

Defense Adjustment Program

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Performance Evaluation

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A research team headed by Rutgers University prepared this report. Its findings, conclusions, and recommendations are those of its authors and do not necessarily reflect the views or policies of the Economic Development Administration or the U.S. Department of Commerce.

TABLE OF CONTENTS

SUMMARY OF FINDINGS 1

SECTION I—INTRODUCTION TO THE RESEARCH.....7

SECTION II—RESEARCH RESULTS: QUANTITATIVE21

SECTION III—RESEARCH RESULTS: QUALITATIVE.....33

SECTION IV—RESEARCH TEAM, ACKNOWLEDGMENTS, REFERENCES.....43

SECTION V—PROJECT PROFILES, SITE VISIT SUMMARIES,
AND DESCRIPTIVE MATERIALS.....49

(Project-by-project pages of this section are not included in this PDF.)

Region 1—Philadelphia.....55

Region 4—Atlanta.....137

Region 5—Denver.....165

Region 6—Chicago185

Region 7—Seattle.....207

Region 8—Austin265

SUMMARY OF FINDINGS

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DEFENSE ADJUSTMENT PROGRAM PERFORMANCE EVALUATION

STUDY OVERVIEW

- The purpose of the research described here is to evaluate all (190) Economic Development Administration (EDA) Defense Adjustment Program grant projects approved during the period FY 1992 through FY 1995. The primary objective of this program and its projects is the restructuring of local economies to diversify away from dependence on former defense bases or defense contractors impacted by closure or cutback.
- Direct appropriated funding to EDA for the Defense Adjustment Program began in FY 1994. From 1992 to 1994, EDA received transfers of funds for defense projects from the Department of Defense's Office of Economic Adjustment (OEA). The program, therefore, is relatively young, and as of 1997, the defense construction, capacity building (planning and technical assistance), and revolving loan fund (RLF) projects analyzed here were just taking hold. While their relative recency does not allow for an evaluation of these projects at full maturity, their accomplishments at this early phase can certainly be quantified.
- As indicated above, the Defense Adjustment projects, even if completed, have had only a short time to mature. With time, the permanent jobs that they create will increase and the cost per job created will decrease. The present evaluation provides a snapshot view of the projects' effects during an early phase of their existence.
- A concurrent EDA study of the Public Works Program and other similar studies have shown that the effects (both direct and indirect) of these projects will increase substantially over time.

STUDY PROCEDURES

- The study was undertaken from November 1996 through September

1997 by research teams from five universities and a major professional organization. All principals of the research teams have extensive experience in both economic development and infrastructure studies. Each principal spent significant time in the field researching individual projects and talking to grantees. Each principal and affiliated staff participated in some aspect of research analysis and in writing the final report. All concur with the findings presented below.

- The research team contacted by mail and telephone 190 grantees of defense adjustment projects. To help the grantees better understand the purpose and types of information necessary to undertake the evaluation, all grantees were invited to attend seminars conducted by the research team at 13 locations nationally. Forty-two project sites were visited to conduct in-depth discussions with grantees to learn more about their individual projects' impacts and to validate the information that they were providing.
- The evaluation is undertaken using performance measures developed by EDA specifically to assess the productivity of defense adjustment projects. Performance measures for defense construction and revolving loan fund projects primarily involve numbers and types of jobs created or retained and amounts of private-sector funds leveraged. For capacity-building projects, the performance measure is a grantee self-rating of the quality and impact of the EDA capacity-building effort.

PROJECT TYPE AND CONTEXT

- From a universe of 190 EDA defense adjustment projects that were approved from FY 1992 through FY 1995, all 190 were contacted.

- The 187 grant-funded projects analyzed in this study¹ include 162 single-element projects, twenty double-element projects, and five triple-element projects. These sum to 217 total project elements funded via the 187 EDA grants.

DISTRIBUTION OF PROJECTS			
<i>Grant-funded projects</i>	<i>Number</i>	<i>Project Types</i>	<i>Number</i>
Single-Element Projects	79	Construction	79
Double-Element Projects	20	Capacity Bldg. RLF	20
Triple-Element Projects	5	Constr./Cap./RLF	5
Total	187		217

Since 1987, approximately 2.5 million defense-dependent jobs have been lost due to defense downsizing. EDA's Defense Adjustment Program is a direct response to base closures, base downsizing, and/or reduced defense contracting. Cutbacks are often sudden and severe for their host communities. In addition, projects are in locations where minority populations and percents of the population below the poverty level are 20 percent higher than state and national averages. These are also locations where per capita income is 25 percent lower than averages at state and national levels.

PROJECT COMPLETION

- Of those 190 defense adjustment projects contacted by the research team, 98.5 percent (187) were initiated as planned.
- Of those undertaken, about 97 and 98 percent of defense construction and capacity-building projects, respectively,

moved to completion; 100 percent of the RLFs moved to completion.

CONTEXT OF PROJECTS AT TIME OF APPLICATION (Medians) (187 Initiated Projects)			
	<i>Median</i>	<i>Ratio to State</i>	<i>Ratio to Nation</i>
Unemployment Rate (%)	7.0	0.98	1.02
Per Capita Income (\$)	13,034	0.72	0.73
Below Poverty Level (%)	15.5	1.18	1.18
Minority (%)	27.3	1.21	1.39

- Of those undertaken and completed, 80 and 81 percent of the defense construction and RLFs, respectively, were completed on time. About 56% of the capacity-building projects were completed on time.
- Of those undertaken and completed, about 90 percent of defense construction projects came in *at or under* budget; the figures for capacity building and RLFs are 97% and 100%, respectively².

PROJECT IMPACTS³

Project-Related Direct Impacts: Defense Construction

- On average, completed defense construction projects (49) have produced 30,870 permanent jobs to date, or 124 jobs per \$1 million of EDA funding. These jobs were produced at an EDA cost of \$8,052 per job and a total cost (all sources of funding) of \$12,045 per job.
- Defense construction projects produced 18.0 FTE⁴ construction jobs per \$1 million of EDA funding.
- Completed defense construction projects (43)⁵ leveraged \$722 million in

¹ Three projects were never funded due to grantee financial problems (2) or cross purposes between the grantee and the EDA regional office (1).

² RLFs, by their nature, cannot come in over budget. They lend what they have.

³ As projects age and mature, project accomplishments will likely increase over time.

⁴ Full-time-equivalent.

private-sector investment, or \$2.2 million per \$1 million of EDA funding.

DEFENSE CONSTRUCTION AND CAPACITY-BUILDING PROJECTS—PERMANENT JOBS: (Medians) (49 Completed Defense Construction and 31 Completed TA* Capacity-Building Projects)		
	<i>Defense Construction</i>	<i>Capacity Building(TA)</i>
Jobs Per \$1M EDA	124	63
EDA Cost Per Job	\$8,052	\$13,633
Construction/ Professional Jobs	18.0 FTE	13.7 FTE
Private-Sector Investment Per \$1M of EDA Funding	\$2.2 M	N/A

*Technical Assistance

Capacity Building

- Capacity-building projects, by their definition and design, are not intended to create jobs directly, but to increase the planning, organizational, and technical skills needed for local economic development. Nevertheless, some jobs result as an indirect by-product of those project goals. Completed capacity-building (technical assistance) projects (31) have produced 63 permanent jobs per \$1 million of EDA funding at an EDA cost of \$13,633 per job and a total cost of \$19,393 per job⁵.
- Permanent jobs coming from capacity-building technical assistance projects reflect developments such as stalled businesses being matched with new markets, workers being more employable due to training, and businesses generating more money because they have been made more efficient.

⁵ Forty-three of forty-nine defense construction projects have private-sector investment. Six projects are public sector and have no private-sector investment.

⁶ Direct job creation is an incidental benefit of capacity-building projects, which generally support subsequent projects having direct job creation.

- Completed capacity-building (technical assistance) projects have produced 13.7 FTE professional consultant jobs for every \$1 million of EDA funding.
- Completed capacity-building projects have, in addition, produced adjustment strategies, heightened community involvement and planning, created workable implementation strategies, and undertaken market/feasibility studies. EDA capacity-building efforts have been rated by grantees as seen in the following table:

GRANTEE RATING OF CAPACITY-BUILDING PROJECTS (Means) (70 Completed Capacity-Building Projects)* (Scale of 1-10; 10 = best)	
Quality of Adjustment Strategy	8.2
Extent of Community/Business/ Government Participation	8.5
Consistency of Implementation Efforts and the Adjustment Strategy	7.8
Quality of Technical Assistance Effort	8.8
Impact of Technical Assistance Effort	8.9
Quality of Feasibility/Market Study	9.1
Impact of Feasibility/Market Study	8.7

*These include all types of capacity-building projects, not just technical assistance.

Grantee Observations:

- Across the board, grantees report that the products they are delivering with EDA oversight are both well done and have a significant impact.
- Capacity building empowers local areas to respond in a proactive and forward-moving way to the adverse impacts on their economies.

Grantees further report the following:

- Capacity-building projects are responsible for significant networking among various forms and levels of economic development agencies. This enables greater use and leveraging of public and nonprofit funds.
- Capacity-building projects comprise technology transfer efforts wherein sophisticated methods of enhanced

productivity are used to measure business adjustment to new technology.

Revolving Loan Funds

- With regard to revolving loan funds (RLFs), 304 jobs have been created per \$1 million of EDA funding for 16 completed projects (fully loaned); for those projects in process (21), there are 247⁷ jobs created. EDA cost per job is \$3,312 for completed RLF projects and \$4,079 for projects that are in process.
- Completed RLF projects have leveraged \$115 million in private-sector investment, or \$2.5 million per \$1 million of EDA funding. In-process RLF projects have leveraged \$42 million in private-sector investment, or \$2.8 million per \$1 million of EDA funding.
- Other statistics for RLFs include combined default and write-off rates for completed projects of 13% and for RLF projects in process of 1.9%⁸. For both completed and in-process projects, jobs produced per business assisted are about 22 and 24, respectively. In 50% of the cases the RLF involves a business expansion (as opposed to start-up or retention), and in 67% of the cases it involves the funding of manufacturing firms (as opposed to commercial or service firms).

PROJECT IMPACTS (GENERAL)

- Due to the recency of defense adjustment projects, their results are just beginning to become evident. Most will likely contribute significant additional employment growth in the long term.
- Defense construction, as well as RLF projects, are nonetheless producing permanent jobs at relatively low costs;

⁷ In-process RLF projects can be analyzed in the same fashion as completed projects because they behave similarly from the time of their first loan onward.

⁸ A 12-15 percent combined default and write-off rate is well within industry standards for this type of loan. The lower rate for in-process loans reflects almost no write-offs at this stage of the loan.

**REVOLVING LOAN FUND PROJECTS
(Medians)**

(16 Completed and 21 In-Process RLFs)

	<i>Completed</i>	<i>In Process</i>
Jobs Per \$1M EDA	304	247
EDA Cost Per Job	\$3,312	\$4,079
Private-Sector Leverage Per \$1M EDA	\$2.5 M	\$2.8 M
Default/Write-off Rates	13%	1.9%
Jobs Created Per Business	22	19

capacity-building technical assistance projects are producing smaller numbers of permanent jobs at somewhat higher costs. Capacity-building planning efforts and market/feasibility/reuse studies are perhaps more importantly laying the groundwork for both defense construction and RLF projects. Capacity-building projects could easily be given credit for jobs produced under these two other types of implementation activities.

- Defense adjustment projects are longer-term, more intricate and complex, and thus take longer to complete than traditional EDA-funded public works projects. Accordingly, they are somewhat less likely to be on schedule or to come in *under* budget than EDA public works projects. Nonetheless, 80-90 percent of defense adjustment projects are on schedule, and 90-100 percent are *at or under* budget.
- EDA defense adjustment projects are in place in numerous localities nationally; tangible progress is in evidence at 97% of the sites.

CONCLUSIONS

- As reported by grantees, EDA defense adjustment projects are one of the few avenues of flexible assistance available to communities faced with base closures.
- EDA funding is critical to most of these types of activities and is usually the primary source of initial funding.

SECTION I
—
**INTRODUCTION
TO THE RESEARCH**

SECTION I—INTRODUCTION TO THE RESEARCH

A. INTRODUCTION

Defense Adjustment Responses

When communities have large employers related to a particular type of industry, they structure their activities and economies to accommodate these large employers. The character and well-being of communities become linked to those activities that support their basic economies. When these employers leave because they are no longer necessary or cannot support themselves, the community is negatively impacted.

If this process is the result of market forces responding to national or international influences or if it is part of a cyclical downturn, there is a tendency to accept these long-term, non-specific geographic impacts and generate public and private local efforts to respond to the crisis. When this process is the result of a national defense policy that disproportionately and severely affects particular local economies, economic “jump-starting” in the form of early and significant short-term investments is considered an appropriate role for the federal government.

Without jump-starting, it is possible for whole sectors of economies to languish because the United States no longer needs a particular defense strategy, a type of weapon, or as large a force of men and women committed to defense activities. Often these locations contain highly trained workers who (1) with a small amount of training can mainstream into the civilian service sector; (2) as part of newly directed businesses can serve high-tech related clients; or (3) with sufficient start-up funds can emerge as small business entrepreneurs. Public-sector defense adjustment activities are undertaken primarily by two federal agencies, the Economic Development Administration (EDA) and the Department

of Defense’s Office of Economic Adjustment (OEA). Their activities are discussed below.

