Revising the Practices for a Comprehensive Federal Data Strategy Based on Public Input

The Practices are intended to guide the development of a comprehensive data strategy that encompasses federal and federally-sponsored program, statistical, and mission-support data. The Federal Data Strategy (FDS) Team developed the draft Practices by considering concepts reflected in the Fair Information Practice Principles and the statutory requirements in the Paperwork Reduction Act, the E-Government Act, the Privacy Act, the Federal Information Security Modernization Act, the Confidential Information Protection and Statistical Efficiency Act, the Freedom of Information Act, the Information Quality Act, the Federal Records Act, and the Foundations for Evidence-Based Policymaking Act.

On behalf of the Federal Data Strategy team, the Department of Commerce published a Request for Comments (RFC) in the Federal Register on October 16, 2018. The RFC included a set of six specific questions about the draft Practices and asked the public to provide specific Action Steps that should be associated with a particular Practice. Comments were also submitted through the Federal Data Strategy website. The RFC closed on November 16, and the website closed to comments on November 23, 2018.

The process generated 198 comments on the draft Practices. There were 95 unique commenters, including authors affiliated with government agencies, academics, private businesses, and individuals. In response to these comments, the draft Practices were revised to reflect suggestions and concerns reflected in the comments.

- Commenters commended the effort to manage government data in a manner that is transparent and accessible and favored the approach to understanding and developing data policies enterprise-wide.
- Many of the commenters noted redundancy, overlap, or lack of clarity in purpose among specific Practices. In response, the FDS Team combined and clarified a number of Practices.
- In response to a large number of comments suggesting that the Practices did not
 adequately prioritize concerns about privacy and confidentiality, the Federal Data
 Strategy Team consulted with government privacy experts to align with existing
 privacy policy and to further emphasize the importance of privacy as an aspect of
 data governance.
- Many comments focused on the need for guidance and specific recommendations for data governance and data access and use; the forthcoming Federal Data Strategy Action Plan is intended to offer such guidance.

Other key changes:

- Two new Practices were added based on public comments indicating the need for Practices related to 1) aligning data quality with intended use and 2) providing resources necessary to support the use of data.
- Several Practices were revised in response to comments indicating that information was missing or unclear.
- Language was streamlined and made more active to improve clarity.
- The draft Practices had been grouped according to five broad objectives, however after feedback from stakeholders the Federal Data Strategy Team simplified the organization of the final Practices into three categories: Building a Culture that Values Data and Promotes Public Use; Governing, Managing, and Protecting Data; and Promoting Efficient and Appropriate Data Use.

The following table provides additional detail about how the draft Practices were revised in response to public comment and expert review, including adding new Practices suggested by reviewers; merging Practices where overlap or duplication was identified; and incorporating alternative or additional concepts to improve specific Practices.

Draft Practice	Final Practice	Rationale for Revision		
Building a	Building a Culture that Values Data and Promotes Public Use			
Plan for Evidence-Building: Develop and publish learning agendas to strategically plan research, evaluation, and other evidence-building activities over a multi-year period.	Agency Questions: Use the learning agenda process to identify and prioritize the agency's key questions and the data needed to answer them.	The FDS team and OMB leadership agreed that this Practice should focus on the data needed to answer agency key questions rather than the development of a learning agenda; this was echoed by comments that recommended deleting the draft Practice as it was not a data practice per se.		
Assess the Needs of Stakeholders: Routinely engage both internal and external stakeholders throughout the data lifecycle to assess the needs of data consumers and the utility of existing data assets to inform action, drive impact, respond to changing customer needs, advance innovation and commercialization, and meet the needs of the public.	Assess and Balance the Needs of Stakeholders: Identify and engage stakeholders throughout the data lifecycle to identify stakeholder needs and to incorporate stakeholder feedback into government priorities to maximize entrepreneurship, innovation, scientific discovery, economic growth, and the public good.	The FDS team combined draft Practices 40 and 41 in response to several comments suggesting they be merged.		
Balance Stakeholder Needs: Review stakeholder feedback as part of the process for making annual and multiyear planning, programming, budgeting, and execution decisions related to data stewardship and management to incorporate stakeholder needs into government priorities when appropriate and practicable.				

