# Building and Using a New Economic Development Evaluation System

A Toolkit for Practitioners

This report was developed through a cooperative agreement between EDA and SRI International

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# Introduction

# Background

Economic development programs are inherently difficult to evaluate due to the analytical distance between focused program activities and desired economic outcomes, as well as the challenge of identifying valid indicators for complex programs that fuel economic development capacity-building, broadly understood.

The Economic Development Administration (EDA) has developed a portfolio of non-infrastructure programs that support start-ups, small firm development, technology development, regional innovation ecosystems, and workforce development. These economic development and innovation-focused programs yield important capacity improvements for participants, which include entrepreneurs, small businesses, and regional organizations. These programs also have long-term, broader economic benefits, such as job growth, which can be difficult to measure in the short-term or in a single program assessment. Yet, in difficult economic times and in an environment of increasing scrutiny for government programs, it is important to rigorously demonstrate this value.

Standard approaches to program evaluation often focus only on narrow economic indicators, such as company and job creation. This approach does not do justice to the long-term impact of program activities, achieved through capacity-building outcomes, on broader and longer-term macroeconomic outcomes.

SRI's Center for Innovation Strategy and Policy (CISP) has been working with EDA on a project to develop and pilot new approaches to evaluate economic development programs. SRI has developed logic models to capture program activities, capacity-building outcomes, and broader macroeconomic outcomes to better understand and evaluate economic development initiatives. We have also developed an econometric model to assess these indicators and better refine what metrics should be used to evaluate EDA-supported programs.

This toolkit represents a key phase of this project – helping EDA and economic development practitioners put our work to use and move towards more comprehensive evaluation of economic development programs.

# **Toolkit Goals**

While designed with EDA programs in mind, the methodology proposed in this toolkit advances the field of program evaluation in economic development in general, and is intended to assist both funding agencies and economic development practitioners around the country to better collect, aggregate, and analyze data from economic development projects in order to assess their impact. The following sections identify and define the critical metrics practitioners should be collecting; provide tools and resources to implement data collection; and highlight third-party data sources to supplement directly collected data. Although this tool kit will focus on EDA programs and make references to EDA staff and grantees, grant-makers and practitioners outside the EDA can and should review this material and apply the identified metrics and approaches to their own economic development initatives as appropriate.

# Using this Toolkit

The tool kit is divided into two sections: one for economic development practitioners who are leading grantsupported programs, and one for grant-making staff who are monitoring and assessing programs.

#### Practitioners

When assessing economic development programs, there are two groups of actors to consider: the organizations receiving grants and implementing programs, and the end beneficiaries of those programs. As such, this toolkit identifies metrics that grant-receiving organizations can report directly to EDA, as well as metrics that they may need to collect from their clients and beneficiaries.

Thus, this tool kit defines two groups of metrics. The first is a group of program output metrics, indicating the activities and support the grant enabled the organization to provide. These metrics will track what the grantee actually accomplished with the money awarded, in order to evaluate how well the organization performed compared to what it intended. While all grantees will receive the same survey instrument asking about their activities and outputs, it is not expected that grantees will report on every category of output contained within the survey. However, given the broad range of activities performed by grantees across EDA's grant-making programs, it is recommended that the selection of metrics is standardized by program to allow for comparability in performance by grantees within a program.

The second group is a collection of capacity outcome metrics, intended to measure the effects of the activities provided. For organizations that serve clients or beneficiaries, these metrics will have to be collected from the people receiving the support or services the grant facilitated. For organizations without clients or beneficiaries, these metrics will be directly reported to EDA. Respondents will be asked about the impact of the grant on six broad categories. In categories in which the grant improved clients' capacities, they will have the opportunity to specify in what form impacts occurred.

This toolkit defines and clarifies the metrics to be reported, explains why they are relevant, and provides survey instruments and other tools to facilitate the data recording and reporting process.

#### **EDA Staff**

To operationalize an analysis of economic development programs, there are three tasks to undertake: managing and aggregating the data reported by grantees; collecting and compiling data from third party sources; and combining the two sources of data in appropriate analyses to assess impact. This toolkit provides a roadmap and best practices for economic development practitioners, through the example of EDA programs, to successfully implement informed and comprehensive evaluations of the economic development programs it supports.

There are two groups of analyses proposed for EDA to conduct to assess the scope of impact of its programs. The first is to analyze the relationship between program activities/outputs and capacity outcomes, to explore and understand how these activities influence the capacities of the people and regions they serve. This analysis requires aggregation of metrics at the program level, and can help EDA understand whether the programs it funds are achieving their aims. While this analysis is not intended to enable a comparison across programs, it will allow EDA to assess each program on a yearly basis and compare performance to earlier years to determine how the program is performing.

The second group of analyses will be to assess how the grants are influencing capacities at the metro level. This will require the analysis of third party metrics at the metro level to explore whether metro areas that receive EDA funding experience improved capacities. The analyses may also help EDA understand what types of metro and micro areas in particular benefit from EDA funding and could help them better target the grants they award.

This toolkit contains two sections geared toward EDA staff: a section on how to logistically implement data collection, and a section on what third-party sources to use and how to collect and manage their data to assess the impact of economic development programs.

The roadmap presented in this toolkit reflects what SRI believes to be the best approach to collecting and managing the necessary data. This approach is informed by past work done by SRI in surveying institutions and collecting data for the purposes of program evaluation and has been modified to meet the particularities of EDA-supported grantees, as understood by SRI.

# **Overview and Roles/Responsibilities**

The data collection and reporting process will require cooperation and coordination among EDA, its grantees, and their clients. Additionally, the process will consist of two separate survey instruments: a program outputs (activities) survey, and a capacity outcomes survey. The diagram below models how the three sets of actors will interact to collect and aggregate the data for each survey.



#### Figure 1: Survey Process

The process will start with EDA, who, in the special terms and conditions of each grant it awards, will specify the set of metrics the grantee needs to collect and report on. They will prepare the necessary survey tools and send them to the grantee to distribute to their clients. The grantee will distribute the tools, as well as directly report to EDA on the required grantee metrics. The clients will similarly fill out the survey tools and report the required data directly back to EDA.

EDA will then collect and store the reported data, and use it in tandem with third party sources to analyze the impacts of the supported programs.

#### **Roles and Responsibilities: Grantees**

Under this process, grantees have two primary responsibilities: first, to record and directly report the metrics asked of them to EDA, and second, to facilitate the collection of metrics from their clients (when applicable).

Regarding the first, it is recommended that organizations include a data management plan in their grant applications, to ensure that they are preparing for appropriate data collection and management from the very beginning of their programs. After receiving a grant from EDA, organizations must then establish and implement their data plans to record the metrics they are required to report, as specified in the award's special terms and conditions. SRI has previously recommended that grantees use a Customer Relationship Management system to

track clients and activities,<sup>1</sup> and such a system could also serve the purpose of recording data to report back to EDA. However, grantees could develop their own system for recording data if it better suited their needs. For each metric being recorded and reported, grantees must make sure that the data they collect adheres to the definition established in this toolkit.

Regarding the second responsibility, grantees must assist EDA in distributing survey protocols and other tools needed to collect data from their clients. As such, grantees need to keep track of who they serve and how to contact them, preferably via email if possible. If there are extenuating circumstances that render it difficult for grantees to track their clients or reach them in order to distribute a survey, grantees should raise this concern to EDA staff as soon as possible in order to identify a feasible alternative.

Grantees should also communicate to their clients that they are responsible for reporting the required metrics to EDA, and help refer clients to the appropriate EDA staff if they have questions or need assistance in reporting the required metrics.

The processes, protocols and practices outlined in this toolkit have been so designed as to be minimally burdensome, and strike a balance between providing the appropriate amount of rigor to program assessment while not interfering with the core work of the grantee.

## Roles and Responsibilities: EDA

EDA is responsible for managing and facilitating the data collection process. Their first responsibility is to work with grantees during the application process to identify the primary activity or activities the grant will support, and to mutually agree upon a set of program output metrics to be reported on. They will then be responsible for administering the survey on a quarterly basis to record these metrics from grantees.

EDA will also be responsible for working with grantees to determine whether the capacity outcomes survey should be administered to the grantee organization or to their clients. If they determine that the survey should be administered to the clients, EDA will work with the grantee to identify the best method of distributing the survey on an annual basis.

Finally, EDA is responsible for collecting, storing, and aggregating the data, and for combining it with third party data to perform analyses.

# **Grantee: Baseline metrics**

In addition to responding to and facilitating the outputs and outcomes surveys, grantees are also required to report on initial baseline conditions at the receipt of the EDA grant. These baseline conditions are important as they allow EDA to consider how initial conditions and inputs may or may not affect grantee organizations and the work they accomplish via a grant.

There are three categories of baseline metrics that grantees should report on: metrics based on their geographic location; metrics based on the industry/cluster focus of their proposed program; and metrics based on the technology focus of the program. These categories, and the specific metrics grantees should report, are listed below.

#### **Geographic Focus of the Proposed Program**

Grantees should report the following metrics for the county in which their organization is operating.

