Department of Commerce (DOC)
FY 22 Annual Evaluation Plan

Introduction and Background

The Foundations for Evidence-Based Policymaking Act of 2018 ("Evidence Act") requires that agency Evaluation Officers coordinate the development of an Annual Evaluation Plan that is published concurrent with the agency Annual Performance Plan. The Annual Evaluation Plan describes "significant" evaluations and related information for the subsequent fiscal year. The list to the right provides the criteria DOC considered when designating projects as significant evaluations. All evaluations presented in this FY22 plan are supported by funding in the FY 22 President's Budget.

Significant Evaluations

Significant evaluations meet one or more of the following criteria:

- Fundamental to the DOC Mission
- Aligns with leadership priorities
- Has potential to create a major advance in impact, efficiency and/or customer experience
- Supports economic recovery and resilience

In addition to Annual Evaluation Plans, major Federal agencies are required to develop multi-year Learning Agendas. The Learning Agenda describes both evaluations and other evidence that will be developed to support effective implementation of the Department's 5-year Strategic Plan. The Interim Learning Agenda developed in FY 2020 is being revised as part of the process of developing the new Department Strategic Plan and will align with the Strategic Objectives in the new plan. Major Federal agencies are required to develop a new Strategic Plans and Learning Agendas in the first year of a presidential term. A Capacity Assessment reporting the agencies resources for accomplishing the Learning Agenda is also required.

Plan Development Process

In December of 2019, the Department's bureaus received an initial survey asking them to report key evidence/evaluation questions and their capacity to research the questions. Responses were received and reviewed by the Interim Evaluation Office in January/February of 2020. COVID-19 and the related quarantine delayed the process and influenced the content of the Evaluation Plan. The Annual Strategic Review (ASR) completed in the spring of 2020 was used to update the evidence/evaluation questions. The Annual Strategic Review is organized by Strategic Objective. The cross-functional, multi-bureau Strategic Objective Teams were asked to select the questions that, if researched, would provide the most benefit to program improvement and efficiency. They were also asked to propose research that would assist in economic recovery from the COVID crisis.

This final plan was developed in second quarter of FY 21 and has been revised significantly to reflect the priorities of the new administration and the President's FY 22 budget.

Dissemination of Evaluation Findings

At significant milestones in the evaluation process, drafts and preliminary findings will be shared with internal stakeholders and staff of collaborating organizations. When evaluation projects are complete, the reports will be posted on the public-facing websites of the relevant bureaus. In addition, final reports will be posted on a new Evaluation/Learning Agenda webpage linked to www.commerce.gov. This Evaluation/Learning Agenda page is under development and will be available in the summer of 2021. Documents will not be posted if there are legal restrictions on access to the information, e.g., for security or privacy reasons.

Significant evaluation findings are often presented at conferences and workshops to the appropriate communities of practices. Some evaluations are published in peer-reviewed journals as an objective measure of quality and to make the results more accessible.

Types of Evaluations

The project descriptions in this Evaluation Plan describe projects as being primarily in one of four categories. The categories are defined as follows:

Formative Evaluation is typically conducted to assess whether a program, policy, or organizational approach, or aspect thereof, is feasible, appropriate, and acceptable before it is fully implemented. It may include process and/or outcome measures. However, unlike outcome and impact evaluations — which seek to answer whether the program, policy, or organization met its intended goals or had the intended impacts — a formative evaluation focuses on learning and improvement and does not aim to answer questions of overall effectiveness.

Impact Evaluation assesses if a program, policy, or organization, or aspect thereof, causes an increase in impact compared to those of a counterfactual. In other words, this type of evaluation estimates and compares impacts (e.g., increased jobs, business revenue), with and without the program, policy, or organization, or a feature of the program or policy. Impact evaluations include both experimental (i.e., randomized controlled trials) and quasi-experimental designs (i.e., a comparison group with similar demographics). An impact evaluation can help answer the question, " did the intervention lead to the observed outcome or impact?"

Outcome Evaluation measures the extent to which a program, policy, or organization has achieved its intended outcome(s) and focuses on outputs and outcomes to assess effectiveness. Unlike an impact evaluation, it typically cannot discern causal attribution. For instance, it can report if the number of jobs increased in a Federally assisted business but cannot conclude that the assistance caused the number of jobs to increase. An outcome evaluation can help answer the question "were the intended outcomes of the program, policy, or organization achieved?"

Process or Implementation Evaluation assesses how the program or service is delivered relative to its intended theory of change, and often includes information on content, quantity, quality, and structure of services provided. These evaluations can help answer the question, "was the program, policy, or organization implemented as intended?" or "how is the program, policy, or organization operating in practice?" Process evaluations are significant because an overly complex or time-consuming service delivery process can undermine the level of outcome/impact achieved even if the basic concept underpinning a program is sound.