The Relationship between Defense Adjustment Activities and Economic Development

From the perspective of the federal government, the economic recovery process is similar whether the problem is a base closure or downsizing or the reduction of defense contracts with one or several local firms. Each of these situations has a common problem—job loss. The local economic adjustment response generally proceeds through a three-phase process which includes *organization, planning and implementation*. As a first step toward renewed economic health, the community public- and private-sector leaders are encouraged to create a single organization that includes representation from affected jurisdictions, workers, businesses, and other interested groups. The organization then develops a broad, inclusive strategy for economic recovery. More detailed planning defines actions to implement the strategy.

The Role of OEA. Defense adjustment often begins in a community with the efforts of the OEA. OEA has helped more than 500 communities alleviate the local effects of the closing of a military base (base closures) or the termination of a major defense contract (contract reductions) by providing the initial technical expertise and planning resources to community organizations.

OEA’s job relative to EDA is typically stage setting—funding efforts of *organization and planning*. This may take a longer period for a base closure than for the situation of defense contract reductions. With this kind of funding, communities learn the language of the military, its organization and procedures. They then create a defense adjustment strategy, that is, how the community is going to react with its economic development groups to

the closure, downsizing, or contract reduction. The next phase is implementation. It is at this point that EDA enters the picture with the provision of capital infrastructure, technical assistance, and/or revolving loan funds. Although there may be some crossover between OEA's and EDA's activities (e.g., EDA providing funding for continuation or elaboration of a defense adjustment strategy), OEA is involved only in organizing and planning for economic recovery and EDA in the implementation of economic recovery.

The Role of EDA. The EDA Defense Adjustment Program targets a flexible program of grant assistance to those communities facing the most severe economic crises—the temporary or permanent change of the local area's economic structural base. Even with the overall healthy economic outlook in the United States today, such radical economic change at the local level is surprisingly more common than one would expect and is precipitated by both long-term trends and sudden economic events. Such devastating economic impacts may be more readily recognized by other labels such as defense downsizing, post-disaster long-term economic recovery, the Pacific Northwest Timber Initiative, the Northeast Fisheries economic crises, or the Appalachian region coal industry decline.

The Defense Adjustment Program is a subset (but far larger from a funding perspective) of EDA's Economic Adjustment Program. The Defense Adjustment Program helps communities impacted by base closures and/or defense contract reductions to rebuild and diversify their economies away from defense dependency. In the process, communities move toward economic sustainability and, hopefully, greater prosperity than that provided by the previous defense-centered economy.

EDA's response to communities affected by post-Cold War defense downsizing began systematically in the early 1990s.

Previous activities were only sporadic, on a case-by-case basis. EDA funds in FY 1992 and 1993 were transfers from OEA. EDA received its first direct appropriation in fiscal year 1994.

Where military bases are closing, the most significant opportunity for economic recovery generally involves reuse of the installation for civilian purposes. OEA assistance usually stops with organization and planning (the local reuse strategy). EDA is the only federal agency that provides flexible discretionary funding to communities to implement reuse plans, most of which are heavily reliant on redevelopment of the old military infrastructure systems to support new uses. There is no question that the success of base reuse depends heavily on the follow-through implementation assistance provided by EDA.

In places such as California, Massachusetts, Long Island, or St. Louis, where a significant portion of the entire state or area economy is defense dependent, industry adjustment projects are critical to restructuring local economies and their business communities and stemming the otherwise devastating job losses associated with downsizing defense-dependent companies. Technical assistance, including development of manufacturing and industrial clusters, technology transfer, and international trade promotion through new or augmented business networks, provides near-term stability for local economies and their threatened businesses.

Further, such strategies as enhancing and augmenting the existing labor force's basic skills and offering alternative methods of using new private-sector skills, such as opportunities for business entrepreneurship and/or quasi-public-sector employment, also help to achieve stability for threatened workers. After an infusion of technical assistance, technology transfer, skills retooling, and new business acumen, an area racked by defense closings or contract reductions can take action to alter its

future. With the emergence of new forms and types of industries, it can gradually begin to prosper.

If OEA's role is to help the community determine where it is going, it is EDA's role to move the community positively along its chosen path. This happens by carefully reemploying old resources and creating new resources through seed-bedding businesses and industries. EDA provides communities with new strategies to help their businesses compete in different arenas and builds skills training centers that prepare dislocated workers to participate in new or redirected businesses or in existing businesses already engaged in civilian services.

An important analogy that might be drawn is that the defense adjustment activities of EDA take place in an "emergency room" economic development environment, whereas traditional public works activities of EDA could be viewed as part of the "main hospital" economic development environment. In both cases, patients (local economies) require care, but in the case of defense adjustment communities, this care must be immediate, significant, and flexibly provided. Accordingly, EDA's defense adjustment activities are often more risky than traditional EDA public works efforts.

B. RESEARCH CHARGE AND APPROACH TO THE RESEARCH

The research team, consisting of Rutgers University, New Jersey Institute of Technology, Columbia University, National Association of Regional Councils, and Princeton University, assisted by the University of Cincinnati, approached the research in the following manner. First, it was necessary to obtain a general understanding of the specific research subjects. This was accomplished by members of the research team reading the applicable literature on Economic Development Administration activities as well as past evaluations. The latter included studies by

Grant et al. (1995), the General Accounting Office (1996), and others.

EDA management decided that the research team would *not* sample the projects to be studied. *All* projects of the program group selected for study would be analyzed; all grantees would be invited to a series of local seminars; and fully 20–25 percent would be chosen for site visits.

The research team decided that the presentation of research would be visual—very accessible data and statistics accompanied by a picture of the project or activity if possible. Accordingly, project profile sheets were developed containing all applicable performance measurement information. The research design was formulated to ensure that all projects would be presented in standardized fashion and that their base data would be available to those reviewing this report. Thus, for each project, there is a project profile sheet presenting information on the magnitude of, and participants in, the grant; demographic and employment data on the community or county where the project took place; and data on outcomes of the project in the form of direct jobs and private-sector capital investment and specific activities undertaken. Each project profile is accompanied by a photograph or other illustration—a visual representation of the tangible results the EDA project has achieved—and by a map showing the project's location.

A third approach of the study design specified that four of the five research principals would each spend a month in the field visiting projects and speaking to grantees. The fifth would be in charge of the seminars and interact with grantees there. Only through this process could a uniform assessment of project scale, context, accomplishments, and difficulties be obtained. The month of January 1997 was spent in the field visiting 42 defense adjustment sites. Seminars at thirteen

locations across the country were also undertaken during this month.

A fourth approach ensured that the resulting message would be simple and straight-forward. Did the EDA activity produce jobs, private-sector leverage, a more diverse economy, tax base addition to the community, more networking among formerly defense-dependent businesses, more technology transfers between the private sector and these local businesses? Did EDA do its job, and how was it rated?

The final approach was that defense adjustment projects would be evaluated by type of *project element* within an overall project—defense construction, capacity building, and revolving loan fund—not by the overall *project*. This decision was made because 20 of the projects actually contained two types of activities or project elements and 5 contained three. For these projects, unless they could be broken down by activities within them, it would be impossible to view their progress and accomplishments in a manner comparable to single-element projects of the same activity type.

C. EDA'S DEFENSE ADJUSTMENT PROGRAM

Since the beginning of FY 1992 through July of FY 1997, EDA obligated \$500 million in Defense Adjustment Program grants. Total funding for the above projects from all sources of revenue amounted to \$787 million. The EDA share of \$500 million supported 305 unique grants for defense construction, capacity building, and revolving loan funds. Seventy percent (\$348 million) of the funding was obligated to defense construction projects, 19 percent (\$93 million) to capacity-building projects (mostly technical assistance), and 11 percent (\$59 million) to revolving loan fund projects. Although EDA began disbursing funds in its Defense Adjustment Program only in FY 1992, the agency has already disbursed \$262 million to 141 counties in 41

states. These long-term projects are already making substantial contributions to the economic growth and stability of their host communities. As these projects continue to develop and mature, they are expected to make even greater impacts the local and state economies. In fact, if defense construction projects' results parallel those of EDA public works projects, their impacts may double during a period of six years subsequent to project completion⁹.

D. THE UNIVERSE OF PROJECTS

This research involves an analysis of 190 defense adjustment projects that were approved from FY 1992 through FY 1995. Between two and five years have elapsed for this universe of projects to be completed and to achieve results; thus, a share of the projects are not complete, and a few are just beginning. Yet, this is the initial set of defense adjustment projects: There were very few projects funded by this program prior to FY 1992. Occasionally, projects were delayed in starting and did not begin until FY 1996 or later. Given the comparative recency of these later projects, one is able to obtain information on goals and progress, but it is much more difficult to discern concrete results. Further, the information obtained often fails to adequately quantify the richness of the program's outreach or networking, or its ability to change local conditions, because there is either insufficient information or an absence of data to measure and present these results.

Of the 190 projects, three were not funded, leaving 187 projects in the data set. A capacity-building project to prepare a defense adjustment strategy in the Seattle Region was not funded because the grantee believed the Regional Office was too difficult to deal with. A revolving loan

⁹ *EDA Public Works Program Performance Evaluation*. 1997. Report prepared by Rutgers University et al. for Economic Development Administration, Washington, D.C. Final Report (May).

fund in the Atlanta Region never got off the ground due to the demise of the nonprofit corporation in which it was to be housed. Finally, an incubator to be formed by the same nonprofit corporation in the Atlanta Region (later attempted to be transferred to a university) was ultimately terminated when the university did not accept the project. In all three cases, no EDA grant funds were disbursed.

The 187 remaining defense adjustment projects are somewhat more geographically concentrated than the projects studied in a concurrent evaluation of the Public Works Program. They are found in areas of the United States that are, or were, defense employment centers. These typically are clustered along the coasts of the United States or in remote non-coastal locations. The 187 defense adjustment projects are found in 36 states (Figure 1).

The 187 defense adjustment projects that are analyzed here range in scale from \$30,000 to \$30 million, with EDA's share accounting for 20-75 percent, with minimum and maximum grants of \$25,000 and \$15.5 million, respectively.

Defense adjustment projects that were selected for site visits are shown in Figure 1 and indicated with stars.

E. Type of EDA Defense Adjustment Grants

1. Defense Construction

Among the types of projects funded are the following: water and sewer facilities, which primarily serve industry and commerce; access roads to industrial parks or sites; industrial parks; port improvements; and buildings of various types, including business incubators and technology centers. Selection factors include the extent to which the proposed activities will contribute to facilitating private-sector investment in the types of enterprises and industry sectors that will strengthen the economic base of the area.

2a. Capacity Building: Planning

Under the Title IX Economic Adjustment Program, of which defense adjustment is a part, EDA can fund community planning that is a prerequisite to any subsequent EDA funding for construction, RLF, or technical assistance implementation activities. The community plan, which may be called an economic adjustment strategy, a defense adjustment strategy, or a base reuse plan, serves much of the same community self-assessment and local priority-setting role that the OEDP (Overall Economic Development Program) serves for the Title I Public Works Program. It lays the groundwork and provides structure and direction for all subsequent implementation activities.

There are important differences between an OEDP and an economic adjustment strategy, however. Whereas the OEDP seeks to provide a strategy to strengthen an area's economy, an economic adjustment strategy is generally a more focused plan to redirect an area's economy away from dependence on a damaged or destroyed economic sector, such as the defense sector, and to develop new or substitute economic activity.

While EDA commonly funds such economic adjustment strategies for post-disaster economic recovery, other sudden economic events such as plant closures or the closure of a major fishery, or in response to long-term structural economic deterioration such as Appalachian coal, the Department of Defense (DOD) Office of Economic Adjustment (OEA) has the primary responsibility for funding such community plans responding to base closures or other defense downsizing impacts. With the EDA defense adjustment program, therefore, EDA's subsequent implementation grants rely for the most part on the DOD-OEA funded defense adjustment or base reuse studies for the planning prerequisite. EDA-funded planning assistance for defense adjustment is, therefore, generally reserved

(Figure 1 is not included in this PDF. It is a map of the United States showing the locations of all 187 projects funded during FY 1992–95 and examined in this evaluation, flagging the 42 that were also visited during the evaluation.)

for specific planning activities not otherwise covered by the DOD–OEA program.

2b. Capacity Building:
Technical Assistance

Grants awarded for technical assistance are designed to assist in solving specific economic development problems, to respond to developmental opportunities, and to build and expand local organizational capacity in distressed areas. In responding to specific problems and opportunities, a local economic development organization might focus on (a) technology transfer, or (b) engineering or market feasibility studies.

3. Revolving Loan Funds (RLFs)

Grants to attract or retain businesses in a defense-impacted area frequently underwrite loans, typically up to a \$150,000 maximum with a 5-year payback. These are not bank loans but loans of much higher risk. Loans are typically offered at two percent below prime but cannot have an interest rate below four percent. Grantees are given three years to disburse their funds. RLF loans are for business start-up, expansion, and retention. The loans support manufacturing, service, and commercial nonresidential activities.