• Employment:

<sup>&</sup>lt;sup>1</sup> SRI International. 2014. "Making Connections: Evaluation Project to Assess Best Practices in EDA's University Center Program". https://www.eda.gov/files/tools/university-centers/Evaluation-of-UC-Best-Practices.pdf

- # of employed workers in the region
- o 5-year employment growth rate in the region
- Establishments & SMEs
  - # of business establishments in the region
  - 5-year establishment growth rate
  - # of small & medium-sized enterprises (SMEs, <500 workers)
  - 5-year SME growth rate
- Workforce
  - Labor force size
  - $\circ \quad \text{Labor force participation rate} \\$
  - o Unemployment rate
  - Average/median wage rate
  - o Educational attainment (% of population with high school, associate's, bachelor's, graduate)

#### Industry/Cluster Focus of the Proposed Program (if applicable)

If grantees are proposing to conduct activities at the industry/cluster level, applicants should define and describe the specific industry cluster that is the focus of the applicant's proposed grant program, based upon standard industry measurement mechanisms as much as possible (NAICS codes, commodity codes, firm-level databases, etc.). They should include a description of the method or source through which the cluster was defined. All other metrics reported below should be based on the industry cluster described.

- Description of Industry/Cluster
- Employment:
  - # of workers employed in the industry cluster
  - 5-year growth rate of cluster employment
- Establishments:
  - # of establishments in the industry cluster
  - o 5-year growth rate of cluster establishments
- Wages:
  - Average/median wages in the cluster
  - 5-year growth rate of cluster wages
- Location Quotient(s)
  - Location quotient(s), using employment data, for the NAICS that best represent the industry cluster of focus: Applicant should provide the Location Quotient(s) for the industry cluster that is the focus of the proposed program. Applicants are recommended to utilize the BLS Location Quotient Calculator Web Tool for obtaining this data. The Location Quotient(s) should be calculated for the NAICS codes and county(ies) that are most closely aligned with the cluster and region of focus, as defined by the applicant. The applicant should specify the exact NAICS code, county(ies), and year for each Location Quotient provided.

#### **Technology Focus of the Proposed Program (if applicable)**

If grantees are proposing a technology-focused program, applicants should provide a definition and description of the specific technology(ies) at the center of the proposed grant program. They should describe the extent of the technology's development and application in the region at the time of this application. Descriptions are likely to be qualitative in nature, but should be linked with specific industry (NAICS), product, or commodity classifications if possible.

EDA plans to build a script to crawl the data sources for these metrics and automatically collect the necessary data for grantees. However, most of these metrics are also available on the StatsAmerica website, built and maintained by the Indiana Business Research Center (IBRC) at Indiana University. Grantees are able to access the website and enter their county of operation to generate a county-level report with most of these metrics compiled, which can then be downloaded and saved. As a best practice for record-keeping, grantees should consider downloading these

metrics from StatsAmerica for their initial grant year and maintaining them with their grant paperwork, even if they don't have to submit them to EDA.<sup>2</sup>

# **Grantee: Program Outputs Survey and Metrics**

### **Summary of Logistics**

- Grantee organizations will be required to report on program output metrics on a quarterly basis, in-line with the existing quarterly reports required by EDA.
- Grantees will provide data to EDA via a survey instrument, but it is expected that grantees will track the data throughout each quarter via a Customer Relationship Management system or other database, in order to ensure adequate data reporting.
- EDA and the grantee will, at the time of the award, determine which specific group of program output metrics the grantee will be required to report on, based on the primary activity or activities supported by the grant.

# **Best Practices for Recording Data**

Grantees should establish a method for recording program output data that is simple and reliable. A basic Excel spreadsheet or database will suffice to collect the primary activities and clients served by grantee organizations. Grantees should enter data on a regular basis, and ensure that there is a clear delineation of responsibility for recording data, to ensure that duplicative data is not entered and that there is no gap in recording data.

# **Overview of Categories of Outputs**

The metrics being collected are derived from the EDA logic model developed by SRI, shown below.



## EDA Economic Development Program Logic Model

Figure 2: EDA Program Logic Model

<sup>&</sup>lt;sup>2</sup> For more information on the data sources where these metrics can be found, and the information available through StatsAmerica, please see Appendix C.

The Program Output survey will collect metrics from the middle column, which categorizes the types of activities grantee organizations conduct. EDA will identify which categories of metrics are relevant to each of their grant making programs, and will then communicate to grantees which category of metrics they must report on, based on the program they are funded under.

The following information describes each category of activity and defines the metrics belonging to the category.

#### **Facilities & Equipment**

New facilities and equipment reflect expanding capabilities of organizations served by EDA grants, and are an important metric to capture because they are a physical manifestation of capacity growth. The metrics reflect only the amount of facilities and equipment obtained in support of the organization's mission, and not other tangential purchases or acquisitions.<sup>3</sup>

#### **Metrics in this Category:**

- Amount of new space (sq. ft.) that was developed, purchased or leased in support of the organization's mission
- Total value of new equipment (USD) purchased or leased in support of the organization's mission

#### Events, Networking, & Referrals

Another important category of activities is events, networking & referrals. Creating strong networks is critical to improving regional capacity, and these outputs help generate connections among stakeholders and facilitate the flow of information, ideas and resources within a region.<sup>4</sup>

#### **Metrics in this Category:**

- Number of conferences, showcases, exhibitions, networking and/or outreach events held, and number of participants who attended
- Number of referrals for services or support given

#### **R&D & Commercialization Support**

Supporting new research initiatives and the commercialization of research is another category of activity that support economic development. Metrics in this bucket demonstrate what grantee organizations are doing to support their clients' research activities either by connecting them to university partners, or by supporting their research as it moves into commercialization and patenting.<sup>5</sup>

#### **Metrics in this Category:**

- Number of new joint research projects facilitated between clients/beneficiaries and university partners
- Number of clients/beneficiaries assisted with technology commercialization, licensing, patenting, or other regulatory/government approvals

#### **Financing Support**

Another critical set of activities conducted by grantee organizations is financing support. For organizations and clients to achieve long term success, they need to obtain consistent financing to grow and expand their efforts.

<sup>&</sup>lt;sup>3</sup> Building institutions that fuel innovation ecosystems is a recognized path to regional economic growth. See <a href="http://www.pnas.org/content/105/28/9455.short">http://www.pnas.org/content/105/28/9455.short</a>

<sup>&</sup>lt;sup>4</sup> Social capital enhances business performance, see <u>https://link.springer.com/article/10.1023/A:1008178808631</u>

<sup>&</sup>lt;sup>5</sup> R&D has a variety of key spillovers, see Audretsch and Feldman, 1996, "R&D Spillovers and the Geography of Innovation and Production." The American Economic Review, 86(3), 630-640

These metrics reflect the activities grantee organizations are doing to bring in new funding for their mission and their clients.<sup>6</sup>

#### **Metrics in this Category:**

- Number of clients assisted in obtaining angel/seed/venture capital/loan funding
  - o Total amount of funding obtained by clients (if known)
- Number of clients assisted with a grant, loan or award application
  - Total amount of funding obtained by clients (if known)
- Number of clients assisted in obtaining other types of funding
  - Total amount of funding obtained by clients (if known)
- Number of angel/seed/venture capital or loan funding competitions supported

## Mentoring, Coaching & Training

Mentoring, coaching, & training is an important category of metrics for assessing economic development activities, because these types of activities provide clients with the support for human capital related to innovation and business development. These activities help diffuse critical experience and knowledge that can improve regional capacity and assist clients and organizations in achieving their mission.<sup>7</sup>

#### **Metrics in this Category:**

- Number of training/skills assistance sessions held, and number of people who received assistance
  - This includes number of people who attended boot camps, accelerator programs, and/or startup mentoring and coaching programs
- Number of firms receiving business assistance
  - This includes market research or advice, marketing, sales, product development, supply chain, exporting, or other operational assistance

## Planning & Institutional Development

Finally, the last category of activities comprises actions taken by grantee organizations to improve institutional capabilities or pursue planning and research activities. These activities are often led by organizations who may not directly serve clients, but who seek to organize or develop strategies, studies, and plans that will help grow regional economics.

#### **Metrics in this Category:**

- Number of hours of relevant outside expertise or professional services obtained
- Number of hours spent developing strategic organizational funding plans
- Number of hours spent conducting grant-related research; producing plans, reports and/or tools; or on other coordination activities

# **Grantee: Capacity Outcomes Survey and Metrics**

## Summary of Logistics

• This survey will capture changes in capacity outcomes on a yearly basis. For grantee organizations that serve clients/beneficiaries, they will be required to distribute this survey to those people who have benefited from

http://www.sciencedirect.com/science/article/pii/0883902686900121

<sup>&</sup>lt;sup>6</sup> Finance plays a unique role in technological innovation and growth, see

<sup>&</sup>lt;sup>7</sup> See Bauer, P.W., Schweitzer, M.E., and Shane, S.A., 2012, "Knowledge Matters: The Long Run determinants of State Income Growth." Journal of Regional Science, 52: 240-255

their services over the year. For grantee organizations who do not serve clients/beneficiaries, they will report directly on the changes in their capacities.

- The survey will be distributed on a yearly basis, starting one year from the execution of the grant and continuing through the life of the grant, as well as five years after the close of the award. The exact timeline will be specified in the special terms and conditions of the grant.
- The survey will be distributed and responses collected through an online survey platform. EDA will distribute the link to grantee organizations, who will then forward it to their clients (if applicable).
  - Grantees are expected to maintain a record of who they served and what services they provided throughout the year. This record should also contain a valid email address for any and all clients/beneficiaries, for the purpose of distributing this survey.
  - When EDA distributes the survey link to grantee organizations, those organizations that have served clients must then distribute the survey link to their clients, along with an explanation of the survey and its importance.
    - Grantees should highlight to their clients that the survey will be anonymous: that is, EDA will be able to tell which grantee a client received services from, but EDA will not know any information about the client themselves.
  - If the grantee organization does not serve clients, then they should fill out the survey themselves and respond directly to EDA.