List of Evaluation Topics and Questions

National Oceanic and Atmospheric Administration – Weather Forecast Communication
Is the new forecast communication approach reaching all communities that are particularly vulnerable to climate hazards? Is the information/support accurate and adequate?

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National Telecommunications and Information Administration – Impact of Federal Broadband Spending
How many US residents have received broadband as result of Federal broadband support programs and the Universal Service Fund Programs?

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National Telecommunications and Information Administration – First Responder Network Investments
How can changes in the broadband communications market best support public safety's needs since the deployment of FirstNet in 2017?

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Project Descriptions

Topic: What new statistics should be developed to improve understanding of economic well-being and growth, and support evaluation of federal interventions?

Lead Bureau: Bureau of Economic Analysis (BEA)

Rationale for Topic's Priority and How the Evaluation Findings will be Used:
The mission of the Department of Commerce is to "create the conditions for economic growth and opportunity." Fundamental to achieving that mission is measuring the current state of economic growth and opportunity. The rate of change in economic conditions, particularly conditions from crisis (e.g., COVID-19), require additional indicators of more facets of the US economy generally and demographic groups. Furthermore, geographically specific data are needed to assess the impact of Federal interventions. Formative Evaluations and the development of new statistics will span several years. The FY 22 work will be a Formative Evaluation for statistics on income inequality.

FY 22 Significant Evaluation Question:
What data and measurement challenges will be a major obstacle in the development of measures of income inequality by income groups and region?

A Formative Evaluation will be conducted to assess the feasibility of developing statistics, consistent with Gross Domestic Product (GDP), on how income is used to consume goods and services and the distribution of consumer spending by income group and region. Insights into regional variation can answer important questions about how different areas of the country are faring economically.

Methodology for Evaluations:
BEA will review existing academic studies that have explored various approaches to developing national accounts-based measures of income inequality. Each will be reviewed for applicability and replicability to ensure any resulting measures developed would meet BEA's standards of accuracy and

transparency. A challenge in developing new measures is ensuring they can be produced on a regular, time-series basis. Therefore, the bureau must explore the latest data sources available and ensure they are suitable for the continued production of the measures. For a fuller discussion of methodology development considerations, see the following technical document linked here.

Data Source:
Federal data sources include—but not are not limited to —BEA's measures of personal income, personal disposable income and consumer spending, Census Bureau/Bureau of Labor Statistics (BLS) Current Population Survey data, Internal Revenue Service (IRS) Statistics of Income data, BLS Consumer expenditure survey data, data from the Congressional Budget Office, Federal Reserve Board Survey of Consumer Finance data, etc.

Challenges:
The primary challenge is using existing data sources developed for other purposes and devising adjustments so that the data fits the definition and scope of the intended measures BEA would like to develop. In most circumstances, the bureau also requires data that is publicly available (for transparency purposes) and produced on a regular basis for use in the ongoing production of the BEA developed measures.

Dissemination:
Findings will be reported to Federal Advisory Committees and documented for the statistical community of practice. BEA will also use a formal federal register process to solicit input from the public. The details of how statistics are calculated are available on the BEA website here.

Topic: How effective were approach and technology innovations used in the Decennial 2020 Census?

Lead Bureau: Census Bureau

Rationale for Topic's Priority and How the Evaluation Findings will be Used:
The Decennial Census is required by the Constitution. The data is used for Congressional apportionment and in the formulas for the distribution of Federal funding. Since 1950, the Census Bureau has conducted a testing, evaluation, and experimental program to evaluate the current decennial census and to facilitate planning for the next decennial census. For the 2020 Census, fourteen evaluations, three experiments, and fifty-four operational assessments have been planned for the next few years. All, in varying degrees, will inform objectives for 2030 Census life-cycle research and testing plans.

FY 22 Significant Evaluation Question:
How effective were the 2020 Census innovations and, as appropriate, what effect did they have on data quality and coverage?

The following outcome evaluations will be conducted using the methodologies described:

Investigating Digital Advertising and Online Self-Response—To investigate the relationship between digital advertising materials and online self-response, by analyzing production data and paradata indicating what page linked respondents to the 2020 Census website.

Group Quarters Advance Contact: Refining Classification of College or University Student Housing—To examine production data on whether refined classification used in the 2020 Census resulted in more accurate identification of student housing not owned by the university.

