2414

Fernald Community Reuse Organization

COMMUNITY TRANSITION PLAN 1999 - 2002 AND FY99 IMPLEMENTATION REQUEST

P.O. Box 38
Ross, Ohio 45061
513-648-4168

1

2414

1999-2002 COMMUNITY TRANSITION PLAN

AND

FY99 IMPLEMENTATION REQUEST

FERNALD COMMUNITY REUSE ORGANIZATION
P.O. Box 38
Ross, Ohio 45061

Message Line:	(513) 648-4168
Project Office:	(513) 527-3150
Fax:	(513) 527-3153
E-mail:	paddockmgt@aol.com
Website:	www.fernald.gov "Stakeholders CRO" Section

June 30, 1999

2

Fernald
Community
Reuse
Organization

2414

June 30, 1999

Mr. Jack Craig
DOE - FEMP
P.O. Box 538705
Cincinnati, OH 45253-8705

Dear Mr. Craig:

The Fernald Community Reuse Organization (FCRO) is very pleased to convey to you its Community Transition Plan (CTP) and Implementation Grant Request. This work product is the result of over two years of dedicated work by the civic leaders on the FCRO and the participation of a broad cross section of the Fernald site's stakeholders.

In the CTP we outline the open and deliberative process which was the basis for arriving at our plan's strategy and the priority list of projects we propose. This process has been greatly enhanced by several key factors. First, our FCRO membership has included active representation from all labor organizations at the Fernald site. Together with representatives from Fernald's salaried workforce, this union participation has ensured that our transition strategy is congruent with the deeply felt needs and concerns of the Fernald workforce.

A second major consideration in the development of our strategy has been a commitment to linking the CTP to the plans, programs and objectives of the several economic development agencies operating in the Greater Cincinnati Region. This linkage is, again, reflected in the composition of the FCRO's board. In addition, the FCRO's representatives have become active members in the interagency efforts that are coordinating the Greater Cincinnati Region's overall economic development program. This participation has resulted in the target industry study, which is a key component of this CTP. This linkage also has resulted in the inclusion of several FCRO priorities in the Hamilton County's Overall Development Plan (OEDP), which is annually updated and submitted to the Economic Development Administration as a unified statement of our area's economic development agenda.

You will note the CTP projects a three year program which, if fully funded, would require a total of $12,000,000 in DOE resources. The first year implementation request totals $3,017,340. We believe we have clearly established the need for such an undertaking and the measurable objectives that will be achieved through an

P.O. Box 38 Ross, Ohio 45061 513-648-4168

allocation at this level. However, we recognize the realities of the situation and are prepared to dialogue with DOE regarding project priorities, refocusing our planned efforts, or rebudgeting, based upon DOE's review of our request.

The support and encouragement we have received from all levels of DOE have been very helpful and appreciated by all of us. We look forward to your review and are ready to address any of your questions or needs for additional information.

Thank you for this opportunity to plan and execute a well-conceived approach to community transition at Fernald, based upon the full inclusion and participation of our workforce, the community at large, and the existing plans and programs of our region's economic development leaders.

Sincerely,

David R. McWilliams

Dr. David McWilliams
Chair
Fernald Community Reuse Organization

FERNALD COMMUNITY REUSE ORGANIZATION
1999 - 2002 COMMUNITY TRANSITION PLAN
AND
FY99 IMPLEMENTATION REQUEST

2414

TABLE OF CONTENTS

I. Introduction 1

II. Organizational Development and Planning 3
- Site Remediation 3
- Fernald Citizens Task Force Recommendations 3
- Fernald Accelerated Cleanup Plan 4
- Employment Reductions 4
- Fernald Community 5
- Purpose of Fernald CRO 5
- Convening Process 5
- CRO Membership 6
- National Council for Urban Economic Development 7
- Path Forward 8
- Final Land Use Planning 8
- State of Ohio Development Assistance 9
- Excess Property Disposition 10
- Economic Development Program Options 10
- Economic Impact Assessment 10
- Target Industry Study 13

III. Regional Development Initiatives 15
- Overall Values 15
- Revolving Loan Fund 16
- Marketing and Promotional Activities 19
- Entrepreneurial Development Assistance 21
- Formation of Fernald Employee-Owned Business Units 22
- Local Development Corporation 23
- Business Incubator 24
- Administration and Management 25
- Staffing and Contract Relationships 26
- Financial Management 27
- Community Involvement and Communication 27

IV. Performance Monitoring and Measurement 29

V. FY99 Implementation Request 32

VI. Appendices
- Appendix 1: Market Assessment Study
- Appendix 2: Market Assessment Study
- Appendix 3: Market Assessment Study
- Appendix 4: FEMP Economic Impact Study
- Appendix 5: Target Industry Study
- Appendix 6: Budget Overview
- Appendix 7: Project ADEPT Guidelines
- Appendix 8: CRO Administrative and Financial Procedures Manual

5

FERNALD COMMUNITY REUSE ORGANIZATION
COMMUNITY TRANSITION PLAN
1998 - 2002

2414

I. INTRODUCTION

Since the early 1950s, the Department of Energy's operation of the Fernald site located in southwestern Ohio has made a significant contribution to the economy of the region. The initial mission of DOE's Fernald site was the production of high purity uranium metal products for the nation's defense system. With a decline in product demand and increasing environmental concerns, production operations ceased in mid-1989 and the site was placed on the National Priorities List in November 1989. Since that time, the site, now known as the Fernald Environmental Management Project (FEMP), has been engaged in an aggressive site cleanup program. This accelerated remediation effort seeks to complete site remediation in the 2006-2008 timeframe. This shift in mission has already resulted in a significant loss of payroll to the region, and this decline is anticipated to continue throughout the remaining years leading to eventual closure of the facility.

The Fernald Community Reuse Organization (CRO) was organized in August 1996 to provide recommendations to the Department of Energy regarding steps necessary to mitigate adverse impacts to the area's economy resulting from the gradual closure of the FEMP. The CRO is composed of local leaders drawn from both the public and private sector who are knowledgeable about local and regional economic trends and the impact of the Fernald facility on the operations of the local economy. In May of 1997 the Department of Energy supplied the CRO with an initial startup grant to develop the organizational structure and mechanisms necessary to perform its mission. This support was followed by the award of an additional grant for the development of a complete Community Transition Plan. This planning grant was received in June 1998.

Since that time, the CRO has been engaged in an extensive region-wide effort to develop a set of development initatives that respond to the challenges confronting the region as the FEMP facility moves toward eventual closure. This Community

6

Transition Plan describes the CRO's proposed programs, priorities, and management systems. Section II, Organizational Development and Planning, describes the CRO's mission and the planning process that has been developed to establish the CRO's planning and implementation objectives. Section III describes the program priorities selected by the CRO to accomplish its mission. Section III, Regional Development Initatives, also includes the administrative and management arrangements which have been established to assure effective performance. Finally, Section IV, Performance Monitoring and Measurement, specifies the program measures which will be utilized to determine progress toward fulfillment of the CRO's goals and objectives and measure the ultimate success of its endeavors. A variety of technical appendices are attached which provide additional explanation of the CRO's findings, operating environment and administrative operational procedures. The sections which these appendices support are referenced in the following text.

II. ORGANIZATIONAL DEVELOPMENT AND PLANNING 2414

The Fernald Environmental Management Project (FEMP) is a 1,050 acre Department of Energy facility located in a rural area of southwestern Ohio, approximately 18 miles northwest of Cincinnati. From the early 1950s to 1989, the Fernald site produced high-purity uranium metal products for the nation's defense program. During its 38-year production history, Fernald shipped over 500 million pounds of uranium metal products to other DOE facilities. With a decline in product demand and increasing environmental concerns, production operations ceased in mid-1989, and the site was placed on the National Priorities List in November 1989. Congress officially declared the site closed in August 1991. Under contract with the DOE, Fluor Daniel Fernald has been managing the site's cleanup activities since December 1992.

Site Remediation

After almost 10 years of detailed technical analysis, the FEMP has completed characterization of site contamination, marking the end of the Remedial Investigation/Feasibility Study phase mandated by the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) process. Records of decision are in place for the FEMP's five site operable units, and the site is now focused on the safe, efficient and timely implementation of remedial actions. A snapshot of cleanup activities to date includes: initiating construction of an on-site disposal facility; completion of safe shutdown activities in all of the site's former production facilities; decontamination and dismantlement of fifty-three former production buildings; off-site shipment of low-level radioactive "legacy" wastes; treatment of hundreds of thousands of gallons of liquid hazardous wastes; thorium overpacking amd off-site shipment, and treatment of 1.3 billion gallons of contaminated water.

Fernald Citizens Task Force Recommendations

In 1993, the DOE, the EPA and the Ohio EPA established the Fernald Citizens Task Force, a site-specific citizens advisory board, to provide recommendations on key site remediation issues, including future use of the FEMP. In July 1995, the Task Force issued its final report to the DOE and the regulators. On the issue of future use,

the Task Force did not identify specific land uses, stating:

> "The Task Force believes it is best that those decisions be made by the persons who would ordinarily make such decisions — people of surrounding townships, and local planning and zoning officials. In particular, residents adjacent to and immediately impacted by the future use of Fernald should be provided significant access to and participation in decisions regarding specific future use and ownership of the Fernald property."

Among other activities, the Fernald CRO has built upon the Citizens Task Force's broad land use recommendations.

Fernald Accelerated Cleanup Plan

The FEMP is managing site cleanup activities under an aggressive remedial action plan which will complete site cleanup 15 years earlier than originally projected, at a $3 billion cost saving for taxpayers. The Accelerated Cleanup Plan was endorsed by the regulators, local elected officials, the Fernald Citizens Task Force, and other stakeholders. In June 1996, the DOE approved a rebaseline proposal for the plan which identifies the steps to complete site remediation within a 10-year window.

Although the pace of remediation at the FEMP will be determined largely by funding levels, the site is positioned to complete remediation as safely and quickly as possible to avoid additional burden to taxpayers.

Employment Reductions

In the last six years, the FEMP has undergone two work force reductions. In 1993, 255 workers were terminated during an involuntary reduction in force, and in 1995/1996, 431 workers left as part of a voluntary reduction in force. During the outyears of the Accelerated Cleanup Plan, additional work force reductions will occur. The May 1, 1996, *Environmental Restoration Acceleration Report*, projected a 37 percent work force reduction over a 10-year period, through 2005. Current estimates project a decline in FEMP employment from 2,464 in 1997 to 911 in 2008.

Fernald Community

The 1,050 acre FEMP site is located within Hamilton and Butler counties in Ohio. Eight hundred and fifty acres of the site are located within Hamilton county and 200 acres are located within Butler county.

The two counties are each governed by boards of commissioners. The three townships which surround the FEMP — Crosby, Morgan and Ross townships — derive authority from the state government, and are governed by three-member boards of trustees. The Fernald CRO will be different from most other DOE CROs since the site is not in or near an incorporated community.

Most of the surrounding communities are unincorporated and are characterized as rural, agricultural or "bedroom communities" for Greater Cincinnati area commuters.

Purpose of Fernald CRO

As previously stated, the FEMP will experience a significant decline in employment over the next 10 years as the site completes cleanup activities under the Accelerated Cleanup Plan. The Fernald CRO has developed a strategy to offset the impact of downsizing on the local communities and will continue to serve as a forum for regional planning and development issues. The group will continue to evaluate and provide recommendations to DOE on the following socioeconomic issues:

- future land use planning for the FEMP;
- disposition of excess facilities and equipment; and
- community transition and economic development opportunities for the surrounding communities.

Convening Process

To ensure that formation of the Fernald CRO was fair, open and inclusive of all interests, a convener from the University of Cincinnati was used to determine and recommend membership and develop the group's charter and operating procedures. The convener's assignment involved four phases: preliminary investigation; needs assessment; design of the CRO; and implementation.

To inform both internal and external stakeholders of the CRO formation process, DOE and Fluor Daniel Fernald conducted a publicity campaign which involved: news releases and display ads in the three local newspapers; Fernald Envoy reports to local

stakeholder groups; regular feature stories in the monthly stakeholder newsletter, "The Fernald Report," which is distributed to over 800 people; announcements to the Fernald work force through employee updates, the electronic news network, and other employee communications.

In parallel with these activities, the convener attended stakeholder meetings and met one-on-one with community leaders, elected officials, Fernald management, employees and others to learn about the surrounding communities, educate stakeholders on the formation of the CRO, and solicit nominations for membership. During this period, the convener distributed CRO nomination/application forms to the public and held a public workshop in May 1996 to answer questions about the group and encourage stakeholder interest.

The convener based her recommendations on the following criteria: location of candidate's residence and work; candidate's profession, membership(s) and volunteer work; candidate's leadership abilities; candidate's community experience; candidate's knowledge of Fernald site issues; candidate's reason and interest in serving on the CRO, among other factors. The convener's intention was to select a mix of individuals who generally reflect the three primary communities adjacent to the Fernald site, with representation from Fernald's unions and salaried work force. Because the CRO's mission includes economic development issues, the convener also considered candidates with background, education or expertise in this area. The Fernald CRO convened on August 17, 1996, and members participated in an orientation retreat on September 14, 1996. The CRO meets on the first Tuesday of each month.

CRO Membership

The Fernald CRO membership generally reflects the tri-township communities (Crosby, Morgan, Ross) surrounding the Fernald site. Of the 50 to 60 stakeholders who expressed interest in the Fernald CRO, 35 completed an application and 18 (including an ex officio member) were appointed for either a two-year or three-year membership, with opportunities for term renewal. Members include: Fernald salaried employees; union officials; community leaders; local residents; business leaders; local elected officials; educators; and regional planners. The chair is the superintendent of

Ross Local School District.

Current Members	Affiliation
Sharon Cornwell	Fluor Daniel Fernald employee
Lisa Crawford	FRESH President; Fernald Citizens Advisory Board member
Karl Dillhoff	Morgan Township Trustee
Louis Doll	Cincinnati Building and Const. Trades Council Rep.
William Hinkle	Hamilton county Communications Operations director
Maurice Hornbach	Crosby Township Rep., former Fernald employee
Darryl Huff	Fernald Citizens Advisory Board member
Michael Keyes	President, International Guards Union of America
Dan Lawler	Assistant Superintendent, Southwest Local School District
David McWilliams	Ross Local School District superintendent, CRO Chair
William Neyer	ex-officio member; DOE FEMP employee
Thomas Renck	Ross Area Merchants Association representative
Alisa Rhodes	Fluor Daniel Fernald employee
Gary Storer	Crosby Township trustee
Robert Tabor	Fernald Atomic Trades & Labor Council representative; Fluor Daniel Fernald employee Fernald Citizen's Advisory Board member
Donald Thiem	Ross Township Resident
Randy Welker	Greater Cincinnati Chamber of Commerce
Christie Williams	Butler County Economic Development Agency

National Council for Urban Economic Development (CUED)

CUED has a contract with the U.S. DOE Office of Worker and Community Transition to provide short-term technical services to 10 communities adversely affected by downsizing and/or closure of DOE sites. On October 21 and 22, 1996, CUED economic development experts, experienced in economic/community recovery and revitalization, met with CRO members, local residents, elected officials, business leaders, economic development planners, FEMP workers and others to assess community issues and needs. Issues discussed included: the CRO's goals; the

regional economic development climate; available services for local businesses; and opportunities for technology transfer. In February 1997, CUED submitted its final report to the CRO. The report contained recommendations on planning and organizational development issues which have helped guide CRO deliberations.

Path Forward

During January and February 1997, the CRO participated in several facilitated working sessions to develop a path forward, establish its own mission and vision based on DOE's initial charges, and determine specific strategies. The CRO has appointed a five-member board of directors, and established a nominating committee to address membership issues.

Over the Spring and Summer of 1997, the CRO focused on refining its administrative procedures and selecting an economic development consultant. The latter process resulted in the selection of a consultant who initiated operations in September 1997.

Final Land Use Planning

Beginning in October 1997, the CRO began to turn its attention to issues pertaining to projected final land use on the FEMP site. Discussions with DOE, Fluor Daniel and Ohio Environmental Protection Agency personnel were most revealing. It quickly became apparent that much of the site's acreage would be needed for natural resources restoration as mandated by the terms of pending court settlements. Remaining land would be utilized for the on-site storage cell. Finally, established Records of Decision directed the dismantlement of virtually all structures on the site. Consequently, only 23 acres near the main entrance to the site appeared to be available for uses that might contribute to fulfilling Community Transition goals. The CRO, following public discussion at several committee meetings, decided to initiate a market potential study that would examine demand for industrial and/or commercial utilization of the 23 acre site within a five year period. Three commercial real estate/appraisal firms were engaged for this analysis. After examining metropolitan areawide trends and site specific characteristics, the three firms all concluded that they could not forecast any significant demand for industrial/commercial utilization of the

FEMP site over the five year period. The primary reason cited for this assessment was the site's relative isolation from growth corridors in the region, the site's negative environmental legacy and more than sufficient availability of comparable or superior commercial/industrial locations throughout the region (see Appendices 1, 2 and 3).

These findings served as the basis of the CRO's October 1998 recommendation to DOE on future land use. DOE was and continues to be engaged in compiling a site Environmental Assessment that will serve as the framework for final land use disposition. The CRO's recommendation was that the 23 acres be set aside as a reserve for future economic development and/or community facility uses. The CRO's study projected demand five years into the future. The site will not be available for any type of alternative use for at least eight years. Consequently, it is possible that patterns of market demand may shift over that period. The CRO further recommended that some form of community-based advisory body be reconvened closer to the point in time when the 23 acres might actually be available. This community-based group would make recommendation to DOE at that future time regarding specific site uses.

State of Ohio Development Assistance

During the Fall and Winter of 1997-1998, the CRO was successful in developing a proposal to the State of Ohio Department of Development. The proposal was based on a proven program concept adopted by the Rocky Flats CRO. In order to stimulate the formation and growth of firms likely to need the skill sets of Fernald workers, the CRO proposed an entrepreneurial assistance program. The program makes payments to certified management consultants that provide needed financial, planning or engineering assistance to eligible firms. The selection of consultants and participating firms is to be done by the CRO in conjunction with the region's system of Small Business Development Centers (SBDCs). The SBDCs are supported by the U.S. Small Business Administration and area universities, Chambers of Commerce and other development organizations. A $50,000.00 state grant was awarded to the CRO for this initiative in March 1998.

Excess Property Disposition for Economic Development

The CRO has been engaged in discussions regarding a process for designating surplus property for economic development purposes. Alternative methods have been discussed with DOE and Fluor Daniel Fernald property specialists. Specific methods and procedures will soon be finalized, specifying roles and responsibilities of the CRO, its staff, FDF and DOE for disposition of property that may serve an economic development need of the region.

DOE Grant for Community Transition Planning

On June 1, 1998, DOE awarded a grant to the CRO for the development of this Community Transition Plan. Primary elements of this plan were to include an update and forecast of the FEMP's economic impact on the Cincinnati region, an analysis of the region's economic strengths, weaknesses, opportunities and threats and a target marketing study that would identify those business categories most likely to locate and/or expand in the region. These inquiries were carried out over the period of July though December of 1998. The findings and their strategic implications are discussed below.

Economic Development Program Options

Public participation was solicited in October 1998 to examine the data and analysis gathered at that time, assess the implications for the region and begin to evaluate alternative program methods for addressing the issues identified by the on-going planning process. A series of public workshops were held that invited a cross-section of the community to engage in these discussions. Over ten different program options were identified. Based upon this public input, the CRO met in December 1998 to further refine a list of the program options and to determine their relative priority. This priority rating was determined by a criteria that assessed each option's perceived likelihood to effectively address the economic development issues and objectives of the Community Transition Plan. These program options are given detailed discussion in Section III, Regional Development Initiatives.

Assessment of FEMP Economic Impact

In order to determine the appropriate goals for the Community Transition Plan,

it is fundamentally necessary to determine the projected impact on the community of the gradual closure of the FEMP. In order to make this assessment, the CRO engaged the Center for Economic Education at the University of Cincinnati to determine the economic impact of FEMP operations on an annual basis and for the entire period of 1997 to 2008 (for the full report, see Appendix 4). 2008 is the currently projected date for closure of the facility. The outcomes of this inquiry are summarized below. It is clear that the impact of the FEMP on the regional economy of the Greater Cincinnati area is substantial, necessitating a substantial effort to mitigate the adverse impact of closure.

From 1997 to 2008, Fernald's total annual economic impact on the Greater Cincinnati economy will decline by 81% — from $735 million in 1997 to $136 million in 2008. After the year 2005, the loss of regional economic activity due to lower Fernald spending is dramatic. In fact, the combined economic impacts of Fernald over the three year period from 2006 to 2008 is less than the total economic impact in any one of the nine prior years.

Fernald's total economic impact includes two separate components — the impact on regional output and the impact on regional household earnings. From 1997 to 2008, Fernald's economic impact on regional output will decline by 88% — from $594 million in 1997 to $72 million in 2008. Fernald's impact on household earnings in the Greater Cincinnati region will decline by $76 million, or 54%, over the same period. In addition, Fernald-associated employment in Greater Cincinnati will suffer a loss of 2,765 jobs between 1997 and 2008.

In FY 1997, total Fernald non-payroll expenditures were $257 million. In addition, payroll and benefit payments totaled nearly $91 million. Fernald's activities required a total of 2,464 direct jobs in the 1997 fiscal year.

By 2008, Fernald's non-payroll expenditures will fall to $31 million, and payroll and benefits will drop to $41 million. Fernald employment will decline from 2,464 in 1997 to 911 in 2008.

It is expected that over the next eleven years total Fernald non-payroll expenditures will peak at $321 million in 2005. Expenditures for payroll and benefits

are highest in 2001, when Fernald will spend $121 million for payroll and benefits. The number of total employees reached a peak in 1998, when Fernald employed 2,594 people.

In addition to direct effects on the regional economy, there are substantial indirect effects as well. For example, the $257 million in non-payroll expenditures that Fernald spent in 1997 created an economic impact on region-wide output of $594 million. The $91 million in direct payroll and benefits led to a total impact of $140 million in household earnings, which includes the indirect impacts of earnings through the respending of dollars in the local economy. Together, the output and earnings components yielded the total annual economic impact of $735 million in 1997. In addition, the 2,464 jobs directly created at Fernald led to a total of 4,394 jobs in the regional economy due to the indirect business activity that is stimulated by Fernald employment.

Fernald's total economic impact is expected to be greatest in 2005, when the impact will reach $910 million. The economic impact of regional output peaks in 2005, while the economic impact on regional earnings peaks in 2001. Regional impact on employment was greatest in 1998, when 4,638 jobs direct and indirect were generated by Fernald operations.

Once again, the impact of Fernald's operations on the regional economy can be summarized as follows:

- From 1997 to 2008, Fernald's total annual economic impact on the Greater Cincinnati economy will decline by 81% — from $735 million in 1997 to $136 million in 2008.
- Fernald's total annual impact will peak in 2005, when it will reach $910 million. The total economic impact of Fernald in 2005 includes $764 million in regional economic output and $164 million in household earnings.
- From 1997 to 2008, Fernald's direct and indirect employment impact on the Greater Cincinnati economy will decrease by 2,765 jobs — from 4,394 in 1997 to 1,629 in 2008.

- The impact of Fernald on regional employment peaked in 1998 when 4,638 jobs were directly and indirectly created throughout a number of Greater Cincinnati's industries.
- After the year 2005 the loss in regional economic activity due to lower Fernald spending is dramatic. In fact, the combined annual economic impacts of Fernald over the three year period from 2006 to 2008 is less than the total economic impact in any one of the nine prior years.

These findings suggest that a number of community transition initiatives are vitally necessary to counteract the very large negative impact which will be felt on the Greater Cincinnati regional economy as a result of the FEMP's downsizing and eventual closure.

Target Industry Study

In order to determine the areas of the regional economy that would be the most likely candidates for creating jobs to replace those lost through the closure of the FEMP facility, the CRO participated in a region-wide target industry study. This study was performed under the auspices of the Greater Cincinnati Chamber of Commerce and its related program, the Regional Marketing Partners. This latter group is composed of the economic development organizations of the tri-state area, and includes eight different economic development agencies. This group, together with the CRO, engaged the services of the Wadley-Donovan Group, Ltd. to conduct a regional target industry study (see Appendix 5). Wadley-Donovan is a nationally recognized industrial relocation consulting firm. The firm routinely advises major corporations from throughout the United States on optimal locations for new or expanded operations. In addition, they advise community and regional economic development organizations on development strategies to attract new industrial growth that is best suited to each region's economic characteristics.

The Wadley-Donovan study indicated that the Greater Cincinnati area has unique locational advantages for several different types of industrial and business facilities. The three primary categories identified by the study included 1) professional-based

white collar operations; 2) research and development centers; and 3) manufacturing facilities that possess high engineering content. In the area of professional based white collar operations, different categories that were included were headquarters and sales offices, technical support centers, and high end back office operations. Research and development centers were facilities that were engaged in long-term basic research, applied, i.e., search to adapt marketable products to unique market circumstances, and repetitive production in the development phase. Manufacturing with high engineering content included industrial machinery and equipment, advanced materials, sub-assemblies and components, test and measure equipment, and medical equipment.

The findings of both the economic impact study and the target industry analysis set the context for the CRO's strategic development initiatives. The overriding goal of these initiatives will be to offset direct and indirect employment losses through efforts that attract, retain or expand employment opportunities in the target industry categories. The geographic focus of these efforts will include the entire metropolitan area, with priority consideration given to projects willing to locate within communities immediately surrounding the FEMP. In all cases, CRO development efforts will proceed only when a high level of community support and consensus exists for the proposed project.

III. REGIONAL DEVELOPMENT INITATIVES

The regional development initiatives of the Fernald CRO will consist of an interrelated set of programs that are meant to provide financing and other support mechanisms to spur the creation of jobs which will require the labor skills represented by the Fernald workforce and residents of the communities most directly affected by the operations of the FEMP. This section describes each of these program initiatives, plus the administrative and management aspects related to their implementation. A budget overview will be found in Appendix 6.

Overall Values

The Fernald CRO seeks to implement a regional economic development vision which is characterized by the following elements: a more diverse regional economy, the capacity to seize economic opportunities as they arise, a well developed, proven economic development process, and the integration of the CRO's initiatives into the efforts of related economic development organizations throughout the area. The Community Transition Plan is an effort to focus the strategic initiative, thereby realizing the overall vision.

The following values will be incorporated into decision making regarding the implementation of all proposed programs and activities:

- The overall regional development initiative will be action oriented and performance based with clear performance targets that address objectives within a well conceived overall plan.
- The CRO is, and will continue to be, community based, communicating actively with its constituents, funders and related providers of economic development resources.
- The majority of implementation funds will be directly expended to assist businesses in their efforts to create permanent private sector jobs that are not dependent on continued operations of the FEMP.
    - Existing firms that expand are more likely to create permanent jobs than start-up firms.

      Funding decisions on loans or grants to firms will take into account

the following factors:

- Certainty that expenditure of funds will create permanent private sector jobs.
- Quality and experience of the management team.
- Existence of an established market or evidence of unexploited new markets.
- A preference for value-added manufacturing processes.
- Importation of dollars to the region by sale of products or services outside the region.
- Potential for the firm's growth.
- Multipliers, i.e., businesses that will use local suppliers, transportation, distributors, etc. to keep funds circulating in the community.
- Living wage jobs
- Sustainable jobs
- Consistency with other community and economic development plans/strategies.
- Leveraging of CRO funds.

- The CRO will only provide support to efforts that fill gaps in existing programs and that have demonstrated a real economic development need where no other organization exists to deliver exactly the same assistance.

Economic Development Program Initiatives

- *Revolving Loan Fund For Gap Assistance.*

The FEMP workforce is engaged in one of the largest and most complex environmental remediation projects ever attempted. Environmental remediation is anticipated to be a growth industry within the Cincinnati region for many years. Regional growth of this industrial category could absorb a significant portion of the FEMP's dislocated workforce.

This trend will be reinforced and accelerated by the public sector's

growing involvement in brownfield redevelopment. Brownfields are former industrial properties that currently are underutilized due to actual or perceived environmental contamination. Although several state or federal programs have been created to assist local brownfield redevelopment efforts, the ability of local government units to participate is often quite limited. The primary constraint on local participation is the lack of available fiscal resources for cost sharing on a timely basis. The availability of a revolving loan fund that offers short-term, low interest loans will assist local jurisdictions to more readily engage in brownfield redevelopment. As more brownfield redevelopment is initiated, the demand for workers with environmental remediation skills will increase. The secondary community-wide benefit will be the return of underutilized industrial sites to productive use with corresponding increases in employment opportunities. Loans to firms willing to participate in cleanup efforts would be repaid from project revenue streams. The revolving nature of the proposed loan fund would ensure that the CRO or its successors would have a source of program funds that could extend over an indefinite future period. In addition, fees and interest payments will serve as source for CRO operational support after DOE funds are no longer available.

The Community Transition Plan proposes that $2,000,000 of DOE grant funds be utilized to establish and capitalize the initial year of a revolving loan fund. The same amount would be sought annually for two succeeding years to bring a total capitalization to the fund of $6,000,000. As previously stated, the goal of this fund will be to create new jobs and new economic activity by filling financing gaps not met by private lenders.

Loan Terms

The terms and conditions for the loans will be established by a loan review committee that will be appointed from the CRO's existing membership, as well as additional finance experts drawn from the community. The loan committee will establish detailed guidelines for loan administration that will provide adequate structure to the program, but permit flexibility to meet the

individual needs of borrowers.

As indicated, specific rates and terms will be determined by the loan committee on a case-by-case basis. However, in each instance the following general requirements will be maintained.

- Lender of Last Resort. The revolving loan fund is intended to provide gap financing to businesses that otherwise could not obtain suitable or adequate financing. Businesses must document the legitimate need which cannot be met by an existing lender market.
- Business Plan. Each loan applicant must submit a sound and realistic business plan that demonstrates the applicant's business acumen, technical expertise and knowledge of their target market.
- Matching Funds. All revolving loans will be required to be matched by private funds in the form of equity contributions or other acceptable debt instruments. Generally, the loan committee will require at least 100% matching funds by participating banks or other institutional investors. Proposals that do not include bank participation must provide matching investments that equal at least two thirds of total project costs.
- Loan Term Participation. Loan terms will normally mirror the terms and conditions of the bank's participation loan, but not exceed five year terms. Consideration may be given to extending loan amortization utilizing balloon or bullet repayments in cases that demonstrate a clear need.
- Periodic Reviews. Each client business will be required to submit annual financial statements to the administrator of the revolving loan fund for review within 90 days of the close of the client business' fiscal year. Periodic business and marketing plan reviews may also be required.

- One Time Participation. Client businesses can participate in the program only once.
- Refinancing. The revolving loan fund will not be used to refinance existing debt.
- Loan Size. There will be no loan ceilings or floors, because the goal will be to be as flexible as possible.
- Bank Identification. Loan applicants will be required to designate the name of the participating bank at the time of the application's submission.

Loan Administration

As previously indicated, policy guidelines for the revolving loan fund will be established by a loan review committee. The loan review committee will be made up of at least six members of the CRO with an additional four members drawn from representatives of financial institutions within the metropolitan area. Actual administration of the loan fund, such as establishment and servicing of accounts, will be subcontracted to the Hamilton County Development Company. The Hamilton County Development Company is a non-profit organization that provides economic development services within Hamilton County and also administers a variety of loan programs throughout the Greater Cincinnati metropolitan area. The experience of the Hamilton County Development Company in administering loan programs of this type has been recognized and commended by the U.S. Small Business Administration and the U.S. Economic Development Administration. Efforts to attract potential loan applicants will be a function of the CRO's administrative staff.

- *Marketing and Promotional Activities*

As earlier described in this Plan, considerable CRO-funded research has been undertaken to identify those industrial categories that are the most natural fit for the Cincinnati regional economy. Identification of target industries and locational characteristics that make Cincinnati an attractive choice for such

firms, is the basis for initiating a new regional marketing strategy. This regional marketing strategy is being undertaken through the combined efforts of over eight different public and private economic development organizations within the Greater Cincinnati metropolitan area. This new initiative is referred to as the Partnership for Greater Cincinnati. The Fernald Community Reuse Organization has been a participant in the development of this group's work program. The next phase of the Partnership's work focuses on undertaking a well conceived and focused national marketing effort to attract the type and quality of firms that seek the advantages of a Cincinnati location.

It is one of the underlying assumptions of this Plan that becuse of the wide commuting range of the Fernald workforce that growth anywhere within the Cincinnati regional market will contribute to the formation of job opportunities that could potentially address the needs of dislocated workers at the FEMP and community residents who will be adversely impacted by the closure of the FEMP.

This assumption is based on the fact that the current residency of Fernald workers is dispersed throughout the metropolitan area. In order to undertake this overall growth initiative, a marketing effort will be undertaken over the next several years by all of the participating organizations in the Partnership. An overall budget in excess of $600,000 is planned for this marketing and promotional effort. The CRO's first year share for participation in this effort would be $11,500. This will enable representatives of the CRO to be actively engaged in all policy making decisions with respect to the implementation of the marketing effort. This participation will allow the CRO to be aware of any new locations that are pending which may result in new opportunities for the CRO's target populations. Through leveraging the CRO's investment through the work of other public and private organizations, the overall impact that the CRO will be able to have on marketing of the region to new and expanding firms will be greatly increased.

An overriding goal of the Community Transition Plan is to ensure that

economic conditions in the Greater Cincinnati area support creation of job opportunities that can be filled by Fernald workers, as well as Fernald community residents displaced or otherwise negatively impacted by the eventual FEMP closure. To achieve this goal, it will be necessary for the CRO to work closely with the several economic development organizations that represent different portions of the metropolitan area. During the planning process, the CRO has already established close working relationships with all of these agencies. The primary mechanism for achieving this goal has been the CRO's participation in the work of the newly formed Partnership for Greater Cincinnati. This initiative is a collaborative effort led by the Greater Cincinnati Chamber of Commerce. It includes the participation of not only eight economic development agencies from throughout the area, but also the involvement of a broad cross section of the area's corporate structure. This Partnership is the primary vehicle for marketing our region to businesses considering relocation sites, as well as efforts to improve the climate for retention and expansion of Cincinnati's existing business base. The CRO plans to allocate implementation funds to continued and intensified participation in these efforts. The purpose will be to ensure that region-wide economic development decision making and operations remain appropriately focused on Fernald-related concerns. The net effect of this infusion of funds and the CRO's participation in these region-wide activities will be an increased likelihood that any new regional investments will utilize the Fernald labor pool. Finally, if the CRO were to attempt such a marketing effort on its own, the overall budget and program effectiveness could not begin to approach the impact of being a full partner in a regional effort that includes massive resources derived from diverse sources.

- *Assistance to Entrepreneurial Development Efforts*

Through a grant from the Ohio Department of Development, the CRO has initiated an entrepreneurial assistance project entitled Project ADEPT (Accelerated Development of Entrepreneurs — Program Technique). The purpose of this program is to help start-up businesses obtain an in-depth level

of management consultation necessary to propel the growth during the critical initial phases of operation. This assistance is provided in conjunction with the services of our region's network of Small Business Development Centers (SBDCs). SBDCs receive their support from the U.S. Small Business Administration. The SBDCs provide management assistance and consultation to start-up businesses. This assistance is offered on a free basis, but only covers a basic level of management advice. The assistance available from Project ADEPT allows participating firms to receive much more in-depth management consulting from a private sector source through the provision of cash payments to a selected group of management consultants that have long term experience with the SBDC program of specialized small business assistance.

This program has been modeled after similar successful efforts undertaken by the Rocky Flats CRO. Indications are that the Fernald CRO program's initial efforts will show a significant degree of success. Consequently, the Community Transition Plan proposes that Project ADEPT be augmented through the annual allocation of $250,000 from the DOE implementation grant. Under the first year program, it is anticipated that approximately eight firms will be assisted. In an expanded program, a level of support could be provided that would assist approximately 20 start-up organizations during the first year of project operations. A similar level of program assistance would be provided in the subsequent two years of the proposed implementation period. Additional details regarding Project ADEPT operations and procedures are included in Appendix 7.

- *Assisting Formation of Fernald Employee-Owned Business Units*

At other DOE sites throughout the complex, CRO organizations have been effectively used to assist the formation of business units that are owned by individuals who were previously employees of either DOE or the site's prime contractor. These cases have emerged from decisions on the part of DOE to outsource certain functions at the sites. Most of these examples have been

support units, such as graphics, laundry, maintenance, health services, etc. As an element of both community transition and worker transition, such a practice creates an opportunity for current employees to transition into a business in which they have the potential for having an ownership stake. The process of transitioning into self employment would be facilitated by a DOE contract. Such a contract would become a source of revenue stability that most new businesses do not enjoy.

Where this strategy has been successful, it is clear that much careful attention has been given to ensuring that the employee group developed a detailed business plan which addressed all elements of what is required to ensure long-term survival in a competitive marketplace. As an economic development program of the CRO's Community Transition Plan, it would be the goal to deliver to employee business units several of the resource programs described elsewhere in this document, i.e., loans, grants, technical assistance, etc. This focus would include involvement of CRO personnel working toward the goal of ensuring that proper linkages are established between the employee-owned business units and sources of capital and managerial assistance from throughout the region.

- *Local Development Corporation*

At the present time, there is not a multi-purpose economic development entity that directly serves the economic development interests and concerns of the three townships that immediately surround the FEMP site. The economic development departments of both Hamilton and Butler Counties have general responsibility for providing economic development anywhere within their respective jurisdictions. However, many rural as well as suburban and urban locations throughout Ohio and the nation, have found it useful to form a local development corporation that has responsibility for recruiting and retaining business growth within a focused area. Such groups are often organized on a non-profit basis with responsibilities for the financing of development projects, as well as the marketing of a jurisdiction for business growth. The only existing

local organization with a somewhat similar mission, the Ross Merchants Association, is limited in its scope. It does not have the full complement of programs and services generally associated with a full scale, local development corporation. Funds from the implementation of the CRO's Community Transition Plan will be utilized under this program to initially capitalize a development corporation, both in terms of operating funds and the establishment of a development fun d. Local jurisdictions and the Ross Merchants Association have indicated their willingness to consider matching grant funds for the purposes of establishing such a development organization. The task of this group will be to promote, guide an d direct an economic development strategy for the tri-township area over a multi-year period. One undertaking of such a group may include investigation of a Main Street revitalization project for the Ross-Venice commercial area as well as other commercial districts within the tri-township area. This strategy would utilize the historic character of these older commercial areas to promote increased retail shopping and trade.

- *Business Incubator*

The Greater Cincinnati area currently utilizes several incubators to promote its overall regional growth strategies. Some of these incubator facilities are general-purpose in nature, others are focused on specialized categories such as bio-technology. Consultation with various development organizations throughout the CRO's planning process has indicated that the current capacity of existing incubators in our region has become strained. Anticipated business growth initiatives, primarily in the western portion of Hamilton County, suggests that the time is right to study the feasibility of a new incubator facility. Some significant percentage of FEMP workers appear to consider self-employment as an appropriate transition option. In these cases, the availability of new incubator space could be very helpful. In addition, Fluor Daniel Fernald operates a widely recognized mentoring program that seeks to develop business opportunities for minority vendors. Incubator facilities could

augment the success of these efforts.

It is proposed that CRO implementation funds be utilized to undertake a feasibility study for the formation of a new incubator facility in the western portion of Hamilton County. Based upon the outcomes of this initial feasibility study, preliminary design work and related engineering studies would be undertaken to plan for the construction of such a new facility. Actual construction funds for such a facility would be sought from other public and private sources at both the state and federal level.

It is likely that the CRO would undertake this initiative in partnership with the Hamilton County Development Company. As previously indicated, the Hamilton County Development Company is a leading regional provider of economic development services and the operator of a highly successful incubator in Norwood, Ohio. The Norwood incubator has received substantial support from the U.S. Economic Development Administration. Collaboration with this agency during the feasibility study and design phases, will ensure that a highly experienced incubator operator will assist and guide the CRO's involvement in this initiative.

Administration and Management

The activities and programs of the Fernald Community Reuse Organization will utilize a corporate management and oversight model that has been developed over the past two years of the organization's operation. This management model has been responsible for the execution and administration of two previous grants from the Department of Energy. The original start-up grant to the organization, in the amount of $150,000, was followed by the current administration of the $260,000 Community Transition Planning Grant. In addition, the Fernald CRO has been the recipient of a grant from the State of Ohio in the amount of $50,000 for the administration of an entrepreneurial development grant. The CRO's policies, systems and procedures were originally developed and approved by DOE prior to the receipt of the initial start-up grant.

Organization and Oversight

Oversight and policy development for the Fernald Community Reuse Organization is the responsibility of the CRO's Board of Trustees. The Board assigns day-to-day operational and policy oversight to its Executive Committee. The Board of Trustees has established a variety of committees and working groups on an as-needed basis to address various aspects of CRO operations. A Loan Review Committee will be established and appointed by the Board when the revolving loan fund is established. It will be the function of the Loan Review Committee to structure and approve specific loans, interest rates, repayment terms, collateral, etc.

Staffing and Contract Relationships

The CRO has determined that the most effective and efficient means for providing day-to-day administration of CRO activities is through a contract with an external consulting organization. The consulting organization supplies a full time individual who is experienced in economic development and planning operations. This individual provides total staffing for the CRO's policy deliberations, maintains relationships with external economic development agencies and supplies day-to-day administration of the CRO's various assistance programs for business development and community transition throughout the region. This model has proved to be successful, and it is the intention of the CRO to maintain this form of staffing through the implementation period.

In addition, the CRO will establish contract management services with one or more external agencies to provide management services necessary to undertake certain specialized aspects of the overall CRO economic development program. For example, the CRO intends to contract with the Hamilton County Development Company to provide management and bookkeeping services related to the administration of the revolving loan fund. Loan policy and loan approval will remain the function of the CRO through its Loan Committee and through the Board of Trustees. However, routine processing of loan applications, servicing of accounts and collections activity will be a function performed by the Hamilton County Development Company under contract to the CRO. Additionally, the Hamilton County Development Company will be contracted with to undertake aspects of any feasibility study related to the

development of an incubator in western Hamilton County. The Hamilton County Development Company's expertise in the field of incubator development and operations is well recognized by several federal agencies and the State of Ohio.

Necessary clerical support services for CRO operations will continue to be performed under contract with the CRO's primary external management consultant. The consulting firm, in addition to providing the full time staff person for executive functions, will also provide sufficient clerical support to meet the on-going needs of the CRO during the implementation period.

Financial Management

Financial management will be performed by the management consultant in conjunction with the CRO's Treasurer. The Treasurer's function will be to maintain the organization's accounting records, prepare and verify financial reports to DOE and other agencies, and provide quarterly financial reports to the Board of Trustees. The role of the management consultant will be to obtain appropriate bids for CRO contract functions, approve and forward invoices to the Treasurer for payment, and assist in the preparation of financial reports to external funding sources. Additional financial administrative procedures are outlined in the CRO's Procedures Manual, attached as Appendix 8. This manual spells out the management system related to the handling of Accounts Receivable, Accounts Payable, and Procurement.

The CRO retains separate and independent CPA firms, one for the preparation of financial statements and reports, the second for annual and special purpose audits and financial reviews.

Community Involvement and Communication

During the initial start-up period of CRO operations, a Public Participation Plan was adopted. This plan includes policies and procedures for encouraging the active participation of various stakeholder groups in the development of CRO policies and programs. This plan will continue to guide the CRO as it establishes policies and procedures for any program established during the implementation phase. Public events, speaking engagements, workshops, and public hearings will continue to be a part of the work of the CRO's staff. The staff will work with local media to obtain

broad based print and broadcast coverage of the CRO's programs. The contracted management consultant will be primarily responsible for coordination and management of the communications functions of the CRO.

The CRO has taken several initiatives to establish close working relationships with the several economic development agencies and organizations that operate within the Greater Cincinnati metropolitan area. These relationships will continue to be a primary means for assuring that the work of the CRO is known to both public and private sector leaders who are engaged in efforts to improve the economic functioning of the entire region. Among the groups with which the CRO will continue to be actively involved will be the Greater Cincinnati Chamber of Commerce, the Ohio Department of Development, the Butler County Department of Economic Development, the Hamilton County Development Company, and all units of local government throughout the immediate area of the FEMP.

IV. PERFORMANCE MEASUREMENT

The Fernald CRO's implementation programs will be managed to achieve desired results and be accountable to the organization's stakeholders. Performance measurement will provide the essential tools for overall program evaluation and refinement of program approaches. Performance will be measured in a variety of ways to give clear indication of progress toward goal attainment.

Performance measurement, including the development of procedures, data collection, analysis and reporting, will be the responsibility of the contracted management consultant. The contracted management consultant will work closely with the Executive Committee of the CRO to ensure that the methods utilized for program performance measurement generates sufficient data on a timely basis to ensure prompt follow up and corrective action.

Performance data for each calendar quarter will be collected within two weeks after the end of each quarter, organized, analyzed using the methods described below. This data then will be forwarded simultaneously to DOE, the CRO Board of Trustees, program subcontractors, and made available to the public through a variety of distribution channels. The data will be accompanied by a memorandum that summarizes the information and interprets its meanings with respect to progress toward goal attainment.

A comprehensive review of performance will take place within the first weeks following the end of each program year. This review will include an assessment of annual performance as reported quarterly and compiled for the entire year. A written report will be prepared which summarizes and analyzes the annual data. This analysis will be utilized in the annual update of the Community Transition Plan and will impact each year's application to DOE for additional implementation funds.

Performance Measures

Objective #1: Establish a well-managed revolving loan fund that successfully assists in the start-up or expansion of at least ten firms during the initial year of operation. Together with financing from other leveraged sources, it will be the goal of this program to assist in the creation of 500 jobs annually for the three year

implementation period.

Program Measures: Within three years the revolving loan fund will have helped create at least 1,000 jobs that require skills represented by the Fernald workforce and others within the regional community whose employment opportunities have been adversely affected by the downsizing and closure of the Fernald facility.

Objective #2: Initiate a marketing campaign that generates at least 100 serious prospect inquiries concerning relocation to the Greater Cincinnati area. These inquiries will occur over a twelve month period. These inquiries should result in at least ten major capital investments that yield at least 500 new jobs.

Program Measures: Within a twelve month period over 100 serious project inquiries will be received that are converted into at least ten major capital investments ($500,000+) resulting in at least 500 new jobs within the region.

Objective #3: Expand the CRO's existing entrepreneurial assistance program in a manner that will enable at least 50 firms to receive in-depth management consultation services. The assisted firms will be responsible for generating at least 150 new jobs within an 18 month period. Over 85% of these new positions will require skills represented by the Fernald workforce. Of these firms, at least 15 will be owned by former Fernald employees.

Program Measures: Creation of 150 new jobs, 85% of which require Fernald employee skills. Of the 50 assisted firms, at least 15 will be start-ups owned by Fernald employees.

Objective #4: Assist the formation of at least four firms that are owned by former Fernald employees. These firms' initial activities will be under contract to Fluor Daniel Fernald to carry out functions that have been selected for outsourcing by DOE. At least 60 jobs will be retained by current FDF incumbents through implementation of this program.

Program Measures: Formation of at least four viable business units owned by

former Fernald employees. These firms will retain at least 60 positions currently within the FEMP workforce.

Objective #5: Increase the volume of local retail sales in the tri-township commercial districts by at least 25% over a three year period. This increase in sales volume will be the result of the creation of at least 50 new jobs within the commercial districts covered by the local development corporation.

Program Measures: A 25% increase in retail sales over a three year period, accompanied by the creation of 50 new jobs.

Objective #6: Attract at least 10 start-up firms to a new incubator facility in western Hamilton County. The average employment of each firm will be a minimum of four employees over a four year period. At least five of these firms will graduate from the incubator and ultimately employ a total of at least 50 workers.

Program Measures: The first year measure would be completion of incubator feasibility and design studies. The second year measure would be completion of incubator build out and leasing to at least ten firms. The total capitalization of these ten firms would equal approximately $1 million. Within five years, total jobs produced by incubator graduates and tenants would equal at least 50. Ninety percent of these positions will require skills represented by the Fernald workforce.

