**APPENDIX**

*Informing Improvement   
and Powering Progress*



Recommendations to the Illinois P-20 Council

by the Education & Workforce Data Task Force on

Building a P-20W Data System

APRIL 2019

*Contents*

These appendices provide context and considerations discussed by the Task Force during the process to develop the set of the recommendations presented in the [report](https://www2.illinois.gov/sites/P20/Pages/P-20-Data-Task-Force-Report.aspx). In addition, these appendices provide a summary of the presentations around emerging best practices in other states and sectors. Also included is an overview of the current state of data collection, analysis, tools, and dissemination in the Illinois P-20W sectors.

**APPENDIX I: Additional Context & Considerations around Task Force Recommendations 3**

1. Establish Leadership, Vision, and Goals/Nurture a Culture of Data Use 3
2. Create Data Governance and Oversight Bodies Charged to Implement Vision 6
   1. Statement from the Illinois Federation of Teachers 8
3. Build the Capacity to Support Data Use and Management Within and Across Agencies 9

**APPENDIX II: Capabilities Necessary for Data Sharing, Data Linkage,   
and Data Analysis 12**

**APPENDIX III: Lessons From Other States and Sectors 19**

a. State Models 19

b. The Data Commons Solution – a Next-Generation Solution 24

c. The Administrative Data Research Facility (ADRF) 27

d. Resources Presented to the Task Force 28

**APPENDIX IV: Illinois Public Entity Data Overview and Activity 30**

1. State of Illinois Cradle-to-Career Data Engagement Resources 30

b. Illinois Longitudinal Data System (ILDS) 33

c. Agency Data Activities and Updates 35

1. Illinois Board of Higher Education (IBHE) 36
2. Illinois Community College Board (ICCB) 38
3. Illinois Department of Employment Security (IDES) 40
4. Illinois Department of Commerce & Economic Opportunity (ILDCEO) 43
5. Illinois State Board of Education (ISBE) 45
6. Illinois Student Assistance Commission (ISAC) 48

**APPENDIX V: Sample Questions to Guide Data Activities in Illinois 49**

# **APPENDIX I**

Additional Context & Considerations around Task Force Recommendations

This appendix provides more detail around the context, content, and considerations the Task Force discussed during the development of the recommendations made in the Task Force report to the P-20 Council.

These considerations are organized by the report’s recommendations:

* Establish leadership, vision, and goals/nurture a culture of data use;
* Create data governance and oversight bodies charged to implement the vision; and
* Build the capacity to support data use and management within and across agencies.

The Task Force believes that as the state implements the recommendations offered in the report, this context and points of consideration can be useful to inform the implementation discussions and planning. Our hope is that these set of actions will help make the vision for effective data use in Illinois a reality.



Establish Leadership, Vision, and Goals/Nurture a Culture of Data Use (Recommendations 1 and 4)

Build Trust

People will not use data if they don’t know it exists, don’t find it valuable, or fear it will be used to hurt them. In recent years, public data has been used more often as a hammer than as flashlight. This diminishes trust in data and data systems among point-of-service personnel who are often best positioned to use data to improve individual and organizational effectiveness.

* Examples for building trust include the Maryland Data Center, where staff conduct visits with every legislator to demonstrate the powerful data analysis that can support the lawmakers’ efforts to help their constituents, and Kentucky, which has a communications team to make presentations and offer data insights to organizations across the state.
* High stakes assessment data offers a valuable point for reflection; this summative test data has great potential to provide value to families, learners, teachers and systems leaders, but because it is often delivered on a delayed scheduled, it is not presented in a way that is easily geared to providing insight and changing actions, and there is little training on how to discuss and use these results to support continuous improvement. As a result, the value of high stakes assessment data is diminished, and it is not trusted to be helpful.

Listen More Actively to What End-Users Are Telling Us about Their Information Needs

Illinois needs to engage practitioners and the public more intentionally in the development of information systems that meet their needs. This includes focusing on critical questions and use-cases that result in data collection, analysis, and information systems that users find valuable.

* Data systems should be agile and focused on continuous improvement and refinement to keep up with people’s increasing information demands. This includes starting to link data from other sectors such as health, social services, foster care, etc. and other states when the need arises. Creating a culture focused on creating value for people will help make this data and all data not just tools of accountability and compliance but tools of transparency, engagement, and improvement.

Make Improved Data Literacy a Statewide Priority

* Improved data literacy is a critical condition for more effective data use. More often than not, data does not provide clear answers so much as it increases opportunities for thoughtful analysis and interpretation. End-users such as teachers and school leaders and other service providers need specific training on how to interpret different kinds of data for specific purposes.
* Illinois currently offers data training to agency staff and some practitioners but needs to expand these efforts. Regional and local training efforts also need to reduce their dependence on vendors whose products are built around the data they report.
* From parents to policymakers, most Illinois data users need to know more about how to access, use and safeguard data. They also need more accurate information about the strengths and limitations that various forms of data have for informing policy and practice.
* Illinois should encourage teacher and administrator preparation programs to include greater focus on data literacy in their programs.
* Constituency and membership organizations can prioritize trainings/sessions at their annual convenings on data use and protection. Everyone has a role in raising awareness and improving understanding around data use and protection.

Value Partnerships

* Transforming data into information happens at many levels and involves many actors. Public agencies, colleges and universities, philanthropic organizations, advocates, and employers all have role in creating a culture of evidence that provides needed training and builds capacity over time.
* For example, the current partnership that Illinois State Board of Education (ISBE) has with Northern Illinois University (NIU) to create report cards, profiles and to house the Illinois Longitudinal Data System (ILDS) are models of this partnership and should be supported, replicated, expanded. The capacity within the university and college systems for research, analysis, training, and communication tools is large and should be tapped.

Build Local Analytic Capacity

Greater analytic capacity within agencies and outside partners is a critical component of transforming data into valuable information. But without making local analytic capacity a higher statewide priority, this work will predictably have only a marginal impact on quality and effectiveness at actual points of service across the state.

Provide Appropriate and Timely Access to Information

Ensure public transparency around aggregate data through continued work on creating dashboards and portals. For those limited stakeholders who require personally identifiable information, make sure they have the data they need in the format they require.

* Several states (See Appendix III for more information on efforts in Kentucky, Maryland and Virginia) are creating centralized information hubs that provide a one stop shop on data/metrics/analysis and research around system performance from early childhood through workforce learning and also provide links to all the agency websites as well.

Safeguard Data

A major part of building trust is to continue to prioritize ongoing improvements to keep data secure, private, and confidential. Agency staff feel a strong sense of responsibility as stewards of the data in their control, and agencies must continue to implement the best practices in protecting data. Department of IT (DoIT) can and should play an important role to ensure data security methods are consistent across agencies and following best practices.

* Possible activities to build awareness with external stakeholders on data security include having state agencies convene stakeholders to collaboratively develop model statewide training and resource materials on state and federal privacy and security laws and best practices (including data breach policies; 3rd party vendor policies, contracts and terms of service; cybersecurity; and communication tools for talking with families around data rights and security) for dissemination statewide.
* Any changes to improve data sharing must be built on a foundation of trust and high shared standards of security and privacy regarding rules, policies, processes, and training to protect against misuse and breaches, etc.

Invest for Impact

If meeting people’s information needs are a priority in Illinois, then the state budget needs to reflect that. Leading states have increased their investment in building the information systems of their state; see Appendix III for a description of the investments made by Kentucky, Maryland, and Virginia to sustain this work. Funding needs to support not just the technical aspects of the data system, but to increase the staff available to conduct analysis, create communication tools and services, and to manage data requests and queries.

Use the Bully Pulpit of State and Regional Leadership to Raise Urgency

State leadership should embrace the vision by talking about the role of information in internal and public discussions, allocating resources to this work, and creating the conditions for people to work together towards shared goals. Recommendation 2 provides suggested actions to make this a reality.

* The [Governor’s Transition Recommendations](https://www2.illinois.gov/sites/gov/Documents/Transition/Reports/Transition_Education.pdf) highlights that this work is already being teed up as an area of focus in this excerpt:

“**Strengthen and utilize data systems to improve decision-making, accountability, and the quality of services provided to young children and their families.** Individual state agencies lack the capacity to produce timely data and they have difficulty utilizing the data they produce to improve services and drive decision-making. Insufficient data limits the ability of service providers and other stakeholders to conduct needs assessments, improve recruitment and enrollment strategies, and foster equity and inclusion. Every strategy for improving educational success would be strengthened by access to better data. The new administration should create a culture of data use, data-sharing, and accountability among agencies for the production of data.”

Create Data Governance and Oversight Bodies Charged to Implement Vision (Recommendation 2)

**Discussion of Current State Governance and Other State’s Approaches**

Illinois has a governance structure to support data sharing and project prioritization across seven agencies who comprise the ILDS. However, if the state wants to join the ranks of leading states — like the ones mentioned in this report — that have built efficient and impactful cross-agency information systems, Illinois needs to build a more robust data governance structure that oversees and coordinates all aspects of education and workforce data sharing, matching, analysis, protection, and dissemination. It will also need to establish the roles, responsibilities, incentives, and accountability measures that ensure that all agencies and partners are working in an aligned and collaborative manner to have data improve education and workforce outcomes in the states.

The governance structure can be built off the current P-20W[[1]](#footnote-1) governance structures now in place at the P-20 Council and the ILDS Governing Board, but greater technical and staff capacity is needed to support the mission of the P-20W systems. Lessons from other states and sectors (see Appendix III) can provide models from which Illinois can learn and tailor to our own specific situation and culture. Each of the states have created structures that engage agencies as members of the governance structure and respect the role of agencies to be responsible stewards for the data in their charge. A more robust centralized governance structure has created more capacity within individual agencies and across the P-20W transition point data needs and has contributed to a more coordinated customer-focused information system.

In all the states we studied, there is a centralized governance body that oversees all the aspects of education and workforce data and ensures coordination among all the players across the systems. Every agency is represented by its senior leadership within the governance structure, and voices of other stakeholders are at the table in appropriate ways to ensure that the processes and products serve all customers in the state. Governance needs to be a collaborative process developed by, with, and for agencies and stakeholders, not a top down structure that is imposed as a compliance exercise.

Creation of this governance structure is one of the critical initial steps to make this strategic plan and the desired vision a reality. While the Task Force believes further discussion will be necessary to establish where all the components of this governing structure are housed, the exact procedures and bylaws that govern it, who sits on which board or advisory council, and how often those bodies are convened, it is also adamant that establishing a broader-based governance structure that is accountable to the Governor and Legislature is a necessary foundation for building the IT infrastructure, the human capacity, the analytic power and tools, and partnerships that are necessary to turn data into actionable information and that will fuel a culture of inquiry and evidence in Illinois.

Role and Responsibilities of P-20W Data Governance

The P-20W governance structure should have three core components to ensure success:

* A clear and urgent leadership directive,
* A forum comprised of multiple stakeholders, including agencies, to align P-20W and related efforts, and
* Centralized and dedicated staff capacity to carry out necessary system functions.

The Task Force discussed the following actions by the state’s highest policy leaders to create A robust statewide P-20W Data Governance Structure to be accountable to the people of Illinois:

Provide Clear Directives around Data and Hold Everyone Accountable to Following Through on these Directives

The Governor, General Assembly, and agency directors must have a sense of urgency about implementing a nationally leading P-20W data system and make it a top priority for the focus of staff effort, financial resources, and accountability for action.

Create a Representative Stakeholder Forum for Aligning All Efforts Toward the Overall Vision and Mission of the P-20W Data System

A multi-stakeholder body to ensure all the pieces of the P-20W data ecosystem are working together to meet the information needs of the people of Illinois efficiently and effectively.The creation of the ILDS represented Illinois’ initial effort to create this forum, and the state should revisit this issue in a way that builds on existing capacity while applying lessons learned from ILDS implementation.

Build Centralized and Dedicated Staff Capacity

While the right leadership and governance bodies must be in place, dedicated staffing is needed to drive the system forward. Some of these staff should be centralized within, report to, and speak with the authority of the Governor’s Office. Other staff may be housed in the Department of IT, at University partners, or through dedicated FTE allocations by the agencies. Regardless, the staffing structure must be clearly defined and in place with sufficient capacity to address all of the following functional areas (which are aligned to the capabilities listed in the next section):

* **Manage specific data projects** including the ongoing management of projects related to the P-20W system and data collection, sharing, and linking. In coordination with a technical architect, agencies should establish a plan for development and ensure the capacity and resources exist to help implement the plan.
* **Develop Research Agendas and Establish Partnerships with Internal and External Researchers** responsible for the development of a research agenda and the mechanisms for getting research accomplished.
* **Translate Policy Priorities into Data Projects** including working with P-20 Council, legislators, agency leadership and critical program and policy leaders to prioritize the efforts around transition data to meet the needs of the state.
* **Continuously Strengthen the IT infrastructure and solutions to share, link, provide appropriate access and protect data.** Develop a technology plan for the P-20W system and work with agencies to coordinate its development. Where necessary manage centralized elements of the P-20W system and ensure those elements are implemented in a technologically robust manner.
* **Communicate Insights from Data Analysis in Compelling and Actionable Ways.** Develop coordinated strategies to ensure people — from parents to policymakers — understand how data can help them make more informed education and workforce decisions.

The states that the Task Force studied provide detailed models for how to create structures that fulfill all these components of governance. It is up to Illinois to develop a P-20W Governance Structure that meets the information needs of our state and ensures that all of the key players—both inside state government and outside—are working together to make our shared vision a reality. This creation of a centralized P-20W governance structure with agreed upon and enforceable policies and standard operating procedures must be a priority of the new administration and legislative session.

Role of the Department of Information Technology

In addition to a strong governance structure, to better meet Illinois’ analytic needs, a systems-oriented solutions approach is required. The Department of IT’s (DoIT) goal is to build an architecture for analytic self-service that provides visibility into the organization’s information assets, highlights the quality of those assets, and enables Data Analytics team to independently interact with them. All of this must be provided in a secure manner with full ability to access control and a mean to enforce data retention policies.