F. THE PERFORMANCE MEASURES

Performance measures for evaluating defense adjustment projects have been developed by the Economic Development Administration's Program Research and Evaluation staff in a collaborative agency-wide process that included broad field staff participation and feedback from grantees and other constituents. These performance measures have had the benefit of input and comment from EDA's six regional offices (Atlanta, Austin, Chicago, Denver, Philadelphia, and Seattle) and from field representatives as well. This process enabled the performance measures to achieve broad-based support both within EDA and from its customer base.

Measures for defense adjustment projects contain separate indices for each type of project: construction, capacity building, and revolving loan fund. These measures apply to projects (1) at time of approval and project completion, and (2) post-project completion, at 2 and 4 years.

Except for defense construction, most of the performance measures used in analyzing defense adjustment projects are the same for project completion as they are for post-project completion (at 2-4 years after completion). Post-project completion measures are a severe test for defense construction projects barely at completion because, as was noted in the Public Works Program evaluation, project outcomes increase over time. In the Public Works Program evaluation it was found that twice as many jobs could be created and retained six years after project completion as there were at the time of completion. In the present evaluation, to make comparisons across defense adjustment programs and with the prior evaluation of the Public Works Program, the *2- to 4-year defense construction evaluation criteria* are used to gauge the success of projects *at completion*. Thus, this evaluation obtains information on actual jobs created and retained for defense construction projects that typically would not be required at this early point in time by EDA performance measures. Measuring the jobs at this juncture produces a lower number of jobs and a higher cost per job than would be expected at full maturity of these projects. The research team believed that similar information and program comparability should dictate the type of information analyzed in the evaluation even if it imposed a harsher view of this particular group of defense construction projects.

It must be understood that defense construction jobs created/retained will be lower than might be expected, and EDA costs per job higher than might be expected, because projects are measured at completion using post-completion criteria of performance measurement (jobs

created/retained—actual). Over time, however, jobs created/retained can be expected to increase, and EDA costs per job can be expected to decrease, as projects reach their full maturity.

Defense Construction Projects

Performance measures for defense construction projects at post-completion are similar to those for public works projects. They seek to quantify information on jobs created and private- and public-sector funds leveraged. They further require data on the amount of local tax base added by the project and whether the project contributed to a diversification of the local community. Performance measures also attempt to determine whether the project was constructed on time.

- *Performance and outcomes at project completion (2-4 year performance measures used here)*
 1. Construction schedule met as to start and finish dates
 2. Jobs created and/or retained, as estimated at time of approval.
 3. Jobs created and/or retained—*actual*.
 4. Additional private-sector dollars directly related to, but not part of, the EDA project—*actual*.
 5. Additional dollars (other federal) directly related to, but not part of, the EDA project—*actual*.
 6. Additional dollars (nonfederal, state, and local) directly related to, but not part of, the EDA project—*actual*.
 7. Other dollars invested indirectly related to the EDA project.
 8. Percentage increase in local tax base (actual or based on recognized multiplier).
 9. Local capacity improved: Diversification of local economy (extent to which plans were fulfilled).

Capacity-Building Projects

Due to significant diversity in their activities and in their goals, separate performance measures exist for capacity-building activities. These include planning, strategy development, market and feasibility studies, and other related activities. Such measures determine whether the project was on time in terms of meeting its finish date and whether the various activities undertaken to turn the economy around have been completed successfully. Grantees are asked to rate on a scale of 1 to 10 (10 = best): (1) the quality of the strategy, (2) extent of local participation, (3) consistency of project implementation with the overall strategy, (4) quality of any market evaluation or feasibility study undertaken, and (5) impact of these studies on overall project activities.

- *Performance and outcomes at project completion (same as measures at 2-4 years)*
 1. For research/evaluation, technical assistance, and state and urban planning projects: Project start and finish dates have been met.
 2. For ongoing district and Indian planning projects: Annual update of the Overall Economic Development Program (OEDP) completed.
 3. For all capacity-building projects, grantee comment: with 1 to 10 (10 = best) numerical response for the following questions:
 - a. Quality of local OEDP/adjustment assistance (Title IX) strategy.
 - b. Extent of participation by government, business, and community leaders, i.e., building of community partnerships.
 - c. Extent to which projects implemented are based on OEDP/Title IX strategy.
 - d. Quality of evaluation or feasibility study.

- e. Impact of feasibility study on project planning.

RLF Projects

EDA also established a set of performance measures for RLFs. They similarly initially measure whether projects' activities have been completed on time: Has the money been disbursed according to schedule, and is it being repaid?

Measures seek further to quantify the number of businesses assisted (number of loans made), number of jobs created, and private-sector funds leveraged. Finally, performance measures attempt to gauge the significance of the capital base that is the source of money for RLFs. This is defined as money originally appropriated in the grant for RLF purposes, interest accrued from outstanding loans, and bad debt loss from loans not being repaid.

- *Performance and outcomes at project completion (same as measures at 2-4 years)*
 1. Implementation schedule for disbursement of RLF dollars met.
 2. Jobs created and retained (actual) through RLF loans
 3. Number of businesses assisted (loans made) by the RLF.
 4.
 - a. Private-sector dollars invested.
 - b. Other dollars invested.
 5. RLF capital base (grant + local share + net income generated minus write-offs).

In addition to the above measures, the research team has included information on the nature of business activities supported (start-up, expansion, or retention) as well as the type of business (commercial, manufacturing, service). Information on default rates and loan write-offs is also included.

G. PROCEDURES USED TO OBTAIN RESULTS

The evaluation of projects contained in this report is based on a three-pronged approach to accessing information. The first was phone and mail solicitation to obtain project statistics and to quantify project outcomes. This involved mailing surveys to all 190 grantees with a series of six callbacks each to obtain and verify project information.

The second approach involved inviting all grantees to seminars held at thirteen locations across the country where they were instructed on how to respond to information requests and the specific information that was required. One-day seminars were held in Atlanta, Austin, Chicago, Cincinnati, Denver, Hartford, Little Rock, Los Angeles, Myrtle Beach, Orlando, Philadelphia, San Francisco, and St. Louis.

The third approach involved research team members visiting 22 percent of the grantee locations for a site inspection. These 42 visits, usually lasting one-half day, included a trip to the EDA project and a two- to three-hour interview with personnel who had overseen the project. Site visits allowed field verification of scale and relative health of the project, numbers of direct jobs, and relationship with EDA Regional Offices throughout project evolution.

Thus, all project grantees were contacted by mail and telephone and all were invited to the seminars, of which about 25 percent attended. The site visits were determined randomly, reflecting the following criteria:

- a. geographical diversity
- b. project type diversity
- c. project funding-level variations
- d. EDA funding-share variations

The response to mail and telephone solicitation and to site visits requests was 100 percent. All data obtained from the field was retransmitted to grantees for final verification.

H. COUNTING AND ATTRIBUTING JOBS AND INVESTMENT

The Attribution of Jobs and Private-Sector Investment

In most instances, EDA's investment in a project is the critical component that launches a project (defense construction, capacity building, or RLF) into action. The EDA funding is the critical, or "*but for*," element of the project that created the jobs in the area. Indeed, in making its project selection decisions, the *but for* argument is decisive for EDA. The role of filling this early implementation funding gap defines to a large extent EDA's role in defense adjustment, because EDA fills the gap in funding available to communities to respond to defense-related economic dislocation.

Much of a defense-impacted locality's development after the completion of an EDA defense project is dependent on the initial EDA decision to provide that funding. In many base closure communities, turnarounds might never occur without EDA's early involvement decisions. In urban defense-impacted communities, without EDA's timely involvement, neighboring economic forces could negatively impact the future of a project. Thus, given either the absence of local resources, or the inability of the public or private capital market in an area to generate the funding necessary to help a community adjust to cutbacks in defense spending or closure of military bases, infrastructure projects that help build the capacity of a community to recover from the shock of defense downsizing often would not be built or technical assistance rendered without EDA funding. Without EDA, the industrial park, incubator building, or other enterprise would not be built, or the technology transfer effort, training seminars, business liaisons, or market/feasibility studies not undertaken. In such cases, because of the critical nature of EDA funding and the risk capital that EDA provides, EDA is credited for the jobs created. No other funder—public or private—fills that

important, initial implementation role. If EDA is there first, plays an early implementation role, and offers significant funding, it gets credit for the jobs.

Further, only the public-sector investment should form the basis for the calculation of investment credit for a project. Leveraging of private-sector investment is the prize—the actual product—of EDA's and other public-sector investment. It is not a part of the initial component of project funding. With time, interest around an EDA project increases and private-sector investments or funding increase. Just as a risk-taking venture capital funder gets its reward from the increased value of its equity investment as subsequent investors come in, so does EDA's investment increase in value as later private-sector investments are made or private-sector players are attracted.

Finally, in most instances, it is only after EDA commits to funding a project that the grantee then can produce its local share, be it CDBG, other local funds, or private funds. EDA's "gap" funding—the special value that EDA contributes to economic development in distressed areas—is the major contributor to the impact of EDA's investments.

In counting jobs as an indicator of the impact of EDA funding, the correlation between EDA's investment and jobs is more accurately described as follows: Jobs in EDA-funded projects "result" from EDA's investment, rather than are "caused" by it.

EDA's investment in areas adversely affected by defense downsizing is crucial. In most instances, *but for* the EDA funding, there would not have been a successful project, and none of the other related jobs would have come about. In such cases, the resulting jobs are attributed to the EDA funding.

Defense adjustment grantees were asked whether EDA's role was "critical"

(without funding the project would have stopped) or “essential” (without funding the project would have been seriously compromised). Regional office directors were asked to research this same question. There was a nearly 8 in 10 correspondence between the two source designations of “critical” and “essential” on individual projects. Also very apparent was the almost uniform classification of EDA activities as *essential* as opposed to critical when EDA funding share fell below 25 percent. Following this field-developed relationship, the research team classified EDA activities as *essential* in *all* cases when the EDA share was less than 25 percent.

Information in the analytic summaries (found in Section II and repeated in the Summary of Findings) credits jobs created/retained to EDA reflective of the above convention. EDA is given *full* credit when its role is *critical*, and *proportional* credit when its role is *essential*. In the individual project summaries, this convention is not employed.

I. DATA AND DOLLARS— SOURCES AND YEARS

Data on project-area unemployment rates and per capita income have been obtained from EDA’s centralized data file. They are 24-month averages for the time period just before project approval. These have been researched and checked by the study team. Where data are missing, they have been supplied from other sources.

For the most part, this information is presented for the county of which the project is a part. Where large cities are the project sites, these data are used. Thus, information on unemployment rates, jobs lost, and per capita income for defense adjustment projects most often reflect the two years prior to project initiation. These are individually compared by project to state or national averages for the same years and results displayed in the project profiles. Information for percent minority and percent

below the poverty level is derived from decennial U.S. Census information for 1990.

Information on defense employment losses at a specific site includes direct military and civilian losses reported for a multiple-county area. Program focus usually determines the level at which job losses are reported. These data have been derived from DOD/OEA and/or Congressional Research Service sources.¹⁰

All financial information is left in its original form (1992–1995 dollars) in the project profiles and site visit summaries. In the analytic summaries of cost-per-project or per \$1 million of EDA funding (found in Section II and repeated in the Summary of Findings), these costs are expressed in constant (1997) dollars. Project expenditures from 1992 to 1995 have been taken to 1997 using the Consumer Price Index (CPI) as an index of inflation. This is about a 6 to 15 percent increase in actual project expenditure dollars depending upon the year of the project. Per capita income at project sites is also in its original form in the project profiles and site summaries (1992–1995 dollars).

J. MEASURES OF CENTRAL TENDENCY: WHICH ONES ARE USED

Throughout Section II of this study, statistical information is presented on the *average* EDA project. Choices available to the researcher for selection of the average project are the mean, the median, and the trimmed mean (5 percent of the cases removed at each end). The distribution of EDA defense adjustment projects contains about one-third of the projects below \$500,000 of EDA funding and about 8

¹⁰ U.S. Department of Defense, Office of Economic Adjustment. 1997. “Military Base Status Sheets.” Internal Working Document. Washington, DC; George H. Siehl and Edward Knight. 1996. “Military Base Closures Since 1988: Status and Employment Changes at the Community and State Level.” Washington, DC: Congressional Research Service. June 17.

percent of projects above \$5.0 million. These uneven extremes obviously influence the overall distribution.

The most robust measure of central tendency for interpreting this distribution is the median. It isolates and provides information on the middle case. This is the measure used for almost all comparisons in this study. The median is employed in all instances except when zero values are so numerous that the median is also zero. In these situations (only in capacity-building consultant jobs and costs per job), the trimmed mean is used. The trimmed mean produces values between the mean and the median and dampens the impact of extreme cases on the mean. Given the non-normal distributions of project information, in no case is the unaltered mean used as a measure of central tendency for this information. Means are used in simple program evaluation ratings which have very limited ranges (i.e. a scale of 1-10).

K. RELIABILITY OF PROCEDURES AND EFFECT ON RESULTS

The state of the art of job and investment counting is just that—jobs must be physically counted. This means that those individuals closest to, and with the most knowledge about, where and when economic development is taking place must tabulate the fruits of this investment. These are local economic development officers, tax assessors, and owners of local businesses.

Those who count jobs and investments must be guided in their assessments. This guidance involves an education process that distinguishes between differing levels of job creation, i.e., direct and indirect, as well as specific instruction on how to credit job creation. Further, the results of this process must be checked and validated. This three-part process—counting, educating, and validating—produces the most reliable results.