OMB Approval No. 0348-0043

APPLICATION FOR FEDERAL ASSISTANCE

2. DATE SUBMITTED	Applicant Identifier	2414
3. DATE RECEIVED BY STATE	State Application Identifier	
4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier	

1. TYPE OF SUBMISSION:
Application: ☐ Construction ☐ Non-Construction
Preapplication: ☐ Construction ☐ Non-Construction

5. APPLICANT INFORMATION

Legal Name: Fernald Community Reuse Organization

Organizational Unit: N/A

Address (give city, county, state, and zip code):
P.O. Box 38
Ross, Ohio 45061

Name and telephone number of the person to be contacted on matters involving this application (give area code)
Curt Paddock
(513) 527-3150

6. EMPLOYER IDENTIFICATION NUMBER (EIN): 3 1 – 1 5 3 1 6 9 7

7. TYPE OF APPLICANT: (enter appropriate letter in box) ☐
A. State
B. County
C. Municipal
D. Township
E. Interstate
F. Intermunicipal
G. Special District
H. Independent School Dist.
I. State Controlled Institution of Higher Learning
J. Private University
K. Indian Tribe
L. Individual
M. Profit Organization
N. Other (Specify): non-profit

8. TYPE OF APPLICATION:
☐ New ☒ Continuation ☐ Revision
If Revision, enter appropriate letter(s) in box(es): ☐ ☐
A. Increase Award B. Decrease Award C. Increase Duration
D. Decrease Duration Other (specify):

9. NAME OF FEDERAL AGENCY:
Department of Energy

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 8 1 . 5 0 2
TITLE: Miscellaneous

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:
FY99 Implementation of FCRO Community Transition Plan

12. AREAS AFFECTED BY PROJECT (cities, counties, states, etc.):
Hamilton/Butler Counties in the State of Ohio

13. PROPOSED PROJECT:

Start Date	Ending Date
10/1/99	9/30/00

14. CONGRESSIONAL DISTRICTS OF:

a. Applicant	b. Project
1, 2, 8	Fernald Community Reuse Organization

15. ESTIMATED FUNDING:

a. Federal	$	.00
b. Applicant	$	.00
c. State	$	.00
d. Local	$	.00
e. Other	$	.00
f. Program Income	$	.00
g. TOTAL	$	.00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?
a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON:
DATE _____
b. NO. ☒ PROGRAM IS NOT COVERED BY E.O. 12372
☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?
☐ Yes If "Yes," attach an explanation. ☐ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED

a. Typed Name of Authorized Representative	b. Title	c. Telephone number
David R. McWilliams	Chair	513-863-1253

d. Signature of Authorized Representative: David R. McWilliams
e. Date Signed: 7-1-99

37

OMB No. 0348-0044

BUDGET INFORMATION — Non-Construction Programs

SECTION A – BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Community Transition	81.502	$	$	$	$	$
2.						
3.						
4.						
5. TOTALS		$	$	$	$	$

SECTION B – BUDGET CATEGORIES

6 Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)	(4)	Total (5)
a. Personnel	$	$	$	$	$
b. Fringe Benefits					
c. Travel	14,000				
d. Equipment					
e. Supplies	15,000				
f. Contractual	377,840	See FCRO FY99 Implementation Request (Projects 1-7) Budget Summary Items I A-D; II B			
g. Construction					
h. Other	2,610,000	See FCRO FY99 Implementation Request (Projects 1-7) Budget Summary Items IIA, C-D			
i. Total Direct Charges (sum of 6a - 6h)					
j. Indirect Charges					
k. TOTALS (sum of 6i and 6j)	$ 3,016,840	$	$	$	$
7. Program Income	$	$	$	$	$

2414

38

SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8.	$	$	$	$
9.				
10.				
11.				
12. TOTALS (sum of lines 8 and 11)	$	$	$	$

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 3,016,840	$ 754,210	$ 754,210	$ 754,210	$ 754,210
14. NonFederal					
15. TOTAL (sum of lines 13 and 14)	$ 3,016,840	$ 754,210	$ 754,210	$ 754,210	$ 754,210

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. Community Transition 81.502	$ 4,491,580	$ 4,491,580	$	$
17.				
18.				
19.				
20. TOTALS (sum of lines 16 -19)	$ 4,491,580	$ 4,491,580	$	$

SECTION F - OTHER BUDGET INFORMATION

(Attach additional Sheets if Necessary)

21. Direct Charges:

22. Indirect Charges:

23. Remarks

39

2414

FCRO FY 99 IMPLEMENTATION REQUEST
PROJECTS 1 - 7

BUDGET SUMMARY AND DISCUSSION

Expense	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6	Project 7	Total
I. Program Administration								
A. Economic Dev. Consultant	104,000		20,800	8,320	20,800	8,320	41,600	203,840[1]
B. Administrative Support	5,000		2,000	1,000	2,000	1,000	3,000	14,000[2]
C. Loan Admin. Agency	100,000							100,000[3]
D. Bus. Incubator Feasibility Cons						50,000		50,000[4]
E. Office Expense	3,000		1,000	500	1,000	500	9,000	15,000[5]
F. Travel	1,500		500	500	500	500	10,500	14,000[6]
G. Subtotal	213,500		24,300	10,320	24,300	60,320	64,100	396,840
II. Program Operations								
A. RLF Capitalization	2,000,000			50,000[7]				2,050,000[8]
B. Regional Marketing		10,000						10,000[9]
C. Technical Assistance			260,000[10]	50,000[11]				310,000[12]
D. LDC Operations					250,000			250,000[13]
E. Subtotal	200,000	10,000	260,000	100,000	250,000			2,620,000
III. Program Budget								
A. Program Administration	213,500		24,300	10,320	24,300	60,320	64,100	396,840
B. Program Operations	2,000,000	10,000	260,000	100,000	250,000			2,620,000
C. Total	2,213,500	10,000	284,300	110,320	274,300	60,320	64,100	3,016,840[14]

NOTES - BUDGET SUMMARY

1. The Economic Development Consultant (EDC) will provide a total of 2,548 hours at $80.00 per hour. The EDC's work effort will be allocated to projects as summarized above and explained on each individual project budget which follows.

2. Administrative support will be provided by a secretarial firm under contract to the EDC. Billing from the service will not exceed $20 per day. Administrative support will provide a total of 1,400 hours at $10.00 per hour. These expenses will be allocated as summarized above and explained on each individual project budget which follows.

3. See explanatory note #3 on Project Budget # 1.

4. See explanatory note #3 on Project Budget #6.

5. Allocation of Office Expenses explained in Budget Notes of Project Budgets 1 and 3-7.

6. Allocation of Travel explained in Budget Notes of Project Budgets 1 and 3-7.

7. See explanatory note #6 on Project Budget #4.

8. See explanatory note #6 on Project Budget #1 and note #6 on Project Budget #4.

9. See explanatory note #1 on Project Budget #2.

10. See Explanatory note #5 on Project Budget #3.

11. See explanatory note #5 on Project Budget #4.

12. See explanatory note #5 on Project Budget #3 and note #5 on Project Budget #4.

13. See explanatory note #5 on Project Budget #5.

14. Total FCRO request to DOE for FY99 Implementation of FCRO 1999-2002 Community Transition Plan.

FCRO FY99 IMPLEMENTATION TIMEFRAMES & PROJECT DELIVERABLES
Project 1: Revolving Loan Fund
OCTOBER 1, 1999 - SEPTEMBER 30, 2000

TASKS/RESPONSIBLE PARTY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DELIVERABLES/WORK PRODUCTS
Development loan policies and procedures manual/ EDC	•----	-----	—x										20 copies of a comprehensive loan policies and procedures manual, including all necessary applications and reporting forms.
Design, print, and distribute promotional material/ EDC		•---	-----	-----	-----	-----	-----	-------	-----	-----	------	—x	500 copies of a brochure that discusses the availability of the loan program, eligibility criteria and basic application procedures
Counsel loan applicants, generate applications/ EDC				•---	—--	-----	-----	-------	-----	-----	------	—x	Preliminary application discussions, generating 25 complete and eligible applications. To be documented by meeting notes and application documents.
Administer and service loans/ LAA					•---	-----	-----	-------	-----	-----	------	—x	Summary loan statements, reporting status on all accounts. Semi annual and annual report, covering all accounting activity
Generate monthly, quarterly, annual loan portfolio statements/ LAA						•---	-----	-------	-----	-----	------	—x	
Evaluate project outcomes/ EDC										•---	------	—x	Documentation of jobs created by loan recipients.
Provide ongoing technical assistance and referral/ EDC			•---	-----	-----	-----	-----	-------	-----	-----	------	—x	A report documenting all referrals of loan recipients to technical assistance providers.

EDC = Economic Development Consultant: Primary responsibility for promotional marketing of RLF availability and recruitment of qualified applicants.
LAA = Loan Administration Agency: Experienced public or non-profit sector administrator of revolving loan funds. Contracted to provide loan bookkeeping, application processing and loan servicing functions.

24114

42

FCRO FY99 IMPLEMENTATION REQUEST
Project 1: Revolving Loan Fund (RLF)

2414

BUDGET DETAIL AND DISCUSSION

I. RLF Administration and Marketing		
A. Economic Development Consultant	$104,000[1]	
B. Administrative Support	5,000[2]	
C. Loan Administration Agency (LAA)	100,000[3]	
D. Office Expense	3,000[4]	
E. Travel	1,500[5]	
F. Subtotal		$213,500
II RLF Capitalization		2,000,000[6]
Total		$2,213,500

---

1 1,300 Hours @ $80.00 per hour

2 500 Hours @ $10.00 per hour

3 The LAA will be reimbursed by the payment of loan administration fees equal to 5% of the loan amount. Assuming allocation of $2,000,000 in loans, LAA service fees will be $100,000.00.

4 Printing of promotional materials, 1,000 items @ $1.50 (avg) per piece $1,500.00
Postage, 2,000 pieces @ $.75 (avg) per piece $1,500.00

5 Local Travel: 1,562 miles X $.32 per mile (EDC visits with applicants, LAA, technical assistance providers)
National Travel: Travel associated with attendance at national seminars of RLF administration (2 days)

6 Assumes average loan size of $200,000.00 X 10 loans

FCRO FY99 IMPLEMENTATION TIMEFRAMES & PROJECT DELIVERABLES
Project 2: Marketing and Promotional Activities
OCTOBER 1, 1999 - SEPTEMBER 30, 2000

TASKS/RESPON-SIBLE PARTY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DELIVERABLES/WORK PRODUCTS
Place national advertising/ RMA	•----	----	----	----	----	----	----	----	----	----	----	—X	Annual report summarizing advertisment placement, trade show attendance, and all related marketing activity. Report will include summarization of inquiries received and capital project invested activity, as well as resulting increases in employment.
Attend regional and national trade shows/ RMA	•----	----	----	----	----	----	----	----	----	----	----	—X	
Inform FCRO of prospect employment opportunities/ RMA	•----	----	----	----	----	----	----	----	----	----	----	—X	

RMA = Regional Marketing Agency: Areawide economic development agency charged with national and international promotion of the Cincinnati region as a business location. FCRO allocation to the RMA's annual marketing campaign will ensure inclusion of FCRO workforce resources in listing of the region's assets. Moreover, the rMA will relay employment prospects resulting from their activities to the FEMP through the FCRO.

FCRO FY99 IMPLEMENTATION REQUEST
Project 2: Marketing and Promotional Activities

2414

BUDGET DETAIL AND DISCUSSION

I. Regional Marketing Agency	$10,000[1]	
Total Project Budget		$10,000.

[1] The Greater Cincinnati Chamber of Commerce functions as the Regional Marketing Agency. The $10,000 represents FCRO's participation fee in the Chamber's national/international marketing effort. This participation fee is combined with over $6,000,000 raised from public and private sources to market the region as a business location to audiences across the nation and in overseas markets. This level of participation also allows for FCRO involvement in setting policy for the marketing campaign.

FCRO FY99 IMPLEMENTATION TIMEFRAMES & PROJECT DELIVERABLES
Project 3: Project ADEPT
OCTOBER 1, 1999 - SEPTEMBER 30, 2000

TASKS/RESPON-SIBLE PARTY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DELIVERABLES/WORK PRODUCTS
Conduct program recruitment workshops/EDC	•----	-----	---x										Program notes and summaries of at least three recruitment workshops
Identify potential applicants/EDC		•---	----	--x									Completed program applications from a minimum of twenty-five potential applicants
Refer for business plan development /EDC				•--	--x								Documentation of a minimum of twenty business plans/assessments
Establish technical assistance needs and provider linkages/ EDC					•---	-----	---x						Documentation of fifteen assignments of management consultants to approved prospects
Monitor provision of management consultation/EDC							•---	------	----	----	-----	--x	A monitoring visit report on each approved project will be prepared, documenting progress toward completion of project objectives
Evaluate results and collect jobs data/EDC								•-----	----	----	-----	--x	A final summary report will be completed one ach approved project, stipulating objectives achieved, jobs created and related data.

24114

42

FCRO FY99 IMPLEMENTATION REQUEST
Project 3: Project ADEPT

2414

BUDGET DETAIL AND DISCUSSION

I. Program Administration		
A. Economic Development Consultant	$20,800[1]	
B. Administrative Support	2,000[2]	
C. Office Expense	1,000[3]	
D. Travel	500[4]	
E. Subtotal		$23,300
II Program Operations		260,000[5]
Total		$283,300

[1] 260 Hours @ $80.00

[2] 200 Hours @ $10.00

[3] Printing of promotional materials, 1,000+ items at $1.50 (avg) per piece

[4] 1,562.5 miles X $.32 per mile (EDC visits with applicants and technical assistance providers.)

[5] 26 program participants X $10,000.00 per technical assistance grant.

FCRO FY99 IMPLEMENTATION TIMEFRAMES & PROJECT DELIVERABLES
Project 4: Fernald Employee-Owned Business Units
OCTOBER 1, 1999 - SEPTEMBER 30, 2000

TASKS/RESPONSIBLE PARTY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DELIVERABLES/WORK PRODUCTS
Identify business units for feasibility assessment/ EDC	•----	---x											A report detailing collaborative process with DOE and prime contractor to identify appropriate pilot unit(s)
Designate pilot unit(s) / EDC		•---	---x										
Develop detailed business plan(s)/ EDC				•---	----	----x							Technical assistance and referral summary that documents plan development process and outcomes
Arrange for technical assistance providers/ EDC						•----	-----	----x					A report detailing inclusion of pilot unit(s) in the Project ADEPT program.
Facilitate financing through private and RLF sources/ EDC							•----	-----	-----	-----	-----	---x	A report detailing referrals and followup with financing sources, including consideration of the FCRO RLF fund.
Assess first year performance/ EDC											•----	---x	Evaluation study documenting attainment of program members, problems encountered and lessons learned.
Designate second round of business units/ EDC												---x	A report detailing collaboration with DOE and prime contractor to identify a second round of business units.

FCRO FY99 IMPLEMENTATION REQUEST
Project 4: Fernald Employee-Owned Business Units

2414

BUDGET DETAIL AND DISCUSSION

I.	Program Administration		
	A. Economic Development Consultant	$8,320[1]	
	B. Administrative Support	1,000[2]	
	C. Office Expense	500[3]	
	D. Travel	500[4]	
	E. Subtotal		$10,320
II	Program Operations		
	A. Supplementary Project ADEPT Support	$50,000[5]	
	B. Supplementary RLF Support	50,000[6]	
	C. Subtotal		$100,000
III	Total		$110,320

---

1 104 Hours @ $80.00 per hour

2 100 Hours @ $10.00 per hour

3 Postage, 1,000 pieces @ $.50 (avg) per piece

4 1,562.5 miles X $.32 per mile (EDC visits with participating business units, FEMP personnel and technical assistance providers.

5 Five Fernald ADEPT program participants X $10,000 per technical assistance grant

6 One additional project loan reserved for participating Fernald business unit (loan size $50,000.00)

FCRO FY99 IMPLEMENTATION TIMEFRAMES & PROJECT DELIVERABLES
Project 5: Local Development Corporation
OCTOBER 1, 1999 - SEPTEMBER 30, 2000

TASKS/RESPON-SIBLE PARTY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DELIVERABLES/WORK PRODUCTS
Conduct organizational workshops/ EDC	•----	-----	—X										Record of proceedings from two community workshops to organize LDC and recruit leaders.
Establish by-laws and incorporate/ EDC				•---	---X								Completed by-laws and related incorporation documents, as required.
Survey members to determine project alternatives/ priorities/ EDC		•---	-----	---X									A report documenting process used and summarizing findings.
Determine specific budget for 1st year allocations from development fund/ EDC				•---	-----	---X							Detailed budget for allocation of LPC program funds.
Execute contracts for land acquisition, facade improvements and/or joint marketing/ EDC							•----	-------	-----	-----	-----	—X	Copies of all contracts related to expenditures from the development fund.
Evaluate 1st year results/ EDC										•---	-----	—X	A report detailing attainment of program measures, including jobs created
Initiate local fund-raising efforts/ EDC								•-----	-----	-----	------	—X	A written fund-raising plan, indicating commitments from volunteer leadership.

FCRO FY99 IMPLEMENTATION REQUEST
Project 5: Local Development Corporation

2414

BUDGET DETAIL AND DISCUSSION

I.	Program Administration		
	A. Economic Development Consultant	$20,800[1]	
	B. Administrative Support	2,000[2]	
	C. Office Expense	1,000[3]	
	D. Travel	500[4]	
	E. Subtotal		$24,300
II	Program Operations (LDC Development Fund)		$250,000[5]
III	Total		$274,300

[1] 260 Hours @ $80.00 per hour

[2] 200 Hours @ $10.00 per hour

[3] Printing of promotional material, 500 items @ $1.00 (avg) per piece
Postage, 1,000 items @ %.50 (avg) per piece

[4] 1,562.5 miles @ $.32 per mile (EDC visits with LDC and participating businesses)

[5] Based upon prioirty identified by the LDC, the Development Fund will be utilized to acquire signage, street furniture, landscaping and other material needed for enhancement of area shopping districts.

FCRO FY99 IMPLEMENTATION TIMEFRAMES & PROJECT DELIVERABLES
Project 6: Business Incubator Feasibility Study
OCTOBER 1, 1999 - SEPTEMBER 30, 2000

TASKS/RESPONSIBLE PARTY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DELIVERABLES/WORK PRODUCTS
Inventory and describe existing regional incubators	•----	-----	—x										A complete and through feasibility study that will equip the FCRO board to determine a path forward in the second year of CTP implementation.
Identify unmet regional needs/opportunities/ IFC, EDC		•---	-----	---x									The completed feasibility study will clearly identify the optimal scenario for new regional incubator development that will meet market-driven criteria
Conceptualize scenarios to meet identified market opportunities/ IFC, EDC				•---	-----	---x							Feasibility study outcomes will detrmine whether the proposed FCRO business incubator project is included in subsequent annual implementation program budgets.
Development mission, objectives and marketing plan for each scenario/ IFC, EDC					•---	-----	----x						
Analyze alternative locations for each scenario/ IFC, EDC							•----	-------	---x				
Project costs for site acquisition, building, remodeling, equipment/ IFC, EDC								•-----	-----	-----	-----x		
Develop timeframes for project execution/ IFC, EDC									•---	-----	-----	—x	

2414

52

IFC = Incubator Feasibility Consultant: Expert agency contracted to perform feasibility component of the proposed FCRO incubator program.

EDC = Economic Development Consultant: The EDC will coordinate gathering of data and site visits for the IFC. In addition, the EDC will provide liaison between the IFC and FCRO committees.

FCRO FY99 IMPLEMENTATION REQUEST
Project 6: Business Incubator Feasibility Study

2414

BUDGET DETAIL AND DISCUSSION

I. Program Administration		
A. Economic Development Consultant	$8,320[1]	
B. Administrative Support	1,000[2]	
C. Business Incubator Feasibility Consultant	50,000[3]	
D. Office Expense	500[4]	
E. Travel	500[5]	
Total		$60,320

---

1 104 Hours @ $80.00 per hour

2 100 Hours @ $10.00 per hour

3 A Business Incubator Feasibility Consultant will be engaged to assist in the production of the Incubator Feasibility work product at a maximum cost of $50,000.00 625 Hours @ $80.00 hour.

4 Postage, 1,000 pieces @ $.50 (avg) per piece

5 1,562.5 miles X $.32 per mile (EDC local travel for data collection and site investigation)

FCRO FY99 IMPLEMENTATION TIMEFRAMES & PROJECT DELIVERABLES
Project 7: General Administration
OCTOBER 1, 1999 - SEPTEMBER 30, 2000

TASKS/RESPONSIBLE PARTY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DELIVERABLES/WORK PRODUCTS
Plan and facilitate all FCRO general and committee meetings/ EDC	•----	-----	-----	-----	-----	-----	-----	-------	-----	-----	------	—X	A monthly activities/results report will be submitted to the Executive Committee. This report will stipulate results achieved with respect to each general administrative task. A comprehensive administrative report will be prepared at year end which will enable the FCRO and DOE to assess performance of the EDC. Additional administrative duties will be stipulated in EDC's contracted scope of services with the FCRO.
Liaison with DOE and the prime contractor on all project issues/ EDC	•----	-----	-----	-----	-----	-----	-----	-------	-----	-----	------	—X	
Ensure execution and compliance with FCRO Public Participation Plan/ EDC	•----	-----	-----	-----	-----	-----	-----	-------	-----	-----	------	—X	
Prepare all necessary reports to DOE/ EDC	•----	-----	-----	-----	-----	-----	-----	-------	-----	-----	------	—X	
Develop and maintain relations with areawide economic development agencies/ EDC	•----	-----	-----	-----	-----	-----	-----	-------	-----	-----	------	—X	
Prepare grant application/proposals for additional funding/ EDC	•----	-----	-----	-----	-----	-----	-----	-------	-----	-----	------	—X	
Maintain project records and files/ EDC	•----	-----	-----	-----	-----	-----	-----	-------	-----	-----	------	—X	

54

2414

FCRO FY99 IMPLEMENTATION REQUEST
Project 7: General Administration

2414

BUDGET DETAIL AND DISCUSSION

I. Program Administration		
A. Economic Development Consultant	$41,600[1]	
B. Administrative Support	3,000[2]	
C. Office Expense	9,000[3]	
D. Travel	10,500[4]	
Total		$64,100

---

[1] 520 Hours @ $80.00 per hour

[2] 300 Hours @ $10.00 per hour

[3] $250/month, general liability insurance premium - Board and Officers $3,000.00
Postage (meeting announcements, documents, etc.) 2,000 pcs @ $.50 (avg) . 1,000.00
Audit 5,000.00
$9,000.00

[4] National Travel: $10,500.00 Travel associated with attendance at National OWCT-sponsored meetings, CUED workshops, and other national meetings relevant to the FCRO's mission. Five, 4-day trips. Reimbursement costs include airfare, rental car, lodging and per diem, with receipts.

Rates for one 4-day trip:

Round Trip Airfare $1,000.00
Per Diem (Lodging $130/day, Meals $45/day) 700.00
Rental Car ($50/day) 200.00
Gas, Parking ($50/day) 200.00
Total, Per Trip $2,100.00

$2,100.00 X 5 Trips $10,500.00

DOE F 1600.5
(06-94)
OMB Control No. 1910-0400
All Other Editions Are Obsolete

2414

U.S. Department of Energy
Assurance of Compliance
Nondiscrimination In Federally Assisted Programs

OMB Burden Disclosure Statement

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, HR-4.3, Paperwork Reduction Project (1910-0400), U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget (OMB), Paperwork Reduction Project (1910-0400), Washington, DC 20503.

Fernald Community Reuse Organization (Hereinafter called the "Applicant") HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended, (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L.90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), the Energy Conservation and Production Act of 1976, as amended, (Pub. L. 94-385) and Title 10, Code of Federal Regulations, Part 1040. In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or disability, in its employment practices. Such employment practices may include, but are not limited to, recruitment, advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws and regulations cited above. To this end, the subrecipient shall be required to sign a written assurance form; however, the obligation of both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and disability; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color, national origin, sex, age and disability in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to the obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Civil Rights, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereof, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance, and that the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person(s) whose signatures appear below and who are authorized to sign this assurance on behalf of the Applicant.

Applicant Certification

The Applicant certifies that it has complied, or that, within 90 days of the date of the grant, it will comply with all applicable requirements, of 10 C.F.R. 1040.5 (a copy will be furnished to the Applicant upon written request to DOE).

Designated Responsible Employee

David R. McWilliams, Chair 513-863-1253
Name and Title (Printed or Typed) and Telephone Number

Signature and Date

Fernald Community Reuse Organization 513-527-3150
Applicant's Name and Telephone Number

P.O. Box 38, Ross, Ohio 45061
Address

7-1-99
Date

X David R. McWilliams

Authorized Official:
President, Chief Executive Officer

57

Assurance of Compliance

2414

or Authorized Designee

Name and Title (Printed or Typed) and Telephone Number

Signature and Date

58

2414

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. Lobbying

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub.L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I (GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

57

(2) The grantee's policy of maintaining a drug-free workplace;
(3) Any available drug counseling, rehabilitation, and employee assistance programs; and
(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and
(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statue occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug- free workplace through implementation of paragraphs (a),(b),(c),(d),(e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance: (Street address, city, county, state, zip code)

X _____

_____

_____

___ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

X Fernald Community Reuse Organization
NAME OF APPLICANT and PR/AWARD NUMBER and/or PROJECT NAME

David R. McWilliams, Chair
PRINTED NAME and TITLE OF AUTHORIZED REPRESENTATIVE

X [signature] 7-1-99
SIGNATURE and DATE

60

2414

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

(See reverse for public burden disclosure.)

1. Type of Federal Action:	2. Status of Federal Action:	3. Report Type:
[b] a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	[a] a. bid/offer/application b. initial award c. post-award	[a] a. initial filing b. material change For Material Change Only: year _____ quarter _____ date of last report _____

4. Name and Address of Reporting Entity:	5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:
[X] Prime [ ] Subawardee Tier __, *if known.* Congressional District, *if known:* 1, 2, 8 OH	N/A Congressional District, *if known:*
6. Federal Department/Agency: DOE	**7. Federal Program Name/Description:** Community Transition CFDA Number, *if applicable:*
8. Federal Action Number, *if known:*	**9. Award Amount, if known:** $
10. a. Name and Address of Lobbying Registrant *(if individual, last name, first name, MI):*	**b. Individuals Performing Services** *(including address if different from No. 10a)* *(last name, first name, MI):*

Items 11 through 15 are deleted.

16 Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature: X [signature]
Print Name: David R. McWilliams
Title: Chair
Telephone No. 513-863-1253 Date: 7-1-99

Federal Use Only

Authorized for Local Reproduction
Standard Form - LLL

61

PropertyAdvisors

2414

DEMAND MARKET ANALYSIS - LIGHT INDUSTRIAL

Fernald Community Reuse Organization

7400 Willey Road
Crosby Township, Hamilton County, Ohio 45030

September 17, 1998

Property Advisors Corporation

COMMERCIAL REAL ESTATE SERVICES

Prepared for:

Mr. Curt Paddock
Principal
Paddock Management Services
5725 Dragon Way, Suite 219
Cincinnati, OH 45227

Cincinnati Office • 8260 Northcreek Drive • Suite 330 • Cincinnati, Ohio 45236 • tel 513-791-0407 fax 513-792-4770
Columbus Office • 6641 North High Street • Suite 209 • Columbus, Ohio 43085 • tel 614-431-3332 fax 614-431-3376

62

PropertyAdvisors

2414

September 17, 1998

Mr. Curt Paddock
Principal
Paddock Management Services
5725 Dragon Way, Suite 219
Cincinnati, OH 45227

RE: Demand Market Analysis - Light Industrial
Fernald Community Reuse Organization
Crosby Township, Hamilton County, Ohio

Dear Mr. Paddock:

At your request we have conducted a market demand analysis for a proposed 23-acre light industrial tract of land. The site is located in Crosby Township, Hamilton County, Ohio within the former Fernald Feed Materials Production Facility complex. The property is now referred to as the Fernald Environmental Management Project. The objective of this report is to provide insight into determining if a light industrial use is economically viable at Fernald by the Year 2003 based on current and projected market trends. An inspection of the proposed site was conducted on August 18, 1998.

DESCRIPTION OF REAL ESTATE

Market Area Description. The market area for this report is Crosby Township, Hamilton County, Cincinnati, Ohio. Crosby Township lies between Colerain Township to the east, Whitewater Township to the south and Harrison Township to the west. It includes the communities of New Haven, Fernald and New Baltimore. The subject lies within western Hamilton County bordered by Butler County to the north. It is 7.3 miles north of Interstates 74 and 275 at their juncture. State Route 128 is one-half miles east of the subject, and runs in a north-south intersecting I-74 to the south. It is also 2.7 miles south of Cincinnati-Brookville Road (SR 126). A map is located within the addendum of the report.

The subject is in Crosby Township, which governs zoning and planning issues. Real estate tax calculations are handled by Hamilton County. Population within one mile of the subject is projected to remain stable from 1997 to 2002, following an increasing trend of growth from 1980 to 1990. Population, though, within three miles of the subject rises 9.7% from 1997 to 2002. Households mirror this pattern as well. (Demographics are detailed later in this report.) Major commercial and retail development is approximately eight miles to the southeast in Colerain Township.

Location Description. The subject property is located at 7400 Willey Road, Crosby Township, Hamilton County, Cincinnati, Ohio 45030. The subject lies approximately one-half mile from the intersection of Willey Road and State Route 128. The subject's immediate area consists of a mix of agricultural properties, single-family residences, and

Property Advisors Corporation
COMMERCIAL REAL ESTATE SERVICES

Cincinnati Office • 8260 Northcreek Drive • Suite 330 • Cincinnati, Ohio 45236 • tel 513-791-0407 fax 513-792-4770
Columbus Office • 6641 North High Street • Suite 209 • Columbus, Ohio 43085 • tel 614-431-3332 fax 614-431-3376

industrial uses. Directly to the east of the subject is a farm which sits on the corner of Willey Road and State Route 128. The nearest highway access is via State Route 128 at I-74 approximately 7.3 miles south. State Route 128 serves primarily industrial uses to the north and south of the subject property. Residential properties surround the Fernald facility, most containing a higher than average amount of acreage. Small communities dot the area around the subject including Shandon and Ross to the north, New Haven to the west, New Baltimore to the southeast, Dunlap to the east and Miamitown directly south near Interstates 74/275.

Property Description. The Fernald Environmental Management Project covers approximately 1,050 acres. This land is encompassed mostly within Crosby Township, but partially lies in Ross Township and Morgan Township to the north. The property is accessed off Willey Road, west of State Route 128. The west property line runs along Paddy's Run Road, north from Willey Road to just south of State Route 126 in Butler County.

A large majority of the subject property is currently undergoing cleanup, with most of its activities including demolition of contaminated buildings and soil remediation. The southern portion of the property is a certified clean area with little previous development. Areas to the west bordering Paddy's Run Road and to the northeast corner of the site are wooded areas, which have been preserved by Fernald from any development. Part of the western portion of the site has been leased to a nearby farmer who uses the ground for various agricultural purposes. The subject's 23-acres is situated at the south central portion of the Fernald property fronting Willey Road, and the west side of the entrance drive.

Topography. Level.

Utilities. All utilities except sewer are accessible to the site. It is assumed that within the next five years sewer will become available to the subject site.

Size and Shape. 23 acres. Irregular.

Flood Data. The subject is located in zone "C"--Areas of Minimal Flooding, as well as Zone "A"--Area of 100 Year Flood, as indicated by Community Panel #390204-0010-B, which has an effective date of June 1, 1982. The area within Zone "A" runs along the west side of the property and along the Paddy's Run stream flowing in a north-south direction. A map is located within the addendum of the report.

Census Tract. 205.01 -- Crosby Township, Hamilton County, Ohio 45030

Zoning. The subject site is located within the zoning jurisdiction of Crosby Township in Hamilton County. The site is currently zoned "G" -- Heavy Industry.

School District. Southwest Local School District

Auditor's Reference. Multiple parcels in Hamilton County Auditor's Book 530, Pages 60, 70, 80 and 90.

Ownership. United States of America (Department of Energy)

Taxes. Within the State of Ohio, the real property and improvements are assessed at approximately 35% of market value. The subject parcels are government owned property and therefore are exempt from any taxation with the State of Ohio.

DEMOGRAPHIC ANALYSIS

A demographic analysis for the subject property was conducted using the subject as a central reference point. One, three, and five-mile radii were examined. The following table shows population and income data by radius.

DEMOGRAPHIC ANALYSIS
Fernald Environmental Management Project
One, Three and Five Mile Radii

	One Mile	% Change	Three Mile	% Change	Five Mile	% Change
1997 Population Estimate	216	—	6,643	—	16,326	—
2002 Population Projection	217	0.46	7,290	9.74	16,524	1.21
1997 Households Estimate	82	—	2,345	—	5,880	—
2002 Households Projection	85	3.66	2,657	13.30	6,280	6.80
1997 Average HH Income	$48,998		$55,062		$65,126	
1997 Median HH Income	$28,333		$42,971		$47,245	

Source: National Decision Systems

According to National Decision Systems, the 1997 population estimate is 216 people within a one mile radius, and 6,643 people within a three mile radius of the subject. This population figure rises dramatically within a five mile radius to 16,326. A rise in population occurs for Year 2002 projections across all three radii, with a half percent rise within one mile, 9.7% within three miles and 1.2% within five miles. Households within one mile of the subject are 82 for 1997 and are projected to remain stable at 85 in 2002. The number of households will increase 13.30% and 6.80% respectively for the three and five-mile radii. Average 1997 household income is $65,126 within the subject's five mile radius, with a median income of $47,245.

PROJECT DESCRIPTION

The Fernald Environmental Management Project involves a former uranium processing plant which operated between 1953 and 1989 to produce uranium metal products for the nation's defense programs. The plant shut down all processing activity in 1989 due to uranium contamination and leakage problems in the ground and surrounding building structures. The site is now involved in the cleanup process of the former 136-acre production area, with Fluor Daniel and the Department of Energy acting as cleanup contractors, heading up all efforts to attain a clean site. Fernald is now on the National Priorities List of federal facilities needing remediation.

Cleanup efforts at Fernald include the dumping of contaminants (soil and debris) in the northeast sector of the property where an on-site disposal facility has been created. Nine "cells" are used to store low level (only) contaminated waste, and each cell is filled

according to a scheduled year (up to 2007). Approximately 85% of the waste is soil and 15% is debris from the demolition of tainted buildings.

Fernald proposed to lease approximately 23 acres of its total acreage for potential light-industrial users. This acreage is considered excess land that is not needed for natural resources or storage at Fernald. The site is assumed to be clean (soil tested) and will be pad ready. The proposed access is from Fernald's main entrance drive off of Willey Road. However, a stigma may exist that this new light-industrial site is "contaminated" because it lies so close to the Fernald production area. A separate entrance off Willey Road would create a sense of independence for the site and a disassociation from Fernald. The Department of Energy plans to maintain ownership of the site and lease the site to industrial users, or a master developer. Terms of the lease will be negotiable.

GREATER CINCINNATI INDUSTRIAL MARKET OVERVIEW

Greater Cincinnati's industrial market has strengthened over the last five years and will continue to be strong though 1999 and possibly 2000. This strength has encouraged purchases of new facilities or commitments to longer-term leases. Rents are increasing along with demand for industrial space. New construction has been strong due to the lack of available properties, especially those for sale. Favorable financing is boosting additional construction, including speculative space in the Northern Kentucky and northern Cincinnati submarkets. At some point, the real estate market will approach the downward side of the cycle. This movement, combined with the potential for overbuilding, will negatively impact the industrial market. We feel this "trend" will occur in two or three years. Beyond this time frame, we are not comfortable making projections. However, assuming equilibrium we can make general statements regarding the subject site at Fernald.

Nearly 90% of the total Cincinnati industrial market consists of freestanding single tenant (whether leased or owned) buildings. In general, the majority of recent industrial development has been warehousing as opposed to manufacturing space. CB Commercial/Torto Wheaton research indicates that over the past five years, 86.5% of all new industrial construction in Greater Cincinnati has been built for warehousing use. Occupancy levels are segregated between the various industrial product types as follows:

Cincinnati Market Overview - Industrial

	1997 Space Survey (000's)				Historical Vacancy			
	Total Area (SF)	% of Total	Vacancy (SF)	Absorption (SF)	1996	1995	1994	1993
Office/Warehouse	7,500	3.5%	728	75	9.7%	10.7%	12.0%	16.5%
Bulk Distribution	13,362	6.2%	2,000	1,500	15.0%	6.2%	9.0%	14.9%
Freestanding	195,574	90.3%	3,549	10,131	1.8%	3.9%	3.9%	6.0%
Totals	**216,436**	**100%**	**6,277**	**11,706**	**2.9%**	**4.2%**	**4.4%**	**6.9%**

Source: CB Commercial 1997 Overview

At year-end 1997, Greater Cincinnati boasted the third lowest availability rate, nationally, for existing space at 4.3%. The national average was 8.2% as of year-end 1997. According to the 1997 *CB Commercial Industrial Overview* and the CB Commercial 1998 Market Profile, industrial sales and leasing activity have remained strong. With 5.8 million square feet of absorption of existing inventory coupled with a record 7.3 million square feet of new construction, Cincinnati continues to absorb space at record levels. New construction activity is extremely strong for industrial properties, with build to suits accounting for 43% of all new construction. Historical absorption is segregated below by total industrial development, new additions, speculative development and build-to-suit construction (1990 to 1997).

Greater Cincinnati
Industrial Development and Absorption Overview

Year	Total Industrial Development	New Additions	Speculative Development	Build to Suit
1992	2,200,000	433,000	67,000	1,700,000
1993	3,200,000	811,000	189,000	2,200,000
1994	5,300,000	900,000	200,000	4,200,000
1995	5,600,000	784,000	672,000	4,144,000
1996	5,800,000	1,392,000	1,933,000	2,475,000
1997	7,300,000	N/A	N/A	N/A

Source: CB Commercial, 1997

Of the industrial submarkets within Greater Cincinnati, Northern Kentucky has had the most recent success due to a combination of good highway access, proximity to the airport and downtown Cincinnati, and a pro-business environment (tax incentives). At least three million square feet have been absorbed over the last two years. Bulk warehouse space is approximately 5.5 million square feet. Land is readily available with prices generally falling in the range of $40,000/acre to $100,000/acre.

The northern Cincinnati submarket, including northeastern Greater Cincinnati, has a strong presence of bulk distribution. Also, the northeast market has strong single-tenant, light industrial and office/warehouse presence. Land within the northern submarket is readily available with prices generally in the $40,000/acre to $100,000/acre range. The majority of industrial space in this market is owner occupied.

The central Cincinnati submarket has limited land availability. In fact, manufacturing facilities are being razed because their functional usefulness has declined to the point where the land is more valuable than the facility. Also, the market for industrial buildings has been moderately slow and rental rates remain flat due to location and physical improvement issues. Prices for buildings sold in the last five years range from $2.00/SF - $35.00/SF depending on building age, condition, location and overall functional utility. Typical lease rates for more functionally efficient buildings range between $1.50/SF to $3.00/SF depending on physical and locational factors. Land is priced at $45,000/acre to $80,000/acre.

The eastern Cincinnati industrial submarket is characterized generally by single-tenant, owner occupied properties and multi-tenant office/warehouse. As compared to the other

submarkets, the eastern area is much smaller in terms of available properties. There is no major presence of bulk distribution as the area is served by I-275, but it is not proximate to I-75 or I-71. Land prices for industrial sites generally range from $25,000/acre to $45,000/acre.

Located on the facing page is a map identifying the industrial submarkets and the location and size of industrial parks within these submarkets. The industrial park near the subject is discussed below.

DEMAND ANALYSIS

Crosby Township, which has a small industrial pocket, lies outside of the four major submarkets of the Greater Cincinnati industrial market. The majority of industrial property in the township falls within the "Heavy Industry" zone, including the Fernald Environmental Management Project. Most of the existing industrial properties, located primarily along State Route 128, are light industrial and are considered to be of fair to average quality.

Current Demand

Demand for industrial property in northwestern Hamilton County is low, but as land becomes more scarce in other industrial submarkets, demand could increase. New industrial activity is proposed for west of Fernald, and the subject site, where 270 acres is under consideration by Neyer Properties for industrial use. The land, currently owned by a third party, is zoned "Heavy Industrial" and "Residential". It is considered by the developer to be a slightly superior site compared to the subject given its height--elevated 50 feet above the Fernald plant, and given its location--separated by Paddy's Run Road (west of both Fernald and Paddy's Run Road, and north of Willey Road). A zone change is being requested to "Light Industrial" for 50 acres zoned "Residential". Land value is estimated at $30,000/acre and, like the subject, has water and gas available, but no public sewer access. It should be noted that Neyer Property's modus operandi is to work with a property owner on the outer edge of development, via an option or letter of agreement, to market the site in an effort to generate potential future activity. There is little capital outlay and title does not transfer unless a user is identified.

Other market participants contacted indicate that the Fernald stigma will weigh heavily in any potential user's decision making. Some developers asked why anyone would even consider the Crosby Township area, much less the Fernald site. Others claim a lack of demand for the area: 1) the "Fernald" stigma, 2) location -- Crosby Township is a good distance away from the employment populace, and 3) highway access is not direct, and road/utility infrastructure is inferior. Land in the area, according to one industrial market participant, is a little above agricultural in status, and, as such, would price land with utilities at approximately $5,000 to $8,000 per acre. Finally, given the abundance of potential, available land in Crosby Township and surrounding areas, any site with a "negative" will be at a competitive disadvantage.

A case study was conducted by the University of Cincinnati in 1992 entitled "A Geographic Information System-Based Approach to the Effects of Nuclear Processing Plants on Surrounding Property Values: The Case of the Fernald Settlement Study". This working paper appears in a study called *Impact of a Toxic Waste Superfund Site on Property Values* by Alan K. Reichert, Ph.D. within The Appraisal Journal, October 1997.

Research showed that within two miles of the Fernald site, residential properties directly bordering the site had a 35% reduction in value and within one mile had a 12% - 20% reduction in property values. Between one and two miles, the reduction percentage decreased to a 5% - 12% range. Although industrial properties were not studied, this indication of loss of value to residential properties points to the same potential for other properties near a nuclear plant such as Fernald.

In addition to the proximity to Fernald and the potential for reduced values, industrial users do not have any incentive to locate there. Market participants claim that if there is land available elsewhere, then why bother locating near a nuclear plant. The marketability of the subject site would have to be such that better incentives could not be found anywhere else in the Greater Cincinnati industrial market. These incentives may negate the purpose of undertaking the proposed 23-acre site development to generate a cash flow "annuity".

Liability is another issue. If in fact the subject site is deemed a clean site and future contamination is found, the DOE will have to deal with the liability and cleanup of such an occurrence.

Fernald Reputation

There is no doubt that a stigma associated with the Fernald plant exists in the Greater Cincinnati market area. This stigma, most likely, will only diminish with time. Even in the last several months, a host of press releases raise concerns about Fernald and a variety of issues with regard to proximity. This press is enough to cause apprehension for potential users of the subject site. In addition, lawsuits generated by the fallout of Fernald, including health and safety matters, continue as residents and business owners strive to improve the local perception of the area.

Recent news regarding Fernald includes a halt in low-level radioactive materials shipments to the Nevada Test Site. Shipments of liquid radioactive material were stopped after a faulty white metal container containing the liquid leaked onto an Arizona highway. This caused apprehension at both the Nevada and Fernald sites concerning safety standards in place. Other articles are reporting on a study indicating public safety may have been at risk from radon gas emitted from the Fernald plant prior to 1979, reaching up to 19 miles from the site. Residents who lived within the 19 miles, until 1979, reportedly have an increased risk of dying of lung cancer. Residents closest to the site have a greater risk, and those living away from the site have less of a risk, depending on the direction of the residences from the Fernald site (i.e. wind factor).

Crosby Township residents and members of the Fernald Health Effects Subcommittee are calling for warnings of the risks of living nearby Fernald. Health research is currently being conducted. The Agency for Toxic Substance and Disease Registry (ATSDR) will only preliminarily begin reporting health data collected from people who lived within five miles of the plant between 1951 and 1988. It will be some time before any conclusive findings are available. As research continues, negative press regarding Fernald will probably occur sporadically for the foreseeable future.

Future Demand

Currently, demand for available industrial land in Hamilton County is strong, especially along I-275, and saturation is near. This will cause a continued shift in demand into other parts of the Greater Cincinnati metropolitan area including Warren, Butler and Clermont counties, and Northern Kentucky. As time progresses, a shift in demand will also be made into, other less dense areas where available agricultural land exists. The Crosby Township industrial market is small, but some future growth is anticipated based on the availability of land. However, as long as the stigma of the Fernald plant exists, it is not likely to draw prospective industrial users to a site that is part of the Fernald complex.

Industrial demand, within five years (2003), will exist in the Crosby Township market, but will be based on the future status of Fernald and associated activities. If negative press reports continue to plague the plant, the likelihood of new business locating to the area diminishes. Interestingly, there is increased residential activity in the area. Currently, a 22-lot residential subdivision called the "Meadows of Crosby" is being developed at New Haven Road and Crosby Road, approximately 2.2 miles southwest from Fernald. Several home builders are slated to build within the subdivision.

RECOMMENDATIONS AND CONCLUSIONS

"Fernald" has a negative name recognition within the Greater Cincinnati market. The 23-acre subject site might have an improved appeal in the industrial market if the following items are considered: 1) Put the subject site into a different entity's name, thereby reducing the association with "Fernald". 2) Market the site as smaller industrial tracts. Smaller, local users are more likely to take a risk than a single, larger user. 3) Offer ownership rather than a ground lease. A large majority of industrial properties within the Greater Cincinnati market are owner-occupied. This trend comes from the area's dominant German heritage which advocates ownership. If a ground lease is imperative, think about working with a master developer. 4) Provide some sort of unique incentive. 5) Provide access to the site from Willey Road instead of Fernald's entry drive. Again, separate the stigma not only physically, but in perception. 6) Try to pre-arrange financing with several banks to facilitate lender/borrower issues. Bank's will likely require detailed proof of a clean site before any loans are processed. In addition, subordination is usually of concern when a ground lease is involved.

Currently, there is little demand in the Crosby Township market area for light industrial uses, especially near the Fernald plant. Future demand (i.e. Year 2003) will partially be based on the reputation of Fernald and whether or not its stigma continues to plague the market area. Demand will also be based on the availability of land. Crosby Township has plenty of agricultural land, but the issue remains as to what extent a potential industrial user will go to be involved with a site located near a former nuclear plant, much less within the confines of that plant's official boundaries. The presence of strong incentives must be in place in order to entice interested users to the subject. However, it may not be prudent to spend a large sum of money to create a development that may not return the same to the community. Finally, the site should be certified as a clean site, with a guarantee of any future liability not the responsibility of a developer and/or end user(s).

We appreciate the opportunity to work with you on this assignment. If we can be of further assistance, please call.

Respectfully Submitted,

Property**Advisors** Corporation

Gerald E. Atkins, MAI, CCIM
Ohio Certification #382077

Scott R. Glaser
Ohio Certification #415371

A

MARKET ANALYSIS

OF

A 23 Acre Site
Located at the NWC of Willey Road and the Main Entrance to the Fernald Site,
Crosby Township, Hamilton County, Ohio

FOR:

Mr. Curt Paddock
The Fernald Community Reuse Organization
5725 Dragon Way, Suite 219
Cincinnati, Ohio 45227

BY:

The Gem Real Estate Group, Inc.
Suite 610
6 North Main Street
Dayton, Ohio 45402
937/228-2882

The Date of The Report
August 28, 1998

The Effective Date of The Market Analysis
August 28, 1998

2414

THE
GEM
REAL ESTATE
GROUP

SIX NORTH MAIN STREET
SUITE 610
DAYTON, OH 45402

937.228.2882
800.261.4436
FAX 937.228.4079

August 28, 1998

Mr. Curt Paddock
The Fernald Community Reuse Organization
5725 Dragon Way, Suite 219
Cincinnati, Ohio 45227

Re: A 23 Acre Site Located at the NWC of Willey Road and the Main Entrance to the Fernald Site, Crosby Township, Hamilton County, Ohio

Dear Mr. Paddock:

In accordance with your request of our opinion of the market demand for the above captioned property, please find that we have completed the captioned assignment.

As agreed with the client prior to the preparation of this analysis, and for purposes of this inquiry, it can be assumed that the site will: 1) be leased from DOE, and 2) that the site will be declared by all relevant regulatory bodies to be environmentally suitable for a proposed industrial or commercial use. A further assumption is that the site will not be available until June 2003.

The market analysis has been focused on several issues that influence the demand for industrial vacant land in the marketplace. A discussion of each of the issues follows.

Overall Location: The site is located at the northwest corner of Willey Road and the main entrance to the Fernald Site, in Crosby Township, Hamilton County, Ohio. Surrounding land uses in the area are generally agricultural in use. This area is considered to be a rural/agricultural area in northwest Hamilton County and has not experienced urban development. Furthermore, the development activity in the area has generally been a result of the ongoing operations at the Fernald Site.

Accessibility: The site has access from Willey Road via Route 128 via Route 27 to I-275. The site is located approximately 8 - 10 miles from the intersection of I-275 and Route 27 (Colerain Avenue). The site does not have direct access to the interstate system in the Cincinnati area which is generally required by industrial users.

Utilities: Gas, electric, water and sewer would be made available to the site.

Public Services: The area is served and protected by the Hamilton County Sheriff's office and several volunteer fire departments in the area as well as the emergency response team at the Fernald site.

Amenities: Again, this area is considered to be a rural/agricultural area in northwest Hamilton County and does not offer a wide variety of service providers (restaurants, gas stations, banks, etc.) that are benefits to employees of an industrial park.

Price: Typically, land prices within the southwestern Ohio and northern Kentucky industrial markets for sites in the 2.00 to 7.00 acre size, range is from $30,000/acre to $60,000/acre. However, the sites that command these prices are typically located near the interstate system, have all utilities available, and are located in industrial parks with many surrounding amenities. It is most common in this market that the underlying land is owned in fee simple estate and is not leased. Furthermore, over 95% of the freestanding buildings in the area are owner occupied and not leased. The fact that the land would be leased from DOE creates an additional hurdle in the marketability of this site. Therefore, if demand were present, the overall lease rate for a site in this area would be minimal.

Type of industrial process/activity: Industrial activity is generally located in areas with good to excellent accessibility to the interstate system. In southwestern Ohio and northern Kentucky, the more active areas with regard to industrial growth area centered in the following areas:

Ohio: The I-75 corridor from I-275 north to the Union Center Boulevard interchange, and the Route 63 interchange. Along I-275 areas such as Union Township, Fairfield and Hamilton have experienced a tremendous amount of industrial growth over the past ten years. The most active area for development in the region is along the I-71 corridor from I-275 north to the Kings Mill Road interchange. To the east, Clermont County has experienced growth in industrial development as the roadways have improved and allowed better access to the area.

Kentucky: Industrial development in northern Kentucky has been focused around the airport. This area has seen a tremendous demand for bulk distribution space and manufacturing plants located on sites with convenient access to the airport and the interstate system.

Use of incentives: Governmental incentives vary depending upon the use and user of the site. In general, tax abatements on the improvements are common along with a host of other industry incentives based upon job creation and economic value added to the area.

Environmental history: This report assumes that the client is fully aware of the environmental history of the Fernald Site.