It is timely that the Department of IT (DoIT) is also conducting a review and recommendations around data governance across all state data system, with a focus on data security and standards, and the procedures for interagency data sharing. This work should be coordinated with the efforts within the education and workforce sectors to create an aligned and where appropriate, common governance structure around IT systems. The Task Force’s governance recommendations are broadly focused on not only the IT aspects of governance (data sharing, matching and access, and protection), but also on issues of project prioritization, coordinated research, and dissemination of insights and reports. Wherever possible, the work being led by DoIT should align with the enhanced governance structure for P-20W data. Appendix IV provides more information on DoIT’s Governance Review.

If state leaders wish to leverage the power of data to improve decision making and outcomes across the P-20W pathway, they must invest in creating a financially and politically supported common governance structure that has the power to manage the processes, policies and IT systems across the P-20W sector.

Statement from the Illinois Federation of Teachers

The Illinois Federation of Teachers does not support Recommendation 2) Create Data Governance and

Oversight Bodies to Implement the Vision of the 2019 report, Informing Improvement & Powering

Progress: Recommendations to the Illinois P-20 Council by the Education & Workforce Data Task Force

on Building a P-20W Data System. The IFT appreciates participating in the work of the Education &

Workforce Data Task Force, which met from September 2018 – April 2019, and supports the other

recommendations in the report.

As a statewide organization representing practitioners across the P-20 education spectrum, we value

our members having the resources, tools and information they need to support their students. While

access to data is vital for educators, the data must be protected and secured. We appreciate the

leadership Illinois state agencies have shown to maintain, control and protect information they are

entrusted to collect, protect and share as participants in the current Illinois Longitudinal Data System.

We value the work of researchers who actively examine questions about education policy and practice

and share their findings to improve the education experiences of students through the education to

workforce pipeline and the role of long-term, longitudinal data in their work. We recognize the

challenges researchers currently experience when they seek to analyze cross-agency data and

understand that Recommendation 2 seeks, in some way, to address those challenges.

However, we fundamentally disagree with Recommendation 2. After months of task force discussion,

we have not seen compelling examples to demonstrate how this recommended governance structure,

primarily to facilitate cross-agency data sharing and analysis, will have positive and substantive impacts

now on schools, colleges and universities, young people and communities. There is no clear linkage to

how this new governance structure enhances and enables better classroom experiences for teachers,

faculty, students and their families, over the current longitudinal governance structure. Students’ needs

are greater than ever, and Illinois is only now transitioning to an evidence-based funding model which

will take years to fully fund. Building this new governance structure would be a diversion of scarce state

resources, funding and attention when state agencies are underfunded and understaffed and there are

more immediate needs in Illinois P20 schools, including underfunding of Illinois public colleges and

universities; students without access to a broad, rich curriculum, wraparound services, mental health

services and smaller class sizes; the need for counselors, social workers, nurses and librarians in every

school; and the existing disparities in school facilities across the state. Focusing resources and attention

on these would better meet the immediate needs of students and improve their ability to thrive in the

long run. In addition, we do not see how the current two-board structure (P20 Data Use Advisory Board

and Education and Workforce Data Interagency Board) will function in a meaningful way, coordinate

with the Illinois Department of Innovation and Technology (DoIT), manage and protect centralized data,

and interact with the Governor’s Office and Agency Executives. The interconnectedness, functions and

roles of each of these structures are not clear. In conclusion, the case has not been made that now is

the time for significant investment of time, funding and people to address the current challenges of

cross-agency data connections, over the more pressing needs of the Illinois P20 education system.

 Build the Capacity to Support Data Use and Management Within and Across Agencies (Recommendation 3)

The proposed governance components outlined above will require a greater level of centralized and shared activity than has happened in the past in Illinois. If we want to ensure that data serves individuals, we need policies, structures, procedures to streamline data sharing with appropriate, trusted professionals and take the friction out of the interactions at every point in the process to transform data into actionable and useful information for the people of Illinois. We also need to invest in the data capacity and infrastructure within and across agencies.

Agencies are stewards of the data they collect, and they are required to adhere to legal and data security requirements that vary between data sets. Agencies understand their data and have subject matter experts who understand the data in context. For these reasons, it is imperative that careful consideration be given to agency requirements before data from agencies are used within a centralized capacity and that agencies provide approval on any projects that involve their data.

Discussion of Granularity of Data Needed

Different questions require different grain sizes of data and levels of analysis. The technical infrastructure of state agency data systems and the capacity of agencies needs to be able to produce simple metrics and indicators (e.g., how many third graders are reading at grade level?), or deeper analysis that can often be developed with a single data set (e.g., what percentage of ninth graders are on track for graduation?), but it also sometimes requires information from several agencies to be connected (e.g., what is the relationship between students taking math their senior year of high school and remediation in college?). Questions that require deeper research studies to gauge impact of an intervention or approach often require data from multiple agency data systems to be able to link the service with the impact (e.g., what expenditures of WIOA funds create the best long-term career outcomes? how do college-going and workforce outcomes differ by demographic group among students with similar high school outcomes?). See the Appendix V for an expanded list of exemplar questions developed by the Task Force.

Discussion of Agency Capacity for Data Sharing and Analysis

Agencies need to build capacity to answer and communicate the insights from these analyses in timely, actionable ways. Individual agencies can continue to produce metrics and analyses that only require data from their own agency; great progress has been made in the last five years to empower education and workforce stakeholders with more timely and actionable metrics and analysis through dashboards, public reports, and websites. For research questions that require data from multiple data sets or deeper analysis, data needs to be shared with researchers from other agencies or research institutions. While the ILDS was set up to create a multi-agency forum for this data sharing work and has been producing value tools and insights, the current infrastructure in Illinois is not positioned to support the increasing information needs of the state. Currently, the data sharing and analysis process is not smooth and efficient because there are too many friction points in the processes, there are insufficient incentives for everyone to work together, and the infrastructure is not supported by enough centralized capacity. This has a high cost in frustration, duplication, and the opportunity cost of lost knowledge and insight on what is and is not working in our P-20W system.

Critical Components for Data Capacity

This list of critical components and suggestions for a more centralized infrastructure are supported by the Task Force, but there is also shared agreement that this infrastructure needs to be built through and, as noted above, by a governance structure that has all agency leadership at the table to ensure the system works for everyone—the people of Illinois, policymakers, education and workforce professionals, and the agencies who are entrusted with safeguarding the data and will play the greatest role in transforming this data into actionable information.

The Task Force discussed building a technical infrastructure and development of capacity. Each component function is captured, its purpose defined, and requirements for its implementation provided in detail in Appendix II. Some of this infrastructure is already in place; other aspects will need to be newly developed. Some of these components can be put in place immediately, while the ones that require the central housing of some limited data sets need to be built under the auspices of the restructured governance system to ensure these new models are accountable to meeting the broader, shared vision laid out for the entire P-20W ecosystem. Finally, it is important to note that building these capabilities will require enhanced capacity, both in the agencies and where necessary in a shared, central service center to manage and provide services that are inter-agency.

These capabilities are premised on a concept of sharing data files between agencies and users of the data. While enhancing this approach may lead to improved data sharing, evolving to a Data Commons infrastructure may provide a fast-track to establishing these capabilities, while providing additional data security, data quality, and data privacy. This approach is explored in Appendix III.

# **APPENDIX II**

Capabilities Necessary for Data Sharing, Data Linkage, and Data Analysis

This appendix provides an overview of the discussion Task Force’s discussions around the capabilities necessary for data sharing, data linkage, and data analysis that need to be further developed and strengthened within individual agencies and in the P-20W governance structures.

Technical Infrastructure Design and Data Operations

The enhanced P-20W system will be a highly complex technical system and needs to have ongoing support to ensure a design capable of implementing elements such as the development of databases that capture data and define a data model for elements that are intended to be shared, master indices, Data Commons, and support systems such as the data request system described below.

Current Status

Each of the agencies have individuals charged with supporting and developing their own infrastructure, and NIU has provided support for the implementation of many elements of the technical infrastructure. However, there has been no technical capacity to develop an end-to-end system to improve the overall data architecture and the ability to respond to data requests in a timely manner. Note that the technical infrastructure is only part of the reason why data sharing has been difficult — but even if research support and legal support capacity was improved, a more comprehensive design of the overall technical infrastructure would be necessary. Developing this design and providing ongoing operations support for this infrastructure requires people that understand the needs of the users and the technical options possible for a holistic system.

Requirements

* Support a technical architect to play a centralized role to help develop and manage the cross-agency data infrastructure and to serve the agencies to support their own infrastructure.
* Work with the agencies and the master client index administrator to provide support for implementation of their systems where appropriate and development of the centralized system.
* Use expertise in data management and business analytic systems to design an end to end architecture for data sharing and data requests.
* Develop plans and work with internal agency staff and external stakeholders to help explain complex technical choices.

Handling Data Requests

One of the major issues that has been identified regarding the data infrastructure is the ability to handle data requests. This capability includes managing the request cycle: taking requests, responding with issues to requests, providing support for developing the request, and managing the process for providing access to data. The capability would provide a centralized mechanism for researchers and other data users to make requests of the data*.*

Current Status

Currently, data requests are shepherded by NIU using the common interagency data sharing agreement form and process. However, this process is not automated, and it gets bogged down in back and forth communication across several different agencies and entities – sometimes causing requests to languish for years. In addition, even once a request is approved, extensive time is then needed to prepare and provide the data files.

States like Maryland, Virginia and Kentucky and other sector examples like the National Cancer Institute’s Genomic Data Commons have automated and centralized processes that provide security and ensure authorized access and acceptable use agreements are in place to control access while also making it more timely and less burdensome for the agencies providing the data and the analysts/researchers asking for it. Maryland also has a statute requiring all data requests to be fulfilled within three weeks for aggregate data and four months for de-identified unit-record data. A strong governance structure with clear leadership will help ensure that everyone works together and will hold all players accountable.

Requirements

* Users have the ability to examine a well-defined and transparent data dictionary and model of all agencies online.
* There is an online process for the management of the request across agencies with notes on the process of the request and strict timelines for reviews that must be adhered to by the agencies.
* The online process incorporates the standardized data sharing agreement template and captures the necessary legal authorizations from the requestor and the participating agencies.
* Once authorizations have been provided, the online request can be turned into an appropriate query for each data system and provide data files across all the systems.
* The system incorporates a process for agency review of the proposed research report or analysis prior to publication to ensure adherence to data privacy standards, policies, and laws and the appropriate characterization of the data.
* Staff that can respond immediately to data requests and are dedicated to these processes.
* Staff that can provide support for the development of requests (need to determine the scale of this function).
* Legal staff that can provide quick responses to legal concerns about data sharing.
* Staff that can help train and support researchers and non-profit organizations in the approaches to data request development to expedite data requests and avoid legal obstacles.
* Staff that can work with institutions to provide training and understanding of how data is used and shared with external entities.
* Staff to work with external data users and institutions to discuss and collaborate on the development of new data collections that will allow for additional research.

Data Sharing/Extraction

This provides a centralized process for agencies to quickly share data and for data sets to be brought together. For example, Virginia provided an example of exposure databases that allowed data to be easily extracted by a central agency. Other states moved the data from each agency into a centralized database that could then be used to respond to data requests. In each case, concerns exist about storing the data in multiple places and the ability to link data once it is stored centrally or after it is extracted.

Requirements

* Each data sharing database should have its well-defined and transparent publicly available data model and data dictionary.
* Data files produced for approved projects that have de-identified data and have keys that are particular to this data project (need to discuss what should happen with requests where the user wants to match to their own files).
* Agencies will refresh data sharing databases on an ongoing basis and provide public listings of existing databases and appropriate access/use of such databases.
* Data sharing databases will use the keys developed by the Master Client Index and Master Indices for other data types.
* Agencies must have control over requests to data sharing databases and the ability to manage requests (process for data requests described below).

Data Linking

The critical technical element of an enhanced P-20W system is the ability to achieve interagency data linkage, which allows for longitudinal research. A significant concern about such linkage is that it requires a mechanism for identifying individuals across agencies without exposing personally identifiable information (PII) such as social security numbers (SSN) or other, similarly sensitive data. The existence and use of a unique interagency key can render the sharing of PII unnecessary, since interagency linkage can utilize that key rather than PII elements. Periodic updates to individual keys as well as the use of hashing techniques can essentially remove the key itself as an identifiable piece of information.

Current Status

The ILDS has built a set of unique interagency keys known as the Master Client Index (MCI). The MCI identifiers can serve as the single piece of information that facilitates interagency linkages. To date, however, while all ILDS agencies submit data to the MCI and have identifiers produced by the system, not all agencies have incorporated those identifiers back into their intra-agency data systems. Additionally, the MCI is limited to Illinois state agencies and thus does not allow for inter-state data linkage.

Requirements

* Utilize the MCI whenever possible for interagency matching projects involving personally identifiable data but not involving multi-state data, ensuring agencies incorporate the MCI ID’s into their source systems.
* Review other methodologies for key development that allow for matching of personally identifiable information across states.
* Continue to assess and improve the methodologies for developing the MCI and other systems for matching across state lines.
* Establish standardized keys across agencies for matching program and institutional data.
* Require common program/institution keys to be included in all external-facing datasets.

Data Quality

There are many elements to data quality, including shared definitions and standardization of metrics across agencies, the use of common keys across agencies, recognized standards for data validation and processes for checking the validity of data, and maintenance of data quality standards (e.g., the approaches to common data elements such names, addresses, and ethnicity). Currently each agency is responsible for its own data quality, and there are no shared data quality standards across the agencies. Finally, there is no shared capacity for ensuring that the data quality standards are implemented or met. This capability allows for the standardization of metrics across agencies and maintenance of data quality standards such as the approaches to common data elements such names, addresses, and ethnicity.

Requirements

* The state agencies need data dictionaries which clearly define the data fields for shared data sets and the meanings of those fields.
* For data elements that are based on calculations, there should be clear definitions of the approach to calculating the field.

Data Analytics

There are tools that allow for the implementation of ongoing analysis of data, such as the analyses of college entrance and persistence by each high school in Illinois.

