



Federal Data Strategy

2021 Action Plan

Foreword

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.

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,¹ 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.

1. The Biden-Harris Administration Immediate Priorities are available at [whitehouse.gov/priorities](https://www.whitehouse.gov/priorities).



Federal Data Strategy 2021 Action Plan

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

Introduction

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 government-wide 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.

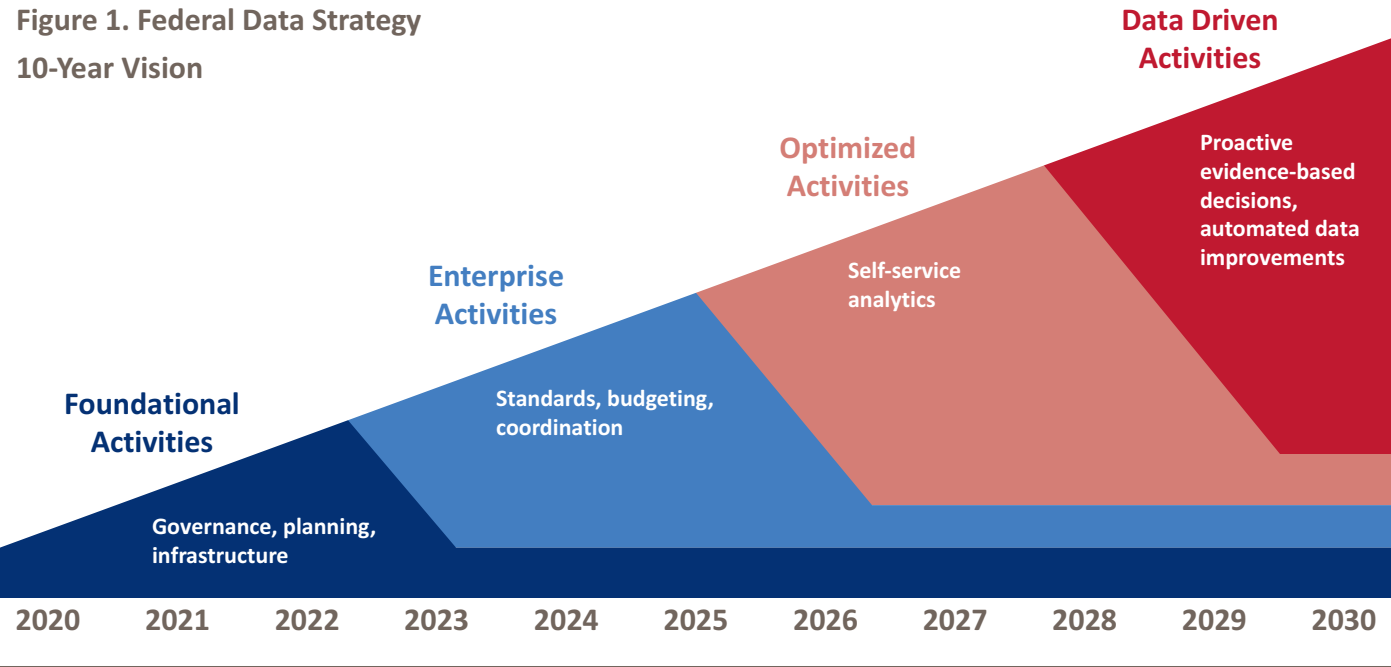
M-19-18 calls for annual government-wide Action Plans to guide federal agency implementation of the FDS, and to “identify and prioritize practice-related steps for a given year, along with target timeframes and responsible entities.”² This approach balances long-term goals stretching across budgets and administrations with short-term flexibility to adjust for emerging national priorities, new legislation, and data maturity levels, needs, and capabilities that vary across agencies. The 2021 Action Plan was developed in consultation with an interagency, interdisciplinary working group and the [Chief Data Officer \(CDO\) Council](#) Executive Committee.

To achieve the 2030 Vision of the FDS, annual Action Plans follow an incremental maturity ladder that generally moves from: **Foundational activities** of governance, planning, and infrastructure (~2020-2022), to **Enterprise activities** of standards, budgeting, and coordination (~2023-2025), to **Optimized activities** of self-service analytics (~2026-2028), and finally, to **Data-Driven activities** of proactive evidence-based decisions and automated data improvements (~2029 and forward) (see *Figure 1*).