Existing market perceptions of Fernald: In the local market there is a definite "stigma" associated with the Fernald Site. Stigma, as it applies to real estate affected by environmental risk, is generally defined as *"an adverse public perception about a property that is intangible or not directly quantifiable."* Due to the extensive ongoing media coverage in the Cincinnati area about the Fernald Site, and the potential health hazards as a result of the site's prior use, the perception in the marketplace is generally unfavorable. This "stigma", along with the general lack of roadway access to the area, is one of the main reasons the neighborhood is largely undeveloped.

Supply of land zoned for industrial use: With the current supply of more attractive land opportunities in southwestern in Butler, Warren, and Clermont counties in Ohio as well as Boone, Kenton and Campbell Counties in Kentucky, it is our opinion that these areas will need to be more fully developed before there is demand in the area of the Fernald Site.

Lack of Financing: Due to the perceived environmental risk, along with the lack of market demand in the area, many of the regional lenders and mortgage brokers we spoke with would require extensive environmental and market studies prior to lending on a facility in or around the Fernald Site. Many of the lenders also indicated a general lack of market demand for this site due to other alternative sites in the area.

Intended Use of Report: This report is intended to assist our client, Mr. Curt Paddock of the Fernald Reuse Organization, for internal decision making purposes.

Date of Report: August 28, 1998

Development and Reporting Process: In preparing this report, we

- made an inspection of the subject property;
- gathered and confirmed information on the local industrial market that influence supply and demand for vacant land.

Highest and Best Use As If Vacant: As Is

Summary and Conclusions: Based on our analysis of the local market in southwestern Ohio and northern Kentucky, it is our opinion that there is little or no demand for the 23 acre site as of August 1998 and for the foreseeable future date of June 2003. This lack of demand is primarily a result of a rural location with a lack of roadway access along with the "Stigma" associated with the Fernald Site. Furthermore, vacant land in and around the I-275 beltway, other areas that have better interstate access and infrastructure and do not suffer from the "Stigma" in the marketplace, will be developed before there is demand for vacant sites in northwest Hamilton County.

We trust this is the information that you require. All data gathered during the course of the work are being maintained in a permanent file. If you should have any questions, please let us know. Respectfully submitted,

The Gem Real Estate Group, Inc.

Eric J. Gardner
Assistant Vice President

Douglas E. Harnish
President/COO

EJG/DEH:skb
C1447EJG

Saunders

Commercial Real Estate Services

September 10, 1998

Mr. Curt Paddock
Paddock Management Services
5725 Dragon Way, Suite 219
Cincinnati, Ohio 45227

Re: Assessment of Market Demand
Fernald Environmental Management Project
Butler and Hamilton Counties, Ohio

Dear Mr. Paddock:

Pursuant to your request as the consultant for the Fernald Community Reuse Organization (CRO), I have formulated my opinion as to the market demand for the subject project.

My opinion is based upon the following assumptions as well as my knowledge of the area the market and interviews with developers and industrialists:

1. The site will be leased from the Department of Energy (DOE).
2. The site will be declared by all relevant regulatory bodies to be environmentally suitable for industrial or commercial use.
3. The site will be available June , 2003 for development.

Factors considered per your request:

STATEGIC LOCATION:

Although the site is currently located outside the I275 loop it is only 6 to 10 minutes from three interchanges (Route 27 at Northgate, Route 128 at Miamitown, and Dry Fork Road east of Harrison, Ohio.

Industrial development in Greater Cincinnati is concentrated in two areas; I75 north of I275 in Ohio and I275 near the airport in Northern Kentucky. Most of the development consists of large distribution facilities that are built and managed by Real Estate Investment Trusts.

Most are leased on a multi-tenant basis. There are very few small (20,000 SF to 30,000 SF) speculative buildings being constructed in todays market.

ACCESSIBILITY:

The access to the FEMP site although mainly 2 lane roads, would be acceptable to most industrial clients. The criteria for moving to a new location is as follows:

1. Management and employee distance from their home base.
2. Ultimate destination to products coming in and out of the facility.
3. Customer base and the deadhead time for transportation of product.

AMMENITIES AND EXISTING INFRASTRUCTURE:

Industrial developments require that all roads and utilities be available at the site, rail being the only exception that is not always necessary.

Amenities that typically would attract office users such as restaurants, health clubs and park setting are not as important for industrial development with the exception of R&D facilities. The lack of these amenities at the FEMP site do not present a disadvantage.

PRICE:

Industrial land in the Hamilton-Fairfield area ranges in price from $30,000 to $60,000 per acre. Union Township land near expressways range from $75,000 to $150,000 per acre.. Northern Kentucky land near the airport and Florence range from $80,000 to $150,000 per acre.

Land at the FEMP site, if sold and in order to meet the market, should be priced in a range of $20,000 to $25,000 per acre.

TYPE OF INDUSTRIAL PROCESS/ACTIVITY:

Companies currently located in the near area are light manufacturers and most are privately owned and operated. That trend will most likely not change in the near future.

USE OF INCENTIVES:

There are in most areas around Greater Cincinnati and Northern Kentucky, various incentive packages offered to companies. Typically these incentives are tax abatements for buildings and personal property (inventory), but could also include job training incentives. These same incentives should be available at the FEMP site and would be requirement for most companies considering the site.

ENVIRONMENTAL HISTORY AND EXISTING PERCEPTIONS:

The greatest challenge to the entire project is obviously the current and historical environmental problems. The perception related to the site's suspected problems and the attention the media gives to them will not help future development of the site.

Assuming that the site is suitable by regulatory assessment in June, 2003, does not necessarily mean that the industrial community is ready to accept it for their place of business.

MARKET ANALYSIS:

An overview of today's industrial market indicates that it is very strong. Vacancy rates are low (3-4%) but will increase as new construction outpaces absorption. A vast majority of construction is distribution versus manufacturing buildings.

There are more development opportunities in brownfield sites because of govermental and financial institutions relaxing their requirements. The sites selected depend upon the severity of the environmental problems.

The industrial market west of Colerain Avenue (Route 27) has not had the same growth pattern as the other submarkets mainly because of the I75 and I71 activity.

There is a small development just east of Harrison, Ohio at Dry Fork and another at Willey and Paddy,s Run Road (Crosby Commerce Center). In both cases activity is slow compared to other submarkets.

SUMMARY:

Utilizing the aforementioned assumptions and factors, my opinion is as follows:

1. A successful industrial development of the Fernald Environmental Management Project will depend largely upon the environmental attitude of the industrial user at the time of commencement.

2. The location is not prime for speculative development however it could be appealing to local businesses. Location, access and incentives are not a problem, however perceptions as to environmental problems could continue to be a negative issue.

3. In order to strengthen the success of an industrial project I would suggest that the DOE consider leasing land and buildings to prospective tenants, utilizing lower rates and using local, state, and federal incentive programs to there maximums. This approach could offset disadvantages of the site as well as the need for capital expenditures by the user and any approvals for financing.

CONCLUSION:

The site has the potential for success on a limited basis. Availability of other better located sites that do not have additional challenges will tend to minimize activity.

Thank you for the opportunity to work with the organization. It has been both interesting and educational. Please call at your convenience if you have any questions or comments at 512-874-6543.

Respectfully submitted,

David A. Saunders
Saunders Commercial Real Estate Services

2414

The Economic Impact of Fernald on the Greater Cincinnati Economy

Prepared for the

Fernald Community Reuse Organization

By the

Economics Research Group
Center for Economic Education
University of Cincinnati

November 1998

Principal Investigators
Marie Haney, Associate Director of Research
Amy Merrell, Research Assistant

81

2414

Executive Summary
The Economic Impact of Fernald on the Greater Cincinnati Economy

We have analyzed Fernald's economic impact on the Greater Cincinnati economy for each year between 1997 and 2008. Our major findings include the following:

- From 1997 to 2008, Fernald's total annual economic impact on the Greater Cincinnati economy will decline by 81 percent – from $735 million in 1997 to $136 million in 2008.

- Fernald's total annual economic impact will peak in 2005, when it will reach $910 million. The total economic impact of Fernald in 2005 includes $764 million in regional economic output and $164 million in household earnings.

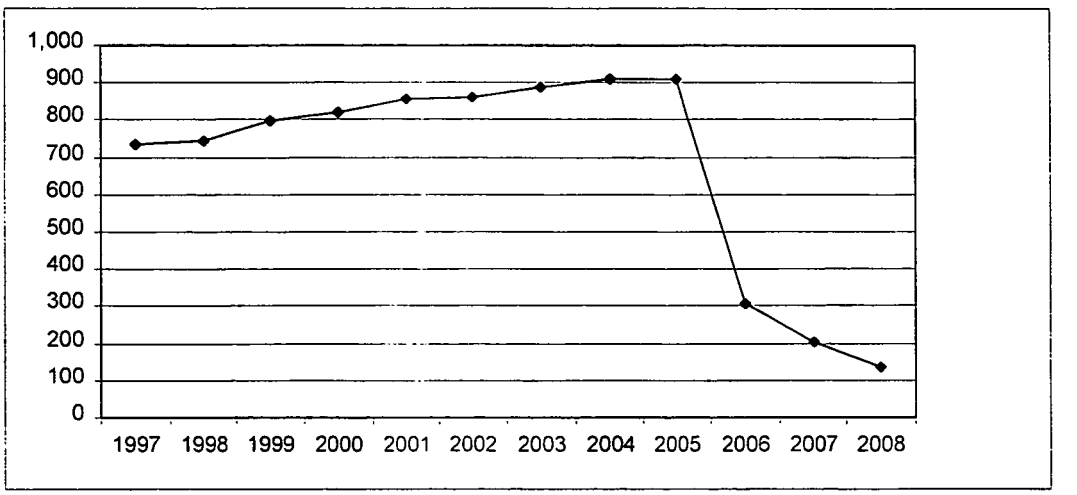
- From 1997 to 2008, Fernald's direct and indirect employment impact on the Greater Cincinnati economy will decrease by 2,765 jobs – from 4,394 in 1997 to 1,629 in 2008.

- The impact of Fernald on regional employment will peak in 1998, when 4,638 jobs are directly and indirectly created throughout a number of Greater Cincinnati's industries.

- The industries in Greater Cincinnati that benefit the most from Fernald's operations are construction, business services, real estate, retail trade, and health services.

- Chart 1 shows the total annual economic impacts of Fernald for the years 1997 through 2008. After the year 2005, the loss in regional economic activity due to lower Fernald spending is dramatic. In fact, the combined annual economic impacts of Fernald over the three year period from 2006 to 2008 is less than the total economic impact in any one of the nine prior years.

Chart 1: 1997-2008 Total Fernald Annual Economic Impacts 1997 to 2008 (in millions of dollars)



Introduction

Between 1953 and 1989, Fernald produced uranium metal products for the nation's defense programs. Fernald's uranium metal production was suspended in 1989 to focus resources on environmental restoration, and since 1991, the Fernald work force has been dedicated to environmental restoration and waste management. In 1992, Fluor Daniel Fernald assumed responsibility for managing all cleanup activities at Fernald under a contract with the Department of Energy.

This report describes the economic impact of Fernald on the Greater Cincinnati economy over the 1997 to 2008 time period. We describe Fernald's economic impact in terms of its direct and indirect creation of regional output, household earnings, and employment in the Greater Cincinnati economy.[1]

Structure of this Report

This report is structured as follows. The introduction includes descriptions of the data sources and research methodology we used for this analysis. The summary, which begins on page four, summarizes the total economic impact of Fernald over the 11-year period and highlights our major findings. Following the summary we describe in detail the economic impact of Fernald for each year between 1997 and 2008.

Two appendices are included in the back of the report. Appendix I includes the data provided to us from the Department of Energy, as well as a description of the assumptions they made in order to provide us with the data we required. Appendix II includes detailed information on the methodology used in our analysis.

Data Sources

The Department of Energy's Fernald Area Office provided us with the data that was necessary to conduct this analysis. Economic impacts are based on industry and location specific multipliers for economic activities. Because there is not an "environmental remediation" industry multiplier, we have divided Fernald's business activities into three main categories: engineering and management, construction, and transportation. These three industries represent Fernald's operations, and together they describe how and to what extent Fernald affects regional economic activity.

---

[1] Greater Cincinnati is defined as a 13-county area including parts of three states. The counties are Brown, Butler, Clermont, Hamilton, and Warren in Ohio; Boone, Campbell, Gallatin, Grant, Kenton, and Pendelton in Kentucky; and Dearborn and Ohio counties in Indiana.

2414

For each of these three operating activities, we asked the Department of Energy to provide us with total payroll and benefit expenditures, all other expenditures, and total employment. Therefore, our analysis is based on total non-payroll expenditures, total payroll and benefit expenditures, and total employment associated with Fernald's engineering and management activities, construction activities, and transportation activities.

The Department of Energy provided the total expenditures, payroll and benefits, and employment associated with each of the three units beginning with the 1997 fiscal year and projected through the 2008 fiscal year. These data and an outline of the assumptions and methodology used to gather these data are in Appendix I.

Research Methodology

The economic impact of Fernald is described in terms of Fernald's impact on regional output, household earnings, and employment. The economic impact analysis was performed using the Regional Input Output Modeling System (RIMS II), developed by the Bureau of Economic Analysis at the U.S. Department of Commerce.[2] RIMS II measures the impact of a project's economic activities by using location specific multipliers which determine the total amount of business activity, household earnings, and employment that will be generated within the Cincinnati Consolidated Metropolitan Statistical Area.

The "output" multipliers (which we use to calculate the economic impacts of spending on regional output) determine the total amount of expenditures that are spent in the region by estimating how much of the industry-specific spending could be satisfied by regional businesses. Therefore, we do not create our own estimates of how much of Fernald's expenditures stay within the Greater Cincinnati region. However, the "earnings" and "employment" multipliers do require that we estimate how many Fernald employees live in the Greater Cincinnati region. Based on a 1996 study we conducted for Fernald, we estimate that 72 percent of Fernald's employees live within the 13-county Greater Cincinnati area. For more detailed information on the methodology used in this analysis, please see Appendix II.

[2] This economic impact analysis was conducted using the latest version of RIMS II industry multipliers for the Greater Cincinnati region. These multipliers are based on 1995 Greater Cincinnati data and 1992 US Benchmark (Input-Output) tables.

Summary of the Economic Impact of Fernald

From 1997 to 2008, Fernald's total annual economic impact on the Greater Cincinnati economy will decline by 81 percent – from $735 million in 1997 to $136 million in 2008. After the year 2005, the loss in regional economic activity due to lower Fernald spending is dramatic. In fact, the combined annual economic impacts of Fernald over the three year period from 2006 to 2008 is less than the total economic impact in any one of the nine prior years.

Fernald's total economic impact includes two separate components -- the impact on regional output and the impact on regional household earnings. From 1997 to 2008, Fernald's economic impact on regional output will decline by 88 percent – from $594 million in 1997 to $72 million in 2008. Fernald's impact on household earnings in the Greater Cincinnati region will decline by $76 million, or 54 percent, over the same period. In addition, Fernald-associated employment in Greater Cincinnati will suffer a loss of 2,765 jobs between 1997 and 2008.

Table 1 reports the data on which our analysis is based. In FY 1997, total Fernald non-payroll expenditures were $257 million. In addition, payroll and benefit payments totaled nearly $91 million. Fernald's activities required a total of 2,464 direct jobs in the 1997 fiscal year.

By 2008, Fernald's non-payroll expenditures will fall to $31 million, and payroll and benefits will drop to $41 million. Fernald employment will decline from 2,464 in 1997 to 911 in 2008.

It is expected that over the next 11 years total Fernald non-payroll expenditures will peak at $321 million in 2005. Expenditures for payroll and benefits are highest in 2001 when Fernald will spend $121 million for payroll and benefits. The number of total employees reaches a peak in 1998 when Fernald will employ 2,594 people. See Table 1 below for details.

Table 1: Total Fernald Expenditures, 1997-2008

Year	Total Expenditures	Total Non-Payroll Expenditures	Total Payroll and Benefits	Total Employees
1997	$ 348,020,000	$ 257,441,000	$ 90,579,000	2,464
1998	350,674,000	258,700,000	91,974,000	2,594
1999	379,678,000	275,212,000	104,466,000	2,586
2000	392,409,000	280,589,000	111,820,000	2,390
2001	409,206,000	288,165,000	121,041,000	2,345
2002	409,688,000	295,948,000	113,740,000	2,278
2003	419,478,000	303,937,000	115,541,000	2,236
2004	430,666,000	312,143,000	118,523,000	1,844
2005	423,251,000	320,571,000	102,680,000	1,757
2006	149,793,000	94,483,000	55,310,000	1,306
2007	101,461,000	56,965,000	44,496,000	842
2008	72,592,000	31,117,000	41,475,000	911

2414

While Table 1 shows the direct effects of Fernald on the Greater Cincinnati region, Table 2 shows the direct *and indirect* effects of Fernald on the regional economy. For example, the $257 million in non-payroll expenditures that Fernald spent in 1997 created an economic impact on regionwide output of $594 million. The $91 million in direct payroll and benefits led to a total impact of $140 million on household earnings, which includes the indirect impacts of earnings through the re-spending of dollars in the local economy. Together, the output and earnings components yielded a total annual economic impact of $735 million in 1997. In addition, the 2,464 jobs directly created at Fernald led to a total of 4,394 jobs in the regional economy due to the indirect business activity that is stimulated by Fernald employment.

Fernald's total economic impact is expected to be greatest in 2005 when the impact will reach $910 million. The economic impact on regional output peaks in 2005, while the economic impact on regional earnings peaks in 2001. The regional impact on employment is greatest in 1998, when 4,638 jobs are created.

Table 2: Total Fernald Economic Impacts, 1997-2008

	Total Economic Impact	Total Economic Impact on Output	Total Economic Impact on Earnings	Total Economic Impact on Employment
1997	**$ 734,601,510**	$ 594,143,553	$ 140,457,957	4,394
1998	**741,171,843**	597,924,825	143,247,018	4,638
1999	**795,957,617**	633,292,150	162,665,468	4,629
2000	**821,071,980**	646,140,069	174,931,912	4,283
2001	**855,479,451**	665,049,145	190,430,306	4,219
2002	**860,424,699**	682,009,621	178,415,078	4,088
2003	**885,466,919**	702,453,116	183,013,803	4,034
2004	**909,237,431**	721,443,942	187,793,489	3,327
2005	**909,641,275**	745,808,047	163,833,228	3,179
2006	**305,758,568**	218,641,769	87,116,799	2,347
2007	**200,734,635**	131,307,606	69,427,029	1,507
2008	**136,216,573**	71,673,815	64,542,758	1,629

Charts 1 and 2 on the following page show the total economic impact of Fernald for each year, and then the two component parts – the annual economic impact on regional output and the annual economic impact on regional earnings.

Chart 1: Total Fernald Economic Impacts, 1997-2008 (in millions)

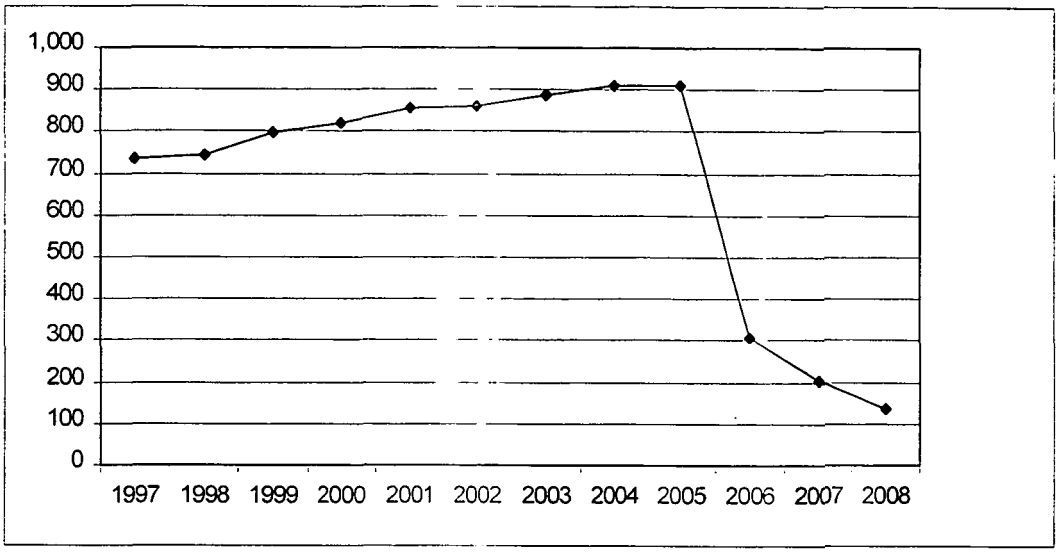
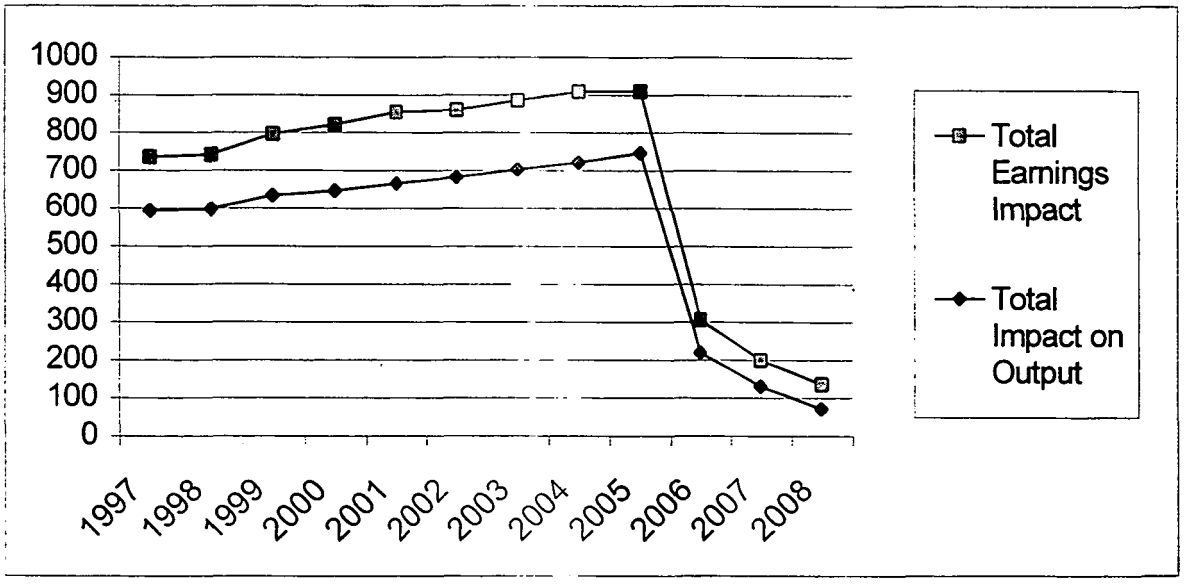


Chart 2: Total Impact on Output and Total Impact on Earnings 1997-2008 (in millions)



2414

Table 3 shows the 13 industries that benefit the most from Fernald's presence in the region. For each year of data we analyzed, we evaluated the economic impact of Fernald's expenditures on the output of the 38 aggregate industries that make up the Greater Cincinnati economy. While the dollar amount and percentage of the economic impact going to each of these industries varies from year to year due to the amount and type of spending, the 13 industries shown in Table 3 are consistently the top 13 industries benefiting from Fernald.

Table 3: 1997 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry	Percentage of Total Output
Construction	$ 200,532,946	33.75
Business services	126,416,094	21.28
Real estate	33,437,673	5.63
Retail trade	27,329,731	4.60
Health services	22,192,650	3.74
Wholesale trade	21,198,722	3.57
Miscellaneous services	16,152,878	2.72
Transportation	15,240,095	2.57
Fabricated metal products	13,014,569	2.19
Depository, nondepository institutions, brokers	12,540,672	2.11
Insurance	9,457,559	1.59
Chemicals and petroleum and coal products	9,312,568	1.57
Eating and drinking places	9,276,938	1.56
Communications	8,217,723	1.38
Food and kindred products	7,924,652	1.33
Other	61,898,084	10.42
Total	**$ 594,143,553**	**100%**

Total Fernald Expenditures and Regional Economic Impacts 1997 Fiscal Year

Total Fernald expenditures in 1997 were $348 million, which created a total economic impact of $734 million in the Greater Cincinnati region. A total of 4,394 regional jobs were directly and indirectly supported due to Fernald-related activities.

In 1997, Fernald spent a total of $257 million on non-payroll goods and services. Of this $257 million, Fernald spent $62 million on engineering and management activities and $196 million on construction. See Table 4.

Table 5 shows the economic impact of Fernald's 1997 expenditures by operating unit. Fernald's 1997 expenditures created a regional output impact of $594 million. Engineering and management activities accounted for $135 million of the impact and construction accounted for $459 million of the impact.

In addition, Fernald's 1997 payroll and benefit expenditures created a regional household earnings impact of $140 million. The impact on regional household earnings from engineering and management activities was $38 million and the impact from construction activities was $102 million. Engineering and management accounted for 27 percent of this impact and construction provided 73 percent of the earnings impact.

Fernald's 1997 employment created a regional employment impact of 4,393 jobs. The impact on regional employment was 948 jobs from engineering and management services (22 percent of the impact) and 3,445 jobs from construction activities (78 percent of the total employment impact).

The construction industry benefits the most from Fernald's presence in Greater Cincinnati with a $201 million economic impact on output in 1997. The impact on the business services industry was the second largest at $126 million. These two industries account for more than half of Fernald's regional output impacts for 1997. Although Fernald made no major direct transportation expenditures during 1997, the transportation industry had an indirect economic impact of $15 million. See Table 6 for other details.

2414

Table 4: 1997 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 61,785,840	$ 28,831,000	591
Construction	195,655,160	61,650,000	1,873
Transportation	-	98,000	-
Total	**$ 257,441,000**	**$ 90,579,000**	**2,464**

Table 5: 1997 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Impact on Regional Employment
Engineering and management	$ 134,647,410	$ 38,172,059	948
Construction	459,496,143	102,154,543	3,445
Transportation	-	131,354	-
Total	**$ 594,143,553**	**$ 140,457,957**	**4,394**

Table 6: 1997 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 200,532,946
Business services	126,416,094
Real estate	33,437,673
Retail trade	27,329,731
Health services	22,192,650
Wholesale trade	21,198,722
Miscellaneous services	16,152,878
Transportation	15,240,095
Fabricated metal products	13,014,569
Depository, nondepository institutions, brokers	12,540,672
Insurance	9,457,559
Chemicals and petroleum and coal products	9,312,568
Eating and drinking places	9,276,938
Communications	8,217,723
Food and kindred products and tobacco products	7,924,652
Other	61,898,084
Total	**$ 594,143,553**

90

Total Fernald Expenditures and Regional Economic Impacts 1998 Fiscal Year

Total Fernald expenditures in 1998 will be $ 351 million, which will create a total economic impact of $741 million in the Greater Cincinnati region. A total of 4,638 regional jobs will be directly and indirectly supported due to Fernald-related activities.

Fernald will spend a total of $259 million during 1998, not including payroll and benefits. Engineering and management expenditures account for $57 million, or 22 percent of total spending, while construction expenditures total $202 million, or 78 percent of spending. For the 1998 fiscal year, Fernald's non-payroll expenditures are expected to increase by $2 million over 1997 expenditures. See Table 7 for 1998 fiscal year spending estimates.

Fernald's 1998 non-payroll expenditures will translate into a $598 million economic impact on output for the region. Engineering and management activities at Fernald will generate a $124 million economic impact on output and contribute 21 percent to the total output impact. Fernald construction activities will create a $474 million impact on output in the Greater Cincinnati area. The impact on regional output for 1998 is expected to be $4 million greater than the impact for 1997.

In addition, Fernald's impact on regional earnings will increase $3 million to $143 million in 1998. Engineering and management activities will contribute $36 million to the impact on regional earnings, and construction activities will contribute $107 million, or 75 percent, to the total regional earnings impact.

The total impact on regional employment for 1998 is expected to total 4,638 jobs, which is the largest employment impact over the 11-year period under study. This reflects a 5.5 percent increase in total jobs when compared to 1997's employment impact. Engineering and management activities will generate 915 of these jobs, or 20 percent of the total impact. Construction activities will account for 3,723 jobs and 80 percent of the total impact. See Table 8 for Fernald's economic impacts in 1998.

The construction industry will benefit the most from Fernald's 1998 expenditures with a $186 million regional output impact. Business services will gain $111 million in direct and indirect Fernald-related activities, and the transportation industry will realize a $14 million impact in 1998. The impact on the construction industry will increase $6 million from 1997 to 1998, while the impact on business services will decline $5 million year over year. Other industries benefiting from Fernald include real estate, retail trade, and health services. See Table 9 for the industries benefiting the most from Fernald's 1998 operations.

2414

Table 7: 1998 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 56,914,000	$ 27,402,000	571
Construction	201,786,000	64,475,000	2,023
Transportation	-	98,000	-
Total	**$ 258,700,000**	**$ 91,975,000**	**2,594**

Table 8: 1998 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 124,030,404	$ 36,280,073	915
Construction	473,894,421	106,835,591	3,723
Transportation	-	131,354	-
Total	**$ 597,924,825**	**$ 143,247,018**	**4,638**

Table 9: 1998 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 206,675,844
Business services	121,637,222
Real estate	33,435,526
Retail trade	27,587,147
Health services	22,249,338
Wholesale trade	21,493,313
Miscellaneous services	16,215,833
Transportation	15,344,842
Fabricated metal products	13,385,345
Depository and nondepository institutions and brokers	12,580,167
Insurance	9,533,198
Chemicals and petroleum and coal products	9,442,757
Eating and drinking places	9,291,366
Communications	8,227,281
Primary metal industries	7,998,590
Other	62,827,054
Total	**$ 597,924,825**

Total Fernald Expenditures and Regional Economic Impacts 1999 Fiscal Year

Total Fernald expenditures in 1999 will be $380 million, which will create a total economic impact of $796 million in the Greater Cincinnati region. A total of 4,629 regional jobs will be directly and indirectly supported due to Fernald-related activities.

As seen in Table 10, during 1999 Fernald is expected to spend $58 million on engineering and management activities, $209 million on construction activities, and $8 million on transportation activities for total non-payroll expenditures of $275 million. This represents a $16 million increase in expenditures from 1998.

Fernald's 1999 non-payroll expenditures will create a $633 million impact on regional output. Of this, engineering and management activities create $126 million of the impact, construction activities $491 million, and transportation activities will contribute $16 million to the impact on regional output. The total regional output impact is expected to increase $35 million, or 6 percent, from 1998 to 1999.

In addition, the impact on regional earnings for 1999 is expected to reach $163 million based on payroll and benefit expenditures of $104 million. Engineering and management activities account for $41 million of the earnings impact, construction activities $121 million, and transportation activities $1 million. The impact on regional earnings will increase by $18 million in 1999, or 13 percent over 1998 levels.

There will be a total impact on regional employment of 4,629 jobs from Fernald's 1999 employment estimates. Engineering and management will contribute 871 jobs, construction will generate 3,616 jobs, and transportation activities will account for 142 regional jobs. Nine fewer regional jobs will be generated in 1999 compared to the estimates for 1998. Table 11 shows the expected economic impacts generated by Fernald from its operations in 1999.

The construction industry will gain $215 million in Fernald-associated business and the regional business services industry will gain $125 million. The transportation industry shows a $25 million impact from Fernald's 1999 operations. As seen in Table 12, the impact on the construction industry will increase $8 million from 1998, the impact on business services will increase $4 million, and the impact on the transportation industry will increase $10 million over 1998 levels.

2414

Table 10: 1999 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 57.794,520	$ 30,685,000	543
Construction	209.161,120	73,100,000	1,965
Transportation	8.256,360	680,000	78
Total	**$ 275,212,000**	**$ 104,465,000**	**2,586**

Table 11: 1999 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 125.949,286	$ 40,626,744	871
Construction	491,214,890	121,127,285	3,616
Transportation	16.127,974	911,439	142
Total	**$ 633,292,150**	**$ 162,665,468**	**4,629**

Table 12: 1999 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 214,853,000
Business services	125,216,561
Real estate	35,315,534
Retail trade	29,068,662
Transportation	24,938,501
Health services	23,537,837
Wholesale trade	22,673,616
Miscellaneous services	17,161,395
Fabricated metal products	13,947,304
Depository and nondepository institutions brokers	13,430,951
Insurance	10,071,438
Chemicals and petroleum and coal products	9,963,335
Eating and drinking places	9,851,434
Communications	8,671,710
Primary metal industries	8,440,532
Other	66,150,342
Total	**$ 633,292,150**

Total Fernald Expenditures and Regional Economic Impacts 2000 Fiscal Year

Total Fernald expenditures in 2000 will be $392 million, which will create a total economic impact of $821 million in the Greater Cincinnati region. A total of 4,283 regional jobs will be directly and indirectly supported due to Fernald-related activities.

As seen in Table 13, Fernald's non-payroll and benefit spending in the year 2000 is expected to total $281 million. Expenditures for engineering and management activities will be $56 million, construction-related expenditures $216 million, and transportation expenditures $8 million. This reflects an increase of $6 million in total non-payroll expenditures from 1999.

We estimate that Fernald's year 2000 expenditures will create a $646 million impact on regional output. Engineering and management activities at Fernald will create $122 million, or 19 percent, of the total impact. Construction activities will generate $507 million of the impact, or 78 percent of the total, and transportation activities will contribute $16 million to Fernald's regional impact. The total regional output impact is expected to increase by $13 million, or two percent, from 1999 to 2000.

In addition, the impact on regional earnings for the year 2000 is expected to reach $175 million. Engineering and management-related payroll and benefits will account for $40 million of this impact, construction $134 million, and transportation-related payroll and benefits will generate $1 million of the impact. The impact on regional earnings is expected to increase seven percent, or $12 million, between 1999 and 2000.

We project a total impact on regional employment of 4,283 jobs based on Fernald's year 2000 employment levels. Engineering and management-related employment will contribute 767 of these jobs, construction activities will provide 3,386 regional jobs, and transportation activities will account for 131 jobs of the total employment impact. Fernald's employment impact will decrease by seven percent between 1999 and 2000. See Table 14 for Fernald's year 2000 economic impacts.

Table 15 describes the industries benefiting the most from Fernald's operations in the year 2000. The construction industry will benefit approximately $222 million from Fernald's spending, while the business services industry can expect to gain $125 million. We estimate a $25 million impact on the transportation industry. Compared to 1999, the impact on construction will increase by $6 million, the impact on business services will fall by a half a million, and the impact on transportation will increase by half a million in the year 2000.

2414

Table 13: 2000 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 56,117,800	$ 30,260,000	478
Construction	216,053,530	80,683,000	1,840
Transportation	8,417,670	877,000	72
Total	**$ 280,589,000**	**$ 111,820,000**	**2,390**

Table 14: 2000 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 122,295,277	$ 40,064,046	767
Construction	507,401,715	133,692,376	3,386
Transportation	16,443,077	1,175,489	131
Total	**$ 646,140,069**	**$ 174,931,912**	**4,283**

Table 15: 2000 Total Fernald Regional Output Impacts

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 221,850,218
Business services	124,736,121
Real estate	35,915,673
Retail trade	29,703,713
Transportation	25,442,127
Health services	23,969,596
Wholesale trade	23,220,143
Miscellaneous services	17,487,990
Fabricated metal products	14,386,359
Depository and nondepository institutions and brokers	13,681,520
Insurance	10,284,148
Chemicals and petroleum and coal products	10,203,900
Eating and drinking places	10,027,129
Communications	8,824,524
Primary metal industries	8,707,238
Other	67,699,672
Total	**$ 646,140,069**

96

Total Fernald Expenditures and Regional Economic Impacts 2001 Fiscal Year

Total Fernald expenditures in 2001 will be $409 million, which will create a total economic impact of $855 million in the Greater Cincinnati region. A total of 4,219 regional jobs will be directly and indirectly supported due to Fernald-related activities.

In 2001, we expect Fernald's total spending on non-payroll and benefit expenditures to be $288 million. This represents a $7 million spending increase when compared to the year 2000. In 2001, Fernald is expected to spend $49 million on engineering and management activities, $231 million on construction activities, and $9 million on transportation activities. See Table 16.

We estimate that Fernald's 2001 spending will create a regional output impact of $665 million. Engineering and management activities will create $107 million of this impact, construction $541 million, and transportation will contribute $17 million to the total impact. The total regional output impact is expected to increase $18 million, or three percent, from 2000 to 2001.

In addition, we estimate the impact on regional household earnings for 2001 to be $190 million. Over the 11-year period under study, Fernald's payroll and benefit expenditures peak in 2001 at $121 million, creating the largest impact on household earnings during the period. The impact on regional earnings is expected to increase nine percent, or by $15 million, between 2000 and 2001.

There will be a total impact on regional employment of 4,219 jobs from Fernald's 2001 direct employment. Engineering and management-related employment will generate a total of 639 regional jobs. Fernald's construction employment will create a total of 3,452 regional jobs. Fernald's transportation-related employment will account for 128 regional jobs. Between 2000 and 2001, Fernald's regional employment impact will decline by 64 jobs. See Table 17 for Fernald's economic impacts for the year 2001.

As seen in Table 18, the regional construction industry will gain $236 million in Fernald-related business activity from year 2001 spending, and the regional business services industry will benefit by $119 million. The impact on construction will increase $14 million and the impact on business services will decrease by $6 million between 2000 to 2001. Real estate, retail trade, transportation, and health services industries in Greater Cincinnati will also reap significant benefits from Fernald.

2414

Table 16: 2001 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 48,988,050	$ 29,602,000	399
Construction	230,532,000	90,562,000	1,876
Transportation	8,644,950	877,000	70
Total	**$ 288,165,000**	**$ 121,041,000**	**2,345**

Table 17: 2001 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 106,757,698	$ 39,192,859	639
Construction	541,404,402	150,061,958	3,452
Transportation	16,887,045	1,175,489	128
Total	**$ 665,049,145**	**$ 190,430,306**	**4,219**

Table 18: 2001 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 236,465,490
Business services	119,086,319
Real estate	36,608,597
Retail trade	30,712,510
Transportation	26,179,560
Health services	24,530,161
Wholesale trade	24,166,093
Miscellaneous services	17,933,372
Fabricated metal products	15,287,960
Depository and nondepository institutions and brokers	14,014,444
Chemicals and petroleum and coal products	10,620,840
Insurance	10,610,927
Eating and drinking places	10,246,168
Primary metal industries	9,255,975
Communications	9,011,611
Other	70,319,118
Total	**$ 665,049,145**

Total Fernald Expenditures and Regional Economic Impacts 2002 Fiscal Year

Total Fernald expenditures in 2002 will be $410 million, which will create a total economic impact of $860 million in the Greater Cincinnati region. A total of 4,088 regional jobs will be directly and indirectly supported due to Fernald-related activities.

In the year 2002, Fernald is expected to spend $296 million in non-payroll and benefit expenditures. Of this $296 million, $56 million will be allocated to engineering and management activities, $231 million to construction activities, and $9 million for transportation-related activities. Total non-payroll spending is expected to increase by $8 million from 2001 to 2002. See Table 19 for 2002 expenditure and employment data.

The regional impact from Fernald's output expenditures in 2002 will be $682 million. Engineering and management activities will create $123 million of this impact, construction activities $542 million, and transportation activities $17 million. The total regional output impact will increase $17 million (three percent) from 2001 to 2002.

In addition, Greater Cincinnati's household earnings will increase by $178 million based on Fernald's 2002 payroll and benefit payments. Engineering and management wage payments will account for $39 million of the earnings impact, construction payments $138 million, and transportation $1 million. The impact on regional earnings will decrease by $12 million between 2001 and 2002 (six percent).

We expect a total impact on regional employment of 4,088 jobs from Fernald's 2002 employment. Engineering and management-related employment will contribute 694 of these jobs, construction employment will generate 3,269 direct and indirect jobs, and transportation-related employment will account for 125 direct and indirect jobs. Between 2001 and 2002, Fernald's impact on regional employment will decline by three percent. See Table 20 for details on Fernald's economic impacts in the year 2002.

Based on the regional output impact of Fernald in 2002, the regional construction industry will gain $234 million, business services $128 million, and the transportation industry $27 million. The impact on the regional construction industry increased by half a million between 2001 and 2002. The impact on business services increased by $9 million, or 8 percent, over this time period, and the impact on transportation increased three percent. See Table 21 for the industries benefiting the most from Fernald in the year 2002.

2414

Table 19: 2002 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 56,230,120	$ 29,354,000	433
Construction	230,839,440	83,509,000	1,777
Transportation	8,878,440	877,000	68
Total	**$ 295,948,000**	**$ 113,740,000**	**2,278**

Table 20: 2002 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 122,540,051	$ 38,864,508	694
Construction	542,126,425	138,375,081	3,269
Transportation	17,343,145	1,175,489	125
Total	**$ 682,009,621**	**$ 178,415,078**	**4,088**

Table 21: 2002 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 236,946,682
Business services	128,476,887
Real estate	37,786,877
Retail trade	31,400,438
Transportation	26,852,072
Health services	25,252,000
Wholesale trade	24,600,382
Miscellaneous services	18,436,081
Fabricated metal products	15,349,521
Depository and nondepository institutions brokers	14,417,935
Insurance	10,863,896
Chemicals and petroleum and coal products	10,810,862
Eating and drinking places	10,558,300
Primary metal industries	9,291,228
Communications	9,290,044
Other	71,676,416
Total	**$ 682,009,621**

Total Fernald Expenditures and Regional Economic Impacts 2003 Fiscal Year

Total Fernald expenditures in 2003 will be $419 million, which will create a total economic impact of $885 million in the Greater Cincinnati region. A total of 4,034 regional jobs will be directly and indirectly supported due to Fernald-related activities.

Fernald's non-payroll expenditures in 2003 are expected to total $304 million. This is an increase of $8 million over 2002. Spending on engineering and management activities will total $46 million, construction-related spending will be $249 million, and transportation-related spending $9 million. See Table 22 for expenditure and employment data for Fernald in the year 2003.

Year 2003 operation spending will create an economic impact of $702 million in the Greater Cincinnati economy. Engineering and management activities stimulate $99 million in economic activity, construction activities generate $585 million of the impact, and transportation activities contribute $18 million to the total output impact. We estimate the total regional output impact will increase $20 million, or three percent, from 2002 to 2003.

In addition, household earnings in Greater Cincinnati will increase by $183 million in 2003, based on Fernald's payroll and benefit payments of $116 million during that year. The impact on regional earnings is expected to increase $5 million between 2002 and 2003.

Fernald's direct employment in 2003 will create a total impact on regional employment of 4,034 jobs. Engineering and management-related employment at Fernald will generate 538 regional jobs, Fernald construction-related employment will generate 3,373 direct and indirect jobs, and transportation-related employment will create 122 regional jobs. Between 2002 and 2003, regional employment related to Fernald will decrease by 54 jobs. See Table 23 for Fernald's year 2003 economic impacts on the Greater Cincinnati economy.

In 2003, the regional construction industry will receive $255 million of the total economic impact. Business services will gain $119 million, and the regional transportation industry $28 million. Between 2002 and 2003, the impact on construction will increase $18 million (eight percent), the impact on business services will decrease by $9 million, and the impact on transportation will increase three percent. See Table 24 for a list of the industries benefiting the most from Fernald's year 2003 activities.

2414

Table 22: 2003 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 45,590,550	$ 24,506,000	335
Construction	249,228,340	90,158,000	1,834
Transportation	9,118,110	877,000	67
Total	**$ 303,937,000**	**$ 115,541,000**	**2,236**

Table 23: 2003 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 99,353,662	$ 32,445,787	538
Construction	585,312,756	149,392,527	3,373
Transportation	17,786,697	1,175,489	122
Total	**$ 702,453,116**	**$ 183,013,803**	**4,034**

Table 24: 2003 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 255,472,726
Business services	119,263,359
Real estate	38,417,637
Retail trade	32,538,887
Transportation	27,647,933
Health services	25,811,850
Wholesale trade	25,713,070
Miscellaneous services	18,896,067
Fabricated metal products	16,485,543
Depository and nondepository institutions and brokers	14,755,837
Chemicals and petroleum and coal products	11,301,593
Insurance	11,226,217
Eating and drinking places	10,770,615
Primary metal industries	9,983,115
Communications	9,468,853
Other	74,699,812
Total	**$ 702,453,116**

Total Fernald Expenditures and Regional Economic Impacts 2004 Fiscal Year

Total Fernald expenditures in 2004 will be $431 million, which will create a total economic impact of $188 million in the Greater Cincinnati region. A total of 3,327 regional jobs will be directly and indirectly supported due to Fernald-related activities.

By 2004, Fernald's operation spending is expected to reach a total of $312 million -- $8 million more than operation spending in 2003. Engineering and management expenditures will account for 15 percent of non-payroll spending, construction activities will account for 82 percent of the total, and transportation-related spending three percent. See Table 25 for information on Fernald's payroll expenditures and employment in the year 2004.

Fernald's total impact on Greater Cincinnati output will be $721 million in 2004. Engineering and management activities will create $102 million of the impact, construction activities will generate $601 million (83 percent) of the impact, and transportation will contribute $18 million to the regional total. The output impact in 2004 will be $19 million more than it was in 2003.

In addition, Greater Cincinnati's household earnings will increase by $188 million in 2004. Engineering and management earnings will stimulate $33 million in direct and indirect regional earnings, construction earnings will generate a total earnings impact of $154 million, and transportation will create $1 million of the total earnings impact. The impact on regional earnings increased $5 million between 2003 and 2004.

We expect Fernald will generate a total impact on regional employment of 3,327 jobs in 2004. However, between 2003 and 2004, regional employment associated with Fernald will decline by over 700 jobs, or 18 percent. See Table 26 for Fernald's economic impacts for the year 2004.

The impact on the regional construction industry is expected to total $262 million in 2004, an increase of three percent over 2003. The impact on regional business services will total $122 million in 2004, a $3 million increase over 2003's industry impact. The impact on the transportation industry will increase three percent between 2003 and 2004 to total $28 million. See Table 27 for the industries benefiting the most from Fernald's regional activities in 2004.

Table 25: 2004 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 46,821,450	$ 24,991,000	277
Construction	255,957,260	92,655,000	1,512
Transportation	9,364,290	877,000	55
Total	**$ 312,143,000**	**$ 118,523,000**	**1,844**

Table 26: 2004 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 102,036,113	$ 33,087,924	444
Construction	601,115,625	153,530,076	2,782
Transportation	18,292,204	1,175,489	101
Total	**$ 721,443,942**	**$ 187,793,489**	**3,327**

Table 27: 2004 Total Fernald Regional Output Impacts

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 262,370,238
Business services	122,483,352
Real estate	39,454,875
Retail trade	33,417,405
Transportation	28,394,400
Health services	26,508,744
Wholesale trade	26,407,298
Miscellaneous services	19,406,242
Fabricated metal products	16,930,636
Depository, nondepository institutions and brokers	15,154,231
Chemicals and petroleum and coal products	11,606,725
Insurance	11,529,314
Eating and drinking places	11,061,411
Primary metal industries	10,252,649
Communications	9,724,503
Other	76,741,917
Total	**$ 721,443,942**

Total Fernald Expenditures and Regional Economic Impacts 2005 Fiscal Year

Total Fernald expenditures in 2005 will be $423 million, which will create a total economic impact of $910 million in the Greater Cincinnati region. A total of 3,179 regional jobs will be directly and indirectly supported due to Fernald-related activities.

Total non-payroll expenditures at Fernald are expected to increase by $8 million between 2004 and 2005, to reach a peak of $321 million. Table 28 shows the details of non-payroll and payroll expenditures in 2005, as well as Fernald employment estimates.

We estimate that Fernald's 2005 expenditure levels will lead to a $746 million economic impact on Greater Cincinnati's output, which is the peak of Fernald's impact on the regional economy. Engineering and management activities will create $91 million of the total impact, and construction activities will generate $655 million in direct and indirect output (88 percent of the total impact). The total regional output impact will increase $24 million, or three percent, from 2004 to 2005.

In addition, the impact on Greater Cincinnati's household earnings will be $164 million, based on Fernald's payroll and benefit payments in 2005. Engineering and management-related earnings will lead to a $25 million earnings impact, and construction earnings will provide a $139 million earnings impact, accounting for 85 percent of the total regional impact on earnings. The impact on regional earnings will decrease by $23 million from 2004 to 2005.

We estimate that Fernald's direct employment in the year 2005 will generate a total employment impact of 3,179 jobs in the Greater Cincinnati economy. Of these jobs, 366 will stem from engineering and management employment at Fernald, and 2,812 jobs will be generated from Fernald's construction-related employment. The number of regional jobs associated with Fernald will decline by four percent between 2004 and 2005. See Table 29 for Fernald's 2005 economic impacts on the Greater Cincinnati economy.

In 2005, the regional construction industry will gain $285 million and the regional business services industry will gain $121 million from Fernald's operations. Other industries benefiting from Fernald's operations include real estate, retail trade, wholesale trade, and health services. See Table 30 for a complete listing.

2414

Table 28: 2005 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 41,674,230	$ 18,850,000	228
Construction	278,896,770	83,732,000	1,529
Transportation	-	98,000	-
Total	**$ 320,571,000**	**$ 102,680,000**	**1,757**

Table 29: 2005 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 90,818,982	$ 24,957,279	366
Construction	654,989,064	138,744,594	2,812
Transportation	-	131,354	-
Total	**$ 745,808,047**	**$ 163,833,228**	**3,179**

Table 30: 2005 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 284,890,294
Business services	120,632,662
Real estate	40,508,185
Retail trade	34,875,047
Wholesale trade	27,698,296
Health services	27,281,426
Miscellaneous services	20,004,592
Transportation	19,183,225
Fabricated metal products	18,299,219
Depository and nondepository institutions and brokers	15,467,102
Chemicals and petroleum and coal products	12,173,107
Insurance	11,977,045
Eating and drinking places	11,340,968
Primary metal industries	10,958,271
Communications	10,024,127
Other	80,494,481
Total	**$ 745,808,047**

Total Fernald Expenditures and Regional Economic Impacts 2006 Fiscal Year

Total Fernald expenditures in 2006 will be $150 million, which will create a total economic impact of $306 million in the Greater Cincinnati region. A total of 2,347 regional jobs will be directly and indirectly supported due to Fernald-related activities.