Current Status

Most agencies now develop their own business analytics tools. The Task Force believes that there is an opportunity to reduce duplication and increase efficiencies by increasing some centralized capacity to develop a centralized set of business analytic tools. All of the states we studied have centralized business analytics tools and work with outside organizations such as universities, non-profit organizations, and external vendors to help manage database services. The Task Force recommends that Illinois also follow that path. Work started by DoIT’s to create an Analytics Center of Excellence should inform and perhaps be linked with this effort. An appropriate balance should be developed between centralized support for appropriate analytic practice and capacity at the agencies with the greatest knowledge of business rules and the types of analysis necessary. The Task Force believes that centralized capacity could help agencies rethink the nature of their own capacity, and the Task Force strongly believes that individual agencies should have strong analytic capacity to complement the new centralized capacity.

Requirements

* Some centralized capacity for business analysis across multiple agency data sets.
* Ability to handle large data sets.
* Technical staff to ensure that ongoing functioning of the tool sets.
* Analytic staff at the agencies and across agencies to run analysis.
* Staff should have knowledge of education data and approaches to analysis in an education context (for example, data experts from districts).
* Should be able to support the development of dashboards and systems that will provide ongoing information.
* Should be involved in the development of metrics definitions so that metrics are of high quality and provide information valuable to districts and institutions (for example, should we present on the percent of students from each high school remediated or the percent of students that go to community college remediated for each district).
* Greater resources to support the hiring of additional agency staff as well as staff that play a role in the cross-agency analysis work.

Data Security & Privacy

A key part of effective data use is the safeguarding of data. As Illinois builds its technical infrastructure to be able to produce actionable information for education and workforce decisions, it is equally important to build its capacity to protect this data. Data sharing across agencies requires building a sense of trust. This starts with adhering to all legal requirements, but it also goes far beyond this compliance mentality.

Requirements

* Work with DoIT as it develops its new Statewide Data Governance Strategy to ensure that the Chief Privacy Officer is supported by and aligned with the broader state IT system
* Serve as a resource, not only to the ILDS and data sharing efforts, but to every agency to create common policies and practices to protect data. Develop data breach policies, security audits, trainings and toolkits for use across the agencies.
* Be accountable to both the Governor’s Office and every agency in terms of protecting data

Research Support and Publication

Lessons from other sectors and states reinforce the importance of building data systems around critical questions that a data system should be set up to answer. The existence of a set of guiding research questions also makes it possible to help prioritize the types of data the state should allow access so that research can be conducted. In addition, this capacity should be responsible for managing and supporting the development of research projects that accomplish the research agenda’s goals.[[2]](#footnote-2) Finally, this capability should support the capacity to publish and disseminate broadly reports based on the data by researchers that has been reviewed and validated.

Requirements

* Work with agencies to help support the development of internal research agendas.
* Agencies have control of their own internal research agendas.
* Good understanding of grants and grant processes for supporting research.
* Relationships with university partners and other non-profit organizations that support research.
* Ability to coordinate stakeholders to define external research needs with P-20 Council.
* Prioritize research agenda based on priority, funding, and timeliness.
* Establish a process of review once data has been used and analyzed to ensure that data privacy.

Public-Facing Dashboards and P-20W Information Center

Data is often used to develop systems that provide information to a wide set of external users. Working with users and receiving feedback to existing systems is an important element of system design. Agencies and the P-20W system could benefit from centralized capacity for the ongoing development of systems and changes necessary, using external feedback to continuously improve how information and insights from research are being used by the people of Illinois.

Requirements

* Should be able to support the development of dashboards and systems that will provide ongoing information.
* Should be involved in the development of metrics definitions so that metrics are of high quality and provide information valuable to districts and institutions (for example, should we present on the percent of students from each high school remediated or the percent of students that go to community college remediated for each district).
* Processes for the development and management of the creation of public-facing dashboards incorporating interagency data to ensure consistency of style and user features, and coordination across the continuum of dashboards sponsored by agencies and security procedures have been established and adhered to.
* Key end users (including parents and educators) should be engaged in an ongoing manner to help define the content of the public-facing information.

Aggregated Data Hub & Unified Public Access

Provide a warehouse of aggregated data across agencies that captures data that is published by agencies.

Current Status

While there is a [State data portal](https://data.illinois.gov), it is currently bereft of P-20W data. This means that every time anyone wants to answer a question that requires data from more than one agency, s/he must work with each agency to coordinate and request a data set, even when there is no personally identifiable data. Anyone wanting to go to one place to get a broader picture of how well Illinois systems are working to serve learners and earners has to visit every state agency website to find that data.

A shared data hub that contains aggregate data in one place would open the door to data presented in richer context and with the ability to draw richer insights. [KYStats](https://kystats.ky.gov/), the [Maryland Longitudinal Data System Center](https://mldscenter.maryland.gov/), and the [National Cancer Institute’s Genomic Data Commons](https://gdc.cancer.gov/about-gdc) all provide that public level access to data that should be available to people at no burden and to researchers to download and conduct analysis. [Texas2036.org](https://texas2036.org/) created a portal which is putting all publicly available aggregate data on a single website access and created portals/dashboards for quick searchable reviews as well as making the data available for further analysis. Illinois should consider moving in this direction.

Requirements

* Establish a process for notification of centralized agency when new datasets are published by agencies.
* Allow for the integration of datasets into a centralized repository that can be accessed by researchers and non-profits.
* Centralized agency can review datasets for maintenance of data standards across agencies and publication of meta-data (for example, mean and variance of standardized test data).
* Establish common geographic and political aggregations of data (for example, county, school district, community college system).
* Do not impede publication of data by agencies but provide notification for review and integration into common platform.
* Can be responsible for the development of common branding and approaches to design of features.
* Should work with agencies to support ongoing development of internal systems.

# **APPENDIX III**

Lessons From Other States and Sectors

The recommendations found in this report have been shaped not only by the experiences with education and workforce data here in Illinois, but also through insights learned from the study of exemplary systems in other states and sectors. This appendix includes highlights of the insights from Kentucky, Maryland and Virginia’s statewide longitudinal data systems, from the University of Chicago’s Center for Translational Data Science and Data Commons work, and from the Administrative Data Research Facility (ADRF). These were used to shape the Task Force recommendations.

State Models

All of the state longitudinal data systems we studied have a legislatively mandated and financially supported mission to share and link data from across agencies, conduct analysis themselves or provide data to outside researchers to do so, safeguard data, and communicate insights and actionable information to their customers across the state. The robust governance structures of Kentucky, Maryland and Virginia create a common forum for building productive interagency relationships built on a single vision about the use of data to support better decision making in education and workforce across the state. Hallmarks of their success include a common mission to work together to facilitate that vision becoming a reality, a commitment to transparency, and a culture based on trust and mutual self-interest.

For more information on each of these models:

* Kentucky Center for Education and Workforce Statistics: <https://kystats.ky.gov>
* Maryland Longitudinal Data System Center: <https://mldscenter.maryland.gov/>
* Virginia Longitudinal Data System (VLDS): [www.VLDS.Virginia.gov](http://www.VLDS.Virginia.gov)

These governance structures, while built to fit each of the three state’s unique character, have many critical features from which Illinois can learn. These are described below under the following six headings: vision and mission focused; clear, accountable roles and responsibilities; incentives for alignment and performance with a customer focus; financially stable and sustainable; focused on research questions around transitions; and efficient and secure data linking and sharing.

Vision and Mission Focused

These three states developed their governance structure based on the state priority to have data inform the key points of transition in education and workforce development pathways. Like in Illinois, policy leaders in these three states recognized that without establishing a centralized infrastructure to focus on facilitating the appropriate and legal sharing of data across agencies, critical decisions made by policymakers, practitioners, and families would not be based on quality information. The VLDS was originally begun in 2005 through the state’s P-16 Council and launched as a stateside project in 2012. Maryland’s legislature in 2010 built off of the groundbreaking 2009 Illinois legislation to establish the MLDS Center which began operations in 2013. Kentucky was established through legislation in 2012 to provide greater centralized infrastructure and capacity to support the interagency data sharing that was serving as a national model around high school feedback reports. Their mission statements offer inspiration for the development of the mission statement for Illinois:

* **Kentucky.** “The Kentucky Center for Education and Workforce Statistics connect data from educators and employers to inform our Commonwealth.”
* **Maryland.** “The Maryland Longitudinal Data System Center develops and maintains the MLDS in order to provide analyses, produce relevant information, and inform choices to improve student and workforce outcomes, while ensuring the highest standards of system security and data privacy.”
* **Virginia.** “The Virginia Longitudinal Data System is a powerful tool for Virginia’s future, giving the Commonwealth an unprecedented and cost-effective tool for extracting and analyzing insightful education and workforce development data within a secure environment.”

Clear, Accountable Roles and Responsibilities

**Governing Board.** Legislation in Maryland and Kentucky have established governing boards consisting of education and workforce leaders.

* **Kentucky.** The Kentucky Center for Education and Workforce Statistics Governing Board is established in KRS 121B.124 and is comprised of five members and chaired by the secretary of the Kentucky Education and Workforce Development Cabinet. They must meet at least twice a year but continue to meet three times.
* **Maryland.** In Maryland, the heads of K-12, postsecondary, and workforce state agencies; the chancellor of the University System; Executive Director of the Maryland Association of Community Colleges; President of the MD Independent Colleges & Universities Association; President of Morgan State University; and five members appointed by the governor (must include a local school superintendent and an expert in large data systems and security). This governing board ensures that the MLDS is meeting the needs of its stakeholders. The current Chair is the Secretary of Higher Education, and the board meets quarterly.
* **Virginia.** In Virginia, the Data Governance Board, comprised of representatives from each agency/organization that is sharing data meets monthly and all decisions must be unanimous to a standard of “can my agency live with this.”

**Advisory Boards/Working Groups.** The structure in all three states share similar areas of focus (and are supported by advisory boards or working committees comprised of staff from agencies, experts and other stakeholder voices). These areas of focus include:

* **Data Governance and Management**. This subcommittee/advisory board sets directions for data collections, monitors data quality, ensures protection of sensitive data. Virginia has a Book of Data Governance that lays out the bylaws, and rules of engagement across agencies, and the guiding principle is “can my agency live with this.”
* **Research and Policy.** In Maryland, a Research and Policy Advisory Board meets monthly to ensure participation and input from stakeholders on the research agenda, facilitates consultation between stakeholders and the Center staff on operational matters, and assists Governing Board with oversight.
* **Communication**.
* The Maryland Center communicates regularly with its internal and external customers. Center staff provide a monthly report to the Governing Board and maintain strong relationships with the Department of Legislative Services (including presenting an overview of the Center to Senate Education, Health, and Environmental Affairscommittee at the start of the legislative session and submitting mandatory annual reports) and the Governor’s P-20W council. In addition, they communicate with other stakeholders through email newsletters, presentations, and conference participation.
* KYSTATS is required by legislation to produce public reports on high school feedback on postsecondary outcomes and the Future Skills Report (a planning tool for local use), but they have gone far beyond compliance orientation to sharing insights from their data analysis. KYSTATS has a full-time staff person focused on social media to help get evidence and insights into everyday policy and practice conversations and to build more demand for actionable information. They have a blog, a newsletter, and a twitter account and serve as a resource to the legislative members and staff to answer questions. The KYSTATS team listens to customer feedback through use of focus groups to guide their areas of priority and research agenda.

**Staff.** In all three of the states, there are staff who play a leadership role to ensure that the system is continually fulfilling its mission and continuously improving its operations and processes. The leaders of these centers are researchers and analysts who are strong project and people managers and external leaders. In Maryland and Kentucky, the governance structure is not housed in an existing agency so that it maintains independence and autonomy.

* **Kentucky.** KYSTATS is housed under the Kentucky Education and Workforce Development Cabinet in the office of the Secretary. There is a full-time Director and a staff of 42.
* **Maryland.** In Maryland, there is a full-time MLDS Center Executive Director and a staff of 12. The Center and staff exist as an independent unit of state government. Three of the staff are liaisons who work half time at their home agency and half time at the center to build alignment and coordination.
* **Virginia.** The VLDS is housed within the State Council of Higher Education of Virginia (SCHEV), the post-secondary coordinating board as a duty of the State Council (a governor-appointed board). The agency head is appointed by the State Council rather than the Governor and thus SCHEV runs more like an institution than an agency. Leadership of VLDS is assigned to the Policy Analytics Director, who is accountable to the agency head and a Data Governance Council which is made up of representatives from all of the participating agencies/organizations. The location at SCHEV is due both to the Council’s overview of college participation/completion/workforce-readiness and that one of principle of architects behind VLDS having been housed at SCHEV.

Incentives for Alignment & Performance with a Customer Focus

In all three states there is an increasingly strong culture that values data as a critical aspect of making informed decisions and fueling better outcomes in the education and workforce sectors. The governance structure has been set up to facilitate shared goals and common processes, protocols, principles, and actions to make those goals a reality. Every one of the states talked about the foundational role that building trust and transparent, mutually beneficial relationships has played in building a strong and effective governance structure. People need to understand “what’s in it for me” as they come to the table, and there needs to be an acknowledgement that “sharing is scary.”

In Kentucky and Maryland, in particular, there are several components of their structure that incent people working together for a shared purpose of sharing and linking data cross agencies: (1) the structure reports to and is accountable to the Governor; (2) the body is public-facing and must be accountable to not only policymakers, but to the public and hold public meetings; and (3) the legislation in Maryland sets time limits on the maximum time allowed for providing data to an approved request (no more than three weeks for aggregated data (although most requesters hear a response in ten days and have their request fulfilled within 30 days) and no more than four months for individual-level de-identified data). *Note: Even without a statutory mandate: Virginia provides data to researchers in three weeks to three months, and Kentucky within one month for aggregate level data and four-to-six months for a linked unit record data set. In contrast, it is taking three years for the University of Chicago researchers to get the data they require to conduct analyses for the To&Through Project.*

All states talked about the growing demand for their services and for access to data. Kentucky has tripled the number of requests they have fulfilled; they are now fulfilling 20-25 a month and did over 300 last year. Maryland similarly has increased demand, especially from their legislature and other stakeholders; they are depending on grants to support this work as well as graduate students to help with their analysis.

Financially Stable and Sustainable

Each of these three states, similar to Illinois, has received federal funding to build this interagency governance structure. Ongoing and annual state appropriations and a cost-recovery fee-for-service approach and grant funding for specific data analysis projects are also providing support to sustain and develop operations and services to keep up with increasing demand.

