

*Government Data Advisory Board (GDAB)*

# Annual Report

# 2018



Governor's Office of Information Technology  
601 E. 18th Ave., Suite 250 | Denver, CO 80203



January 18, 2019

Dear Chief Information Officer Szczurek,

It is my pleasure to deliver the 2018 Government Data Advisory Board (GDAB) Annual Report in accordance with C.R.S. 24-37.5-701 et seq.

This report reflects ongoing work by the GDAB to improve data governance and interagency data sharing and promote a state data strategy. It has relied on significant contributions by GDAB members and has continued activities that will expedite data sharing while enhancing data privacy and security. Specifically, the GDAB has:

- Begun development of a data sharing checklist or toolkit, so agencies may respond to requests for data and data sharing circumstances in a more efficient and systematic manner. This work has identified the high level considerations that should be in place to respond to potential data sharing needs so agencies can proactively implement them. The GDAB will continue to elaborate on these considerations over this year.
- Agreed on fundamental principles and goals for a state data strategy. This allows for a standard foundation from which to work in developing more specific objectives and tasks for a data strategy. Such a data strategy will be a major focus for the GDAB and the Chief Data Officer this year.
- Provided an important sounding board for questions and issues related to new legislation, such as House Bill 18-1128, or other developments or initiatives like the partnership with the Colorado Evaluation and Action Lab at the University of Denver.

I look forward to any comments you may have about this work. Of course, if you have any questions or concerns, please do not hesitate to contact me.

Best regards,

A handwritten signature in blue ink, appearing to read 'Jon Gottsegen'.

Jon Gottsegen  
Chief Data Officer

# Introduction

The State of Colorado has recognized that greater efficiencies and innovations in state government will be achieved through improving data sharing processes and procedures. While there are several advanced data management programs and data sharing or integration efforts among state agencies, data sharing between state agencies continues to require labor intensive execution of data sharing agreements and manual transfer of data using a wide variety of tools adopted by state agencies independently. Additionally, the lack of a standard data governance framework across the state enterprise results in data being managed differently among state agencies. This hinders data sharing, as an agency that is sharing data may not have a common reference with the requesting agency for how the shared data may be handled.



More efficient and effective data sharing and integration will make data available for sophisticated analyses of policy and program effectiveness across state programs. With more standardized approaches to governing and sharing data across the enterprise, the sharing of data will also be better governed, thereby protecting the data and the value invested in those data by the state.

Improving data sharing, integration and governance has been the focus of the state's Government Data Advisory Board (GDAB or the "Board"). The Colorado General Assembly recognized the need for more effective sharing and governance of data when it created the GDAB in 2009 specifically to advise the State Chief Information Officer (State CIO) on activities and policies necessary for developing an interdepartmental data protocol. This protocol should facilitate information sharing across agencies and assist in determining the effectiveness of state policies related to data sharing, governance and distribution to the public. The Interdepartmental Data Protocol and GDAB are codified in C.R.S. 24-37.5-701 et seq. The Board is managed and chaired by the Governor's Office of Information Technology (OIT).

The Board was preceded by a Data Protocol Development Council ("Council"), also created by statute to provide guidance, policies and procedures for implementing a data sharing architecture across the state enterprise and driven by the need to use data across state agencies to analyze the effectiveness of state policies and inform strategy for the use of state resources. Before it was allowed to sunset, this Council recommended establishing a formal governing board, which ultimately became the GDAB, to advise on enterprise policies, directions and priorities for data governance and management across agencies. While the GDAB's work followed the Council's focus on unit records (i.e., records pertaining to individuals within the state), it now provides recommendations on records of any type. Nonetheless, unit records will continue to be a priority for the Board due to the privacy and compliance-related issues surrounding them.

## Vision

The Government Data Advisory Board's vision is *to increase the effectiveness and efficiency of government services by promoting greater collaboration, innovation and agility in government operations through more regular data sharing between state agencies and political subdivisions and more seamless, efficient, and strategic exchange of core datasets while protecting the privacy and security of data.*

The Board has the following cross-departmental responsibilities:

- Advise the state's chief information officer (CIO) on the development, maintenance and implementation of the data sharing protocol;
- Advise on the best practices for sharing and protecting citizen data;
- Review, advise and provide input into the strategic plan for improving data governance;
- Advise on compliance, privacy and security data requirements;
- Advise on internal and external data policies and procedures;
- Advise on financial and budgetary components required for implementation; and
- Specifically recommend education data sharing and management strategies.