The procedure described above is the research design of this study. The design allowed those most familiar with the outcomes of EDA projects to provide quantitative and qualitative information on job creation and private-sector investment. Those who did this were guided by instruments and instruction sessions provided by the research team. The research team, in turn, standardized and aggregated all results and subjected these results to tests of plausibility.

The final step was physically checking the results of such analyses by conducting on-site visits. One in four of the projects analyzed for economic benefits was physically visited by a research team member. Numbers were checked with those who provided them, and site visits ensued in which the numbers and results (jobs and private-sector leverage) were authenticated.

SECTION II
—
**RESEARCH RESULTS:
QUANTITATIVE**

SECTION II—RESEARCH RESULTS: QUANTITATIVE

A. INTRODUCTION

This section of the report deals with the findings of the research. It begins with a discussion of the sites that were surveyed and how information was gathered; it then presents the *quantitative* results of the research. The research described here reflects information obtained via telephone, mail survey, and feedback from the seminars. Also included here are results from the site visits both in terms of additional information and direct verification of telephone and mail information. Section III contains a *qualitative* summary of the results from the study sites.

B. PROJECT CONTEXT

EDA’s Defense Adjustment Program is not specifically targeted to economically distressed areas but to those with current or impending defense-oriented impacts. Nonetheless, host locations of defense adjustment projects are indeed well below average in terms of economic health when compared to other areas. This is evident in the basic statistics for localities of the 187 projects studied:

1. The median two-year host county unemployment rate was 7.0 percent (about the same as the host state and national medians).
2. Median host county per capita income was \$13,034 (about three-quarters of the level of host state and national medians).
3. Median city percentage of population below the poverty level was 15.5 percent (about 20 percent more than host state and national medians).
4. Median 1990 city percentage of minorities was 27.3% (20 and 40 percent, respectively, more than host state and national medians).

CONTEXT OF PROJECTS (Medians) (At Time of Application. All 187 projects.)			
	<i>Median</i>	<i>Ratio*</i> <i>to</i> <i>State</i>	<i>Ratio*</i> <i>to</i> <i>Nation</i>
Unemployment Rate (%)	7.0	.98	1.02
Per Capita Income (\$)	13,034	0.72	0.73
Below Poverty Level (%)	15.5	1.18	1.18
Minority (%)	27.3	1.21	1.39

* See prior text for explanation of ratios.

C. CONTACT RESPONSE

As indicated earlier, these projects represent the universe of defense adjustment grant projects that were approved from FY 1992 through FY 1995. This amounted to 190 projects; of these, three were never funded, leaving 187 projects. These projects, typically with 2- to 3-year time spans, either have been finished for a relatively short period of time or are still in progress. They are found in 36 states (see Figure 1). All 187 projects were contacted successfully. Information on these projects is presented individually in the project profiles of Section V and is summarized in the aggregate here.

D. CATEGORIES OF DEFENSE ADJUSTMENT PROJECTS

Defense Construction

Defense construction projects are similar to public works projects except that they are usually larger and funded under the Defense Adjustment Program. Five groupings of defense construction projects are analyzed here.

These projects involve (1) buildings, (2) industrial parks, (3) roads, (4) water/sewer lines, and (5) marine/ tourism activities. Defense construction projects that are complete are no more than 1–2 years old; they barely have had time to get off the ground. One would expect much less output in jobs created and private-sector funds leveraged, because these projects have been in existence for only twenty percent of the time of the public works projects that have been analyzed in a concurrent study prepared for EDA.¹¹ Nonetheless, defense adjustment construction projects are measured in the same fashion as public works projects: number of direct jobs created and the amount of private-sector funds leveraged.

Capacity Building

Capacity-building projects are those projects funded by EDA that involve (1) planning/strategy building, (2) technical assistance (3) market/feasibility/reuse studies, and so on. Planning/strategy building and market/feasibility/reuse studies are not designed to, and therefore often *do not*, produce significant numbers of direct new jobs or private-sector investment. Technical assistance programs in some cases *do* generate permanent private-sector jobs.

Rather than acting as a job generator, capacity building might be thought of as the glue that binds economic development efforts together and ensures the success of defense construction and revolving loan fund projects. Projects that either create infrastructure to support or finance the emergence of businesses need a plan or market/feasibility analysis to guide their actions and train workers to staff new businesses. This is the fundamental role of capacity building.

Capacity building is process-related, as is economic development. Therefore,

¹¹ *EDA Public Works Program Performance Evaluation*. 1997. Report prepared by Rutgers University et al. for Economic Development Administration, Washington, D.C. Final Report (May).

traditional measures of assessing job creation and private investment leverage are often not on point. In the long term, creative ways must be developed to evaluate the positive impacts and systemic benefits of capacity-building projects.

Such measures should include, in addition to specific training products (such as number of workshops or training sessions), activities like

- Number of economic development professionals and local elected officials trained;
- Number of community stakeholders that participated in on-site assistance;
- Follow-up assistance provided;
- Research generated that contributed to a state database, which would not have been developed otherwise;
- Linkages created with other federally and state-funded defense adjustment projects
- Recommendations for state policy to target resources more appropriately to communities; and
- Creation of viable partnerships at the state, regional, and local levels.

Other desired measures could be the improved capacity of local economic development professionals to plan and implement economic adjustment programs and the increased ability of local elected officials to make better policy and resource allocation decisions for economic development. (Some of these measures and their results are discussed in the activity summaries on the project profiles in Section V of this report.)

Revolving Loan Funds

Revolving loan funds (RLFs) established by local economic development grantees make loans to start-up or established businesses of various types, as targeted by

the local economic adjustment strategy. RLF projects analyzed here are capitalized from \$500,000 to \$5 million and have been categorized in this study as those (1) less than \$1 million; (2) \$1 million to \$3 million; and (3) \$3 million and over. RLFs are established with an EDA grant that funds both a capital base from which to draw loans and, in rare instances, a small amount of money for administration. (Typically, grantees are responsible for administrative expenses. They may use program income earned under the grant to support such expenses.) Individual loans to small businesses typically range from \$50,000 to \$150,000 and typically are offered at two percent below the prime interest rate, with a 5-year payback. EDA regularly monitors active revolving loan funds and requires semiannual reports on their activities. Required information includes the number of loans made, jobs created, and ongoing levels of payback by the businesses that have been awarded loans. The data contained in this study reflect, for the most part, semiannual reports submitted as of March 31, 1997.

E. PROJECT DATA

The 187 grant-funded projects analyzed in this study include 162 single-element projects, twenty double-element projects, and five triple-element projects. These sum to 217 project elements funded via the 187 EDA grants.

DISTRIBUTION OF PROJECTS			
<i>Grant-funded</i>		<i>Project Elements</i>	
<i>Projects (Number)</i>		<i>(Number)</i>	
Single Projects	Project Elements		
	79 Construction	79	
	69 Capacity Building	69	
	14 RLF	14	
Double Projects			
	2 Construction/Capacity	4	
	16 Capacity/RLF	32	
	2 Construction/RLF	4	
Triple Projects			
	5 Constr./Capacity/RLF	15	
Total	187	217	

In the vast majority of cases, defense construction projects are undertaken as a single activity; in one-third of the cases, capacity building projects are undertaken with at least one other activity, usually an RLF; and in two-thirds of the cases, RLF projects are undertaken with at least one other activity, usually a capacity-building project.

From this point forward in the analysis, information will be presented using the base of 217 project elements, or some share of these, rather than the 187 grant-funded projects. This will provide much greater comparability by project type. By project element, there are 88 defense construction, 92 capacity building, and 37 revolving loan fund projects.

F. PROJECT COMPLETION

Defense adjustment projects undergo a standardized process of review at their respective EDA Regional Offices. Often, before a project is formalized into a proposal, there are informal discussions between the Economic Development Representative (EDR) or other Regional Office representative and the potential grantee. Then, a proposal is submitted in abbreviated form for informal review. If a defense adjustment proposal meets EDA criteria for defense impact and purpose, an application is officially invited. Prior to approval, the proposal undergoes legal review to determine ownership of the land and clear title, with the intention to follow through with the transfer of the property from military to civilian ownership. Further reviews include environmental, engineering and market feasibility analyses. There is often no equivalent engineering review for nonconstruction projects.

Projects Moving to Completion

Under the EDA Defense Adjustment Program, the purpose of the funding is to effect structural adjustment of the local economy, usually involving the creation of permanent private-sector jobs. EDA defense adjustment projects are conceived

and executed with the explicit purpose of producing strategies, evaluations, construction projects, and revolving loan funds that in the long term help communities adjust to the impact of defense downsizing/contract reductions and lead to permanent jobs.

These projects are selected with the expectation that they will come to fruition and be successful. This does not always take place, however. Two capacity-building and four construction projects were terminated after substantial EDA outlays or held in limbo for significant periods of time, freezing the funds allocated to these projects. In the first two cases, a project to make ceramic bowls/ovens on an Indian reservation in Montana (Denver Region) was terminated because the product was not market-ready at the time the marketing program was ready to proceed. Similarly, a hybrid (gasoline-electric) vehicle project in California (Seattle Region) was terminated after delay for an Inspector General's audit and changing legislative conditions rendered the market no longer amenable to reduced-emission vehicles.

In the next four cases, two projects in Florida (Atlanta Region) at the same surplus Air Force base ran into environmental problems and were placed on long-term hold. Further, a commerce center in Massachusetts (Philadelphia Region) is still looking for a home, and funds remain unexpended because the sponsor site no longer wants the structure built there. Finally, a wastewater treatment plant in Maine (Philadelphia Region) constructed for a manufacturing expansion has been mothballed because the manufacturing facility failed and no subsequent tenants have been found for the building.

Thus, for defense construction projects, 85 of 88 projects are progressing toward completion (97%); for capacity building, 90 of 92 projects are progressing to completion

(98%); and for RLFs, 37 projects are progressing to completion (100%).

STARTED PROJECTS MOVING TO COMPLETION	
(All 217 Project Elements*)	
<i>Moving To Completion</i>	
Defense Construction	97%
Capacity Building	98%
Revolving Loan Funds	100%
*Referred to as projects after this period.	

Completed Projects

The projects being evaluated were approved during the period FY 1992 to FY 1995. The recency of these awards affects these projects' level of completeness, as they are being evaluated just 2-5 years later in FY 1997. For defense construction projects, 49 of 88, or 56 percent, of the projects are complete; for capacity building, 70 of 92, or 76 percent are complete; and for RLF projects, 16 of 37, or 43 percent of the projects are complete.

Except for project funding information, for the analysis that follows, only information on completed projects will be presented in this quantitative summary; although all projects (both completed and in process) are shown in the profile sheets. This is because for in-process projects, data on jobs created/retained or private-sector funds leveraged are only estimates. For RLFs, analysis does not entirely depend on whether the project is completed (i.e., the loan amount is equal to or in excess of the original full grant amount) because the RLF is loaning money from the beginning and its operations can be reviewed for loans made, costs per job, and default/write-off rates as of the initiation of the first loan, all of which could change. For RLFs, incomplete projects will be analyzed; the analysis will distinguish between incomplete and completed project RLF results.

Schedule

With regard to defense construction projects, 39 of 49 completed projects were on-time, or about 80%; for capacity building, 39 of 70 completed projects were on-time, or 56%; and for RLFs, 13 of 16 completed projects, or 81%, were on-time. *Defense adjustment* grants are on average twice the size of public works grants; *defense construction* projects are four times the size of public works projects. Defense adjustment projects are difficult to manage and are fraught with exogenous conditions affecting project schedule. Capacity-building projects often involve research or technology transfers that are also much more unpredictable than building a water or sewer line. For defense construction projects, those most likely to be on-time are water/sewer projects; those least likely are buildings projects. For capacity building, those most likely to be on-time are market/feasibility studies; those least likely are technical assistance projects. For RLFs, the smaller-sized grants (less than \$1 million) are those least likely to be on time.

Budget

For defense adjustment projects, there is not the same likelihood that a project will come in under budget as there is for public works projects. Defense adjustment projects are often projects encompassing a variety of tasks and, in most cases, consume all of their budget. Public works projects are of a much smaller scale and involve solely construction, which is much simpler to carry out. The budget criterion that should be applied to defense adjustment projects is whether they have come in *at or under budget*. Using this criterion, 44 of 49 completed defense construction projects were at or under budget (90%); 68 of 70 completed capacity-building projects were at or under budget (97%); and 16 of 16 of the RLFs were at budget (100%). The budget criterion does not apply to RLFs in the way it does to other defense adjustment projects

because RLFs lend to the full extent and beyond their original grant using funds repaid from the first cycle of lending.

PROJECT COMPLETION (135 Completed Projects)			
	<i>Currently Completed</i>	<i>On Time</i>	<i>At or Under Budget</i>
Defense Construction (49)	56%	80%	90%
Capacity Building (70)	76%	56%	97%
Revolving Loan Funds (16)	43%	81%	100%

G. PROJECT FUNDING (CONSTANT \$)

Information obtained from EDA indicates that the median defense adjustment project studied here costs \$1.5 million when all sources of funding are counted (1997 dollars). EDA’s median contribution is just over \$1.0 million. The most expensive projects are defense construction projects (\$3.4 million); the least expensive are capacity-building strategies or market/feasibility studies (\$337,000). EDA’s median share of total defense adjustment project funding is approximately 75 percent.

