

Federal Data Strategy: 2021 Action Plan

The 2021 Action Plan identifies specific actions to be taken in support of the FDS, while also recognizing that 2021 is a transition year for the Executive Branch. Given the timing of the release of this 2021 Action Plan in the context of a transition year and with significant efforts underway across agencies on the Administration’s immediate priorities, agencies may only begin working on toward the Plan’s milestones before the end of calendar year 2021. Nevertheless, this Action Plan establishes these aspirational milestones in order to encourage agencies to make steady progress on the Plan’s actions and milestones. In doing so, agencies will enhance their ability to use data to achieve their missions and deliver to the American public.

To account for the changing role of data and meet the needs of democracy, the federal government created a coordinated and integrated Federal Data Strategy (FDS). Leaders from the Office of Management and Budget, Office of Science and Technology Policy, Department of Commerce, and Small Business Administration built an interdisciplinary team that worked with private industry, academia, civil servants, and the public to build a robust integrated approach to managing and using data. The result was a strategy that plans for agencies’ use of data for a variety of critical purposes: to generate evidence-based policy, to deliver on mission, to serve the public, and to steward resources. At the same time, the FDS emphasizes the vital need to protect security, privacy, and confidentiality.

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Data.gov (DG)

Stakeholder(s):

Office of Management and Budget

Role: Guidance

On June 4, 2019, the Office of Management and Budget published Memorandum M-19-18, Federal Data Strategy — A Framework for Consistency, which provided a Mission Statement, Principles, and Practices to provide a governmentwide vision for how agencies should manage and use federal data by 2030. Specifically, the FDS calls for the federal government to replicate, accelerate, and scale leading practices related to government data, including steps to:

- Provide consistent, reliable and privacy-preserving access to federal government data to the public, businesses, and researchers for commercial and other public purposes;
- Fill gaps in government capacity and knowledge;
- Increase the sharing and use of data for federal decision-making and operational needs;
- Make federal data more findable and discoverable through rich descriptions and metadata;
- Utilize data and operational maturity models and evidence-based planning assessments;
- Provide data-management tools and protocols for secure data access for state, local, tribal, and territorial governments; and

- Plan for secondary data uses from the outset, through re-identification risk assessments, stakeholder engagement, and sufficient information to assess fitness for use.

Federal Agencies

Role: Planning

M-19-18 calls for annual government-wide Action Plans to guide federal agency implementation of the FDS, and to “identify and prioritize practice-related steps for a given year, along with target timeframes and responsible entities.” This approach balances long-term goals stretching across budgets and administrations with short-term flexibility to adjust for emerging national priorities, new legislation, and data maturity levels, needs, and capabilities that vary across agencies.

CDOC Executive Committee

Role: Plan Development

The 2021 Action Plan was developed in consultation with an interagency, interdisciplinary working group and the Chief Data Officer (CDO) Council Executive Committee.

Federal Data Strategy Development Team

Role: Coordination & Editing

The 2021 Action Plan was coordinated and edited by the Federal Data Strategy development team.

Vision

Agencies enhance their ability to use data to achieve their missions and deliver to the American public

Mission

To identify actions to be taken in support of the Federal Data Strategy

Values

Data

Democracy

Evidence

Public Service

Stewardship

Security

Privacy

Confidentiality

Agency Actions

Improve the effectiveness of data governance, planning, and infrastructure activities

The 2021 Action Plan incorporates lessons learned from the 2020 Action Plan and sets the stage for the 2022 Action Plan. The 2020 Action Plan requested that agencies prioritize foundational activities such as capacity assessments and basic governance and infrastructure building. This year, agencies will focus on improving the effectiveness of such foundational governance, planning, and infrastructure activities. In 2021, agencies should consider:

- What further areas need a comprehensive assessment of existing capabilities?
- How do agencies use these comprehensive assessments to produce meaningful improvements?
- What foundational governance, planning, and infrastructure must be in place in the next 2 years to support adopting Enterprise activities (standards, budgets, coordination) from the FDS maturity ladder in 2023?

The 2021 Agency Actions build directly on the 2020 Actions to lay a firm agency-wide foundation. While the 2020 Action Plan established a comprehensive roadmap for the FDS, we recognize that agencies entered the 2020 Action Plan at different stages. Many milestones allow for flexibility, given the diversity of agency missions and the maturity gauged during the execution of the 2020 Action Plan. In some cases, agencies should remain focused on producing quality assessments of their data infrastructure, skills, and assets. In other instances, agencies can move forward toward completing those foundational activities. The increased flexibility for 2021 encourages agencies to tackle areas that best serve their mission (e.g., for some agencies it may be data governance, while for others it may be workforce development or data management and interoperability) and learn from each other throughout the process.