By 2006, Fernald's non-payroll expenditures are expected to drop by $226 million (71 percent) to $94 million. According to this estimate Fernald will spend $17 million on engineering and management, $77 million on construction activities, and $1 million on transportation in 2006. See Table 31.

Fernald's year 2006 operation expenditures will create a total impact on output of $218 million. This reflects a decrease of 70 percent (527 million) compared to 2005. Engineering and management activities will generate 17 percent of the total output impact, construction activities will create 82 percent of the total, and transportation 1 percent.

In addition, Greater Cincinnati households will benefit from an $87 million impact on household earnings in 2006. Fernald's earnings impact will decrease by $77 million between 2005 and 2006. Engineering and management will account for $18 million of the earnings impact, and construction $69 million.

Fernald's employment impact will total 2,347 Greater Cincinnati jobs in 2006. This is a 26 percent decrease over the 2005 employment impact. Fernald's engineering and management activities will directly and indirectly create 377 regional jobs, construction 1,946 regional jobs, and transportation 24 jobs. See Table 32 for Fernald's year 2006 economic impacts.

Industries benefiting the most from Fernald's 2006 operations include the construction industry ($78 million), the business services industry ($40 million), and real estate ($12 million). The impact on the regional construction industry will decrease $207 million from 2005 to 2006, and the impact on business services will decrease by $80 million. See Table 33 for a more complete listing of the industries benefiting from Fernald operations in 2006.

2414

Table 31: 2006 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 17,006,940	$ 13,435,000	235
Construction	76,531,230	41,691,000	1,058
Transportation	944,830	184,000	13
Total	**$ 94,483,000**	**$ 55,310,000**	**1,306**

Table 32: 2006 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 37,062,544	$ 17,787,854	377
Construction	179,733,594	69,082,321	1,946
Transportation	1,845,631	246,625	24
Total	**$ 218,641,769**	**$ 87,116,799**	**2,347**

Table 33: 2006 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 78,365,277
Business services	40,332,015
Real estate	12,071,394
Retail trade	10,126,348
Health services	8,076,180
Wholesale trade	7,955,752
Transportation	6,610,295
Miscellaneous services	5,901,408
Fabricated metal products	5,060,812
Depository and nondepository institutions and brokers	4,585,411
Chemicals and petroleum and coal products	3,495,984
Insurance	3,493,377
Eating and drinking places	3,368,924
Primary metal industries	3,039,102
Communications	2,975,043
Other	23,184,446
Total	**$ 218,641,769**

Total Fernald Expenditures and Regional Economic Impacts 2007 Fiscal Year

Total Fernald expenditures in 2007 will be $101 million, which will create a total economic impact of $201 million in the Greater Cincinnati region. A total of 1,507 regional jobs will be directly and indirectly supported due to Fernald-related activities.

In 2007, Fernald's non-payroll expenditures are expected to drop another $37 million from the 2006 level, to $57 million. Expenditures on engineering and management activities will total $12 million, construction activities will total $44 million, and transportation spending $1 million. See Table 34 for information about Fernald's year 2007 payroll expenditures and employment.

We estimate Fernald's non-payroll spending will create an economic impact on regional output of $131 million. Engineering and management activities will create $26 million of the total impact, construction activities $103 million, and transportation activities $2 million. Fernald's output impact on the Greater Cincinnati economy will decrease $87 million, or 40 percent, from 2006 to 2007.

The impact of Fernald on regional earnings will fall to $69 million in 2007, a decrease of $17 million (20 percent) over 2006. Engineering and management-related earnings will account for $17 million of the regional impact, and construction-related earnings will provide $52 million of the impact.

We anticipate a total impact on regional employment of 1,507 jobs in 2007. Engineering and management will directly and indirectly contribute 284 regional jobs, construction-related employment will generate 1,193 direct and indirect Greater Cincinnati jobs, and transportation will account for 31 jobs. Compared to 2006, there will be 36 percent fewer regional jobs created by Fernald in 2007. See Table 35 for more details about Fernald's 2007 economic impacts.

The regional construction industry will benefit the most from Fernald in 2007, gaining $45 million in direct and indirect business sales. Business services will benefit by $26 million and the transportation industry will benefit by $5 million. From 2006 to 2007, the impact on construction will decrease $33 million (43 percent), the impact on business services will decline $14 million, and the impact on transportation will decrease $2 million. See Table 36 for a further description of industries that benefit from Fernald-related business activity.

2414

Table 34: 2007 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 11,962,650	$ 12,747,000	177
Construction	43,863,050	31,565,000	648
Transportation	1,139,300	184,000	17
Total	**$ 56,965,000**	**$ 44,496,000**	**842**

Table 35: 2007 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 26,069,725	$ 16,876,946	284
Construction	103,012,373	52,303,458	1,193
Transportation	2,225,509	246,625	31
Total	**$ 131,307,606**	**$ 69,427,029**	**1,507**

Table 36: 2007 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 45,006,953
Business services	26,008,692
Real estate	7,321,267
Retail trade	6,040,614
Health services	4,879,178
Wholesale trade	4,713,341
Transportation	4,568,684
Miscellaneous services	3,557,749
Fabricated metal products	2,918,340
Depository and nondepository institutions and brokers	2,775,916
Insurance	2,090,570
Chemicals and petroleum and coal products	2,071,042
Eating and drinking places	2,040,247
Communications	1,799,365
Primary metal industries	1,758,692
Other	13,756,956
Total	**$ 131,307,606**

Total Fernald Expenditures and Regional Economic Impacts 2008 Fiscal Year

Total Fernald expenditures in 2008 will be $50 million, which will create a total economic impact of $136 million in the Greater Cincinnati region. A total of 1,629 regional jobs will be directly and indirectly supported due to Fernald-related activities.

By 2008, Fernald's non-payroll expenditures are estimated to drop to $31 million. This is a $26 million decrease in spending from 2007, and a $226 million decrease in spending from 1997. See Table 37 for details.

The economic impact on regional output generated by Fernald's year 2008 spending will total $72 million. This reflects a $60 million fall from the economic impact created in 2007, and a $522 million fall from the economic impact created in 1997 – a decline of 88 percent. While engineering and management services contributed $135 million to Fernald's economic impact on output in 1997, this will fall to $15 million in 2008, reflecting an 89 percent decline. In 1997, construction activities provided $459 million of Fernald's impact, but this will drop to $56 million in 2008 – an 88 percent decline. Transportation activities will contribute $1 million to the impact on regional output in 2008, while it made no significant contribution in 1997.

The impact of Fernald on Greater Cincinnati's household earnings will total $65 million in 2008. This is a seven percent decrease over 2007, and a 54 percent decrease over 1997. Engineering and management services accounted for $38 million of the household earnings impact in 1997, and this will decline to $16 million by 2008 – a 58 percent loss. In 1997, construction activities accounted for $102 million of the impact on regional earnings, while in 2008 these activities will account for $48 million of the impact, a decrease of 53 percent.

By 2008, Fernald will have a total impact on regional employment of 1,629 jobs. This is actually an increase over 2007, when there will be an employment impact of 1,507 jobs. However, total job creation over the 11-year period will decrease by 63 percent, or 2,765 jobs. See Table 38 for Fernald's year 2008 regional economic impacts.

In 1997, Greater Cincinnati's construction industry benefited from an additional $177 million in business activity due to the direct and indirect effects of Fernald. By 2008, Fernald's impact on the regional construction industry will decline by 88 percent to $24 million. In 1997, the Greater Cincinnati business services industry received $126 million in additional economic activity due to Fernald, and by 2008 this will decline to $15 million – another 88 percent drop. See Table 39 for a description of industries benefiting most from Fernald in 2008.

Table 37: 2008 Fernald Expenditures, Payroll and Benefits, and Employment

Operations	Total Expenditures	Payroll and Benefits	Employment
Engineering and management	$ 6,845,740	$ 12,382,000	200
Construction	23,648,920	28,909,000	692
Transportation	622,340	184,000	18
Total	**$ 31,117,000**	**$ 41,475,000**	**911**

Table 38: 2008 Fernald Regional Impacts: Output, Earnings, and Employment

Operations	Impact on Regional Output	Impact on Regional Earnings	Employment
Engineering and management	$ 14,918,647	$ 16,393,689	321
Construction	55,539,489	47,902,444	1,274
Transportation	1,215,679	246,625	33
Total	**$ 71,673,815**	**$ 64,542,758**	**1,629**

Table 39: 2008 Economic Impact on Regional Output by Industry

Industry Name	Economic Impact on Regional Output by Industry
Construction	$ 24,274,484
Business services	14,531,776
Real estate	4,009,189
Retail trade	3,292,228
Health services	2,668,357
Wholesale trade	2,563,170
Transportation	2,493,816
Miscellaneous services	1,944,377
Fabricated metal products	1,575,665
Depository and nondepository institutions brokers	1,517,651
Insurance	1,140,202
Chemicals and petroleum and coal products	1,126,211
Eating and drinking places	1,116,341
Communications	984,741
Food and kindred products and tobacco products	953,089
Other	7,482,518
Total	**$ 71,673,815**

Appendix I
Description of Data

2414

Community Reuse Organization
Economic Impact Assessment Information
(Dollars in thousands)

ASSUMPTIONS AND METHODOLOGY

Total Fernald Operating Budgets:

- Represents Budget Authority dollars (new fiscal year funding)
- Includes DOE-FEMP and FDF Fee

Percentages of Operating Budgets based upon the 3 Main Operating Units:

- Engineering and Management Services activities includes Activity Data Sheet (ADS) 4004 Support and Oversight costs
- Construction activities includes ADS 4001, 4002 and 4003 remediation costs
- Transportation includes shipping cost for Waste Management, Silos Project and the Waste Pits Remedial Action Project (WPRAP); excludes container and disposal costs
- FY 1997 reflects actual costs; FY 1998 - FY 2008 reflects the budgeted cost of work scheduled (BCWS) from the FY 1999 Replan August file

Number of Employees:

- Represents Full Time Equivalents (FTEs) from the FY 1999 Replan file
- Includes Basic Ordering Agreement (BOA) FTEs
- BOA FTEs are based upon the current FY1998 number of BOAs onsite and assumes that number will remain relatively constant in the outyears
- Includes all other subcontractors on site at a rate of 250 FTEs per year through FY 2006 and 100 FTEs for FY 2007 and FY 2008

Payroll and Benefits:

- Dollars are based upon 60% payroll and benefits for engineering/management service activities; 40% for construction activities; and 10% for transportation activities

Notes:

- This report reflects information from FY 1997 through project completion (FY 2008) as documented in the FEMP performance measurement baseline. It is the goal of the FEMP to accelerate the current work and bring the schedule back into the FY 2006 time period. This should have no affect on the information contained in this report.

Community Reuse Organization
Economic Impact Assessment Information
(Dollars in thousands)

Total Fernald Operating Budget (Funds), FY 1997 - FY 2008:

FY 97	$257,441
FY 98	$258,700
FY 99	$275,212
FY 00	$280,589
FY 01	$288,165
FY 02	$295,948
FY 03	$303,937
FY 04	$312,143
FY 05	$320,571
FY 06	$ 94,483
FY 07	$ 56,965
FY 08	$ 31,117

Percentage of each year's operating budget that is used for engineering and management service activities:

FY 97	24%
FY 98	22%
FY 99	21%
FY 00	19%
FY 01	17%
FY 02	18%
FY 03	15%
FY 04	15%
FY 05	13%
FY 06	17%
FY 07	21%
FY 08	22%

Percentage of each year's operating budget that is used for construction activities:

FY 97	76%
FY 98	78%
FY 99	76%
FY 00	77%
FY 01	80%
FY 02	78%
FY 03	82%
FY 04	82%
FY 05	87%
FY 06	81%
FY 07	77%
FY 08	76%

Community Reuse Organization
Economic Impact Assessment Information
(Dollars in thousands)

Percentage of each year's operating budget that is used for transportation activities:

FY 97	0%
FY 98	0%
FY 99	3%
FY 00	3%
FY 01	3%
FY 02	3%
FY 03	3%
FY 04	3%
FY 05	0%
FY 06	1%
FY 07	2%
FY 08	2%

Total number of employees, FY 1997 - FY 2008:

FY 97	2464	
FY 98	2594	
FY 99	2586	
FY 00	2390	
FY 01	2345	
FY 02	2278	
FY 03	2236	
FY 04	1844	
FY 05	1757	
FY 06	1306	
FY 07	842	
FY 08	911	Note: Includes subcontractor FTEs.

Percentage of employees working in (or whose work supports) engineering and management service activities (FY 1997 - FY 2008):

FY 97	24%
FY 98	22%
FY 99	21%
FY 00	19%
FY 01	17%
FY 02	18%
FY 03	15%
FY 04	15%
FY 05	13%
FY 06	17%
FY 07	21%
FY 08	22%

Community Reuse Organization
Economic Impact Assessment Information
(Dollars in thousands)

Percentage of employees working in (or whose work supports) construction activities (FY 1997 - FY 2008):

FY 97	76%
FY 98	78%
FY 99	76%
FY 00	77%
FY 01	80%
FY 02	78%
FY 03	82%
FY 04	82%
FY 05	87%
FY 06	81%
FY 07	77%
FY 08	76%

Percentage of employees working in (or whose work supports) transportation activities (FY 1997 - FY 2008):

FY 97	0%
FY 98	0%
FY 99	3%
FY 00	3%
FY 01	3%
FY 02	3%
FY 03	3%
FY 04	3%
FY 05	0%
FY 06	1%
FY 07	2%
FY 08	2%

Community Reuse Organization
Economic Impact Assessment Information
(Dollars in thousands)

Total payroll and benefits, FY 1997 - FY 2008:

FY 97	$ 90,579
FY 98	$ 91,974
FY 99	$104,466
FY 00	$111,820
FY 01	$121,041
FY 02	$113,740
FY 03	$115,541
FY 04	$118,523
FY 05	$102,680
FY 06	$ 55,310
FY 07	$ 44,496
FY 08	$ 41,474

Payroll and benefits for the employees in engineering and management services (FY 1997 - FY 2008):

FY 97	$28,831
FY 98	$27,402
FY 99	$30,685
FY 00	$30,260
FY 01	$29,602
FY 02	$29,354
FY 03	$24,506
FY 04	$24,991
FY 05	$18,850
FY 06	$13,435
FY 07	$12,747
FY 08	$12,382

Payroll and benefits for the employees in construction activities (FY 1997 - FY 2008):

FY 97	$61,650
FY 98	$64,475
FY 99	$73,100
FY 00	$80,683
FY 01	$90,562
FY 02	$83,509
FY 03	$90,158
FY 04	$92,655
FY 05	$83,732
FY 06	$41,691
FY 07	$31,565
FY 08	$28,909

Community Reuse Organization
Economic Impact Assessment Information
(Dollars in thousands)

Payroll and benefits for the employees in transportation activities (FY 1997 - FY 2008):

FY 97	$ 98
FY 98	$ 98
FY 99	$680
FY 00	$877
FY 01	$877
FY 02	$877
FY 03	$877
FY 04	$877
FY 05	$ 98
FY 06	$184
FY 07	$184
FY 08	$184

Appendix II
Research Methodology

2414

Fernald's economic impact was calculated using the Regional Input Output Modeling System (RIMS II), developed by the Bureau of Economic Analysis at the U.S. Department of Commerce. As described in the RIMS II user manual:

> "RIMS II is based on an accounting framework called an I-O table. For each industry, an I-O table shows the distribution of the inputs purchased and the outputs sold. A typical I-O table in RIMS II is derived mainly from two data sources: BEA's national I-O table, which shows the input and output structure of nearly 500 U.S. industries, and BEA'S regional economic accounts, which are used to adjust the national I-O table in order to reflect a region's industrial structure and trading patterns.[1]"

The analysis was conducted using the latest version of RIMS II industry multipliers for the Greater Cincinnati region. These multipliers are based on 1995 Greater Cincinnati data and 1992 U.S. Benchmark (national I-O) tables.

RIMS II measures the impact of a project's economic activities by using location specific multipliers, which determine the total amount of business activity, household earnings, and employment that will be generated within the Cincinnati Consolidated Metropolitan Statistical Area. In order to determine Fernald's economic impact on output (or business activity), we applied final demand output multipliers to Fernald's total non-payroll and benefit expenditures. We calculated Fernald's economic impact on household earnings by applying direct effect earnings multipliers to Fernald's direct payroll and benefit expenditures. We determined Fernald's economic impact on employment by applying direct effect employment multipliers to Fernald's direct employment levels.

The final demand output multipliers determine the total amount of expenditures that are spent in the region by estimating how much of the industry-specific spending could be satisfied by regional businesses. The BEA does this by calculating location quotients for each industry in the region. Therefore, we did not create our own estimates of how much of Fernald's expenditures stay within the Greater Cincinnati region.

However, the direct effect earnings and direct effect employment multipliers do require that we estimate how many Fernald employees live in the Greater Cincinnati region. Based on a 1996 study we conducted for Fernald, we assumed that 72 percent of Fernald's employees live within the 13-county Greater Cincinnati area. The percentage of local employment was provided to us by the Department of Energy in 1995, and we have no reason to believe that the distribution of Fernald's employment by place of residence has changed since 1995, or will change over the next 11 years.

---

[1] U.S. Department of Commerce, Economics and Statistics Administration, Bureau of Economic Analysis, *Regional Multipliers – A User Handbook for the Regional Input-Output Modeling System (RIMS II),* Third Edition (Washington DC: U.S. Government Printing Office, 1997): page 1.

EXECUTIVE SUMMARY
TARGET MARKETING STRATEGY

Prepared for:

GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP
MARCH 1999

Prepared by:

The
WADLEY-DONOVAN GROUP
973.540.0012

121

2414

INTRODUCTION

This target industry profile is the product of a contract between the Wadley-Donovan Group, Ltd. (WDG) and the Greater Cincinnati Regional Marketing Partnership. WDG was retained by the Partnership to profile three Partnership selected target industries or activities and to produce a target directed marketing strategy. The three selected targets are:

1. Professional Based White Collar Operations
2. Research and Development Centers
3. Manufacturing with High Engineering Content (or Advanced Manufacturing)

This document summarizes WDG's findings and conclusions. Profiles of these industries and the recommended marketing program have been submitted as separate documents.

WDG is a management consulting firm that specializes in location consulting. Its clients include many of the world's leading companies. As an outgrowth of this corporate consulting, WDG is frequently asked by economic development agencies and utilities to assist them with their economic development programs. Assistance is typically provided in sales and marketing, strategic planning, database development, overall product development, and assessment. Clients have included New Orleans; Tulsa; Orange County and Orlando, FL; Memphis; Phoenix; Asheville, NC; Raleigh; Kansas City; Richmond; Jackson, TN; Mobile; and the states of Delaware, Iowa, Kansas, Kentucky, Maryland, and Washington.

To complete this report WDG analyzed published data provided by the Partnership and its member localities, interviewed local employers and educators and from its own proprietary and published databases. Throughout the report, WDG employed its knowledge of industry locational trends gained from its corporate location consulting.

122

2414

SUMMARY

The Greater Cincinnati Regional Marketing Partnership area consists of the 13 counties of the Cincinnati-Hamilton, OH-KY-IN Consolidated Metropolitan Statistical Area (CMSA), plus the City of Cincinnati. Figure 1 shows the strategic location of the CMSA within the Midwest and Upper South. Figure 2 shows the location of the counties within the CMSA.

The metro area has an estimated 1998 population of 1.9 million, and a civilian labor force of slightly more than 1 million. It is a regional and national corporate office center, including the headquarters of 14 Fortune 1000 companies and a number of subsidiary and divisional headquarters. In addition to these corporate headquarters, Cincinnati is home to subsidiary and divisional headquarters, regional and national sales centers, business support offices, (e.g. high-end back offices such as insurance claims processing, shared service centers, and investment service centers), and technical service centers. Many of the manufacturing companies headquartered in Cincinnati, such as Procter & Gamble, Milacron and the Ethicon Endo-Surgery division of Johnson & Johnson, also carry on research and development activities as well as manufacturing in the area.

The ability to support such a broad range of operations with different locational requirements points to a special situation: the metro area is one of the few locations in the country that offers excellent opportunities for combinations of headquarters, research and development, and manufacturing. Most locations offer opportunities for one or possibly two of these functions but very few provide excellent opportunities for all three.

The advantages of co-located operations include:

1. Shortened lines of communications and spontaneous generation of new product ideas.
2. Improved execution of major strategic initiatives.
3. Enhanced time-based competitiveness, as evidenced by shortened product development cycles.
4. Career paths that are unhampered by relocation considerations.
5. Avoidance of a "we-they" culture.
6. Avoidance of redundant facility-related positions (e.g. receptionists, mail clerks, employment representatives, etc), and resulting overall cost savings

The area's unique environment allows professional based white collar operations, research and development centers and advanced manufacturing operations to operate successfully in Greater Cincinnati. These three operations are defined as follows:

1. **Professional Based White Collar Operations.** This target consists of three sectors: Corporate Headquarters and Sales Offices, Technical Support Centers, and Business Support Office Operations. This target covers most business sectors.

2. **Research and Development Centers**. This target consists of research and development activities in a variety of industries. Research activities can range from pure or basic research to applied research, while development can be an extension of applied research or an off-shoot of the manufacturing function. While Greater Cincinnati can attract both research centers and development facilities, the area's strengths are more compatible with the development function. In terms of industries, development activities centered on industrial machinery and equipment and applications involving materials such as plastics, composites and metals should be the focus of marketing efforts, leveraging Greater Cincinnati's capabilities in engineering, materials science, physics and chemistry. Environmental research laboratories are a viable target; an experienced work force at the Fernald site and an existing cluster of environmental consulting and testing laboratories are relevant resources. We classify electronics, software and life sciences as secondary targets.

3. **Manufacturing with High Engineering Content.** This target industry includes companies that manufacture products requiring high levels of on-going engineering and technician input for product development, process enhancement and product output. The target includes five major sectors: industrial machinery and equipment; advanced materials; subassemblies and components; test and measurement equipment, and medical equipment.

The key assets offered by the metro area for Professional White Collar Operations include:

1. A Delta Air Lines hub with non-stop international service to London, Frankfort, Paris, Montreal and Toronto. Parts of the metro area are also within acceptable driving time to the Dayton, Ohio, Louisville, KY and Lexington, KY airports.

2. A growing presence of foreign corporate functions and other investment from Japan and Europe. This investment is creating an expanding multi-cultural population and international business service base. These developments coupled with Delta's expanding international air service, and overall moderate operating costs position the area as a strong contender for global office operations.

3. A combination of superior air service and location that allows for round-trip one day travel to most parts of the country, increasing executive effectiveness.

4. A good to excellent ability to recruit well educated, skilled and experienced clerical, technical, professional and managerial talent from the local labor market at a modest cost, a key asset for technical support centers and business support offices.

5. An excellent ability to recruit top flight talent from other parts of the country, due in large part to the area's moderate cost-of-living, low to moderate crime rates, wide choice of public and private secondary schools, solid cultural and recreational opportunities, strong medical care, big league sports, diversified and affordable housing opportunities within short commutes to the principal business sectors, and solid spousal employment avenues.

6. Numerous higher educational institutions that include two and four year colleges and universities. These institutions produce over 16,000 graduates annually. Full-time and part-time undergraduate and graduate programs are available in business and technical disciples, such as computer science.

7. Diversified locational choices that include downtown Cincinnati, suburban settings, and exurban venues. Sites and buildings suitable for corporate headquarters, sales centers, technical service centers and business support offices are available in three states.

8. Moderate labor, tax, and real estate costs.

9. A strong corporate presence and the necessary supporting business infrastructure.

Key assets offered by the metro area for Research and Development Centers include:

125

1. Recruitability of top-notch talent on a regional and national basis. Selectivity and cost of housing, good public and private schools, and the presence of both alternate and spousal employment opportunities are key in recruiting efforts.
2. An attractive local labor market. R & D skills are available, at moderate costs. Local universities and colleges stress work experience as part of their curricula especially in engineering; the educational emphasis is on practical applications and problem-solving.
3. Accessibility by air and ground transportation. The development function, in particular, needs ready access to customers, suppliers, and other corporate sites, primarily manufacturing facilities. The bulk of the U.S. machine tool market is within 300 miles of Greater Cincinnati. The airport offers non-stop flights to over 100 cities, including three in Europe. Round-trip one-day travel to nearly all U.S. cities enhances managerial effectiveness and allows speedy adaptation to changing market conditions.
4. The availability of suitable real estate. Availability of rental space appears better in the northern and eastern sectors of the metro area. Land is available throughout the region, with "greenfield" sites especially prevalent in the southern and western sectors. Construction costs are moderate.
5. A favorable operating environment for R & D, especially in terms of higher education. The University of Cincinnati's Engineering College works closely with the business community. The Institute of Advanced Manufacturing Sciences is a plus, especially for development activities. The business-government climate needs improvement, however, and incentives for R & D can be strengthened.

6. A significant base of research and development centers. There are 27 commercial, 134 corporate and 62 non-profit research and development centers in Greater Cincinnati.

Measured against locational criteria, Greater Cincinnati offers the following advantages for Manufacturing with High Engineering Content:

1. A labor market which features the availability of skilled manufacturing workers and excellent technical education resources. Engineering programs at the University of Cincinnati and post-secondary technical educational at Cincinnati State Technical and Community College both stress co-op experience and practical, not theoretical, training. Managerial and professional talent are not only available locally but can be recruited from outside the area.

2. An excellent transportation infrastructure and proximity to key industrial markets. For example, 45% of the U.S. market for machine tools is within 250 miles of Greater Cincinnati. Air service and the highway network facilitate "just-in-time" deliveries, both of in-bound supplies and out-bound products.

3. Moderate labor, real estate and tax costs. Labor costs are in line with other mid-western locales. Utility costs are beneficial for industrial users.

4. A choice of locations within Greater Cincinnati that comply with environmental standards. Counties at the eastern, southern and western edges of the area are ozone attainment areas. Greater Cincinnati as a whole is in attainment for particulates, sulfur dioxide and lead.

5. A favorable operating environment for manufacturing. Union activity has diminished dramatically over the past ten years. Labor legislation is benign. Incentives for manufacturers are well-targeted and the Institute for Advanced Manufacturing Sciences (IAMS) can materially assist new manufacturers.

WDG's proposed target marketing strategy for the Partnership is aggressive. It will require strong organizational skills and quality time devoted to oversight and coordination. A blend of sales tactics is recommended. These are summarized below:

1. Direct mail

   - Four annual mailings to target industry companies in each of the three market segments
   - Mailings to multiple contact points within each company
   - Four yearly mailings to corporate real estate executives and their service providers

2414

126

- Eight special mailings a year to the top 40 site selection consultants
- Quarterly newsletter mailing to some 500 key contacts (e.g., current and past prospects)
- 18 annual mailings to the international community in the U.S. (e.g., three mailings to foreign owned subsidiaries, three mailings to international accountants, three mailings to embassies/consulates, etc.)
- Follow-up letters from personal visitations and trade shows
- Retention of a direct mail consultant

2. Advertising

- Image building in general business publications (i.e., Business Week, Forbes, Fortune, CFO)
- 66 ads in 12 trade industry journals (timed to reinforce direct mail)
- 20 ads in 4 geographic business journals (timed to support direct mail)
- 11 ads in 3 real estate industry magazines
- Kiosk displays and billboard ads at/near Cincinnati/Northern Kentucky International Airport

3. Public Relations

- National effort mainly oriented toward print media
- Key to building Greater Cincinnati's image
- Must be well coordinated with tourism, and convention and visitors marketing

127

4. Trade Shows

   - 14 target industry trade shows (booths, limited sponsorships, networking) attended once every other year (i.e., 7 shows per annum)
   - Hannover Fair
     - Booth at the USA pavilion
     - Extended stay to call on companies in Germany
   - National and regional meetings of the International Development Research Council (IDRC) and National Association of Corporate Real Estate Executives (including participation in the state's hospitality suite at IDRC, NACORE exhibit booth, and sponsorship at regional chapter meetings)

5. Reverse Investment Missions (does not include Germany where companies will be called on after the Hannover Fair)

   - Two per annum
   - Rotate among countries each year
   - Perhaps start with the Benelux countries or France, and Japan

6. Prospecting Trips in the U.S.

   - Call on companies, consultants, and brokers
   - Each call should be less than 30 minutes
   - Annual trips planned to six regions covering 18 metro areas. (Each trip would be to each metro area within a region.)
     - Southern Michigan (Ann Arbor, Kalamazoo-Battle Creek, Benton Harbor)
     - South Central Michigan (Grand Rapids-Muskegon-Holland, Lansing-East Lansing, Flint, Saginaw-Bay City-Midland)

128
2414

- Northern Ohio (Cleveland, Akron, Toledo)
- Illinois (Peoria-Pekin, Davenport-Moline-Rock Island)
- Central Indiana (Terre Haute, Indianapolis, Muncie, Fort Wayne)
- Northern Indiana (Gary, South Bend). South Bend, Michigan could be included in the Southern Michigan trip.

7. Other

- Familiarization tour
  - 12 consultants/business executives and spouses invited to Greater Cincinnati
  - All expenses paid
  - Perhaps around the tennis tournament, a Reds' game or a Bengals' game
  - Brings exposure to prospective investors and their advisors
- Developers day
  - Leisure and business, perhaps centered on a golf outing
  - Informs and builds support of local economic development. and Partnership efforts and the obstacles that must be overcome
  - Engenders greater trust and confidence in area economic development professionals

It will also be important to keep abreast of trends in target industries. Toward that end, WDG has identified trade associations for each target industry. The Partnership and/or its members should belong to those notated or receive material from a local corporate member. Directories, journals, and on-line literature searches will also be needed for keeping current on the three target industries.

A user friendly tracking system (i.e., software) will be necessary for determining what marketing efforts are working the best. The Partnership should be prepared to quickly modify the overall strategy as marketplace conditions dictate. Flexibility needs to be a hallmark of the campaign.

We also strongly believe that results should be communicated to stakeholders once a quarter. Their feedback on fine-tuning the effort should be sought as well.

The recommended annual budget for the proposed marketing program is $1.79 million, plus a one time cost of $287,500 to be incurred in the first year of the program for development of sales literature, presentation equipment and other sales and marketing tools.

An addition of staff dedicated to the Partnership's marketing program is recommended due to the increase in marketing activity. WDG suggests three more full time staff members. The suggested budget to cover the three new positions is $155,000 plus benefits.

130

2414

131

FIGURE 1

THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA WITHIN THE MIDWEST U.S.

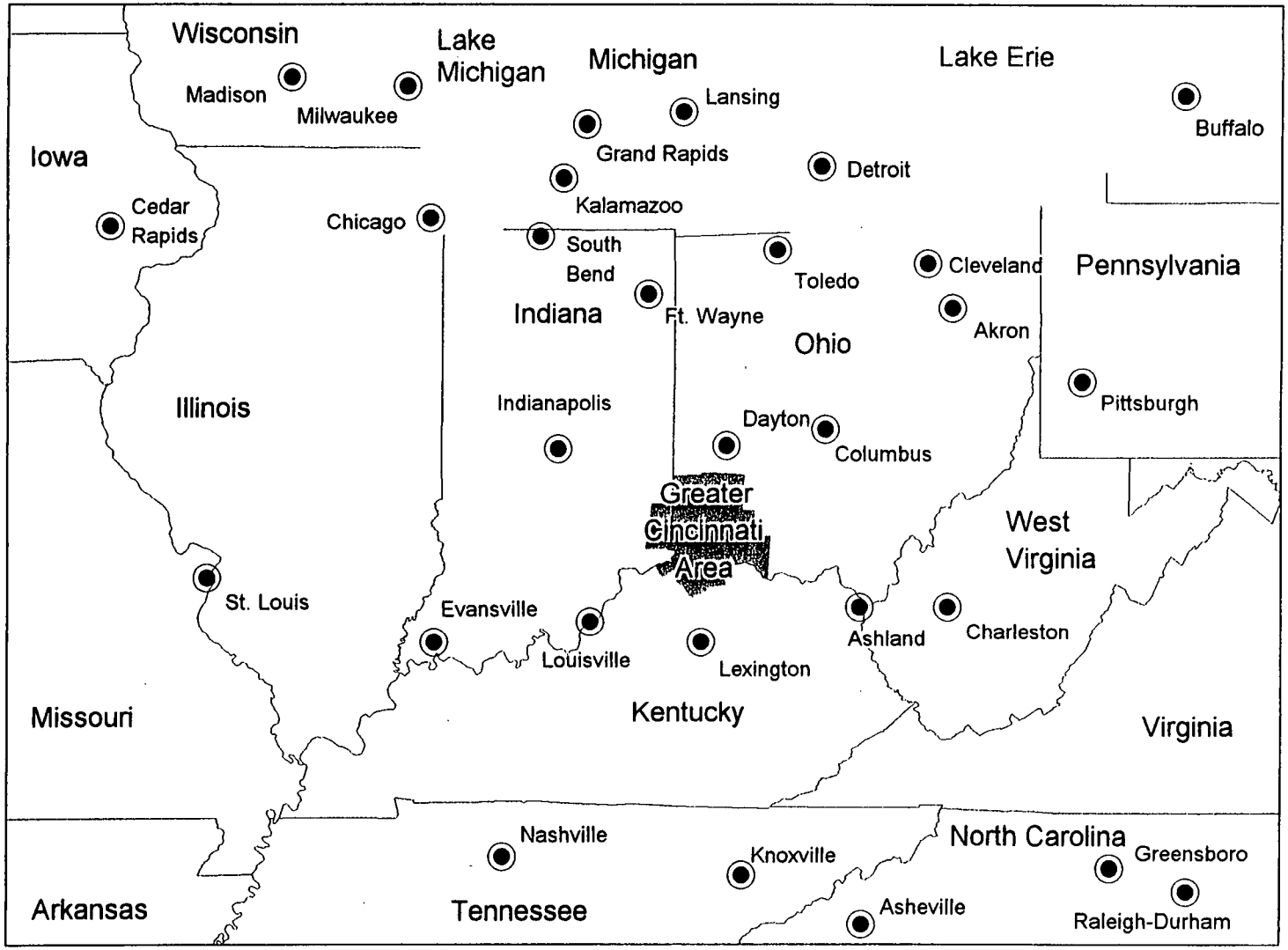
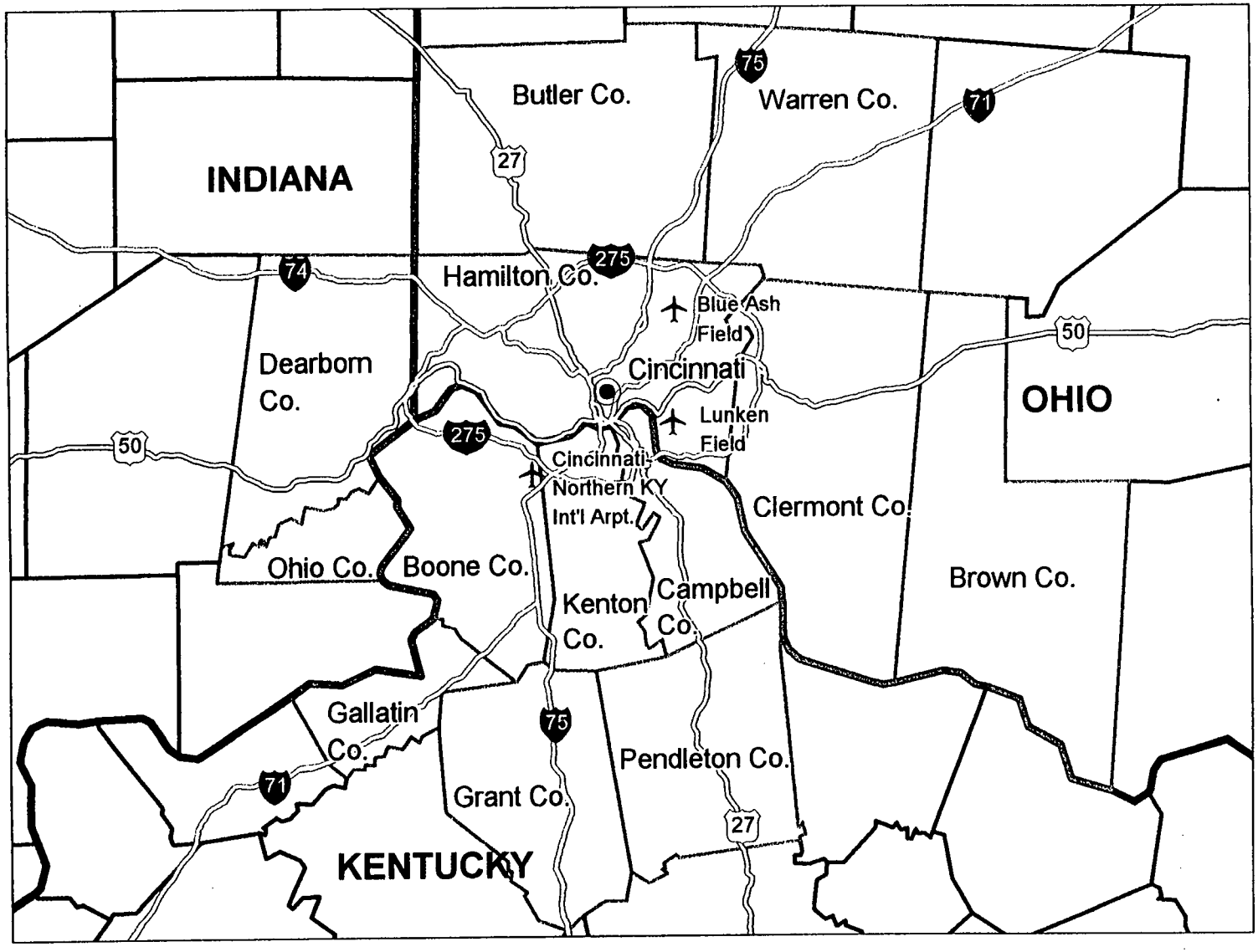


FIGURE 2
THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA



132

2414

TARGET INDUSTRY PROFILE: MANUFACTURING WITH HIGH ENGINEERING CONTENT

Prepared for:

GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP
JANUARY 1999

Prepared by:

The
WADLEY-DONOVAN GROUP
973.540.0012

123

2414

TABLE OF CONTENTS

Section

Introduction 1

Executive Summary 2

1 Definition, Overview and Target Trends 6

2 Major Area Employers 24

3 Principal Locational Criteria 31

4 Rationale for Selection 32

5 Background Data Appendix

Table A-1 – Demographic Characteristics A-1

Table A-2 – Labor Force Characteristics A-13

Table A-3 – Economic Structure, Greater Cincinnati, Employment by Key Industry Sector (1990-1995) A-18

Table A-4 – Cities Accessible from Cincinnati/No. Kentucky Intl. Airport within 1½ Hours or Less by Non-Stop Flight ... A-19

Table A-5 – Degrees Granted by Greater Cincinnati Post-Secondary Schools A-21

131

24 14

INTRODUCTION

This target industry profile is the product of a contract between the Wadley-Donovan Group, Ltd. (WDG) and the Greater Cincinnati Regional Marketing Partnership. WDG was retained by the Partnership to profile three Partnership selected target industries or activities. This document profiles one of these industries: Manufacturing with High Engineering Content. This profile defines and outlines the employment composition and recent locational trends of the target. It also presents the target's principal locational criteria and the strengths of Greater Cincinnati for the activity.

WDG is a management consulting firm that specializes in location consulting. Its clients include many of the world's leading companies. As an outgrowth of this corporate consulting, WDG is frequently asked by economic development agencies and utilities to assist them with their economic development programs. Assistance is typically provided in sales and marketing, strategic planning, database development, overall product development, and assessment. Clients have included New Orleans; Tulsa; Orange County and Orlando, FL; Memphis; Phoenix; Asheville, NC; Raleigh; Kansas City; Richmond; Jackson, TN; Mobile; and the states of Delaware, Iowa, Kansas, Kentucky, Maryland, and Washington.

To complete this report WDG analyzed published data provided by the Partnership and its member localities, interviewed local employers and educators and from its own proprietary and published databases. Throughout the report, WDG employed its knowledge of industry locational trends gained from its corporate location consulting.

135

2414

EXECUTIVE SUMMARY

The Greater Cincinnati Regional Marketing Partnership area consists of the 13 counties of the Cincinnati-Hamilton, OH-KY-IN Consolidated Metropolitan Statistical Area (CMSA), plus the City of Cincinnati. Figure 1 shows the strategic location of the CMSA within the Midwest and Upper South. Figure 2 shows the location of the counties within the CMSA.

This metro area has an estimated 1998 population of 1.9 million, and a civilian labor force of slightly more than 1 million. It is a regional and national corporate office center, including the headquarters of 14 Fortune 1000 companies and a number of subsidiary and divisional headquarters.

The manufacturing sector in greater Cincinnati is strong employing over 160,000, or nearly 20% of private sector employment, compared to 18.6% for the nation. Many area manufacturing employers also conduct research and development activities at their Cincinnati sites. Within the targeted industry, the Greater Cincinnati area has seen significant growth in employment and establishments compared to the national average.

This ability to successfully support such a range of operations (e.g. manufacturing and R&D) with different locational requirements points to a special situation: the metro area is one of the few locations in the country that offers excellent opportunities for headquarters, research and development, and manufacturing. The advantage of co-located operations include:

1. Enhanced time-based competitiveness, as evidenced by speedier transitions from prototypes to full-scale production.
2. Shortened lines of communications, between development and manufacturing, for instance.
3. Improved execution of major strategic initiatives.
4. Career paths that are unhampered by relocation considerations.
5. Avoidance of a "we-they" culture.

Within the manufacturing sector, Greater Cincinnati's assets center on manufacturing with a high technology content. Relative concentrations of employment and skills point to the fabrication of materials – metals, electronics and plastics – into products sold to industrial markets as a particular strength. Machine tools and accessories, special and general industrial machinery, advanced materials, subassemblies and components, test and measurement equipment, and medical equipment are key manufacturing sub-sectors.

Measured against locational criteria, Greater Cincinnati offers the following advantages for these targeted industries:

1. A labor market which features the availability of skilled manufacturing workers and excellent technical education resources. Engineering programs at the University of Cincinnati and post-secondary technical educational at Cincinnati State Technical and Community College both stress co-op experience and practical, not theoretical, training. Managerial and professional talent are not only available locally but can be recruited from outside the area.

2. An excellent transportation infrastructure and proximity to key industrial markets. For example, 45% of the U.S. market for machine tools is within 250 miles of Greater Cincinnati. Air service and the highway network facilitate "just-in-time" deliveries, both of in-bound supplies and out-bound products.

3. Moderate labor, real estate and tax costs. Labor costs are in line with other mid-western locales. Utility costs are beneficial for industrial users.

4. A choice of locations within Greater Cincinnati that comply with environmental standards. Counties at the eastern, southern and western edges of the area are ozone attainment areas. Greater Cincinnati as a whole is in attainment for particulates, sulfur dioxide and lead.

5. A favorable operating environment for manufacturing. Union activity has diminished dramatically over the past ten years. Labor legislation is benign. Incentives for manufacturers are well-targeted and the Institute for Advanced Manufacturing Sciences (IAMS) can materially assist new manufacturers.

WDG recommends that the Partnership conduct a strong marketing effort aimed at:

1. Medium-sized firms in small communities within a 500 mile radius of Greater Cincinnati. The features of functional co-location, recruitability of technology talent and the transportation infrastructure constitute significant advantages for such firms.

2. European firms with a technological focus which are seeking a manufacturing foothold in the U.S. Labor skills, and costs, educational resources and the transportation network should translate into even greater competitive benefits for European firms than for U.S. companies.

3. Cincinnati firms with multiple locations. Consolidation in Greater Cincinnati could improve time-based competitiveness and the overall cost structure.

137

24114

138

FIGURE 1
THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA WITHIN THE MIDWEST U.S.

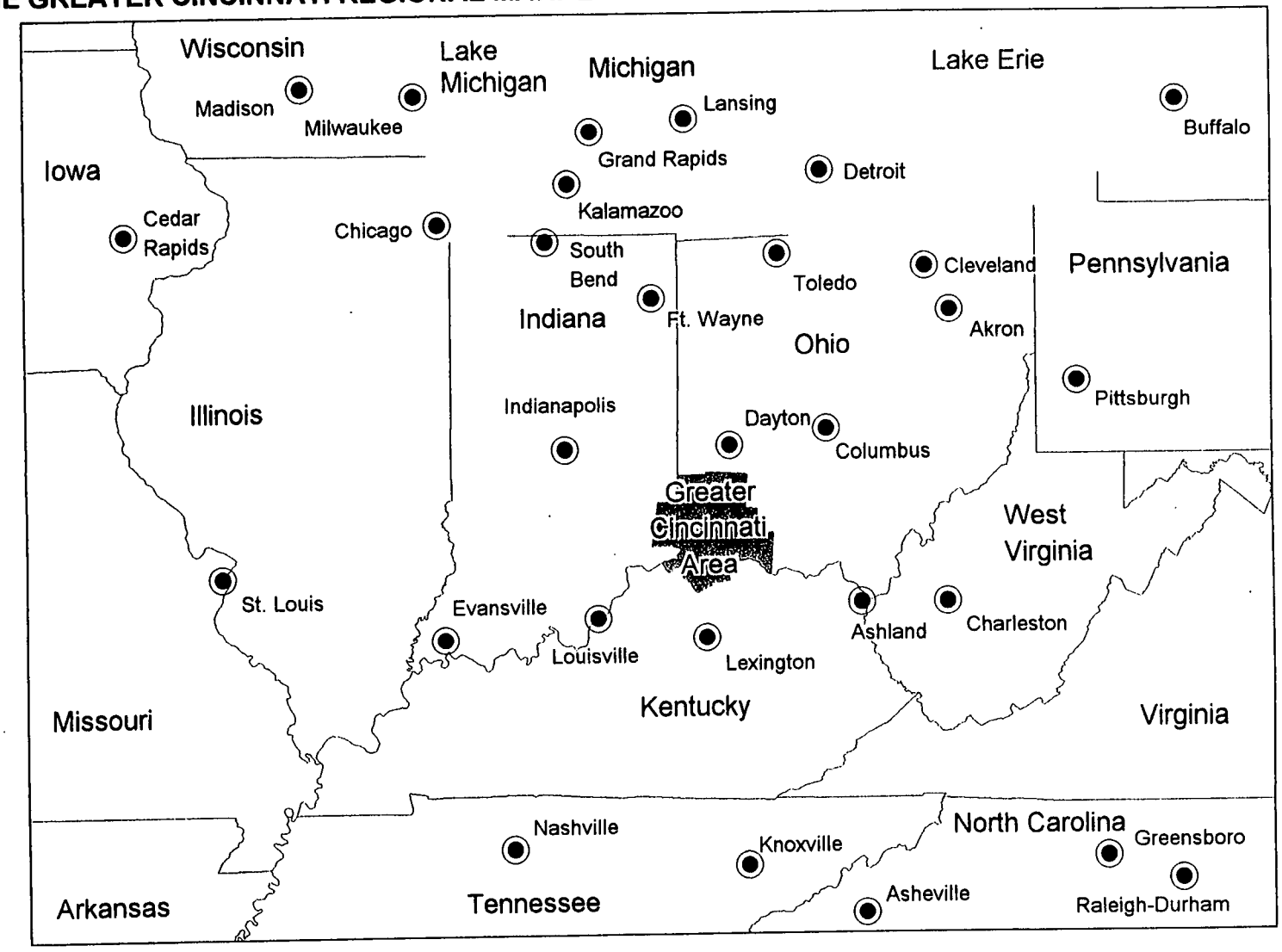
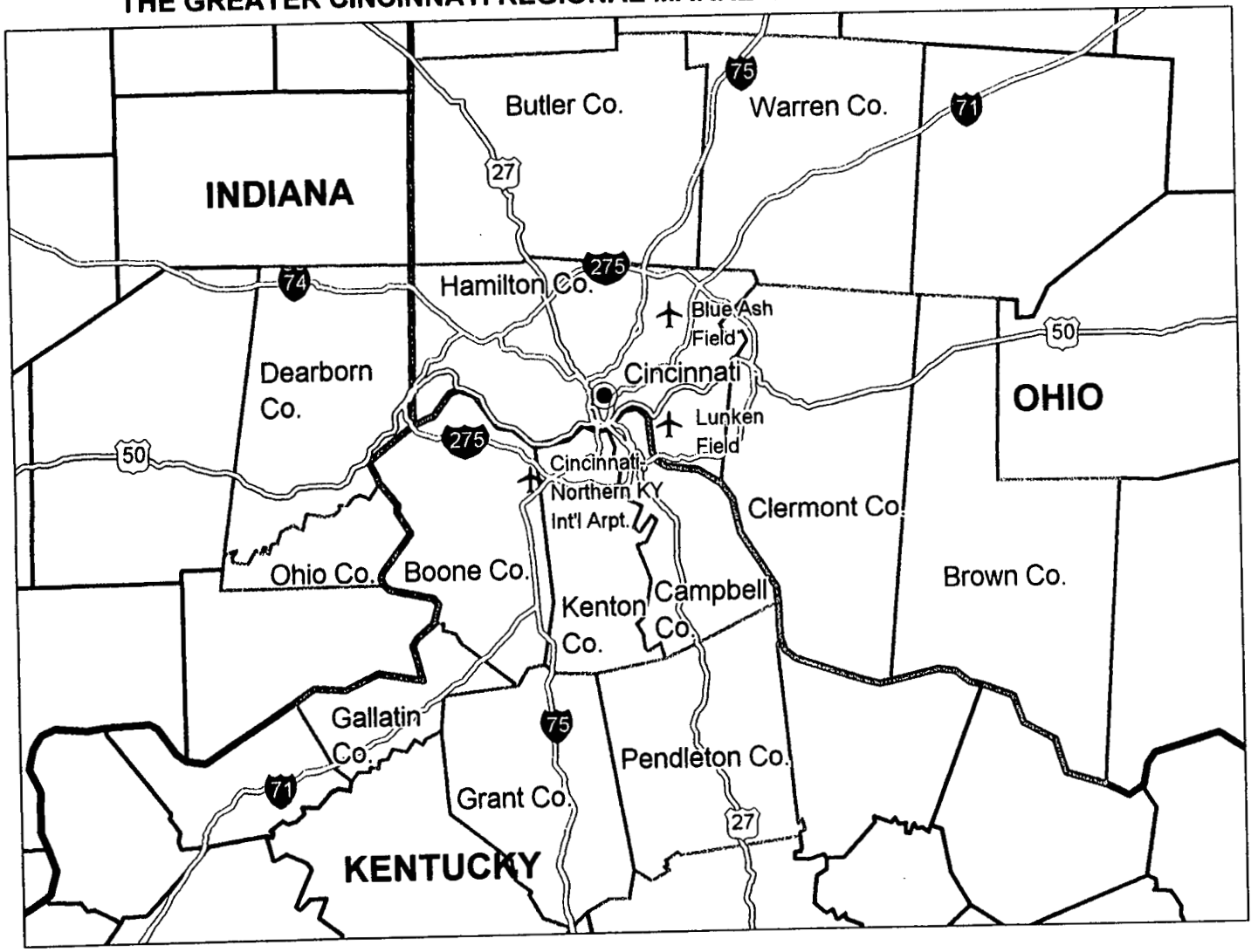


FIGURE 2
THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA



139

2414

DEFINITION, OVERVIEW, AND TARGET TRENDS

Definition

This target industry includes companies that manufacture products requiring high levels of on-going engineering and technician input for product development, process enhancement and product output. The target includes five major sectors: industrial machinery and equipment; advanced materials; subassemblies and components; test and measurement equipment, and medical equipment. The specific sectors that are included in this target and their subsectors are outlined in Table 1. Table 2 presents representative products for each of the target subsectors.