Matching 2018 Census Barriers, Attitudes, and Behaviors Study Survey Sample to 2020 Census — By matching the 2018 Census Barriers, Attitudes, and Motivators Study (CBAMS) survey sample addresses to 2020 Census addresses, this study will evaluate (1) how well survey respondents' intended response behaviors aligned with actual response behaviors as well as (2) the characteristics of non-responding CBAMS households.

Evaluating Privacy and Confidentiality Concerns— To assess privacy and confidentiality concerns about the census, particularly regarding the internet response option and administrative records use in a census environment, by deploying a follow-up survey.

Comparing 2019 Census Test and 2020 Census Self-Response Rates to Estimate "Decennial Environment"— By matching 2019 Census Test data to 2020 Census data, the Census Bureau can compare self-response behavior with and without the decennial environment.

FY 22 Significant Evaluation Question:
What is the viability of recommendations identified for 2030 Census research and testing?

The following formative evaluation will be conducted using the methodology described:

Real-Time 2020 Administrative Record Census Simulation— To conduct an administrative record census, using record matching and modeling, to show how the population statistics compare between an administrative record census and survey-style collection, in the same time frame; and to show how long it takes to execute an administrative record census and identify the most time-consuming parts of the process.

Data Source:
Data sources include 2020 Census production data and associated paradata, previous census data, administrative records (Federal and state) and third-party data, periodic survey data collections, independent contract data collections, qualitative testing and focus groups, and lessons learned.

Challenges:
Operational impacts brought on by the COVID-19 pandemic modified implementation of some auxiliary data collections supporting the evaluations and experiments and methods for answering some of the research questions.

Topic: What is the Impact of Federal Business Assistance Programs?

Lead Bureau: Census Bureau in collaboration with the Small Business Administration

Rationale for Topic's Priority and How the Evaluation Findings will be Used:
The economic conditions created by COVID-19 highlight the need for effective tools to support businesses during times of crisis. More generally, even during normal times there are market frictions in small business lending that may leave important segments of the economy underserved by traditional lenders. This has historically motivated government intervention, such as the Small Business Administration's 7A guaranteed loan program.

It is expensive to measure how federal programs benefit participating businesses. Survey methods could be employed but would yield only a particular sample and would be costly. Agencies and the private sector lack high quality business frames to sample non-participant firms as a comparison group. The administrative and survey data at the Census Bureau is both high quality and has excellent (universal non-farm) coverage of the overall U.S. economy. Ongoing operations in support of Census business surveys continually adds new data, and businesses are tracked longitudinally. To study impact, Census collaboration with business assistance programs, offers a rigorous and cost-effective approach to program evaluation.

FY 22 Significant Evaluation Question:
What is the impact of the disaster loan program?

This impact evaluation will assess the effect of Small Business Administration disaster loans (Economic Injury Disaster Loans and Physical Disaster Loans) on recipient firms and their neighbors. Comprehensive data on applications, approval processes, and loans between 2004 and 2020 are available for the analysis. Measures of outcomes include employment, revenue, survival, credit score, and debt financing. The latter two will be drawn from credit bureau data. In addition to determining if a causal effect between the loan and firm outcomes can be established, the research will examine how the effects of receiving a loan vary with owner characteristics and location. Finally, the study will identify any super-local spillovers on neighboring business outcomes.

Methodology for Evaluation:
The methodology used will follow a quasi-experimental design approach.

For the disaster loan program evaluation, to establish causality, both a regression discontinuity and loan officer fixed effect design will be used. These approaches rely on data about applicants and the loan disbursement decision-making process. Most programs at the Small Business Administration do not include data on unsuccessful applicants. For these programs, matching techniques will be employed. Specifically, a suitable comparison group will be identified using propensity score or coarse exact matching techniques. Regressions will be used that compare outcomes for the program recipient firm and the very similar firm that was not a recipient.

Data Source:
Initially, program data from the Small Business Administration's Disaster Loan program will be matched to the Census Bureau's Business Register. The Business Register is a dataset on the universe of business activity from a blend of data sources, including data collected by the Census Bureau and administrative data from the Internal Revenue Service, Bureau of Labor Statistics and Social Security Administration.

Challenges:
The Census Bureau does not have the resources to perform this type of analysis broadly for business programs within the Federal government. In general, assessment of business assistance impact will be joint work between the agencies, since both benefit from the output. Ideally, this approach significantly lowers the cost of matching business data, makes the data available to improve Census Bureau programs, and the linked data available to independent researchers to perform more detailed studies within the Federal Statistical Research Data Centers.

Topic: What types of EDA projects most effectively support economic recovery/mitigation in communities highly impacted by COVID-19?