OVERALL PROJECT FUNDING (Medians) (All 217 Projects)	
Total Cost	\$1.50 million
EDA Cost	\$1.01 million
EDA Share	75% †

† When medians are used, EDA share is not the simple ratio of the first to the second cost number.

PROJECT FUNDING BY TYPE (Medians) (All 217 Projects)			
	<i>Total Cost</i>	<i>EDA Cost</i>	<i>EDA Share</i>
Defense (88) Construction	\$3.39 mil.	\$2.03 mil.	75%
Capacity (92) Building	\$337,000	\$234,000	75%
Revolving (37) Loan Funds	\$1.33 mil.	\$1.0 mil.	75%

H. PROJECT IMPACTS (PROJECT-RELATED DIRECT IMPACTS)

Number and Cost of Direct Permanent Jobs

Zero to two years after project completion, the total number of direct permanent jobs resulting from the 49 completed defense construction projects was 30,870. For a similar period at or after completion of 31 capacity-building (technical assistance) projects, 1,952 direct permanent jobs were produced. Again, capacity-building projects are not designed to create jobs directly, but those that are created are counted here. During a similar period after completion, 16 completed RLFs produced 7,977 jobs. Since RLFs can produce jobs before the project is viewed as complete (at the point where the loan amount exceeds the grant amount, including non-EDA funds), 21 in-process RLFs have already produced 3,772 permanent jobs.

TOTAL JOBS (96 Completed Defense Adjustment Projects, TA Capacity-Building Projects and RLF Projects; 21 In-Process RLF Projects)		
	<i>Completed Projects</i>	<i>Total Jobs</i>
Defense Construction	49	30,870
Capacity Building (Technical Assistance only)	31	1,952
RLF (complete)	16	7,977
(in process)	21	3,772

Defense construction projects produce 124 permanent jobs per \$1 million of EDA funding at a median cost of \$8,052 per job. About 83 permanent defense construction jobs are produced per \$1 million of all sources of funding at a median total cost of \$12,045. Capacity-building (technical assistance) projects produce 63 permanent jobs per \$1 million of EDA funding at a cost of \$13,633 per job.¹² Approximately 43 capacity-building permanent jobs are produced per \$1 million of all sources of funding at a total cost of \$19,393 per job.

¹² The trimmed mean is used for this calculation.

Finally, RLFs (completed and in-process) produced 304 and 247 permanent jobs per \$1 million of EDA funding at a total cost of \$3,312 and \$4,079 per job, respectively. About 263 and 185 permanent (complete and in-process) RLF jobs are produced per \$1 million of all sources of funding at a cost of \$3,822 and \$5,439 per job, respectively.

The number and cost of permanent jobs vary significantly by type of defense adjustment activity. Defense construction projects produce the most permanent jobs and are in the middle in terms of cost per job; capacity-building projects, because they are not designed or intended to create jobs, produce the least permanent jobs and, as counted here, are the most expensive; RLF-produced jobs range midway between the two other types of projects but are the least expensive in terms of cost per job.

Two important points bear repeating here. The first is that most of the completed defense construction projects analyzed in this study are barely past the completion stage.¹³ The public works evaluation cited earlier found that created/retained jobs double over the period from completion to six years after completion.

The second point that bears mentioning is that capacity-building projects from a performance measurement point of view are *not* generally rated on their job-producing abilities. This is as it should be because other than consulting jobs, no direct jobs were reported or found for either the planning or market/feasibility/reuse study components of capacity building. In about one-third of the technical assistance projects, permanent

¹³ Comparing the results of defense construction projects in this evaluation to the results of public works projects in the May 1997 report should not be done because the scale of the projects is so different. That is, defense construction projects are much larger and may not produce the same types of results. More importantly, the public works projects studied have had six years to mature before impacts were tallied; defense construction projects studied have had barely 1–2 years to mature.

job creation was reported. Due to the uncertainty of getting a job after technical assistance has ensued, these jobs are more expensive to create than defense construction or RLF equivalents. It is important, however, to both recognize and count the direct jobs created through the technical assistance component of capacity building.

PROJECT JOB PRODUCTION (Medians) (96 Completed Defense Adjustment Projects, TA Capacity-Building Projects and RLF Projects; 21 In-Process RLF Projects)					
		<i>Jobs per \$1 million</i>		<i>Cost per Job</i>	
		EDA	TOTAL	EDA	TOTAL
Defense Construction	(49)	124	83	\$8,052	\$12,045
Capacity Building (Technical Assistance)	(31)	63	43	13,633	19,393
Revolving Loan Funds (Complete)	(16)	304	263	\$3,312	\$3,822
(In Process)	(21)	247	185	\$4,079	\$5,439

Other Direct Measures for Capacity Building

Capacity-building activities, as indicated previously, are not intended to be measured in terms of either job production or cost per job. Capacity-building projects analyzed in this study produced feasibility analyses, provided technical assistance, encouraged economic development networks to be expanded, added to the net worth of firms through technology transfers, and enhanced local abilities to deal with the reality of economic downturns. These specific activities are shown on pages facing capacity-building project profiles following the summary text of this report.

Other measures for capacity building employ grantee ratings of project performance in terms of the (a) quality of the adjustment assistance strategy, (b) extent of participation by government, business, and community leaders, (c) extent to which projects implemented are based on the Title IX strategy, (d) quality of the evaluation or

feasibility study, and (e) impact of the feasibility study on project planning.

For 70 completed capacity-building projects, these ratings are shown below. They indicate very high overall grantee satisfaction with the capacity-building effort being undertaken, especially as it relates to the quality and impact of technical assistance and quality of the market, feasibility, or reuse study. These received about a 9 rating on a scale of 1–10. Consistency of implementation measures with the adjustment strategy and the defense adjustment strategy itself received lower ratings—i.e., 7.8 and 8.2, respectively, on a scale of 1–10.

CAPACITY BUILDING RATINGS (Means) (70 Completed Capacity-Building Projects [All Types]) (Scale of 1 to 10; 10=Best)		<i>Rating</i>
a. Quality of Defense Adjustment Strategy		8.2
b. Participation of Community Leaders	(N=19 for a,b,c)	8.5
c. Consistency of Strategy with What Was Done		7.8
d. Quality of Technical Assistance	(N=31 for d,e)	8.8
e. Impact of Technical Assistance		8.9
f. Quality of Feasibility Study or Market Analysis	(N=20 for f,g)	9.1
g. Impact of Feasibility Study or Market Analysis		8.7

Other Direct Measures for Revolving Loan Funds

Revolving loan funds are measured using the standard criteria of jobs and private-sector funds leveraged. Revolving loan funds are also measured by the number of businesses assisted (loans made) and by the scale of the capital base that has been accumulated. The latter comprises the original grant amount for the revolving loan fund (including both EDA and local shares) plus interest accrued, minus bad debt.

For the 16 completed RLFs, businesses assisted (loans made) per RLF amount to 16 and total jobs per business, 22. These are funded from a median capital base of \$1.55 million. For the 21 in-process RLFs, businesses assisted (loans) amount to 5.0 per RLF, with a median of 24 jobs per business. These are supported by a median capital base of \$1.27 million.

Completed RLFs have combined default and write-off rates of 13 percent; for in-process RLFs the rate is much less, or 1.9 percent. Both completed and in-process RLFs fund primarily business expansions (50%) and industrial firms (67%).

It should be realized that these are not the equivalent of bank loans, but rather loans of much higher risk. At the interest rate charged, there is virtually no private-sector competition. Default/write-off rates for completed RLFs reflect this risk but are still within industry standards for this type of loan.

REVOLVING LOAN FUND (Medians) (16 Completed RLFs; 21 In-Process RLFs)		
	<i>Completed</i>	<i>In-Process</i>
Businesses		
Assisted (Loans made)/RLF	16	5
Jobs/Business	22	24
RLF Capital Base	\$1.55 M	\$1.27 M
Percent in:		
Default/Written off	13	1.9
Percent of Loans (means):		
Start-up	33	27
Expansion	48	55
Retention	19	18
Percent of Loans (means):		
Industrial	69	64
Commercial	18	25
Service	13	11

All of the RLF performance information contained in the table that follows comes from grantee semiannual reports to EDA. These reports are far more comprehensive

than information required by EDA RLF performance measures. The performance measures should be expanded to include at least the data that follow from the semi-annual reports. There would be no additional data-gathering burden at the grantee or Regional Office levels (the information is already being collected), and these measures add substantially to the RLF performance evaluation.

Construction/Professional Employment

Although not usually counted by EDA, there is both construction and professional employment related to the defense construction or capacity-building efforts, respectively. From both surveys and checking with standards from the field, it was found that the 49 completed defense construction projects produced 2,606 construction jobs, or about 18 full-time-equivalent (FTE) jobs per \$1 million of EDA funding.¹⁴ The 70 completed capacity-building projects produced 591 professional consultant jobs, or about 13.7 FTE jobs per \$1 million of EDA funding.

CONSTRUCTION/CONSULTANT EMPLOYMENT (Medians) (49 Completed Defense Construction Projects; 70 Completed Capacity-Building Projects)	
18.0 FTE Construction Jobs*	Per \$1 Million of EDA Funding
13.7 FTE Consultant Jobs**	
<hr/> * Defense Construction ** Capacity Building	

In most input-output (I/O) models, the creation of construction or consultant employment due to private- or public-sector investment is an integral part of the impact assessment. Although these are not permanent jobs, they do add significantly

¹⁴ Except in the case of buildings, this does not include private- or other public-sector improvements on the land.

to the local economy. EDA might consider rethinking its policy not to include one-time jobs as part of the job-creating benefits of defense construction and capacity-building project.

Direct Private-Sector Investment

Direct private-sector investment primarily involves the erection or improvement of structures. This is true for both defense construction and revolving loan fund projects. For most utility and road defense construction projects, direct private-sector investment takes place after the initial, EDA-funded capital improvement. For buildings, both from defense construction and revolving loan funds, private-sector investment results from the EDA grant. For harbor, pier, and dock defense construction projects, there is often less subsequent private-sector investment than in other categories of construction projects.

For the 43 completed defense construction projects studied¹⁵, zero to two years after completion of these projects, private-sector investment totaled \$722 million. This amounts to \$2.2 million per \$1 million of EDA funding.

PRIVATE-SECTOR INVESTMENT (Medians) (43 Completed Defense Construction Projects)	
Defense Construction (43)	\$722 million total private sector; \$2.2 million per \$1 million of EDA funding
RLFs (Completed) (16)	\$115 million total private sector; \$2.5 million per \$1 million of EDA funding
RLFs (In-Process) (21)	\$42 million total private sector; \$2.8 million per \$1 million of EDA funding

For the 16 completed revolving loan funds, private-sector investment totaled \$115 million. This amounts to \$2.5 million per million of EDA funding.

For the 21 in-process revolving loan funds, private-sector investment totaled \$42 million. This amounts to \$2.8 million per million of EDA funding.

J. PROJECT IMPACTS (GENERAL)

EDA defense adjustment projects produce jobs, private-sector investment, and a less easily measurable economic development product termed “capacity building.” Capacity building empowers local areas to respond in a proactive and forward-moving way to the adverse impacts on their declining economies. Whereas defense construction projects and revolving loan funds clearly produce the most jobs and the most private-sector investment, it is capacity building that enables these activities to take place. *In fact, capacity building, in the form of the specific Title IX Defense Adjustment Strategy, the OEA Base-Reuse Plans, or various forms of commissioned market and feasibility strategies, could well be given credit for all the jobs created by defense construction and revolving loan fund projects.* Capacity-building projects are not directly credited with these accomplishments; accordingly, they may wrongly appear to produce fewer “hard results” relative to the achievements of the more easily quantified defense construction and RLF projects.

Defense adjustment projects of all types also have potentially much more economic development significance in the long run. They affect large areas, involve more funding, and usually have reasonable shares of basic utilities and street hardware in place. The defense adjustment projects looked at here are likely just beginning to scratch the surface in terms of regional employment impacts.

¹⁵ Six projects of 49 completed are public sector and have only public-sector investment.

SECTION III
—
**RESEARCH RESULTS:
QUALITATIVE**

SECTION III—RESEARCH RESULTS: QUALITATIVE

A. INTRODUCTION

The descriptions in subsections C through H present information about three EDA defense adjustment projects in a grouped analysis. In subsection I, three other projects are presented in a case analysis form. This is done in the first case to contrast and compare projects across certain dimensions; in the second case, the entire flow of a project is presented. The projects selected are representative of EDA efforts in terms of both substantive thrust and local impacts.

B. GENERAL OBSERVATIONS ON DATA AND IMPACTS

- In almost all cases, defense adjustment projects involving military base reuse have been in existence too short a time, given the extensive rehabilitation effort required to bring most military bases up to civilian standards, to produce numerical tallies of jobs created that are representative of their final, steady-state impacts.
- In almost all cases, defense adjustment projects have a much greater long-run potential of producing jobs and real community economic change than most public works projects. Often, the sheer scale of the project is huge, the land is already assembled, much of the infrastructure is in place, and the air-fields, hospitals, schools, residences, and other facilities already exist. However, in most cases, such infrastructure is grossly deficient in terms of supporting an alternative, non-defense-dependent economy.
- EDA's requirement that actions of the defense adjustment grantees be consistent with an existing adjustment strategy is an excellent point of departure. It forces many community leaders to think strategically, sometimes for the first time, about their own community's development as well as the community's place in the overall economy, both with and without the defense facility.