TABLE 1
RECOMMENDED SECTORS, SUBSECTORS, AND THEIR SIC CODES

	Description	SIC Code	SIC Title
1	**Industrial Machinery and Equipment**		
	• Manufacturing and Measuring Equipment, Machine Tools	354	Metal Working Machinery
	• Assembly Manufacturing Systems, Flexible Manufacturing Systems, Machine Vision Systems, Robots and Robotic Equipment	356	Special Industry Machinery
2	**Advanced Materials**		
	• Polymers	282	Plastics Materials and Synthetics
	• Coatings and Coating Materials	2851	Paints and Allied Products
	• Adhesives and Abrasives	2891	Adhesives and Sealants
	• Additives and Modifiers	2899	Chemical Preparations, nec
	• Oils and Lubricants	2992	Lubricating Oils and Greases
	• Laminates (epoxy, fiber, plastic-metal, phenolic, polyester)	3083	Laminated Plastics Plate and Sheet
3	**Subassemblies and Components**		
	• Electronic Connectors	3678	Electronic Connectors
	• Passive Components	3679	Electronic Components, nec

190

TABLE 1 CONTINUED
RECOMMENDED SECTORS, SUBSECTORS, AND THEIR SIC CODES

Description	SIC Code	SIC Title
4 **Test and Measurement Equipment** • Analyzers • Calibrators • Counters and Recorders • Detection Equipment • Measurement Equipment • Process Variable Controllers • Scientific and Laboratory Equipment	382	Measuring and Controlling Devices
5 **Medical Equipment** • Medical Diagnostic Equipment • Surgical and Medical Equipment	3841	Surgical and Medical Instruments

TABLE 2
REPRESENTATIVE PRODUCTS

1. **Industrial Machinery and Equipment**
• Manufacturing Measuring Equipment, Machine Tools (SIC 354)
– Machine tools/presses/equipment
– Riveting equipment
– Special purpose machines
– Manufacturing equipment
– Machine tool accessories
– Electronic comparators
– Assembly hand tools
– Assembly power tools
– Welding equipment
– Machine vision systems for welding/welding robots
– Robotic welding equipment
– Soldering equipment
– Brazing equipment
– Other machine tools/equipment

141

24114

TABLE 2 CONTINUED
REPRESENTATIVE PRODUCTS

1. Industrial Machinery and Equipment (continued)
• Manufacturing Systems (SIC 356)
– Flexible manufacturing systems
♦ Controllers
♦ Broken/dull tool sensors
♦ Flexible manufacturing cells
♦ Materials handling equipment
♦ Machining equipment
♦ Coolant systems
♦ Electronic probing equipment
♦ Tool storage systems and ranks
– Assembly manufacturing systems
♦ Assembly lines and systems
♦ Material dispensing equipment
– Bulk handling equipment
– Packing and shipping equipment
– Non-fluid power pumps and pumping equipment
• Manufacturing Systems (SIC 356)
– Machine vision systems
♦ Machine vision identification systems
♦ Machine vision inspection systems
♦ Light-based machine vision systems
♦ Laser-based machine vision systems
♦ Machine vision part sorting systems
– Robots and robotic equipment
– Robotic arm-related equipment
– Robot compliance devices
– Robot end-of-arm tooling
– Robotic joints
– Robot controllers
– Robotic drives
– Robotic peripherals
– Robot simulation systems
– Robots
– Robotic sensors

TABLE 2 CONTINUED
REPRESENTATIVE PRODUCTS

2. Advanced Materials
• Polymers (SIC 282)
– Elastomers
– Plastics and plastic resins
• Monomers (SIC 2821)
• Coatings and coating materials (SIC 2851)
– Antireflection coatings
– Bonded coatings
– Diffusion coatings
– Metallic coatings
– Non-metallic coatings
• Adhesives and abrasives (SIC 2891)
– Acrylic adhesives
– Resorcinol adhesives
– Cellulosic adhesives
– Vinyl adhesives
– Silicone adhesives
• Additives and Modifiers (SIC 2899)
• Oils and lubricants (SIC 2992)
• Laminates (SIC 3083)
– Plastic-metal laminates
– Phenolic laminates
– Plastic laminates
– Fiber laminates

143

2414

TABLE 2 CONTINUED
REPRESENTATIVE PRODUCTS

3. **Subassemblies and Components**
• Electronic connectors and packaging (SIC 3678)
• Passive components (SIC 3679)
– Electrical filters
– Mechanical filters
– Resonators
– Resistive devices
• Electrical power attenuators (SIC 3679)
• Electric power supplies (SIC 3679)
– Logic power supplies
– Laser power supplies
– Microwave power supplies
– Operational amplifier power supplies
– Programmable power supplies

TABLE 2 CONTINUED
REPRESENTATIVE PRODUCTS

4. Test and Measurement Equipment (SIC 382)
• Analyzers
– Computer related analyzers
– Engine analyzers
– Photonic/optical analyzers
• Calibrators
• Counters and Recorders
– Data logging/acquisition equipment
– Data recorders
– Counters and timers
• Detection equipment
• Measurement equipment
– Energy measuring equipment
– Indicators
– Property measuring devices and equipment
– Photo-optical measuring equipment
• Process variable controllers
– Conductivity controllers
– Humidity controllers
– Gas density controllers
– Industrial control panels
• Scientific and laboratory equipment
– Scientific instruments
– Laboratory equipment

145

24114

TABLE 2 CONTINUED
REPRESENTATIVE PRODUCTS

5. **Medical Equipment (SIC 3841)**
• Medical diagnostic equipment
– Medical analyzers
– Blood processing equipment
– Medical diagnostic instruments
– Medical test kits
• Surgical/medical equipment
– Blood related equipment
– Operating room auxiliary equipment
– Infection control equipment
– Medical surgical pumps

Overview

National Overview

FIGURE 3
SECTOR SHARE OF TOTAL U.S. TARGET EMPLOYMENT
Source: County Business Patterns

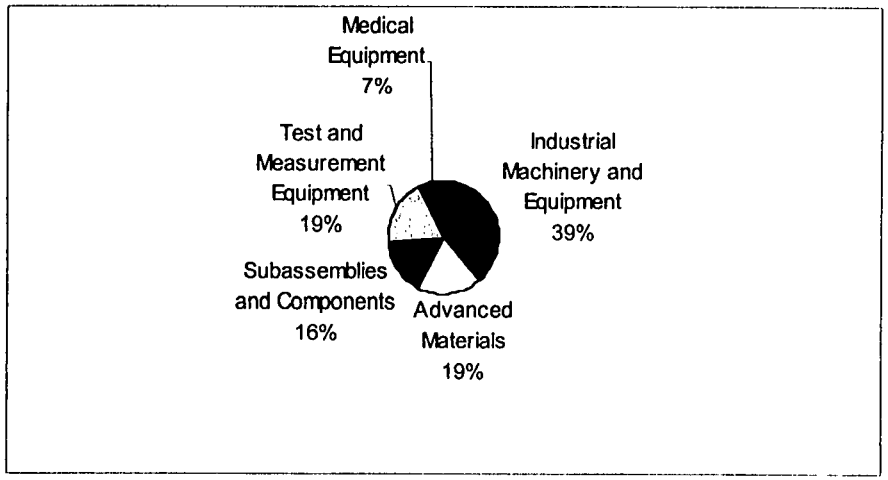


TABLE 3
US TARGET INDUSTRY STATISTICS (1995)
Source: County Business Patterns

	Industrial Machinery and Equipment	Advanced Materials	Subassemblies and Components	Test and Measurement Equipment	Medical Equipment	Total
Employment	543,959	259,677	229,106	263,614	101,006	1,397,362
Establishments	16,000	4,908	3,286	4,698	1,345	30,237
Average Establishment Size	34.0	52.9	69.7	56.1	75.1	46.2
Average Annual Per Employee Earnings	$36,126	$39,767	$33,547	$39,880	$36,276	$37,099

147

2414

FIGURE 4
DISTRIBUTION OF U.S. TARGET INDUSTRY ESTABLISHMENTS BY SIZE (1995)

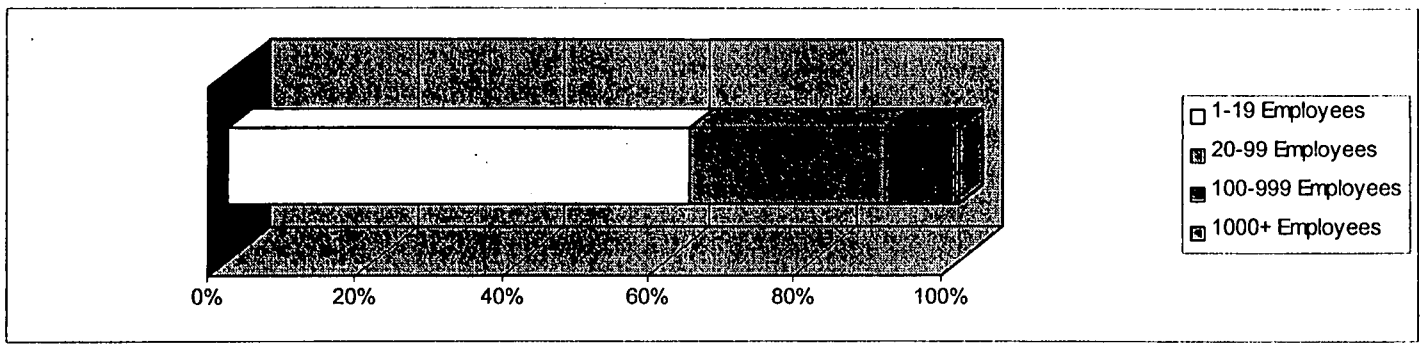


TABLE 4
U.S. TARGET INDUSTRY EMPLOYMENT AND EARNINGS (1997)

Source: US Bureau of Labor Statistics

Target Sector	Total Employment (000)	Production Workers (000)	Average Hourly Earnings (Production Workers)
Industrial Machinery and Equipment	608.3	414.9	$14.46
Advanced Materials	1,023.9	752.7	$12.21
Subassemblies and Components	140.1	95.3	$10.43
Test and Measurement Equipment	300.9	153.6	$13.57
Medical Equipment	103.9	66.2	$11.85
Total	2,177.1	1,482.7	$12.85

TABLE 5
MSA RANKINGS-TARGET INDUSTRY ESTABLISHMENTS (1995)

Source: County Business Patterns

Rank	MSA Name	Establishments
1	Chicago, IL PMSA	1,734
2	Detroit, MI PMSA	1,565
3	Los Angeles-Long Beach, CA PMSA	1,141
4	Boston, MA-NH PMSA	743
5	Philadelphia, PA-NJ PMSA	685
6	Cleveland-Lorain-Elyria, OH PMSA	677
7	Minneapolis-St. Paul, MN-WI MSA	631
8	Orange County, CA PMSA	601
9	San Jose, CA PMSA	515
10	Milwaukee-Waukesha, WI PMSA	464
11	Houston, TX PMSA	430
12	Newark, NJ PMSA	384
13	Nassau-Suffolk, NY PMSA	352
14	San Diego, CA MSA	347
15	Dallas, TX PMSA	337
16	New York, NY PMSA	335
17	Pittsburgh, PA MSA	328
18	Grand Rapids-Muskegon-Holland, MI MSA	307
19	Hartford, CT MSA	306
20	Oakland, CA PMSA	306
21	St. Louis, MO-IL MSA	306
22	Riverside-San Bernardino, CA PMSA	301
23	Atlanta, GA MSA	300
24	Dayton-Springfield, OH MSA	294
25	Providence-Fall River-Warwick, RI-MA MSA	283
26	Bergen-Passaic, NJ PMSA	268
27	Portland-Vancouver, OR-WA PMSA	264
28	Seattle-Bellevue-Everett, WA PMSA	255
29	New Haven-Meriden, CT PMSA	246
30	Phoenix-Mesa, AZ MSA	246
31	**Cincinnati, OH-KY-IN PMSA**	**245**
32	Indianapolis, IN MSA	238
33	Akron, OH PMSA	232
34	Rochester, NY MSA	215
35	Tampa-St. Petersburg-Clearwater, FL MSA	211
36	Middlesex-Somerset-Hunterdon, NJ PMSA	193
37	Worcester, MA-CT PMSA	188
38	Denver, CO PMSA	185
39	Kansas City, MO-KS MSA	184
40	Charlotte-Gastonia-Rock Hill, NC-SC MSA	178
41	Buffalo-Niagara Falls, NY MSA	176
42	Bridgeport, CT PMSA	173
43	Rockford, IL MSA	173
44	Fort Worth-Arlington, TX PMSA	167
45	Columbus, OH MSA	158
46	Baltimore, MD PMSA	156
47	Ann Arbor, MI PMSA	142
48	Fort Wayne, IN MSA	135
49	San Francisco, CA PMSA	132
50	Tulsa, OK MSA	132

149

2414

TABLE 6
MSA RANKINGS-TARGET INDUSTRY EMPLOYMENT (1995)

Source: County Business Patterns

Rank	MSA Name	Employment
1	Chicago, IL PMSA	64,547
2	Detroit, MI PMSA	52,857
3	Boston, MA-NH PMSA	44,658
4	San Jose, CA PMSA	38,223
5	Minneapolis-St. Paul, MN-WI MSA	36,073
6	Los Angeles-Long Beach, CA PMSA	34,736
7	Cleveland-Lorain-Elyria, OH PMSA	30,509
8	Orange County, CA PMSA	26,852
9	Philadelphia, PA-NJ PMSA	26,493
10	Milwaukee-Waukesha, WI PMSA	19,925
11	Portland-Vancouver, OR-WA PMSA	19,520
12	Houston, TX PMSA	18,761
13	**Cincinnati, OH-KY-IN PMSA**	**18,481**
14	Pittsburgh, PA MSA	18,243
15	Dallas, TX PMSA	16,764
16	Charlotte-Gastonia-Rock Hill, NC-SC MSA	16,457
17	Austin-San Marcos, TX MSA	15,656
18	Providence-Fall River-Warwick, RI-MA MSA	14,368
19	San Diego, CA MSA	13,971
20	Nassau-Suffolk, NY PMSA	12,683
21	Dayton-Springfield, OH MSA	12,577
22	Newark, NJ PMSA	12,485
23	Grand Rapids-Muskegon-Holland, MI MSA	12,334
24	Oakland, CA PMSA	11,937
25	St. Louis, MO-IL MSA	11,890

Rank	MSA Name	Employment
26	Greenville-Spartanburg-Anderson, SC MSA	11,627
27	Atlanta, GA MSA	11,502
28	Rockford, IL MSA	10,892
29	Rochester, NY MSA	10,681
30	Phoenix-Mesa, AZ MSA	9,886
31	Bridgeport, CT PMSA	9,702
32	Seattle-Bellevue-Everett, WA PMSA	9,535
33	Indianapolis, IN MSA	9,457
34	Hartford, CT MSA	9,424
35	New Haven-Meriden, CT PMSA	9,387
36	Columbus, OH MSA	9,266
37	Miami, FL PMSA	9,196
38	Greensboro--Winston-Salem--High Point, NC MSA	9,069
39	Tampa-St. Petersburg-Clearwater, FL MSA	9,018
40	Worcester, MA-CT PMSA	8,420
41	Riverside-San Bernardino, CA PMSA	8,350
42	Beaumont-Port Arthur, TX MSA	8,161
43	Middlesex-Somerset-Hunterdon, NJ PMSA	8,120
44	Buffalo-Niagara Falls, NY MSA	8,028
45	New York, NY PMSA	7,912
46	Ann Arbor, MI PMSA	7,627
47	Kansas City, MO-KS MSA	7,361
48	Bergen-Passaic, NJ PMSA	7,010
49	Akron, OH PMSA	6,974
50	Baltimore, MD PMSA	6,742

150

Regional Overview

FIGURE 6
GREATER CINCINNATI SECTOR SHARE OF TARGET INDUSTRY EMPLOYMENT
Source: County Business Patterns

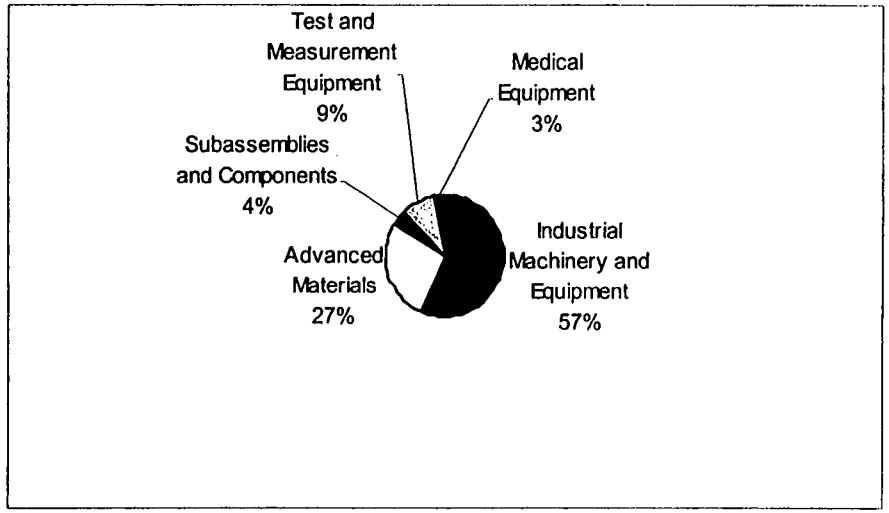


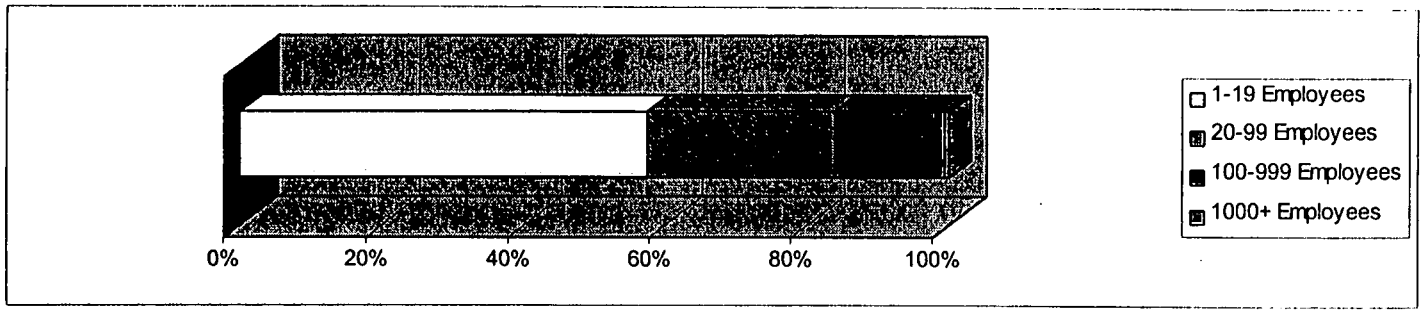
TABLE 7
GREATER CINCINNATI TARGET INDUSTRY STATISTICS (1995)
Source: County Business Patterns

	Industrial Machinery and Equipment	Advanced Materials	Subassemblies and Components	Test and Measurement Equipment	Medical Equipment	Total
Employment	11,061	5,355	807	1,704	610	19,537
Establishments	166	57	11	30	11	275
Average Establishment Size	66.6	93.9	73.4	56.8	55.5	71.0
Average Annual Per Employee Earnings	$40,014	$39,192	$28,066	$36,787	n/a	$35,024

151

2414

FIGURE 7
GREATER CINCINNATI DISTRIBUTION OF TARGET INDUSTRY ESTABLISHMENTS BY SIZE
Source: County Business Patterns



152

Target Trends

National Overview

TABLE 8
U.S. TARGET INDUSTRY TRENDS (1990-1995)
Source: County Business Patterns

	Industrial Machinery and Equipment	Advanced Materials	Subassemblies and Components	Test and Measurement Equipment	Medical Equipment	Total
Employment (1990)	537,083	275,031	199,167	289,930	85,959	1,387,170
Employment (1995)	543,959	259,677	229,106	263,614	101,006	1,397,362
Percent Change	1.3%	-5.6%	15.0%	-9.1%	17.5%	0.7%
Establishments (1990)	15,198	4,767	2,690	3,928	1,127	27,710
Establishments (1995)	16,000	4,908	3,286	4,698	1,345	30,237
Percent Change	5.3%	3.0%	22.2%	19.6%	19.3%	9.1%
Average Establishment Size (1990)	35.3	57.7	74.0	73.8	76.3	50.1
Average Establishment Size (1995)	34.0	52.9	69.7	56.1	75.1	46.2
Percent Change	-3.8%	-8.3%	-5.8%	-24.0%	-1.5%	-7.7%
Average Annual Earnings (1990)	$30,078	$33,587	$27,582	$31,706	$29,533	$30,722
Average Annual Earnings (1995)	$36,126	$39,767	$33,547	$39,880	$36,276	$37,099
Percent Change	20.1%	18.4%	21.6%	25.8%	22.8%	20.8%

153

2414

TABLE 9
NEW CAPITAL EXPENDITURES FOR PLANT AND EQUIPMENT (1992-1996)

Source: County Business Patterns

	New Capital Expenditure (1996) ($ million)			Percentage Change (1992-1996)		
Description	Total	Buildings and Other Structures	Machinery and Equipment	Total	Buildings and Other Structures	Machinery and Equipment
Industrial Machinery and Equipment	2,744	484	2,260	51.6%	52.5%	51.5%
Advanced Materials	4,908	549	4,359	22.2%	15.7%	23.1%
Subassemblies and Components	2,776	492	2,284	35.3%	61.9%	30.7%
Test and Measurement Equipment						
Medical Equipment	673	135	539	-2.3%	-18.7%	3.0%
Total Industry	11,133	1,669	9,465	26.4%	33.6%	25.2%

154

TABLE 10
MSA RANKINGS-NUMERIC GROWTH OF TARGET INDUSTRY ESTABLISHMENTS (1990-1995)

Source: County Business Patterns

Rank	MSA Name	Establishment Growth
1	Minneapolis-St. Paul, MN-WI MSA	122
2	Riverside-San Bernardino, CA PMSA	78
3	San Diego, CA MSA	67
4	Chicago, IL PMSA	59
5	Houston, TX PMSA	58
6	Atlanta, GA MSA	55
7	Dallas, TX PMSA	54
8	Pittsburgh, PA MSA	49
9	Portland-Vancouver, OR-WA PMSA	49
10	Phoenix-Mesa, AZ MSA	48
11	Boulder-Longmont, CO PMSA	44
12	San Jose, CA PMSA	44
13	Grand Rapids-Muskegon-Holl, MI MSA	40
14	Providence-Fall River-Warwick, RI-MA MSA	40
15	Austin-San Marcos, TX MSA	38
16	Seattle-Bellevue-Everett, WA PMSA	37
17	**Cincinnati, OH-KY-IN PMSA**	**35**
18	Columbus, OH MSA	32
19	Louisville, KY-IN MSA	31
20	Raleigh-Durham-Chapel Hill, NC MSA	31
21	Tampa-St. Petersburg-Clearwater, FL MSA	30
22	Denver, CO PMSA	29
23	Akron, OH PMSA	27
24	Charltte-Gastonia-Rk Hill, NC-SC MSA	26
25	Hartford, CT MSA	26
26	Dayton-Springfield, OH MSA	25
27	Ventura, CA PMSA	25
28	Greensboro--Winston-Salem--High Point, NC MSA	24
29	Fort Worth-Arlington, TX PMSA	22
30	Melbourne-Titusville-Palm Bay, FL MSA	22
31	Nashua, NH PMSA	21
32	Oklahoma City, OK MSA	21
33	St. Louis, MO-IL MSA	21
34	Ann Arbor, MI PMSA	20
35	Salt Lake City-Ogden, UT MSA	20
36	Las Vegas, NV-AZ MSA	18
37	Little Rock-North Little Rock, AR MSA	18
38	Nashville, TN MSA	18
39	Fort Lauderdale, FL PMSA	17
40	Knoxville, TN MSA	17
41	Lexington, KY MSA	17
42	Milwaukee-Waukesha, WI PMSA	17
43	Orlando, FL MSA	17
44	Rockford, IL MSA	17
45	Greenville-Spartanburg-Anderson, SC MSA	16
46	Sacramento, CA PMSA	16
47	San Antonio, TX MSA	16
48	Memphis, TN-AR-MS MSA	15
49	Oakland, CA PMSA	15
50	Odessa-Midland, TX MSA	15

155

2414

TABLE 11
MSA RANKINGS-NUMERIC GROWTH OF TARGET INDUSTRY EMPLOYMENT (1990-1995)

Source: County Business Patterns

Rank	MSA Name	Employment Growth
1	Minneapolis-St. Paul, MN-WI MSA	6,788
2	San Jose, CA PMSA	6,134
3	Austin-San Marcos, TX MSA	5,998
4	Albuquerque, NM MSA	4,385
5	Detroit, MI PMSA	3,841
6	Providence-Fall River-Warwick, RI-MA MSA	3,703
7	Portland-Vancouver, OR-WA PMSA	3,588
8	Phoenix-Mesa, AZ MSA	3,459
9	Dutchess County, NY PMSA	3,450
10	Greensboro--Winston-Salem--High Point, NC MSA	3,046
11	Saginaw-Bay City-Midland, MI MSA	2,999
12	Atlanta, GA MSA	2,651
13	**Cincinnati, OH-KY-IN PMSA**	**2,640**
14	Houston, TX PMSA	2,377
15	San Diego, CA MSA	2,063
16	Ann Arbor, MI PMSA	2,016
17	Miami, FL PMSA	2,006
18	Appleton-Oshkosh-Neenah, WI MSA	1,964
19	Mobile, AL MSA	1,900
20	Fort Wayne, IN MSA	1,881
21	Fort Collins-Loveland, CO MSA	1,877
22	Mansfield, OH MSA	1,861
23	Grand Rapids-Muskegon-Holland, MI MSA	1,757
24	Beaumont-Port Arthur, TX MSA	1,662
25	Milwaukee-Waukesha, WI PMSA	1,555
26	Tampa-St. Petersburg-Clearwater, FL MSA	1,458
27	Lawrence, MA-NH PMSA	1,348
28	Lexington, KY MSA	1,319
29	Memphis, TN-AR-MS MSA	1,191
30	Huntsville, AL MSA	1,186
31	Santa Rosa, CA PMSA	1,173
32	Little Rock-North Little Rock, AR MSA	1,104
33	Fort Worth-Arlington, TX PMSA	1,067
34	Nashville, TN MSA	1,051
35	Sacramento, CA PMSA	1,050
36	Bloomington, IN MSA	1,010
37	Roanoke, VA MSA	995
38	Kansas City, MO-KS MSA	925
39	Rocky Mount, NC MSA	925
40	Colorado Springs, CO MSA	914
41	Kenosha, WI PMSA	881
42	Springfield, MO MSA	865
43	Riverside-San Bernardino, CA PMSA	861
44	Santa Barbara-Santa Maria-Lompoc, CA MSA	837
45	Green Bay, WI MSA	832
46	Sioux Falls, SD MSA	820
47	Greeley, CO PMSA	817
48	Orange County, CA PMSA	792
49	Rapid City, SD MSA	780
50	Montgomery, AL MSA	770

Regional Overview

TABLE 12
GREATER CINCINNATI TARGET INDUSTRY TRENDS (1990-1995)

Source: County Business Patterns

	Industrial Machinery and Equipment	Advanced Materials	Subassemblies and Components	Test and Measurement Equipment	Medical Equipment	Total
Employment (1990)	10,169	4,199	420	1,734	375	16,897
Employment (1995)	11,061	5,355	807	1,704	610	19,537
Percent Change	8.8%	27.5%	92.1%	-1.7%	62.7%	15.6%
Establishments (1990)	141	62	8	24	5	240
Establishments (1995)	166	57	11	30	11	275
Percent Change	17.7%	-8.1%	37.5%	25.0%	120.0%	14.6%
Average Establishment Size (1990)	72.1	67.7	52.5	72.3	75.0	70.4
Average Establishment Size (1995)	66.6	93.9	73.4	56.8	55.5	71.0
Percent Change	-7.6%	38.7%	39.7%	-21.4%	-26.1%	0.9%
Average Annual Earnings (1990)	$34,182	$32,991	n/a	$31,001	n/a	$33,845
Average Annual Earnings (1995)	$40,014	$39,192	$28,066	$36,787	n/a	$35,024
Percent Change	17.1%	18.8%	n/a	18.7%	n/a	3.5%

157

2414

MAJOR AREA EMPLOYERS

The Greater Cincinnati area is home to many manufacturers of highly engineered products. The advantages of Cincinnati for manufacturing and development activities allow many of the area's companies to combine some or all of these functions at one or multiple locations in the metro area.

A representative list of manufacturers of engineered products in Greater Cincinnati is shown in Tables 13.

TABLE 13
MANUFACTURERS OF HIGHLY ENGINEERED PRODUCTS IN GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Company	Product Description	SIC
Ohio-based Companies		
American Fan Co	Industrial & commercial fans	3564
Atlas Vac-Machine Co	Heat sealing packaging machinery	3565
Attachmate Corp	Industrial measuring & control instruments	3823
BASF Corp	Research & development lab: plastic, metallic & protective removable container coatings	2821
BASF Corporation / Container Coatings	Manufacturer of interior and exterior metallic and protective coatings for metal containers	2851
Black Clawson Co	Paper Mill machinery	3554
Borden Chemical, Inc. / Coatings & Graphics Division	Solvent-based, water-based and UV-cured printing inks and coatings	3827
Cae Ransohoff Co	Packaging machinery manufacturers	3565
Campbell Group	Air & gas compressors	3563
Campbell-Hausfeld Co	Paint sprayers, air compressors, tools & access	3563
Carr Tool Co	Carbide tipped multifluted cutting tools	3545
Cincinnati Fan	Blowers manufacturers	3564
Cincinnati Gear Co	Speed changers industrial drives & gears	3566
Cincinnati Gilbert Machine Tool Company, L.L.C.	Table-top and floor-type horizontal boring mills and rotary tables	3540
Cincinnati Inc	Squaring shears, shear conveyors, metal & hydraulic presses, laser cutting machines, press brakes & tooling	3542

TABLE 13 CONTINUED
MANUFACTURERS OF HIGHLY ENGINEERED PRODUCTS IN GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Company	Product Description	SIC
Ohio-based Companies continued		
Cincinnati Incorporated	Metal fabricating tools including shears, lasers, presses and press brakes	3540
Cincinnati Industrial Machine	Ovens Industrial	3567
Milacron, Inc.	Industrial manufacturing equipment and supplies including machine tools and plastic-manufacturing machinery	3540
Milacron, Inc. / Machine Tool Group	Machine tools including milling and grinding machines and CNC turning and machining centers	3540
Milacron, Inc. / Plastics Machinery Group	Plastic blow molding, extruding, reaction-in-mold, plastic thermoforming, cast and blow film and plastic injection machines	3540
Cincinnati Sub-Zero Products, Inc.	Custom environmental test chambers	3820
Cincinnati Test Systems, Inc.	Leak detection systems and instruments for component part testing	3820
Cinti Sub-Zero Prods Inc	Hospital equipment & supplies manufacturers	3841
Clopay Plastic Products Co.	Polyethylene, polypropylene and thermoplastic elastomer films and laminates	2820
CTL-Aerospace, Inc.	Honeycomb core composites, hybrid composites and graphite/carbon and carbon composites	3083
D F Electronics Inc	Electronic security, control & instrumentation equipment	3823
Digital Controls Corp	EDP computer data communication products & switches	3679
Diversified Ophthalmics	Surgical/Medical Instruments/Apparatus	3841
Dynamics Corporation of America / Ellis and Watts Division	Thermal products and mobile medical systems. Thermal products include air conditioners, heat exchangers, chillers, dehumidifiers, air pollution control equipment, air handlers, blowers and custom environmental control units	3841
Emerson Electric Fusite Div	Electronic equipment & supplies manufacturers	3679
Ethicon, Inc. / Ethicon Endo-Surgery Division	Disposable surgical devices & equipment, Harmonic scalpels which cut and coagulate simultaneously	3841
Ferco Tech Corp	Fixtures, tooling, jigs, specialty machinery, aircraft engine brackets, aircraft tube bending & fabricating	3544
Fibre Glass-Evercoat Co., Inc.	Body fillers for repairing cars and boats	2899
Fluid Kinetics Inc	Automatic controls-residential & commercial	3822

159

2414

TABLE 13 CONTINUED
MANUFACTURERS OF HIGHLY ENGINEERED PRODUCTS IN GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Company	Product Description	SIC
Ohio-based Companies continued		
Force Control Industries Inc	Clutch & motor brakes, 2 speed & high speed reverse drives	3568
Fuller, H B Co	Adhesives, resins & latex compounds & emulsion polymers	2821
Futuro Inc	Health supports, medical stockings, convalescent & first aid products & bandages	3842
General Polymers Corp	Construction chemicals, special flooring & coatings	2899
Gold Crown Machinery	Grinding & honing machinery; machinery rebuilding	3541
Grace, W R & Co-CONN	Silica gel	2899
Halma Holdings Inc	Industrial Measuring & Control Instruments	3823
Henkel Corp. / Chemicals Group	Resins, adhesives, radiation and epoxy curing agents, plasticizers, polymers, plastics additives, fungicides and dispersants; vitamin E; specialty chemicals for metal extraction	2899
Huls America Inc	Colors & colorants	2851
Hydro Systems Co.	Liquid proportioning and dispensing systems primarily for the cleaning and food service industries	3569
I T T A-C Pump Corp	Centrifugal pumps	3561
Imperial Adhesives, Inc.	Solvent based polyurethane, polyester and rubber based contact adhesives, nitro-rubbers and acrylics, polyamide and PVA and EVA adhesives	2891
ITT A-C Pump	Pumps & Pumping Equipment	3561
J W Harris Intl Inc	Industrial Process Furnaces & Ovens	3567
KDI Precision Products, Inc.	Precision mechanical devices including gears, timing chains and fuses. Company also manufactures surface mounted printed circuit boards.	3678
Kendall Inc	Health supports, medical stockings, convalescent & first aid products & bandages	3842
Kett Tool Co	Portable electric & pneumatic saws, shears & scissor shears	3546
Kornylak Corp.	Material handling equipment and systems for the production of urethane and expandable polystyrene foam products	3569
Kratz-Wilde Machine Co Inc	Tool & die, automobile & aircraft precision metal stampings	3544

140

TABLE 13 CONTINUED
MANUFACTURERS OF HIGHLY ENGINEERED PRODUCTS IN GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Company	Product Description	SIC
Ohio-based Companies continued		
Liebel-Flarsheim Co	Urology surgical tables, digital injectors, disposable syringes & medical x-ray components, diagnostic imaging, angiographic and urological X-ray equipment and supplies	3841
Makino	Manual lathes, machining centers, machine tools, electrical discharge machines, machining cells & systems	3541
Marathon Monitors Inc	Oxygen probes, industrial process controllers & integrated process control systems	3823
Mercury Instruments Inc	Electronic & mechanical pressure temperature volume recording & billing instruments	3823
Meridian Diagnostics, Inc.	Immunodiagnostic test kits, reagents and parasitology transport systems	3841
Metalex Manufacturing Co	Cutting tools & accessories & measuring devices	3545
Midwest Filtration Co	Air & liquid filter media, absorbents, spill control products & lab services	3569
Millennium Petrochemicals, Inc.	Chemicals and specialty products including vinyl acetate, acetic acid, ethyl alcohol, ethyl ether, polypropylene and polyethylene plastics, colorants and additives for plastics, tie-layer resins and wire and cable compounds	2820
Morton Intl Inc	Tin stabilizers & asphalt additives	2899
Mutual Manufacturing & Supply	Sprinklers automatic fire manufacturers	3569
North American Refractories Co	Refractory castables cements, mortars, mixes & crucibles; nonclay refractories	3567
Nu-Tone Inc	Fans industrial & commercial manufacturers	3564
O P W Engineered Systems	Loading arms, floating suctions, valves, pipe fittings, swivel joints & sight flow indicators	3568
Oakley Die & Mold Co	Molds & dies; tooling, tool grinding & general machining	3544
Ohmart Corp.	On-line gauges for measuring density, mass flow, weight, level and moisture	3825
OPW	Mechanical power transmission equipment	3568
Owens-Orten Tool & Die Co	Tool & die: plastic working machinery, plastic & cutting dies, jigs & fixtures, prototypes, drilling & boring, grinding services	3544
Perry & Derrick Co	Architectural paints & chemical coatings, polyurethane & resins	2851

161

2414

TABLE 13 CONTINUED
MANUFACTURERS OF HIGHLY ENGINEERED PRODUCTS IN GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Company	Product Description	SIC
Ohio-based Companies continued		
Physician Sales & Services	Surgical Instruments	3841
Pittsfield Of KY Inc	Industrial filters	3564
Pole/Zero Corp	Digitally tuned RF hopping filters	3679
Porter Precision Products Co	Precision piercing punches, retainers, die buttons & urethane strippers	3544
Precision Industrial Automation, Inc.	Automatic assembly systems, automatic arc and resistance welding machines, high-speed automatic mechanical presses, packaging equipment and hydraulic and manual CNC fixtures	3569
Recto Molded Products Inc	Custom molded thermoplastic parts	3083
Reliance Medical Products, Inc.	Medical examination and treatment chairs, instrument stands and delivery systems and surgery stretchers	3841
Richards Industries	Needle, instrument, gauge & manifold valves; static pressure instruments	3823
Rotex, Inc.	Particle size analyzers for large and small analysis and screening equipment for dry and wet separations, screening and sifting equipment	3820
Sealtron Inc	Glass to metal hermetic connectors & seals	3678
Setco	Precision machine-tool components, metal working spin industrial and metal working tables	3540
Standex Electronics	Relays, switches, coils & connectors	3679
Surgical Appliance Industries	Surgical garments & convalescent products	3842
Tape Products Co	Orthopedic prosthetic & surgical appliances	3842
Tekmar Dohrmann Co	Scientific research equipment, laboratory analytical instruments, environmental analysis equipment	3821
Truform Orthopedic/Prosthetic	Back & surgical supports; knee braces	3842
U S Drill Head Co	Multiple spin industrial drill heads & machine tool access	3545
U S Turbine Corp	Gas turbine generators	3569
U.S. Precision Lens, Inc.	Lenses for projection televisions, medical equipment, optical storage devices and other industrial applications	3827

TABLE 13 CONTINUED
MANUFACTURERS OF HIGHLY ENGINEERED PRODUCTS IN GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Company	Product Description	SIC
Ohio-based Companies continued		
United States Drill Head Co.	Multiple spin industrial drill heads which are used on drilling equipment	3540
Utilco	Machine tools manufacturers	3541
Valentine Research, Inc.	Radar detectors, G-force measurement devices and LED digital displays	3825
Vickers Electronic Systems	Contract electronics manufacturing services and manufacturer of programmable controllers and computer numerical controls	3823
Voith Sulzer Paper Technology	Paper machinery & repairing	3554
Vulcan Oil Co	Petroleum & synthetic coolants & lubricants; rust inhibitors; cleaners; compound blending; cutting, hydraulic & industrial oils	2992
Western States Machine Co	Industrial centrifugals for chemical process industries, sugar, chemical, municipal & industrial sludge dewatering	3569
Wolf Machine Co	Cloth cutting machinery & power meat saws	3552
Xetron Corp	Electronic equipment & supplies manufacturers	3679

See next page for Kentucky-based Companies

143

2414

TABLE 13 CONTINUED
MANUFACTURERS OF HIGHLY ENGINEERED PRODUCTS IN GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Company	Product Description	SIC
Kentucky-based Companies		
Balluff Inc	Control systems & regulators manufacturers	3822
Boston Gear	Pillow blocks, gear racks & small gears	3566
Ellison Surface Technologies	Designer, engineer, developer and applier of metallic, ceramic, dielectric and organic coatings to metal and plastic substrates	2851
Fast Air Products	Fans industrial & commercial manufacturers	3564
Gusher Pumps Inc	Industrial centrifugal pumps, automotive coolant pumps	3561
Hanna Color	Custom colorings for plastics	2851
Hy-Q Intl	Quartz crystals; communication products, microprocessor crystals, crystal oscillators & crystal filters	3679
Interplastic Corp	Polyester resins	2821
Jones, R A & Co Inc	Specialty packaging machinery, equipment & systems	3565
Mazak Corp.	CNC machine tools. Products include lathes, vertical and horizontal machining centers and flexible machining systems	3540
Omni Technologies, Inc.	Polyurethane plastics, molding and machine shop services specializing in polyurethanes	2820
Post Glover Resistors, Inc.	Wire-wound, grid, edge-wound and ribbon power resistors	3679
R A Jones & Co	Packaging machinery manufacturers	3565
Ronan Engineering Co	Nuclear measuring instruments	3829
Ronan Engineering Co. / Measurements Division	Level measuring equipment, radiation gauges and instruments used to measure density, weight and gravitational pull, nuclear measuring equipment	3825
Rotek Inc	Ball & roller bearing	3562
Smith, A O Corp	Frits & protective coatings	2899
SWECO	Vibratory fine screening and grinding equipment and vibratory deburring machines	3540
Wagstaff Inc	Custom aluminum molds & castings	3544
Xtek, Inc.	Heavy industrial equipment including gears, rolling mill rolls, crane wheels and gear couplings	3540
Zellerbach	Orthopedic prosthetic & surgical appliances	3842

PRINCIPAL LOCATIONAL CRITERIA

Five major categories of criteria apply to the location of high-technology manufacturing facilities. These factors are:

1. The availability, quality and cost of labor. The local labor market should be capable of supplying non exempts and hourlies for positions such as precision machining, technicians, operation of CNC equipment, etc. Lower level exempts for supervisory positions also should be readily available locally. Companies also will want to be able to recruit top-notch technical talent (e.g., engineers) both locally and on a regional or national basis.

2. Operating costs. Since competition is usually technology-driven, not cost-driven, companies seek moderate real estate, utility and tax costs, not necessarily the lowest.

3. Transportation infrastructure. The area should feature a range of transportation options for shipments of raw materials and finished products. For employees and visitors, "just-in-time" access by air and ground transportation is of major importance.

4. Environmental issues. In some industries, environmental criteria – e.g., air quality non-attainment – constitute a "knock-out" factor to eliminate metropolitan areas at the outset of locational screening. If not, during the evaluation process, companies assess the probability and time required for obtaining air, water and solid waste environmental permits.

5. The operating environment. A major focus is labor-management relations. This category also includes labor legislation, governmental climate and incentives.

165

2414

RATIONALE FOR SELECTION

As a key organizational benefit, Greater Cincinnati can attract combinations of high-technology manufacturing with both headquarters and research and development functions. Co-location of development and manufacturing can be of particular value in that it can help to speed new product introductions and reduce product development cycles. Several Greater Cincinnati corporations feature this consolidated organizational model, including:

1. Procter & Gamble (headquarters, plus portions of R & D and manufacturing)
2. Mazak (headquarters, technical center, and manufacturing)
3. Milacron (headquarters plus portions of R & D and manufacturing)
4. CTL Aerospace (headquarters and manufacturing)
5. U.S. Precision Lens (headquarters, R & D and manufacturing)
6. Makino (headquarters, R & D and manufacturing)

146

Overall, Greater Cincinnati's strengths are oriented to high-technology manufacturing which involves the fabrication of materials – metals, electronics and plastics – into products sold to industrial markets. WDG urges that marketing efforts should focus on machine tools and accessories, special and general industry machinery, advanced materials, subassemblies and components, test and measurement equipment, and medical equipment.

1. Employment patterns show that there is a solid nucleus of employment within Greater Cincinnati in these industries (nearly 20,000). (See Table 12.) Except for test and measurement equipment, each of these industries has increased employment with growth far outpacing national averages. See Table 14 for a list of total local employment in the full range of high-end manufacturing sectors.

TABLE 14
EMPLOYMENT PATTERNS IN MANUFACTURING WITH HIGH TECHNOLOGY CONTENT
Source: County Business Patterns

Manufacturing Sector	Ohio Counties		Kentucky Counties		Indiana Counties		Greater Cincinnati Total		U.S. Total	
	1995 Employ -ment	% Chg. from 1990	1995 Employ -ment	% Chg. from 1990	1995 Employ -ment	% Chg. from 1990	1995 Employ -ment	% Chg. from 1990	1995 Employment	% Chg. from 1990
Industrial Machinery and Equipment	8,470	5%	2,539	29%	52	(51%)	11,061	9%	543,959	1%
Advanced Materials	4,970	38%	385	(36%)	-	-	5,355	28%	259,677	(6%)
Subassemblies and Components	747	108%	60	-	-	-	807	92%	229,106	15%
Test and Measurement Equipment	684	(2%)	20	100%	-	-	1,704	(2%)	263,614	(9%)
Medical Equipment	550	47%	60	-	-	-	610	63%	101,006	18%
Total	16,421	16%	3,064	16%	52	(40%)	19,537	16%	1,397,362	1%

127

24114

2. The concentrations of area employment compared to U.S. totals also favors industrial machinery and equipment and advanced materials, as shown in Table 15. In both cases, industry employment as a percentage of total employment considerably outweighs the comparable U.S. number. For test and measurement equipment and medical equipment, Greater Cincinnati's employment concentrations are on par with the national averages.

TABLE 15
EMPLOYMENT CONCENTRATIONS IN MANUFACTURING WITH HIGH TECHNOLOGY CONTENT
% OF TOTAL EMPLOYMENT (1995)
Source: County Business Patterns

Target Sector	Greater Cincinnati	U.S.
Industrial Machinery and Equipment	1.3%	0.5%
Advanced Materials	0.1%	0.3%
Subassemblies and Components	0.1%	0.2%
Test and Measurement Equipment	0.2%	0.2%
Medical Equipment	0.1%	0.1%
Total	2.3%	1.3%

128

3. WDG also analyzed two other high-technology manufacturing industries: pharmaceuticals/biologicals and chemical products, as possible targets. However, employment in pharmaceuticals and biologicals is relatively small (under 1,000 in 1995) and fell 75% from the 1990 level (vs. a 6% decline nationally). Chemical products employment is substantial in Greater Cincinnati, totaling just under 7,500 in 1995, but was down 2% from 1990. And, nationwide, employment in this sector slumped 5% in the same period. In addition, nearly 40% of chemical product employment is represented by manufacturers of soaps, cleaners and toilet goods, primarily Procter and Gamble. Our conclusion is that these two industries should be regarded as secondary targets with primary marketing emphasis in the five sectors detailed above.

Measured against the first locational criterion for locating high-technology manufacturing-the availability, quality and cost of labor-Greater Cincinnati exhibits a number of advantages. Labor availability and quality are compatible with the needs of companies in high-technology manufacturing.

1. General labor supply indicators show that, while growth in population and new entrants to the labor force in Greater Cincinnati lag slightly behind the U.S. average, Northern Kentucky almost exactly matches the national norm. In terms of occupational patterns, Northern Kentucky exceeds the U.S. average in each of the five categories shown in Table 16.