Promote a Culture that Values Data as an Asset: Conduct routine assessments of current organizational practices to identify opportunities to improve the agency's ability to acquire, use, and disseminate data for program, statistical, and mission-support purposes to improve data use and value.	Champion Data Use: Leaders set an example, incorporating data in decision-making and targeting resources to maximize the value of data for decision-making, accountability, and the public good.	The FDS team revised this Practice to focus on the role of agency leaders in championing data use in response to comments that it wasn't distinct enough from other Practices.
Incorporate Data into Decision-Making: As part of budget, operational, policy, and management processes, identify opportunities to effectively and routinely use data for decision-making and to create a bridge between evaluation, performance, and other activities within agencies.	Use Data to Guide Decision-Making: Effectively, routinely, transparently, and appropriately use data in policy, planning, and operations to guide decision-making; share the data and analyses behind those decisions.	The FDS team revised this Practice to include the concept of transparency and to add text about the appropriate uses of data in response to comments from privacy experts.
Prepare to Share: Provide encouragement and incentives for agencies to develop a culture in which they are predisposed to share data within and across federal agencies, as well as with external partners, with proper protections and where relevant and appropriate. Such a culture entails not only an attitudinal shift, but a proactive effort to plan for data sharing throughout every stage of the data lifecycle.	Prepare to Share: Assess and proactively address the procedural, regulatory, legal, and cultural barriers to sharing data within and across federal agencies, as well as with external partners.	The FDS team revised this Practice in response to several comments on the overlap between draft Practice 19 and other draft Practices and the suggestion that this Practice should include a consideration of policy and legal considerations in data sharing.
Communicate Insights from Data: Adopt a range of innovative communication tools and techniques to effectively transmit insights from data to a broad set of consumers, both internal and external to the agency.	Convey Insights from Data: Use a range of communication tools and techniques to effectively present insights from data to a broad set of audiences.	The FDS team revised this Practice to emphasize use rather than adoption of communication tools and to streamline and clarify the language in response to comments.

Connect Federal Spending to Outcomes: Analyze spending data to align resources with strategic priorities and desired outcomes to enable the public to understand the results of federal investments and to support informed decision-making regarding future investments.	Increase Accountability of Federal Spending: Align federal spending data with performance data to enable the public to understand the results of federal investments and to support informed decision-making.	The FDS team revised this Practice to clarify its focus on financial transparency in response to several comments and input from OMB financial policy officials.
Monitor and Address Public Perceptions: Regularly assess public perceptions, monitoring views of the value, accuracy, and objectivity of federal data to make strategic improvements and ensure transparency about information policies and practice.	Monitor and Address Public Perceptions: Regularly assess and address public confidence in the value, accuracy, objectivity, and privacy protection of federal data to make strategic improvements, advance agency missions, and improve public messages about planned and potential uses of federal data.	The FDS team revised this Practice to clarify the call for statistical monitoring of public perceptions of federal data and for action based on the results because comments indicated this purpose was unclear.
Connect Data Functions Across Agencies: Identify, establish, and connect a network of offices responsible for data functions (e.g. data management, analytics, informatics, and user support) to ensure prioritization of effective management and customer service governing the use of federal data.	Connect Data Functions Across Agencies: Establish communities of Practice for common agency data functions (e.g. data management, access, analytics, informatics, and user support) to promote efficiency, collaboration, and coordination.	The FDS team revised this Practice to clarify in response to comment that it calls for cross-agency communities of Practice around common data functions.
New	Provide Resources to Explicitly Leverage Data Assets: Ensure that sufficient human and fiscal resources are available to support using data for agency decision-making and accountability and to spur commercialization, innovation, and public use.	The FDS team added this Practice in response to numerous comments emphasizing the importance of sufficient resources to leverage data assets.