Action 1. Questions

Gather and Assess Data Identified for Priority Agency Questions

In 2020, as part of developing Interim Learning Agendas, agencies began to consult with key agency leaders, such as CDOs, Evaluation Officers (EOs), and Statistical Officials (SOs), to identify data needed to answer priority agency questions. They also began to develop plans to acquire, access, and analyze that data.

In 2021, agency CDOs and SOs should remain actively involved in their agency's strategic planning activities and in the development of Learning Agendas, led by EOs, as outlined in OMB Memorandum M-19-23, Phase 1 Implementation of the Foundations for Evidence-Based Policymaking Act of 2018: Learning Agendas, Personnel, and Planning Guidance (July 10, 2019).⁶ CDOs, EOs, and SOs should also begin to assess the quality of the data identified in Learning Agendas.

Agencies are encouraged to build upon their existing frameworks⁷ in assessing the quality of the data needed to answer Learning Agenda questions. In accordance with the concept of "fitness for purpose," information destined for a higher-impact purpose must be held to higher standards of quality. The systematic application of the "fitness for purpose" concept will enable appropriate data to answer priority Learning Agenda questions and should lead to strategic quality improvements in existing assets as well as inform new data collection processes. Agencies should also consider secondary uses of data, while protecting privacy and confidentiality, as part of this assessment.

After assessing the quality and security of the data assets to be used in pursuit of their Learning Agenda goals, CFO Act agencies should include these data assets in their comprehensive data inventories, and indicate within their inventory which Learning Agenda questions particular assets support.

Performance Indicators

1.1 Data Assets

Description	Type	Fitness	Start Date	End Date
Assess data assets for fitness of purpose, in support of Learning Agenda items	Target	Progress		
	Actual	TBD		

Reporting Mechanism: Progress Reporting Tool | Required for CFO Act Agencies only, encouraged for non-CFO Act agencies

1.2 Data

Description	Type	Accessibility	Start Date	End Date
Acquire or access data needed to answer priority questions	Target	Progress		
	Actual	TBD		

Reporting Mechanism: Progress Reporting Tool | Required for CFO Act Agencies only, encouraged for all non-CFO agencies

1.3 Inventory

Description	Type	Questions	Start Date	End Date
Indicate which data assets support Learning Agenda questions in comprehensive data inventory	Target	Progress		
	Actual	TBD		

Reporting Mechanism: Progress Reporting Tool | Required for CFO Act Agencies only, encouraged for all non-CFO agencies

Action 2. Governance

Mature data governance

In 2020, agencies designated CDOs, formed Data Governance Bodies, and posted key governance materials publicly on their websites. Many agencies dedicated full-time employees to support of their data-governance processes.

In 2021, agencies should continue to prioritize the data-governance planning efforts encouraged in the 2020 Action Plan. In addition, agencies should identify and document priority goals for their Data Governance Body to accomplish over each of the next three years. The priority goals provide an overview of each agency's data maturity and accomplishments during FY 2020, as well as the data maturity gaps the agency plans to address in fiscal years 2021, 2022, and 2023. In setting those goals, agencies create a customized data-governance plan that demonstrates their progress over time in each of the FDS Practices. Agency plans should include specific initiatives to improve the current state of data management (e.g., data quality or metadata management), data use (e.g., new data access mechanisms or new uses of existing data assets), and agency priority projects.

Performance Indicators

2.1 Goals

Description	Type	Documented	Start Date	End Date
Data Governance Bodies document priority goals for calendar years 2021, 2022, and 2023 respectively	Target	Completion		2021-12-31
	Actual	TBD		2021-12-31

Reporting Mechanism: Progress Reporting Tool & Post to Agency/ data web page | Required for all agencies

Action 3. Data & Infrastructure

Enhance data and infrastructure maturity

Data and Infrastructure Maturity ~ In 2020, agencies selected an operational maturity assessment model for their data and data infrastructure and worked to conduct the initial assessment. Some agencies began building a data strategy or road map, established plans for data assets and infrastructure capital planning, and adopted agency master data-management programs. Many agencies are considering new capabilities and approaches for data assets and infrastructure to address capability gaps identified in their data strategy.