* **Kentucky.** KYSTATS has an annual budget of $4.5 million; while the federal Statewide Longitudinal Data System (SLDS) grant has supported a substantial part of the development of KYSTATS, staff believe that their budget is on track to be fully funded for next year. This will be covered by an annual appropriation as well as through direct cost recovery fees by researchers and other customers (fees are covering approximately 16% of the budget and can range from $500 to $100,000 depending on the work involved to provide the data and/or analysis).
* **Maryland.** The MLDS Center has an annual appropriation of $2 million from general funds that covers staff salaries, IT infrastructure improvements, and ongoing research projects. Maryland has not built in cost recovery fees yet, but it is considering it.
* **Virginia.** VLDS has a $347,000 appropriation in the annual budget to support the VLDS, but the actual annual budget is closer to $550,000; the additional $220,000 is made up from agency support. As new data sharing partners join in (like Goodwill and the early childhood agency) they pay $20,000 in fees to cover the cost of building the data linkage tools (all data stays behind agency/organization firewalls in VA). The Department of Education has 0.5 of an FTE and SCHEV has 1.2 FTE working on VLDS. The technical vendor handling system development and maintenance, data matching, and some development of dashboards and public reporting (such as High School Feedback Reports) costs $350,000 a year. Agencies share the costs of producing dashboards and reports on transition issues. This technical vendor also supports the installation in Nevada which shares the same codebase as VLDS.

Focused on Research Questions around Transitions

All of the LDS governing structures are established to focus on cross-sector and cross-agency transitions. The priorities of these bodies focus on K-12 readiness, postsecondary readiness and access, post-secondary completion, and workforce outcomes. Each of these body’s decisions are prioritized based on a statewide, broad-based P-20W research agenda. All work around data sharing and linking must be aligned to one of these priorities and this agenda.

**Researcher Access.** All three states reinforced that they focus on making aggregated data sets easily available to users through publication of these sets in easy to find formats and through dashboards. For unit-record level data, the states have all created researcher portals that aim to create transparent, efficient, and timely processes for requesting and receiving data. The MLDS Center has an MOU with the University of Maryland to help provide analytic support and research to the Center.

Critical components to the researcher relationship in all three states include: (1) researchers must be requesting data to support research that is aligned with the state’s research agenda and priorities (few requests are denied; Kentucky denies one in 110 for example); (2) researchers must complete the data sharing request and sign a data sharing agreement laying out the processes and terms of sharing and use of the data; (3) there is an automated, online process for requesting data, and it allows the requester to see exactly where their request is in the review/approval process; and (4) researchers must not have violated privacy protections in the past. Part of every data sharing effort with a researcher is the requirement that the final research product be reviewed to ensure appropriate use of the data before it is released publicly. Virginia doesn’t provide data for dissertation research or to independent researchers not affiliated with an institution.

**Internal Analytic Capacity**. Kentucky and Maryland have also built their own teams with research capacity. KYSTATS has 10-12 researchers who do basic statistics, regression analysis, and data visualization, and MLDS Center has three researchers/analysts on staff. Researchers and analysts at these centralized centers are also providing analysis support to individual agency projects as well. All three states reinforce that they are providing a non-partisan, objective, and accurate view of data that isn’t about policy but used to inform others’ efforts in policy and practice.

Efficient and Secure Data Linking & Sharing

Each of these exemplar states approaches how they link and provide data to other agencies or non-governmental researchers in slightly different ways, but they are all working to provide legal and appropriate access to data in a way that facilitates the answering of their priority research questions to meet the information needs of their citizens.

* **Kentucky** collects data from broad set of agencies that impact education and workforce, including all of the agencies from early learning to workforce as well as information from the Cabinet for Health and Family Services (e.g., child care, SNAP, TANF, Medicaid eligibility and claims), and corrections data. In addition, KYSTATS is developing data sharing relationships with the Department of Workforce Investment on apprenticeship information, the Kentucky Chamber of Commerce on their Talent Pipeline Management data, and others. The agencies send the data and the linkages are made at KYSTATS, de-identified, and stored in a warehouse. Researchers never see any identifiable information.
* **Maryland** Departments of Education; Higher Education; and Labor, Licensing, and Regulation provide the MLDS Center data sets that are necessary to answer the state’s priority questions. This includes local K-12 student information (e.g., state collections, attendance, completion, assessments); early childhood education information; Higher Education information (e.g., enrollment, degree, course and financial aid); labor, licensing, and regulation information (e.g., labor and unemployment and wage); and adult education information (e.g., GED and National External Diploma). Additional critical data sets are provided by the College Board (testing data), National Student Clearinghouse for out of state post sec info, and the Motor Vehicle Administration (to facilitate data matching). MLDS Center is prohibited by law to collect data that are not defined as education-related data; there is conversation underway to begin to expand the definition of what constitutes education data so that data may be shared with the Center from corrections and social services.

Similar to Kentucky, data received from the contributing agencies is loaded into the Master Data Management System, matched, de-identified, and then stored in the operational data storage. Only one or two people have access to this centralized storage area. When legal and appropriate, authorized researchers and analysts are permitted limited access to specific data sets from the operational data storage.

* **Virginia**, like Illinois, has a federated data system, meaning that there is no central storage of data and all data sets remain behind agency firewalls and are de-identified before they are shared. There is a statewide common structure to identify and match records. VLDS operates “on behalf of and under the control of” the agencies and organizations linking de-identified administrative data (including from the K-12, postsecondary, workforce, social service, children’s services, health services, juvenile justice, and adding on the Virginia Goodwill Network and the Early Childhood Foundation). VLDS uses an outside vendor to do data matching twice a year. Microsoft Dynamics software has automated much of the data request and sharing process, workflow, and communications management, which reduces time and burden on agency staff and gets data into the hand of those who requested it faster and with fewer points of contact.

Presentations on State Models

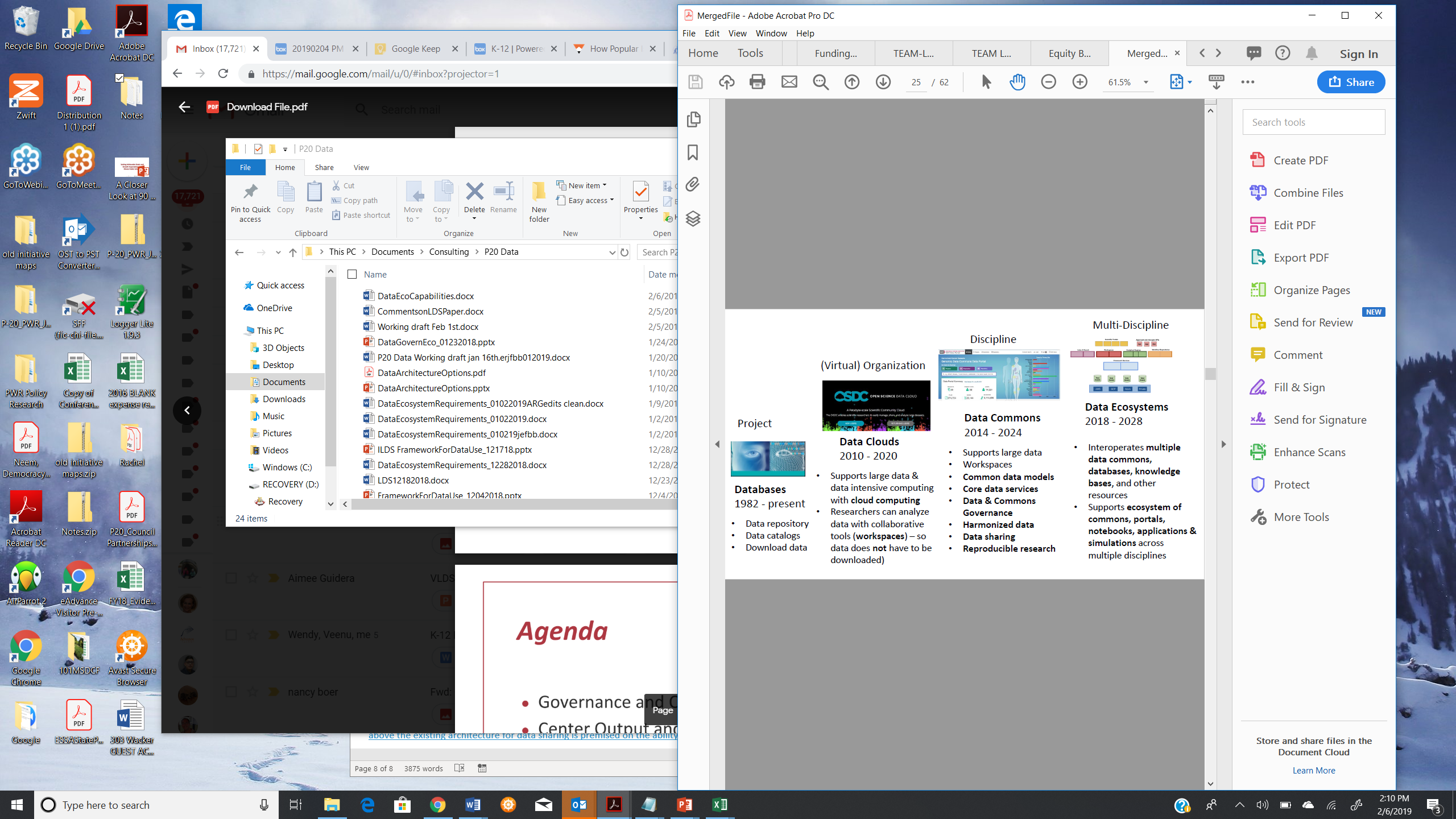
* **Kentucky**: [Kentucky Center for Statistics (KYSTATS) Presentation](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.1_State%20Models%20-%20KYSTATS%20Presentation.pdf) by Jessica Cunningham (also posted as attachment Appendix 3.1)
* **Maryland**: [Maryland Longitudinal Data System (MLDS) Presentation](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.2_State%20Models%20-%20MLDS%20Presentation.pdf) by Ann Kellogg (also posted as attachment Appendix 3.2)
* **Virginia**: [Virginia Longitudinal Data System (VLDS) Presentation](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.3_State%20Models%20-%20VLDS%20Presentation.pdf) by Tod Massa (also posted as attachment Appendix 3.3)

The Data Commons Solution – a Next-Generation Solution

Improving data sharing capability for agencies and the ability to respond to external requests is critical to turning educational data into actionable information and improving student outcomes. A Data Commons provides a next-generation solution to increasing access to educational data, while solving for many of the security and operational issues of existing approaches to data sharing and analytics. At its core, a Data Commons is a shared, secure virtual storage environment. It brings together data from a wide range of sources, and offers tools accessed securely via the internet where credentialed stakeholders can run analysis on key questions about outcomes. For example, through the National Cancer Institute’s Genomic Data Commons, scientific discoveries are accelerated via efficient data sharing across institutions and researchers.

A Data Commons creates the environment for more sophisticated outcomes analyses – with reduced costs and turnaround time – by dramatically reducing the burden on state agencies in responding to research requests. Within a secure environment the end-user has access to sophisticated analytic and query tools, which return responses based on their access rights. This provides the opportunity to have much richer information about education activities and outcomes, which can inform policy, practice, and funding decisions on an ongoing basis. Data stored in a Data Commons is only accessible through the secured virtual environment. The data is also shared across a multiple servers making the data physically difficult to compromise. Therefore, rather than having to share data with end-users, the end-users have to access data through this environment, limiting the ability for data to be compromised and limiting end-users ability to access the raw data.

The existing architecture in Illinois for data sharing requires data files to be shared across agencies and with researchers. Each time a file is shared, there is a risk that data records could be compromised. This assumption restricts the types of questions that can be asked of the data, because information must be stripped out to avoid the user of the data being able to identify users. In fact, while the measures taken to secure the data (e.g., replacing identifiable keys with keys that do not allow for identification) the end-user still gets access to an entire data file and the owner of the data has little control over how the data is used. Data users are required to destroy data when they are finished using it and are expected to put in place appropriate methods for handling data to avoid misuse. But this creates additional issues like an inability to replicate and validate research and analytics done with the data, a growing necessity for high quality research.

This approach also generally requires researchers to have their own analytic tools, and often requires them to have their own computation power. Finally, when data is used in the development of metrics or aggregated data, the final product is often published disconnected from the original data set making additional aggregations or deeper dives into metrics impossible without reconnecting and instantiating the underlying dataset, which requires additional capacity and often additional processes. Additionally, this can lead to outdated metrics when the underlying data is updated but the files and metrics are not regenerated. In conclusion, sharing data files separates data from its original home limiting its usefulness and making additional analysis difficult to complete.

The picture above, provided by the Center for Translational Data at the University of Chicago visualizes a progression of technologies, from project-based individualized databases and data files to a next generation approach using a Data Commons and inter-connected Data Commons called Data Ecosystems.

It is critical to note that many of the elements that have been built to support the ILDS are necessary to help move data into a Data Commons. In that manner, a Data Commons is an evolution from the existing infrastructure rather than a break from where we have been so far. However, a Data Commons provides another approach to developing the capacities described above. As a start, Data Commons for each agency provide a mechanism to store data in very secure environments that provide many of the latest security features for data storage. For example, data is generally spread amongst multiple servers making it much more difficult to physically compromise data than in traditional data environments.

In these environments, state agencies no longer have to ship data to different entities in order to allow that entity to do research or display metrics. Agencies are already reconfiguring their environments in this way. For example, the College2Career tool (discussed in Appendix IV) will have an institutional analyst portal where all analysis occurs in a state-developed and maintained environment. This limits the access that external users have to individualized data records and means that they only get the metrics they need to display, but it also increases the timeliness of metrics and reduces the need to reship data later.

Beyond enhanced data sharing capabilities, Data Commons provide workspaces for data analytics. Again, the critical element here is that rather than require the data analyst to have access to an entire dataset to do analysis, the analysis can occur within the workspace, so that the data owner never has to relinquish control of the data. In fact, the analytic tools are generally equipped with “query gateways”, which ensure that the data that is returned from a research request maintains data security and quality standards and aligns with rules such as avoiding smaller than allowable cell sizes. This work can then be recorded so that data analysis against the same data set can be replicated, which allows for improved control of data quality and of the published research. This all leads to improved data requests – because the end user is no longer asking for access for data, but rather merely requesting access to run queries on the data and the data commons provides the tools to do that.