TABLE 16
KEY LABOR SUPPLY INDICATORS

Source: U.S. Census Bureau; Claritas

Location	1998 Population (000)	Population Growth 1997-2003 (%)	% Change 18-34 Year Olds 1997-2002 (%)	Occupational Profiles: Percentage of Workforce in Selected Occupations				
				Precision Production	Machine Operations	Transportation	Laborers/ Handlers	Technicians
Ohio Counties								
Brown	40.4	7.0%	4.8%	17.1%	14.3%	5.5%	6.2%	2.2%
Butler	331.1	3.8	(0.7)	11.4	7.4	4.5	4.3	3.7
Clermont	174.1	6.9	1.5	15.0	9.2	4.4	4.5	3.3
Hamilton	848.7	(2.2)	(5.6)	8.9	5.7	3.2	3.6	4.3
Warren	140.8	10.9	5.6	12.3	10.4	4.0	3.9	3.8
Subtotal	1,535.0	1.6	(2.5)	10.5	7.0	3.7	3.9	4.0
Kentucky Counties								
Boone	77.1	14.6	8.8	11.7	6.8	5.5	4.8	4.0
Campbell	87.9	1.7	(2.7)	12.3	7.0	4.4	5.0	3.9
Gallatin	6.7	11.5	8.7	11.5	10.0	8.3	8.9	1.4
Grant	20.3	12.9	8.8	14.0	10.5	7.9	7.1	2.5
Kenton	146.1	0.5	(4.2)	11.5	6.1	4.5	4.3	4.1
Pendleton	14.2	8.3	3.7	14.5	9.9	9.2	7.5	0.9
Subtotal	352.3	5.1	0.2	12.0	6.8	5.1	4.9	3.8
Indiana Counties								
Dearborn	46.8	9.1	9.2	16.2	10.4	5.5	6.5	3.1
Ohio	5.5	0.8	(2.3)	20.9	12.2	6.4	7.9	5.0
Subtotal	52.3	8.2	8.0	16.8	10.6	5.6	6.7	3.3
Greater Cincinnati	1,939.6	2.4	(1.7)	10.9	7.0	4.0	4.2	3.9
U. S. Average	----------	4.3	(0.4)	11.3	6.8	4.1	3.9	3.7

2. Labor demand (employment growth) and labor supply (labor force growth) are in balance in the Ohio counties. However, in Northern Kentucky and Indiana, employment growth over the most recent five years has outstripped labor supply by a wide margin. Nevertheless, for Greater Cincinnati as a whole, the relationship between these indicators is virtually the same as in the country as a whole. Table 17 shows supply and demand data for the most recent five-year periods for which each data set is available.

3. As in most metropolitan areas, area unemployment rates have dropped significantly in the 1990's. While Greater Cincinnati's 1997 unemployment rate was about 1½ percentage points under the national average of 5.6%, it is in the same range as – and, in many cases, higher than – many Midwestern and Southeastern metro areas whose economies have prospered during this decade.

TABLE 17
KEY LABOR DEMAND INDICATORS

Source: County Business Patterns, U.S. Bureau of Labor Statistics

Location	Labor Force Growth 1992-1997 (%)	Employment Growth 1990-1995 (%)	Average Unemployment Rate 1997 (%)
Ohio Counties			
Brown	8.1	(1)	5.7
Butler	9.3	12	3.6
Clermont	8.1	22	4.2
Hamilton	1.6	1	3.5
Warren	11.7	36	3.2
Subtotal	4.8	5	3.6
Kentucky Counties			
Boone	16.7	25	3.6
Campbell	7.1	9	3.8
Gallatin	15.7	(5)	5.8
Grant	15.2	27	5.3
Kenton	6.3	21	3.6
Pendleton	12.9	61	6.7
Subtotal	9.4	21	3.9
Indiana Counties			
Dearborn	10.7	22	3.6
Ohio	4.6	39	3.3
Subtotal	9.2	23	3.6
Greater Cincinnati	5.8	7	3.9
U. S. Average	6.0	7	5.6

170

4. Manufacturing skills are available. Manufacturing employers interviewed included Procter & Gamble, Milacron, CTL Aerospace, U.S. Precision Lens, Makino, Mazak, and Seagram. Employer responses to survey questions about labor availability (see Table 18) were encouraging, except for engineers, as summarized below for specific key positions.

TABLE 18
EMPLOYER VIEWS OF LABOR AVAILABILITY
Source: WDG Employer Surveys, 1998

Occupation	Availability 1 = Unavailable, 5 = Plentiful
Material handling laborers	4.0
Machine operators, no set-up	3.7
Bench assembly workers	3.5
Maintenance, experienced	3.4
Technicians, non-office	3.4
Machine operators, with set-up	3.3
Unskilled workers, manufacturing	3.3
Engineers, entry level	2.6
Engineers, experienced	2.5

- Bolstering employer viewpoints is the pattern of specific occupational concentrations in Greater Cincinnati. As shown in Table 19, the proportion of skilled manufacturing workers in the labor force surpasses the national counterpart by 35%.

171

2414

TABLE 19
OCCUPATIONAL CONCENTRATIONS: SELECTED MANUFACTURING POSITIONS

Source: U.S. Bureau of the Census

	Percentage of Labor Force	
Occupations of Residents	**Greater Cincinnati**	**U.S.**
Tool & die makers	0.12%	0.12%
Precision assemblers, metal	0.04	0.03
Machinists	0.63	0.46
Precision grinders, filers, tool sharpeners	0.02	0.02
Engravers, metal	0.03	0.01
Miscellaneous precision workers	0.06	0.04
Lathe and turning machine operators (with and without set-up)	0.07	0.05
Milling and planing machine operators	0.01	0.01
Punching and stamping machine operators	0.12	0.09
Drilling and boring machine operators	0.04	0.02
Grinding, abrading, buffing and polishing machine operators	0.13	0.10
Numerical control machine operators	0.01	----
TOTAL	1.28%	0.95%

- A resource for Greater Cincinnati employers is Wright-Patterson Air Force Base in nearby Dayton. Upon request, the base will furnish lists of expected retirees, by year and occupational specialty. WDG's experience with employers in metropolitan areas with military bases is that they regard retirees as an excellent source of labor, especially in manufacturing.

5. Employers are satisfied with the output of post-secondary institutions in Greater Cincinnati (see Table 20), but vocational/technical programs need to be expanded.

- Cincinnati State Technical and Community College received high marks from interviewees. The college, which enrolls 5,500-6,000 students per term, emphasizes co-op programs; graduates must have one year of practical experience. Of its 713 graduates in 1994, over 25% were trained as technicians, mainly in manufacturing disciplines, with graduates in electromechanical technology the most numerous.

- The University of Cincinnati's College of Applied Science has established programs to fill specific manufacturing needs, such as CNC machining. The college also sponsors programs for craftsmen (e.g., welding, stationary engineering, and electricians). All

full-time students are required to co-op. The college is at 100% capacity. The Raymond Walters arm of the University of Cincinnati sponsors certificate programs for manufacturing.

- At the secondary level, The Great Oaks Institute provides vocational training for about 2500 students in Ohio, making it the second largest such institution in the state. Great Oaks enrolls students on a full-time basis in Grades 11 and 12, as opposed to part-time programs common in many other metropolitan areas. Employers interviewed did point to the need for guidance counselors, especially at the high school but also extending to two-year colleges to become much better informed on business career options for students who are not college-bound.

- Colleges and universities in Greater Cincinnati are an excellent source of engineering (and scientific) talent. Over 500 engineering graduates with bachelors degrees are minted annually; another 225 possess advanced degrees. Another 300 graduate with BS degrees in chemistry and biology.
  - The University of Cincinnati produces the majority of engineering graduates. The University emphasizes practical problem solving and requires a minimum of four quarters of co-op experience, mainly with local employers.
  - Greater Cincinnati employers also recruit college graduates in engineering from the University of Kentucky, University of Louisville, Purdue, Ohio State, and University of Wisconsin.

TABLE 20
EMPLOYER VIEWS ON QUALITY OF TRAINING AND EDUCATIONAL SERVICES
(5 = EXCELLENT, 1 = POOR)
Source: WDG Employer Interviews, 1998

Institution	Composite Employer Rating
High Schools	2.6
Technical/Vocational Schools	3.0
Junior or Community Colleges	3.3
Universities and Colleges	3.9

173

- Sinclair Institute in Dayton also is a resource for shop-floor positions in manufacturing. Greater Cincinnati should regard Sinclair as a resource, particularly for employers on the north side of the area.

6. Greater Cincinnati exhibits a number of advantages in recruitability of professional and managerial talent from outside the area.

- The median home value of $93,300 in 1998 was 7% below the U.S. average, while cost-of-living was 1.5% under the national average.

24 14

- Easy commutes enhance productivity; commute times are under 30 minutes for 70% of the workforce.
- Public and private schools are an asset in recruiting families, with Ohio schools rated more highly by employers.
- Greater Cincinnati features an impressive array of cultural and recreational opportunities for a metropolitan are of its size. And, these opportunities, including a symphony orchestra, ballet, opera, 94 public and private golf courses, and two major league sports franchises, are readily accessible from suburban locales.
  - The diversity of Greater Cincinnati's economy provides assurance of both alternate and spousal employment options. The Job Bank, formed by a coalition of 25 companies, concentrates on finding spousal employment for dual-career relocating families.
  - Crime rates are well below the national average. In the Ohio portion of the metro area, the non-violent crime rate is 14% below the U.S. norm, and the violent crime weighs in at 30% less. The gaps are even more favorable in the Kentucky and Indiana sectors.
  - Health care is an asset, with Greater Cincinnati showing 17% more physicians per 100,000 population than the U.S. as a whole.
  - Local employers give good marks to the recruitability of talent from outside the area, with a 4.0 rating (5 = best, 1 = worst).

The educational profile of local residents conforms to national patterns. Greater Cincinnati's educational attainment profile is a virtual mirror image of the U.S. For example, focusing on key groups for manufacturing – persons with a high school diploma and those with 1-3 years of college – the proportion of the working age population with these credentials is identical to the national average of 54.9%. (See Table 21.)

174

TABLE 21
EDUCATIONAL ATTAINMENT

Source: U.S. Census Bureau

Location	Educational Attainment Levels of Working Age Population				
	No High School Diploma (%)	High School Diploma (%)	1-3 Years of College (%)	Bachelors Degree (%)	Graduate Degree (%)
Ohio Counties					
Brown	35.1%	40.3%	17.2%	4.2%	3.2%
Butler	24.0	34.7	22.6	12.0	6.8
Clermont	27.2	36.4	21.9	9.9	4.6
Hamilton	24.4	27.7	24.3	15.1	8.6
Warren	24.5	34.1	23.4	12.1	5.9
Subtotal	24.8	30.7	23.5	13.5	7.5
Kentucky Counties					
Boone	23.6	36.4	21.7	9.7	5.6
Campbell	29.0	34.1	21.9	9.6	5.3
Gallatin	40.2	38.9	15.9	3.3	1.7
Grant	38.4	39.9	14.4	4.7	2.5
Kenton	25.6	33.1	24.2	11.4	5.6
Pendleton	39.9	40.7	12.7	3.7	3.1
Subtotal	27.6	34.7	22.6	9.9	5.2
Indiana Counties					
Dearborn	26.5	43.4	19.3	6.5	4.2
Ohio	32.3	46.5	15.2	4.2	1.8
Subtotal	27.2	43.8	16.8	6.2	3.9
Greater Cincinnati	25.4	31.7	23.2	12.7	7.0
U. S. Average	24.8	30.0	24.9	13.1	7.2

The quality of the Cincinnati area labor force is strong. Employers surveyed gave favorable ratings in response to queries on skills of job applicants, work ethic and productivity. (See Table 22.)

175

2414

TABLE 22
EMPLOYER VIEWS ON LABOR FORCE QUALITY AND TRAINING
(5 = EXCELLENT, 1 = POOR)

Source: WDG Employer Interviews, 1998

Measure	Average Rating
Basic Skills	
Overall Skills	3.3
Written Skills	2.9
Reading Skills	3.1
Arithmetic/Math Skills	3.4
Basic Computer Skills	3.1
Work Ethic	3.6
Productivity	3.5
Productivity Relative to Other Sites	3.6

Labor costs are moderate. According to national survey data, Greater Cincinnati is on a par with other mid-size cities in the Midwest and slightly higher than Southeastern cities. (See Table 23.)

TABLE 23
1998 LABOR COSTS FOR TYPICAL MANUFACTURING POSITIONS
ANNUAL SALARY ($000)

Source: Economics Research Institute

Location	Machine Tool Operator	Machinery Mechanic	Machinist General	Materials Handler	Production Supervisor	Tool & Die Maker	Average	Index U.S. = 100
Columbus, OH	27.2	34.9	38.2	21.1	41.2	39.0	33.6	100.5
Indianapolis, IN	27.6	35.1	37.6	21.2	40.3	38.8	33.4	100.0
U.S. Average	26.5	34.9	38.2	20.6	41.4	38.7	33.4	100.0
Greater Cincinnati	**$26.6**	**$34.6**	**$37.3**	**$20.6**	**$40.7**	**$38.4**	**$33.0**	**98.8**
Louisville, KY	26.0	34.3	37.6	20.5	41.1	38.2	33.0	98.8
Atlanta, GA	26.4	33.8	37.3	20.1	40.3	38.1	32.7	97.7
Raleigh-Durham, NC	25.1	33.6	36.4	19.7	39.6	37.1	31.9	95.5
Charlotte, NC	24.7	32.7	35.4	19.4	38.5	36.1	31.1	93.1
Nashville, TN	24.9	32.1	35.0	19.5	38.6	35.6	30.1	90.1

1. The 1998 Greater Cincinnati Compensation and Benefits Survey, as shown in Table 24, portrays an even more favorable labor cost picture.

TABLE 24
LOCAL SURVEY RESULTS FOR SELECTED MANUFACTURING POSITIONS
MEAN ANNUAL PAY AND PAY RANGES ($000)
Source: Adams, Nash and Haskell Survey, 1998

Job Title	Actual Pay (Weighted Mean)	Pay Range	
		Minimum	Maximum
Machine Operator	$21.4	$18.4	$25.3
Machinist	32.9	25.0	34.1
Material Handler	24.6	18.5	23.7
Production Supervisor	38.0	35.8	56.5
General Maintenance Mechanic	27.0	21.9	31.2

2. Payroll taxes also are moderate, with Indiana's unemployment insurance and workers' compensation costs lower than those in Kentucky and Ohio. (See Table 25.)

177

2414

TABLE 25
PAYROLL TAXES

Source: State Departments of Labor, State Chambers of Commerce

Payroll Tax	Indiana	Kentucky	Ohio
Unemployment Insurance			
Average rate for existing employers, 1997	1.3%	2.0%	2.1%
Taxable Base, 1997	$7,000	$8,000	$9,000
Workers' Compensation			
Blended rate per $100 of payroll, all manufacturing	$2.28	$4.81	$4.21
Mental stress allowed as compensable injury?	Yes	Yes	No
Employee allowed to choose any physician?	No	Yes	Yes

The second major criterion for high-technology manufacturing firms is operating costs. As with labor, costs of real estate and utilities are moderate in Greater Cincinnati. Taxes are less competitive, mainly because inventories are subject to personal property taxes and income tax rates are relatively high (except for Indiana).

1. Leased industrial space is more readily available in Ohio localities, but is slightly less expensive in Northern Kentucky. The reverse holds true for distribution warehouse space, as shown in Table 26.

178

TABLE 26
VACANCY RATES AND MEDIAN QUOTED LEASE RATES IN SELECTED AREAS OF GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce

Locality	Vacancy Rates, Mid-1998		Quoted Median Lease Rates Per Square Foot, Mid-1998	
	Technical Space	Warehouse/ Distribution Space	Technical Space	Warehouse/ Distribution Space
Northern Kentucky	13%	22%	$6.63	$6.13
Ohio – Milford/I-75	41%	15%	7.25	3.25
Ohio – Blue Ash	40%	0%	11.95*	3.50*

*Maximum, not median.

2. The area features 16 industrial parks of more than 100 acres, with the largest (over 1200 acres) in Florence, Kentucky.

3. According to Means Commercial Cost Index, construction costs are 7% below the U.S. average. Land is available for well under $100,000 per acre.

4. Cinergy is the primary supplier of electricity and natural gas in Greater Cincinnati. Electric utility rates are in the middle range in our experience, but favor large industrial users, as shown in Table 27. Utility services are readily available in most of the Kentucky and Ohio portions of the metro area, less so in the Indiana sector.

TABLE 27
PROFILE OF CINERGY UTILITY COSTS
INDUSTRIAL SERVICE
Source: Edison Electric Institute

Consumption/Peak Usage	Typical Monthly Bill	Cents per KWH
300KW/120,000 KWH	$11,092	$0.09
10,000KW/5,000,000 KWH	$225,974	$0.05

5. Greater Cincinnati is a power-rich area and experiences infrequent brown-outs. Surplus capacity should serve to keep a lid on cost increases in the future.

6. As seen in Table 28, local employers give high marks to the cost and reliability of utilities in Greater Cincinnati.

TABLE 28
EMPLOYER RATINGS OF UTILITIES IN THE GREATER CINCINNATI REGION
Source: WDG Employer Surveys, 1998

Utility Factor	Rating (1 = Poor, 5 = Excellent)
Water Supply Capacity	4.1
Sewer Treatment Capacity	4.1
Electric Power Costs	3.9
Electric Power Reliability	3.7
Natural Gas Costs	3.7
Sewer Systems Acceptance of Industrial Waste	3.5
Water and Sewer Costs	3.3

179

2414

7. State and local income taxes, both corporate and personal are at the higher end of the range in Ohio and Kentucky compared to Midwestern and Southeastern cities. Indiana's income tax is much less burdensome. An irritant for local employers is the municipal wage and income tax which is levied in both Ohio and Kentucky.

TABLE 29
TOP CORPORATE AND PERSONAL TAX RATES
Source: Ernst & Young

Location	Corporate	Personal	County	City
Ohio				
City of Cincinnati	8.50%	7.2%	---	2.1%
Suburbs	8.50%	7.2%	---	0.5% to 2.1%
Kentucky				
Suburbs	8.25%	6.0%	0.8% to 0.95%*	1% to 2.5%
Indiana				
Suburbs	4.50%	3.4%	0.6% to 1.0%	---

* Boone, Campbell and Kenton Counties only.

8. Real and personal property tax rates depend on the specific locality, but generally are lower in Kentucky and higher in Indiana, with Ohio in the middle. The inclusion of inventories in items subject to personal property tax is a minus for the region.

Greater Cincinnati offers an excellent transportation infrastructure for technology-intensive manufacturing with two exceptions: rail service and passenger air fares.

1. According to The Machine Tool Association, 45% of the market for machine tools is within 250 miles of Greater Cincinnati. Both Mazak and Makino point to a major nucleus of machining customers within 250-300 miles. Machine tool manufacturers such as Mazak ship these products primarily by truck. Interstates 71 and 75 provide access to the North and South, while I-74 is the artery to the West. As shown in Table 30, ten metro areas are within 4 hours drive. Detroit, Cleveland and Nashville are 4.5 hours away, Pittsburgh and Chicago a little over 5 hours.

TABLE 30
ACCESS TO KEY REGIONAL CITIES

Source: Microsoft Automap

Location	Miles	Drive Time
Evansville, IN	215	4 hours
Toledo, OH	209	3 hours 50 minutes
Charleston, WV	200	4 Hours
Fort Wayne, IN	170	3 hours 30 minutes
Huntington, WV/Ashland, KY	150	3 hours
Indianapolis, IN	114	2 hours 10 minutes
Columbus, OH	108	2 hours
Louisville, KY	99	1 hour 50 minutes
Lexington, KY	82	1 hour 30 minutes
Dayton, OH	54	1 hour

2. With "just-in-time" shipments of goods to end-users assuming increasing importance, not only is ready regional access by surface transportation of crucial importance but also air service to more far-flung markets. Mazak, for example, is a major user of air freight services at the airport. The presence of UPS, Federal Express and DHL provides sufficient competition to keep air shipment costs reasonable. DHL has a 1 a.m. deadline for next-day delivery, aiding time-based competition on the part of Greater Cincinnati shippers.

3. The area is under-served by rail, with major east-west lines crossing north of Greater Cincinnati.

4. Over-all, local manufacturers regard Greater Cincinnati's logistics infrastructure as an asset, except for rail service, as shown in Table 31.

TABLE 31
EMPLOYER RATINGS OF LOGISTICS INFRASTRUCTURE IN THE GREATER CINCINNATI REGION

Source: WDG Employer Surveys

Logistics Element	Rating (1 = Poor, 5 = Excellent
Trucking Service	4.5
Trucking Costs	4.0
Air Freight Service	4.0
Rail Freight Costs	4.0
Rail Freight Service	2.0

5. For business travelers, good accessibility, primarily by air, translates into better proximity to customers, suppliers, and other company facilities located elsewhere and improved productivity for corporate managers. Many Greater Cincinnati manufacturers use their facilities as showcases for customers, so that in-bound service is a significant asset.

6. Largely because Cincinnati is a key hub for Delta Air Lines, non-stop flights are available to most of the major U.S. cities, as shown in Table 32, with at least three flights to each metro area.

7. There are 52 cities that are accessible from Cincinnati within 1-½ hours or less via non-stop daily flights. Cities within a 1-½ hour flight offer the opportunity for a comfortable single day round trip to customers and other constituents.

8. International destinations are accessible via non-stop flights to Toronto, Montreal, London, Paris, Frankfurt, Zurich and Brussels. A daily one-stop direct flight (through Portland, OR) provides service to Tokyo. One-stop direct flights also serve Sao Paulo and Munich.

9. For many executives and managers premium airfares are warranted by the ability for one-day turnaround in travel to many U.S. destinations.

   - Helped by easy, predictable commutes to the Cincinnati/Northern Kentucky International Airport, an executive, for example, can depart for Denver at 8:50 am, arrive at 9:44 am, work a full day and return to Cincinnati on a 5:30 flight arriving at 10 p.m.

   - Airfares are high since Delta accounts for approximately 80% of the flights to / from Cincinnati/Northern Kentucky International Airport. Several interviewed employers are resorting to mandating that middle management personnel fly from Dayton, Lexington, Louisville or Indianapolis to capture savings of 50-70% on round trip flights to destinations such as Los Angeles, even though a change of planes at Cincinnati is necessary.

TABLE 32
AIR SERVICE TO MAJOR U.S. CITIES

Source: OAG

Destination City	# of Daily Flights
Atlanta, GA	12
Boston, MA	5
Charlotte, NC	10
Chicago, IL	29
Dallas/Ft. Worth, TX	9
Denver, CO	4
Houston, TX	3
Los Angeles, CA	4
Miami, FL	3
Minneapolis, MN	11
New York, NY/Newark, NJ	21
Phoenix, AZ	4
Salt Lake City, UT	6
San Francisco, CA	4
Seattle, WA	4
Washington DC/Baltimore, MD	11

With respect to environmental issues, ozone non-attainment in six of the thirteen counties in Greater Cincinnati could result in the disqualification of the metropolitan area from consideration as a location for certain industries. In addition, existing companies with air emissions are not in favor of adding new companies that exacerbate the problem.

1. Ozone non-attainment is classed as moderate in the counties listed below. We understand that some or all have met ozone levels in 1998 and could, as a result, be reclassified either to an improved non-attainment status or to attainment.

- Ohio
  - Butler County
  - Clermont County
  - Hamilton County
  - Warren County

183

2414

- Kentucky
  - Boone County
  - Campbell County

2. Therefore, the choices for a manufacturer with ozone issues are locations in Indiana, Kenton County, and the more remote counties (Brown in Ohio, Gallatin and Grant in Kentucky).

   - Companies now in Greater Cincinnati, such as Mazak, are using new technology and new paint processes to satisfy Environmental Protection Agency regulations. The cost of such efforts, including the diversion of resources from core corporate initiatives, results in reluctance to welcome additional emission sources into the region.

   - On the plus side, Greater Cincinnati is in attainment for other emissions: particulate matter, sulfur dioxide and lead.

   - Employers interviewed were, in general, satisfied with the local permitting processes. One interviewee (in Clermont County) cited the need for a "road map", consisting of a guide to local permitting contacts and the anticipated time for specific permits. Another interviewee (Northern Kentucky) found that dealing with multiple entities at the municipal and county levels was frustrating and time-consuming. Overall, however, interviewees rated the ease of obtaining permitting for facility expansion at 3.7 (5 = excellent, 1 = poor).

   - On the human resource side, a workforce experienced in environmental remediation is available as Fluor Daniel phases out its efforts at the Fernald site.

     - Fluor Daniel employs about 2000 at the Fernald complex in Ross, OH, all of whom will be released over the next 8-10 years. This total includes at least 300 engineers and scientists with experience in environmental remediation, hazardous materials, safety management, risk assessment, etc. While this workforce now commands salary scales above local standards, the phase-out undoubtedly will dampen salary expectations. Federal and State funds are available for retraining and employees can be released on a flexible basis to meet a new employer's start-up timetable.

The final criterion category is operating environment. Although none of the three states is a right-to-work state, Greater Cincinnati's labor-management climate has improved dramatically over the past ten years. Labor legislation is generally favorable for employers. Incentive programs are adequate but can be strengthened.

1. The number of union elections has decreased by 50% from the 1982-85 period to 1992-95 (1995 is the latest year for which data are available). Union wins, expressed as a proportion of total elections, have declined, as have the composite number of eligible voters involved in elections. And, elections involving major unions – The Teamsters, Steel Workers, Machinists and Auto Workers – have plummeted from 85 in the 1982-85 period to 16 in 1992-95. (See Table 33.)

TABLE 33
UNION ELECTIONS
1992-95 COMPARED TO 1982-85

Source: National Labor Relations Board

Time Span	# of Elections	Union Wins	Union Losses	Union Win %	# of Eligible Voters	# of Elections Involving Major Unions*
1982-1985	164	67	97	41%	7,888	85
1992-1995	82	30	52	37%	4,778	16

* Teamsters, Steel Workers, Machinists, Auto Workers

2. In 1995, only 18 elections were held, with unions winning 4 (22%). All 14 management wins involved a local independent union; these unions failed to garner a single vote in the 14 elections.

3. Labor legislation, as summarized in Table 34, is benign for employers. In particular, in each of the states plant closing laws and EEO hiring standards are no more restrictive than their Federal counterparts.

TABLE 34
LABOR LEGISLATION

Source: State Departments of Labor, State Chambers of Commerce

Legislative Item	Indiana	Kentucky	Ohio
Employment at will?	Yes	Yes	Yes
Restrictions on drug testing?	No	No	No
Plant closing law stricter than Federal?	No	No	No
Ban on hiring replacement workers during a strike?	No	No	No
Striking workers entitled to unemployment insurance?	No	No	No
EEO hiring standards more restrictive than Federal?	No	No	No

2414

4. Except in the City of Cincinnati itself, local governments are perceived by employers as pro-business. Interviewees cited both Ohio and Kentucky governmental entities as helpful with their expansions. The only minus that surfaced was governmental fragmentation, which interviewees claim, results in higher taxes and in-fighting among jurisdictions, and is detrimental to economic development efforts. Several called for more collaborations among Chambers of Commerce and economic development groups on issues such as workforce development, citing multiple initiatives and contacts as counter-productive.

5. A review of published incentives for manufacturing employers in the three states shows that Kentucky seems to have a slight edge, although in practice (as seen below), existing employers rate the states as about even. Kentucky's published incentives provide for property tax abatements(except school tax) on production machinery as well as land and buildings. All three states provide an income tax credit for new jobs, but Kentucky has more options on how the credit is applied. Table 35 summarizes key incentive programs.

6. Real and property tax abatements surfaced as the most valuable incentive among employers surveyed in Greater Cincinnati who had undergone recent expansions. These included firms in Ohio and Kentucky. However, there is a perception among existing employers that incentives are aimed at relocating industries and not expansion by firms already in the area. Interestingly, no interviewee mentioned job training or income tax credits associated with incremental employment; communications to the current industry base about eligibility for such incentives is in order.

186

TABLE 35
KEY INCENTIVE PROGRAMS

Source: State Departments of Economic Development

Legislative Item	Indiana	Kentucky	Ohio
Property Tax Abatement			
Available?	Yes	Yes (Cities)	Yes
Applicable to:			
Machinery/Equipment	Yes	Yes	Yes
Land	No	Yes	No
Building	Yes (improved)	Yes (total)	Yes (improved)
School tax?	Yes	No	Yes
Length of abatement?	3-10 years	Up to 5 years	Up to 15 years for real property in a Community Reinvestment Area and up to 10 years for real and personal property in an Enterprise Zone.
Geographic Restrictions	None	Must be in a city	Community Reinvestment Zone

TABLE 35 (CONTINUED)
KEY INCENTIVE PROGRAMS

Source: State Departments of Economic Development

Legislative Item	Indiana	Kentucky	Ohio
Corporate Income Tax Credits/ Job Creation			
Credits/Job	3.1% of new hires' personal income tax withheld from new employees.	Either 10 year, 100% credit for state income taxes or 2% credit on gross wages.	Up to 75% of state income taxes withheld from new full-time employees.
Term of Credit	Up to 10 years.	10 years or term of agreement.	Negotiable, up to 10 years.
Corporate Income Tax Credits/ New Capital Investment			
Available?	No	No	Yes
Formula	--	--	7.5% to 13.5% of cost of new machinery and equipment. Term: 7 years.
Grant Programs			
Available?	Yes	No	Yes
Project components fundable	Public Infrastructure	--	Public Infrastructure, machinery/ equipment purchases, non-public infrastructure.
Pre-employment Training			
Available?	Yes	Yes	Yes
Wages mandatory for trainees?	Yes	No	Yes
Recruiting and screening by state?	Yes	Yes	Yes

7. A distinct governmental asset for Greater Cincinnati is IAMS, the Institute of Advanced Manufacturing Sciences. IAMS provides consulting and training services to manufacturing and technical companies to improve competitiveness. It also acts as a clearing-house for university and Federal research laboratories in technology transfer to industry for commercialization. IAMS is one of six Thomas Edison Project centers, sponsored by the state, in Ohio. Another nearby center is the Materials Center at Wright-Patterson Air Force Base in Dayton, whose specialty is materials research and engineering.

187

2414

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Dearborn County, IN	Ohio County, IN	Indiana Counties Subtotal	Indiana	Boone County, KY	Campbell County, KY
Population						
1980	34,291	5,114	39,405	5,490,235	45,841	83,317
1990	38,835	5,315	44,150	5,544,159	57,589	83,866
1998	46,779	5,512	52,291	5,892,335	77,084	87,930
2003	51,045	5,558	56,603	6,073,227	88,347	89,418
Change '80 - '90	13.3%	3.9%	12.0%	1.0%	25.6%	0.7%
Change '90 - '98	20.5%	3.7%	18.4%	6.3%	33.9%	4.8%
Change '90 - '03	31.4%	4.6%	28.2%	9.5%	53.4%	6.6%
Change '98 - '03	9.1%	0.8%	8.2%	3.1%	14.6%	1.7%
Percent Minority						
1980	1.3%	1.3%	1.3%	9.6%	1.3%	1.7%
1990	1.3%	1.2%	1.3%	10.4%	2.0%	1.8%
1998	1.7%	1.3%	1.6%	11.7%	2.4%	2.1%
2003	1.9%	1.3%	1.8%	12.4%	2.8%	2.3%
Percent Distribution by Age Group (1998)						
0-17	28.1%	25.6%	27.8%	25.9%	28.4%	26.5%
18-34	20.5%	21.4%	20.6%	23.5%	22.7%	23.1%
35-54	29.3%	28.8%	29.3%	28.4%	30.5%	28.0%
55-64	8.8%	9.4%	8.9%	8.7%	8.4%	8.4%
65-74	7.1%	7.6%	7.1%	7.1%	5.9%	7.4%
75 and over	6.1%	7.3%	6.3%	6.4%	4.1%	6.6%

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Gallatin County, KY	Grant County, KY	Kenton County, KY	Pendleton County, KY	Kentucky Counties Subtotal	Kentucky
Population						
1980	4,842	13,308	137,058	10,989	295,355	3,660,771
1990	5,393	15,737	142,031	12,036	316,652	3,685,296
1998	6,707	20,250	146,130	14,201	352,302	3,928,005
2003	7,479	22,862	146,895	15,377	370,378	4,060,023
Change '80 - '90	11.4%	18.3%	3.6%	9.5%	7.2%	0.7%
Change '90 - '98	24.4%	28.7%	2.9%	18.0%	11.3%	6.6%
Change '90 - '03	38.7%	45.3%	3.4%	27.8%	17.0%	10.2%
Change '98 - '03	11.5%	12.9%	0.5%	8.3%	5.1%	3.4%
Percent Minority						
1980	3.3%	0.8%	3.6%	0.9%	2.5%	8.2%
1990	2.2%	0.6%	4.0%	0.9%	2.7%	8.3%
1998	2.4%	0.8%	4.4%	1.1%	3.0%	8.7%
2003	2.5%	0.9%	4.7%	1.2%	3.2%	9.0%
Percent Distribution by Age Group (1998)						
0-17	27.7%	28.3%	27.1%	28.6%	27.4%	25.3%
18-34	21.7%	22.1%	23.4%	22.5%	23.0%	23.6%
35-54	28.8%	28.5%	28.9%	26.9%	28.9%	28.6%
55-64	8.8%	8.9%	8.0%	8.6%	8.3%	8.9%
65-74	6.7%	6.5%	6.7%	7.1%	6.7%	7.2%
75 and over	6.3%	5.7%	5.9%	6.2%	5.7%	6.4%

189

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	City of Cincinnati	Brown County, OH	Butler County, OH	Clermont County, OH	Hamilton County, OH	Warren County, OH
Population						
1980	385,478	31,920	258,788	128,483	873,223	99,277
1990	364,040	34,966	291,479	150,187	866,228	113,909
1998	337,298	40,419	331,065	174,130	848,650	140,708
2003	321,624	43,229	343,761	186,215	830,134	156,053
Change '80 - '90	-5.6%	9.5%	12.6%	16.9%	-0.8%	14.7%
Change '90 - '98	-7.3%	15.6%	13.6%	15.9%	-2.0%	23.5%
Change '90 - '03	-11.7%	23.6%	17.9%	24.0%	-4.2%	37.0%
Change '98 - '03	-4.6%	7.0%	3.8%	6.9%	-2.2%	10.9%
Percent Minority						
1980	35.1%	1.8%	5.7%	1.5%	20.2%	2.4%
1990	39.8%	1.5%	6.0%	1.8%	22.7%	3.3%
1998	44.1%	1.7%	7.1%	2.2%	25.3%	3.9%
2003	46.5%	1.9%	7.7%	2.4%	26.9%	4.3%
Percent Distribution by Age Group (1998)						
0-17	26.1%	28.2%	25.7%	28.4%	26.1%	26.1%
18-34	26.3%	21.2%	24.9%	22.9%	23.5%	22.7%
35-54	26.8%	27.8%	28.9%	29.9%	28.0%	31.1%
55-64	6.8%	8.9%	8.6%	8.5%	8.4%	8.9%
65-74	6.5%	7.3%	6.8%	5.9%	7.2%	6.5%
75 and over	7.4%	6.6%	5.2%	4.4%	6.8%	4.6%

190

2414

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Ohio Counties Subtotal	Ohio	Greater Cincinnati	Cincinnati MSA	United States
Population					
1980	1,391,691	10,797,638	1,726,451	1,467,663	226,545,776
1990	1,456,769	10,847,115	1,817,571	1,526,092	248,709,872
1998	1,534,972	11,204,986	1,939,565	1,608,500	269,412,832
2003	1,559,392	11,356,818	1,986,373	1,642,612	280,885,056
Change '80 - '90	4.7%	0.5%	5.3%	4.0%	9.8%
Change '90 - '98	5.4%	3.3%	6.7%	5.4%	8.3%
Change '90 - '03	7.0%	4.7%	9.3%	7.6%	12.9%
Change '98 - '03	1.6%	1.4%	2.4%	2.1%	4.3%
Percent Minority					
1980	14.1%	11.6%	11.8%	12.9%	19.9%
1990	15.2%	12.9%	12.7%	13.9%	24.4%
1998	16.2%	14.2%	13.4%	14.7%	27.6%
2003	16.8%	15.1%	13.8%	15.1%	29.7%
Percent Distribution by Age Group (1998)					
0-17	26.3%	25.6%	26.5%	26.7%	25.6%
18-34	23.6%	23.0%	23.4%	23.1%	23.7%
35-54	28.7%	28.5%	28.7%	28.7%	28.8%
55-64	8.5%	8.9%	8.5%	8.4%	8.5%
65-74	6.9%	7.5%	6.9%	6.9%	7.1%
75 and over	6.0%	6.5%	5.9%	6.1%	6.2%

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Dearborn County, IN	Ohio County, IN	Indiana Counties Subtotal	Indiana	Boone County, KY	Campbell County, KY
Percent Distribution by Age Group (2003)						
0-17	27.3%	25.0%	27.1%	25.3%	27.4%	25.8%
18-34	20.6%	20.7%	20.6%	22.9%	21.5%	22.1%
35-54	28.4%	28.7%	28.4%	28.3%	30.1%	28.7%
55-64	10.2%	10.8%	10.3%	9.9%	10.2%	9.4%
65-74	6.8%	7.1%	6.8%	6.8%	6.0%	6.8%
75 and over	6.7%	7.8%	6.8%	6.8%	4.7%	7.1%
Projected Percent Change in Age Distribution (1997-2002)						
0-17	6.0%	-1.3%	5.3%	0.5%	10.5%	-0.9%
18-34	9.2%	-2.3%	8.0%	0.2%	8.8%	-2.7%
35-54	5.7%	0.6%	5.2%	2.8%	13.2%	4.3%
55-64	26.9%	15.4%	25.6%	18.4%	38.6%	14.1%
65-74	4.2%	-6.2%	3.1%	-2.0%	17.6%	-6.3%
75 and over	19.5%	7.2%	18.0%	10.3%	32.4%	10.1%
Median Age						
1998	35.8	36.9	36.0	35.4	34.3	35.2
2003	36.8	38.2	36.9	36.4	35.8	36.5
Median Household Income						
1997	$39,440	$37,153	$39,087	$38,404	$45,373	$37,336
2002	$42,475	$45,017	$42,666	$43,972	$52,237	$41,542
Change '97 - '02	7.7%	21.2%	9.2%	14.5%	15.1%	11.3%

2414

192

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Gallatin County, KY	Grant County, KY	Kenton County, KY	Pendleton County, KY	Kentucky Counties Subtotal	Kentucky
Percent Distribution by Age Group (2003)						
0-17	27.0%	27.5%	26.3%	27.9%	26.6%	24.6%
18-34	21.1%	21.3%	22.3%	21.6%	22.0%	22.8%
35-54	28.2%	28.1%	29.3%	27.6%	29.2%	28.6%
55-64	10.5%	10.6%	9.5%	9.5%	9.7%	10.2%
65-74	6.5%	6.4%	6.2%	6.8%	6.3%	6.9%
75 and over	6.7%	6.1%	6.4%	6.7%	6.2%	6.9%
Projected Percent Change in Age Distribution (1997-2002)						
0-17	8.9%	9.7%	-2.5%	5.7%	2.1%	0.4%
18-34	8.7%	8.8%	-4.2%	3.7%	0.2%	0.0%
35-54	9.2%	11.4%	1.9%	11.1%	6.1%	3.3%
55-64	32.7%	34.7%	19.0%	18.6%	23.3%	19.2%
65-74	7.1%	11.3%	-6.9%	3.1%	-0.3%	-0.5%
75 and over	18.8%	20.0%	9.5%	16.1%	14.4%	10.3%
Median Age						
1998	35.4	34.7	34.7	34.2	34.7	35.7
2003	36.5	35.9	36.0	35.4	36.0	36.9
Median Household Income						
1997	$28,592	$29,707	$43,199	$30,413	$40,607	$29,541
2002	$31,452	$32,092	$52,253	$34,258	$46,604	$32,375
Change '97 - '02	10.0%	8.0%	21.0%	12.6%	14.8%	9.6%

193

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	City of Cincinnati	Brown County, OH	Butler County, OH	Clermont County, OH	Hamilton County, OH	Warren County, OH
Percent Distribution by Age Group (2003)						
0-17	26.0%	27.5%	24.9%	27.4%	25.5%	25.2%
18-34	24.1%	20.8%	23.8%	21.7%	22.7%	21.7%
35-54	29.0%	27.4%	28.8%	29.6%	28.5%	30.6%
55-64	7.6%	10.2%	9.9%	10.2%	9.3%	10.4%
65-74	5.8%	6.9%	6.7%	6.1%	6.7%	6.7%
75 and over	7.6%	7.1%	5.8%	5.0%	7.2%	5.4%
Projected Percent Change in Age Distribution (1997-2002)						
0-17	-5.1%	4.2%	0.5%	3.1%	-4.1%	7.3%
18-34	-12.7%	4.8%	-0.7%	1.5%	-5.6%	5.6%
35-54	3.1%	5.5%	3.7%	5.9%	-0.2%	9.1%
55-64	6.1%	22.9%	19.9%	27.6%	8.6%	29.5%
65-74	-15.8%	2.2%	2.7%	11.4%	-9.4%	14.1%
75 and over	-2.7%	15.1%	17.2%	20.8%	3.4%	29.0%
Median Age						
1998	33.5	35.4	34.6	34.2	35.2	35.7
2003	34.9	36.4	36.0	35.6	36.2	37.1
Median Household Income						
1997	$27,089	$31,505	$41,976	$41,792	$40,335	$50,503
2002	$30,436	$34,150	$46,968	$46,882	$46,842	$59,259
Change '97 - '02	12.4%	8.4%	11.9%	12.2%	16.1%	17.3%

194

2414

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Ohio Counties Subtotal	Ohio	Greater Cincinnati	Cincinnati MSA	United States
Percent Distribution by Age Group (2003)					
0-17	25.6%	25.0%	25.9%	26.1%	25.1%
18-34	22.7%	22.4%	22.5%	22.2%	22.7%
35-54	28.9%	28.4%	29.0%	29.0%	29.0%
55-64	9.7%	10.1%	9.7%	9.7%	9.8%
65-74	6.6%	7.1%	6.6%	6.6%	6.8%
75 and over	6.4%	7.0%	6.4%	6.5%	6.6%
Projected Percent Change in Age Distribution (1997-2002)					
0-17	-1.0%	-1.0%	-0.2%	-0.4%	2.3%
18-34	-2.5%	-1.3%	-1.7%	-2.0%	-0.4%
35-54	2.4%	0.9%	3.2%	3.1%	4.8%
55-64	15.6%	15.1%	17.3%	16.7%	19.6%
65-74	-2.5%	-3.6%	-2.0%	-2.9%	0.4%
75 and over	9.6%	9.0%	10.7%	9.5%	10.9%
Median Age					
1998	35.0	35.9	35.0	35.1	35.4
2003	36.2	37.0	36.2	36.2	36.6
Median Household Income					
1997	$41,392	$37,464	$41,182	$41,025	$38,302
2002	$47,618	$42,220	$47,274	$47,329	$42,246
Change '97 - '02	15.0%	12.7%	14.8%	15.4%	10.3%

195

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Dearborn County, IN	Ohio County, IN	Indiana Counties Subtotal	Indiana	Boone County, KY	Campbell County, KY
Household Income Distribution (1997)						
Households	16,595	2,067	18,662	2,236,754	27,482	33,284
Less than $35,000	44.7%	46.3%	44.8%	45.6%	36.7%	46.7%
Between $35,000 and $75,000	41.2%	41.8%	41.3%	38.0%	44.2%	38.5%
Greater than $75,000	14.1%	12.0%	13.9%	16.5%	19.2%	14.8%
Educational Attainment Levels						
No High School	26.5%	32.3%	27.2%	24.4%	23.6%	29.0%
High School Only	43.4%	46.5%	43.8%	38.2%	36.4%	34.1%
Associate Degree	4.8%	4.7%	4.8%	5.3%	5.1%	4.9%
1 to 3 Years College	14.5%	10.5%	14.0%	16.6%	19.6%	17.0%
Bachelors Degree	6.5%	4.2%	6.2%	9.2%	9.7%	9.6%
Graduate Degree	4.2%	1.8%	3.9%	6.4%	5.6%	5.3%
12 to 15 years of education	62.7%	61.7%	62.6%	60.1%	61.1%	56.0%
16 or more years of education	10.7%	6.0%	10.2%	15.6%	15.3%	14.9%

196

2414

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Gallatin County, KY	Grant County, KY	Kenton County, KY	Pendleton County, KY	Kentucky Counties Subtotal	Kentucky
Household Income Distribution (1997)						
Households	2,431	7,261	54,296	5,114	129,868	1,500,213
Less than $35,000	59.7%	57.4%	40.3%	56.6%	43.1%	57.1%
Between $35,000 and $75,000	33.4%	34.3%	38.2%	35.3%	39.1%	31.3%
Greater than $75,000	6.9%	8.2%	21.5%	8.2%	17.8%	11.6%
Educational Attainment Levels						
No High School	40.2%	38.4%	25.6%	39.9%	27.6%	35.4%
High School Only	38.9%	39.9%	33.1%	40.7%	34.7%	31.8%
Associate Degree	2.1%	3.1%	4.9%	2.6%	4.7%	4.1%
1 to 3 Years College	13.8%	11.3%	19.3%	10.1%	17.9%	15.2%
Bachelors Degree	3.3%	4.7%	11.4%	3.7%	9.9%	8.1%
Graduate Degree	1.7%	2.5%	5.6%	3.1%	5.2%	5.5%
12 to 15 years of education	54.8%	54.4%	57.3%	53.4%	57.3%	51.0%
16 or more years of education	5.0%	7.2%	17.0%	6.8%	15.1%	13.6%

147

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	City of Cincinnati	Brown County, OH	Butler County, OH	Clermont County, OH	Hamilton County, OH	Warren County, OH
Household Income Distribution (1997)						
Households	146,589	14,522	120,162	63,043	336,916	50,088
Less than $35,000	59.9%	53.8%	41.7%	40.5%	44.2%	33.0%
Between $35,000 and $75,000	28.4%	35.5%	37.9%	41.6%	34.5%	41.1%
Greater than $75,000	11.8%	10.7%	20.4%	17.9%	21.3%	25.9%
Educational Attainment Levels						
No High School	30.4%	35.1%	24.0%	27.2%	24.4%	24.5%
High School Only	25.0%	40.3%	34.7%	36.4%	27.7%	34.1%
Associate Degree	5.3%	4.0%	5.5%	5.2%	6.1%	6.4%
1 to 3 Years College	17.2%	13.2%	17.1%	16.7%	18.2%	17.0%
Bachelors Degree	13.4%	4.2%	12.0%	9.9%	15.1%	12.1%
Graduate Degree	8.7%	3.2%	6.8%	4.6%	8.6%	5.9%
12 to 15 years of education	47.4%	57.5%	57.3%	58.3%	51.9%	57.5%
16 or more years of education	22.2%	7.4%	18.7%	14.5%	23.7%	18.0%

198

2414

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Ohio Counties Subtotal	Ohio	Greater Cincinnati	Cincinnati MSA	United States
Household Income Distribution (1997)					
Households	584,731	4,291,302	733,261	613,099	100,657,536
Less than $35,000	42.6%	46.6%	42.7%	42.9%	46.0%
Between $35,000 and $75,000	36.6%	36.9%	37.1%	37.0%	35.3%
Greater than $75,000	20.9%	16.5%	20.1%	20.1%	18.8%
Educational Attainment Levels					
No High School	24.8%	24.3%	25.4%	25.6%	24.8%
High School Only	30.7%	36.3%	31.7%	31.2%	30.0%
Associate Degree	5.9%	5.3%	5.6%	5.7%	6.2%
1 to 3 Years College	17.6%	17.0%	17.6%	17.7%	18.7%
Bachelors Degree	13.5%	11.1%	12.7%	12.8%	13.1%
Graduate Degree	7.5%	5.9%	7.0%	7.1%	7.2%
12 to 15 years of education	54.2%	58.7%	54.9%	54.5%	54.9%
16 or more years of education	21.0%	17.0%	19.7%	19.9%	20.3%

199

TABLE A-2
LABOR FORCE CHARACTERISTICS
Source: U.S. Bureau of Labor Statistics, Claritas Inc., State Department of Education

	Dearborn County, IN	Ohio County, IN	Indiana Counties Subtotal	Indiana	Boone County, KY
Civilian Labor Force (Average Annual)					
1992	20,017	2,535	24,544	2,840,249	33,721
1997	22,163	2,652	26,812	3,104,288	39,356
% Change '92 - '97	10.7%	4.6%	9.2%	9.3%	16.7%
Unemployment Rate (Average Annual)					
1992	8.8%	8.2%	16.1%	6.6%	5.8%
1997	3.6%	3.3%	10.8%	3.3%	3.6%
Labor Participation (1990)					
Female	55.5%	48.6%	54.6%	57.4%	61.8%
Male	74.8%	75.7%	74.9%	75.2%	81.7%
Total	64.8%	61.7%	64.4%	65.9%	71.3%

200

2414

TABLE A-2
LABOR FORCE CHARACTERISTICS
Source: U.S. Bureau of Labor Statistics, Claritas Inc., State Department of Education

	Campbell County, KY	Gallatin County, KY	Grant County, KY	Kenton County, KY	Pendleton County, KY
Civilian Labor Force (Average Annual)					
1992	43,059	2,751	8,143	74,901	5,927
1997	46,100	3,184	9,380	79,652	6,692
% Change '92 - '97	7.1%	15.7%	15.2%	6.3%	12.9%
Unemployment Rate (Average Annual)					
1992	6.4%	6.8%	8.4%	5.9%	7.7%
1997	3.8%	5.8%	5.3%	3.6%	6.7%
Labor Participation (1990)					
Female	57.6%	55.3%	51.2%	59.3%	51.9%
Male	75.5%	71.6%	74.8%	78.5%	72.1%
Total	66.0%	63.3%	62.6%	68.3%	61.7%

201

TABLE A-2
LABOR FORCE CHARACTERISTICS
Source: U.S. Bureau of Labor Statistics, Claritas Inc., State Department of Education

	Kentucky Counties Subtotal	Kentucky	Brown County, OH	Butler County, OH	Clermont County, OH
Civilian Labor Force (Average Annual)					
1992	168,502	1,766,955	17,485	155,274	83,564
1997	184,364	1,923,415	18,894	169,769	90,303
% Change '92 - '97	9.4%	8.9%	8.1%	9.3%	8.1%
Unemployment Rate (Average Annual)					
1992	6.2%	6.9%	8.8%	6.7%	6.5%
1997	3.9%	5.2%	5.7%	3.6%	4.2%
Labor Participation (1990)					
Female	58.5%	51.2%	50.6%	56.1%	59.8%
Male	77.7%	70.8%	73.0%	75.0%	79.7%
Total	67.6%	60.5%	61.4%	65.1%	69.4%