## Goals

The Board's mission is to facilitate information sharing across agencies and assist in formulating and determining the effectiveness of state policies. The Board's specific goals are:

**Goal 1:** Develop recommendations for enterprise data sharing, integration and consolidation, particularly in the area of data sharing agreements.

**Goal 2:** Recommend policies and procedures for managing data and resolving data sharing or data management conflicts.

**Goal 3:** Identify areas to reduce operational costs and complexity.

**Goal 4:** Provide recommendations to improve data privacy, regulatory compliance, and access management.

**Goal 5:** Establish an enterprise data governance framework and provide recommendations and best practices to improve data governance within the state enterprise.

**Goal 6:** Identify change management opportunities (i.e. service delivery, process improvement, organizational realignment) to enhance data governance and data sharing.

**Goal 7:** Provide feedback and guidance on an open data strategy for the state.







## Membership

As originally passed, state statute (C.R.S. 24-37.5-703) specifies the state and local agencies that must be represented in the Board's membership, while also allowing the governor to include representatives designated by the executive directors of additional agencies. As revised in 2018, that statute mandates that all executive branch agencies be represented on the Board. Statute also allows the secretary of state, attorney general, state treasurer, and the chief justice of the supreme court to select a member from his or her department.

Currently the Board membership includes the Departments of:

- Corrections
- Education
- Health Care Policy and Financing
- Higher Education
- Human Services
- Labor and Employment
- Natural Resources
- Public Health and Environment
- Public Safety
- Revenue
- State
- Transportation
- And the Office of eHealth Innovation

Local representation includes:

- Douglas County
- Jefferson County School District
- Littleton School Board

The state chief data officer (CDO), serves as an ex officio member and chair of the Board, and OIT will be soliciting membership from the remaining executive branch agencies in 2019.

The specific members representing these agencies and statutory language directing the Board's membership are included in Appendix B. In addition to these official members, there has been participation from the Governor's Policy Office and OIT's Office of Information Security as well as other staff from OIT.

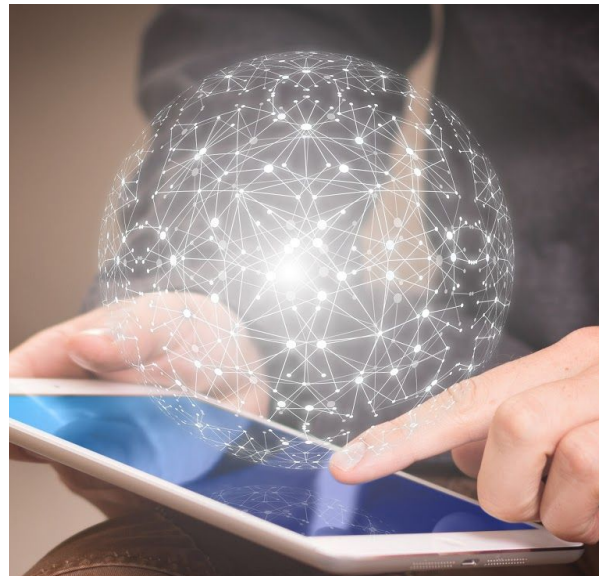
# 2018 Work Activities

The Board met monthly through the 2018 calendar year. In addition, the Board formed two working groups to work on the standard data governance framework and the standard data lexicon (i.e., dictionary). The specific meeting dates are listed in Appendix A.