The following information describes each category of outcomes and defines the metrics belonging to the category.

### **Overview of Categories of Outcomes**

As with the program output metrics, the capacity outcome metrics being collected are derived from the EDA logic model developed by SRI, shown here.



# EDA Economic Development Program Logic Model

#### **SRI International**

Figure 3: EDA Program Logic Model

The capacity outcome metrics being collected belong to the categories in the second column from the right. These are groups of metrics that reflect short term, direct impacts that resulted from the activities and services provided as a result of the grant.

All grantees/clients, regardless of the types of activities performed, will be asked about improvements in the same five categories of outcomes. If an organization/client did not see an improvement in a category, they will indicate that and move on to the next category. For those categories in which respondents did see improvements, they will be prompted for more information to define and quantify those improvements.

# Product, Production Processes, & Business Capacities

The ability of organizations and businesses to operate effectively plays a large role in their long term success or failure. Enabling organizations to improve their products, productions processes, or business capacities allows them to increase efficiency, reduce costs, and invest savings in new ideas or methods. Metrics in this category reflect these improvements and shine light on how investments by EDA can support the development of products and processes by their grantees and clients.<sup>8</sup>

#### **Metrics in this Category:**

- Number of days spent working on designs for new or improved products, processes, or services: All time spent working on designs or plans for new/improved products, processes or services should be reported, regardless of whether the design was completed and/or implemented.
- Number and amount of cost reductions, operational efficiencies, and/or quality improvements made, and subsequent cost savings: Examples of the types of cost reductions and efficiencies to be recorded under this metric are things such as: Lower cost inputs, process optimization, product re-design.
- Number of environmental and/or energy efficiency improvements made: This metric includes improvements such as adopting smart controls for production processes or facilities, improving heat retention, and switching to a renewable energy source.

## Markets & Business Networks

The growth of an organization is inherently dependent on its access to new customers, markets, and networks. Improving this access will give organizations more opportunities to fulfill their missions and grow their impact. The metrics in this category reflect improvements made in accessing new customers and developing new business contacts and networks (see footnote 4 above).

#### Metrics in this category:

- Number of new customers: New customers who buy or agree to buy goods and/or services, or who agree to license Intellectual Property based on data collected through a Contact Management System. For a customer to be considered new, they must not have previously been listed in the contact management system.
- Number of new professional/business relationships formed and recorded (based on data collected through a Contact Management System): These include potential suppliers, partners, stakeholders, and other new relationships that can provide professional support and resources.
- Develop new sales, marketing, or branding strategies (binary metric, Yes/No): This is a binary metric, and should capture whether an organization developed new sales, marketing, or branding strategies as a result of the grant. For a strategy to constitute a "new" strategy, it must represent a formal change or new direction from existing strategies and materials.
- Develop new export strategies (binary metric, Yes/No): This is a binary metric, and should capture whether an organization developed new export strategies as a result of the grant. For a strategy to constitute a "new" strategy, it must represent a formal change or new direction from existing strategies.

<sup>&</sup>lt;sup>8</sup> Firms and sectors characterized by innovation and new products grow faster. See <a href="http://www.sciencedirect.com/science/article/pii/0167718795004998">http://www.sciencedirect.com/science/article/pii/0167718795004998</a>

# Innovation, Technology Transfer, & Commercialization

Innovation lies at the heart of EDA's mission, and this category of metrics reflects the impact EDA grants have on innovation, transfers of technologies, and commercialization of technologies. These metrics are important to understanding what effect organizations and their activities can have on improving innovative capacity of regions and on the ability to take good ideas and translate them into successful products (see footnote 5 above).

#### **Metrics in this Category:**

- Increase in Technology Readiness Level of a product or products: Technology Readiness Levels (TRL) are a method to assess the improvement of a technology, from basic research to scale and operation. While there are multiple sets of definitions for the different levels, SRI recommends that EDA and grantees use the definitions contained in Appendix B of this report. These definitions are modified versions of the definitions used by the U.S. Department of Defense, which have been simplified and adapted for a broader, commercial setting. When reporting, respondents should first indicate whether or not they increased the TRL of a product, and then report the number of levels increased if applicable (i.e. if a product moved from TRL 4 to TRL 6, the response should be an increase of 2 readiness levels).
- Number of new technologies that were licensed or commercialized: Respondents should indicate the number of technologies that they licensed or commercialized over the past year, due to the services/ assistance that was provided by the grant. If a respondent has started the process of licensing or commercializing a technology, they should respond as if that technology has been licensed/commercialized.
- Number of patents or trademarks that were obtained: Respondents should indicate the number of patents or trademarks they obtained during the previous year, due to support from the grant. If respondents have submitted an application for a patent/trademark but has not yet received approval, they should include that in their response.
- Number of government approvals obtained: Respondents should indicate how many other government approvals (FDA, etc.) they obtained in the previous year, due to support from the grant. If respondents have submitted an application for an approval but have not yet received it, they should include that in their response.

#### Financing & Investment

Inevitably, funding drives much of the discussion around what an organization is able to achieve. Measuring the impacts of EDA grants on grantees' and clients' abilities to gain additional funding is a strong indicator of grant success. This category of metrics asks respondents to report on the types and amounts of financing and investment deals they obtained as a result of the grant and its provided services (see footnote 6 above).

#### Metrics in this Category:

- Count and amount of seed/angel/venture capital deals executed: Respondents should report on the total amount of funding obtained through seed, angel, and venture capital deals that were aided by the grant or services received through the grant.
- **Count and amount of loans obtained:** Respondents should indicate the total amount of loans obtained, regardless of source.
- Count and amount of government funding (grants, contracts, SBIR, STTR, etc.) awarded: Respondents should indicate the total amount of non-loan funding they received from government sources, to include grants, contracts, SBIR, and STTR awards. (Loans from federal sources should be reported under the previous metric). They should report the number of such funding agreements, as well as the total amount of funds received.

# Human Capital & Workforce

A strong workforce is critical to every organization. Growing and strengthening the skills and talents available to an organization is an important outcome to track and measure. These metrics capture how EDA grants can improve the human capital and workforce available in regions, which are important to the region's long term economic success.<sup>9</sup>

#### **Metrics in this Category:**

- Number of hours that employees/trainees spent on skill development: Respondents should indicate the total number of hours that employees/trainees spent gaining new skills through a formal learning process. Skills must be relevant to the organization's work and should improve the capacity/capability of the organization. For example, time employees spent training on a new piece of equipment or training to implement a new production process would be reported by the total number of hours spent on training (i.e. number of employees trained multiplied by the number of hours each employee trained).
- Number of hours that employees spent on entrepreneurship/leadership programs: Programs should be supported/led by reputable organizations, and should be formally structured with established curricula/activities. Respondents should indicate the total number of hours spent by all employees on such programs.
- Number of employees who completed technology or cluster-relevant degrees or certificates: Respondents should report the total number of employees who successfully completed formal degree or certificate programs.
- Number of new employees hired: Respondents should indicate the number of new employees they hired over the past year. Full-time, part-time, and 12-month contract employees should be reported, but other temporary hires should not.

# **Organizational Capacity**

An organization's capacity, particularly as it relates to the ability to plan for future activities, is critical to economic development. Capable organizations with the ability to mobilize resources in support of strategies for growth, both within their organization as well as within their regional economy, can effectively engage partners and grow regional ecosystems. These metrics capture both the ability of an organization to plan and find funding for future economic development initiatives, as well as the ability (and willingness) of organizations to collaborate with peer entities to achieve economic development outcomes.<sup>10</sup>

#### **Metrics in this Category:**

- Create or update a Comprehensive Economic Development Strategy (or the equivalent) (binary metric, Yes/No): Respondents should indicate whether they created or updated a Comprehensive Economic Development Strategy (CEDS), as defined and outlined by EDA,<sup>11</sup> or a similar document, within the year.
- Collaborate or coordinate with another entity in order to develop an economic development plan (binary metric, Yes/No): Respondents should indicate whether they collaborated or coordinated with another peer entity on a particular economic development program. Collaboration/coordination should have a regular and semi-formal character, and should have resulted in substantial progress towards a plan.
- Complete an economic or community development grant application from a non-federal source (binary metric, Yes/No): Respondents should indicate whether they completed and submitted an application for

 <sup>&</sup>lt;sup>9</sup> Lever, William, 2002 "Correlating the knowledge-base of cities with economic growth." Urban Studies 39.5-6: 859-870
 <sup>10</sup> Feldman, et. al. (2014). "Economic Development: A definition and model for investment."

https://www.eda.gov/files/tools/research-reports/investment-definition-model.pdf

<sup>&</sup>lt;sup>11</sup> For more information on CEDS, see https://www.eda.gov/ceds/

grant funding for economic or community development initiatives from a non-federal source. Initiatives must relate to economic development aims and be aligned with the mission of the organization.

• Create or finish a project, plan, report, or tool (excluding CEDS) (binary metric, Yes/No): Respondents should indicate whether they created or finalized other research projects, plans, reports or tools that are intended to be used internally for strategy and planning purposes. This should not include stand-alone research papers, but rather projects and deliverables that can be applied to achieve organizational aims.