207

2414

TABLE A-2
LABOR FORCE CHARACTERISTICS

Source: U.S. Bureau of Labor Statistics, Claritas Inc., State Department of Education

	Hamilton County, OH	Warren County, OH	Ohio Counties Subtotal	Ohio	Greater Cincinnati
Civilian Labor Force (Average Annual)					
1992	441,705	62,579	760,607	5,496,079	953,653
1997	448,606	69,880	797,452	5,755,978	1,008,628
% Change '92 - '97	1.6%	11.7%	4.8%	4.7%	5.8%
Unemployment Rate (Average Annual)					
1992	5.6%	6.1%	6.0%	7.3%	6.3%
1997	3.5%	3.2%	3.6%	4.6%	3.9%
Labor Participation (1990)					
Female	57.1%	59.2%	57.2%	54.7%	57.3%
Male	74.2%	74.0%	74.9%	73.2%	75.4%
Total	65.0%	66.6%	65.5%	63.5%	65.8%

203

TABLE A-2
LABOR FORCE CHARACTERISTICS
Source: U.S. Bureau of Labor Statistics, Claritas Inc., State Department of Education

	Cincinnati MSA	United States
Civilian Labor Force (Average Annual)		
1992	798,379	124,787,000
1997	838,859	132,304,000
% Change '92 - '97	5.1%	6.0%
Unemployment Rate (Average Annual)		
1992	6.3%	5.5%
1997	3.9%	5.6%
Labor Participation (1990)		
Female	57.6%	56.8%
Male	75.4%	74.4%
Total	66.0%	65.3%

2414

204

TABLE A-3
ECONOMIC STRUCTURE, GREATER CINCINNATI
EMPLOYMENT BY KEY INDUSTRY SECTOR (1990-1995)

Source: County Business Patterns

	Manufacturing		Wholesale and Retail Trades		Finance, Insurance and Real Estate		Services		Total Employment	
Key Industry Sector	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% Chg from 1990
Ohio Locality										
Brown	1,265	21%	1,628	27%	428	7%	1,732	29%	6,037	-1%
Butler	21,139	22%	29,239	31%	6,761	7%	24,942	26%	94,630	12%
Clermont	7,842	21%	13,422	36%	2,383	6%	9,121	24%	37,699	22%
Hamilton	95,871	18%	154,896	30%	34,476	7%	178,222	34%	522,152	1%
Warren	12,158	31%	13,972	36%	1,263	3%	9,205	23%	39,436	36%
Sub-Total	138,275	20%	213,157	30%	45,341	7%	223,222	32%	699,954	5%
Kentucky Locality										
Boone	9,137	23%	13,063	33%	830	2%	8,877	22%	39,931	25%
Campbell	4,116	20%	7,079	35%	799	4%	5,579	28%	20,206	9%
Gallatin	17	3%	476	70%	23	3%	123	18%	685	-5%
Grant	506	13%	1,946	50%	175	5%	763	20%	3,887	27%
Kenton	7,441	14%	15,700	28%	3,470	6%	18,507	34%	55,238	21%
Pendleton	631	37%	466	28%	88	5%	309	19%	1,672	61%
Sub-Total	21,830	18%	38,730	32%	5,385	4%	34,158	28%	121,619	21%
Indiana Locality										
Dearborn	2,342	22%	3,153	30%	539	5%	2,673	25%	10,581	22%
Ohio	10	2%	134	28%	21	4%	250	51%	487	39%
Sub-Total	2,352	21%	3,287	30%	560	5%	2,923	26%	11,068	23%
Total Greater Cincinnati	162,457	20%	255,174	31%	51,256	6%	260,303	31%	832,641	7%
U.S. Average	----	19%	----	28%	----	7%	----	35%	----	7%

205

TABLE A-4
CITIES ACCESSIBLE FROM CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL AIRPORT WITHIN 1-1/2 HOURS OR LESS BY NON-STOP FLIGHTS AS OF JUNE 1998

Source: Reed Travel Group

From Cincinnati International Airport (CVG)

	Destination City	Daily Direct Flights
1	Dayton, OH	10
2	Lexington, KY	9
3	Louisville, KY	11
4	Indianapolis, IN	8
5	Columbus, OH	8
6	Huntington, WV/Ashland, KY	3
7	Fort Wayne, IN	6
8	Evansville, IN	7
9	Charleston, WV	5
10	Toledo, OH	7
11	South Bend, IN	6
12	Akron/Canton, OH	6
13	Tri-Cities, TN	4
14	Cleveland, OH	16
15	Kalamazoo, MI	5
16	Knoxville, TN	7
17	Detroit, MI	17
18	Nashville, TN	8
19	Pittsburgh, PA	12
20	Lansing, MI	4
21	Chicago, IL	29
22	Grand Rapids, MI	8
23	Asheville, NC	3
24	Chattanooga, TN	5
25	Roanoke, VA	4
26	St. Louis, MO	12
27	Greenville, SC	7
28	Milwaukee, WI	10
29	Huntsville, AL	3

206

2414

TABLE A-4
CITIES ACCESSIBLE FROM CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL AIRPORT WITHIN 1-1/2 HOURS OR LESS BY NON-STOP FLIGHTS AS OF JUNE 1998

Source: Reed Travel Group

From Cincinnati International Airport (CVG)

	Destination City	Daily Direct Flights
30	Greensboro, NC	4
31	Charlotte, NC	10
32	Charlottesville, VA	3
33	Madison, WI	4
34	Atlanta, GA	12
35	Raleigh/Durham, NC	6
36	Birmingham, AL	6
37	Memphis, TN	8
38	Columbia, SC	4
39	Buffalo, NY	3
40	Appleton, WI	4
41	Washington, DC/Baltimore, MD	11
42	Richmond, VA	6
43	Toronto, Canada	7
44	Cedar Rapids, IA	4
45	Harrisburg, PA	3
46	Baltimore, MD	3
47	Rochester, NY	3
48	Norfolk, VA	3
49	Myrtle Beach, SC	2
50	Wilkes-Barre/Scranton, PA	4
51	Allentown, PA	2
52	Des Moines, IA	5

TABLE A-5
DEGREES GRANTED BY GREATER CINCINNATI POST SECONDARY SCHOOLS
Source: U.S. Department of Labor (1996)

School	Less than 1 Year Certificate	1-2 Year Certificate	2-4 Year Certificate	Associate's Degree	Bachelor's Degree	Master's Degree	Doctorate
Butler County Jvs District-D Russel Lee Career Ctr	30	225	-	-	-	-	-
Chatfield College	-	-	-	30	-	-	-
Cincinnati State Technical & Community College	-	11	-	702	-	-	-
Clermont College	-	-	-	216	-	-	-
College of Mount Saint Joseph	-	-	-	38	354	31	-
Fort Mitchell	-	4	-	44	-	-	-
Interactive Learning Sys	24	53	-	-	-	-	-
Kentucky Career Institute	17	-	6	239	-	-	-
Main Campus	-	-	-	493	2,938	1,198	227
Miami University – Oxford	-	-	-	192	3,303	522	44
Northern Kentucky State Vocational Tech School	-	45	52	-	-	-	-
Northern Kentucky U.	-	-	-	310	1,093	181	-
Queen City Vocational Ctr	-	207	-	-	-	-	-
Raymond Walters College	-	-	-	383	-	-	-
Southern Ohio College	2	-	-	123	-	-	-
Southern Ohio College-							
Southwestern College of Business	15	51	-	-	-	-	-
The Union Institute	-	-	-	-	286	-	508
Thomas More College	-	-	-	59	199	-	-
University of Cincinnati-							
University of Cincinnati-							
University of Cincinnati-							
US Grant Joint Vocational School	-	40	-	-	-	-	-
Warren County Career Ctr	-	23	-	-	-	-	-
Xavier University	-	-	-	71	694	645	-
TOTAL	**88**	**659**	**58**	**2,900**	**8,867**	**2,577**	**779**

208

2414

TARGET INDUSTRY PROFILE: PROFESSIONAL BASED WHITE COLLAR OPERATIONS

Prepared for:

GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP
JANUARY 1999

Prepared by:

The
WADLEY-DONOVAN GROUP
973.540.0012

209

2414

TABLE OF CONTENTS

Section

Introduction 1

Executive Summary 2

Industry Profile:

1 Definition 6

2 Employment Composition 9

3 Target Trends 18

4 Major Area Employers 26

5 Principal Locational Criteria 28

6 Rationale for Selection 37

7 Background Data Appendix

Table A-1 – Demographic Characteristics A-1

Table A-2 – Labor Force Characteristics A-13

Table A-3 – Economic Structure, Greater Cincinnati, Employment by Key Industry Sector (1990-1995) A-18

Table A-4 – Cities Accessible from Cincinnati/No. Kentucky Intl. Airport within 1½ Hours or Less by Non-Stop Flight ... A-19

Table A-5 – Degrees Granted by Greater Cincinnati Post-Secondary Schools A-21

INTRODUCTION

This target industry profile is the product of a contract between The Wadley-Donovan Group (WDG) and the Greater Cincinnati Regional Marketing Partnership. WDG was retained by the Partnership to profile three Partnership selected target industries or activities. This document profiles one of these industries: Professional Based White Collar Operations. This target consists of three sectors: Corporate Headquarters and Sales Offices, Technical Support Centers, and Business Support Office Operations. This profile defines, outlines the employment composition and recent locational trends of the target. It also presents the target's principal locational criteria and the strengths of Greater Cincinnati for the activity.

WDG is a management consulting firm that specializes in location consulting. Its clients include many of the world's leading companies. As an outgrowth of this corporate consulting, WDG is frequently asked by economic development agencies and utilities to assist them with their economic development programs. Assistance is typically provided in sales and marketing, strategic planning, database development, overall product development, and assessment. Clients have included New Orleans; Tulsa; Orange County and Orlando, FL; Memphis; Phoenix; Asheville, NC; Raleigh; Kansas City; Richmond; Jackson, TN; Mobile; and the states of Delaware, Iowa, Kansas, Kentucky, Maryland, and Washington.

To complete this report WDG analyzed published data provided by the Partnership and its member localities, interviewed local employers and educators and from its own proprietary and published databases. Throughout the report, WDG employed its knowledge of industry locational trends gained from its corporate location consulting.

2414

211

EXECUTIVE SUMMARY

The Greater Cincinnati Regional Marketing Partnership area consists of the 13 counties of the Cincinnati-Hamilton, OH-KY-IN Consolidated Metropolitan Statistical Area (CMSA), plus the City of Cincinnati. Figure 1 shows the strategic location of the CMSA within the Midwest and Upper South. Figure 2 shows the location of the counties within the CMSA.

This metro area has an estimated 1998 population of 1.9 million, and a civilian labor force of slightly more than 1 million. It is a regional and national corporate office center, including the headquarters of 14 Fortune 1000 companies, including six Fortune 500 companies. In addition to these corporate headquarters, Cincinnati is home to subsidiary and divisional headquarters, regional and national sales centers, business support offices, (e.g. high-end back offices such as insurance claims processing, shared service centers, and investment service centers), and technical service centers.

This ability to successfully support such a range of operations with different locational requirements points to a special situation: the metro area is one of the few locations in the country that offers excellent opportunities for headquarters, sales offices, technical support centers and business support offices. Most locations offer opportunities for one or possibly two of these functions. It is rare to find a location that can support all four. This unusual situation allows many of the area's local companies to house these functions at one facility in Greater Cincinnati. The advantage of co-located operations include:

- Avoidance of redundant facility-related positions (e.g. receptions, mail clerks, employment representative, etc.) and, consequently enjoy savings in occupancy costs.
- Shortened lines of communications.
- Career paths that are unhampered by relocation considerations.
- Avoidance of a "we-they" culture.

The key assets offered by the metro area for the targeted functions include:

1. A Delta Air Lines hub with non-stop international service to London, Frankfort, Paris, Montreal and Toronto. Parts of the metro area are also within acceptable driving time to the Dayton, Ohio, Louisville, KY and Lexington, KY airports.

2. A growing presence of foreign corporate functions and other investment from Japan and Europe. This investment is creating an expanding multi-cultural population and international business service base. These developments coupled with Delta's expanding international air service, and overall moderate operating costs position the area as a strong contender for global office operations.

3. A combination of superior air service and location that allows for round-trip one day travel to most parts of the country, increasing executive effectiveness.

4. A good to excellent ability to recruit well educated, skilled and experienced clerical, technical, professional and managerial talent from the local labor market at a modest cost, a key asset for technical support centers and business support offices.

5. An excellent ability to recruit top flight talent from other parts of the country, due in large part to the area's moderate cost-of-living, low to moderate crime rates, wide choice of public and private secondary schools, solid cultural and recreational opportunities, strong medical care, big league sports, diversified and affordable housing opportunities within short commutes to the principal business sectors, and solid spousal employment avenues.

6. Numerous higher educational institutions that include two and four year colleges and universities. These institutions produce over 16,000 graduates annually. Full-time and part-time undergraduate and graduate programs are available in business and technical disciples, such as computer science.

7. Diversified locational choices that include downtown Cincinnati, suburban settings, and exurban venues. Sites and buildings suitable for corporate headquarters, sales centers, technical service centers and business support offices are available in three states.

8. Moderate labor, tax, and real estate costs.

9. A strong corporate presence and the necessary supporting business infrastructure.

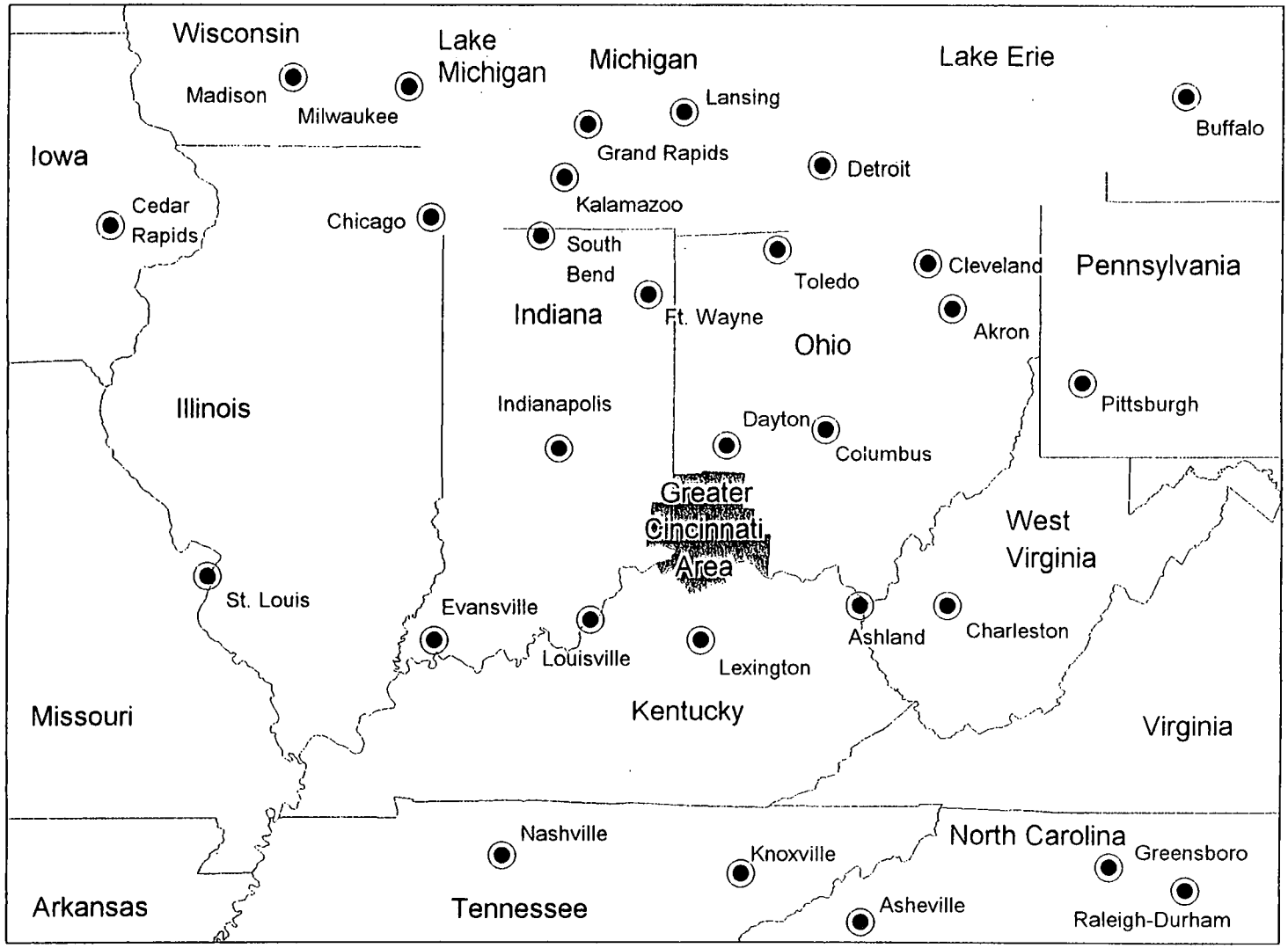
WDG recommends that the Partnership conduct a strong marketing effort to firms with the targeted functions within a 500-mile radius. Companies with operations in smaller cities offer the best marketing opportunity because of the improved air service and labor recruiting conditions in the Cincinnati area. Greater Cincinnati also would be attractive to companies in major metropolitan areas with much higher housing, labor and office space costs. Greater Cincinnati can be promoted as a location for each of the four targets, or as a location where two or more of the functions can be co-located in a single facility.

Based on our interviews with major employers in the area, we do caution that care be exercised in positioning new business support or high-end back office operations in the area. Current employers will not welcome a major facility of this nature in immediate proximity to their offices, mainly because of a tightening labor market. Recruiting efforts should focus on support offices that are truly up-scale (i.e. with college graduates comprising the bulk of the workforce). Finally, downtown office development should be encouraged to allow a wider choice of location options, especially for headquarters operations.

2414

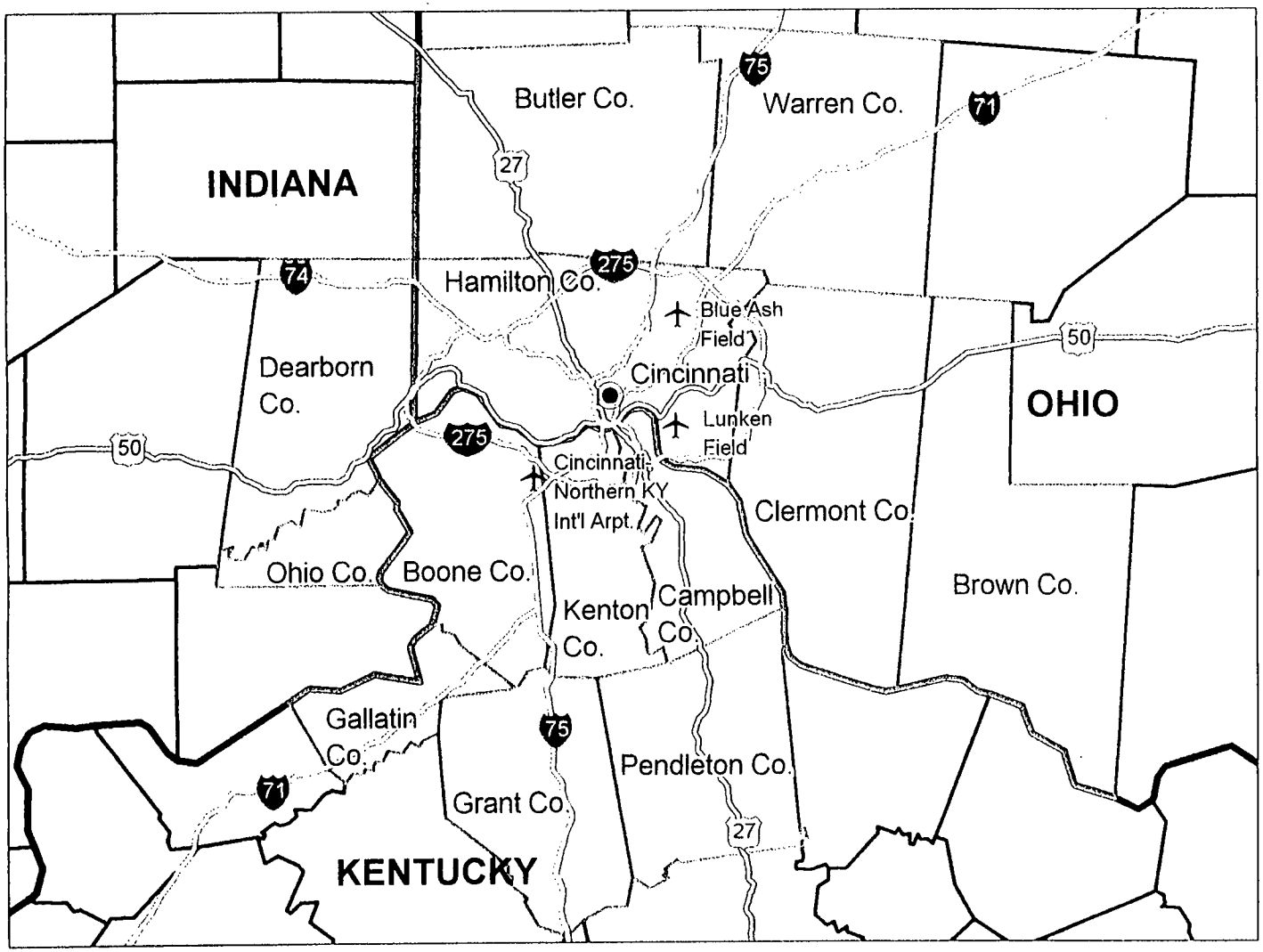
213

FIGURE 1
THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA WITHIN THE MIDWEST U.S.



214

FIGURE 2
THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA



215

2414

DEFINITION

Corporate Headquarters and Sales Offices

A corporate headquarters, or home office, consists of senior line executive positions to which is given the responsible of guiding and administratively supporting a business enterprise, and the requisite support staff. Headquarters can embrace parent companies, divisions and subsidiaries.

- Major functions housed at home offices include business strategy, corporate governance, legal/regulatory compliance, government/community relations, finance, human resource administration, technology administration, operations oversight and other administrative support.
- Among manufacturing companies, R&D functions are often either co-located with headquarters or situated within a short drive. Given compressed product development cycles, it is often advantageous for senior engineering, manufacturing and sales marketing executives to be in close physical proximity.

Sales offices represent field sales activities serving a defined territory, which can be multi-state, or a metropolitan region. The mission of a sales office is twofold: to increase market penetration and protect market share. To meet these goals, frequent and close contact with existing customers is necessary. Functions that are sometimes co-located with sales include customer service, telemarketing, collections and field service support (also known as user support).

Multi-state sales offices cover most industries, but are most common in the manufacturing sector (especially pharmaceuticals, production machinery and equipment, office machinery and equipment, computer hardware), business applications and networking software, telecommunications, transportation services, financial services, insurance, and business services.

Technical Support Centers

Technical support centers (TSCs) are a sophisticated form of inbound call center operated by or for companies to provide ready access to expert telephone assistance with products or services. Most TSCs can be classified into one of two functional categories: product-based or information-based.

- Product-based TSCs provide telephone guidance on the installation, operation, and maintenance of physical products such as workstations, telephone systems and computers.

- Information-based TSCs provide telephone assistance to consumers of less tangible products such as software and application of statistical control processes.
- Both categories of TSCs need individuals who are proficient in and knowledgeable of a company's specific products and services. TSCs require a more educated workforce with higher levels of cognitive skills than what are needed for standard call centers. While the bulk of new hires are trainees, they must display strong problem solving abilities, solid communications skills, and PC literacy.

Technical support centers can be business to consumer, business to business, or both. They are most common in the manufacturing, transportation, software, and utilities, although they also appear in the financial services and insurance sectors. Functions performed at technical support centers can embrace any of the following:

- Counseling on the installation, operation, maintenance and warranties of equipment such as computers, computer printers, copiers, fax machines, robotics, industrial machinery, appliances, machinery parts and components, etc.
- Assisting company field repair or service technicians with detailed technical information on specific products while those technicians are servicing equipment at customer sites.
- Receiving orders for special replacement parts from customers and company technicians servicing machinery and equipment on customer sites.
- Providing routing/tracking information for product shipment.
- Guiding operations personnel on application of software, models, and statistical processes.
- Assisting customers with technically directed computer software questions.

The organization of a TSC can assume a variety of forms. Some TSCs are stand-alone facilities, remote from other corporate functions. Others are combined with existing office or administrative functions, or are located at corporate headquarters. In general, the hours of operation in most TSCs span much longer than the normal business day. Often, a TSC handles calls from all over the US, which means its hours of operation must be convenient to callers across multiple time zones. Occasionally, a TSC will also handle inquiries from Europe and Asia, which further stretches its hours of operation.

TSCs are often linked with traditional back-office administrative and call center functions. However, there is a growing trend toward independent centers. Labor markets are driving the trend. TSCs require a different mix of skills than traditional administrative offices and call centers. As a result, many companies are segregating TSCs from other activities. Examples include Hewlett Packard in Boise, Idaho; Eaton in Norfolk, Virginia; Utilicorp United in Omaha, Nebraska and AOL in Jacksonville, Florida.

217

2414

Many business sectors have functions that could be characterized as TSCs. However, those industries in which TSCs are most common appear in Table 1.

TABLE 1
INDUSTRY SECTORS WHICH FREQUENTLY MAINTAIN TECHNICAL SUPPORT CENTER OPERATIONS
Source: WDG Project Files

Industry or Function	SIC Code
Manufacturing	20 to 39
Telephone communications	4813
Air transportation	45
Surface transportation	40,42,44
Software	7371,7372

218

Business Support Operations

Business support offices embody administrative support and customer contact operations requiring a high proportion of two and four year college graduates. Key responsibilities of employees often involve one or more of the following: resolving customer complaints or questions using independent judgement, providing direction and advise (e.g., investment) to customers, interesting customers in purchases of additional products/services, and processing and analyzing information. Business support office operations are common to all business groups. Examples of business support office functions include:

- Insurance claims processing.
- Human resource service delivery centers (for employees and retirees).
- Shared services centers combined corporate wide (e.g., accounting, purchasing, benefits and payroll administration and other support functions).
- Shareholder and investment services centers (e.g. account servicing and management, investment counsel, portfolio management).
- Administrative services (a blend of professional and clerical staff operations, including accounting, management information, human resources, taxation, legal, real estate, human resources, etc.).

EMPLOYMENT COMPOSITION

Corporate Headquarters and Sales Offices

Headquarters are staffed by executives, professionals, technicians, and their support staff. A diverse range of skills is employed at these operations, as implied by the varied nature of functions they execute. Executive positions in these operations can include those listed below. Tables 2-5 present the staffing profiles from past WDG headquarters projects.

- Chief Executive Officer
- Chief Operating Officer
- Vice President of Human Resources
- Senior Vice President Technology
- Executive Vice President, Operations
- Senior Account Managers
- Chief Administrative Officer
- Chief Financial Officer
- Controller
- Treasurer
- Product Managers
- General Counsel
- Vice President of Corporate Real Estate

TABLE 2
INSURANCE CARRIER COMPANY HEADQUARTERS STAFFING PROFILE
Source: WDG Project Files

Positions	Number of Employees
Exempt	**429**
Executive Vice Presidents	5
Senior Executives	6
Vice Presidents	23
Associate Vice Presidents	17
Junior Officers	18
Directors/Managers	117
Senior Professionals	124
Professionals	119
Nonexempt	**166**
Senior Support	85
Entry Support	81
Total Employees	**595**

219

2414

TABLE 3
MAJOR RETAIL COMPANY REGIONAL HEADQUARTERS STAFFING PROFILE
Source: WDG Project Files

Positions	Number of Employees
Exempt	**22**
Regional Operations Manager	1
Personnel Administrator	1
Loss Prevention Manager	1
VP-Merchandising	1
Buyer	4
Assistant Buyer	4
Merchandise Coordinator	1
MIS Coordinator	2
Real Estate Specialists	2
Store Planner	1
Construction Project Manager	1
Computer Operator	1
Peripheral Equipment Operator	1
Advertising Specialist	1
Nonexempt	**10**
Secretary	4
Accounting Clerk	2
General Clerk	2
Office Manager	1
Receptionist	1
Total Employees	**32**

220

TABLE 4
MAJOR PHARMACEUTICAL COMPANY HEADQUARTERS STAFFING PROFILE
Source: WDG Project Files

Positions	Number of Employees
Exempt	**1,181**
Entry	127
Entry-Professional	210
Senior Professional	286
Managers	241
Senior Managers	189
Executive	78
Senior Executive	50
Nonexempt	**520**
Total Employees	1,701

TABLE 5
CONSUMER PRODUCTS COMPANY HEADQUARTERS STAFFING PROFILE
Source: WDG Project Files

Positions	Number of Employees
Exempt	**84**
Officers	9
Directors	21
Managers	27
Professionals	27
Nonexempt	**30**
Support Staff, Senior	10
Support Staff, Junior	10
General Clerk	8
Technician	1
W/H Operative	1
Total Employees	**114**

221

2414

Sales offices are staffed by sales professionals, account managers, clerical support staff, and sometimes field technical support personnel. Table 6 displays human resource specifications from a past WDG sales office project.

TABLE 6
CHEMICAL COMPANY SALES OFFICE
Source: WDG Project Files

Positions	Number of Employees
Exempt	**21**
Vice President	1
Sales Manager	1
Sales Executive	1
Sales professionals	5
Field Service Support	10
Customer Service Supervisors	2
Office Manager	1
Nonexempt	**33**
Receptionist	1
Order Clerk	2
Secretary	1
Data Entry Clerk	2
Billing Clerk	1
Accounting Clerk	1
Customer Service Reps	25
Total Employees	**54**

222

Technical Support Centers

The great majority of employees at TSCs are Technical Service Representatives (TSRs), which often outnumber supervisory staff by a factor of over 20. Although TSRs are usually recruited from the local labor market, supervisory staff for start-up operations is often relocated from other company locations.

Skills required for a TSR vary from operation to operation. Ability to master technical information on specific products and services is central. A four-year college degree is commonly required. In the absence of a college degree, many TSR positions require several years of

relevant industry experience and a two-year degree. Disciplines frequently required include computer science, engineering, operations research and liberal arts (with some computer literacy).

Most TSC operations are computerized and networked, so basic computer skills are essential for TSRs. A small cadre of network technicians is typically on-staff at each TSC to maintain the system. TSC systems are usually developed and installed by off-site technicians, either from headquarters or by an outside vendor.

Wages paid at TSCs vary depending on the needed skill base, individual company policy, and local labor market conditions. Most TSCs pay wages in line with their area's market rates. Entry level starting wage levels are usually in the $10-$15 per hour range.

Total employment in a TSC can range from a small center with a few individuals to a large operation that employs well over 1,000. A typical center, however, will employ 100-250 people. Although no two TSCs are exactly alike, Table 7 displays human resource specifications from a blend of recent WDG technical service center projects. The staffing model outlined in Table 7 represents the kind of TSC that could be anticipated as a prospect for location in the Greater Cincinnati region.

TABLE 7
TECHNICAL SUPPORT CENTER STAFFING
Source: WDG Project Files

Positions	Number of Employees
Exempt	16
Management	6
Technical Support Team Leader	16
Network Technician	2
Clerical	10
Technical Support Personnel	175
Full time (75% entry level)	140
Part time (40% entry level)	35
Total Employees	209

223

2414

Business Support Offices

Typical size ranges for these offices are 200-400 employees. Frequently, over 50% of an operation's center staff will be professional. For shareholder and investment services, a significant percentage of employees will need Series 6 and 7 National Association of Security Dealers (NASD) licenses. Prototypical staffing profiles for claims processing, shareholder/investment services, shared services, and a corporate infrastructure support center are present in Tables 8-11.

TABLE 8
CLAIMS PROCESSING CENTER STAFFING PROFILE
Source: WDG Project Files

Position	Number of Employees
Exempt	**110**
Underwriting Technical Assistant	17
Underwriting Specialist	8
Phone Claims Representative	39
Sr. Claims Representative	26
Claims Underwriting Supervisor	10
Accountant	2
Human Resources Specialist	2
Vice President	6
Nonexempt	**94**
File Clerk	12
Distribution Clerk	17
Sr. Customer Service Representative	19
Rater/Coder	34
Receptionist	1
Secretary	8
Office Manager	1
Payroll Clerk	1
Facilities Administrator	1
Total Employees	**204**

224

TABLE 9
SHAREHOLDER/INVESTMENT SERVICES STAFFING PROFILE
Source: WDG Project Files

Position	Number of Employees
Exempt	**325**
Retirement Plan Representative *	70
Retail Account Representative *	190
Retirement Plan Specialist	15
Supervisor	35
Trainer	5
Human Resources Specialist	3
Accounting	2
Manager	5
Nonexempt	**88**
Associate Retirement Plan Rep	20
Jr. Retail Account Representative	40
General Clerk	10
Payroll/Accounting Clerk	3
Receptionist	1
Facility Administrator	2
Secretary	8
Administrative Assistant	4
Total Employees	**413**

* Some companies will classify these positions as nonexempt.

225

2414

TABLE 10
SHARED SERVICES CENTER STAFFING PROFILE
Source: WDG Project Files

Position	Number of Employees
Exempt	**180**
Accountant	70
Human Resources Specialist	25
Human Resources Customer Service	40
Supervisor	35
Manager	10
Nonexempt	**226**
Jr. Accounting Clerk	80
Intermediate Accounting Clerk	50
Sr. Accounting Clerk	35
Payroll Clerk	5
Human Resources Clerk	35
General Clerk	10
Receptionist	1
Secretary	7
Administrative Assistant	3
Total Employees	**406**

226

TABLE 11
CORPORATE INFRASTRUCTURE OFFICE SUPPORT CENTER STAFFING PROFILE
Source: WDG Project Files

Position	Number of Employees
Exempt	**215**
MIS (Programmer/Analyst)	60
Real Estate (Facility Management)	10
Human Resources (e.g. Benefits)	30
Finance/Accounting (Analyst, Accountant)	60
Supervisor	30
Manager	15
Vice President	10
Nonexempt	**215**
Accounting Clerk	110
Human Resources Clerk	15
Human Resources Customer Service	35
Real Estate Customer Service	10
Network Specialist	15
General Clerk	12
Receptionist	1
Secretary	10
Administrative Assistant	7
Total Employees	**430**

227

2414

TARGET TRENDS

Corporate Headquarters and Sales Offices

A recent trend in corporate America is to view non-core business support activities (e.g. real estate, human resources, and technology-such as management information systems) as a unified platform under the heading of "corporate infrastructure". From this unified platform, operating strategies are devised to maximize the effectiveness of support units. Development of these strategies requires frequent personal interface between senior executives of the support actives and headquarters based top operations executives. Easy physical access between these executive groups is imperative if infrastructure (or support) activities are physically separated from executive headquarters offices.

Corporate headquarters make up a small percentage (less than 5%) of all business location activity. There is an estimated 150-200 Fortune 1000 headquarters (home office, division and subsidiary) moves per annum. The preponderance of these moves is either local (within the same city) or short distance (within the same metro area).

In the mid-1990's, long distance relocation of corporate headquarters has been an infrequent occurrence. Several factors have contributed to this reduction of long distance home office moves. These include the following:

- Many corporations have already moved cost sensitive operations (i.e. back offices) out of headquarters to lower operation costs.
- Outsourcing of non-core activities continues to grow.
- The trend of decentralizing management infrastructure to the field continues.
- The cost differentials among cities that can sustain a global business have narrowed, especially salaries and to a lesser extent office space.
- It is becoming increasingly more difficult and expensive to relocate professional and managerial talent, which increases both cost and business disruption risk of a headquarters move:
  - Younger professionals place a greater emphasis on family, roots, and preferred lifestyles.
  - Alternative job opportunities are manifold.
  - Spouses often have high quality jobs and therefore resist relocation.

Despite these trends, there are compelling reasons why companies have and will continue to relocate home offices. In WDG's view there will be a moderate increase in headquarters relocation over the next five years due to several factors.

1. Many companies experience difficulties recruiting managerial/professional talent on a national or sometimes international scale, and this experience is expected to continue. Such difficulties are especially troublesome for companies located in small, remote communities. Examples include Quaker State (Oil City, PA to Dallas, TX), Ashland (Ashland, KY to Northern Kentucky), Northeast Tools (from Lyndonville, VT to Greenville, NC), Fort Dodge Laboratories (from Fort Dodge, IA to Overland Park, KS), Philips Electronics (Seneca Falls, NY to Ann Arbor, MI) and Gateway 2000 (North Sioux City, SD to San Diego, CA).

   Recruiting can also pose a staff challenge for companies located in areas characterized by high housing costs and long commutes. This dynamic comprised the main reason for relocation of corporations such as UPS (Greenwich, CT to Atlanta, GA), Hughes Missile Group (Los Angeles, CA to Tucson, AZ), Coca-Cola Nestle Refreshments' new headquarters established in Tampa, FL, and Sea-Land Services from Northern New Jersey to Charlotte, NC.

2. Headquarters are becoming smaller due to re-engineering, decision decentralization, and outsourcing. An illustration is Texaco's recent decision to trim headquarters staff from 500 to 70. Because smaller headquarters are easier and less costly to relocate than larger headquarters, there probably will be gains in home office moves over the next few years. As noted above, these gains will be pronounced among companies with headquarters in small communities with limited business and air service, and those located in large expensive metropolitan areas. These smaller head offices will gravitate toward metro areas that satisfy business operating needs and lifestyle preferences of top management.

3. Some companies need to have their headquarters closer to their primary markets and customer base. Examples of companies that have relocated their home offices for this reason include:

   - Exxon from New York, NY to Dallas, TX.
   - Gates Rubber from Denver, CO to St. Louis, MO.
   - SBC Communications (formerly Southwestern Bell) from St. Louis, MO to San Antonio, TX.
   - General Dynamics from Ft. Worth, TX to Northern Virginia.

4. Others relocate headquarters to reduce operating costs, such as:

   - Peterbilt Motors (Paccar Division) from Los Angeles, CA to Dallas, TX.

227

2414

- GTE from Stamford, CT to Dallas, TX.
- Fila USA (formerly Fila Footwear) from New York, NY to metropolitan Baltimore, MD.
- 1800 Batteries from Silicon Valley to Reno.

5. Some headquarters relocations occur because of consolidation after a merger/acquisition, or as a part of a corporate restructuring. Some examples include:

   - Air Trans (Value Jet and Air Ways to Orlando, Florida).
   - Vlasic Foods (consolidated divisional marketing from Farmington Hills, MI to the parent company, Campbell Soup, headquarters in Camden, NJ).
   - Amoco Corporation Divisional headquarters consolidation of units in Denver and Houston into Houston.
   - Proctor & Gamble consolidation of divisional R&D headquarters from Norwich, NY and Shelton, CT to Cincinnati.

230

6. Headquarters relocations also occur as an outgrowth of re-engineering strategies and in an effort to change corporate culture. Examples of such relocations include:

   - Ford Lincoln-Mercury Division headquarters from Dearborn, MI to Irvine, CA.
   - Maybelline home office from Memphis, TN to New York, NY.
   - Holiday Inn corporate headquarters move from Memphis to Atlanta (direct air access to parent headquarters in London was also a factor).
   - Kodak Imaging Division headquarters from Rochester, NY to Northern Virginia.
   - Westinghouse (now a broadcasting company) from Pittsburgh, PA to New York, NY.
   - JC Penney corporate headquarters from New York, NY to Dallas, TX.

Sales offices remain a locationally active segment of the market. This situation is due to a combination of forces, including:

- Strong economic growth.
- Demands placed on vendors to be located close to customers.
- The need for companies to quickly respond to customers needs.
- The need for easy access to existing and potential customers.
- Consolidations of sales/service centers.

Numerous (probably over 1,000) sales/service centers are established annually. Examples include:

- Wells Fargo Armored Services in metropolitan Kansas City.
- Chevron West Coast consolidation in San Ramon, CA.
- Stephens (an investment firm headquartered in Little Rock, AR) in Dallas, TX.
- AST Research in Ft. Worth, TX.
- NWNL (insurance) consolidation of Connecticut and Pennsylvania operations into northern New Jersey.
- USF&G in Indianapolis.
- Ticketmaster in Virginia Beach.
- Kodak South America regional headquarters in Miami, FL.
- WorldCom sales/technical support center in Tulsa, OK.

There is a trend for company/customer teams to collaborate in product development, technology application, and cost reduction/containment. Regional sales personnel often join forces with other executives throughout the corporate enterprise to either conduct "consultative sales" or partner with a customer in one of the aforementioned arenas.

231

2414

Technical Support Centers

Research efforts on TSCs are severely hindered by an absence of reliable data. The novelty of the activity and the application of TSCs in a wide variety of industries prevent coordinated data collection. Nevertheless, it is clear that the number of TSCs operating in the country is growing rapidly. Companies have realized that an effective TSC can be a major competitive advantage. In fact, the advantages offered by a well-run TSC are so apparent that TSCs are rapidly evolving into a competitive necessity.

There is no differentiation in available statistics by call center subsectors. Data tends to be collected in the aggregate, with no consideration for the different activities and subsectors of call centers, or for the industries in which they operate. For example, a facility that makes outbound telemarketing calls is considered identical in the industry literature to a phone center that handles inbound calls concerning software installation. Both are considered simply "call centers". Consequently, it is impossible to gauge the relative size of individual call center industry subsectors. Therefore, reliable statistics on the TSC subsector do not exist.

Data collection is hindered because TSCs and other call centers exist in numerous industries. TSCs are more accurately described as a function than an industry. As such, there are no specific SIC codes pertaining to TSCs. Rather, TSCs are classified according to the business of the parent company. For example, a TSC which serves truck freight customers will be classified in SIC industry group 4213, while a software company's TSC would be considered as part of SIC 737. Consequently, when marketing the region to this sector, contact will have to be established with the companies in the aforementioned broad industries (i.e., manufacturing, transportation, utilities, and software).

232

TSCs are a relatively new corporate function. Although TSCs have existed for quite some time, they have only recently (early 1990's) become a significant component of manufacturing, software, and logistics firms. Unlike more established activities, which almost always maintain professional societies and research centers to collect, analyze, and report industry-specific data, few organizations exist which monitor the technical call center "industry" consistently. Several associations, which focus on call centers, do provide some information and education on technical support functions. Such associations include the International Quality and Productivity Center, and the software section of the IEEE. Additionally, industry trade associations i.e. computer, insurance, banking, customer service, consumer products, will sometimes provide educational forums for technical support centers.

Despite the dearth of statistical information, enough broad call center data exists to suggest that the number of TSCs is growing rapidly in the US.

- Toll-free calling has experienced staggering growth. According to the Center for Customer Driven Quality (a major call center research institution at Purdue University), Americans placed 15 billion toll-free calls in 1995. This volume is well over 1,000 times the number of toll free calls placed in 1980.

- The call center services market (of which TSCs are a subset) is projected to grow steadily in the future. Industry sources project that call center activity will grow by nearly 16% annually through 2003.
- There are many reasons for the impressive forecasted growth of the target industry. TSCs are now less expensive to set up and have become an essential competitive tool for corporations in many industries. The depth and responsiveness of technical support can be a distinguishing feature for customers in both first time sales and upgrading product purchases. This can be critical for small businesses, especially those new to the market.
- The barriers to establish a TSC have been lowered, making TSCs possible for even small businesses. A few years ago, the capital requirements for setting up a TSC could be met only by the largest corporations. However, the steadily declining cost of equipment has sharply reduced TSC start up expenses. Smaller businesses are now able to enjoy the same competitive advantage once available only to the largest companies. Indeed, shrewd small business operators realize that technical and customer support have become a product dimension on par with price, quality, packaging, and marketing/sales. Smaller businesses that offer superior technical support can distinguish themselves from larger competitors that can usually produce goods more cheaply or have better distribution channels.
- TSCs have evolved from a competitive advantage to a competitive requirement. Consumers now expect free, immediately accessible expert assistance for the products and services they purchase. TSCs have become so commonplace that firms that do not support their products in this fashion are at a severe competitive disadvantage. Consequently, more and more firms are being forced to set up TSCs in order to remain competitive.
- TSCs enhance management's ability to control the quality and content of their company's customer service. Companies wish to provide their customers with correct, courteous, and consistent customer service. Any question posed by a customer should elicit the same response from all customer service agents employed by the firm. It is more difficult to achieve this consistency when customer representatives are in multiple locations. Centralized TSCs allow firms to train and supervise their representatives in a consistent, controlled fashion.

Changing labor requirements is one of the most important trends for TSCs. As stated in the Employment Composition section of this report, more stringent staffing requirements distinguish TSCs from the larger set of call centers. TSC personnel must go beyond merely answering phone calls. They must be able to communicate specialized information effectively. Yet, as important as technical knowledge is, there is an increasing emphasis on more general call center skills. There are several reasons for this shift.

233

- TSCs will hire a small core of experienced technical "troubleshooters". The remainder will often be two-year college graduates with a degree in a technical field, or four-year liberal arts graduates. These new hires will undergo extensive training, often requiring 2-4 months. Locations with a large pool of liberal arts college grads that would consider a TSC a challenging work environment (given other local employment opportunities) are preferred locations for this industry.
- Like all business operations, TSC operations face stiff competition for workers with technical skills. Consequently, technically skilled people are in shorter supply and are more expensive to hire.

2414

- TSC managers place increased emphasis on "soft skills" when hiring. Soft skills, such as phone manners, negotiation, and conflict resolution are essential for all TSRs. The most technically literate employee becomes a liability when he or she cannot articulate information effectively or is abrasive to customers. Shortened product life cycles have made product knowledge less important when hiring candidates. Since representatives will be in constant product training, managers have become more interested in employees with a solid base of call center skills.
- Despite the growing importance of "soft skills" in TSC job definitions, technical aptitudes of job applicants are important. The technical customer service rep must become thoroughly familiar with the complexities and applications of specific products. They must also possess problem-solving skills to help customers resolve applications challenges. Additionally, TSCs are becoming more embedded into the corporate organizational hierarchy. Information exchanges between the TSC and other components of the corporation will occur more frequently. As a result, TSCs place a high degree of importance on employee retention.

234

Business Support Offices

Large companies ($50 million +) are increasing consolidation and locating stand-alone centers for either sophisticated customer service or corporate infrastructure services. The common thread among these business activities is a skilled clerical and professional workforce. Two and four-year college graduates typically comprise 50-75% of headcount in upper end back offices.

There are several driving forces behind creation of these business enterprises that started cropping up in the early 1990's. Principal drivers include:

- Achieving greater efficiency by taking customer service and accounting functions out of field operations and centralizing these activities at a single site.
- Taking full advantage of technology by creating a larger critical mass of business operations.
- Reducing business operating costs.
- Improving the responsiveness and effectiveness of customer service (both internal and external).
- Prioritizing career patterns and upward mobility for employees by combining operations (important for recruiting top quality employees, minimizing turnover, and developing future executive talent.

Business support offices tend to service national markets except for claims processing and some shareholder services, which can be dedicated to a regional territory. We are witnessing strong growth in the location of these business operations. Last year an estimated 400 business support offices were established. WDG anticipates a 5% increase in 1999 and a 10% rise in 2000. Illustrative of recent locational activity in this sector are the following:

1. Charles Schwab Southeast shareholder service center in Orlando, FL.
2. T. Rowe Price western region shareholder service center in Colorado Springs, CO.
3. Cigna regional claims processing center in Tampa, FL.
4. FHP national claims processing center in Phoenix, AZ.
5. Bombardier Capital customer service center in Jacksonville, FL.
6. Hewitt and Associates customer service center in Orlando, FL.
7. Chubb rapid response claims center in Norfolk, VA.
8. Lucent Technologies customer service center in Oklahoma City, OK.
9. American Express Financial Advisors shareholder services center inSan Antonio, TX.
10. Ryder Shared Services Center in Atlanta, GA.
11. Tenneco Shared Services Center in Houston (Woodlands), TX.
12. Dun & Bradstreet Shared Services Center in Denver, CO.
13. Times Mirror Shared Securities Center in Bethlehem, PA.
14. McKesson corporate accounting center in Ft. Worth, TX.
15. GMAC Mortgage Customers Service Center in Bloomfield, MI.

235

2414

MAJOR AREA EMPLOYERS

The Greater Cincinnati area is home to many professionally based white collar operations, including the corporate headquarters of 14 Fortune 1000 companies. In addition to these 14, Ashland, Inc (102 on the 1997 Fortune 500 list) just announced it is relocating its corporate headquarters from Russell, KY to Covington, in Northern Kentucky. The advantages of Cincinnati as a location for corporate headquarters, technical centers, and business support offices allow many of the area's companies to combine these functions at a single location in the metro area. Therefore, many of the companies listed as being headquartered in the area also have one or both of the other functions.

A list of representative companies with professionally based white-collar operations and technical centers in Greater Cincinnati is shown in Tables 12 and 13.