Lead Bureau: Economic Development Administration (EDA)

Rationale for Topic's Priority and How the Evaluation Findings will be Used:
As a result of supplemental funding in 2020 and 2021, EDA has been appropriated $4.5 billion to support regional, long-term economic recovery from the negative economic impacts of COVID-19 and mitigate expected damage. A cornerstone of EDA's value proposition for long-term economic recovery is to enhance resilience to future economic catastrophes. The supplemental funding for EDA's Economic Adjustment Assistance (EAA) program[1] is the vehicle for providing the assistance, and EDA deployed several new approaches in support of these efforts[2]. Economic crisis will occur again, and rigorous evaluation of alternative types of investments intended to promote recovery and resilience should be available to inform future efforts. Evidence is also needed on the most effective approach to targeting assistance to communities that have been highly impacted by COVID-19 but may be historically underserved by public programming.

FY 22 Significant Evaluation Questions:
Has EDA's process for reviewing and funding projects succeeded in bringing proportional benefits to historically underserved communities and populations?

EDA funds multiple types of projects. Which project types are effective treatments when funded via supplemental appropriations?

For America Rescue Program (ARP) grants, EDA will follow the same evaluation plan that it established to measure the outputs and outcomes of grants made under the CARES Act. EDA will be taking a two-pronged approach on evaluation of supplemental appropriation funded awards, which are made under its Economic Adjustment Assistance (EAA) program: 1.) internal assessments of infrastructure and non-infrastructure awards based on grantee-reported data, 2.) third-party assessments of the impact of

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[1] EAA grants are designed to help communities catalyze public-private partnerships to foster collaboration, attract investment, create jobs, and foster economic resiliency and prosperity. Examples of projects that may be funded through CARES and ARPA include economic recovery planning and preparing technical strategies to address economic dislocations caused by the coronavirus pandemic, preparing or updating resiliency plans to respond to future pandemics, implementing entrepreneurial support programs to diversify economies, and constructing public works and facilities that will support economic recovery, including the deployment of broadband for purposes including supporting telehealth and remote learning for job skills.
[2] Under CARES EDA deployed about half of its funds under non-competitive awards to trusted, existing economic development partners (EDDs, UC, Tribes, RLF). Under ARPA EDA anticipates taking additional new approaches.

specific programs. Emphasis will be placed on building evidence regarding what types of projects are most effective with respect to EDA's investment priorities[3], including equity[4], under specific conditions.

Methodology for Evaluation:

Evaluation of Processes Designed to Target Award Benefits to Underserved Populations and Geographies — coding will be established to track benefits targeted for communities and populations which meet the definition of underserved[5]. Using the coding schema, data will be gathered on the number of awards made, intended benefits, area of impacts and expected outcomes for the target populations. The data will be used to assess the effectiveness of the processes and develop improved approaches.

Data Source(s):

Regional Offices: Regional offices will provide data on application details, geographies and populations impacted and will code appropriate awards with the information related to "underserved".

EDA will be collecting success stories to amplify its work in these communities. These case studies will support the design of more rigorous evaluation.

Next Steps (Post FY22):

EDA will do an analysis of the Economic Development impacts generated from the investments made under the supplementals. EDA collects **grantee-reported data** and will leverage publicly available **third-party data**:

Grantee-Reported Data: EDA will collect performance data directly from grantees, leveraging existing Government Performance and Results Act (GPRA) data collection instruments for both:

a. infrastructure grants; and
b. non-infrastructure grants.

Third-Party Data: EDA will continue to work with third-party stakeholders, including utilizing data products from other agencies, to help track and analyze pertinent regional data on economic conditions that parallel the output and outcome data collected from grantees through the GPRA processes. The result will be data on economic development impacts collected at various intervals depending on award type (i.e., infrastructure versus non-infrastructure) and mechanism (i.e., direct impacts from grantees or derived from publicly available third-party data). These impacts may be outcomes (e.g., jobs created and private investment generated), outputs (e.g., number of firms assisted with financing activities), or third-party identified changes in community or regional conditions —all of which flow from and effectively align with EDA's Economic Development Logic Model (https://www.eda.gov/files/performance/ED-Logic-Model.pdf).

Challenges:

- Attribution will be a challenge. Other Federal, state, and local interventions will influence the degree and speed of local recovery. EDA will be consulting with academics and the extended evaluation community on methodology for the post-FY 22 work.