2. The Federal Data Strategy is available at <https://strategy.data.gov>.

Figure 1 depicts what the FDS as whole can achieve by 2030 to advance data-driven government. Some agencies (or their components) may be further along the ladder in 2021, and many federal programs and offices are actively engaging in **Data-Driven activities** today. Agencies that can make progress more quickly than outlined in the strategy are encouraged to continue promoting enhancement opportunities. The goal of the FDS, however, is to ensure that these activities do not happen in an ad hoc way, but rather are integrated into agency culture and become standard practice across all federal government programs.

**Figure 1. Federal Data Strategy
10-Year Vision**



The 2021 Action Plan builds on the outcomes of the 2020 Action Plan and reinforces the activities of data governance, planning, and infrastructure. During 2021, CDOs will continue to grow in their new capacity and lead each agency to fulfill ambitious but achievable goals to better serve the public.

2020 Action Plan Successes and Lessons Learned

Major successes of the 2020 Action Plan³ in the areas of foundational governance, planning, and infrastructure activities lay the groundwork for implementing the FDS by 2030.

Governance

The 2020 Action Plan empowered CDOs to develop their agencies' internal governance structures for the management and use of data. At each agency, the CDO worked across business lines to establish a Data Governance Body and began critical steps to build data strategy road maps, develop plans for enterprise data assets and infrastructure capital planning, and adopt master data-management programs.

Collectively, the CDOs formed the first-ever Federal Chief Data Officer (CDO) Council to promote best practices in leveraging data for decision-making and operations. In addition to its regular meetings, the CDO Council encouraged a vibrant learning community by holding regular information sharing sessions between CDOs on best practices to fulfill the FDS. Additionally, the CDO Council began working collaboratively to solve emerging cross-cutting data challenges, such as through the creation of the COVID-19 Working Group. The establishment of responsive and effective governance structures at individual agencies and across the entire federal enterprise provides the framework for continued government success for the 10-year FDS vision.

Planning

Throughout 2020, CDOs examined their agencies' mission requirements, infrastructure, and workforce in order to develop effective plans for the future. Specifically, agency CDOs, working with Evaluation Officers (EO) and Statistical Officials (SO), helped to identify and determine how to access the data needed to answer priority agency questions. Agencies also selected and implemented operational maturity assessment models to establish a baseline for future improvements related to their data infrastructure. Finally, agencies assessed the data literacy and skills of their current staff to determine what gaps must be bridged to ensure the workforce can implement data-driven and evidence-building activities.

3. The 2020 Action Plan is available at strategy.data.gov/2020/action-plan.

Both the Chief Information Officer (CIO) Council and CDO Council have begun creating tools to assist agencies with increasing their staff data skills, and the Interagency Council on Statistical Policy (ICSP) continues its training and mentoring programs. In addition, the General Services Administration (GSA) issued a Staff Data Skills Catalog of agency program offerings as highlighted in the 2020 Action Plan.⁴ In 2020, agencies nominated 61 federal employees for an interagency pilot in data upskilling, and this cohort completed their capstone projects and graduated from the program in April 2021. Additionally, the CIO Council released materials for agencies to build their own data-science training program. Likewise, the CDO Council established a Data Skills Development Working Group. The CDO Council is exploring joint hiring initiatives with the United States Digital Service to improve access to professionals with advanced data-science skills.

The 2020 Action Plan also tracked progress made by other federal councils to plan interagency data-related initiatives. For example, federal councils launched planning products to improve financial data standards and established a geospatial data infrastructure strategic plan. The federal government also investigated access and quality topics associated with artificial intelligence (AI) research and development.

Infrastructure

An agency's data inventory establishes the foundational structure for data access and can allow for further technological innovation, policymaking insights, and economic development. Agencies made significant progress in indexing data assets in their inventories on data.gov, and identified certain data assets related to a broad range of critical issues such as COVID-19 and AI research and development.