# **EDA: Logistics**

This section outlines the logistics behind the survey process. EDA staff should refer to this section to implement data collection and adhere to best practices where possible.

## **Best Practices**

Distributing surveys, tracking respondents, and managing data collected is no small feat. SRI has developed substantial expertise in conducting surveys through the course of past projects, and has identified several best practices to consider in order to obtain the best information possible through the surveys.

- Setting expectations early: It is critical that grantees understand from the very beginning of their grant what is expected of them in terms of collecting and reporting data. Not only does this enable them to prepare appropriate protocols and processes to support data collection during their activities, but it also instills a mindset geared toward data reporting and evaluation. EDA should have a conversation with every grantee discussing the reporting requirements associated with their grant, and should make sure that the special terms and conditions of every award clearly spell out expectations for collecting data.
- Using simple instruments: Minimizing reporting burden on both grantees and their clients is an important consideration, and that begins with employing simple survey instruments. They should be clear, easy to respond to, and minimally time-invasive, to facilitate an easy reporting process. Adhering to this practice, SRI has developed a set of simple survey instruments EDA can leverage throughout this process and has provided those in the appendix of this toolkit.
- **Providing sufficient support:** Although every effort has been made to make the data reporting process as clear and understandable as possible, respondents will undoubtedly have questions as they move through the process. It is critical that EDA provides easily accessible support to survey respondents to assist them with reporting and clarify any questions. EDA should have staff either internal or externally hired available to answer phones and quickly respond to email inquiries in order to minimize reporting challenges and improve response rates.

## Program Outputs Survey

The Program Outputs survey will help EDA assess what grantees accomplish with grant funding, compared to what they asserted they would accomplish in their proposals.

*Timing:* EDA should administer the survey on a quarterly basis. Responses should be due on the same date that grantee's quarterly reports are due, which means that EDA should send out survey links to grantees one month earlier. A reminder email should be sent one week prior to the submission due date.

**Data considerations:** Grantee organizations are urged to track these output measures using a Customer Relationship Management system or other database, to ensure accurate reporting. However, EDA should be aware that not all organizations will do so, and therefore reported data may lack some accuracy.

*Selecting appropriate activity categories:* Prior to formally awarding the grant, EDA should work with the grantee organization to determine what activity category or categories are central to the work the grant is supporting. EDA, based on its assessment of the grant proposal, should determine which activity categories it thinks are most relevant and propose those categories to the grantee as the required reporting metrics. If the grantee has a different

assessment of their primary activity and believes other categories are more appropriate, EDA should consider their feedback before finalizing the selection of required metrics.

## **Capacity Outcomes Survey**

The Capacity Outcomes survey will help quantify the improvements in client and regional capacity as a result of the grants provided by EDA.

**Timing:** The capacity outcomes survey should be administered on a yearly basis, starting one year after the disbursement of the award. The survey should be administered through the life of the award, as well as for five years after the termination of the grant. Extending the survey past the life of the grant will help capture longer term effects of the grant funding and will enable EDA to better understand the full impact of their grant programs. When administering the survey each year, EDA should distribute the survey links one month prior to the reporting deadline to provide grantees and clients with sufficient time for reporting.

*Client-serving versus non-client serving organizations:* Since the survey is intended to measure any increase in capacity due to the grant funding by EDA, it is important that it is distributed to the appropriate entity for reporting. In situations where the grantee organization serves clients or beneficiaries, the survey should be distributed to those individuals who received services. When grantees do not serve clients but rather used the grant to increase their own capacity, they should respond directly to the survey themselves.

*Survey distribution to clients:* Grantees that serve clients should track who they served and what services they provided over the course of the year. In doing so, they should collect and maintain contact information for those individuals they served, specifically a valid email address, for the purposes of distributing the capacity outcomes survey.

**Data considerations:** The capacity outcomes survey is structured to capture several levels of detail on how capacities are improved. Every respondent will be asked whether their capacities in 5 different categories improved. This will provide the broadest level of data for EDA, as it will reflect the general types of impacts grants have without providing more detail about what those impacts are.

For each category in which a respondent indicated they saw an improvement, the survey will prompt them for more information on that improvement, both by asking for details on the form in which the improvement came and, where possible, asking the respondent to quantify the improvement. This will provide more granular data for EDA on the impact their grants are having.

However, it is important to note that not all respondents may be able or willing to provide answers at the most granular level. They may not have tracked the impacts closely enough to provide reliable data, or they may just not have interest in providing greater detail. Best practices in survey administration (as outlined above) can help encourage greater response rates, and as EDA goes through several iterations of the data collection process they should take note of any particular strategies that work well in encouraging more detailed capacity responses.

# **EDA: Third Party Metrics**

Alongside the directly collected program data generated using the reporting protocols outlined above, EDA will maintain a complete set of third party (indirectly collected) indicators. These indicators will measure (more or less closely) the economic development capacity categories presented in the EDA logic model. These are indicators at the heart of the EDA logic model (see figure 4 below). These data validate the connection between the capacities developed by EDA programs (captured through direct collection) and long-term outcomes, such as employment, income and growth, that are only measured indirectly at aggregate levels.



#### **EDA Economic Development Program Logic Model**

#### Figure 4: EDA Program Logic Model

By collecting and analyzing these data alongside the directly collected data discussed above, EDA will ensure that it is always able to substantiate with up-to date information the relationship between capacity and long-term outcomes over time. EDA may, as new data sources present themselves, and as new approaches are refined, add to the elements described below. In this way EDA will build an increasingly compelling case, over time, for both the shortrun effectiveness of individual programs, and the importance of their long term impact.

The data sets proposed for use by EDA are those used in the econometric study that constitutes a separate part of this project. The data are organized by metro, with the model set up to measure different levels of economic development capacity by metro, and correlate those differences (or not) with different levels of long-term economic performance by metro. Eight series measuring economic development capacity were identified and are described below.

It is hoped that over time better (more complete, closer proxies) will be added to this list by EDA staff or other experts. In particular, we note that three of the series below have been purchased. While SRI will provide EDA with the purchased data series, and those data will enable EDA to begin implementing this method of evaluation and will suffice for analyses in the near future, in the long term new sources of freely available data should be identified. As such, deliberate efforts should be made to align some part of the work of the Commerce Department and other Federal agencies that collect and organize economic and social data with the need to measure these pieces of economic development capacity. EDA and practitioners will benefit from freely available data series that measure the complete waterfront of economic development capacities.

# Indirect Indicators of Economic Development Capacity

#### **Product, Production Processes & Business Capacities**

• New product introductions, per capita, by metro (ThomasNet). Data on new industrial B2B product announcements. Direct measure of product improvement.

#### Markets & Business Networks:

• Number of membership associations and organizations, per capita, by metro (Bureau of Labor Statistics, Quarterly Census of Employment and Wages). Data that serves as a proxy measure of the density of social capital.

#### Innovation, Technology Transfer & Commercialization:

• Patents granted, per capita, by metro. (U.S. Patent and Trademark office). Proxy, lagged measure of innovation.

#### **Financing & Investment:**

- Venture/angel/seed capital data on financing events of all kinds, per capita, by metro (Pitchbook). Proxy measure of innovation and start-up activity.
- SBIR/STTR awards, per capita, by metro (U.S. Small Business Administration). Technology development awards that serve as a proxy measure of innovation.

#### Human Capital & Workforce:

- Establishment birth/death rates. Net increase in establishments, per capita, by metro (U.S. Census, Statistics of U.S. Business). Proxy measure for innovation and entrepreneurship.
- Non-employer firm data, number of establishments and sales, per capita, by metro. (U.S. Census, Statistics of U.S. Business). Proxy measure of entrepreneurship.

#### **Organizational Capacity:**

• Number of nonprofit community development and economic development organizations, per capita, by metro (GuideStar USA, Inc.). Direct measure of economic and community development capacity.

## Data Collection, Management & Analysis

EDA will require a relatively low-cost, web-based capability to acquire, aggregate and analyze the directly collected data reported by grantees and clients/beneficiaries. This capability will be akin to the capability already in place to collect data reported to EDA by the Trade Adjustment Assistance for Firms (TAAF) centers.<sup>12</sup> Reporting and aggregating can be achieved using a simple, web-based platform (for example, Lime Survey or Survey Monkey). This kind of platform will provide a clean, easy-to use interface for data collection, and will allow EDA and others to easily download the data to review and analyze. The data would only have to be exported into another application in the event that much more sophisticated data analysis was required. Complex data analysis (regression analysis, etc.) will be necessary on an occasional basis, but not required for real-time program assessment.

Data from grantees capturing activities (and, where appropriate, outcomes) should be reported quarterly. Grantees have the capacity to submit data reports with this frequency, since they are already expected to submit financial reports at this time.

<sup>&</sup>lt;sup>12</sup> Another model for accomplishing the tasks that would otherwise fall to EDA staff is to call for and designate a "field office", a grantee tasked with supporting and reporting on the activities of other grantees and their clients and beneficiaries. This is an approach adopted by the Industrial Assessment centers program at the Department of Energy. The activities and requirements outlined above would be the same no matter which approach is adopted.

Data from beneficiaries/clients should be submitted once or every twelve months (where projects last longer than a year). This should not be burdensome, but it will be necessary for grantees to set expectations with clients/beneficiaries, so that they continuously collect data during the period of the project. In this way, the final report will be relatively simple and accurate.