[3] https://eda.gov/about/investment-priorities/
[4] As defined in E.O. 13985.
[5] [ibid]

- The Executive Order (E.O. 13985) was not issued until just prior to the ARP appropriation. Therefore, EDA has not collected data relevant to underserved communities for grant awards made under the CARES Act.
- Unforeseen programmatic changes as part of the ARP Act may require adjustments to the evaluation methodology, data sources, and/or project types.
- Since EDA's program data is grantee-reported, grantee non-response on their reporting requirements could pose a serious challenge to our evaluation plans.
- Evaluation activities may be hampered by legacy grant administration and data management systems.
- Proposed DOC modernized grant system(s) will need to demonstrate the ability to 1.) meet the needs of EDA business processes and analytic activities, particularly the management of data on EDA project characteristics and 2.) be deployed quickly enough to minimize disruption to internal activities.
- Adapting existing data collection processes to include questions geared towards potential program and/or project changes, including securing required clearances.
- Data and indexes on chronic generational poverty and public investments in these areas and populations are being assessed. In the absence of statistical indicators that are standard for defining 'underserved', EDA will be required to make its own interpretations.
- The life cycle of an EDA grant includes a time lag between project development, grant award, project completion, and data collection.
    - Infrastructure Investments - As an example of an infrastructure project, a typical period of performance for a construction project funded through EDA's Economic Adjustment Assistance (EAA) program is 3-years. Upon project completion data collection on grantee outcomes then happens at 3, 6, and 9-year intervals. This means a construction award made through ARP in 2022 may not have long-term job creation data until 2028.

    - Non-Infrastructure Investments - While the reporting cadence for non-infrastructure awards is more frequent, there still exists a time lag from the grant administrative processes and data collection. Non-infrastructure grantees are reporting on a semi-annual and annual basis from the start of their period of performance, for the duration of the period of performance. For example, a grantee with a period of performance starting in June will receive their semiannual questionnaire in December, with the report due 30 days later in January.

Topic: Data Needed to Evaluate Approaches to Assisting Underserved Populations and Communities

Lead Bureau: Evaluation Officer and Chief Data Officer, Office of the Under Secretary for Economic Affairs

Rationale for Topic's Priority and How the Evaluation Findings will be Used:
Executive Order 13985, *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*, directs agencies to "pursue a comprehensive approach to advancing equity for all". Therefore, all agencies are performing assessments to identify barriers that underserved

communities face in accessing benefits and approaches to proactively bring programming to these communities. This effort will not produce results if the programming is ineffective or not cost effective. Increased understanding about what interventions produce the most economic progress for populations and communities addressed by E.O. 13985is fundamental to achieving its aim.

FY 22 Significant Evaluation Questions:
What data is needed to assess the effectiveness of alternative approaches to assisting underserved populations and communities? Do Commerce bureaus have access to the data? If not, what sources are available to fill data gaps?

Methodology for Evaluation:
This will be a formative evaluation to investigate the feasibility of alternative methods of assessing impact. The first step in the project will be selecting three Department initiatives aimed at supporting underserved populations and communities' economic recovery. Alternative methodologies will be developed for rigorously evaluating their effectiveness. The evaluators will select the best approaches and identify what data is needed to execute the methodologies. When data gaps are identified, research will be done on possible sources of the needed data.

The research will be done in close collaboration with target populations and communities, particularly regarding defining program effectiveness.

Data Source:
Data Sets Available Through the National Disaster Research Project
Community Resilience Estimates
Opportunity Atlas
Longitudinal Employer-Household Dynamics (LEHD)
Response Outreach Mapper
Other data sets identified through outreach efforts and research.
Research conducted by/for the Federal Advisory Committee on Data for Evidence Building will be an important resource for the project.

Challenges:
Many programs are being brought to the service of economic recovery. In additional to Federal programming, states, localities, and the private sector are increasing benefits /interventions for underserved populations and communities. Isolating the effects of any one intervention will be a methodological challenge.

Data sets used to evaluate the impact of recovery programming need to be granular and current. They should also be updated at a frequency that supports analysis of trends. Useful data sets may only be available for a subset of the populations and areas that will be studied.

Topic: Do U.S. exporters that have been assisted by the International Trade Administration outperform U.S. exporters that have not been assisted? How does the profile of businesses assisted by ITA compare to businesses that are not assisted?

Lead Bureau: International Trade Administration (ITA)

Rationale for Topic's Priority and How the Evaluation Findings will be Used:
Increasing U.S. exports is a principal Department tool for creating the conditions for economic growth and opportunity. To efficiently support U.S. exports, especially from small and medium sizes enterprises (SMEs), and play a critical role in strengthening the U.S. economy, evidence is needed on what approaches work best under what conditions.

FY 22 Significant Evaluation Questions:
Do U.S. exporters that have been assisted by ITA outperform U.S. exporters that have not been assisted by ITA?