That said, approaches to linking data are still required. For example, if the end-user has another data set that they would like to match to a data set within the Commons, they would need to ensure that their data used similar keys to the data residing in the Commons. They would then be able to put their data in the Commons environment.

Additionally, data quality and standards would need to be adhered to. Data Commons staff often provide the ability to harmonize data and ensure that the fields mean the same thing across data sets. For example, if multiple agencies enter data that has ethnicity information, it is important for that data to be coded in the same way or for potential conflicts to be resolved in agreed to fashion (e.g., how to handle data that might be coded with Latino and Non-Latino vs. Hispanic and Non-Hispanic). Note that once this harmonization has occurred, the ability to link data across Commons becomes far more manageable – again without additional data files ever being shared. Each time the data is queried in a linked fashion or linked to other data, this can be recorded.

It is critical to understand that while a Data Commons provides a robust approach to improving the technology landscape, it does not resolve issues of capacity or governance. The rules for who has access to data, how long they have access to data, and how research is completed with that data will be used still require discussion and oversight. In addition, having the tools and workspace for analytics, especially without sharing data files, is a huge step forward, but it does not provide the capacity for analytics, which still requires analysts and researchers. That said, a Data Commons provides a holistic way to provide the capabilities described above and should be reviewed as an option to continue the evolution of the ILDS.

Materials for the Data Commons – Gen3 Approach

* UChicago Center for Translational Data Science: [Introduction to the Center for Translational Data Science (CTDS) and Some of the Data Commons It Develops](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.4_Data%20Commons%20-%20UChicago%20CTDS%20Presentation.pdf) by Robert Grossman (also posted as attachment Appendix 3.4)
* UChicago Center for Translational Data Science: [Introduction to the Gen3 Platform for Data Commons and Data Ecosystems](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.5_Data%20Commons%20-%20UChicago%20Gen3%20Presentation.pdf) by Phyllis Wang (also posted as attachment Appendix 3.5)

Administrative Data Research Facility (ADRF)

The state models previously discussed showcase the importance of a centralized, robust data governance structure as a critical catalyst for more informed decision-making. All of the examples we studied stressed the need for system agility to continue to meet the increasing information demands. Several exemplar states are working to link data sets that aren’t directly education or workforce data (e.g., corrections, health, social services, Head Start, etc.), but are vital to providing insights into why services, programs, and interventions are not having the desired impact.

One of the growing demands for information is being able to follow individuals across state lines to provide feedback reports and conduct analysis of how well education or training prepared individuals for success in life. One of these efforts, the **Administrative Data Research Facility (ADRF**) links Illinois data sets from workforce, social services, and corrections with states in the region where there is movement across Illinois borders of people who were educated within Illinois are receiving services or paychecks in another state or vice versa. The ADRF conducted a successful two-year pilot among four Illinois state agencies (i.e., Illinois Department of Employment Security, Illinois Department of Corrections, Illinois Department of Human Services, and Illinois Department of Revenue) in partnership with New York University, Chapin Hall at the University of Chicago, and University of Maryland. The pilot established six evidence-based, data-analytic programs that wove workforce outcomes with criminal justice, welfare benefits, and economic development. Each program lasted approximately four months in duration and conducted training for almost 300 participants organized into 60 projects. Several of these projects implemented interstate record linkage.

Project teams conducted research on employment outcomes for the formerly incarcerated and welfare-benefit client groups, such as SNAP/TANF recipients and parents of children who receive childcare subsidies. For example, the Illinois Department of Employment Security (IDES) collaborated with the Department of Corrections (DOC) to evaluate the impact of DOC vocational training programs on the local employment outcomes of more than 28,000 formerly incarcerated individuals. Read more [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.6_ADRF%20-%20Post-Release%20Employ_20170616.pdf) (also posted as attachment Appendix 3.6). Preliminary findings include (1) Race and high school degree (or equivalent) at the time of admission have the greatest impact on employment stability 2 years following release; and, (2) earned credit towards GED and industrial training while incarcerated impacts employment stability only in regions outside of Cook county. A second study on Illinois formerly incarcerated examined employment outcomes for those who migrated to surrounding states. Read more [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.7_ADRF%20-%20Ex-offender%20employment%20across%20state%20lines.pdf) (also posted as attachment Appendix 3.7).

Another project of note investigated workforce outcomes for direct service providers (i.e., caregivers) to disabled individuals in Illinois. Under direction by the Illinois Department of Human Services (IDHS), graduate students at the Harris School University of Chicago analyzed workforce outcomes of Direct Support Persons (DSPs). IDHS employs DSPs to care for adults with intellectual disabilities in community residential settings. The goal was to identify feasible strategies to improve DSP retention and recruitment based on a linkage of IDHS and DES administrative records. Read more [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.8_ADRF%20-%20DSP%20Outcomes_20181214.pdf) (also posted as attachment Appendix 3.8). Preliminary findings include: (1) the mean annual earnings for DSPs ranged from $20,500 to $21,500, and more than three-quarters of employees held only one job at a time; (2) increasing the DSP wage by $1 per hour correlates with a 45-day extension of an employee’s tenure; and, (3) many DSPs work at a community residential setting for less than two quarters, and fifty percent of DSPs who left their jobs went on to earn higher wages.

The success of this pilot supported an IDES-led interagency procurement (together with the Illinois Department of Children and Family Services, Illinois Department of Corrections, Illinois Department of Human Services, and Illinois Department of Innovation and Technology) to establish an Illinois Administrative Data Research Facility (I-ADRF) for evidence-based decision making within the national ADRF structure. The features of the I-ADRF include FedRamp-compliant data-analytic platform (a secure, private and isolated cloud-based platform); remote access (to facilitate collaboration across agencies and approved researchers); interstate and interagency record linkage; data stewardship module (client-directed management and access to agency administrative data); and, collaborative data-analytics skills practice.

The I-ADRF provides a model for a shared Data Commons as well as a reminder that one of the key roles of a governance structure is to continually build the capacity of the systems to meet people’s increasing information needs.

Materials for the ADRF Approach

* ADRF: [Administrative Data Research Facility – A Secure Environment to Integrate Data and Build Data Science Skills](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.9_ADRF%20-%20ADRF%20Webinar_Part%201_20190227.pdf) by Julia Lane (also posted as attachment Appendix 3.9)
* ADRF: [Illinois Administrative Data Research Facility: Project Deliverables](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.10_ADRF%20-%20ADRF%20Webinar_Part%202_20190227.pdf) by George Putnam (also posted as attachment Appendix 3.10)

Additional Resources Presented to the Task Force by the Data Quality Campaign

* [Presentation to the Illinois Education & Data Task Force](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%203.11_Additional%20Resources%20-%20DQC%20Presentation.pdf) (September 18, 2019). This is a presentation of the Data Quality Campaign (DQC) by Elizabeth Dabney titled, *Make Data Work for Students in Illinois.* (also posted as attachment Appendix 3.11)
* [Data Can Help Every Student Excel](https://dataqualitycampaign.org/resource/data-can-help-every-student-excel/). This infographic and video show what it will look like when data is working for all students.
* [Time to Act: Making Data Work for Students](https://dataqualitycampaign.org/resource/time-to-act/). When information about students is provided in a timely, useful manner, every adult working with a child is able to support that student’s learning more effectively. This vision can and must become a reality for every student. States have a unique and critical role to play in bringing it to life. *Time to Act: Making Data Work for Students* is a set of recommendations to help states enact policies that are critical to ensuring that data is used to support student learning.
* [Roadmap for Cross-Agency Data Governance](https://dataqualitycampaign.org/resource/roadmap-cross-agency-data-governance/). This set of policy recommendations (developed with a working group of data governance experts) articulates six key focus areas that policymakers should consider when thinking about how they collect, manage, and use data.
* [The Art of the Possible: Data Governance Lessons Learned from Kentucky, Maryland, and Washington](https://dataqualitycampaign.org/resource/art-of-the-possible-data-governance-lessons-learned/). This set of short case studies highlights lessons learned from three leading states on developing a high-quality cross-agency data governance body.

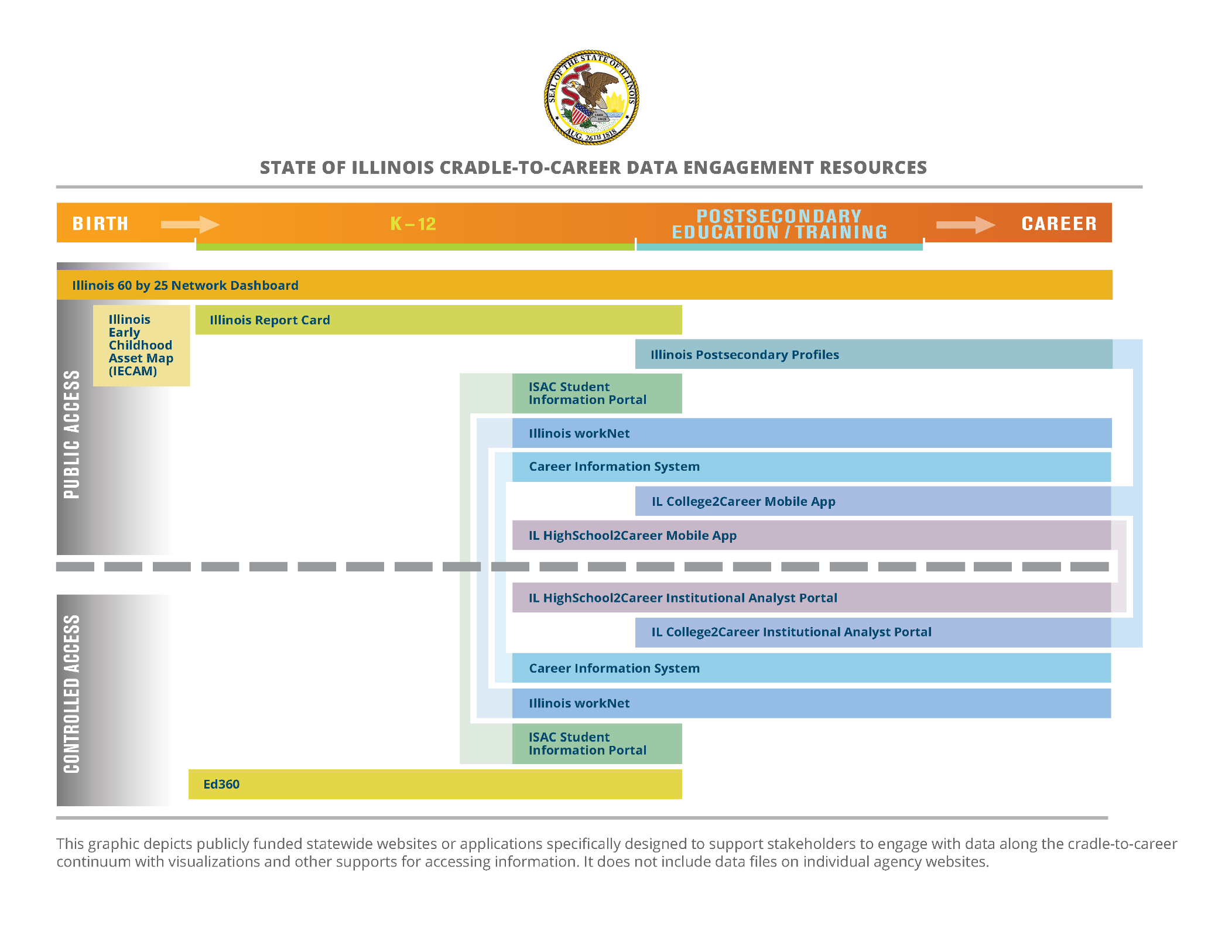
# **APPENDIX IV**

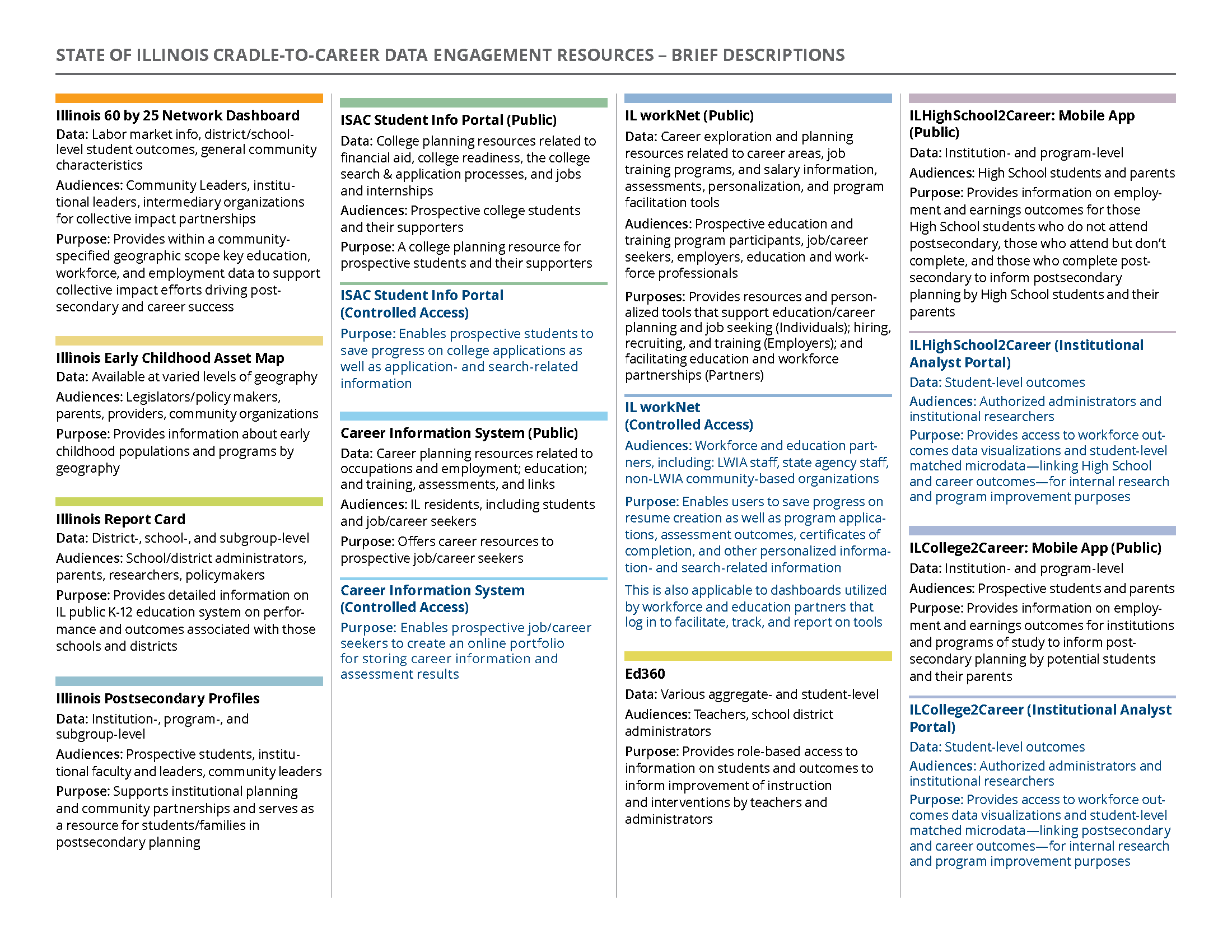
Illinois Public Entity Data Overview and Activity

This appendix provides additional information on how Illinois state agencies and other public entities continue to make progress towards their data priorities and goals.