Third party data from the sources indicated above are maintained at different units of measurement: some measure data at the county level, others at the zip-code level, and yet others at the MSA level. In SRI's econometric analysis of EDA grants using these data sources, we manipulated each source so it reflected data based on 2013 MSA definitions.<sup>13</sup> EDA will need to evaluate the data sources collected and, based on the type of reporting they wish to conduct, manipulate the data as necessary to reflect the appropriate region/unit of measurement.

How EDA uses these data will depend on its own reporting needs. However, one clear benefit will be the ability to observe whether grantees are actually executing on their projects on a quarterly basis, and have the information necessary to recommend improvement or adjustment if necessary.

# Conclusion

This toolkit lays the foundation to empower EDA and other grant-making organizations to better assess the impact of their work. This type of program evaluation is complex, and requires commitment and participation from all stakeholders: grant-making organizations, grantees, and the clients they serve. It is also an exercise that requires patience, both in implementing the data collection practices and in seeing improvement in the data collected. This should not be viewed as a short-term project; rather, EDA and similar organizations must commit to implementing and improving the data collection process outlined in this toolkit over the next 5-10 years. As grantees implement data recording practices, it will be important to identify organizations that have remarkable success in collecting and reporting data and to disseminate associated best practices to other grantees, in order to improve data collection across the board.

Similarly, the types of projects economic development grants are supporting do not generate instant impact and it will likely take years to notice any improvements in the data. This should not be taken as a sign of ineffectiveness in grantees and their activities, but rather as a reflection of the scale and importance of the type of impact being pursued. Grant-makers should remain patient as they collect and assess data, and should maintain a long-term perspective on grantees and the work they conduct.

Nevertheless, this toolkit will facilitate EDA and other grant-making entities in taking an important step to improving upon their grantmaking activities. The data collected using this toolkit will provide grantmakers with much greater insight into the type of work they are supporting, and the success of that work. It will provide guidance and support to improve decision-making regarding future grantees, and will help organizations be as effective as possible in helping their grantees achieve their economic development goals.

<sup>&</sup>lt;sup>13</sup> Note that MSA definitions change over time. For historical data, SRI collected data at the Zip-Code or County level, and then rolled up those data into groupings that reflect the most recent MSA definitions from Census.

# Appendices

# **Appendix A: Survey Protocols**

SRI has developed the following survey protocols as tools for EDA's data collection from its grantees and clients. As described above, there are two survey protocols: one for capturing program activity output data, and one for capturing capacity outcomes data. Additionally, there are two versions of the capacity outcomes survey: one for organizations that serve clients/beneficiaries, and one for organizations that do not.

It is expected that these protocols will be administered via an online survey portal (such as Lime Survey), and as such will have expandable fields and question response options. Therefore, the surveys as they are presented here do not wholly reflect how they will be administered to grantees and clients, but instead reflect the language and wording that will be used to generate survey response data.

# Survey 1: Program Output Survey

**Approach:** Metrics are categorized by program activity. As EDA makes grants to organizations, they will determine which program activity (or activities, if the organization will conduct activities that cut across groups) is primary to the grant, and will request that the organization tracks the metrics belonging to that activity group. All grantees will receive the same survey, but will only be required to report on the metrics previously agreed to with EDA.

*Timing:* Grantees will be required to report on these output metrics on a quarterly basis, in-line with their quarterly reports to EDA.

Format: Grantees will provide their data via a survey instrument accessed through an online system.

#### **Facilities & Equipment**

Did this grant support the acquisition of facilities and/or equipment?

Yes No

If no, please proceed to the next group.

If yes, please answer the following questions:

- 1) How much new space (sq. ft.) was developed/purchased/leased as a result of the grant in support of your organization's mission?
- 2) What was the total value (\$USD) of new equipment that was purchased/leased as a result of this grant in support of your organization's mission?

#### **Events, Networking & Referrals**

Did this grant support events, networking, and referrals activity?

Yes No

If no, proceed to the next group.

If yes, please answer the following questions:

- 1) How many conferences, showcases, exhibitions, networking or outreach events did your organization host over the past quarter?
  - a. How many participants attended these events, in total?
- 2) How many times did you refer a client to a technical expert, business contact, investor, etc. for required services and/or support, over the past quarter?

#### **R&D & Commercialization Support**

Did this grant support R&D and commercialization support activities?

Yes

If no, please proceed to the next group.

If yes, please answer the following questions:

No

- 1) How many new joint research projects between your clients/beneficiaries and university partners did you facilitate over the past quarter?
- 2) How many clients/beneficiaries did you assist with technology commercialization, licensing, patenting, or other regulatory/government approval over the past quarter?

#### **Financing Support**

Did this grant support financing activities?

Yes No

If no, please proceed to the next group.

If yes, please answer the following questions:

- 1) How many clients did you assist in obtaining angel/seed/venture capital/loan funding over the past quarter?
  - a. Number of clients assisted with obtaining angel funding
    - i. Total amount of angel funding obtained by clients (if applicable)
  - b. Number of clients assisted with obtaining seed funding
    - i. Total amount of seed funding obtained by clients (if applicable)
  - c. Number of clients assisted with obtaining venture capital funding
    - i. Total amount of venture capital funding obtained by clients (if applicable)
  - d. Number of clients assisted with obtaining loan funding
    - i. Total amount of loan funding obtained by clients (if applicable)
- 2) How many clients did you assist with a grant proposal and loan or award application over the past quarter?
  - a. Number of grant proposals assisted
  - b. Number of loan or award applications assisted
  - c. How much total funding did those clients ultimately obtain? (if known)
- 3) How many clients did you assist with obtaining other types of funding over the past quarter? (e.g. contract, etc.)
  - a. How much total funding did those clients ultimately obtain? (if known)
- 4) How many angel/seed/venture capital or loan funding competitions did you support over the past quarter?

#### **Mentoring, Coaching & Training**

Did this grant support mentoring, coaching, and training activities?

Yes No

If no, please proceed to the next group.

If yes, please answer the following questions:

- How many training or skill assistance sessions did your organizations hold over the past quarter?
   a. How many people received such training or skill assistance, in total?
- 2) How many firms received business assistance from your organization over the past quarter?

#### **Planning & Institutional Development**

Did this grant support planning and institutional development activities?

Yes

If no, this is the end of the survey.

If yes, please answer the following questions:

No

- 1) How many hours of outside expertise or professional services, relevant either to your organization's work or your clients' work, did you obtain as a result of support from this grant, over the past quarter?
- 2) How many hours did your organization spend researching funding resources and developing a funding plan over the past quarter?
- 3) How many hours did your organization spend on conducting grant-related research, producing plans, reports or tools, and/or on other coordination activities over the past quarter?

#### Survey 2: Capacity Outcomes Survey

**Approach:** This survey is intended to collect information on the impacts of program outputs on select organizational capacities. There are two paths of the survey: one is intended for the clients/beneficiaries of grantees, for those grantees who have served clients, and the other is intended for grantees who do not serve clients. The survey will be distributed to all grantees, who will then either forward the survey to their clients, if they have any, or complete the survey themselves if they do not have clients.

All grantees/clients will receive the same survey, but will provide answers dependent upon what outcomes they have achieved.

*Timing:* Survey is to be filled out annually, starting one year after grant is executed.

Method: Grantees/clients will provide data via a survey distributed to them by EDA Staff.

#### About your organization

Please indicate below whether you are the direct recipient of a grant from EDA, or if you are a client who has received services from an organization that is supported by an EDA grant.

🗆 EDA Grantee

🗆 Client

Please answer the following questions. If you are a grantee of EDA, respond to the questions in regard to the grant funding you received from EDA. If you are a client who has received services from an organization that is supported by an EDA grant, respond to the questions in regards to those services you received.

Were jobs created or retained as a result of this grant/services? (Yes/No)

- a. If yes, how many jobs were created?
- b. If yes, how many jobs were retained?

Was private investment leveraged as a result of this grant/services? (Yes/No)

a. If yes, how much private investment was leveraged?

If applicable, did you increase sales as a result of this grant? (Yes/No/ N/a)

a. If yes, what was your increase in sales?

## Path 1: Clients

#### About your organization

Please provide the name of the grantee organization who sent you this survey link:

Please provide a brief description of the services you received from this grantee organization.

#### **Product, Production Processes & Business Capacities**

Were the services you received from [grantee x] intended to improve your products, production processes and/or your business capacities? This includes things such as new or improved designs for products, processes or services; cost reductions or operational efficiencies; and environmental or energy efficiency improvements. No

#### Yes

If no, please proceed to the next group.

If yes, please answer the following:

- a. Please rate the improvement of your product, production processes and/or your business capacities on a scale from 1 to 5, where 1 is no improvement and 5 is substantial improvement. 1 2 3 Δ 5
- b. Please respond to the following about your improvements:
  - a. How many days did you spend working on new or improved designs for products/processes/services as a result of the services as a result of the services you received from [grantee x]?
  - b. How many cost reductions, operational efficiencies, and/or quality improvements were made as a result of the services you received from [grantee x]?
    - i. What were the total cost savings (\$USD) from these improvements?
  - c. How many environmental and/or energy efficiency improvements were made as a result of the services you received from [grantee x]?

#### Markets & Business Networks

Were the services you received from [grantee x] intended to improve your access to new markets and business networks? This includes things such as new customers gained; new relationships formed; and new strategies developed.