Methodology for Evaluation:
This study is an impact evaluation. A quasi-experimental design will be used with statistical controls comparing Global Markets/ITA clients to non-users. Survey research will be used to identify the characteristics of non-clients.

Data Source:
Internal ITA client data (both manually entered, and data taken from Dun & Bradstreet (D&B)). Non-ITA client data from D&B.

Challenges:
COVID-19 quarantine effect on exports.

Topic: What Federal interventions best support the success of minority business enterprises (MBEs)?

Lead Bureau: Minority Business Development Agency (MBDA)

Rationale for the Topic's Priority and How Evaluation Findings will be Used:
Minorities are projected to account for more than 50% of the working population in 2046. To maintain US economic supremacy, it is imperative minorities' contribution to wealth creation is at par with non-minorities in the coming years. Measuring the policy-actionable barriers to business establishment and expansion and assessing interventions is critical to MBDA policy design supporting Executive Order 11625.

FY 22 Significant Evaluation Questions:
What is the role of cash-on-hand and access to capital in affecting minority business enterprises' (MBE) resiliency? How effective was CARES programming in increasing MBE resiliency? What are the lessons learned from COVID-19 recovery programming regarding MBE resiliency?

Methodology for Evaluation:
MBDA will use a formative evaluation to develop measures of resiliency followed by an impact study using quasi-experimental design to assess the effect of CARES programming. Resiliency is defined as the firm's ability to survive and stay in business during economic downturns (e.g., COVID-19). MBDA

will use pre-COVID data to determine typical cash-on-hand, access to capital and survival rates for industry sector/ethnic and racial group/geographic location.

MBDA will compare standard levels for the variables of interest to experiences of business as reported in Census's Business Pulse Survey and NIST-FEMA SME Complex Event Resilience survey, and correlate resiliency to other variables. MBDA will compare resiliency of MBEs who received support from MBDA, COVID-19 relief programming or other Federal projects to: 1.) MBEs not receiving support; 2.) non-MBEs receiving support; and 3.) remaining non-MBEs. To the extent possible, MBDA will explore local policies (e.g., lockdowns, quarantines) and business characteristics (e.g., type of ownership, industry) as they may be an important determinant of resilience.

MBDA will link its data on minority business served by MBDA's business centers to administrative and Census data. MBDA will use propensity score matching techniques to identify an appropriate control group to be used as a comparison group to measure how much more resilient Business Center's clients have been. Similarly, MBDA will attempt to account for participation in other COVID-19 support projects (e.g., PPP) and disaster support (e.g., FEMA disaster loans) as drivers of resiliency.

Data Sources:
Census: Survey of Business Owners (2012); Annual Survey of Entrepreneurs (2014-2016); Annual Business Survey (2017); Pulse Business Survey (2020). MBDA: Business Center's data from CRM. FEMA & NIST- Survey data from "Eliciting Lessons from Small- and Medium-Sized Enterprises (SMEs) for Natural Disaster Resilience Planning and Recovery During the COVID-19 Pandemic: SME Complex Event Resilience." BLS: Business Employment Dynamics datasets.

Challenges:
Availability of information on race and ethnicity, which can be overcome by using imputation algorithms. Sample-selection bias may require two-step estimators or similar techniques.

Topic: What technical services and products are most needed to cultivate Artificial Intelligence (AI) systems that are accurate and reliable, safe and secure, explainable and free from bias?

Lead Bureau: National Institute of Standards and Technology (NIST)

Rationale Topic's Priority and How Evaluation Findings will be Used:
Artificial Intelligence (AI) is rapidly transforming our world with new applications and innovations arising every day that affect everything from medical diagnostics and facial recognition to security and banking transactions. With the applications of AI effecting an increasing number of services and functions that are critical to society, it is essential that AI is developed in a trustworthy manner to ensure reliability, safety, and accuracy. NIST provides multiple services to support the broader AI community. To identify which ones are most critically needed to advance the responsible development, deployment, and use of trustworthy AI, NIST will engage with the broader AI community in a Formative Evaluation to assess how its portfolio of efforts, targeting measurements, data, standards, and testbeds, can be optimized to meet the needs of the stakeholder community most efficiently.

FY 22 Significant Evaluation Questions:
What resources (technical, infrastructure, and human capital) are needed to support the responsible design, development, and use of trustworthy AI?

Methodology for Evaluations:
Selected examples include but not limited to:
• Baseline assessment of ongoing fundamental and applied research in new hardware for AI and machine learning (ML) to determine gaps that NIST programs could efficiently address.
• Assessment of existing datasets that can be used for training and testing of ML techniques to identify areas where new data products could have the most impact.
• Assessment of AI relevant standards activities and industry participation to determine where NIST resources and expertise could be most effectively deployed.