Governing, Managing, and Protecting Data		
Establish Data Governance Structures: Prioritize data governance within federal agencies by establishing and supporting Data Councils/Boards to coordinate the effective development, management, compliance, and use, and to communicate the value of data assets. Define Responsibilities for Protecting Confidentiality: Periodically review and revise roles and responsibilities for protecting confidential data and provide resources for training on best practice methods to protect data in order to maintain public trust and safeguard	Prioritize Data Governance: Ensure there are sufficient authorities, roles, organizational structures, policies, and resources in place to transparently support the management, maintenance, and use of strategic data assets. Govern Data to Protect Confidentiality and Privacy: Ensure there are sufficient authorities, roles, organizational structures, policies, and resources in place to provide appropriate access to confidential data and maintain public trust and safeguard privacy.	The FDS team revised this Practice in response to comment in order to highlight authorities, resources, and transparency and to focus on prioritizing the function of data governance rather than the creation of any particular type of data governance structure. The FDS team revised this Practice to make it parallel to the more general one on data governance and, in response to comments, to emphasize the importance of protecting privacy and confidentiality as part of the governance process and structure.
privacy. Prioritize Data Security: Establish priorities to weave data-centric security into every system that is refreshed, architected, or replaced to address current and emerging threats. Evolve Data Security: Continually foster innovation in data security to ensure quality assurance, cost savings, and security optimization.	Protect Data Integrity: Emphasize state- of-the-art data security in Information Technology security practices for every system that is refreshed, architected, or replaced to address current and emerging threats; foster innovation and leverage new technologies to maintain protection.	The FDS team revised this Practice in response to several comments on the overlap and lack of clear distinction among draft Practices 14, 15, 16, and 17. This Practice was rewritten to emphasize the need for security practices to stay up to date with current and emerging threats to protect data integrity.
Preserve Data Integrity: Convey data such that their veracity is knowable to users wherever they are found.	Convey Data Authenticity: Disseminate data sets such that their authenticity is discoverable and verifiable by users throughout the information lifecycle, consistent with open data practice, and encourage appropriate attribution from users.	The FDS team revised this Practice in response to several comments on the overlap and lack of clear distinction among draft Practices 14, 15, 16, and 17. This Practice was rewritten to emphasize the point made in public comment about assuring users of data integrity in terms of believability. The revised Practice also includes the goal of having data users attribute their use of federal data assets.
Assess Data Maturity: Conduct and publish periodic assessments of federal dataset and stewardship maturity to identify strategic opportunities to efficiently improve dataset quality and value.	Assess Maturity: Evaluate the maturity of all aspects of agency data capabilities to inform priorities for strategic resource investment.	The FDS team broadened this Practice to clarify in response to comment that it includes agency data infrastructure as well as dataset maturity.

Inventory Data Assets: Maintain an inventory of data assets with sufficient completeness, quality, and metadata to facilitate planning, discovery, access, and use.	Inventory Data Assets: Maintain an inventory of data assets with sufficient completeness, quality, and metadata to facilitate discovery and collaboration in support of informing key agency questions and meeting stakeholder needs.	This FDS team revised this Practice to be explicit in response to comments that inventories need to both inform agency key questions and meet stakeholder needs.
Identify High-Value and Authoritative Data Assets: Assign value and cost to data assets based on usefulness, applicable law, regulation, policy, and operational guidance to appropriately prioritize and document stewardship and resource decisions. Align Resources to Value and Authority: Periodically review the alignment of resources to the value and authority of datasets to promote consistency and fairness. Manage High-Value and Authoritative Data Assets: Periodically review high-value and authoritative data assets to identify and document opportunities to improve data management systems and procedures and ensure quality and integrity.	Recognize the Value of Data Assets: Assign value to data assets based on maturity, key agency questions, stakeholder feedback, and applicable law and regulation to appropriately prioritize and document resource decisions.	The FDS team merged draft Practices 3, 4, and 5 in response to several comments on their overlap, to be explicit about inputs to the valuation, and to emphasize the role of the valuation in setting priorities.
Manage with a Long View: Include data investments in annual capital planning processes and associated guidance to ensure taxpayer dollars are being used efficiently to leverage data as a strategic long-term asset.	Manage with a Long View: Include data investments in annual capital planning processes and associated guidance to ensure appropriated funds are being used efficiently to leverage data as a strategic long-term asset.	The FDS team revised this Practice to specify its application to appropriated funds.
Publish Data Documentation: Publish comprehensive data documentation in publicly accessible digital repositories to facilitate discovery, collaboration, access, and use, and to ensure traceability.	Maintain Data Documentation: Store up- to-date and comprehensive data documentation in accessible repositories to facilitate use and document quality, utility, and provenance in support of informing key agency questions and meeting stakeholder needs.	The FDS team revised this Practice in response to comments in order to emphasize that data documentation must not only be published but maintained, to clarify that the Practice pertains to all data assets (not just "public" ones), and to state the motivation of informing agency key questions and meeting stakeholder needs.