In 2021, building on the prior year activities, agencies should use their data strategy and the outcomes of the operational maturity assessment in their strategic planning processes. They should analyze and document data asset and infrastructure requirements that support mission functions and the FDS. Where appropriate, agencies are encouraged to develop business-case analyses for enterprise-wide data infrastructure funding and identify which cross-agency projects or shared data services would be most impactful. Business cases should include a risk-rated return-on-investment analysis that considers, at a minimum: mission performance measures; reduced cost; increased quality, speed, flexibility, or transparency; and improved customer experience and satisfaction. Agencies should ensure appropriate resources are identified in future-year budget requests to support enterprise data assets and infrastructure. They should also clearly identify enterprise data infrastructure investments in budget year 2023 IT Capital Planning and Investment Control (CPIC) products or in their budget submissions.

Performance Indicators

3.1 Asset & Infrastructure Plans

Description	Type	Status	Start Date	End Date
Begin implementing enterprise data asset and infrastructure capital plans developed in 2020	Target	Progress		2021-12-31
	Actual	TBD		2021-12-31

Reporting Mechanism: Progress Reporting Tool & FY2023 Budget Submission | Required for all agencies

3.2 Budget Submissions

Description	Type	Status	Start Date	End Date
Agency budget submissions should include data asset and infrastructure needs	Target	Completion		
	Actual	TBD		

Reporting Mechanism: FY 2023 Budget Submission | Target Date: As required by the FY2023 budget timeline | Required for all agencies

Action 4. Skills

Increase staff data skills

The 2020 Action Plan set goals for all agencies to perform an assessment of staff data literacy skills, to conduct a gap analysis between existing and agency-required skills, and to develop a performance plan to close the identified gaps. In 2021, agencies should prioritize completing assessments and performance plans, as directed in the 2020 Action Plan, and should consider following the best practices of agencies that have already successfully achieved these milestones. Agencies may find it useful to include the data skills gap analysis as part of the Capacity Assessment for Research, Evaluation, Statistics, and Other Analysis required by the Foundations for Evidence-Based Policymaking Act of 2018.

Additionally, in 2021, agencies should begin work to fill immediate skills gaps by improving the data literacy of all employees, increasing professional development opportunities, and planning to hire staff with the requisite data skills. The Office of Personnel Management intends to issue a new Data Scientist job series in 2021 to facilitate the hiring of candidates with the appropriate skillsets. By the end of 2022, agencies should have a solid foundation throughout their workforce, including a minimum level of data literacy among all staff and a sufficient accumulation of data skills to allow for effective performance of all aspects of the data lifecycle.

Performance Indicators

4.1 Training & Development

Description	Type	Status	Start Date	End Date
Incorporate data skills training and rotational experiences into agency professional development offerings	Target	Completion		2021-12-31
	Actual	TBD		2021-12-31

Reporting Mechanism: Progress Reporting Tool | Required for CFO Act agencies only, encouraged for non-CFO Act agencies

4.2 Workforce Goals

Description	Type	Status	Start Date	End Date
Establish 2022 workforce goals and specify how they will be met (e.g. training or hiring goals), using data skills gap analysis and performance plans	Target	Progress		2021-12-31
	Actual	TBD		2021-12-31

Reporting Mechanism: Progress Reporting Tool | Required for CFO Act agencies, encouraged for non-CFO Act agencies

Action 5. Plans

Publish agency open data plans

In 2021, agencies should continue activities from the 2020 Action Plan, including the identification of priority data assets for open data plans in accordance with the requirements of the Evidence Act and with guidance from the Office of Management and Budget.

Performance Indicators

5.1 Open Data Plan

Description	Type	Status	Start Date	End Date
Publish an Open Data Plan that identifies specific priority data assets, including assets that support COVID-19 response and AI R&D	Target	Completion		
	Actual	TBD		

Reporting Mechanism: Information Resource Management (IRM) Strategic Plans and agency digital strategy web page | Target Date: Annually in accordance with OMB Guidance | Required for all agencies

Action 6. Inventories

Improve data inventories

In 2021, agencies should continue to take necessary steps to include all required data assets in their comprehensive data inventories and to update their inventories as applicable. For some small agencies, this may mean taking further steps to develop an inventory and ensure its inclusion on Data.gov. For more mature agencies with an established inventory, CDOs may focus on ensuring that their inventories provide a clear and comprehensive understanding of agency data assets. Use of appropriate metadata schema may aid in that effort.