## Work Agenda

In 2016 the Board identified several objectives that will improve sharing and governance of data in the state. These objectives were identified to overcome organizational obstacles to data sharing and to realize opportunities for improved management of data across the state enterprise. Current pain points or challenges in data sharing can be categorized into:

- Statutory or programmatic restrictions
- Data governance practices (or lack of them)
- Technological needs
- Data sharing agreements and policies
- Relationships between and within agencies



Benefits or drivers for improving data sharing in the state fall into the following categories:

- Statutory or legal drivers
- Improved data governance
- Interagency relationships and data interoperability benefits
- Technology improvements and innovation
- Strategic and organizational benefits

The Board's first product was a document that describes the obstacles to and drivers for improved data sharing and governance in greater detail entitled "[Why should Colorado develop an interdepartmental data protocol?](#)" available [here](#). This led to a work agenda to improve the data sharing and governance environment in the state, and this work agenda continued into 2018. In 2017, the Board developed several products including a common lexicon for data sharing and a data governance framework that is based on a maturity model approach. In 2018, the GDAB pursued or contributed to the following work:

- **Data Sharing Checklist/Toolkit:** In order to expedite data sharing and avoid creating processes and procedures on an ad hoc basis for each data sharing request or use case, the GDAB has suggested creating a checklist for sharing data (e.g., ensuring data ownership and stewardship are clear before passing data onto other agencies or

receiving data from other agencies). This can develop into a toolkit for data sharing that agencies can utilize to facilitate the data sharing process from initial request to transfer of data and continuing governance of the data sharing agreement.

The GDAB has developed the framework for such a checklist, identifying the components of the decision processes and workflows that agencies should engage in when considering requests for data. This framework does not specify what particular decisions agencies should make (e.g., should they share certain types of data for certain purposes). Rather it outlines the types of decisions and work processes at a meta-level that should be in place to expedite data sharing. For example, the checklist recommends pre-identifying specific information that should be included in a data request, but it does not identify that information for agencies. This checklist has been started, and will be completed in 2019.

- **Data Strategy/Policy:** The state will benefit from an enterprise-wide strategy for governing and sharing data and fully leveraging data as strategic assets. OIT is currently developing such a strategy starting from high level objectives related to government effectiveness and efficiency, specifically: ensure the security and privacy of Coloradans' information, enhance the effectiveness and efficiency of Colorado government programs and services, and promote the transparency of Colorado state government.

As a start to a data strategy that addresses these objectives, the GDAB decided that it was critical to agree on a commonly understood framework of foundational principles and goals. The GDAB developed and approved these principles and the basis for ongoing consideration of a data strategy. These principles then led to a set of goals to be achieved by such a data strategy. These principles and goals are listed in Appendices C and D respectively. They are useful not only to Colorado, but other states borrowed this approach for the development of their own data strategy. Colorado may also adopt best practices from other states as they mature their data strategies as well.

- **Data Governance:** An enterprise approach to data governance is necessary to preserve the value, security, and integrity of data assets in the state. The issue of varying data governance policies and procedures across state agencies puts the state's data at risk and does not preserve or yield full advantage of the state's data assets. It potentially also leads to redundant data management and confusion about which data should be used for what purpose.

In 2017 the GDAB developed and published a data governance framework based on a data governance maturity model. It included a self-assessment tool so agencies may evaluate their maturity level in various aspects of data governance. This tool presents a set of questions, with examples of how these questions may be answered to assign a specific maturity level for various components of data governance. It provides an in-depth depiction of where an agency may improve its data governance and allows for the agency to make informed choices regarding specific steps to enrich it. Some

agencies have applied the self-assessment tool to their agencies and have found it useful to inform data governance within their agency. One of the agencies that is pursuing data governance maturity most thoroughly is the Department of Human Services. The data governance framework is also assisting them with shaping their governance program. Another step in application of the data governance framework is how it is used in data sharing contexts. That is, how may the framework be used to set expectations for agencies' treatment of data they receive from another agency.

- **Open Data:** Colorado has been committed to opening state data for public access through the Colorado Information Marketplace (CIM) at [data.colorado.gov](https://data.colorado.gov). While several of the fundamental principles for a state data strategy support open data, a concise, thorough strategy for open data in the state will advance this effort. Such a strategy will elucidate what constitutes open data, how those data will be published, and how public engagement with those data will be expanded, and most important, what are the goals and benefits of open data.