State of Illinois Cradle-to-Career Data Engagement Resources

Visuals that depict publicly funded statewide websites or applications specifically designed to support stakeholders to engage with data along the cradle-to-career continuum are provided in the following two pages. These visuals can also be found [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.1_%20State%20of%20Illinois%20-%20Cradle-to-Career%20Data%20Engagement%20Resources.pdf) or posted as attachment Appendix 4.1. They do not include data files housed in individual agency systems.





Illinois Longitudinal Data System (ILDS)

The Illinois Longitudinal Data System (ILDS) is a federated data system that enables analysis of individuals’ education and employment outcomes over time and across state agencies. Data from the eight agencies participating in ILDS cover the extent of the cradle-to-career education data pipeline.

|  |  |
| --- | --- |
| **ILDS Agency Participants** | |
| Illinois Board of Higher Education (IBHE) | Illinois Department of Human Services (IDHS) |
| Illinois Community College Board (ICCB) | Illinois State Board of Education (ISBE) |
| Illinois Department of Employment Security (IDES) | Illinois Student Assistance Commission (ISAC) |
| Illinois Department of Commerce & Economic Opportunity (ILDCEO) | Illinois Department of Children and Family Services (DCFS) (Onboarding) |

Governance and Purposes

On June 30, 2013, seven agencies participating in ILDS and the Office of the Governor entered into an intergovernmental agreement for the governance of the ILDS; an eighth agency, DCFS, entered into the agreement in spring 2019. This agreement establishes a Governing Board with senior leadership from each of the ILDS agencies that is chaired by an appointee of the Governor. The Governing Board meets quarterly and ensures the ILDS serves three general purposes listed below.

* The ILDS aligns and supports interagency data and research priorities and projects.
* The ILDS, via its interagency unique identifier called the Centralized Demographic Dataset Administrator ID (CDDA-ID), facilitates secure linkage of selected microdata across each agency.
* A team at NIU creates and maintains the CDDA-ID. Semi-annually, the team collects microdata from each agency, algorithmically links those data, and assigns uniquely identified individuals an interagency CDDA-ID.
* The ILDS encourages data access and use by agency and non-agency stakeholders.

Priority Areas

Per intergovernmental agreement, the ILDS Governing Board prioritizes projects in five areas.

* **Early Childhood.** Focused on early childhood education, development, and connections with other state systems (informed by the Research Agenda of the Illinois Early Learning Council).
* **High School to & through College**. Focused on the transition of students from secondary to and through postsecondary education.
* **College Transfers & Guided Pathways.** Focused on transfers between two- and four-year postsecondary institutions as well as the progression of students through Guided Pathways.
* **Career Pathways & Talent Pipeline Analysis**: Focused on how the state’s talent pipeline—composed of secondary, postsecondary, workforce training, and early career systems and programs—is meeting employer demand.
* **60% by 2025**: Focused on facilitating the tracking of state progress towards the 60% by 2025 goal. This goal states that 60% of Illinois adults will have earned a high-quality credential by 2025.

Recent Priority Projects

**College Enrollment and Completion Patterns of Gateways Credential Holders (Early Childhood).**Gateways Credentials serve as professional symbols of the knowledge, skills, and experience held by members of the early childhood workforce. IDHS awards the credentials, administered by the Illinois Network of Child Care Resource and Referral Agencies (INCCRRA). Utilizing the CDDA-ID to link Gateways records with postsecondary data from ICCB and IBHE, this study described Gateways credential holders and their enrollment and completion patterns through two- and four-year postsecondary institutions in Illinois. Key findings included that:

* Gateways credential holders are more racially/ethnically diverse than the overall early childhood workforce in Illinois;
* Many Gateways credential holders have earned some college credit but no degree, suggesting that Gateways credentials could be used to inform progress towards 60% by 2025; and
* Early childhood enrollments and degree completions in Illinois are declining irrespective of sector.

**Early Childhood Matching Project, Phase II (Early Childhood).** Undertaken by a team from the Center for Governmental Studies (CGS) at Northern Illinois University, the Early Childhood Matching Project serves two primary purposes. First, it identifies data quality issues and other barriers that ISBE and IDHS can address. Second, it produces descriptive statistics based on distinct counts of children ages birth to 5 years receiving publicly funded early childhood services in Illinois. The Project relies upon the CDDA-ID linkage, and it places Illinois among a small group of states to have established such counts. The CGS team completed the Phase II analysis, which focuses on 2015 and 2016, in spring 2018; key findings from Phase II are below.

* In 2016, of all three to five year-olds (N = 127,325) served by Preschool For All (PFA) or the Child Care Assistance Program (CCAP), 10% were served by both programs. This proportion represents a 1% decrease from 2015.
* In 2016, of all birth to three year-olds (N = 67,786) served by Prevention Initiative (PI) or CCAP, 5% were served by both programs. This proportion is similar to the same proportion for 2015.
* PI, PFA, and CCAP participation rates for all children and for those living in poverty (<185% Federal Poverty Line) varied widely across Race to the Top Innovation Zones.

**Community College Remediation on state-level data resources (High School to & through College).** ISBE and ICCB linked student record data via the CDDA-ID to measure the number of high school graduates who attend an Illinois community college and enroll in developmental education coursework. Additionally, an analysis of high school students that simultaneously earn credits that count toward a high school diploma and a college degree occurred. The matched ISBE and ICCB data is utilized on the Illinois Report Card and Ed360 platform in aggregate form. The data drive many policy discussions and high-impact strategies around college readiness.

**Health Science Pathway Project (Career Pathways & Talent Pipeline Management).** Undertaken by the CGS team, the Health Science Pathway Project will integrate records from ISBE, ICCB, and IDES to describe and produce distinct counts of students participating in the health science career pathway pipeline from high school to community college and into the workforce. Broadly, it should inform similar work to describe additional career pathways as well as identify data quality issues possibly addressed by the participating agencies. The analysis will describe two distinct cohorts: Cohort 1, which follows health science pathway participants from high school through the transition to, and enrollment in community college; and Cohort 2, which focuses on students’ postsecondary outcomes.

Materials for the ILDS

* ILDS: [Illinois Education and Workforce Data Systems: Background and Current Projects](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.2_ILDS%20-%20ILDS%20Presentation.pdf) by Jon Furr and Charlie Rosemond (also posted as attachment Appendix 4.2)
* ILDS: Illinois Education and Workforce Data Systems [Webinar Recording](https://niuonline.adobeconnect.com/pl9k9n6n3qgi)
* ILDS: [2018 Annual Report & Plan](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.3_ILDS%20-%20ILDS%20Annual%20Report%20and%20Plan_2018_digital.pdf) (also posted as attachment Appendix 4.3)
* ILDS: [CDDA Record Matching Overview](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.4_ILDS%20-%20CDDA%20-%20Record%20Matching%20Overview%20-%20Brief.pdf) (also posted as attachment Appendix 4.4)

Agency Data Activities and Updates

In the following pages, data activities and updates are presented for the following state agencies: Illinois Board of Higher Education (IBHE), Illinois Community College Board (ICCB), Illinois Department of Employment Security (IDES), Illinois Department of Commerce & Economic Opportunity (ILDCEO), Illinois State Board of Education (ISBE), and Illinois Student Assistance Commission (ISAC).

Illinois Board of Higher Education (IBHE)

The information provided below highlights selected data initiatives from the Illinois Board of Higher Education.

**Enrollment Patterns of Transfer Students.** IBHEsystematized its reporting on new undergraduate transfer enrollments and has immediate plans to integrate the academic outcomes of transfer students as they progress through the college pipeline (i.e., first semester GPA, retention, and graduation). The reports are now generated using student unit records IBHE collects as part of its component of the ILDS. The reports include information on transfer students from two perspectives (i.e., the sending college and the receiving institution) and provide short- and long-term trends and sector-specific information.

**Illinois Postsecondary Profiles.** IBHE, ICCB, NIU are preparing to the launch the Illinois Postsecondary Profiles site (IPP), which includes comprehensive information on approximately 250 degree-granting institutions in the state. The main purpose of the IPP is to strengthen the data and information provided to higher education institutions to support alignment and articulation initiatives at the local, regional, and statewide levels to improve college access, persistence and completion rates. The intended use cases include: (1) connecting information and data across education sectors helping to foster partnerships between secondary, postsecondary, and workforce users; (2) supplying users with data and information to guide planning and policymaking; and (3) providing prospective students and their supports an in-depth and timely look at postsecondary institutions across Illinois.

**Career Outcomes Project.** IBHE has been working with ICCB, ISAC, and IDES on a multi-faceted project. The project utilized the ILDS Shared Data Agreement template, as well as degree completion information that was collected from nearly all MAP-eligible colleges in Illinois though IBHE’s component of the Illinois Longitudinal Data System.

There are two components of this project: (1) the public-facing ILCollege2Career mobile application; and (2) the Institutional Research portal. The mobile application will soon be populated with an additional bachelor’s completion cohort, which will allow significantly more information on academic areas to be presented. The institutional research portal was designed to provide the colleges and universities with detailed information on the workforce dynamics of their graduates for program planning purposes and to ultimately better align their program array with workforce demand. Recent IBHE analyses of the career outcomes data demonstrate the rapid change in the job share distribution prior to graduation to two years after graduation. Prior to graduation roughly four out of every ten jobs were in the retail and hospitality industries. However immediately upon graduation, the job share distribution rapidly shifts away from retail and hospitality jobs to jobs in industries with higher barriers to entry such as professional licensure and/or bachelor’s degrees.

**Gateways Credentials.** In partnership with ICCB, the Governor’s Office of Early Childhood Development, and INCCRRA, IBHE utilized the Master Client Index (MCI) ID to match information on early childhood credential holders (Gateways) to the postsecondary enrollment and degree files it collects and maintains. The project was one of the first test cases of the use of the MCI in a research study. This significantly reduced risk by allowing matching and subsequent analysis to occur without the exchange of personal identifiers. It also arguably facilitated the review process in establishing the data sharing agreement, because the sharing of sensitive information across agencies was not necessary. Regarding the substantive findings, the research study pointed to promising trends in terms of the how Gateways credentialed individuals add to the overall diversity of the early childhood workforce in Illinois. Although many of the study group members that matched to a record of enrollment were continuing students and specific to the bachelor’s granting institutions, many had upper division class status and a high proportion had earned awards and degrees or were still enrolled at the end of the study. The study also demonstrated how the Gateways Credentials could be used to better establish progress towards the 60% by 2025 goal.

Illinois Community College Board (ICCB)

**Overview.** ICCB is the State Education Authority responsible for collecting and maintaining enrollment, completion, and student characteristic information on community college students. Illinois Community College System data collection, administrative data matching, and reporting is effectively and efficiently coordinated through ICCB. ICCB established its centralized data system three decades ago and collects millions of student and staff records annually. ICCB continually reviews and enhances its data system and collects student enrollment, demographic, curriculum, course, and credential information, as well as staff and financial data. Additionally, ICCB is the State of Illinois Administrator for Adult Education and collects adult education student enrollment, demographic, course/curriculum, credential, staff, and financial information via the web-based Data and Information System – Illinois (DAIS-I). Finally, ICCB also collects High School Diploma Equivalent student demographic, attainment, and testing site information.

ICCB partners with the community colleges to augment and sustain the ICCB centralized data system to furnish information for state and federal accountability purposes, promote student and institutional improvement, and meet research needs. By compiling student- and staff-level data centrally and generating information on behalf of the colleges it provides a significant cost-savings for the system, reduces reporting burden on community colleges, and ensures continuity and consistency in accountability reporting.

ICCB securely shares data with state agency partners and select national entities for numerous initiatives to enhance insight and analysis on credit and non-credit students in the community college system. ICCB’s ability to link data among state agency and national data sources, including K-12, higher education, and workforce systems allows for analysis of “pipeline” outcomes.

The information provided below highlights selected ILDS data sharing initiatives and research partnerships.

**(ICCB and ISBE) Illinois Public High School Graduate Remediation Rate in Illinois Community Colleges.** Since 2015, ICCB and ISBE have collaborated to enhance the Illinois Report Card by adding remediation rate for Illinois public high school graduates entering Illinois community colleges. ICCB and ISBE utilized the ILDS CDDA-ID to link data and allows ICCB and ISBE to meet the Public Act 096-0107 P-20- Longitudinal Education Data System Act to “enhance and expand existing high school-to-postsecondary reporting systems to inform school and school district officials, education policymakers, and members of the public about public school students' performance in postsecondary education.” In 2017, ICCB and ISBE expanded data sharing to provide remediation data via ISBE’s Ed360 platform to empower high school educators with additional college readiness information on students. See the [Illinois Report Card](https://www.illinoisreportcard.com/) for more information.

**(ICCB and IBHE) Illinois Postsecondary Profile Web Tool.** The central vision guiding the development of the Illinois Postsecondary Profile (IPP) is the creation of a powerful but accessible web site through which interested stakeholders can access data contributed by ICCB and IBHE pertinent to the postsecondary experience in Illinois in meaningful and useful ways. System development began in March 2018 and continues in collaboration with NIU. The user interface of the IPP employs an innovative approach that is designed around user interests and will allow for intuitive and user-friendly exploration of the data. The IPP will eventually utilize student success measures across education sectors linked via the ILDS CDDA-ID.