Data Sources:
Datasets are generated by research at NIST including engagement and collaboration with commercial developers, technology consumers, academia, and government organizations. This occurs through various engagement mechanisms including workshops, requests for comments, and requests for information.

Challenges:
• Budget and staff to meet the expanding role in new policy developments without straining the existing resources
• Delays in the availability of funds combined with the long-lead times for federal procurement make it difficult to establish the necessary partnerships with industry and delays the delivery of products that the industry needs in the rapidly changing field of AI
• Recruiting talent in areas of AI, mathematics, statistics, and computer science
• Physical space for new staff and collaborative work

Topic: How climate change is impacting our communities?

Lead Bureau: National Oceanic and Atmospheric Administration (NOAA)

Rationale for Topic's Priority and How Evaluation Findings will be Used:
Americans' health, security and economic wellbeing are tied to climate and weather. Every day, communities are grappling with environmental challenges due to unusual or extreme events related to climate and weather. NOAA's mission is to understand and predict changes in climate, weather, the ocean, and coasts; share that knowledge and information with federal agencies, states, and the public; and conserve and manage coastal and marine ecosystems and resources. NOAA provides climate information that helps safeguard communities from hazardous natural events, and helps businesses make decisions to operate more efficiently. NOAA's management programs for oceans and coastal areas help enhance both the current and future productivity of these economically vital resources. NOAA will identify which resources are necessary to strengthen delivery of these vital services to underserved communities.

FY 22 Significant Evaluation Questions:
How can NOAA strengthen service delivery to underserved communities impacted by climate change?

Methodology for Evaluations:
As part of the requirements of Executive Order 13985, NOAA is developing a comprehensive approach to evaluate and advance equity and effective service delivery to underserved communities. NOAA is currently (FY 21) identifying high impact programs for a Service Equity Assessment (per OMB Guidance) and will assess these programs to identify access barriers faced by underserved communities. Methods will include surveys, focus groups, and listening sessions. The information will be used to identify and address access barriers through process improvements (service blueprinting). In FY 22, in collaboration with the GSA Office of Evaluation Services, NOAA will conduct an outcome evaluation to assess if improvements have achieved their objectives. The findings will allow NOAA to strengthen its service delivery to underserved communities affected by climate change.

Data Source:
The Service Equity Assessment will help identify the existing datasets for the outcome evaluation. Data will also be generated based on engagement and collaboration with stakeholders from underserved communities and local government organizations. Various engagement mechanisms will be used including formal surveys, councils, workshops, requests for comments, and requests for information.

Challenge:
NOAA may need to develop and get approval of new Information Collection Requests (ICRs,) as required under the Paperwork Reduction Act, to conduct necessary surveys within the timeframe.

Topic: How the National Weather Service (NWS) forecast communication improvements affect the emergency management community's decision-making process?

Lead Bureau: National Oceanic and Atmospheric Administration (NOAA)

Rationale for Topic's Priority and How Evaluation Findings will be Used:
The United States continues to experience an increased frequency of high-impact environmental events. In 2020 alone, 22 weather, water, and climate disaster events —with losses exceeding $1 billion each —struck communities across the country. Improving NOAA's data-driven understanding of extreme weather, water and climate-related community risk is an agency priority. Furthermore, it is a priority to hone the National Weather Service (NWS) decision support services while proactively extending services to vulnerable and underserved communities so they may better prepare for, respond to, and recover from impacts related to extremes, including those connected with climate change.

Emergency managers tell NOAA that the NWS's improved impact-based forecasts, communicated through trusted relationships, have more effectively supported their life-saving work. This customer service-based approach helps emergency managers and communities make better decisions when responding to extreme weather and water events. Impact-based Decision Support Services (IDSS) continue NWS's leadership in optimizing the customer experience of public safety officials at all government levels, especially at the community level where most of the life-saving decisions are made. However, research is needed to assess if IDSS is reaching all vulnerable populations.

FY 22 Significant Evaluation Questions:
Is IDSS reaching all emergency managers, especially in communities that are particularly vulnerable to climate hazards? Is the information/support accurate and adequate for the level of decisions made by the emergency managers?

Methodology for Evaluations:
This is an outcome evaluation based on survey data collected as part of the IDSS process.

Data Source:
NWS has recently developed two surveys: 1.) an Annual Core Partner survey that covers the full breadth of NWS services provided, and 2.) an Episodic Core Partner survey on specific weather, water, and climate events.