The 2020 Action Plan also involved several initiatives to establish uniform resources, pilots, and tools for the benefit of all agencies. Data.gov served as a hub of information to assist all federal agencies in building a data-driven organization.⁵ Specifically, newly developed guides that CDOs can access and use were added to the site, such as a Data Skills Catalog, Data Ethics Framework, Data Protection Toolkit, and Data Quality Toolkit. In other cases, federal organizations piloted new infrastructure to improve the management of and access to data through a One-Stop Researcher Application, an Information Collection Review Tool from the U.S. Department of Education, and an Enhanced Data Management Tool, incorporating user input throughout the development of these pilots.

4. The Staff Data Skills Catalog of agency program offerings is available at resources.data.gov.

5. The resources on Data.gov are available at resources.data.gov.

Lessons Learned

Many lessons learned during the implementation of the first FDS Action Plan have informed the 2021 Action Plan. Those lessons include:

In 2020 we learned...	Therefore, in 2021 we will...
Agencies' diverse needs, resources, and missions make a universal qualitative evaluation of milestone execution challenging	Promote information sharing through interagency councils, such as the CDO Council, to identify and share what practices work best for different use cases
Including statutory requirements in the action plan is helpful for comprehensive awareness and oversight, and minimizes potentially duplicative data-related activities	Continue to include statutory requirements
Coordination of actions undertaken by all federal data communities and stakeholders can be challenging, and it is unclear what benefit it adds to performance or knowledge sharing	Track and highlight Community of Practice and Shared Solution Actions that have the greatest potential value to achieving the FDS
Some milestone dates were unachievable because of a lack of published guidance	Ensure 2021 Actions and milestone target dates support existing guidance or the timelines for new guidance as it pertains to the FDS
Milestone target dates should align with budget cycles	Encourage involvement of the CDOs in strategic planning and budget development activities for their agencies

Agency Actions

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. 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,”⁸ information destined for a higher-impact purpose must be held to higher standards of quality.⁹ 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.

Milestone	Measurement	Reporting Mechanism	Target Date	Required or Encouraged
1.1 Assess data assets for fitness of purpose, in support of Learning Agenda items	Progress	Progress Reporting Tool	Measure Annually	Required for CFO Act Agencies only, encouraged for non-CFO Act agencies
1.2 Acquire or access data needed to answer priority questions	Progress	Progress Reporting Tool	Measure Annually	Required for CFO Act Agencies only, encouraged for non-CFO Act agencies
1.3 Indicate which data assets support Learning Agenda questions in comprehensive data inventory	Progress	Progress Reporting Tool	Measure Annually	Required for CFO Act Agencies only, encouraged for all non-CFO agencies

6. Available at [whitehouse.gov](https://www.whitehouse.gov).

7. Pursuant to OMB's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies*, 67 Fed. Reg. 8452 (February 22, 2002), agencies have already developed agency-specific information quality guidelines for pre-dissemination review. OMB's Guidelines are available at [federalregister.gov](https://www.federalregister.gov).

8. OMB Memorandum M-19-15, *Improving Implementation of the Information Quality Act 3* (April 24, 2019), available at [whitehouse.gov](https://www.whitehouse.gov).

9. The Framework for Data Quality is available at resources.data.gov.

Action 2. 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.

Milestone	Measurement	Reporting Mechanism	Target Date	Required or Encouraged
2.1 Data Governance Bodies document priority goals for calendar years 2021, 2022, and 2023 respectively	Completion	Progress Reporting Tool & Post to Agency/ data web page	Dec. 31, 2021	Required for all agencies

Action 3. 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.

Milestone	Measurement	Reporting Mechanism	Target Date	Required or Encouraged
3.1 Begin implementing enterprise data asset and infrastructure capital plans developed in 2020	Progress	Progress Reporting Tool & FY2023 Budget Submission	Dec. 31, 2021	Required for all agencies
3.2 Agency budget submissions should include data asset and infrastructure needs	Completion	FY 2023 Budget Submission	As required by the FY2023 budget timeline	Required for all agencies

Action 4. 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.