Currently the number of data sets available on CIM is 643. The software platform on which CIM is based has changed its methods for counting the data sets on the platform, so it is difficult to compare this number to previous years. OIT continues to partner with the Secretary of State's office who rely on and support the CIM in their GoCode Colorado effort. The GoCode Colorado program drives more data to CIM (approximately 250 data sets over several years) and improves the usability of those data.

This year OIT, with tremendous support from the Secretary of State's office, engaged in a civic data analytics challenge. The purpose of this initiative was to demonstrate the benefit of making data public to see how it may be used in novel ways. In addition, the challenge focused on three topics critical to Colorado: the opioid crisis, smart cities/smart state, and state water supply planning. The challenge offered an opportunity for Colorado residents to provide analysis or visualizations of data related to these topics that may shed new light on them.

In addition to these objectives and deliverables, the GDAB reviewed other issues that arose during the year and helped state agencies respond. These include:

- **House Bill 18-1128** - This bill introduced requirements for management plans for personally identifiable information (PII), particularly plans for destroying PII, as well as requirements for notification of breaches of PII. Agencies are still determining exactly how they will respond to this bill and what their specific actions in response should be.



Deputy Attorneys General for each agency provided memos of clarification to their agencies, which were consistent with each other and helpful in enumerating the specific issues addressed in the bill. Agencies are still considering their own specific responses.

- *Linked Information Network of Colorado (LINC) in collaboration with the University of Denver's Colorado Evaluation and Action Lab* - The purpose of this hub of information, just being created now, is to join data from multiple agencies for research purposes and provide linked data that is anonymized to protect privacy to researchers on request. This hub will reduce the requests that agencies have to respond to, thereby saving them time and effort. It will also expedite the process of obtaining data for research purposes, since data requestors will have a single location to make such requests rather than contacting and negotiating with multiple agencies. The data sharing decisions and processes will be governed by the data stewards in the agencies who may determine whether a particular request is an appropriate use of their data. Several initial projects requiring integration of data sets from multiple agencies have been identified to prove this concept and provide a foundation on which to build. A memorandum of understanding is currently being executed among the set of agencies maintaining data useful in these projects to define the framework for participation in this hub. This hub concept is similar to the notion of integrated data systems being promoted by the University of Pennsylvania's Actional Information for Social Policy technical assistance grant, which Colorado has received.
- *Mulesoft/Data Integration Services* - OIT is developing a standard platform for integrating and sharing data through application programming interfaces (APIs). The platform for developing, publishing, sharing and governing the APIs, known as an enterprise service bus (ESB), is being established as the standard service for data integration across the state enterprise and funding for the ESB has been requested in a decision item request by OIT. Several aspects add complexity to this service including the mechanism for charging agencies for the service, how agencies may engage the service and how it may be established as a standard that agencies must comply with unless a specific reason for exempting the particular use is offered.
- *Other presentations from:* State Traffic Records Advisory Committee (STRAC), Indiana Performance Management Hub, Criminal Justice and Mental Health Integration



## Agenda for 2019

Based on the outstanding objectives from 2018 and the pressing needs for ongoing improvements to the data sharing and availability environment in the state, the GDAB will work on the following items in 2019.

- *Review and advise on a statewide data sharing strategy* - A long-term strategy and plan for sharing, management and governance of data should be in place and is part of the responsibilities of the state CDO. The CDO will develop this plan and obtain feedback from the GDAB during the year.
- *Support of technology initiatives related to data, particularly the enterprise data integration service based on the enterprise service bus (ESB)*. This may take the form of helping to shape the initiatives, communicating how state agencies may use or support the initiatives, or communicating these initiatives back to the agencies. In the case of the ESB, the GDAB will help shape effective communication describing the use and benefits of the ESB to agencies.
- *Expand statewide data governance* - Continue to test and refine the data governance maturity framework and promote it to all state agencies, assisting them where requested in applying the self-assessment tool to their agency's data landscape.
- *Support data initiatives furthering enterprise approaches to sharing and interoperability* - The GDAB will receive status updates on these projects and offer guidance on how they may be executed to provide benefit to the agencies represented on the GDAB, including suggestions on overcoming obstacles being encountered. In addition, GDAB members will communicate these projects to their departments in an effort to inform their agencies about how the outcomes of these projects may be adapted for them. These projects include:
  - Department of Human Services Joint Agency Interoperability (JAI), specifically the governance efforts pursued through this project.
  - Linked Information Network of Colorado (aka data linking hub)
  - MyColorado.
  - Health IT Roadmap, specifically community needs for access to state data.