**(ICCB and ISAC) Analysis of Illinois MAP Recipient Success in Course Completion.** To better understand and support students receiving MAP grants, ICCB collaborates with ISAC to link MAP recipient and community college student-level data via the ILDS CDDA-ID. Analyzing course completion rates for MAP recipients allows ISAC and its education partners to identify college best practices across the state.

**(ICCB, IBHE, IDES, and ISAC) Career Outcomes Tool Project**. The Career Outcome Tools Project is a collaborative initiative by IBHE, ICCB, ISAC, IDES, and the Governor’s Office. The cross-agency project connects higher education data to employment data and allows for greater understanding of the workforce outcomes of graduates in Illinois via web-based applications. There are two aspects to the project: (1) Institutional Research (IR) Portal – an internal-institutional researcher access-controlled portal for each college, and (2) Illinois College2Career Tool – a public-facing student/parent mobile tool. See the [Illinois College2Career Tool](https://www.ilcollege2career.com/#/) for more information.

**(ICCB, IBHE, & INCCRRA) The College Enrollment and Completion Patterns of Gateways Credential Holders.** In 2017-18, ICCB and IBHE partnered with the Network of Child Care Resource and Referral Agencies (INCCRRA) Gateways to analyze college enrollment and completion patterns of Gateways Credential Holders. Credentials serve as professional symbols of the knowledge, skills, and experience held by members of the early childhood workforce. IDHS awards the credentials, which are administered by INCCRRA. Utilizing the CDDA-ID to link Gateways records with postsecondary data from ICCB and IBHE, the study describes Gateways credential holders and their enrollment and completion patterns through two- and four-year postsecondary institutions in Illinois. See [The College Enrollment and Completion Patterns of Gateways Credential Holders Report](file://iccbfile/Quattro/Policy%20Studies/Education%20and%20Workforce%20Task%20Force/College%20Enrollment%20and%20Completion%20Patterns%20of%20Gateways%20Credential%20Holders) for more information.

**(ICCB and ISBE) To&Through Statewide Pilot (High School to & through College).** The To&Through statewide pilot began in 2018 and has the potential to assist the State in understanding success and gaps in transition points as students matriculate from high school to and through college. The project will look to expand the Urban Education Institute (UEI) at the University of Chicago’s current efforts with Chicago Public School to other regions of Illinois and statewide. ISBE and ICCB linked secondary and community college student data utilizing the ILDS CDDA-ID. UEI at the received the linked datasets and is currently compiling the analysis. See the [To&Through Project](https://toandthrough.uchicago.edu/) for more information.

**(ICCB) Postsecondary Data Partnership.** Approached by the State Higher Education Executive Officers (SHEEO) association and National Student Clearinghouse (NSC) in fall 2018 to participate in the Postsecondary Data Partnership (PDP) initiative, ICCB is in the initial stages of potentially joining the project. The PDP simplifies, streamlines, and enhances data gathering and reporting by using existing resources at the national level by partnering with NSC. Building on its current capacity, the PDP will serve as a hub collecting, verifying, and reporting data back to participating institutions and organizations. This will help colleges and universities more effectively gain a fuller picture of student progress and outcomes, meet various reporting requirements, and focus more of their resources on using data to help students succeed. The project is supported through Gates and Lumina Foundations. See the [Postsecondary Data Partnership](https://studentclearinghouse.org/colleges/pdp/) for more information.

Illinois Department of Employment Security (IDES)

The Economic Information and Analysis Division (EI&A) of IDES has primary responsibility in the State of Illinois for the development and dissemination of workforce and labor market information. Through extensive public/non-public sector partnerships, EI&A has established an evidence-based practice on workforce outcomes for the State of Illinois. EI&A manages and implements strategic planning, analytical services and product development. ISAC and Illinois State University (ISU) host technology services, maintain the data infrastructure, and execute production record matching. IBHE, ICCB, and ISBE serve as subject matter experts on public-sector education programs. ILDCEO, Illinois Department of Corrections (IDOC), and Illinois Department of Human Services (IDHS) serve as subject matter experts on high need populations. In addition, Associated Builders and Contractors IL, CompTia, Chamberlain University College of Nursing, Jane Addams Resource Center, and Manufacturing Skills Standards Council serve as subject matter experts on vocational training programs.

IDES’s partnership with the training/education community has yielded a rich workforce outcomes data infrastructure on vocational training completers, post-secondary graduates, and high school seniors. The vocational training programs, both public and non-public sector, cover growth industry sectors (e.g., construction, manufacturing, information technology and healthcare) and are comprised of nearly 75,000 completers (including dislocated workers and youth). The post-secondary graduates (2010-2014 cohorts and 320,000 individuals) represent nearly 110 private and public two- and four-year colleges. The high school senior project (2003-2016 cohorts and more than 1.7 million individuals) encompasses all the 852 Illinois public school districts.

The cornerstone of Illinois’ evidence-based practice on workforce outcomes is standardized metrics that replicate the job-based Quarterly Workforce Indicators (QWI’s) produced by the US Bureau of Census. These metrics include workforce connectivity (e.g., multiple jobholding and job stability), career job earnings, and career job mobility. The robustness of the Illinois evidence-based practice is due to a flexible data infrastructure and a multiple-technology solution. This flexibility is, perhaps, most prominent in the variety of workforce metric applications: (1) high-need populations such as dislocated workers; (2) youth vocational training completers; (3) graduates from two- and four-year colleges; and (4) high school seniors, augmented by decade-long longitudinal linking to postsecondary enrollment/completion pathways and intergenerational mobility profiles with particular focus on students from low-income households. The multiple-technology solution produces diverse information targeted to key stakeholder groups: students/parents (smartphone enabled delivery of workforce outcomes by education/training program), program administrators (data visualizations and key indicator dashboards), and authorized researchers (secure server workspace for remote-client data analytics on de-identified, linked micro records).

**Vocational Training Programs for Dislocated Workers.** This study examines workforce outcomes for more than 3,000 dislocated workers who complete WIA/Trade training. Read the study [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.5_IDES%20-%20WIA_Trade_Workforce_Outcomes.pdf) (also posted as attachment Appendix 4.5). Major findings include:

* WIA/Trade training completers exhibit a level of job attachment similar to other Illinois workers within a year or two of transition to employment;
* Completer earnings at their new jobs is less than the average for other Illinois workers by nearly forty percent; however, their earnings gains over the two-year post-completion period is double digit (13%) compared to very low gains for Illinois workers (2%); and
* Understanding earnings trajectory by age within industry reveals the importance of understanding the labor market of the job-placement target industry for WIA/Trade training completers.

**Vocational Training Programs for Youth Workforce Readiness**. This project compares career outcomes for youth (32,900) and non-youth (38,300) completers of public, not-for-profit and for-profit vocational training programs in four target industry growth sectors: construction, healthcare, information technology, and manufacturing. Read the study [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.6_IDES%20-%20Youth%20Workforce%20Readiness_20170605.pdf) (also posted as attachment Appendix 4.6). Major findings include:

* Training increases youth employment rates across substate regions and training programs;
* Youth training completers demonstrate higher job stability than other youth; and
* Youth training completers who transition to job stability earn a premium of 25% within a two-year window.

**Graduates from Illinois 2-Year and 4-Year Colleges (College2Career).** A smartphone-enabled [web portal](http://www.ilcollege2career.com) informs career choice for students and parents and shows workforce outcomes by academic area and college in conjunction with a broad range of institution and career information. Since its release in September 2018, this portal has posted more than 6,000 unique weekly users. Visit the portal [here](http://www.ilcollege2career.com/) or learn more about the portal [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.7_IDES%20-%20ILC2C_File.pdf) (also posted as attachment Appendix 4.7). The project team also established a secure, server-based SAS Visual Analytics platform to support data visualizations and data analytic workspace for nearly 110 two- and four-year colleges that have submitted their records for use in the student/parent tool. The data analytic workspace provides authorized institutional researchers access to archived de-identified student records matched to workforce outcomes and SAS-supported statistical tools to conduct custom analysis. Learn more about the workspace [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.8_IDES%20-%20C2C%20IR%20portal.pdf) (also posted as attachment Appendix 4.8).

**Illinois High School Seniors (HighSchool2Career)**. The project team conducted a pilot study that matched 2003-2007 Illinois high school seniors (nearly 600,000 records) to FAFSA records, post-secondary enrollment and completion, and workforce outcomes. This data-analytic framework established a 13-year longitudinal perspective on high school seniors related to intergenerational mobility, life-long learning, and workforce outcomes. Using this sample, the team produced preliminary findings on the mobility of students from low-income households:

* Overall, 10% of children whose parent’s household income was in the lowest quintile at the time of their completing high school, had job earnings in the highest quintile ten years later.
* Only 6% of children whose parent’s household income was in the lowest quintile at the time of their completing high school and who completed a two-year college degree (as their highest degree) had job earnings in the highest quintile ten years later. Top opportunity industries and average monthly earnings:
* Health Care and Social Assistance ($6,180)
* Public Administration ($6,476)
* 21% of children whose parent’s household income was in the lowest quintile at the time of their completing high school and who completed a four-year college degree (as their highest degree) had job earnings in the highest quintile ten years later. Top opportunity industries and average monthly earnings:
* Professional, Scientific, and Technical Services ($8,545)
* Finance and Insurance ($9,893)
* Health Care and Social Assistance ($8,106)

Based on the success of the pilot, IDES executed a shared data agreement with ISBE and transferred more than 1.5 million high school senior records (representing senior cohorts through 2016) to ISAC for linkage to FAFSA records, post-secondary enrollment and completion, and workforce outcomes. See a visual for the high school institutional researcher portal [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.9_IDES%20-%20HS2C%20IR%20portal.pdf) (also posted as attachment Appendix 4.9). See visual that walks through how a high school student may create a HighSchool2Career profile [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.10_IDES%20-%20HS2Career_File.pdf) (also posted as attachment Appendix 4.10).

We also identify priority near-term initiatives (up to nine months) and longer-term projects (longer than nine months) for each of the aforementioned programs: vocational training, post-secondary graduates, and high school seniors. Read these priorities [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.11_IDES%20-%20Workforce%20Outcomes%20Priorities.pdf) (also posted as attachment Appendix 4.11).

Illinois Department of Commerce & Economic Opportunity (ILDCEO)

The **Illinois Employment Business System (IEBS)** is a new cloud based agile software platform that is currently in development by ILDCEO’s Office of Employment and Training (OET). The goal of IEBS is to provide quality workforce information and layoff tracking data from multiple reliable sources that is easy to access, easy to understand, and easy to retain and extract in order to make data driven decisions that facilitate state efforts for layoff aversion and promote economic and workforce advancement in Illinois. Built in responsive design, IEBS will empower users to have the business intelligence they need via smart phone, tablet, or laptop to quickly search the economic landscape of Illinois utilizing real time D&B global business data, IDES Labor Market Information (LMI) data, and state and local workforce layoff tracking data. Providing government workforce and economic advocates with critical transparent business intelligence via on-the-fly dashboards, analytic tools, and industry cluster SWOT information will facilitate informed strategic decision making and result in the ability for state leadership to formulate evidenced based policy making. See a drafted template for the IEBS User Guide Index below.

|  |  |
| --- | --- |
|  | **What are you wanting to do?** |
| **General Organization Search** | Search Illinois D&B organization data by geographical area, sector, and/or business size and solvency indicators. Macrolevel dashboard and transparency via cluster mapping and graphical displays drillable to microlevel customized dashboard. |
| **Specific Organization Search** | Search D&B global business data for specific organization or organizational hierarchy. |
| **Business Outreach** | Search D&B global business data for businesses that are new, expanding, and growing to conduct outreach activities. |
| **Layoff Aversion** | Search D&B global business data for businesses that are declining, laying off, and in decay to conduct outreach activities for layoff aversion. |
| **General Layoff Search** | Search and view high level historical and active layoff activity being conducted in Illinois by ILDCEO – OET and Local Workforce Innovation Areas (LWIAs). View by geographic areas and North American Industry Classification System (NAICS) list, map, and summary view. |
| **Specific Layoff Search** | Search and view historical and active layoff activity for individual organizations in Illinois. View by geographic areas and NAICS. |
| **Layoff Notification Lookout List** | Search potential layoff notices and Pre-WARN alerts that are on the Watch list and potential to elevate to WARN status. |
| **Layoff Pending List** | Search WARN layoff notices that are verified and in process of being activated. |
| **Layoff Management** | Populate and follow-up on IEBS work-in-process (WIP) for WARN, TRADE, and local layoff events. |
| **Labor Market Information** | Conduct geographic, industrial, and/or occupational labor market search and extract labor market analysis report utilizing IDES LMI certified data. Overlay Wages/Unemployment Statistics/Job Demand Data with layoff and business solvency data. |

The Illinois Workforce Innovation Board's Apprenticeship Committee created the **Illinois Apprenticeship Plus Framework** to address employers' and participants' varying degrees of knowledge and/or comfort with apprenticeships. The goal is to provide a variety of options for participation.

In addition to the well-known options of (1) Registered Apprenticeship, (2) Pre-Apprenticeship, and

(3) Youth Apprenticeship, the Illinois Apprenticeship Plus Framework includes a fourth option: (4) Non-Registered Apprenticeship – Industry Recognized Credential Programs. Similar to high-quality on-the-job training, this option requires all five characteristics associated with DOL Registered Apprenticeship be present:

* Business involvement,
* Structured on-the-job training,
* Related instruction,
* Rewards for skill gains, and
* Industry recognized credential(s)

The key elements of Illinois apprenticeships are described [here](https://www2.illinois.gov/sites/P20/PublishingImages/Pages/P-20-Data-Task-Force-Report/Appendix%204.12_ILDCEO%20-%20Key%20Elements%20of%20Illinois%20Apprenticeships.pdf) (also posted as attachment Appendix 4.12).

ILDCEO utilizes Illinois workNet to facilitate intake, eligibility determination, referral data, services, and credential outcome attainment. The data is passed to Illinois Workforce Development System (IWDS) the state WIOA Title I system of record where data is further mined and analyzed and reported to U.S. Department of Labor – Employment and Training Office.