> Yes No

If no, please proceed to the next group.

1

If yes, please answer the following:

a. Please rate the improvement of your access to markets and business networks, where 1 is no improvement and 5 is substantial improvement.

> 2 3 4

- b. Please respond to the following about your improvements:
  - a. How many new customers were gained as a result of the services you received from [grantee x]?

5

- b. How many new professional/business relationships were formed as a result of the services you received from [grantee x]?
- c. Were any new sales, marketing, or branding strategies or materials developed as a result of the services you received from [grantee x]? (Yes/No)
- d. Were any new export strategies developed as a result of the services you received from [grantee x]? (Yes/No)

#### Innovation, Technology Transfer & Commercialization

Yes

1

Were the services you received from [grantee X] intended improve your innovation, technology transfer, or commercialization capacities? This includes things such as improving the Technology Readiness Level of a product; licensing new technologies; and/or obtaining patents or other government approvals.

No

If no, please proceed to the next group.

If yes, please answer the following:

a. Please rate the improvement of your capacity for innovation, technology transfer, or commercialization on a scale of 1 to 5, where 1 is no improvement and 5 is substantial improvement.

2 3 4 5

- b. Please respond to the following about your capacity for innovation, technology transfer, or commercialization:
  - a. Did you increase the Technology Readiness Level (TRL) of a product or products as a result of the services you received from [grantee x]? (Yes/No)

Technology Readiness Levels (TRL) are a method to assess the improvement of a technology, from basic research to scale and operation.

i. If Yes, by how many levels did the product increase?

- b. How many new technologies were licensed or brought to market as a result of the services you received from [grantee x]?
- c. How many patents or trademarks were obtained as a result of the services you received from [grantee x]?
- d. How many FDA or other government approvals were obtained as a result of the services you received from [grantee x]?

#### **Financing & Investment**

Were the services you received from [grantee x] intended to improve your access to financing & investment? This includes things such as angel/venture deals and loans or government funding.

If no, please proceed to the next group.

If yes, please answer the following:

a. Please rate the improvement of your access to financing & investment on a scale from 1 to 5, where 1 is no improvement and 5 is substantial improvement.

2 3 4

No

b. Please indicate below what type(s) of financing and investment deals you obtained as a result of these services. Use the radio button to indicate whether you obtained a specific type of funding, and use the space provided to the right to indicate the number of such funding deals you obtained, and how much total funding (in dollars) was received from each source. Only provide dollar information when you have received funding from that source.

5

- a. Seed/angel/venture capital deals?
- b. Loans obtained?

Yes

1

c. Government funding (grants, contracts, SBIR, STTR)?

#### Human Capital & Workforce

Were the services you received from [grantee x] intended to improve your human capital and/or workforce? This includes things such as employees receiving training or skill development; employees obtaining degrees or certificates; or new employees hired.

If no, please proceed to the next group.

If yes, please answer the following:

a. Please rate the improvement of your human capital and/or workforce on a scale from 1 to 5, where 1 is no improvement and 5 is substantial improvement.

- b. Please respond to the following about your improvements:
  - a. How many total hours did employees/trainees spend on skill development as a result of the services you received from [grantee x]?
  - b. How many total hours did employees/trainees spend on entrepreneurship/leadership programs as a result of the services you received from [grantee x]?
  - c. How many employees completed technology or cluster-relevant degrees or certificates as a result of the services you received from [grantee x]?
  - d. How many new employees (full-time, part-time, and/or 12-month contract employees) did you hire as a result of the services you received from [grantee x]?

#### **Organizational Capacity**

Were the services you received from [grantee x] intended to improve your organizational capacity? This includes things such as developing Comprehensive Economic Development Strategies and collaborating with other entities on economic development planning and strategy.

#### Yes

If no, this is the end of the survey.

If yes, please answer the following:

- a. Please rate the improvement of your organizational capacity on a scale from 1 to 5, where 1 is no improvement and 5 is substantial improvement.
  - 1 2 3 4

No

- b. Please respond to the following about your improvements:
  - a. Did you complete or update a Comprehensive Economic Development Strategy within the past year? (Yes/No)

5

- b. Did you collaborate or coordinate with another entity on economic development strategy and planning within the past year? (Yes/No)
- c. Did you complete an economic development or community development grant application from a non-federal source within the past year? (Yes/No)
- d. Did you create or finish a project, plan, report, or tool (excluding CEDS) that was developed to guide organizational strategy and planning? (Yes/No)

#### Path 2: Grantees with no clients

#### **Product, Production Processes & Business Capacities**

Was this grant intended to improve your products, production processes and/or business capacities? This includes things such as new or improved designs for products, processes or services; cost reductions or operational efficiencies; and environmental or energy efficiency improvements.

#### Yes

If no, please proceed to the next group.

If yes, please answer the following:

- a. Please rate the improvement of your product and production processes and/or your business capacities on a scale from 1 to 5, where 1 is no improvement and 5 is substantial improvement.

   1
   2
   3
   4
   5
- b. Please respond to the following about your improvements:

No

a. How many days did you spend working on new or improved designs for products, processes/services as a result of the grant?

- b. How many cost reductions, operational efficiencies, and/or quality improvements were made as a result of the grant?
  - i. What were the total cost savings (\$USD) from these improvements?
- c. How many environmental and/or energy efficiency improvements were made as a result of the grant?

#### **Markets & Business Networks**

Was this grant intended to improve your access to new markets and business networks? This includes things such as new customers gained; new relationships formed; and new strategies developed.

Yes No

If no, please proceed to the next group.

If yes, please answer the following:

a. Please rate the improvement of your access to markets and business networks, where 1 is no improvement and 5 is substantial improvement.

1 2 3 4 5

- b. Please respond to the following about your improvements:
  - a. How many new customers were gained as a result of the grant?
  - b. How many new professional/business relationships were formed as a result of the grant?
  - c. Were any new sales, marketing, or branding strategies or materials developed as a result of the grant? (Yes/No)
  - d. Were any new export strategies developed as a result of the grant? (Yes/No)

#### **Innovation, Technology Transfer & Commercialization**

Was this grant intended to improve your innovation, technology transfer, or commercialization capacities? This includes things such as improving the Technology Readiness Level of a product; licensing new technologies; and/or obtaining patents or other government approvals.

Yes

If no, please proceed to the next group.

If yes, please answer the following:

a. Please rate the improvement of your capacity for innovation, technology transfer, or commercialization on a scale of 1 to 5, where 1 is no improvement and 5 is substantial improvement.

1 2 3 4 5

No

- b. Please respond to the following about your capacity for innovation, technology transfer, or commercialization:
  - a. Did you increase the Technology Readiness Level (TRL) of a product or products as a result of the grant? (Yes/No)

Technology Readiness Levels (TRL) are a method to assess the improvement of a technology, from basic research to scale and operation.

i. Yes, by how many levels did the product increase?

- b. How many new technologies were licensed or brought to market as a result of the grant?
- c. How many patents or trademarks were obtained as a result of the grant?
- d. How many FDA or other government approvals were obtained as a result of the grant?

#### **Financing & Investment**

Was this grant intended to improve your access to financing & investment? This includes things such as angel/venture deals and loans or government funding.

Yes No

If no, please proceed to the next group.

If yes, please answer the following:

a. Please rate the improvement of your access to financing & investment on a scale from 1 to 5, where 1 is no improvement and 5 is substantial improvement.

2 3 4 5

- b. Please indicate below what types of financing and investment deals you obtained as a result of the grant. Use the radio button to indicate whether you obtained a specific type of funding, and use the spaced provided to the right to indicate the number of such funding deals you obtained, and how much total funding (in dollars) was received from each source. Only provide dollar information when you have received funding from that source.
  - a. Seed/angel/venture capital deals?
  - b. Loans obtained?

1

c. Government funding (grants, contracts, SBIR, STTR)?

#### Human Capital & Workforce

Was this grant intended to improve your human capital and/or workforce capacities? This includes things such as employees receiving training or skill development; employees obtaining degrees or certificates; or new employees hired.

Yes No

If no, please proceed to the next group.

If yes, please answer the following:

- a. Please rate the improvement of your human capital and/or workforce on a scale from 1 to 5, where 1 is no improvement and 5 is substantial improvement.
- 1 2 3 4 5
- b. Please respond to the following about your improvements:
  - a. How many total hours did employees/trainees spend on skill development as a result of the grant?
  - b. How many total hours did employees/trainees spend on entrepreneurship/leadership programs as a result of the grant?
  - c. How many employees completed technology or cluster-relevant degrees or certificates as a result of the grant?
  - d. How many new employees (full-time, part-time, and/or 12-month contract employees) did you hire as a result of the grant?

#### **Organizational Capacity**

Was this grant intended to improve your organizational capacity? This includes things such as developing Comprehensive Economic Development Strategies and collaborating with other entities on economic development planning and strategy.

No

If no, this is the end of the survey.

If yes, please answer the following:

- a. Please rate the improvement of your organizational capacity on a scale from 1 to 5, where 1 is no improvement and 5 is substantial improvement.
- 1 2 3 4 5

Yes

- b. Please respond to the following about your improvements:
  - a. Did you complete or update a Comprehensive Economic Development Strategy within the past year? (Yes/No)

- b. Did you collaborate or coordinate with another entity on economic development strategy and planning within the past year? (Yes/No)
- c. Did you complete an economic development or community development grant application from a non-federal source within the past year? (Yes/No)
- d. Did you create or finish a project, plan, report, or tool (excluding CEDS)?