Performance Indicators

6.1 Inventories

Description	Type	Status	Start Date	End Date
Update comprehensive public data inventory on data.gov	Target	Completion		
	Actual	TBD		

Reporting Mechanism: Agency public data.json APIs & Progress Reporting Tool | Target Date: Quarterly | Required for all agencies

CoPs & Shared Solutions

Advance cross-agency, executive-level, enterprise data maturity and common approaches to data

Community of Practice and Shared Solution Actions ~ Community of Practice Actions are taken by a specific agency or group of agencies related to a common topic, usually through an established interagency council or other existing coordinating mechanism. Shared Solution Actions are government-wide data services and represent discrete pilot projects or efforts led by a single agency or existing council for the benefit of all agencies. For 2021, Community of Practice and Shared Solution Actions focus on activities that further cross-agency, executive-level, enterprise data maturity and common approaches to data. Each of the following Actions is either an established priority or an already funded project and is expected to deliver according to previously established milestones.

Action 7. AI & Automation

Develop and disseminate AI use cases and recommendations to increase AI-specific government expertise

Artificial Intelligence and Automation ~ Executive Order 13859, Maintaining American Leadership in Artificial Intelligence, calls on agencies to increase public access to government data and models where appropriate. Executive Order 13960, Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government, establishes principles for agency use of AI and requires action by the CIO Council and agencies in 2021. To initiate this process, the following milestones adopted for the 2021 Action Plan focus on developing and disseminating a robust set of AI use cases across the government and the public, and developing recommendations to significantly increase AI-specific government expertise. Additionally, recognizing the growing need to understand the risks associated with automated decision-support systems, the CIO Council will deliver in 2021 an open-source Algorithmic Assessment Tool that will help guide federal agencies through process improvement along with data and system considerations.

Performance Indicators

7.1 Algorithmic Assessment Tool

Description	Type	Status	Start Date	End Date
Make the Algorithmic Assessment Tool publicly available for agency use	Target	Completion		
	Actual	TBD		

Reporting Mechanism: CIO Council web page and Resources.data.gov | CIO Council

7.2 Inventory

Description	Type	Status	Start Date	End Date
Prepare an inventory of nonclassified AI use cases, including current and planned uses	Target	Completion		
	Actual	TBD		

Reporting Mechanism: As determined by the CIO Council | Target Date: Reference AI Use Case Inventory Guidance | Required for all agencies

7.3 Use Cases Sharing

Description	Type	Status	Start Date	End Date
Coordinate the sharing of AI use case inventories among agencies	Target	Completion		
	Actual	TBD		

Reporting Mechanism: Progress Reporting Tool | Target Date: Within 60 days of the completion of agency respective inventories | Responsible Party: CIO and Chief Data Officer Councils, as well as other interagency bodies

7.4 Use Cases Availability

Description	Type	Status	Start Date	End Date
Make agency AI use cases available to the public, to the extent practicable and in accordance with applicable law and policy, including those concerning the protection of privacy and of sensitive law enforcement, national security, and other confidential information.	Target	Completion		
	Actual	TBD		

Reporting Mechanism: Progress Reporting Tool | Target Date: Within 120 days of the completion of agency inventories | Responsible Party: Required for all agencies

Action 8. Dashboards

Enhance data modelling and dashboard sharing across federal agencies

Government-Wide Dashboards and Infrastructure ~ Agencies have made significant progress in leveraging data as a strategic asset to enable effective decision-making using data that is timely, reliable, and actionable. Several agencies have created integrated approaches to data analytics and decision-support development, infrastructure, and tools, yet there is no strategy for an approach that would provide decision support on common or urgent issues across multiple federal agencies. The COVID-19 national emergency demonstrated the need to share decision-support tools widely across agencies with urgent, emerging needs to ensure leadership have the data for critical decisions. The CDO Council's COVID-19 Data Coordination Working Group identified opportunities to improve data access and data infrastructure, and to enhance data modelling and dashboard sharing across federal agencies. In 2021, the CDO Council will analyze the key areas and use cases for which shared, interagency decision-support would provide the most value; issue a set of recommendations for a government-wide infrastructure solution and associated funding mechanisms; and create a proof-of-concept demonstration.

Performance Indicators

8.1 Dashboard Prototype

Description	Type	Status	Start Date	End Date
Demonstrate a dashboard prototype to the CDO Council and relevant interagency Councils	Target	Demonstrated		2021-12-31
	Actual	TBD		2021-12-31

Measurement: Demonstration to CDO Council and relevant interagency Councils | Reporting Mechanism: Progress Reporting Tool | Responsible Party: CDO Council

8.2 Recommendations

Description	Type	Status	Start Date	End Date
Document recommendations for government-wide infrastructure solutions and funding mechanisms	Target	Completion		
	Actual	TBD		

Reporting Mechanism: Progress Reporting Tool | Responsible Party: CDO Council

Action 9. Skills

Develop a data-skills workforce development playbook

Data Skills Workforce Development ~ In support of Action 4, agencies need documented examples of successful data-skills training efforts already in use across the federal government. GSA, in collaboration with an interagency working group, developed a Curated Data Skills Catalog in 2020. Responsibility for the Catalog was transferred to the CDO Council. In 2021, the CDO Council will develop a data-skills workforce development playbook that will serve as a roadmap for designing, implementing, and administering a data-skills training program that includes data ethics as a theme.