- *Advocate for a single authoritative opinion on legal data questions* - A significant issue in data sharing is differing opinions provided by Deputy Attorneys General to state agencies on questions related to data security and privacy regulations. In addition, agencies are often directed to withhold the content of these opinions from other agencies, further restricting the ability to negotiate data sharing terms. The GDAB will work with OIT leadership and the Attorney General's Office to arrive at more consistent opinions and guidance from the Attorney General's Office.
- *Support statewide data sharing agreements* - Leverage the work done by health agencies to expand the applicability of the standard agreement language to other agencies. Ultimately, the ideal structure would be to make this a multilateral agreement that is signed by multiple agencies before new data sharing requests arise.
- *Itemize and evaluate tactical issues related to data sharing* - In an effort to make questions and solutions related to data sharing more concrete, the GDAB is embarking on identifying agencies' specific data sharing requirements (i.e., specific data requested from other agencies). With this knowledge, the GDAB representatives can address the specific issues around these data and then generalize them broader solutions across the state enterprise.
- *Promulgate standard privacy policy for non-restricted data* - The State of Colorado often collects data from citizens using state systems, such as names. While such data may not be subject to a particular state or federal statute protecting them, the state should have consistent processes and procedures for managing these data and protecting the privacy of residents. State agencies should communicate these processes in a consistent manner to users of these systems as well. The CDO will work with the Attorney General to develop such a statement for the GDAB's adoption.

In addition, the GDAB discussed the following possible ongoing roles or activities:

- *Document use cases for sharing.* The state needs to demonstrate the powerful business cases for and benefits of data sharing to generate sufficient momentum and support for the work that will be required.
- *Promote data governance and other efforts beyond the IT or business technology groups.* This will require GDAB membership to engage actively in this effort.
- *Document data sharing efforts currently underway, issues being encountered and solutions that have been developed.* Data sharing is happening now, in some places more successfully than others. The state needs to support those efforts, learn from them and ensure they are consistently protecting the privacy of state residents.

# *Appendix A - 2018 Government Data Advisory Board Meeting Dates*

January 17  
February 21  
March 21  
April 18  
May 16  
June 20  
July 18  
August 15  
September 21  
October 12  
November 15  
December 19

# *Appendix B - Government Data Advisory Board Membership*

The following individuals have been approved as members of the GDAB:

- Marcia Bohannon, Chief Information Officer, Colorado Department of Education
- Andrew Cole, Secretary of State Office
- Jeremy Felker, Executive Director, Student Data Privacy and Reporting, Jefferson County Public Schools
- Tobin Follenweider, Chief Operating and Performance Officer, Colorado Department of Natural Resources
- Jonathan Gottsegen, Chief Data Officer, Governor's Office of Information Technology
- Neil Hagenbrok, Director of Business Technology, Colorado Department of Labor and Employment
- Mike Hardin, Director, Business and Licensing, Office of the Secretary of State
- Sarah Nelson, Director of Business Technology, Colorado Department of Human Services
- Steve Norman, Director of Records Management, Colorado Department of Revenue
- Carrie Paykoc, State Health IT Coordinator, Governor's Office of eHealth Innovation
- Jack Reed, Statistical Analyst, Colorado Department of Public Safety
- Erik Sabina, Data Branch Manager, Colorado Department of Transportation
- Parrish Steinbrecher, Colorado Department of Health Care Policy and Finance
- Jim Stephens, Littleton School Board
- Michael Vente, Research and Information Policy Officer, Colorado Department of Higher Education
- Rick Vynke, Associate Director, Office of Planning and Analysis, Colorado Department of Corrections
- Chris Wells, Director of eHealth & Data, Colorado Department of Public Health and Environment



# Appendix C - Statewide Data Strategy Principles

The Government Data Advisory Board (GDAB) approved the following principles for statewide data sharing and governance as the foundation for a statewide data strategy for Colorado. Such a commonly accepted foundation can serve as a guide for ongoing, consistent efforts by state agencies in their management, sharing and integration of data.