# Appendix B: Using Technology Readiness Levels (TRLs)

Technology Readiness Levels (TRLs) is a nine-point scale used to measure the progress of a particular technology from basic science to operational application (whether in a commercial, military, or science setting). For the purposes of EDA non-infrastructure programs, TRLs can be applied in a very straightforward manner to improve program implementation and assessment. What follows is a simple, descriptive and accessible protocol for the use of TRLs by program staff, grantees, and other economic development professionals.

## Purpose

Many EDA non-infrastructure programs target innovation and technology-based development. This involves supporting start-ups and small businesses as they develop new products and processes, which often requires the development of new technologies that increase productivity or product quality. As a result, businesses grow and create good jobs with good wages.

In order to track and assess these kinds of programs, it is critical that program staff and grantees share a common frame of reference when describing the attributes of a particular technology, the goals for developing technologies, and agreed measures of success. TRLs provide a well-established framework for doing all of these things.

Developed originally by NASA, to judge the readiness and riskiness of technologies for use in its missions, the TRL framework is now widely applied by the U.S. Department of Defense, the United Kingdom, Japan, and the European Union among many others. Essentially, TRLs are a set of descriptions of the different stages any technology passes through on its way from basic science findings to operational application. Program staff, grantees, and others can use these descriptions to make Technology Readiness Assessments (TRAs) – in other words, to judge where a technology is to be found on the scale and what would be required to move it to the next level.

## Application

It would be a mistake to attach too much precision to TRLs as a tool for program implementation and assessment. Determining where a technology falls on the scale is a descriptive exercise, based on experienced judgment. There is inevitably some element of subjectivity involved. Precision is also impractical, from the point of view of EDA programs, because these programs embrace many different kinds of technologies.

TRLs must be used in a way that is broad and inclusive if they are to be helpful in the context of EDA's work. Used wisely, TRLs offer an effective framework that allows the technology---related activities of different grantees and programs to be compared in a systematic way.

## **Defining and Measuring TRLs**

The table below summarizes nine technology readiness levels and can be applied in the context of EDA programs. This table is a simplified version of the table used by the U.S. Department of Defense, adapted to a broader, commercial setting. The stages between basic science and commercial application (TRLs 3-7) are the critical stages for technology development. In these stages the risks are high, even as the costs and challenges significantly increase. Many technologies fail to cross these stages (the stages coincide with the so-called "valley of death" for business start-ups).

Most EDA non-infrastructure program activities are often focused on this area of technology development. However, the precise stage where a grantee proposes to intervene in the development of technology cannot be determined ex ante in the design of the program.

EDA grantees typically work within a specific area of technology, or a particular industry cluster, as defined in their initial grant applications. The clients they work with will come from the targeted area or sector, but will be at different levels of readiness (probably somewhere between levels 2-7). The baseline TRL for each client, and the goal

for each client in terms of progress achieved through program participation, should be determined by the client themselves (in consultation with EDA if necessary) through a simple empirical process employing the TRL scale.

Each client should assemble a small, independent technical advisory committee (between 3 and 6 people), including where possible representatives of universities or research centers, representatives from workforce institutions, businesses from within the relevant technical area or sector, and/or local economic development practitioners. The committee will scrutinize the key technologies that are the subject of program participation, and will judge the appropriate technology level (using the TRL scale of 1-9). This judgment will be based on answers to the questions listed in the table below, as well as on committee members' own professional experiences.

Following program participation, the client's committee will then judge the technologies progress towards a higher TRL score. The client will then report to the grantee (and the grantee to EDA) on progress made by the clients in moving along the TRL scale, drawing upon the qualitatively rich material gathered by the committee in conducting the rating process.

This approach employs self-reporting, however delegating the TRL assessment activity to clients is appropriate in that they will know their own technologies best, and reduces reporting costs for clients. The process only should be transparent, including the membership and activities of the technical advisory committee.

Technology Readiness Levels (TRLs) Scale to be Applied by EDA Grantees		
TRL	Definition	Questions To Be Answered and Reported
Level		
1	Basic principles observed	□ What research has been conducted, where, when,
	and reported	and by whom?
		What research papers and publications have
		reported the results?
2	Technology concept	What research has been conducted, where, when,
	and/or application	and by whom?
	formulated	What research papers and publications have
		reported possible applications?
3	Proof-of-concept validated through	□ What research has been conducted, where, when,
	experiment or analysis	and by whom?
		What test results have been reported?
		How do they compare to analytical predictions?
4	Component and/or system/sub-	□ What research has been conducted, where, when,
	system validated in a relevant	and by whom?
	laboratory environment	What are the results of component/sub-system tests
		in laboratory setting?
5	Component and/or system/sub-	□ What were the results of testing a complete system
	system validated in a relevant	in a simulated operational environment?
	commercial environment	□ How do the test results compare with expectations?
		What problems, if any, were encountered? Was
		the system/sub-system refined to match expected
	-	system goals?
6	System/subsystem	What were the results of testing a
	prototype demonstrated in	complete system/prototype at required
	a relevant laboratory environment	specifications?
	environment	□ How did the test compare with expectations?
		□ What problems were encountered?
		What are the plans or actions to resolve problems?
7	System/subsystem	□ What were the results from testing a prototype
	prototype demonstrated in a commercial environment	system in an operational environment?
		□ How did the test compare with expectations?
		□ What problems were encountered?
_		What are the plans or actions to resolve problems?
8	Actual system completed and	□ What were the results of testing the system in its
	qualified through testing and	final configuration in a commercial setting?
	demonstration in a	Didit meet its operational requirements? What
	commercial setting	problems were encountered?
		What are the plans or actions to resolve problems?
9	Actual system proven through	What were the results of operating the technology
	successful operation in a commercial	in a commercial setting, using standard process
	setting	metrics?

# **Appendix C: Baseline Metrics**

In this toolkit, SRI proposes that EDA collects a standard set of baseline metrics from grantees in their initial applications for grant funding. EDA funding announcements already require applicants to use measures of this kind when making the case for their proposal. The purpose here is to establish a consistent approach to collection. These baseline metrics are intended to help EDA consider how initial conditions and inputs may or may not affect grantee organizations and the work they accomplish via a grant. Taking account of initial conditions in this way will allow EDA to better evaluate the activities, outputs and outcomes associated with each grantee

Information on where these baseline metrics can be accessed is presented below.

# **Proposed Metrics and Sources**

SRI proposes that EDA collects the following set of metrics from its grantee applicants. There are two sets of metrics: metrics by county, which are to be collected from all applications; and metrics by industry cluster, which will be collected when applicable (some grantees have a specific sector rather than region as the target for their program activities, and so it would be more useful to report sectoral data). Specific direction for using publicly available sources is provided in each case, but it should be remembered that Federal websites are always being altered and improved, and details relevant for their use may become out of date.

#### **By County:**

- Employment
  - Number of employed workers in the county: available via Quarterly Census of Employment and Wages at the U.S. Bureau of Labor Statistics
    - BLS has multiple ways to select data. The <u>multi-screen</u> search tool has the easiest and best-functioning option. Using this tool, users should select "Total, All Industries" for the industry type, then select the appropriate state and county, then select "0 Total Covered" for employment type and then select "All Employees" as the data type.
  - 5-year employment growth rate in the county: available via Quarterly Census of Employment and Wages at the <u>U.S. Bureau of Labor Statistics</u>
    - Growth rate can be calculated by obtaining the most recent data point from BLS, and the data point from five years ago, and finding the percent growth from the later year to the most recent year.
- Establishments and SMEs:
  - Number of business establishments in the county: available via Quarterly Census of Employment and Wages at the <u>U.S. Bureau of Labor Statistics</u>.
    - Data can be accessed the same way as the employment data, via <u>the multi-screen</u> <u>search</u> tool, only selecting "Number of Establishments" instead of "All Employees" as the data type.
  - 5-year establishment growth rate: available via Quarterly Census of Employment and Wages at the <u>U.S. Bureau of Labor Statistics</u>.

- Growth rate can be calculated by obtaining the most recent data point from BLS, and the data point from five years ago, and finding the percent growth from the later year to the most recent year.
- Number of small and medium-sized enterprises (SMES = <500 workers) in the county: County Business Patterns by Employment Size Class at the <u>U.S. Census</u>
  - There are several ways to access this data, but <u>American Fact Finder</u> is the most direct. Using the <u>guided search feature</u>, select the option for information from a specific dataset, then select "Business Patterns" as the program and select the most recent year. For topic, under "Business Characteristic" select "Employment Size of Establishment/Firm", and then select County for the geographic type, select the state and relevant county. For the industry, select "00, Total for all sectors", and then under Search Results select the "County Business Patterns by Employment Size Class" series. Finally, use the filter option on the column labeled "Meaning of Employment size of establishment" to select all options that indicate establishments with less than 500 employees. To get the final data point, sum the total for the 7 size categories.
    - Note: CBP statistics are available 18 months after each reference year, so there will be an inevitable delay on this data point.
- 5-year SME growth rate: available via County Business Patterns by Employment Size Class at the <u>U.S. Census</u>
  - Growth rate can be calculated by obtaining the most recent data point from Census, and the data point from five years ago, and finding the percent growth from the later year to the most recent year.
- Workforce
  - Labor force size: available via the Local Area Unemployment Statistics at the <u>U.S. Bureau</u> of Labor Statistics
    - The <u>multi-screen data search</u> is likely the best bet, as it allows the selection of state and county (select "County and Equivalents" as area type and then select the county) and then the particular data measure (in this case, labor force).
  - Labor force participation rate: available via the American Community Survey at the <u>U.S.</u> <u>Census</u>.
    - Again, <u>American Fact Finder</u> is the most direct way to obtain this data. Using the <u>Guided Search</u>, select the option for information about people. For Topics, under "Employment" select "Employment (Labor Force) Status). Set geographic type to County, and then select the relevant state and county. Skip the step for Race/Ethnic Groups, and then select the top result, "Employment Status". The first line of the resulting table should provide the Labor Force Participation Rate for the Population 16 years and over.
  - Unemployment rate: available via the Local Area Unemployment Statistics at the <u>U.S.</u> <u>Bureau of Labor Statistics</u>
    - The <u>multi-screen data search</u> allows the selection of state and county (select "County and Equivalents" as area type and then select the county) and then the

particular data series (in this case, unemployment rate).