Performance Indicators

9.1 Documentation & Validation

Description	Type	Status	Start Date	End Date
Document agency use cases and validate those use cases with the CDO Council Data Skills Development Working Group	Target	Completion		2021-12-31
	Actual	TBD		2021-12-31

Reporting Mechanism: Progress Reporting Tool | Responsible Party: CDO Council

9.2 Workforce Playbook

Description	Type	Status	Start Date	End Date
Publish the data-skills workforce development playbook	Target	Completion		2021-12-31
	Actual	TBD		2021-12-31

Reporting Mechanism: Progress Reporting Tool & Resources.data.gov | Responsible Party: CDO Council

Action 10. Wildland Fire

Demonstrate best practices for governing and combining disparate data

Interagency Wildland Fire Fuels Data Management ~ In 2020, devastating wildland fires took lives and destroyed property across the United States. Improved land management can reduce the risk of wildland fire by decreasing available fuel. Effective land management requires fusing, interpreting, and managing a wealth of diverse data produced by federal, state, local, tribal, and territorial governments.

Interagency coordination in fuels data management will demonstrate the responsible use of such data to help reduce wildfire risk, increase transparency, and benefit future uses with AI. Similarly, the experience with data-sharing, transfer, and collaboration will have effects beyond this single project or even scientific domain. The processes may be transferable across the federal landscape.

Stakeholder(s):**Land Management Agencies :**

The Department of the Interior and the Department of Agriculture, in partnership with other state and federal land management agencies, will demonstrate best practices for governing and combining disparate data. Such practices include linking data to the original source, and then publishing the data as a knowledge graph that integrates feedback from sub-

ject matter experts. Adding value to the data using such techniques may enable new solutions.

Department of the Interior

Department of Agriculture

Performance Indicators**10.1 Architecture & Roadmap**

Description	Type	Status	Start Date	End Date
Wildland Fuels Modernization Architecture and Roadmap	Target			2021-12-31
	Actual	TBD		2021-12-31

Reporting Mechanism: Progress Reporting Tool | Responsible Party: CDO Council

Action 11. Geospatial Data

Integrate geospatial data practices into the federal data enterprise

Geospatial Data Practices ~ The 2020 Action Plan articulated a series of milestones to better integrate geospatial data practices into the federal data enterprise. The Federal Geographic Data Committee (FGDC) developed a National Spatial Data Infrastructure (NSDI) Strategic Plan that sets overarching goals to ensure that geospatial data supports agency missions, economic growth, and technological innovation. The FGDC continues to operate GeoPlatform to make National Geospatial Data Assets (NGDA) publicly available and discoverable.

The FGDC is focusing on improving coordination and collaboration across interagency councils. In particular, the FGDC will establish and identify CDO Council liaisons to participate in and champion discussions with the broader federal data community. These efforts will help advance the integrated use of the National Geospatial Data Asset portfolio and other geospatial data.

The FGDC will also complete an analysis to identify high-value geospatial investment areas for the Geospatial Data Act (GDA) and the NSDI. The analysis will seek to capture federal agencies' perspectives and concerns, considering applicable laws, policies, missions, and data and service requirements across federal agencies and with non-federal partners.

Performance Indicators**11.1 Investment Areas**

Description	Type	Status	Start Date	End Date
Identify High-Value Geospatial Data Act Investment Areas	Target	Completion		2021-12-31
	Actual	TBD		2021-12-31

Reporting Mechanism: Progress Reporting Tool and FGDC web page | Responsible Party: Federal Geographic Data Committee

11.2 Engagements

Description	Type	Status	Start Date	End Date	Number
Improve coordination and collaboration between the Federal Geographic Data Committee and interagency councils	Target	Improved		2021-12-31	
	Actual	TBD		2021-12-31	0

Reporting Mechanism: Progress Reporting Tool | Responsible Party: Federal Geographic Data Committee

Administrative Information

Start Date: 2020-10-01

End Date: 2021-09-30

Publication Date: 2022-10-21

Source: <https://strategy.data.gov/assets/docs/2021-Federal-Data-Strategy-Action-Plan.pdf>

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