Illinois State Board of Education (ISBE)

ISBE is engaged in a series of interrelated efforts that will enable state policymakers, educators, learners, and members of the public to access information more quickly and easily to support and improve state and local resource allocations, instruction, and learner outcomes.

**Illinois Report Card.** The Illinois Report Card (Report Card) is an annual report released by the Illinois State Board of Education to show how each school and district – and the state overall – are progressing on a wide range of educational goals.

The Report Card was redesigned in 2013 to be more user-friendly and​​ to provide data on a wider range of indicators than previous versions. ​The Report Card now offers a more complete picture of student and school performance in order to inform and empower families and communities as they support their local schools.

There are two versions of the Report Card for the state, districts, and schools. The first version is the classic Report Card. This is a static PDF version of the official Report Card. The second version is the Illinois Interactive Report Card (IIRC). This version is web-based and intuitive. It allows for users to view performance comparisons between school and districts, review trend data, and break data into subcategories. ​View the IIRC [here](http://www.illinoisreportcard.com).

**Ed360 Instructional Support Dashboard**. Ed360 is an educator-driven web application designed to empower educators with access to near real-time student information from the ISBE Data Warehouse. Educators can utilize Ed360 to help them make data-informed instructional decisions. Ed360 incorporates the feedback of Illinois educators to provide a useful and user-friendly data system. ISBE conducted focus groups and piloted the system with educators across the state in the 2016-17 school year to ensure the system meets educator needs. ISBE continues to gather feedback and update Ed360 via the system's feedback module. Learn more about Ed360 [here](http://www.isbe.net/ed360) or download the [Ed360 one-page flier](https://www.isbe.net/Documents/One-PageExSum_EarlyAdopterFeedbackShapesFutureEd360.pdf).

**ISBE Student Information Systems.** ISBE’s Student Information System (SIS) serves as the statewide system for collecting student information from more than 1,000 attendance centers across Illinois. Data collected in the ISBE SIS informs educators, policymakers, education associates, and the public of student progress and outcomes in Illinois. Students enrolled in ISBE SIS are assigned a unique student identifier to track their academic growth and development. The use of individual student data:

* Increases the state's capacity to follow a student's progress over time;
* Supports state summative assessments for English language arts, math, and science;
* Delivers high-quality educator dashboards and reports back to school districts;
* Drives policy decisions resulting in enhanced educational opportunities for all children;
* Reduces data collection burden on schools and districts; and
* Enhances the use and relevance of state data by districts and schools.

Daily entries from ISBE SIS data are loaded into the ISBE Data Warehouse each night. Once in the warehouse, student records are verified for data quality before dashboards and reports are updated. Examples of ISBE SIS data usages are the [Illinois Report Card](https://www.illinoisreportcard.com/), the [Ed360 Instructional Support Dashboard](https://www.isbe.net/ed360), [Evidence-based Funding](https://www.isbe.net/Pages/EvidenceBasedFunding.aspx), and [Site-based Expenditure Reporting](https://www.isbe.net/site-based).

Using student data for district, school, and classroom improvement planning can be very helpful when used correctly and with the necessary security and privacy practices in place. ISBE is committed to protecting student privacy and has put into place safeguards to ensure data privacy practices meet or exceed state and federal law. View the ISBE Privacy Policy [here](https://www.isbe.net/Pages/Privacy-Policy.aspx) to learn more.

**Partnership for Educator Preparation**. ISBE embarked on a significant effort to advance the work of educator preparation programs statewide in 2016 by strengthening data collection, sharing, and reporting. The Partnership for Educator Preparation (PEP) steering committee consisting of diverse stakeholders representing educators, principals, and higher education institutions as well as other experts throughout the state. The committee provides input and guidance in the process and content of ISBE’s revised accountability and program improvement system for teacher and principal preparation statewide.

The goal of this new system is to ensure that all new Illinois teachers are learner-ready on day one in the classroom, and that data is used as a tool for continuous improvement to strengthen teacher preparation statewide in the long term.

Illinois educators and policymakers are guiding this multi-year process of continuous improvement in teacher preparation, making Illinois a leader among the 50 states in driving this transformative change statewide. Collecting and sharing performance data about program outcomes shows that Illinois is embracing the following principles:

* Students benefit from more effective teachers;
* Higher education institutions can use data to improve their educator preparation programs;
* Districts can use data for teacher recruitment, selection, and talent management strategy;
* States can make more informed decisions with more data;
* Prospective teachers learn more about which program is right for them; and

View a fact sheet about PEP [here](https://www.isbe.net/Documents/PEP-fact-sheet.pdf).

**Educator Supply and Demand.** The Educator Supply and Demand Project addresses the relative supply and demand for education staff in Illinois public schools. The project helps identify unfilled positions for certified and noncertified personnel by field of work and content area.

The *Supply* indicators include information regarding the race/ethnicity of the educator workforce, the age distribution of the educator workforce, the gender distribution of the educator workforce, and educator position categories. *Demand* refers to the need for educational personnel to fill positions. *Demand* factors include changes in student enrollments and workforce growth.

The project provides data for state and regional analyses of fields, content areas, and levels with an over/under supply of educators. Additionally, the project provides projections of likely high/low demand for educators in a manner sufficient to advise the public, individuals, and institutions regarding career opportunities in education.

Learn more about the project and view interactive reports [here](https://www.isbe.net/edsupplydemand).

Illinois Student Assistance Commission (ISAC)

ISAC has been collecting and utilizing data in order to evaluate programs and inform policy for more than 40 years. Staff conduct research and analysis concerning ISAC-administered student financial aid programs and general financial aid issues as well as provide program and service evaluation, modeling and forecasting, and market research. This work supports the strategic direction of the agency by providing context and framing solutions for policy, program, and business decisions of ISAC. It also assists in the analysis of the numerous bills introduced in the state (and sometimes federal) legislature each year that impact student financial aid programs and policies, and it also enables ISAC to be responsive and collaborative with higher education partner agencies and stakeholders.

ISAC collects data concerning the Monetary Award Program (MAP) and other ISAC programs. This data includes mean weighted tuition and fees for MAP-approved institutions, a description of how MAP awards are calculated, data on institutional advising and support programs offered to MAP recipients, summary demographic and eligibility characteristics of MAP-eligible students, and data on other scholarship and grant programs. View program data [here](https://www.isac.org/e-library/research-policy-analysis/program-data/).

Research items completed by ISAC staff include affordability studies, program assessments, surveys, and studies of student populations. View research and reports [here](https://www.isac.org/e-library/research-policy-analysis/research-reports/).

ISAC’s annual Data Book includes program expenditures by institution and historical information. View the Data Book [here](https://www.isac.org/e-library/research-policy-analysis/data-book/).

ISAC has also made efforts to expand the data variables available on MAP recipients through contracts and partnerships that allow data linkage with higher education (and workforce) entities and state agencies. ISAC conducts an annual data match with the National Student Clearinghouse to secure retention and graduation data on MAP recipients, and it has also entered into data sharing agreements with other state agencies (IBHE, ICCB, ISBE, IDES, etc.) to capture additional variables like race/ethnicity and course completion that help define and inform outcome measures and policies.

A data sharing partnership among the state agencies listed above has produced a tool using expanded and aggregated data made available through cross-agency data linkage. One of the primary deliverables of the IDES-led project has been the development of the [Illinois College-to-Career website](https://www.ilcollege2career.com/#/), which provides information on Illinois colleges that best fit the user’s educational priorities and career goals within the state. The tool provides an opportunity for students and parents to review a wide range of information on Illinois two-year and four-year institutions including career outcomes of graduates by academic area of study and post-secondary institution. The IDES project team has also developed a non-public visual analytics tool for research analysts at the partner agencies, and the participating two- and four-year post-secondary institutions in Illinois. Using the data made available through shared data agreements, the tool provides details on student demographics, high school and post-secondary characteristics, job profiles and salaries, and allows insights and comparisons on these metrics and more.

# **APPENDIX V**

Sample Questions to Guide Data Activities in Illinois

This appendix provides a list of questions that were developed by the Task Force and represent the priority information needs of this group of representatives of a broad range of Illinois data stakeholders. These questions are grouped into three categories:

* Can be answered by simple analytics;
* Require a research study; and
* Part of a broader societal conversation beyond good data analysis/research (but need to be informed by data!) or are questions of management/governance of data systems.

Questions that can be answered by simple analytics:

* Which children birth to five are enrolled in which educational programs? (Achieving a distinct count)
* Are children in the birth to third grade years progressing as they should, based on Illinois’ learning standards? (This includes determining whether they are entering kindergarten ready to succeed, as measured by KIDS.)
* How many schools are seeing increasing rates of proficiency on a cohort basis (i.e. improved proficiency from third to eighth grade)?
* We need to understand what degrees/endorsements teachers have and how they match what they are teaching at the state, district and school levels. Specifically, what number or percent of Transitional Bilingual Education (TBE) or Transitional Program of Instruction (TPI) classrooms are taught by a teacher with a bilingual endorsement by grade, school, district, and state levels?
* At the state, district and school levels, what is the number and percent of students who have completed a language program, such as dual-language or immersion in elementary school or high school?
* What is the performance of current and former English learners on various academic indicators (freshman on track, AP and IB participation, State Seal of biliteracy, graduation rates) and non-academic indicators (attendance, truancy, and key climate survey indicators that focus on belonging)?
  + For context: The Every Student Succeeds Act (ESSA) established a longitudinal data system to follow the progress of active English Learners and former English Learners long-term, from K-12. Title I within ESSA stipulates that formerly reclassified English Learners are to be included in the English Learner subgroup for reporting and accountability purposes for a period of up to four years after being reclassified as proficient in English. A longitudinal data system would facilitate the monitoring of former English Learner progress from the moment they leave services until graduation. Data suggests achievement gains are likely to occur after the four-year tracking stipulation. This approach is supported by research that states that it takes ELs between five to seven years to be on par with their English-speaking colleagues
* What is the relationship between high school grades and college grades for individual students? How does this vary by subject?
* How many students are taking a college/career ready course load in high school?
* As high schools and postsecondary institutions work to close math gaps before graduation, are we seeing stronger math performance post-graduation, stronger persistence and completion rates more generally, or other impacts?
* What is the relationship between students taking math their senior year of high school and remediation?
* What is the relationship between individual student growth in high school and college persistence?
* What community college programs produce the best long-term career outcomes?
* Are students who complete a career pathway pursuing postsecondary study and/or employment in those fields? With what success?
* What is the completion rate of students who enter community college for undergraduate work vs. starting at a four-year university?

Questions that require research study:

* What are the long-term impacts of the different combinations of services children receive in the birth to five years (taking into account, where possible, the quality of the services)?
* What impact does early childhood education have on student academic and social-emotional outcomes? What program models are most effective in the early childhood window? Can we quantify the return on investment of early childhood outcomes?
* What is the relationship between early childhood experiences and KIDS scores?
* Considering that the state is now going to have kindergarten readiness data across the state:
  + Are students with full year preschool starting school more prepared across some/all domains?
  + Are students with home-visitation and/or early intervention in their past starting school more prepared in some/all domains?
  + Is there a correlation between kindergarten readiness and 3rd grade reading rates?
  + In those classrooms with end of year data, what growth are we seeing?
  + What instructional/other strategies explain strong growth?
  + How does Illinois’ kindergarten readiness compare to other states?  How similar is the assessment?
* Are there early indicators (K-8) that suggest the most appropriate careers for citizens?
* What is the relationship between funding adequacy and student growth (or score on the new accountability system)?
* Are teachers who complete the edTPA reporting greater classroom readiness as they start their teaching careers?  Are principals reporting the same? Does stronger edTPA performance correlate with stronger evaluations and stronger student growth? Are there racial or other patterns or gaps?
* How does course choice in high school relate to career pathways or decisions to pursue further education?
* Which districts, schools, and teachers are having the greatest success accelerating growth for students of color? What is the college enrollment and persistence for these districts, schools, and teachers? What do we know about their programming, expectations, and relevance?  (This would have to be a mixed methods study)
* How do the experiences of students of color compare to white students in Illinois schools? (access to quality pre-k, readiness for kindergarten, access to STEM, college enrollment, wages & workforce outcomes)
* How do college-going and workforce outcomes differ by demographic group among students with similar high school outcomes (e.g., similar GPA & ACT score)?
* What are the most important factors for college success? What factors at the district, school, and student levels impact outcomes? What are the different ways can college success can be defined? How do these questions vary by subgroups?
* What is the effectiveness of transitional math on community college completion?
* What expenditures of WIOA funds creates the best long-term career outcomes?

Questions that are a broader societal conversation beyond good data analysis/research (but need to be informed by data!) or are questions of management/governance of data systems:

* Where do teachers who leave their jobs go and where are certified teachers who choose not to teach employed? What professions are “competing” for teachers, and how do we make teaching a more compelling, attractive profession that attracts and retains the best?
* What are our best opportunities for deepening assessment literacy among parents, educators and policy makers?
* How can we become more intentional about balancing summative grading with formative support in the designs we create for student and institutional assessment?
* How will the success and failure of a work-based learning opportunity for high school students be measured and reported?
* Why do so many students who start college fail to complete? What can policymakers and practitioners do to close the completion gap, and what are colleges doing that is working (and not working)?
* Who benefits the most from education and workforce data?
* How can education and workforce data be delivered to those in need?
* What are the use cases or stories to support the need for data?
* What challenges exists in collecting and delivering data to data communities in a timely and accurate way?
* How should data solutions be prioritized to create the highest ROI?
* Is the new funding system more equitable?
* How can we create greater public awareness of how deeply student achievement is being eroded by the inability of many Illinois schools and districts to respond to increasing poverty in the communities they serve?

1. For purposes of this report the term “P-20W” means from prenatal care through graduate school and the workforce. [↑](#footnote-ref-1)
2. One important piece of work that is important to leveraging a Statewide Research Agenda is a **Statewide Education Research Consortium,** which would bring together researchers from across the state to provide capacity for ongoing research and funding for research priorities. Until recently, Illinois had the Illinois Education Research Council located at SEIU. There have been recent efforts to create a statewide consortium and secure private funding to support this. [↑](#footnote-ref-2)