C. DEFENSE ADJUSTMENT SITES

Defense adjustment projects discussed first include: 1) two capacity-building projects—the Border Environmental Commerce Alliance program (BECA, Chula Vista, California), an environmental business development and support organization, as well as the Bay Area Defense Conversion Action Team (BADCAT), a coordinating agency for response to defense closures; and 2) a defense construction project—the Stony Brook water treatment plant in Norwich, Connecticut.

The above three defense adjustment projects are quite different from each other. As an incubator manager, BECA provides offices at affordable rates to starting businesses and consulting services. These businesses grow and move out into the community and create more jobs and occupy additional commercial space. Key aspects of the incubator operation include: 1) facility amenities (a variety of offices available to businesses at attractive rates, a shared receptionist and greeting area, and conference rooms); and 2) consultant services (access to an on-site manager, business development specialist, and technical consultant pool). BECA also runs a series of business seminars, including those dealing with how to sell products and how environmental rules and regulations affect businesses.

BADCAT helps each of twelve local base conversion coordinators in the San Francisco area learn what others are doing and facilitates their working together on common problems. Toward these ends, BADCAT has completed an industry analysis of the most competitive industrial clusters for the San Francisco area (computers, biomedical services, and so on). The idea is that each conversion strategy should target its efforts to the growth sectors of the economy that parallel its

local skill bases. The program also assists in bringing different conversion sites to the attention of prospective private-sector developers. If it becomes apparent that one site does not fit the profile that the developer is most interested in, the developer can be referred to another site in the region.

Although Norwich's water filtration project is considered "defense construction," it is actually like some of the projects discussed in the public works evaluation. The Norwich project, involving EDA funding of \$2.0 million (out of a total project cost of \$4.7 million), permitted the construction of a water filtration plant including a dam, storage tank and spillway, as well as an access road. This directly and indirectly stimulated the local economy as new businesses were attracted to the immediate area.

D. RATIONALE FOR EDA INVOLVEMENT

In all cases, EDA defense adjustment projects are a direct response to defense base or defense industry closings. BECA is the product of defense industry closings in Chula Vista, just to the south of San Diego. The closings/downsizing include General Dynamics (down from 10,000 to 0) and Rohr Industries (down from 8,000 to 1,900). This is an area of significant distress and, with Los Angeles, is the worst in the nation. To combat the economic effects of downsizing, Chula Vista sought to (1) develop a high-technology resource center convenient to the South Bay part of the San Diego metropolitan area; (2) be part of a regional effort to target new environmental businesses; and (3) develop an "environmental incubator" based on a state strategic plan.

BADCAT is a response to twelve major base closings in the San Francisco Bay Area, resulting in the loss of 41,500 jobs. The San Francisco metropolitan area has been harder hit by base closings than any other

metropolitan area in the United States. At their peak, these bases employed more people than the entire population of the city of Indianapolis. Now, when bases close, communities have difficulty in securing similar numbers of jobs through conversion efforts. The underlying strength of the Northern California economy is the magic bullet that is allowing this particular area to seriously challenge the above notion.

Norwich's water treatment plant is part of the City's effort to shift from naval defense manufacturing to tourism. However, the Norwich story is a bit more complicated. In 1993, the State of Connecticut upgraded its requirements for water treatment facilities, necessitating a new facility. Connecticut cities are able to sell water outside their city limits. Norwich has taken advantage of this opportunity by selling water to the nearby Mohegan Indian Casino and Resort. Thus, in this particular circumstance, not only can the new water capacity be used to attract industry, it can actually be sold as a product.

E. THE IMPORTANCE OF EDA INVOLVEMENT

The EDA grant in each of these three defense adjustment projects clearly helped to spur local economic development. The grants assisted these areas in becoming part of a local, regional, or state strategy—one that emphasizes the growth of both business and personal service industries as an adjustment to defense cutbacks. Without EDA funding, these projects would not have taken place at all or would have been very different projects—most far less comprehensive in scope.

Absent the EDA funding for BECA, there would be no incubator; without similar funding for BADCAT, San Francisco might have lost a valuable coordinating capability. EDA is skilled in bringing the actors in economic development together and maximizing the results of their synergy.

In Norwich, EDA funds were essential in bringing together State of Connecticut and local funds to establish a new enterprise—the sale of water. Without EDA funds, the City would have proceeded with a water filtration facility at a much more modest scale—a plant that could not have supplied water to the Mohegan Indian Casino or elsewhere in the region.

F. DIRECT RESULTS OF EDA INVOLVEMENT

BECA's Technology Resource Center has undertaken assistance in international trade regulatory compliance and business development. BECA's Environmental Business Cluster has commercialized new technology and assisted start-up businesses. This has led thus far to about 90 jobs created or retained in the area.

Since the conversion efforts in the San Francisco Bay Area are fairly new, it is premature to assess BADCAT's direct effects. Alameda and Mare Island base conversions are furthest along in terms of creating jobs. What had been a ship *building* facility at Mare Island is now a ship *cannibalization* facility. Parts of ships are broken up, shipped to Asia, and recycled. Further, the U.S. Forest Service is in the process of locating there. Other interim leases have been let for selected facilities, and elsewhere, film companies have been using various portions of the base for productions.

Over a two-year period, five different construction contracts were issued on the Norwich project. At any given time there were between twelve and forty people working on the job. One person works full-time at the water filtration plant, which is fully automated. Norwich's manager of water operations estimates that the water filtration plant has generated 3,000 jobs; ninety-five percent of the total (2,850) are jobs outside of Norwich. The remainder of the jobs are spread among eleven other firms.

G. INDIRECT RESULTS OF EDA INVOLVEMENT

One reason why BECA is deemed an important participant in San Diego's adjustment to defense downsizing is because, like other regional capacity-building projects, its goals are consistent with those at the regional and state levels (i.e., sustainable development and trade exports).

BADCAT has succeeded not only in the areas of coordination and information dissemination—its main missions—but also in facilitating job-training efforts of the community colleges. Part of BADCAT's overall effort has been to identify the needs of the workplace. Local base coordinators have contacted community colleges to set up training programs for jobs likely to open up as a result of their efforts. About 110 jobs have been created as a result of this effort.

In addition to the above-noted 3,000 jobs generated by Norwich's water treatment plant, there have been tertiary job impacts within Norwich resulting from the Indian casino (e.g., increased business for the local beer distributor and local printers). This defense adjustment project is spurring both economic restructuring and downtown revitalization.

H. OVERALL ASSESSMENT OF THE EDA EFFORT

Representatives of both BECA and BADCAT gave the Seattle EDA Regional Office the highest rating for providing solid services despite limited funds and multiple competing demands. Barbara Parr from BECA states:

They have become involved when we needed help. Their mission has been to help us succeed. They have provided the experience and support to help us to succeed.

The remarks of the director of Bay Area Economic Forum (the agency responsible for BADCAT) continue the theme:

On a macro level they have been responsive to the needs of our area and have helped to develop pro-grams that will be effective. On a micro level, their service has been excellent. They have tried to make defense base conversions a success. Overall, they have been outstanding.

On paper, the spillover effects from Norwich’s water treatment plant are impressive—i.e., 3,000 jobs. However, it may not be appropriate to credit these jobs to Norwich. If the new water treatment plant did not exist, the casino may have been able to obtain water piped at a considerable distance from another city, but it is not likely that would have happened. Nevertheless, the City deserves praise for linking this defense construction project with its long-term economic development and downtown revitalization strategies. Norwich has an attractive downtown based on a historic New England seaport theme and should be able to attract day-trippers going to or returning from the Indian casino.

I. ADDITIONAL EXAMPLES OF EDA’S ACTIVITIES

<ul style="list-style-type: none"> San Bernardino International Airport and Trade Center 	<i>Norton Air Force Base Closure</i>
<ul style="list-style-type: none"> Utah Technology Finance Corporation (UTFC) 	<i>Tooele and Ogden Army Base Depot Closures</i>

Site Characteristics

The above two site visit summaries represent, respectively, technical assistance and revolving loan fund efforts. The deactivation of Norton Air Force Base in 1994, along with other defense industry cutbacks, eliminated 6,650 defense-related

jobs in a relatively depressed area. The economy of the region is approximately \$47 million annually; the Air Force base accounted for approximately \$4.0 million. Indirect revenue impacts exceeded \$4.4 million per year. The overall project consists of approximately \$90 million in USAF funds for base deactivation and cleanup (there is a considerable plume of trichlorethylene [TCE] over the aquifer that the Air Force is treating by a pump-filter-recharge method); approximately \$32 million in San Bernardino Inland Valley Development Agency (IVDA) funds; and about \$6.3 million in EDA funds. The applicant is requesting an additional \$2.0 million in EDA funds. Another agency, the San Bernardino International Airport Authority, is also part of the project. The concept of the project was to turn the base property into an industrial site. The local community wholeheartedly supports the IVDA. There is also a particularly good partnership with the Air Force.

The EDA defense conversion revolving loan fund in Salt Lake City, Utah, is administered by the Utah Technology Finance Corporation (UTFC) to accommodate three defense cutbacks: Tooele Army Depot’s closure, the Ogden Depot Logistics Center closure, and the scale-back of Hill Air Force Base. The total job loss was estimated at 3,600 and had a significant impact on the city.

These programs were the result of defense department cutbacks in the late 1980s and early 1990s. As bases closed or were cut back, many direct defense-related jobs were lost. In addition, many indirect jobs were also lost when military suppliers left the area. Wholesale and retail businesses were also affected.

Independent organizations formed and acted as authorities in administering the economic recovery of these areas. These organizations act as “mini-EDAs” insofar as their primary purpose is to encourage economic development. At the San Bernardino site, the IVDA, along with the

residual Air Force command, coordinates all activities there. IVDA operates the small business incubator. The two organizations negotiate leases for tenants and plan for future activities. The UTFC itself administers the revolving loan funds on a day-to-day basis. Like a bank, it is concerned with keeping loans current and default rates low.

EDA Involvement

The EDA portion of the San Bernardino (Norton Air Force Base) project consists of the provision of a 20-inch water line and attendant pump station to allow development of the east end of the airport. Water/sewer and other utilities, road work, and landscaping will be provided on the west end of the airport and will allow for expansion of four 100-acre industrial park developments. This project also includes a parking lot to be constructed in front of the proposed passenger terminal. An additional grant is being sought to complete the landscaping of the parking lot, extend roadways, and add regional traffic signals.

EDA was critical in the San Bernardino project. It is a difficult sell to convince companies to come to a depressed area. Military bases are designed to be self-contained and inhospitable to visitors. They also frequently have adult recreational land uses around them that may be less than desirable. Any company that does not see a distinct advantage often will not relocate to an area where a military base has previously existed. EDA was able to provide infrastructure plus a newly designed entrance to this particular facility.

Would the project have come to the area without EDA assistance? Yes, but it would have been with great difficulty. It also would have been a much smaller project. Internal funds could not have supplied the necessary infrastructure. The EDA grant removed some of the risk from the project and added the necessary financial support to allow the project to gain acceptance locally.

In Utah, EDA established a defense adjustment revolving loan fund in 1994 of \$1.5 million. This commitment convinced the State of Utah to allocate an additional \$500,000. The purpose of the revolving loan fund was to help businesses establish jobs to replace those lost by defense cutbacks. The project committed to private investment on a one-to-one basis.

The UTFC manages EDA's RLF. EDA audits UTFC's management and allocation of funds; however, the UTFC identifies potential businesses and oversees the loan. UTFC is an independent public corporation created by the Utah State Legislature in 1983 to promote economic development throughout the state. Other programs that it manages include those of the U.S. Department of Housing and Urban Development (low- and moderate-income loans), Farmers Home Loan Association (rural residential loans in locations of 2,500 population or less), and SBA Microloans (business loans of less than \$25,000). UTFC received the EDA's RLF because it deals with other business loans on a day-to-day basis.

The EDA portions of the project grants serve more as a catalyst for overall economic development than simply as a source of money for the facility itself. The infrastructure supplied by EDA funding was critical to the success of the air base project. EDA was also the prime support for the revolving loan fund. The RLF has created 67 jobs thus far and has retained an additional 588 jobs. Most of the loans were made within the last year; more jobs will come in the future.

Results of the EDA Effort

Direct results from the San Bernardino project are occurring daily. At the time of the project visit, a total of 1,720 direct jobs had been created toward the goal of 10,000 jobs. The San Bernardino Trade Center's small business incubator also appeared to be very successful. It had four tenants at the time of visit; two have ex-

panded and are looking for space outside the incubator.

A small percentage of the lost indirect benefits of the Air Force base have been recovered, resulting to date in approximately \$880,000 in private investment and 40 jobs.

In Utah, the revolving loans that have been issued already exceed the grant amount. Seed businesses are being funded, catching on, and growing.

As of August 1997, there were 67 jobs created of the 200 jobs estimated. However, a majority of the fund was loaned in 1996; time is needed to assess the success of this effort. UTFC believes that things are going well and expects to reach if not surpass its original job target. As noted above, all of the 588 jobs estimated to be retained have been retained.

This area has experienced an economic boom since 1994. EDA has initiated some of the growth and otherwise ridden the crest of the overall health of the regional economy.