Challenge:
Assessing IDSS message consistency among partners and forecast offices. Evaluating survey data or developing a methodology that specifically measures the impact to vulnerable communities.

Topic: What is the impact of broadband spending on US resident access and local economies?

Lead Bureau: National Telecommunications and Information Administration (NTIA)

Rationale for Topic's Priority and How the Evaluation Findings will be Used:
As part of the Consolidated Appropriations Act, the Office of Internet Connectivity and Growth (OICG) within NTIA will be required to track the construction, use of, and access to broadband infrastructure built using any Federal support. Based on this data, OICG must prepare a report on the impact of federal broadband funding on broadband access and local economies. Findings will be used to support OICG's annual report required by Congress and evaluate the effectiveness of various federal broadband support programs.

FY 22 Significant Evaluation Questions:
How many US residents have received broadband as result of Federal broadband support programs and the Universal Service Fund Programs?
How many US residents were provided broadband by which universal service mechanism or which Federal broadband support program?

Methodology for Evaluation:
In the near-term, the study will be a process or implementation evaluation. Research will aim to evaluate the relationship between federal broadband investments and broadband access for US residents. The study will require the development of a streamlined mechanism by which participating agencies —including any agency offering a Federal broadband support program and the Commission

for any Universal Service Fund Program —can provide information required in a standardized and efficient fashion.

In the long-term, the study will be an impact evaluation. It will provide an estimate of the economic impact of federal broadband deployment efforts on local economies, including any effect on small businesses or jobs. The study will require data collection and economic evaluation to determine the causal relationship between increased broadband access and the associated economic impact in an affected area.

Data Source:
Data sources are to be determined and will be evaluated based on maturity and accessibility of the data source. Potential sources include NTIA data sets (e.g., National Broadband Availability Map), data from the Census Bureau (e.g., American Community Survey, Computer and Internet Use), and data shared by partner agencies offering federal broadband support (e.g., FCC. USDA, USF Programs).

Challenges:
The first key challenge will be creating a mechanism through which partners can report on federal broadband spending and the number of US residents provided access through programs. The mechanism will require an accompanying ruleset to outline data required and enable consistent, accurate analysis across programs.

A second challenge involves dependencies on federal partners for required reporting. NTIA will be required to develop data sharing agreements and standards with participating programs, including any agency offering a Federal broadband support program and the Commission for any Universal Service Fund Program. These programs will be required to provide input to assess the impact of broadband funding on US resident access and local economies.

Topic: How has the public safety community benefited from the deployment of the nationwide public safety broadband network?

Lead Bureau: First Responder Network Authority, National Telecommunications, and Information Administration (NTIA)

Rationale for Topic's Priority and How the Evaluation Findings will be Used:
The Nationwide Public Safety Broadband Network (NPSBN) (herein "the network") was designed to be a reliable, functional, safe, and secure network for first responders and provide optimal levels of communications capability at all times. First Responder Network Authority (FirstNet) continues accelerated progress in building and deploying the network, providing coverage and capacity for public safety agencies and organizations nationwide. With the network operational and as public safety adoption across the nation grows, the FirstNet Authority seeks to understand how the broadband communications market, including services and products created for public safety, have changed since the deployment of FirstNet —the network informed by and dedicated to public safety's unique operational needs.

FY 22 Significant Evaluation Question:
Has FirstNet accounted for changes in the broadband communications market to best support public safety's needs?

FirstNet seeks to understand how — and in what ways— the broadband communications market has changed for public safety users since the deployment and expansion of the FirstNet network. Information and data can inform how the FirstNet Authority makes investments in the network and guide program and project decisions to ensure the network meets public safety's needs into the future.

Methodology for Evaluations:
This is a formative evaluation to learn the most effective investments in technology and capabilities. The FirstNet Authority will undertake a comprehensive market research review of current broadband communications for public safety, specifically dedicated products and services that came to market from March 2017 to present and available to public safety agencies and first responders.

Data Source:
FirstNet will examine publicly available market reports, industry analysis and product reports on new broadband communications products and public safety use cases, testimonies, and survey feedback on broadband communications' products and services that are targeted for the public safety communities dedicated use. Additionally, FirstNet will examine data collected from the FirstNet Authority's field engagement teams from public safety engagements, to include success stories, public safety stakeholder feedback of available products and services, and operational needs. Additional data sources will be sought and identified at the beginning of this evaluation effort.

Challenges:
To conduct a comprehensive literature review and assessment of broadband communications market changes from 2017 to present, focused on public safety users, the FirstNet Authority must rely on publicly available information from industry vendors. This information may not be easily accessible or comprehensive.