

Towards a National Secure Data Service: Two Years of Progress from the NSDS Demonstration Project

Heather Madray, Ph.D.

Program Director

NATIONAL CENTER FOR SCIENCE AND ENGINEERING STATISTICS NATIONAL SCIENCE FOUNDATION

CHIPS and Science Act Requirements



Section 10375 of the 2022 CHIPS and Science Act calls for a 5-year demonstration project to develop, refine, and test models to inform the full implementation of a National Secure Data Service (NSDS).



The NSDS is envisioned as set of shared services and a government-wide data linkage and access infrastructure to support evidence building.



CHIPS and Science calls for consultation with the director of OMB, the National Artificial Intelligence Research Resource (NAIRR), and alignment with the Advisory Committee on Data for Evidence Building (ACDEB) recommendations.



The NSDS Demonstration will be implemented by the National Center for Science and Engineering Statistics (NCSES).



NATIONAL CENTER FOR SCIENCE AND ENGINEERING STATISTICS https://ncses.nsf.gov

Why an NSDS?

- Novice and non-expert data users have difficulty navigating the complex data ecosystem.
- Data users don't have a place to ask open-ended questions and learn about data options based on their topic of interest.
- Accessing data is burdensome, time-consuming, and often expensive.
- Linking data requires lengthy processes to determine data ownership, requirements, and limitations on use.





No place to ask openended questions





Lengthy processes to link data



NATIONAL CENTER FOR SCIENCE AND ENGINEERING STATISTICS https://ncses.nsf.gov

Two Years Into the Demonstration

• NSDS Demonstration Initiated in August of 2022

Two-Year Report Delivered to Congress in August of 2024

- NSDS Demonstration Ends August of 2027
- Working Towards Implementation of an NSDS 1.0



Building Services for the Nation



Over 30 Projects Initiated

- Tiered Access including Synthetic Data
- Privacy-Preserving Technologies
- Capacity-Building and Equitable Access to Data
- Toolkits and Shared Services
- Data Concierge Services
- Infrastructure Development
- Use of Artificial Intelligence



Partnering with All



Over 30 Presentations to Stakeholders

- Coalition for National Science Funding
- o Data Foundation
- Health and Human Services Data Governance Board
- Congressional Research Service
- National Science Foundation Artificial Intelligence and Data Governance Group
- Centers for Disease Control and Prevention Privacy-Preserving Record Linkage Community of Practice
- Congressional Staff
- Presidential Council of Advisors on Science and Technology
- o Committee on National Statistics
- o Chief Data Officers Council Data Sharing Working Group
- o State Chief Data Officer Network



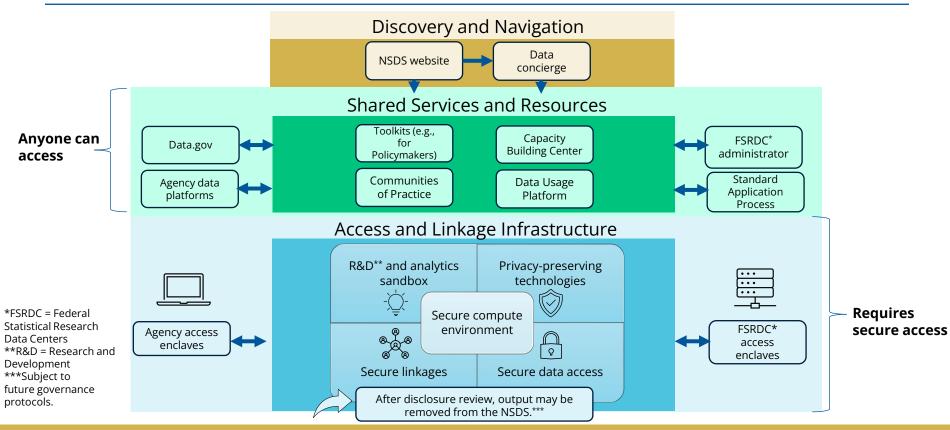
Collaboration and Expert Insight



- Collaboration with:
 - Interagency Council on Statistical Policy (ICSP) including ICSP Subcommittee on the National Secure Data Service
 - Office of Management and Budget (OMB)
 - National Artificial Intelligence Research Resource (NAIRR)
- Expert Panel formed to hear a diverse set of perspectives on our vision and plans



What could an NSDS look like?