Leverage Data Standards:	Leverage Data Standards: Adopt or	The FDS team revised this Practice in response to
Periodically review and optimize the	adapt, create if needed, and implement	comments in order to emphasize considering existing
use, adoption, and creation of data	data standards within relevant	standards before creating new ones and to make the
standards within relevant	communities of interest to maximize	language more active.
communities of interest to identify	data quality and facilitate use, access,	
opportunities to maximize federal	sharing, and interoperability.	
data use, access, sharing, and		
interoperability.		
Align Contracts with Data	Align Agreements with Data	The FDS team revised this Practice in response to
Management Requirements:	Management Requirements: Establish	comments suggesting it be broadened to include more
Periodically review the terms and	terms and conditions for contracts,	types of agreements and to make the language more
conditions of contracts and other	grants, cooperative agreements, and	active.
agreements involving the processing,	other agreements that meet data	
storage, access to, transmission, and	management requirements for	
disposition of federal data to ensure	processing, storage, access, transmission,	
they are sufficient to meet policy and	and disposition.	
legal requirements.		
Recover Allowable Costs:	Identify Opportunities to Overcome	The FDS team broadened this Practice beyond cost
Periodically review federal data	Resource Obstacles: Coordinate with	recovery to include other strategies for addressing and
operations costs and user demand to	stakeholders to identify mutually-	overcoming resource obstacles.
identify cost recovery, shared	acceptable cost recovery, shared service,	
service, partnership and tiered cost	or partnership opportunities to enable	
opportunities to support the	data access while conserving available	
marginal costs of dissemination, the	resources to meet user demand.	
provision of federal labor expertise,		
and/or enhancement of data services		
to ensure taxpayer funds are		
appropriately and strategically		
invested in support of federal data.		

Allow Amendment: Establish and	Allow Amendment: Establish clear	The FDS team revised this Practice in consultation
maintain a process for members of	procedures to allow members of the	with privacy experts to more accurately reflect
the public to access and amend	public to access and amend federal	existing policy and to emphasize the need for clear
federal data about themselves, as	data about themselves, as	procedures.
appropriate and in accordance with	appropriate and in accordance with	
federal laws, regulations and policies,	federal laws, regulations and	
in order to promote transparency and	policies, in order to safeguard	
to help ensure the integrity of federal	privacy, reduce potential harm from	
data.	inaccurate data, and promote	
	transparency.	
Preserve Federal Data: Preserve	Enhance Data Preservation:	The FDS team revised this Practice to streamline the
federal data as a national asset by	Preserve federal data in accordance	language and to make it more active.
regularly reviewing the need for	with applicable law, regulation,	
archiving and disposition and	policy, approved schedules, and	
providing resources for preserving	mission relevance.	
data in accordance with applicable		
law, regulation, policy, approved		
records retention or disposition		
schedules, and operational guidance.		
Coordinate Federal Data Assets:	Coordinate Federal Data Assets:	The FDS team combined draft Practices 9 and 20 in
Coordinate data assets across federal	Coordinate and share data assets	response to several comments on the overlap
agencies to fulfill broader federal	across federal agencies to advance	between the two and to emphasize the value to
information needs and reduce	progress on shared and similar	agencies of such coordination.
collection burden.	objectives, fulfill broader federal	
Share Data Across Agencies: Facilitate	information needs, and reduce	
data sharing across federal agencies to	collection burden.	
efficiently generate more		
comprehensive data for improved		
decision-making.		