<ul style="list-style-type: none"> California Environmental Vehicle Consortium (CEVCO) Hybrid Electric Vehicle Project (HEVP) 	<p><i>California Base Closures</i></p>
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Site Characteristics

With the winding down of the defense industry, California was especially hard hit. Compounded by the closing of 22 major military facilities, 125,000 jobs were lost by mid-1997 in the defense sector. The ripple effect from the loss of business of servicing these activities and their job holders was sorely felt by California, in general, and by the impacted communities in particular.

In response to these economic conditions, the Governor and Legislature established the California Council on Science and Technology, whose mission included: 1) identifying the long-range research requirements for sustaining the state’s economic development and competitiveness, as well as 2) establishing an organizational structure for the development of collaborative public/private-sector initiatives targeted to spurring R&D activities, innovation, and the growth of new science and technology-based industries and jobs.

Under the Council’s auspices, an effort entitled Project California completed an inventory of California’s unique resources that might provide the foundation for new industry in the state. One of the conclusions of Project California’s panel of 26 of the state’s major leaders in the fields of business, labor, government, and academia was that, “Electric vehicles will be one of the largest industries of the twenty-first century.” Project California estimated that the worldwide demand for electric vehicles would reach nearly 2 million autos by 2007, yielding an industry with annual sales exceeding \$25 billion. By 2003, according to the panel, more than 70,000 Americans would be employed in direct manufacturing jobs in the electric vehicle industry.

EDA Involvement

EDA provided approximately \$1.5 million in funding, which the recipient augmented by about \$600,000. With these funds, the California Environmental Vehicle Consortium (CEVCO) and the East Bay Community Foundation (EBCF) proposed to develop a business plan and supporting studies necessary to initiate a hybrid technology development demonstration and pre-marketing program for the creation of a clean vehicle industry in California. The applicants intended to adapt a General Motors Prism gas-powered automobile, assembled by California’s only major automobile assembler, NUMMI (New United Motor Manufacturing Inc.).

The project would replace the internal combustion drive system with a hybrid electric drive system at a cost of no more than ten percent above the cost of the vehicle being replaced. Specific activities included:

1. Completing a technology peer review and optimization study to determine the feasibility of utilizing existing technologies for introduction of the hybrid electric vehicle into the mass market.
2. Completing a project development and commercialization plan by identifying and documenting tasks, schedules, costs, specifications, risk management, property rights, and liability concerns.

Results of the EDA Effort

After the first eight months of the project, a U. S. Department of Commerce Inspector General's (IG) audit was initiated to investigate the contract procurement method, which employed a sole, non-competitively selected source.

During the subsequent nineteen months the project was on hold as a result of the audit, California's regulations were relaxed, a crucial representative of the auto manufacturing industry (NUMMI) withdrew its support, and other competitors overtook CEVCO in their pursuit of a hybrid vehicle. While the IG audit and other circumstances crippled CEVCO's Hybrid Electric Vehicle Project (HEVP), these events did not reduce the need for answers to questions regarding alternatives to internal combustion engines.

The HEVP identified and collected a significant amount of information before being placed on hold as a result of the IG audit. This information was organized into a two-volume set of more than 1,000 pages produced by the CEVCO team and submitted to EDA on May 10, 1996. Although it is not a complete and

integrated report, the documents contained in these volumes are high-quality and extremely detailed. In draft form, they are of significant value to regulators, the public, the political community, and potential component suppliers.

Had the market not turned, IG intervention would have cost all a golden opportunity. The IG intervention was reasonable; both the grantee and EDA must bear responsibility for it having to take place. However, this cloud had a silver lining: as a result of the intervention, EDA and the grantee each saved money on a product that ultimately would not have been marketable. EDA paid \$0.9 million versus \$1.5 million for a study about a project that ultimately had no immediate market. Further, EDA received all of the reports that it was supposed to receive (relative to its disbursement schedule), and a nonprofit organization that was involved in this endeavor managed to survive its loss.

These risks, inherent in defense adjustment activities, point to the uncertainties associated with investment in a changing technology. This is an example of EDA partnering in local risk-taking; economic adjustment is not risk free. It should be noted that the grantee compliance difficulties and the IG audit were unrelated to the risky nature of the venture.

J. CONCLUSIONS

After visiting six regional offices and reviewing the contents of 190 project folders; holding 13 seminars nationally, and meeting with 47 grantees; undertaking 190 mail surveys and a minimum of six callbacks to each site; and finally, after visiting 42 project sites, the research team concludes the following:

- EDA defense adjustment projects create both direct jobs and private-sector investment in the political jurisdictions in which they are developed.
- These jurisdictions have poverty populations including minorities that are often far larger than the state or nation as a whole.
- These locations have experienced severe defense employment losses that have had significant impacts on economies dependent on this type of employment.
- Defense adjustment grants provided by EDA represent one of the few sources of funds available for local economic development implementation. This represents significant and flexible funding that is able to shift in emphasis as the economic development problem shifts.
- The long-run potential for significant job growth and private-sector leverage seems to be with defense adjustment projects. Defense adjustment projects focus on closed military bases that are typically large, have utilities and street systems in place, and previously functioned as “mini-communities” under a radically different economic structure prior to closure. Their scale is equivalent to a large planned-unit development or a new community, and economic benefits accrue commensurately with this scale of activity.
- EDA as a defense adjustment participant is viewed by grantees as a flexible source of support for the problems with which they are confronted. EDA is there when no other funding agency is. As circumstances change, the flexibility of the EDA grant allows project focus to evolve as well. EDA is well-regarded by its constituency and is believed to be a significant player in local economic development.

SECTION IV
—
**RESEARCH TEAM,
ACKNOWLEDGMENTS,
REFERENCES**

SECTION IV—RESEARCH TEAM, ACKNOWLEDGMENTS, REFERENCES

RESEARCH TEAM

The foregoing research was funded by the Economic Development Administration and the Office of Economic Adjustment. The research was undertaken by Rutgers University, Center for Urban Policy Research (CUPR); New Jersey Institute of Technology, National Center for Transportation and Industrial Productivity (NJIT); Columbia University, National Center for Infrastructure Studies (NCIS); Princeton University, Woodrow Wilson School; the National Association of Regional Councils' Economic Development and Planning Division (NARC); and the University of Cincinnati, School of Planning and Urban Policy. The Rutgers-NJIT-Columbia-Princeton-NARC-Cincinnati team was led by four senior academic principals—Robert W. Burchell, Louis J. Pignataro, F.H. (Bud) Griffis, and John W. Epling.

Robert W. Burchell, Ph.D.

Dr. Burchell has served as principal or co-principal investigator on more than 60 research contracts in a thirty-year career at Rutgers University. He has conducted studies for the Federal Transit Administration, U.S. Department of Agriculture, Fannie Mae, U.S. Department of Housing and Urban Development, and other federal, state, and local agencies. For the last five years, his work has been concentrated in the areas of economic impacts and costs of infrastructure development.

Louis J. Pignataro, D.Sc.

Dr. Pignataro is Executive Director of NJIT's Institute for Transportation and Distinguished Research Professor of Transportation Engineering. He has served as primary investigator for more than 55 sponsored research projects in a variety of areas, including pipeline infrastructure studies in the New York metropolitan area.

F.H. (Bud) Griffis, Ph.D.

Dr. Griffis has more than 37 years of experience in design, construction and maintenance of national and international infrastructure systems such as program management of the JFK International Airport redevelopment program, management of the design and construction of Ramon Airbase in Israel, and numerous infrastructure design and construction projects in Europe and the Far East.

John W. Epling, D.P.A.

Dr. Epling brings to the project more than 30 years of experience working for local, regional, and state governments in four different states on issues of economic development, infrastructure investment, urban and rural revitalization, and other areas. As the Executive Director of the National Association of Regional Councils, he has interacted with elected and appointed officials across the country on community and regional development and infrastructure needs.

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RESEARCH ORGANIZATIONS**Rutgers University, Center for Urban
Policy Research (CUPR)**

For nearly three decades, the Center for Urban Policy Research has conducted a broad spectrum of urban research. In particular, CUPR has concentrated its efforts in analysis of infrastructure, public finance, economic impacts and forecasting, land use, environmental policy, and geographic information systems.

The Center for Urban Policy Research has undertaken economic impact and infrastructure studies for the National Academy of Science, National Trust for Historic Preservation, Environmental Protection Agency, New York Metropolitan Transportation Commission, States of South Carolina and New Jersey, Southeast Michigan Council of Governments, and North Jersey Transportation Planning Authority.

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The National Center for Transportation and Industrial Productivity represents a substantial investment of the NJIT's resources and research capacity in activities that are intended to address problems of relevance to local governments, the state, and the nation. The National Center's research involves federal and state transportation studies for motor vehicles and transit based systems.

Current research projects include estimation of multi-modal freight flows in the United States; smart sensors for freight movement; rail intermodal service planning; pipeline infrastructure studies to evaluate and develop criteria for the siting of natural gas and hazardous liquid transmission pipelines in proximity to the public in urban areas and in sensitive environments; economic and land use impacts of transportation projects; design and construction of prototype noise barriers; and seismic retrofitting of major bridges.

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The National Center for Infrastructure Studies was established to research technologies, techniques, and materials to improve the productivity and durability of infrastructure facilities in urban areas. The Center has performed studies of infrastructure demand and supply with funding from federal agencies, states, and major cities.

The Center has established a preventive maintenance management plan for the bridges of New York, developed environmentally responsible guidelines for New York City Bridges, and performed extensive destructive and non-destructive testing on many of the nation's suspension bridges. It has recently developed an innovative concrete mixture substituting ground waste glass for portland cement. The Center is active in the study of transportation systems, water supply,

waste water treatment, solid waste disposal, and dredging.

**Princeton University
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and International Affairs**

The Woodrow Wilson School of Public and International Affairs has more than 50 regular faculty members, most of whom have joint appointments with the departments of Economics, Politics, or Sociology. It has research programs in demography, development, domestic policy, international studies, and survey research. The principal research units are the Center of Domestic and Comparative Policy Studies, the Center of International Studies, the Office of Population Research, and the Survey Center. The Office of Population Research has undertaken multiple studies of the economic impacts of public works projects.

**National Association of
Regional Councils (NARC)**

The National Association of Regional Councils promotes and encourages intergovernmental cooperation, recognition of the region as an economic entity, and cooperation among the nation's public, private, and civic sectors. Research thrusts include the capacity and ability of localities to undertake economic development.

**University of Cincinnati
School of Planning and Urban Policy**

In the last twenty years, the faculty of the School of Planning and Urban Policy have conducted research on community health, computer simulation and GIS, edge cities/metro-towns, environmental management and policy, housing, inner-city development, international urban development, and urban design.

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SECTION V
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**PROJECT PROFILES
AND
SITE VISIT SUMMARIES**

(This PDF contains all of the evaluation's analysis and findings but does not include individual project profiles or site visit summaries. Project-by-project details are contained in the full report. The following lists are included to identify the projects that were the basis of the evaluation.)

SITE VISITS

Project No.	Project Name	Page No.
<i>REGION 1—Philadelphia</i>		
01-49-03235	Pease International Tradeport	58
01-49-03242	Stony Brook Water Filtration Plant	60
01-49-03255	Quonset/Davisville Pier Rehabilitation	64
01-49-03260	Massachusetts Economic Stabilization Trust RLF	70
01-49-03271	Wicomico County Technical Assistance and RLF	72
01-49-03274	Philadelphia Naval Base Reuse Plan and RLF.....	74
01-49-03279	Syracuse Road and Water/Sewer Lines.....	76
01-49-03335	New Jersey Electronics Business Connection.....	88
01-49-03352	Freeport Water/Sewer Extension Project	96
01-49-03354	Pease International Tradeport	98
01-49-03367	Erie Infrastructure Improvements.....	104
01-49-03400	Virginia Defense Conversion RLF	108
01-49-03441	Syracuse—Technical Assistance, Training, and RLF	120
<i>REGION 4—Atlanta</i>		
04-49-04016	Southern Mississippi RLF.....	138
04-49-04018	Savannah River Cooperative Research Center.....	140
04-49-04095	Miami-Dade Community College Dormitory Renovation	152
04-49-04099	Futrex Elevated Mass Transit System Model.....	154
<i>REGION 5—Denver</i>		
05-49-02594	St. Louis Metropolitan World Trade Center and Loan Program.....	168
05-49-02614	Cornerstone Partnership Program.....	170
05-49-02617	Sioux Manufacturing Corporation	172
05-49-02716	UTFC Defense Conversion RLF	178
<i>REGION 6—Chicago</i>		
06-49-02658	Venture Out Business Center.....	188
06-49-02663	Village of Rantoul RLF and Marketing Plan	190
06-49-02680	Wurtsmith Air Force Base Reuse	194
06-49-02685	Clark Maritime Center/North Port Industrial Parks Infra. Improvements	196
06-49-02772	Glenview NAS Base Conversion Study	204
<i>REGION 7—Seattle</i>		
07-49-02639	County of Merced RLF	208
07-49-02662	Castle Airport and Aviation Development Center	216
07-49-02680	San Bernardino International Airport and Trade Center.....	220
07-49-02750	Southern California International Airport	224
07-49-03158	California State University, Monterey Bay	226
07-49-03417	Bonneville County Technology Park.....	230
07-49-03447	North Las Vegas Target Marketing Study.....	234
07-49-04062	BECA Resource Center and Incubator	250
07-49-04071	Bay Area Defense Conversion Action Team (BADCAT).....	254
<i>REGION 8—Austin</i>		
08-49-02904	Arkansas Aeroplex Runway Improvements and Def. Adj. Strategy.....	270
08-49-02906	South Webster Industrial District	272
08-49-02910	Chase Field NAS Infrastructure Improvements	274
08-49-02944	England Industrial Airpark Renovations	280
08-49-02945	Fort Polk Industrial Park	282
08-49-02977	Univ. of New Mexico-AMMPEC Technology Transfer	286
08-49-03002	Arkansas Aeroplex Hangar Improvements	288