NATIONAL CENTER FOR SCIENCE AND ENGINEERING STATISTICS

https://ncses.nsf.gov

Questions an NSDS can help answer

How much federal funding is given to minority-serving institutions?

An NSDS data concierge guides users to public data.

State Data Officer

Policymaker

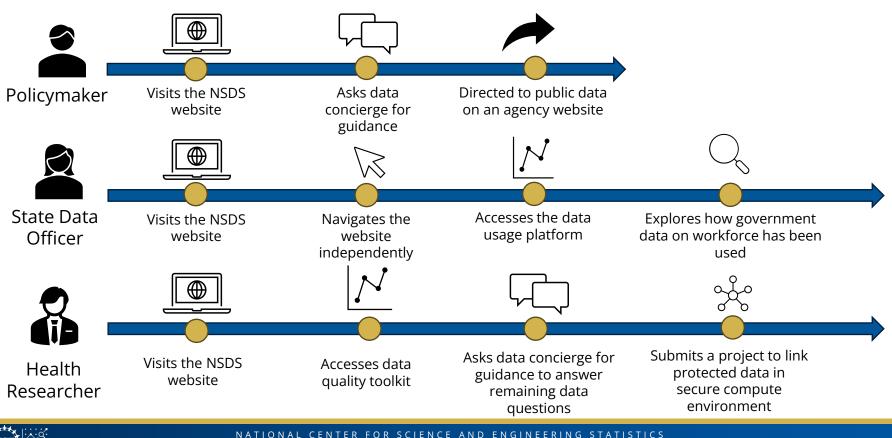
How has government data on workforce education been used? An NSDS data usage platform identifies published products using government data assets.

Health Researcher How are health outcomes influenced by access to transportation services? An NSDS can securely link data across two federal agencies (e.g., transportation and health data).



NATIONAL CENTER FOR SCIENCE AND ENGINEERING STATISTICS https://ncses.nsf.gov

NSDS User Journey Examples



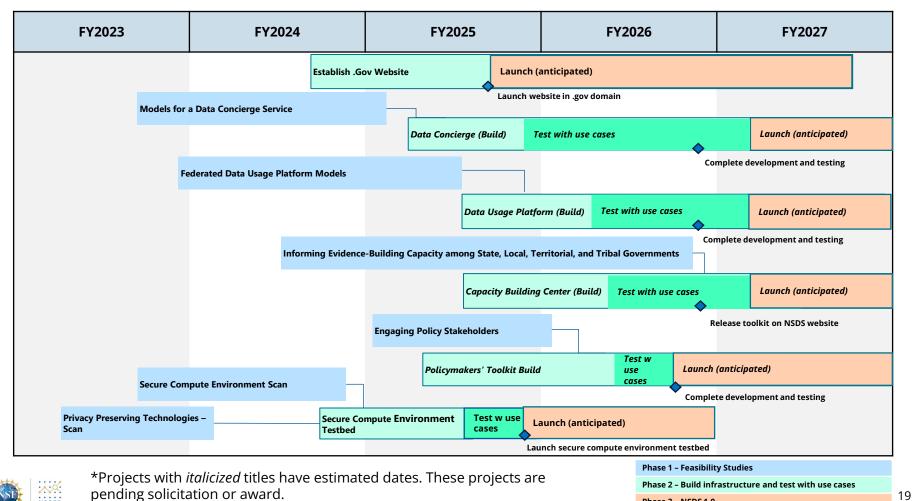
https://ncses.nsf.gov

Three Phase Approach

| | Phase 1 Feasibility Studies | Phase 2 Use Cases | Phase 3 Soft Launch |
|-----------------------------|---|--|---|
| Est. Calendar Years | 2022 - 2026 | 2024 - 2027 | Jan to August 2027 |
| Development and Testing | Gather information and build prototypes for new services | Test prototypes with high- impact use cases | Launch NSDS 1.0 components for public testing |
| Stakeholder Engagement | Gather input and identify use cases from diverse audiences to target core capabilities | Promote collaboration and coordination among stakeholders | Build awareness about and capacity to use NSDS 1.0 resources and services |
| Governance and Resources | Explore governance structures, funding models, and resourcing | Develop governance structure, establish funding, and identity near- term funding and staffing | Establish NSDS 1.0 governance structure and long-term funding and staffing |

A first version NSDS anticipated for public use August 2027





NCSES

Phase 3 - NSDS 1.0