These principles and goals also respond to a desire at the state's executive level of government for improved data sharing that is motivated by three major drivers:

- Protect the state's sensitive data and privacy of Coloradans while appropriately sharing data.
- Enhance the state's effectiveness and efficiency in serving Coloradans.
- Increase transparency and access to state government and state data for residents of Colorado.

## Principles

- **State data assets require careful and proactive stewardship.** State data represent considerable investment of resources from state agencies either in direct capital outlay or in personnel time. Governments often focus on stewardship of information technology systems, leaving the management of the data to less standardized approaches. State data have value to state agencies and taxpayers, and this value should be protected and maximized as much as possible.
- **State confidential data must be governed and secured to protect privacy and security.** State data may contain information about the personal identity of state residents or private information about residents' health, education or finances. State data may also potentially divulge vulnerabilities in state systems if exposed inappropriately. With the increasing attacks on sensitive data held by public and private entities, information security is critically important. Data sharing and management activities must enhance the protection of the privacy of state residents.
- **Ethical use of data extends beyond regulatory or statutory security or privacy requirements.** Use of state data should also consider the perception of excessive intrusion into the lives of Colorado residents. This is particularly the case for children. State agencies should be responsive to and exercise leadership in the sensitivity/ethical issues of data being exposed or being used a certain way.
- **Analysis and sharing of data is necessary for evaluation of government effectiveness and efficiency.** Evaluating the outcomes of state programs often requires analyzing impacts of these programs across agency boundaries. For example, housing programs or policies may impact or be impacted by support programs in human services, education or correctional recidivism. The benefits of efforts in one

program on other domains can be assessed only by integrating data from the agencies that support these various programs.

- **Enhanced security and privacy may conflict with increased data sharing, but it does not have to limit data sharing.** A common impression is that adequate vigilance regarding data security or privacy impedes data sharing. Indeed, protecting data privacy may limit sharing of specific data for specific use cases, but obstacles to or delays in data sharing in fact can arise from inconsistent application of data sharing practices.
- **Standardized data governance protects data and improves its quality and utility.** Data governance is the practice of establishing policies and procedures for determining appropriate data management, sharing and use. Standard governance practices rely on best practices that mitigate risks to data and ensure that data is made available for use efficiently.
- **Create once, use many times.** Among large enterprises like state government, it is possible that similar data are created many times or managed in several different agencies. While there may be programmatic or statutory drivers for this redundancy, it can lead to inefficient use of resources and questions about which data set is the most appropriate for use or is the “authoritative” data. To the extent possible within legal and regulatory constraints, the state should create or manage a data set one time and use it for multiple purposes (linking and collecting/aggregating data as well).
- **Open data is necessary but not sufficient for government transparency.** An important democratic principle, highly valued by the State of Colorado, is transparency of government for its residents. One step to making government activities more transparent is opening the state’s data to the public. This applies only to data that are public, that is, that are not subject to any privacy or security constraints.
- **Data value increases with use.** The value of data is founded on the investments made to create and manage the data, but it is also based on the use of the data. As data are used more frequently and for wider applications, the data’s value to Coloradans, and consequently the value of the source of the data, increases. This applies both to data use within state government and to open data put to beneficial use by end-users outside government.
- **Data governance and data sharing should demonstrate measurable benefit.** Progress toward improved governance and sharing objectives should be as demonstrable and tangible as possible. To this end, benefits of data sharing efforts should be measured through easily-understood metrics and key performance indicators (KPIs). Such measures should include an emphasis on storytelling to engage executive sponsors, citizens and residents, and program leaders to encourage support for strategic investment in data sharing projects.