- Average weekly wage rate: available via Quarterly Census of Employment and Wages at the <u>U.S. Bureau of Labor Statistics</u>
  - Using the <u>multi-screen search tool</u>, users should select "All Industries", then select the appropriate state and county, choose "Total Covered" for owner, and then select "Average Weekly Wage" as the data type.
- Education attainment (high school, associate's, bachelor's, graduate): Available via the American Community Survey at the U.S. Census Bureau
  - There are multiple ways to access ACS, but perhaps the most straightforward for this situation is the <u>Data Profiles</u> site. Users can select state and then county, and then for the educational attainment data select the "Social Characteristics" Data Profile. Attainment should be reported for each grade level (i.e. Less than 9<sup>th</sup> grade, 9<sup>th</sup> to 12<sup>th</sup> grade, no diploma, etc.) as a percent of the population 25 and older.

#### By Industry Cluster (if applicable):

For organizations that have a sectoral focus, EDA should collect a second set of baseline metrics focused on the relevant industry, within the appropriate county as reported above.

Note: SRI recommends that for organizations that have a sectoral focus, both geographic and industry level metrics be collected. This will ensure consistency across all organizations, in that EDA will have geographic level metrics for every grantee, but will enable additional insights from the industry specific metrics. However, if EDA feels that requiring both geographic and industry level metrics will be too burdensome on grantees, they can opt to only require industry level metrics from sectoral-specific organizations and allow them to forego reporting geographic metrics.

- Employment
  - Number of workers employed in the industry cluster: available via Quarterly Census of Employment and Wages at the U.S. Bureau of Labor Statistics.
    - Using the <u>multi-screen search tool</u>, users can select the appropriate industry, and then can select the appropriate state and county to get to the desired level, and then select "All Employees" as the data type.
  - 5-year growth rate of cluster employment: available via Quarterly Census of Employment and Wages at the <u>U.S. Bureau of Labor Statistics.</u>
    - Growth rate can be calculated by obtaining the most recent data point from BLS, and the data point from five years ago, and finding the percent growth from the later year to the most recent year.
- Establishments
  - Number of establishments in the industry cluster: available via Quarterly Census of Employment and Wages at the <u>U.S. Bureau of Labor Statistics.</u>
    - Using the <u>multi-screen search tool</u>, users can select the appropriate industry, then can select the appropriate state and county to get to the desired level, choose "0 Total Covered" as the Owner, and then select "Number of Establishments" as the

data type.

- 5-year growth rate of cluster establishments
  - Growth rate can be calculated by obtaining the most recent data point from BLS, and the data point from five years ago, and finding the percent growth from the later year to the most recent year.
- Wages
  - Average weekly wages in the cluster: available via Quarterly Census of Employment and Wages at the <u>U.S. Bureau of Labor Statistics.</u>
    - Using the <u>multi-screen search tool</u>, users can select the appropriate industry, then can select the appropriate state and county to get to the desired level, choose "0 Total Covered" as the Owner and then select "Average Weekly Wage" as the data type.
  - 5-year growth rate of cluster wages
    - Growth rate can be calculated by obtaining the most recent data point from BLS, and the data point from five years ago, and finding the percent growth from the later year to the most recent year.
- Location Quotient
  - Location quotient for employment for the NAICS that best represents the industry cluster of focus: available via the Quarterly Census of Employment and Wages at the <u>U.S. Bureau</u> of Labor Statistics
    - BLS has a <u>web calculator</u> that can be used to find the location quotient. To use the calculator, users should input the following
      - Base Area should be set to U.S. total
      - Analysis area should be set to the county the applicant is operating in
      - Base Industry should be set to Total, all industries
      - Analysis industry should select the specific industry that is the focus of the applicant's work.

**StatsAmerica:** The <u>StatsAmerica</u> site has many, although not all, of these metrics compiled in a single site, accessible at either the county or industry level.

The following table demonstrates which metrics StatsAmerica has available, and which it does not.

Required Metric Available on StatsAmerica
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County – Number of employed workers	Yes
County – 5-year growth rate of employed	No – but has 10 year change
workers	
County – Number of establishments	Yes
County – 5-year growth rate of establishments	No – but has 10 year change
County - Number of SMES	No
County – 5 –year growth rate of SMES	No
County – Labor force size	Yes
County – Labor force participation rate	No
County – Unemployment rate	Yes
County – Average weekly wage rate	Yes – but yearly wage, not weekly
County – Educational attainment	Yes
Industry* – Number of workers	Yes
Industry* – 5-year growth rate of workers	No
Industry* – Number of establishments	Yes
Industry*– 5-year growth rate of establishments	No
Industry* – Average weekly wages	No – but has total cluster wages
Industry* – 5-year growth rate of wages	No
Industry* – Location Quotient	Yes

\*it appears that most recent industry data is from 2012

# **Appendix D: Third Party Data Resources**

- I. *Number of New product introductions, per capita, by metro (ThomasNet).* SRI has purchased this dataset and will provide to EDA.
- Number of membership associations and organizations, per capita, by metro (Bureau of Labor Statistics, Quarterly Census of Employment and Wages).
   This is measured by NAICS 813: Membership associations and organizations.

2012-2015 data can be accessed using the table viewer below. Select the desired year, "Annual averages", "Private" ownership, and NAICS 813 as the industry to pull up the appropriate data table, which can then be downloaded by the "Download Source Data" button.

Note: this link is for data by county. Data can also be accessed by state, MSA, or geographic area by using the appropriate link on the left hand side.

http://data.bls.gov/cew/apps/data\_views/data\_views.htm#tab=Tables

Pre-2012 data can be accessed at the link below. Go to the "CSV by Industry" column and select the desired year to download a zip-folder of data files. The folder will contain a file for each NAICS code, so after downloading locate the file for NAICS 813 and save it, and the other files may be deleted.

http://www.bls.gov/cew/datatoc.htm

III. Number of patents granted, per capita, by metro (U.S. Patent and Trademark office) Data from 2000-2015 can be accessed via the link below, which takes the user to a list of reports. The relevant report for this toolkit is the first one, "Listing of All U.S. Metropolitan and Micropolitan Areas, Total Utility Patent Counts, 2000-2015". Click on the HTML link, which then displays the data such that it can be copied and pasted into an Excel document. <u>http://www.uspto.gov/web/offices/ac/ido/oeip/taf/reports\_cbsa.htm</u>

Unfortunately, pre-2000 data are stored in a PDF in such a way that they are inaccessible for manipulation and analysis.

- IV. Number of venture/angel/seed capital financing events, per capita, by metro (Pitchbook) SRI has purchased this dataset and will provide to EDA.
- V. Number and amount of SBIR/STTR awards, per capita, by metro (U.S. Small Business Administration)

Data can be accessed via the link below, which lists all SBIR/STTR awards granted since 1983. The filters on the left can be used to isolate the awards by year, which can then be downloaded using the download feature. Downloads are only available by 1000 records, so multiple files will have to be downloaded and merged to construct a complete set of records for each year.

https://www.sbir.gov/sbirsearch/award/all

# VI. Rate of birth/death of establishments, per capita, by metro (U.S. Census, Statistics of U.S. Business)

This data is contained in the Statistics of U.S. Businesses Data, accessible via the link below. The "Employment Change Data Tables" are the relevant tables, and past years can be accessed by navigating the time bar at the top of the page. The data can be accessed at both the MSA and the county level – although if historical data is going to be used, it should be accessed at the county level to ensure consistency in definitions. Birth (or death) rate can be calculated as the annual number of births (or deaths) as a share of all establishments at the beginning of the period. Note that the county table breaks the data out by NAICS, so it is important to use the data for all NAICS.

http://www.census.gov/programs-surveys/susb/data/tables.html

# VII. Non-employer firm data, number of establishments and sales, per capita, by metro. (U.S. Census, Statistics of U.S. Business)

Data is provided through the Census Bureau via the link below. Data should be downloaded through the link for "comma-delimited format (1997-2014)". Data is available at the national, state and county level, but is provided yearly, so multiple downloads will be required if doing time-series analysis.

Note: the files are txt files, but can be easily read into Excel for manipulation and analysis.

http://www.census.gov/econ/nonemployer/

 VIII. Number of nonprofit community development and economic development organizations, per capita, by metro (GuideStar USA, Inc.)
 SRI has purchased this dataset and will provide to EDA