Share Data Between State and Local Governments and Federal Agencies: Facilitate data sharing between state and local governments and the Federal Government, particularly for programs which are federally-funded and locally-administered, to enable richer analyses for more informed decision-making.	Share Data Between State, Local, and Tribal Governments and Federal Agencies: Facilitate data sharing between state, local, and tribal governments and the Federal Government, where relevant and appropriate and with proper protections, particularly for programs that are federally funded and locally administered, to enable richer analyses for more informed decision-making.	The FDS team revised this Practice in response to comments suggesting it should include tribal governments and to specify its particular application to federally-funded and locally-administered programs.	
Pr	Promoting Efficient and Appropriate Data Use		
Increase Staff Capacity for Data Analysis: Enhance the analytic capacity of the federal workforce by investing in mechanisms to expand staff capacity in data science, program evaluation, and other analytic fields.	Increase Capacity for Data Management and Analysis: Educate and empower the federal workforce by investing in training, tools, communities, and other opportunities to expand capacity for critical data-related activities such as analysis and evaluation, data management, and privacy protection.	The FDS team revised this Practice in response to comments suggesting it should include data-related skills beyond data analysis and to expand the types of investments agencies can use to increase workforce capacity.	
New	Align Quality with Intended Use: Data likely to inform important public policy or private sector decisions must be of appropriate utility, integrity, and objectivity.	The FDS team added this Practice in response to numerous comments suggesting a specific Practice on data quality.	

Focus on End Uses of Data: Design	Design Data for Use and Re-Use:	The FDS team revised this Practice to include the
new data collections with the end uses	Design new data collections with the	concept of re-use of data and, in response to
in mind to ensure that the data	end uses and users in mind to	comments, to add the need to meet agency as well
collected will be of appropriately high	ensure that data are necessary and	as stakeholder needs.
quality and meet internal and external	of high enough quality to meet	
stakeholder expectations and needs.	planned and future agency and	
	stakeholder needs.	
Plan Ahead with Informed Consent:	Communicate Planned and	The FDS team revised this Practice in consultation
Periodically review data collection	Potential Uses of Data: Review data	with privacy experts and to make the Practice
procedures for opportunities to	collection procedures to update and	inclusive of data types and uses beyond those which
improve user understanding of	improve how planned and future	require formal informed consent.
potential future uses of data and	uses of data are communicated,	
promote public trust.	promoting public trust through	
	transparency.	
Explicitly Communicate Allowable	Explicitly Communicate Allowable	The FDS team revised this Practice to streamline the
Use: Regularly employ, and	Use: Regularly employ descriptive	language, and, in response to comments, to be
periodically review mechanisms (such	metadata that provides clarity about	explicit about safeguarding intellectual property
as data licenses applied to federally-	access and use restrictions for	rights and to expand the value statement beyond
hosted data) to provide clarity about	federal data, explicitly recognizes	industry to all stakeholders,
appropriate or inappropriate use,	and safeguards applicable	
explicitly recognize any applicable	intellectual property rights, conveys	
intellectual property rights, convey	attribution as needed, and optimizes	
attribution as appropriate or	potential value to stakeholders to	
necessary, optimize potential value to	maximize appropriate legal use.	
industry, and encourage the maximum		
legal use of all federally-hosted data,		
including both protected and open		

Improve Secure Data Linkage:	Harness Safe Data Linkage: Test,	The FDS team revised this Practice in response to
Regularly review and adopt evolving	review, and deploy data linkage and	comments to focus more on privacy protection in
capabilities for linking data so that	analysis tools that use secure and	data linkage and to emphasize its goals of addressing
qualified researchers with relevant	privacy-protective technologies to	agency key questions and meeting stakeholder
research questions can access linked	address key agency questions and	needs.
data in support of national priorities	meet stakeholder needs while	
and agency learning agendas.	protecting privacy.	
Promote Wide Access: Promote fair	Promote Wide Access: Promote	The FDS team combined draft Practices 27, 28, 30,
and equitable public access to federal	equitable and appropriate access to	and 47 in response to several comments on their
data through the facilitation and	data in open, machine-readable	overlap and to emphasize the need for open data,
periodic review of many access and	form and through multiple	multiple access mechanisms, and protection of
dissemination mechanisms and sites,	mechanisms, including through both	privacy and confidentiality.
including from both federal and non-	federal and non-federal providers,	
federal providers, to maximize	to meet stakeholder needs while	
opportunities to use federal data.	protecting privacy, confidentiality,	
Maximize economic value through	and proprietary interests.	
open access: Promote open access to		
appropriate machine-readable public		
data and related descriptive		
information to enable new economic		
opportunities for the Nation through		
entrepreneurship, innovation, and		
scientific discovery.		
Prevent Monopolization of Federal		
Data: Periodically evaluate and		
regularly monitor how data are		
released to the public with an eye		
towards preventing monopolization,		
to ensure public data is as accessible		
and usable to as many members of		
the public as practicable.		
Honor Propriety Interests: Protect		
proprietary interests related to		
commercially-licensed information		
and data to honor business		
investments and promote economic		
growth.		