Milestone	Measurement	Reporting Mechanism	Target Date	Required or Encouraged
4.1 Incorporate data skills training and rotational experiences into agency professional development offerings	Completion	Progress Reporting Tool	Dec. 31, 2021	Required for CFO Act agencies only, encouraged for non-CFO Act agencies
4.2 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	Progress	Progress Reporting Tool	Dec. 31, 2021	Required for CFO Act agencies, encouraged for non-CFO Act agencies

Action 5. 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.

Milestone	Measurement	Reporting Mechanism	Target Date	Required or Encouraged
5.1 Publish an Open Data Plan that identifies specific priority data assets, including assets that support COVID-19 response and AI R&D	Completion	Information Resource Management (IRM) Strategic Plans and agency digital strategy web page	Annually in accordance with OMB Guidance	Required for all agencies

Action 6. 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.¹⁰

Milestone	Measurement	Reporting Mechanism	Target Date	Required or Encouraged
6.1 Update comprehensive public data inventory on data.gov	Completion	Agency public data.json APIs ¹¹ & Progress Reporting Tool	Quarterly	Required for all agencies

10. See resources.data.gov.

11. See data.gov/labs.

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. Artificial Intelligence and Automation

Executive Order 13859, *Maintaining American Leadership in Artificial Intelligence*,¹² 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*,¹³ 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.

Milestone	Measurement	Reporting Mechanism	Target Date	Responsible Party
7.1 Make the Algorithmic Assessment Tool publicly available for agency use	Completion	CIO Council web page and Resources. data.gov	Dec. 31, 2021	CIO Council
7.2 Prepare an inventory of non-classified AI use cases, including current and planned uses	Completion	As determined by the CIO Council	Dec. 31, 2021	Required for all agencies
7.3 Coordinate the sharing of AI use case inventories among agencies	Completion	Progress Reporting Tool	Within 60 days of the completion of agency respective inventories	CIO and Chief Data Officer Councils, as well as other interagency bodies
7.4 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	Completion	Progress Reporting Tool	Within 120 days of the completion of agency inventories	Required for all agencies

12. Available at [federalregister.gov](https://www.federalregister.gov).

13. Available at [federalregister.gov](https://www.federalregister.gov).

Action 8. 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.

Milestone	Measurement	Reporting Mechanism	Target Date	Responsible Party
8.1 Demonstrate a dashboard prototype to the CDO Council and relevant interagency Councils	Demonstration to CDO Council and relevant interagency Councils	Progress Reporting Tool	Dec. 31, 2021	CDO Council
8.2 Document recommendations for government-wide infrastructure solutions and funding mechanisms	Completion	Progress Reporting Tool	Dec. 31, 2021	CDO Council

Action 9. 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.

Milestone	Measurement	Reporting Mechanism	Target Date	Responsible Party
9.1 Document agency use cases and validate those use cases with the CDO Council Data Skills Development Working Group	Completion	Progress Reporting Tool	Dec. 31, 2021	CDO Council
9.2 Publish the data-skills workforce development playbook	Completion	Progress Reporting Tool & Resources.data.gov	Dec. 31, 2021	CDO Council

Action 10. 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.

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

Milestone	Measurement	Reporting Mechanism	Target Date	Responsible Party
10.1 Wildland Fuels Modernization Architecture and Roadmap	Completion	Progress Reporting Tool	Dec. 31, 2021	CDO Council

Action 11. 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)¹⁴ 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.

Milestone	Measurement	Reporting Mechanism	Target Date	Responsible Party
11.1 Identify High-Value Geospatial Data Act Investment Areas	Completion	Progress Reporting Tool and FGDC web page	Dec. 31, 2021	Federal Geographic Data Committee
11.2 Improve coordination and collaboration between the Federal Geographic Data Committee and interagency councils	Number of Engagements	Progress Reporting Tool	Dec. 31, 2021	Federal Geographic Data Committee

14. Available at geoplatform.gov.

Looking Ahead

The FDS presented in M-19-18 articulates a ten-year vision for how the federal government will accelerate the use of data to deliver on mission, serve the public, and steward resources—while protecting security, privacy, and confidentiality. Fully implementing the 40 practices described in the strategy will require a sustained, iterative, and systematic effort over a ten-year period. The Action Plans will continue to identify priority actions each year and incrementally build on progress annually, capitalizing on the successes of previous efforts, aligning with ongoing federal government programs and policies, incorporating applicable emerging technologies, and complementing new statutory requirements.