# Appendix D - Statewide Data Strategy Goals

A long term vision for data sharing, integration and management across state government has the following goals. These will drive specific objectives and tasks to meet the goals over the next five years:

- **Communicate value of data, data sharing, and data governance to business leadership.** Effective and efficient governance and sharing of data requires active leadership support. This is necessary because some organizational or behavioral change will be required. Executive offices within state agencies will support this change only if value will result from the change and this value can be demonstrated.
- **Develop a standard protocol for data sharing including standard procedures for data sharing and expectations for governing data that are shared (interdepartmental data protocol).** Currently expectations for data sharing, procedures for requesting and sharing data, and responses to data sharing requests including data sharing agreements vary across state agencies. This results in considerable time spent responding to data sharing requests in an ad hoc fashion and makes data sharing more difficult. A standard rubric for the conditions, procedures, and requirements for sharing data that is commonly understood across state agencies will avoid the individual and processes and decisions undertaken for each individual data request and will expedite the data sharing process.
- **Pursue API-led connectivity.** The State of Colorado is developing an enterprise service bus platform (ESB) that will support integration of data through application programming interfaces (APIs). This is a technical approach that will maximize repeatability of transfers and sharing of data and provide a management platform to secure and govern these data transfers. This will enhance security and the ability to monitor or audit data sharing.
- **Inventory and document state data assets.** The management maxim of “you can’t manage what you can’t measure” applies to data too. The state must have a good understanding of its data holdings in order to manage them, understand potential risks to the data and maximize their value. This discovery process should occur for existing data, but processes must also be in place to maintain this inventory on an ongoing basis and continue to include new data or data produced for new applications or programs. Such processes will rely on well-defined metadata (data about the data) and result in a repository of metadata to store and allow for browsing and discovery of information about data maintained by the state.
- **Share data by default.** The default question for state agencies should be “How do I share data” rather than “Should I share data.” That is, policies, processes and procedures should be in place that support and guide state agencies’ sharing of data rather than decisions about whether data should be shared and how they should be shared occurring in an ad hoc or variable fashion with each case. If there are restrictions to sharing data, such as privacy constraints or regulatory restrictions,

these restrictions should be understood and applied consistently across the state and should be explicit and clear.

- **Develop and promulgate standard data governance approach.** State data is being governed in some manner already. In some cases this governance may not be explicit. Agencies are carrying out governance activities simply as a byproduct of their business activities. Mature data governance clarifies roles, responsibilities and processes for making decisions about data sharing and appropriate data use. Data governance also involves defining processes for managing data throughout the data lifecycle and mitigating potential risk to data. The state has defined a maturity scale for data governance that agencies can use to plan for enhancing their data governance efforts.
- **Agree on standard governance and controls for data of different security classifications and use cases.** The state currently has a data security classification policy based on the federal security classification standard. Agencies have used this policy to classify data holding, but it is most consistently used in classifying systems that have come on-line since the policy was developed. This policy is based on the criticality of systems being adversely impacted or data being accessed or used in an unauthorized manner. Consequently it serves as risk evaluation, but also implies specific security control sets for each classification. Governance of data can also be guided by these classifications in combination with regulatory restrictions.
- **Make state public data open by default.** State data that are not subject to any security or privacy constraints are public data. They should be discoverable by and accessible to the public in a fully open fashion with well-documented metadata, particularly related to data quality, to increase understanding of the data and their appropriate use. This supports transparency of state governments and provides opportunities for members of the public to analyze and use state data in novel ways, either bringing new insights to the state or even developing new markets for intellectual value added to these data.
- **Identify high-impact, high-value data assets for targeted priority work.** Transforming data sharing and governance processes entails long-term, evolutionary cultural change. Even with that understanding, benefits of data sharing for program effectiveness and for decision-making should be illustrated to stakeholders early and often by successful data sharing initiatives to garner and maintain support. This should start with quick wins leveraging existing relationships and initiatives. These quick wins could form the foundation of targeted outreach to agency leaders and generate momentum for exploring more extensive data sharing engagements. Data sharing should also be prioritized based on the impact of sharing specific data sets, the visibility of the data and the issues associated with sharing them, and the feasibility of accomplishing the sharing. GDAB members and stakeholders can also use their wide variety of relationships with local and national colleagues to help identify impactful, high-value data sharing examples and solutions from other jurisdictions and for evaluation of their applicability in Colorado.