PROJECT PROFILES

Project No.	Project Name	Page No.
<i>REGION 1—Philadelphia</i>		
01-49-03208	Southern Tier Regional Defense Adjustment Strategy	56
01-49-03221	State of Connecticut Defense Information and Services Network	57
01-49-03235	Pease International Tradeport.....	59
01-49-03242	Stony Brook Water Filtration Plant	61
01-49-03245	Lynchburg Business Development Center	62
01-49-03246	Mineral County Defense Adjustment Strategy.....	63
01-49-03255	Quonset/Davisville Pier Rehabilitation.....	65
01-49-03254	New London State Pier.....	66
01-49-03257	Southern Maine Defense Adjustment Strategy	67
01-49-03258	Fort Fairfield Wastewater Treatment Facility	68
01-49-03259	Pennsylvania Defense Cuts Impacts	69
01-49-03260	Massachusetts Economic Stabilization Trust RLF.....	71
01-49-03271	Wicomico County Technical Assistance and RLF.....	73
01-49-03274	Philadelphia Naval Base Reuse Plan and RLF.....	75
01-49-03279	Syracuse Road and Water/Sewer Lines	77
01-49-03277	Seafood Industrial Park Infrastructure Improvements and RLF.....	78
01-49-03282	Maine Transportation and Tourism Study.....	79
01-49-03291	Long Island Defense Diversification Program	80
01-49-03308	State of Maryland Defense Adjustment Technical Assistance	81
01-49-03310	New London County Regional Revolving Loan Fund.....	82
01-49-03314	Hampton Roads PDC Defense Adjustment Strategy	83
01-49-03320	Pennsylvania Industrial Conversion Loan Fund.....	84
01-49-03323	Patrick Henry CommerCenter	85
01-49-03329	Western Maryland Defense Adjustment Strategy	86
01-49-03330	UMBC Industrial Park.....	87
01-49-03335	New Jersey Electronics Business Connection	89
01-49-03333	New River Valley (NRV) PDC Technical Assistance.....	90
01-49-03337	North Central Massachusetts RLF and Technical Assistance	91
01-49-03338	NH State Port Authority Barge Facility.....	92
01-49-03342	Maryland Strategies Assistance Program and RLF.....	93
01-49-03343	Rhode Island Port Authority Revolving Loan Fund	94
01-49-03345	Boykins Wastewater Treatment Plant.....	95
01-49-03352	Freeport Water/Sewer Extension Project.....	97
01-49-03354	Pease International Tradeport.....	99
01-49-03360	Watertown Arsenal Technical Assistance	100
01-49-03361	Baltimore County DED High Tech RLF	101
01-49-03362	Mohawk Valley Industrial Parks and RLF	102
01-49-03365	New Haven CIC RLF	103
01-49-03367	Erie Infrastructure Improvements	105
01-49-03366	Marion, Virginia Defense Adjustment Strategy.....	106
01-49-03398	Massachusetts Industrial Service Program	107
01-49-03400	Virginia Defense Conversion RLF	109
01-49-03399	Champlain Water and Sewer Improvements.....	110
01-49-03402	Burlington County Defense Adjustment Program	111
01-49-03403	Maine Defense Diversified Adjustment Program	112
01-49-03404	Chemung County Sanitary and Storm Sewer Improvements	113
01-49-03420	Lower Eastern Shore RLF and Technical Assistance	114
01-49-03421	Loring AFB Marketing Strategy	115
01-49-03422	Ulster County Business Resource Center	116
01-49-03423	Dutchess County Incubator	117
01-49-03424	URI Ocean Technology Center.....	118
01-49-03425	West Kingston Industrial Park Water and Sewer Improvements	119
01-49-03441	Syracuse-Technical Assistance, Training, and RLF	121
01-49-03437	Patuxent River NAS Defense Adjustment Strategy.....	122
01-49-03454	Keyser Industrial Parks.....	123
01-49-03470	Geneva Incubator.....	124
01-49-03471	Plattsburgh Road and Water/Sewer Lines	125
01-49-03472	Big Flats Water System Improvements	126
01-49-03478	West Davisville Infrastructure Improvements.....	127

01-49-03485	Bristol County Defense Adjustment Strategy	128
01-49-03491	Merrimack Valley RLF	129
01-49-03492	Roger Williams Center for Economic and Environmental Development.....	130
01-49-03495	Massachusetts Industrial Services Program.....	131
01-49-03497	Kingston Business Park.....	132
01-49-03502	Tri-County RLF and Technical Assistance	133
01-49-03503	North American Technology Center and RLF	134
01-49-03505	Devens Commerce Center.....	135
01-49-03512	Philadelphia-Washington Sq. Training Center.....	136
REGION 4—Atlanta		
04-49-04016	Southern Mississippi RLF	139
04-49-04018	Savannah River Cooperative Research Center.....	141
04-49-03998	Bushy Industrial Corridor Wastewater System Expansion.....	142
04-49-04021	City of Homestead Building Construction	143
04-49-04024	Myrtle Beach AFB Water and Sewer Extensions	144
04-49-04034	Myrtle Beach AFB Wastewater and Sewer Improvements	145
04-49-04049	BCD COG Revolving Loan Fund.....	146
04-49-04058	Mobile County Wetlands Study.....	147
04-49-04066	Top of Alabama Impact Study	148
04-49-04079	Oak Ridge Technology Incubator	149
04-49-04090	Orlando Naval Training Center Land Survey.....	150
04-49-04091	Brevard Community College Clean Room Facility	151
04-49-04095	Miami-Dade Community College Dormitory Renovation	153
04-49-04099	Futrex Elevated Mass Transit System Model.....	155
04-49-04097	Calhoun County EOC Business Incubator	156
04-49-04102	Homestead Industrial Park Infrastructure Improvements	157
04-49-04105	Berkeley-Charleston-Dorchester Business Marketing Plan.....	158
04-49-04109	South Carolina Aquarium.....	159
04-49-04134	Gateway Center Science and Multimedia Facility	160
04-49-04140	Studio Marketing Study and Naval Complex Assessment	161
04-49-04148	Naval Air Station Cecil Field Engineering Study	162
04-49-04166	Town of Meggett Water and Sewer Line.....	163
REGION 5—Denver		
05-49-02578	Rocky Flats Defense Adjustment Strategy	166
05-49-02585	Lowry AFB Market Analysis	167
05-49-02594	St. Louis Metropolitan World Trade Center and Loan Program	169
05-49-02614	Cornerstone Partnership Program	171
05-49-02617	Sioux Manufacturing Corporation	173
05-49-02615	Bear Paw Economic Development District RLF.....	174
05-49-02624	Fort Peck Tribe Manufacturing Equipment.....	175
05-49-02651	Rapid City Defense Adjustment Strategy	176
05-49-02654	St. Peters Central Materials Processing Facility.....	177
05-49-02716	UTFC Defense Conversion RLF.....	179
05-49-02715	Lowry AFB Reuse	180
05-49-02729	Tooele Army Depot Defense Adjustment Strategy	181
05-49-02735	Pueblo Depot Activity Defense Adjustment Strategy.....	182
05-49-02736	St. Louis Biomedical Technopolis	183
REGION 6—Chicago		
06-49-02573	InAAP Economic Adjustment Strategy	186
06-49-02635	Indiana Defense Readjustment Strategy	187
06-49-02658	Venture Out Business Center	189
06-49-02663	Village of Rantoul RLF and Marketing Plan.....	191
06-49-02671	Calumet AFB Defense Adjustment Strategy.....	192
06-49-02677	Rantoul Aviation Center Access Road	193
06-49-02680	Wurtsmith AFB Reuse.....	195
06-49-02685	Clark Maritime Center/North Port Industrial Parks Infra. Improvements	197
06-49-02683	Charlestown Sewer System Improvements	198
06-49-02687	Door County Marketing Study, Business Incubator, and RLF	199
06-49-02726	WMU School of Aviation Sciences.....	200
06-49-02749	Rantoul Aviation Center Water Improvements	201
06-49-02766	Fort Benjamin Harrison Base Reuse Study	202
06-49-02768	Indiana Business Modernization Team.....	203

06-49-02772	Glenview NAS Base Conversion Study	205
06-49-02771	Hamilton County Incubator Expansion	206
REGION 7—Seattle		
07-49-02639	County of Merced RLF.....	209
07-49-02634	Alameda Corridor Transportation Way Project	210
07-49-02640	Monterey County-Wide RLF	211
07-49-02648	CALSTART Advanced Transportation Consortium.....	212
07-49-02649	Los Angeles County Business Technology Center	213
07-49-02657	Fort Ord Economic Development and Infrastructure Analysis	214
07-49-02658	Downtown Oakland Rotunda Building.....	215
07-49-02662	Castle Airport and Aviation Development Center	217
07-49-02666	Marina Green Business Park.....	218
07-49-02672	San Diego Technology Incubator.....	219
07-49-02680	San Bernardino International Airport and Trade Center.....	221
07-49-02681	World Trade Center San Diego and EmTEC Fund.....	222
07-49-02722	George AFB Infrastructure Upgrading	223
07-49-02750	Southern California International Airport.....	225
07-49-03158	California State University, Monterey Bay	227
07-49-03349	LA County CDC Product Development Partnership	228
07-49-03360	Redondo Beach Municipal Pier.....	229
07-49-03417	Bonneville County Technology Park.....	231
07-49-03393	Washington Manufacturing Networks.....	232
07-49-03441	CAL ED Technical Assistance.....	233
07-49-03447	North Las Vegas Target Marketing Study.....	235
07-49-03442	Williams AFB Reuse Planning	236
07-49-03536	Williams AFB Reuse Study	237
07-49-04017	Project California, Phase II	238
07-49-04020	Cal-Trade Commerce Tech. Assistance.....	239
07-49-04021	California Environmental Vehicle Consortium Marketing Study.....	240
07-49-04025	Joint Venture: Silicon Valley, Inc.....	241
07-49-04026	BAYTRADE.....	242
07-49-04032	San Jose Center for Employment Training.....	243
07-49-04034	Los Angeles County Technology Incubator Network (In-Net).....	244
07-49-04038	Sacramento County Technology Transfer	245
07-49-04045	Mather Field Industrial Park.....	246
07-49-04046	Vaca Valley Business Park.....	247
07-49-04055	LA Trade	248
07-49-04056	Napa County Marketing Brochure	249
07-49-04062	BECA Resource Center and Incubator	251
07-49-04057	Naval Shipyards/Hunters Point/ NAS Treasure Is. Engineering Study	252
07-49-04063	University of California, MBEST Center	253
07-49-04071	Bay Area Defense Conversion Action Team (BADCAT).....	255
07-49-04064	Mare Island Marketing/Training/Feasibility Study.....	256
07-49-04072	Fort Ord Infrastructure.....	257
07-49-04074	San Francisco Pier 68 Shipyard	258
07-49-04076	U.S. Aviation Discovery Exposition Center.....	259
07-49-04078	Fort Ord Technical Assistance.....	260
07-49-04080	City of American Canyon Infrastructure Study.....	261
07-49-04098	Silicon Valley Defense Conference	262
07-49-04105	Alameda Center for Environmental Technologies.....	263
REGION 8—Austin		
08-49-02887	Fort Polk Realignment Implementation Grant	266
08-49-02890	State of Texas Defense Adjustment Strategy	267
08-49-02893	England Industrial Airpark Access Pad.....	268
08-49-02902	Fort Smith Street Improvements	269
08-49-02904	Arkansas Aeroplex Runway Improvements and Def. Adj. Strategy	271
08-49-02906	South Webster Industrial District.....	273
08-49-02910	Chase Field NAS Infrastructure Improvements	275
08-49-02903	Westark Community College of Business and Industrial Institute.....	276
08-49-02915	Frank Delia Industrial Park Infrastructure Improvements	277
08-49-02921	City of Marshall, Texas, Defense Adjustment Strategy.....	278
08-49-02935	Fort Worth-Arlington Labor Market Analysis	279

08-49-02944 England Industrial Airpark Renovations 281
08-49-02945 Fort Polk Industrial Park 283
08-49-02960 Fort Polk Technical and Marketing Assistance..... 284
08-49-02963 Fort Worth Business Assistance Center..... 285
08-49-02977 Univ. of New Mexico-AMMPEC Technology Transfer 287
08-49-03002 Arkansas Aeroplex Hangar Improvements..... 289
08-49-03001 Graham City Texas Defense Adjustment Strategy..... 290
08-49-03003 Arkansas Aeroplex Road Improvements 291
08-49-03027 Eaker AFB Wastewater System Improvements 292