The 2021 Action Plan builds on the 2020 Agency Actions and affords agencies the flexibility to complete actions not fully met in 2020, as well as to move forward in their Foundational activities. This year's Action Plan also focuses on Community of Practice and Shared Solutions Actions that further cross-agency enterprise data maturity and common approaches to data. In this manner, the 2021 Action Plan provides the next step towards completing the Foundational phase of the FDS. The lessons learned from 2020 also create an opportunity to consider how the timing of future Action Plans can better align with existing planning cycles, as implementation of the FDS continues over the ten-year period.

Future annual Action Plans will further develop a coordinated and collaborative approach to federal data stewardship. The newly formed CDO Council will continue to foster information-sharing and cross-agency collaboration among CDOs. Sustained cross-council collaboration will facilitate interagency partnership. Feedback from stakeholders will continue to highlight key topic areas for future annual Action Plans. These plans will build on the progress made by agencies and the CDO Council in advancing the purpose of FDS: to leverage the full value of federal data, in alignment with American values, for mission, service, and the public good.

Figure 2. Federal Data Strategy 2021 Actions by Practice Matrix

Category	Practices	Actions*										
		1	2	3	4	5	6	7	8	9	10	11
Building a Culture that Values Data and Promotes Public Use	1. Identify Data Needs to Answer Key Agency Questions	○									○	
	2. Assess and Balance the Needs of Stakeholders										○	
	3. Champion Data Use	○	○									
	4. Use Data to Guide Decision-Making	○			○							
	5. Prepare to Share										○	
	6. Convey Insights from Data											
	7. Use Data to Increase Accountability											
	8. Monitor and Address Public Perceptions							○				
	9. Connect Data Functions Across Agencies								○		○	○
	10. Provide Resources Explicitly to Leverage Data Assets			○						○		
Governing, Managing, and Protecting Data	11. Prioritize Data Governance		○									
	12. Govern Data to Protect Confidentiality and Privacy		○									
	13. Protect Data Integrity											
	14. Convey Data Authenticity											
	15. Assess Maturity		○		○							
	16. Inventory Data Assets	○				○	○				○	○
	17. Recognize the Value of Data Assets											
	18. Manage with a Long View											
	19. Maintain Data Documentation	○									○	
	20. Leverage Data Standards								○		○	○
	21. Align Agreements with Data Management Requirements											
	22. Identify Opportunities to Overcome Resource Obstacles								○			
	23. Allow Amendment											
	24. Enhance Data Preservation					○						
	25. Coordinate Federal Data Assets					○			○		○	○
	26. Share Data Between State, Local, and Tribal Governments and Federal Agencies					○					○	
Promoting Efficient and Appropriate Data Use	27. Increase Capacity for Data Management and Analysis				○			○		○		
	28. Align Quality with Intended Use	○										
	29. Design Data for Use and Re-Use										○	
	30. Communicate Planned and Potential Uses of Data										○	
	31. Explicitly Communicate Allowable Use										○	
	32. Harness Safe Data Linkage										○	
	33. Promote Wide Access					○	○		○		○	
	34. Diversify Data Access Methods						○					
	35. Review Data Releases for Disclosure Risk											
	36. Leverage Partnerships								○	○	○	
	37. Leverage Buying Power											
	38. Leverage Collaborative Computing Platforms								○			
	39. Support Federal Stakeholders						○	○	○	○	○	○
	40. Support Non-Federal Stakeholders						○				○	
*Federal Data Strategy 2021 Actions												
1. Gather and Assess data Identified for Priority Agency Questions 2. Mature Data Governance 3. Data and Infrastructure Maturity 4. Increase Staff Data Skills 5. Publish Agency Open Data Plans 6. Enhance Quality of Data Inventories						7. Artificial Intelligence & Automation 8. Government-wide Dashboards and Infrastructure 9. Data Skills Workforce Development 10. Interagency Wildland Fire Fuels Data Management 11. Geospatial Data Practices						



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**To contact the Federal Data Strategy development team
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visit strategy.data.gov.**



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