Diversify Data Access Methods: Invest	Diversify Data Access Methods:	The FDS team combined draft Practices 13 and 14 in
in the creation and usability of	Invest in the creation and usability	response to several comments on their overlap and
multiple tiers of access to federal data	of multiple tiers of access to make	to simplify the language and clarify the goal of
by committing federal resources to	data as accessible as possible while	increasing accessibility while protecting privacy and
making data as open and accessible as	minimizing privacy risk and	confidentiality.
possible while protecting	protecting confidentiality.	
confidentiality.		
Innovate to Enable Safe Use: Explore		
and periodically review methods and		
technologies that enable tiered access		
to safeguard data and promote		
accessibility to relevant stakeholders.		
Review Data Releases for Disclosure	Review Data Releases for	The FDS team revised this Practice to make the
Risk: Regularly conduct and	Disclosure Risk: Review federal data	language more active and, in consultation with
periodically publish reviews of federal	releases to the public to assess and	privacy experts, to indicate it applies to reviews both
data released to the public to assess	minimize the risk of re-	before and after data release as warranted.
and minimize the risk of re-	identification, consistent with	
identification consistent with	applicable laws and policies, and	
applicable laws and policies to	publish reviews to promote	
promote transparency and public	transparency and public trust.	
trust.		

Leverage Partnerships: Establish and periodically review public private partnerships, procurement authorities, open data Practices, and workforce strategies that facilitate collaboration and innovation with the private sector to maximize economic opportunities and intellectual value from federal data. Innovate with Partners: Periodically conduct and review the results of competitions and collaborations with commercial, academic, and other partners to create innovative new insights, products and services based on federal data.	Leverage Partnerships: Create and sustain partnerships that facilitate innovation with commercial, academic, and other partners to advance agency mission and maximize economic opportunities, intellectual value, and the public good.	The FDS team combined draft Practices 44 and 46 in response to several comments on their overlap and made the language more active and focused on the goals of partnerships.
Leverage Buying Power: Monitor needs and systematically leverage buying power for private-sector data assets and services to promote efficiency and reduce federal costs.	Leverage Buying Power: Monitor needs and systematically leverage buying power for private-sector data assets, services, and infrastructure to promote efficiency and reduce federal costs.	The FDS team revised this Practice in response to comments to include infrastructure.
Enable use through data platforms: Facilitate the collaborative use of federal data on modern cloud computing platforms.	Leverage Collaborative Computing Platforms: Periodically review and optimize the use of modern collaborative computing platforms to minimize costs, improve performance, and increase use.	The FDS team revised this Practice in response to comments so as not to refer to a specific technology, such as cloud computing, and to include the motivation for using modern computing platforms.

Engage Federal Experts: Establish and	Support Federal Stakeholders:	The FDS team split draft Practice 45 into two
periodically review mechanisms for	Engage with relevant agencies to	separate Practices; this one focuses on the need to
the sharing federal data expertise	share expert knowledge of data	engage with and support federal stakeholders.
(including labor, code, and data	assets, promote wider use, improve	
assets) with industrial, academic, and	usability and quality, and meet	
other data users to promote wider use	mission goals.	
of federal data and identify usability		
improvements to ensure federal data		
is serving the public interest to the		
maximum extent practical.		
Engage Federal Experts: Establish and	Support Non-Federal Stakeholders:	The FDS team split draft Practice 45 into two
periodically review mechanisms for	Engage with industry, academic, and	separate Practices; this one focuses on the need to
the sharing federal data expertise	other non-federal users of data to	engage with and support non-federal stakeholders.
(including labor, code, and data	share expert knowledge of data	
assets) with industrial, academic, and	assets, promote wider use, improve	
other data users to promote wider use	usability and quality, and advance	
of federal data and identify usability	innovation and commercialization.	
improvements to ensure federal data		
is serving the public interest to the		
maximum extent practical.		