TABLE 12
MAJOR CORPORATE HEADQUARTERS
Source: Greater Cincinnati Chamber of Commerce, Fortune Magazine, 1998

Ohio-based Companies
AK Steel Holding *
American Annuity
American Family Insurance
American Financial Group *
Chiquita Brands – Carl Lindner Company
Chiquita Brands International *
Cincinnati Bell *
Cincinnati Financial *
Cinergy *
E. W. Scripps *
Ethicon Endo-Surgery (Division of J&J)
Federated Department Stores *
Fifth Third Bancorp *
Formica Corporation
Frisch's Restaurants
Hilton Davis
Kroger *
Loyal American Life Insurance
Milacron *
Ohio Casualty *
Omnicare
Procter & Gamble *
Sakrete

236

* Fortune 1000 corporate headquarters

TABLE 12 (CONTINUED)
MAJOR CORPORATE HEADQUARTERS

Source: Greater Cincinnati Chamber of Commerce, Fortune Magazine, 1998

Kentucky-based Companies
Ashland *
Gibson Greetings
Heinz Pet Products
International Paper Distribution Group
Star-Kist Foods

* Fortune 1000 corporate headquarters

TABLE 13
TECHNICAL CENTERS AND BUSINESS SUPPORT OFFICES

Source: Greater Cincinnati Chamber of Commerce, Fortune Magazine, 1997

Ohio-based Companies
American Financial – Carl Lindner Company
Burke, Inc. – Market Research
Check Mark, Inc.
Eagle-Picher Industries
GRE Insurance
Great American Insurance – Carl Lindner Company
Lenscrafters
Ohio Casualty *
Ohio National Financial Services
Union Central Life Insurance
Western & Southern Life Insurance
Kentucky-based Companies
Equitable Bag – Midwest Division
Fidelity Investments Operations Center
Toyota Motor Manufacturing, NA

* Fortune 1000 corporate headquarters

237

2414

PRINCIPAL LOCATIONAL CRITERIA

Corporate Headquarters and Sales Offices

There are four key factors that companies consider when seeking a location for headquarters and sales offices. These factors are:

1. Recruitability of executive, managerial and professional talent. Companies must insure that the location has quality-of-life assets that will enhance the recruitment of new executives, managers and professionals and the transferability of employees from other corporate locations. Specifically, a location should have:

   - A broad selection of housing for both top and middle management, available at moderate costs, combined with reasonable cost of living is a pre-requisite for attracting top-notch talent. Companies will avoid the extremes – locations which are either exorbitantly expensive or lack selectivity and geographic dispersion in housing for executives and middle management.

   - Easy, "hassle free" commutes between home and office and to the airport. Locations that provide ample housing opportunities for executive and professional transferees within a commute time of 30 minutes or less have a market advantage.

   - High quality suburban public schools, with an array of courses for both handicapped and gifted students. Such opportunities are a major plus for recruiting executive families. An area also should have a wide degree of choice of private secondary schools.

   - A broad assortment of cultural and recreational offerings, appealing to both families and singles. These offerings are of importance not only in the recruitment/transfer process, but also for entertaining customers, suppliers, and constituencies in the corporate governance hierarchy. Most headquarters and sales offices seek amenities available only in major metropolitan areas, including five-star restaurants and hotels, major-league professional sports teams, and a variety of cultural offerings.

   - Alternate job opportunities. Such opportunities should be available, particularly for managers and professionals recruited from the outside and for newly minted college graduates and MBA's. This is especially relevant for staff positions (e.g., human resources, finance, and information technology) where skills are transferable among industries. If the current job does not work out, a diversified local economy provides a range of alternative employment options.

238

- Spousal employment opportunities are necessary for today's dual-career family. Many metropolitan areas claim to have informal networks for "trailing spouse" employment, but usually these are haphazard in nature. A formal network for spousal employment provides a competitive edge for an area.

- A safe environment helps a city's image, with low crime rates providing executives and managers heightened assurance of family well being, especially when extensive travel is required. The same holds true for the health network; world-class medical facilities add to an area's stature.

- A resident pool of executives and managers. Such a foundation is an asset in that it reduces the need for relocation from other areas of the world. It also provides assurance for prospective relocatees that there will be ready business and social interaction with peers.

2. Accessibility to domestic and international destinations. For headquarters of all types, ready accessibility – e.g. direct air service – to global cities is a locational prerequisite. "Just-in-time" access to customers, suppliers and other company locations translates into speedier decision-making and enhanced executive productivity. Non-stop air service to the nation's 20 gateway airports is a plus.

   Non-stop flights to Canada and Mexico and to major European and Asian cities are a distinct plus for headquarters operations. Non-stop air service to regional metro areas is very important for sales offices. Sales offices also require highway access of three hours or less to major customers. For both headquarters and sales offices, one-day turnaround – the ability to get to a destination, spend a productive day there, and return home in the same day – is most desirable.

3. Available Class A office space. Real estate cost and availability are closely analyzed in the selection of a site for headquarters and sales offices. Leasing is generally the preferred mode of occupancy for sales offices. Headquarters functions can be housed in either owned or leased facilities, depending on factors such as the need for a distinctive corporate image, the need to maintain or change corporate culture, corporate asset strategy, and the timing of a relocation. Quality Class A space should be available in downtown and suburban locations, preferably within a half-hours drive of the area's airport. Headquarters typically seek available space in the range of 50,000-100,000 square feet, while sales offices typically need 10,000-25,000 square feet of space. Headquarters relocation at times will require temporary leasing of space while permanent quarters are being constructed (or refit).

4. A favorable operating environment. The business climate of an area is of special interest to CEO's. State and local income taxes, both corporate and personal, are evaluated in detail by companies seeking a new location. For headquarters, a support network, including other corporate headquarters but also banking, legal and accounting resources must be available. The governmental climate should be favorable to business, with business leaders and associations having access to city and suburban governmental leaders. Incentives, permitting times and the relative tax burdens on businesses, individuals and homeowners are key business climate indicators. Foreign firms frequently will look for the presence of companies from their country. Foreign firms will also seek a strong

support network, such as cultural organizations, consulates, business associations and special educational opportunities (such as Saturday Schools for the Japanese). The image of an area is an important factor for headquarters locations. A metro area has to have an image that is compatible with that of a resident company.

Another factor, local labor availability and cost, is of much lesser importance for headquarters functions, primarily because non-exempt labor represents a relatively small fraction of total staff. Differentials in labor costs, however, are important when companies conduct detailed financial analyses to justify relocation.

The importance of incentives varies among companies. In many headquarters relocations, top management elects to forego negotiations for incentives beyond "as of right" incentives because of the risk of premature disclosure of the intended move. Such disclosure would have a major negative effect on the affected employee population. In addition, since many headquarters moves entail a substantial number of individual relocations, new job creation is proportionately lower than new office start-ups or relocation of business support centers.

240

Technical Support Centers

Infrastructure continues to be a critical locational factor for TSCs. Although most locations in the US maintain sufficient telecommunications infrastructure to accommodate a TSC, the mere existence of satisfactory equipment and service is not enough to make an area suitable for a facility. Other factors include favorable call pricing, strong capabilities for service and equipment innovation, and excellent service delivery. Metropolitan locations typically offer the best infrastructure advantages for TSCs.

- For several reasons, telecommunications costs are reduced in metropolitan areas. Telecommunications infrastructure is extremely expensive to install and maintain. Per customer fixed costs are minimized in metropolitan areas because overall costs are shared by a large number of firms. Furthermore, since many telecommunications firms compete in large urban markets, telecommunications costs in those areas are further reduced by competition.
- The intense competition among telecommunications providers in metropolitan areas encourages continual improvements in service. Capital investments are more easily absorbed in larger markets, where greater numbers of customers can help pay for new infrastructure. For these reasons, service innovations tend to be installed initially in densely populated areas. TSCs located in metropolitan areas have the first opportunity to benefit from telecommunications improvements that may provide them with a competitive advantage.
- Excellent telecommunications service is critical to TSCs. Interruptions in service result in dissatisfied customers. Service disruptions are typically minimized in urbanized areas. Metropolitan areas maintain denser telecommunication networks, which provide more

options for rerouting calls. Technical and service personnel tend to be concentrated in metropolitan areas, minimizing response time when service problems are reported. The most sought after services are:

- Points of presence (POPs) of the major long-distance careers, preferably near to the TSC facility.
- Digital, fiber, ISDN and SONET ring services.

Areas with an established call center industry are attractive for TSCs. Technical service center managers are placing greater emphasis on hiring people with solid customer service skills. Areas with a high concentration of non-technically focused call center jobs are attractive locations for TSCs because these areas tend to have large pools of labor with the basic skills relevant to higher order customer service. Employees in non-technical call center positions can be attracted to TSCs with the offer of more challenging work, higher pay, and an opportunity for continual training.

To qualify as a legitimate candidate for a technical support center, an area must first have an attractive labor market. Labor availability, quality and stability are more important than costs. A list of the most sought after conditions are:

1. Labor Availability

- TSCs average about 200 employees per facility, therefore, the local labor market must be able to offer the requisite numbers of job candidates to fill the array of required positions (as outlined in the Employment Composition chapter of this report).
- At least a 10:1 ratio of graduates from regional schools in liberal arts for each non-clerical position to be filled should be available.
- A minimum 50:1 ratio of underemployed workers for customer and technical service representative positions should be available (e.g. retail store clerks especially computer/electronics, other clerks that interface with the public, retail sales personnel, cashiers, bank tellers, etc).
- Several large liberal arts schools within a 100 mile radius are preferred.
- Two-year community colleges with strong programs in engineering and engineering technologies, telecommunications, operations research, and computer science.
- Existing call centers with a sizable labor base of customer service represetnatives from which experienced personnel could be recruited for training into technical service center representatives.

- Absence of a dominant high tech manufacturing and R&D base which would absorb most of the desirable college graduates for a TSC.

- Locations rich in technically skilled labor will remain attractive venues for TSCs. Despite the increased importance of soft skills in TSC employment requirements, a percentage of applicants with technical and professional skills remain highly desirable.

2. Labor Quality

- A high percentage of the workforce with associate's and bachelor's degrees.

- Annual turnover under 25% per annum for companies paying a prevailing wage.

- A strong availability of labor with basic skills attainment, problem solving skills and PC literacy. Companies need to have a selectivity ratio of at least 5:1 for applicants displaying these characteristics.

242

3. Payroll Costs

- For positions focused on responding to inbound calls, a salary of less than $25,000 per annum is sought for recent college graduates with a liberal arts degree.

- For positions focused on initiating outbound calls, a salary of less than $30,000 per annum with a performance incentive is sought for recent college grads.

- A labor supply/demand balance which will not result in serious future wage escalation.

4. Training

- Pre-employment training programs with funding of $1,000 or more per new hire.

- The ability to implement quickly certificate/continuing education programs at local community colleges, customized for a TSC (either at a two year and/or four year college).

5. Non-Union Operating Environment

- TSCs in the area should be non-union. There should be virtually no union organizing attempts among TSCs in an area.

A strong telecommunications infrastructure has a lower priority than a quality labor market. However, it is still one of the primary factors used in locating technical service centers.

The availability of suitable, competitively priced sites and buildings is important for new and expanding TSCs. The following features are the most important:

1. Available office space. Many, if not most companies seek available office space for their TSCs. Startup times for new facilities are frequently tight, so communities with available space have a competitive edge. Former retail space offers an acceptable option.

2. A single block of space of roughly 23,000 square feet. Typical headcount for a TSC would be 200 people. As TSCs are frequently 24 hour 7 days a week operations, space needed to accommodate the prototypical TSC would be roughly 23,000 square feet for workstations, training and conference rooms, a cafeteria or lunchroom, some office space and a small reception area.

3. A minimum of seven parking spaces per 1,000 square feet of occupied office space.

4. A site and building with strong curbside appeal (or image).

5. Employee amenities such as fast food establishments, health and fitness centers, day care centers, and convenience shopping within walking distance of the facility.

6. Downtown, suburban and exurban sites within a 25-30 minute commute of prime labor pools for this industry.

    - Space costs of $20 per square foot or less for suitable space.

Nonstop air service to major metropolitan areas is frequently desired. Some technical service centers are used for "client showcasing", therefore, non-stop air service to most of the country's 20 gateway cities is desirable. Most firms would also like to be able to get to and from headquarters to the technical centers within one business day (evening stay acceptable).

Quality-of-life is of moderate importance since most new TSC hires are local. However, community image is important to enhance the reputation of both the TSC and the business it supports. Thus, perceived quality-of-life or transferee appeal can be a deciding factor among several strong candidate locations.

243

2414

Incentives are an important deciding point for companies choosing the final location for a TSC among the finalist candidates. Labor market conditions dwarf incentives in relative importance for this industry, but once a shortlist of three to four qualified metro areas emerges, incentives can play a prominent role in the final choice. Most desirable incentives for this industry are:

- Job creation tax rebates
- Grants to help offset one-time costs
- Personal property tax abatement
- Free pre-employment training

Business Support Offices

Labor market conditions and business costs are the two most influential locational determinants for this industry. Due to the high concentration of professionals in a typical business support office, these facilities tend to gravitate toward moderate to large metro areas with a significant university presence. Wage levels for generic positions such as accountant should be at least 10% less than those in the nation's major metropolitan areas (e.g., New York, Chicago, Los Angeles, Houston, Boston, and Atlanta). In order of importance, the following criteria apply to this industry:

1. An area must have a broadly based and ample supply of local labor, including:

   - Experienced professionals e.g., accountants, insurance claims examiners, financial analysts (with NASD series 6 to 7 licenses), systems analysts, programmers, and database managers.
   - College graduates in accounting, business, and liberal arts fields from the local labor market and within a 100-mile radius. The presence of college/university programs in insurance curricula and NASD license programs is a strong plus.
   - Clerical and technical personnel e.g., accounting clerks, LAN administrators, claims processors, customer service representatives, file clerks, and payroll clerks available at reasonable wage levels (e.g., at least 10% below the average of major metropolitan areas, such as New York or Chicago).

2. Labor quality must be high. Key factors include:

   - A well educated population. The percentage of adult residents with a high school diploma, some college or vocational technical education, and an associate's or bachelor's degree should match or exceed the national average.
   - Solid basic skills among job applicants. Skills of particular importance are writing, reading, and arithmetic/mathematics. Basic computer familiarity and keyboarding skills must be readily available within the workforce.
   - A highly rated work ethic and high productivity.

An area's quality-of-life must be attractive to professionals who would be transferred or recruited to the facility from around the country. Key factors include:

- A metropolitan area cost of living that equals or is below the national average.
- Affordable, available housing in neighborhoods with excellent school districts and within short to moderate commute times (i.e., within 30 minutes).
- Good to excellent trailing spouse employment opportunities.
- Attractive scenery and varied recreational and cultural opportunities.

Business operating costs should be markedly lower than locations in which industries with business support offices are concentrated, such as New York, Hartford, Philadelphia, and Chicago. The cost sectors of primary concern include:

- Payroll (including recruiting and training
- Occupancy
- Taxes (especially absence of intangible property taxes on accounts receivables and absence of sales taxes on long distance telephone calls).
- Travel

Efficient business services are a location plus. State-of-the-art telecommunications infrastructure with dual service from two central switching offices is desirable, as are reliable, moderate cost effective utilities, and a local postal service that can efficiently process large volumes of inbound and outbound first class mail. Non-stop air service and preferably one-day itinerary to/from corporate headquarters is preferred.

An area must have available, quality office space. Office space in the 75,000 – 150,000 square foot range is typically needed. Companies will consider downtown space, but they often prefer suburban business parks in a campus environment. Buildings or sites with dual power feed from two separate sub-stations are frequently desired.

Incentives from state and local governments are a factor in attracting business support facilities, especially when distinguishing among finalist candidate locations. Key incentives sought by companies are:

- Up-front grants to help offset one-time costs.
- Job relocation grants or tax rebates.
- Personal property tax abatement.
- Free pre-employment training equivalent to at least $1,000 per new hire.

Companies frequently seek locations that offer low risk of natural disaster (e.g., earthquakes, tornadoes, and severe storms). Areas with high earthquake potential are generally not attractive to companies as locations for their support offices, especially for offices with data centers.

246

RATIONALE FOR SELECTION

Corporate Headquarters and Sales Offices

As a key organizational benefit, Greater Cincinnati can attract consolidated offices, housing both headquarters and "upscale" back-office operations, especially in the financial sector. This is a noteworthy feature since the conflict between criteria for headquarters facilities (high quality-of-life to attract world-class candidates plus excellent accessibility) and for back-offices (such as low operating costs) usually precludes such co-location. Greater Cincinnati has a number of advantages in each of these categories, although local labor costs indicate that the area is best suited for business support offices requiring a skilled work force at moderate (not lowest) cost.

1. Several Greater Cincinnati corporations feature this consolidated organizational model, including:
   - Western and Southern
   - Cincinnati Financial
   - Midland Insurance
   - Ohio Casualty
2. Benefits for co-located facilities include:
   - Avoidance of redundant facility-related positions (e.g., receptionists, mail clerks, employment representatives, etc.) and, consequently savings in occupancy costs
   - Shortened lines of communications
   - Career paths that are unhampered by relocation considerations
   - Avoidance of a "we-they" culture

When evaluated against the first major criterion for locating headquarters and sales offices, recruitability of talent, Greater Cincinnati exhibits a number of advantages. Median home value in Greater Cincinnati is 7% below the U.S. average. The area features a range of housing opportunities, from top executive housing in Indian Springs and Hyde Park to more geographically dispersed areas in all three states for middle management and professionals. As shown in Table 14, median home values are higher in the Ohio portion of the tri-state area, with Warren County values at the top of the local scale ($104,000).

TABLE 14
MEDIAN HOME VALUE BY COUNTY
Source: Claritas

Area	Median Home Value, 1998
Ohio Locality	
Brown County	$62,400
Butler County	94,400
Clermont County	92,100
Hamilton County	96,300
Warren County	103,600
Kentucky Locality	
Boone County	99,700
Campbell County	80,800
Gallatin County	58,300
Grant County	62,900
Kenton County	87,600
Pendleton County	56,300
Indiana Locality	
Dearborn County	76,100
Ohio County	61,400
Greater Cincinnati	**$93,300**
U.S. Average	**$100,600**

1. Reflecting moderate housing values, the cost of living in Greater Cincinnati also falls below the national average (98.5, U.S. = 100).
   - Data is not available for all the fourteen jurisdictions in the MSA, but only Hamilton County exceeds the U.S. norm (by 4%).
   - Boone and Kenton Counties in Kentucky are 5-7% below that average.

2. Easy commutes enhance productivity, as shown in Table 15.

TABLE 15
ONE-WAY COMMUTE TIMES, GREATER CINCINNATI
Source: U.S. Census Bureau

Area	% of Workforce with Commute Times of: Up to 30 Minutes	Over 60 Minutes
Ohio Locality		
Brown County	49.9%	16.2%
Butler County	72.9	2.9
Clermont County	53.2	4.8
Hamilton County	72.6	2.9
Warren County	68.3	2.8
Kentucky Locality		
Boone County	71.0%	3.8%
Campbell County	69.4	4.1
Gallatin County	50.9	11.0
Grant County	51.6	10.9
Kenton County	73.7	3.5
Pendleton County	43.5	19.1
Indiana Locality		
Dearborn County	52.7%	8.1%
Ohio County	49.4%	16.6%
Greater Cincinnati	**69.4%**	**3.7%**
U.S. Average	**69.5%**	**6.0%**

- The highway network in and around Greater Cincinnati includes I-75 and I-71, extending north and south; I-74 providing access to/from the west; and I-275 forming a perimeter beltway around the city. This network provides relatively easy, "hassle-free" commutes by car and offsets the lack of mass transit, especially commuter rail.

- Several interviewees, however, pointed to increasing congestion as businesses gravitate to suburban locales. Studies are underway for a mass transit link between Warren County and the airport, including commuter rail in the Eastern Corridor.

- Several corporate employers in Greater Cincinnati reinforced the supposition that easy commutes translate into enhanced productivity, pointing to the need for longer hours on the part of down-sized employee populations.

3. Public and private schools are an asset in recruiting. This finding reflects the position of interviewees whose companies have relocated to Greater Cincinnati from other regions. (Comparative statistics in individual school districts across the country are not available.)

   - Greater Cincinnati features a number of good to excellent suburban public schools.
     - Indian Hill, Mason, Lakota, Wyoming and Forest Hills were cited by interviewees as top school districts. Most interviewees perceived that Ohio public schools, in general, are leaders in the area.
     - Indiana schools were rated as average, with improvements needed in computer skills for production jobs. More local funding and control typify Ohio schools, with equality of funding a statewide issue (as in many other states).
     - Both Ohio and Kentucky schools offer noteworthy special education programs, for both gifted and handicapped students.
     - Schools in the city of Cincinnati are a cut above those in inner city schools in most major metro areas, with school crime a much lesser issue. The city is a leader in magnet schools and is experimenting with year-round schools, different configurations and alternative schools.
   - Parochial and private schools are excellent.
     - The Cincinnati area diocesan school system is the 10th largest in the U.S.
     - Covington diocese schools are rated tops in the U.S., by the National Conference of Bishops.
     - Typical private school cost is $8-10,000 per year; with parochial schools considerably less.
   - In all, relocatees can choose from a spectrum of school systems, both public and private/parochial, with large to small student populations and with high to moderate/low tax rates.
     - Relocatees from the South and Midwest generally will find that public school quality is better.
     - Relocatees from the Northeast and major West Coast areas can find equivalent quality.
     - No relocatee will face a downgrade in quality.
     - Relocatees need not address the typical trade-off of major metro areas: quality of schools vs. length of commute.

4. The breadth of cultural and recreational offerings in Greater Cincinnati is attractive to relocating families

   - As summarized in Table 16, Greater Cincinnati features an impressive array of cultural and recreational opportunities for a metropolitan area of its size. And, these opportunities are readily accessible from suburban locales.

TABLE 16
SELECTED RECREATIONAL AND CULTURAL AMENITIES IN GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce

Cincinnati Symphony Orchestra
The Cincinnati Pops
Cincinnati Ballet
Cincinnati Opera
Playhouse in the Park
University of Cincinnati College Conservatory of Music
The Ensemble Theater of Cincinnati
Riverbend Music Center
Showboat Majestic
Aronoff Center for the Arts
Cincinnati Art Museum
Contemporary Arts Center
Cincinnati Museum of Natural History
Cincinnati Historical Society
The Children's Museum of Cincinnati
The Cincinnati Zoo
Paramount's Kings Island, a 1,600-acre theme park
The Omnimax Theater in the Museum Center at Union Terminal
20,000 acres of city and county parks
More than 20 state parks within a two hour drive
More than 60 public golf courses and 34 private clubs
The Cincinnati Reds, baseball's first professional team in 1869
The Cincinnati Bengals of the National Football League
The Cincinnati Cyclones of the International Hockey League
The Cincinnati Cheetahs of the United States Interregional Soccer League
The Kroger Senior Classic Golf Tour
The ATP Men's Professional Tennis Championship Tournament
College and University Athletic Programs
Oktoberfest-Cincinnati, the world's largest next to the original in Munich
The Cincinnati Flower Show
Riverfest
Tall Stacks
Ujima Cincinbration
Black Family Reunion

251

2414

- Many of these offerings are family-oriented, enhancing the recruitability of executives and managers in the 30-60 year old age category. WDG's employer interviews produced mixed signals concerning the recruitability of young singles.
  - The relatively new Labor Force Expansion and Attraction (LEAP) program should be a major asset in recruiting young college graduates to the area. The diversity of career opportunities in Greater Cincinnati should be a key focus of the program. Better communication of social opportunities such as the monthly singles gathering at the Act Museum also will help.
- Some interviewees reported difficulties in recruiting managers and professionals from the East and West Coasts, citing the same issues as noted above for singles, plus geographic drawbacks such as climate and distance from the ocean. Assimilation of ethnic groups could be improved although established local institutions such as Saturday Schools do appeal to the Japanese. There is a need for a reception or welcome center that provides guidance on mundane matters such as obtaining drivers licenses for transferees to all three states in the region. Mixers for expatriate executives and spouses at the homes of local community leaders could also help smooth the assimilation process, especially for spouses.

5. The availability of alternate and spousal employment opportunities is another recruiting plus for Greater Cincinnati.

- Many recruits, particularly at the middle management and entry for staff positions (e.g., human resources, finance, and information technology) need assurance of alternate career opportunities if the current job does not work out. Both the diversity of Greater Cincinnati's economy and clusters of headquarters facilities and of financial sector firms provide the necessary margin of assurance.
  - The structure of Cincinnati's economy, in terms of employment by industry sector, closely mirrors that of the U.S. The only exceptions are slight under-representation in the services sector and slight over-representation in wholesale and retail trades. The proportion of employment in the financial sector in the Ohio portion of the area exactly matches the U.S. norm. Table A-3 in the appendix shows private industry employment in key sectors.
- The area is home to 14 Fortune 1000 headquarters, including four in the financial sector and three in manufacturing, as outlined in Table 12.
- The Job Bank in Cincinnati, formed by a coalition of 25 companies, with Procter and Gamble as the spearhead, focuses on finding spousal employment. As such, it institutes a major recruiting asset for the area. With a paid staff of two or three, the Job Bank utilizes the services of an out-placement firm. We suggest that the services of the Job Bank be communicated to all major corporations in Greater Cincinnati, with expansion in membership beyond the current 25 a distinct possibility.

6. Safety and health data also should assist in recruiting talent to Greater Cincinnati.

- As shown in Table 17, Greater Cincinnati's relatively low crime rates – both violent and non-violent crime rates are well below the national average, except for Hamilton County's non-violent rate – will appeal to potential executive/managerial transferees, and especially to those of international origin. This advantage bolsters the viewpoint of corporate interviewees that Cincinnati "has all the amenities of a large city without large city negatives".

TABLE 17
CRIME RATES PER 100,000 POPULATION BY JURISDICTION (1995)
Source: Federal Bureau of Investigation

Area	Non-Violent Crime Rate	Violent Crime Rate
Ohio Locality		
Brown County	NA	NA
Butler County	3,907	444
Clermont County	2,803	131
Hamilton County	4,546	646
Warren County	NA	NA
Average (Ohio Sector)	3,711	475
Kentucky Locality		
Boone County	3,293	247
Campbell County	3,263	227
Gallatin County	1,085	146
Grant County	1,919	139
Kenton County	3,500	475
Pendleton County	958	201
Average (Kentucky Sector)	3,166	256
Indiana Locality		
Dearborn County	663	354
Ohio County	NA	NA
Average (Indiana Sector)	591	316
U.S. Average	4,338	682

253

2414

- Health care in the area is another asset, especially in the Ohio portion of the MSA where the concentration of physicians per 100,000 population exceeds the national average by well over 10%. (See Table 18.)

TABLE 18
HEALTH CARE BY JURISDICTION
Source: U.S. Bureau of the Census

Area	Physicians Per 100,000 Population	Total # of Hospitals
Ohio Locality		
Brown County	51	1
Butler County	105	4
Clermont County	66	1
Hamilton County	386	19
Warren County	67	0
Average (Ohio Sector)	256	25
Kentucky Locality		
Boone County	115	0
Campbell County	147	1
Gallatin County	17	0
Grant County	23	1
Kenton County	215	4
Pendleton County	23	0
Average (Kentucky Sector)	152	6
Indiana Locality		
Dearborn County	66	1
Ohio County	NA	0
Average (Indiana Sector)	56	1
Greater Cincinnati MSA	262	32
U.S. Average	224	

- Area health institutions are internationally recognized. The University of Cincinnati Medical Center ranks among the top 10 in the country in medical research funding. The Children's Hospital ranks among the top 3 of its kind in the U.S. The Shriners Burn Institute is one of four such national facilities. Health care is affordable, with costs about 5% below the U.S. average.

7. Local WDG-interviewed employers give good marks to the recruitability of talent from outside the area, giving a 4.0 rating to recruitability from outside the area (5=best, 1=worst).

The second major criterion for headquarters and sales offices is accessibility. Air and surface transportation to and from Greater Cincinnati is excellent.

1. For headquarters of all types, ready accessibility to domestic and international operations is a locational prerequisite. Our work with companies such as Star-Kist, Anchor Hocking, James River, Ashland, Inc. and Heinz Pet Products bears out the overriding importance of non-stop air service to and from world-wide destinations. Each of these corporations selected Cincinnati as a headquarters location.

2. Good accessibility, primarily by air, translates into better proximity to customers, suppliers, and other company facilities located elsewhere and improved productivity for corporate executives. In Toyota's case, suppliers must visit the company's Northern Kentucky headquarters. For Mazak, nearly half of its market for machine tools lies within a 250 mile radius of Cincinnati, pointing to the importance of the interstate highway network that surrounds the city as well as air service.

3. Largely because Cincinnati is a key hub for Delta Air Lines, non-stop flights are available to most of the major U.S. cities, as shown in Table 19, with at least three flights to each metro area.

TABLE 19
AIR SERVICE TO MAJOR U.S. CITIES
Source: OAG

Destination City	# of Daily Flights	Destination City	# of Daily Flights
Atlanta, GA	12	Miami, FL	3
Boston, MA	5	Minneapolis, MN	11
Charlotte, NC	10	New York, NY/Newark, NJ	21
Chicago, IL	29	Phoenix, AZ	4
Dallas/Ft. Worth, TX	9	Salt Lake City, UT	6
Denver, CO	4	San Francisco, CA	4
Houston, TX	3	Seattle, WA	4
Los Angeles, CA	4	Washington, D.C./Baltimore, MD	11

255

4. International destinations are accessible via non-stop flights to Toronto, Montreal, London, Paris, Frankfurt, Zurich and Brussels.

   - A daily one-stop direct flight (through Portland, OR) provides service to Tokyo. One-stop direct flights also serve Sao Paulo and Munich.

5. For sales offices, the combination of superior air service and the extensive highway network means ready access to customers. For example, assuming a hypothetical six-state sales territory embracing Ohio, Illinois, Indiana, Kentucky, Michigan and West Virginia, ten metro areas are readily accessible by auto within 200 miles of Greater Cincinnati (see Table 20). Meanwhile, there are 52 cities

2414

that are accessible from Cincinnati within 1½ hours or less via non-stop daily flights (see Table A-4 in the Appendix). Cities within a 1½-hour flight offer the opportunity for a comfortable single day round trip to customers.

TABLE 20
ACCESS TO KEY REGIONAL CITIES
Source: Microsoft Automap

Location	Miles	Drive Time
Evansville, IN	215	4 hours
Toledo, OH	209	3 hours 50 minutes
Charleston, WV	200	4 hours
Fort Wayne, IN	170	3 hours 30 minutes
Huntington, WV/Ashland, KY	150	3 hours
Indianapolis, IN	114	2 hours 10 minutes
Columbus, OH	108	2 hours
Louisville, KY	99	1 hour 50 minutes
Lexington, KY	82	1 hour 30 minutes
Dayton, OH	54	1 hour

256

6. For many executives and managers premium airfares are warranted by the ability for one-day turnaround in travel to many U.S. destinations.

   - Helped by easy, predictable commutes to the Cincinnati/Northern Kentucky International Airport, an executive, for example, can depart for Denver at 8:50 am, arrive at 9:44 am, work a full day and return to Cincinnati on a 5:30 flight arriving at 10 p.m.

   - Airfares are high since Delta accounts for approximately 80% of the flights to / from Cincinnati/Northern Kentucky International Airport. Several interviewed employers are resorting to mandating that middle management personnel fly from Dayton, Lexington, Louisville or Indianapolis to capture savings of 50-70% on round trip flights to destinations such as Los Angeles, even though a change of planes at Cincinnati is necessary.

Office space for headquarters and sales offices is affordable, but is more readily available in the suburbs than in the city.

- The median rental rate in the tri-state area is just below $15.00 per square foot (see Table 21), with the weighted average about $1.00 per square foot higher. Surprisingly, rental rates are lower in the central business district and higher than the overall median in suburbs such as Blue Ash, Kenwood and Mason (I-71 North). In Northern Kentucky office space costs mirror the median rate for the region as a whole.

TABLE 21
TYPICAL LEASE RATES
Source: Greater Cincinnati Chamber of Commerce

Submarket	Available Square Feet	Vacancy Rate	Buildings Surveyed			Rental Rate			
			Total #	Total Square Feet	Median Size	Minimum	Maximum	Median	Weighted Average
All Areas	3,347,471	12.5%	257	26,809,651	54,574	$7.50	$24.95	$14.95	$15.93
Blue Ash	197,357	8.8%	34	2,246,567	41,225	$8.00	$22.58	$16.13	$18.51
Butler County	56,358	18.8%	6	299,581	56,506	$9.00	$16.50	$13.85	$13.41
Central Business District	951,564	7.7%	54	12,291,128	149,789	$9.95	$24.95	$14.50	$14.44
Cincinnati	442,050	14.9%	38	2,967,328	52,843	$9.00	$21.00	$13.50	$13.63
East	268,043	32.0%	14	838,561	35,261	$9.50	$23.78	$14.04	$18.14
Kenwood	17,033	2.3%	9	726,982	45,073	$15.50	$23.72	$19.00	$21.70
Mason/I-71 (North)	412,153	20.9%	18	1,972,547	88,000	$11.00	$21.50	$19.29	$18.64
Milford/I-275 (East)	99,922	18.4%	13	543,542	33,870	$12.25	$19.18	$14.25	$14.46
Northern Kentucky	432,181	19.5%	32	2,216,296	43,775	$7.50	$22.75	$15.00	$15.03
Tri-County/I-75	389,974	16.7%	32	2,331,961	63,500	$11.00	$20.50	$14.50	$17.46
Warren County	15,000	50.0%	1	30,000	93,000				
West	65,836	19.1%	6	345,158	29,414	$9.50	$18.00	$12.63	$15.29

- WDG estimates that total occupancy costs (including operating expenses such as taxes, utilities, security, etc.) amount to $20-21 per square foot on average in the area. Occupancy costs, therefore, represent a competitive advantage for Cincinnati when compared to costs in typical headquarters cities such as Chicago, New York, Atlanta and San Francisco.
- Vacancy rates are on the low side - 12.5% for the region and 7.7% downtown - portending possible upward cost pressure in the future.

257

2414

Greater Cincinnati's operating environment is satisfactory for professional based white-collar operations.

1. State and local income taxes, both corporate and personal, are at the higher end of the range in Ohio compared to Midwestern and Southeastern cities. On the plus side, the apportionment formula for allotting total income to any of the three states as the basis for determining state income tax liability over-weights the sales factor in the commonly used three-factor methodology (payroll, property and sales). The emphasis on the sales component is beneficial because, in the case of Ohio, the most populous state in the region, population (a sales indicator) amounts to less than 5% of the U.S. total. A drawback for local employers, which arose in most of our interviews, is the municipal wage and income tax, which is levied in both Ohio and Kentucky. Table 22 provides key income tax data, while Table 23 illustrates the beneficial impact of the apportionment formulas.

TABLE 22
TOP CORPORATE AND PERSONAL TAX RATES
Source: Ernst & Young

Location	State Income Tax		Local Wage/Business Income Taxes	
	Corporate	Personal	County	City
Ohio				
City of Cincinnati	8.50%	7.2%	----	2.1%
Suburbs	8.50%	7.2%	----	0.5% to 2.1%
Kentucky				
Suburbs	8.25%	6.0%	0.8% to 0.95% *	1% to 2.5%
Indiana				
Suburbs	4.50%	3.4%	0.6% to 1.0%	----

* Boone, Campbell and Kenton Counties only

TABLE 23
IMPACT OF DOUBLE-WEIGHTED SALES FACTOR IN INCOME APPORTIONMENT
Source: Ernst & Young, WDG Estimates

Apportionment Factor	Double-Weighted Sales Factor	Unweighted Factors
Sales	5%	5%
Property	20%	20%
Payroll	30%	30%
Average Proportion of National Income Apportioned to State	15%	18.3%

2. The area's business support network is a plus for headquarters.

   - Interviewees, in general, were pleased with the area's business support network in Greater Cincinnati. One executive pointed to local ownership of banks (e.g., Fifth Third and Provident) and insurance companies (Cincinnati Financial, Ohio Casualty, Western and Southern) as an asset for corporate headquarters, because of immediate accessibility to decision-makers.

3. The government climate is better in the suburbs than in the city of Cincinnati.

   - County and local governments received good marks from white-collar employers interviewed for this project, but a number of interviewees, however, were negative about the number of entities at the county and local levels that had to be dealt with (on building/expansion issues, for example). Governmental fragmentation, they claim, provides higher taxes and in-fighting among jurisdictions and is detrimental to economic development efforts. We recognize that the Partnership is aware of the need to address more collaboration among Chambers' of Commerce and economic development groups on issues such as workforce development.

   - Interviewees agreed, nearly unanimously, that improvements in governance are needed in the city of Cincinnati.

   - Interviewees who had expanded or relocated recently were pleased with incentives obtained in the area. Real and personal property tax abatements were cited as the most common and most valuable incentive. The Partnership needs to communicate the availability of job creation tax credits in all three states as a valuable incentive not only for new companies, but also for existing companies which are expanding employment.

4. The availability of higher education is favorable for white-collar employers in terms of recruiting MBA's and providing employers with opportunities for continuing education. MBA programs are available at the University of Cincinnati, Northern Kentucky University, Miami University and Xavier. At Northern Kentucky University, the emphasis for MBA students is practical experience; the university aims to have each graduate experience six months in a work environment. A Master of Science in Management program is planned as the College of Mount St. Joseph for the 1999-2000 school year. Undergraduate business programs are also available at these schools and at Thomas More and Union Institute. A masters program in computer science is offered at the University of Cincinnati.

257

2414

Technical Service Centers

For many reasons, TSCs are an excellent target for the Greater Cincinnati region. The number of TSCs in the US is growing rapidly, and will continue to do so in the future. TSCs are a natural complement to Greater Cincinnati's business support office base, and they will help to diversify the region's service economy.

Greater Cincinnati presents several compelling locational advantages that will help to attract new and relocating TSCs. The area offers a good combination of available technically literate personnel; well-educated residents; sophisticated telecom infrastructure; and moderate operating costs. The following points present the rationale for selecting TSCs as a target industry for the Greater Cincinnati Regional Marketing Partnership.

The TSC function is growing rapidly. Executives in many industries now realize that offering their customers excellent technical support has become a competitive requirement. Companies that do not offer this service to their customers will soon be forced to either develop their own TSCs or hire contractors to provide this function. In addition, natural economic growth will require existing TSCs to add employees to serve growing markets.

The value of the TSCs to the Greater Cincinnati labor force will increase over time. The call center industry suffers from a stigma that it offers only low skill, low wage jobs with little chance of professional development. However, this perception does not apply to the TSC subset. TSRs are distinguished by their high level of competency in particular products or services, and by their emphasis on professional development through continual training. Often, the skills learned by technical support personnel are transferable to other occupations, or other technical/financial operations.

The TSC target offers an opportunity to diversify and strengthen Greater Cincinnati's back office contingent. As discussed in the Target Trends section, TSC managers often favor workers with general call center experience. These applicants possess the requisite customer service skills needed by all successful TSRs. Areas with an existing call center industry often have the highest concentrations of these applicants. According to WDG research, much of the turnover that plagues less skill-intensive call center operations is due to boredom and the lack of professional development opportunities. TSCs can offer these individuals a chance for more challenging work, professional development, and higher wages. The region's pool of workers with call center experience provides a base of employees with many of the qualifications required for employment in a TSC.

- Companies comprising this base include banks and insurance companies in addition to Fidelity and Citicorp. A plus for the area is the presence of marketing research firms such as Burke and Market Research Service, Inc. Companies that may have existing TSCs include:
  - Henkel
  - Hilton Davis
  - Ilsco
  - International Thomson Publishing
  - Metro Web
  - Xerox

We did not find evidence of major "stand-alone" TSCs in Greater Cincinnati but these could be an attractive target for the area.

Labor is available for positions important to TSCs. Interviewed employer's rate the availability of workers for most positions important to TSCs as well above a satisfactory score of three. (See Table 24.)

TABLE 24
LABOR AVAILABILITY IN THE GREATER CINCINNATI REGION
Source: WDG Employer Surveys

Occupation	Availability (1=Unavailable, 5=Plentiful)
Clerical workers, entry level	4.1
Clerical workers with advanced computer skills	3.5
Customer service representatives	3.4
Professionals/management	3.3
Technicians or technical support (office)	3.2
Computer/office technical support specialists	2.9

The Greater Cincinnati labor force is oriented toward TSC employment. Table 25 compares the total region and its components with national norms on employment distribution by occupational categories relevant to TSC operations. Importantly, technicians comprise a larger percentage of the regional labor force than in the US as a whole. This fact indicates that there is a comparatively large base of technically skilled workers who are potentially available to TSC employers. Meanwhile, workers in the sales, clerical, and services sectors

often have skills that are immediately transferable to TSC occupations. The relative proportion of sales and clerical workers exceeds the national average.

TABLE 25
EMPLOYMENT BY OCCUPATION CATEGORIES (% OF WORKFORCE)

Source: US Bureau of the Census

Area	Technicians	Sales	Clerical	Services
Ohio Counties				
Brown	2.2%	8.3%	12.0%	14.0%
Butler	3.7	12.1	16.8	12.1
Clermont	3.3	11.6	16.0	11.6
Hamilton	4.3	12.4	17.8	13.1
Warren	3.8	12.6	14.1	11.6
Sub-total	4.0	12.2	17.0	12.7
Kentucky Counties				
Boone	4.0	12.4	18.5	10.7
Campbell	3.9	10.9	19.5	12.6
Gallatin	1.4	9.2	16.2	15.2
Grant	2.5	9.5	14.6	13.6
Kenton	4.1	12.2	19.2	12.4
Pendleton	0.9	6.1	16.6	11.8
Sub-total	3.8	11.5	18.8	12.2
Indiana Counties				
Dearborn	3.1	9.4	14.8	12.0
Ohio	5.0	7.0	12.5	10.9
Sub-total	3.3	9.1	14.5	11.9
Greater Cincinnati	**3.9**	**12.0**	**17.2**	**12.6**
U.S. Average	**3.7**	**11.8**	**16.3**	**13.2**

242

Greater Cincinnati's universities, colleges, and technical schools produce a large number of qualified applicants for TSC employment. Table A-5 in the Appendix shows degrees granted by local post-secondary educational institutions in engineering, computer, and business related programs. In 1994, 3,619 degrees were awarded in these fields by the region's two and four year institutions, as shown in Table 26.

TABLE 26
GREATER CINCINNATI REGION SCHOOLS DEGREES CONFERRED, 1996
Source: US Department of Education

Course of Study	1-2 Year Certificate	Associates Degree	Bachelors Degree	Total
Computer and Information Sciences	23	63	89	175
Technicians	13	361	---	374
Business Courses	20	570	2,034	2,624
Engineering	---	---	446	446
Total	56	994	2,569	3,619

- Overall employer ratings of the local post-secondary schools are well above satisfactory. (See Table 27.)

TABLE 27
EMPLOYER RATINGS OF POST-SECONDARY EDUCATION IN THE GREATER CINCINNATI REGION
Source: WDG Employer Surveys

Type of School	Rating (1=Poor, 5=Excellent)
Universities and colleges	3.9
Junior or community colleges	3.3
Technical and vocational schools	3.0

263

2414

The Greater Cincinnati labor force offers above average computer skills. Table 28 shows the results of WDG employer surveys in which interviewed executives were asked to rate the computer skills of their job applicants. Compared to most areas of the country, in which WDG has worked, these ratings are high.

TABLE 28
COMPUTER SKILLS OF OFFICE/CLERICAL JOB APPLICANTS
Source: WDG Employer Surveys

	Rating (1=Poor, 5=Excellent)
Fundamental skills	3.1
Basic keyboard skills	3.4
Using word processing software	3.4
Using spreadsheet software	3.1

The Greater Cincinnati labor force is well educated. As shown in Table 29, the educational attainment level of the region's labor force mirrors that of the US. As indicated earlier, the most favored employees for TSCs are those with a college degree or at least some college experience. The proportion of residents in the Greater Cincinnati region holding bachelor's or associate's degrees, or having one to three years of college is just slightly below the U.S. average.

TABLE 29
EDUCATIONAL ATTAINMENT

Source: U.S. Census Bureau

Location	Educational Attainment Levels of Working Age Population				
	No High School Diploma	High School Diploma Only	1-3 years College	Bachelor's Degree	Graduate Degree
Ohio Counties					
Brown	35.1%	40.3%	17.2%	4.2%	3.2%
Butler	24.0	34.7	22.6	12.0	6.8
Clermont	27.2	36.4	21.9	9.9	4.6
Hamilton	24.4	27.7	24.3	15.1	8.6
Warren	24.5	34.1	23.4	12.1	5.9
Subtotal	24.8	30.7	23.5	13.5	7.5
Kentucky Counties					
Boone	23.6	36.4	24.7	9.7	5.6
Campbell	29.0	34.1	21.9	9.6	5.3
Gallatin	40.2	38.9	15.9	3.3	1.7
Grant	38.4	39.9	14.4	4.7	2.5
Kenton	25.6	33.1	24.2	11.4	5.6
Pendleton	39.9	40.7	12.7	3.7	3.1
Subtotal	27.6	34.7	22.6	9.9	5.2
Indiana Counties					
Dearborn	26.5	43.4	19.3	6.5	4.2
Ohio	32.3	46.5	15.2	4.2	1.8
Subtotal	27.2	43.8	18.8	6.2	3.9
Greater Cincinnati	**25.4%**	**31.7%**	**23.2%**	**12.7%**	**7.0%**
U.S. Average	**24.8%**	**30.0%**	**24.9%**	**13.1%**	**7.2%**

265

2414

Labor costs in Greater Cincinnati are moderate, and attractive to the TSC target. As noted earlier, there exists no standardized statistical description of TSC occupations. Therefore, consistent employee wage and salary data is unavailable for comparisons among locations across the country. An alternative method is to compare overall average employee earnings for all workers. This method, while imperfect, is an indicator of comparative wage rates because wage rates in TSCs are heavily influenced by conditions in local labor markets. Because the TSC function exists in almost all major industries, comparisons of overall employee earnings are a better method than comparing earnings in selected industry groupings (such as services, finance, insurance, and real estate).

Table 30 shows that average annual employee earnings for major geographic sub-sectors in Greater Cincinnati are 4% below the U.S. average. Table 31 shows average annual earnings in Greater Cincinnati for occupations most similar to typical TSC job descriptions.

TABLE 30
AVERAGE ANNUAL EMPLOYEE EARNINGS IN GREATER CINCINNATI
Source: County Business Patterns

Location	Average Annual Earnings
Ohio Counties	$27,743
Kentucky Counties	$22,789
Indiana Counties	$20,739
Greater Cincinnati	$25,494
U.S. average	$26,575

244

TABLE 31
AVERAGE ANNUAL EARNINGS FOR SELECTED OFFICE/CLERICAL OCCUPATIONS IN THE GREATER CINCINNATI REGION
Source: Economics Research Institute

Occupation	Average Annual Earnings
Accounting clerk	$21,027
Computer operator	$26,720
Technician/Engineering	$36,500
Electronics Technician	$38,346

Reasonably priced sites for TSCs are available in the region. As described in the previous section, office space is available at lease costs of $20.00 per square foot.

The business climate of Greater Cincinnati is advantageous for TSCs. Table 32 summarizes the results of WDG's employer survey. All major business climate indicators shown rate above a satisfactory score of three. Importantly, Ohio and Kentucky have only single party telephone monitoring restrictions. Indiana has no such restrictions. Corporations favor TSC locations in states with either single party or no telephone monitoring restrictions.

TABLE 32
BUSINESS CLIMATE RATINGS
Source: WDG Employer Surveys

Topic	Rating (1=Poor, 5=Excellent)
Local government regulations	3.4
State government regulations	3.6
Fairness of unemployment insurance enforcement	3.3
Ease of obtaining permitting for facility expansions	3.7
Unemployment insurance costs	3.7
Fairness of workers' compensation enforcement	3.3
Workers' compensation costs	2.6

Greater Cincinnati offers tax savings for TSCs. Table 33 demonstrates that Greater Cincinnati maintains a favorable tax structure for the target industry. The absence of state levies on toll-free calling is especially important for TSCs, which must provide toll free access for customers.

TABLE 33
TELECOMMUNICATIONS RELATED SALES TAX LEVIES IN GREATER CINCINNATI
Source: State Departments of Revenue

	State		
Service	Ohio	Kentucky	Indiana
Telephone - Inter-State	Yes	No	No
Telephone – Toll Free - Inter-State	No	No	No
Telephone - WATS- Inter-State	No	No	No

267

2414

Business Support Office Operations

The labor market in Greater Cincinnati is attractive for business support and administrative centers. Labor availability and quality are comparable with the needs of these high-end operations, but are less appealing for clerically-intensive and cost sensitive operations staffed largely by high school graduates with no or little advanced education. Costs are moderate and local telecommunications and postal capabilities are given high ratings by area employers. Measured against yardsticks of labor supply, demand and quality, Greater Cincinnati closely mirrors the U.S. as a whole.

- Labor supply indicators show that, while growth in population and new entrants to the labor force in Greater Cincinnati are forecast to lag slightly behind the U.S. average, Northern Kentucky almost exactly matches the national norm.
- With median household income and female participation in the labor force slightly higher than the U.S. average, the supply of second-income earners receives a middle-of-the-road rating.
- A plus is that the concentration of clericals in the labor force exceeds the national figure by about 7%. In Northern Kentucky, the concentration exceeds the U.S. average by almost 20%. (See Table 34.)
- The Fluor-Daniel Fernald Project in Ross, Ohio (in Butler County close to the Hamilton County boundary) will be phasing out operations through 2005. Approximately 200-300 employees will be laid off per year until 2005. Several 100 of the 2,000 employees hold clerical, administrative support and technical positions. Fluor-Daniel will actively assist at any time any other employer seeking to hire these individuals.

TABLE 34
KEY LABOR SUPPLY INDICATORS
Source: U.S. Census Bureau

Location	1998 Population (000)	Population Growth 1997-2003 (%)	% Change 18-34 Year Olds 1997-2002 (%)	Median Household Income ($000)	Female Labor Participation (%)	Occupational Profile Percentage of Workforce in Selected Occupations			
						Executive	Professional	Sales	Clerical
Ohio Counties									
Brown	40.4	7.0	4.8	31.5	50.6				
Butler	331.1	3.8	(0.7)	42.0	56.1	7	9	8	12
Clermont	174.1	6.9	1.5	41.8	59.8	12	14	12	17
Hamilton	848.7	(2.2)	(5.6)	40.3	57.1	12	11	12	16
Warren	140.8	10.9	5.6	50.5	57.2	14	17	12	18
Subtotal	1,535.0	1.6	(2.5)	41.4	57.2	12	13	13	14
Kentucky Counties						**13**	**15**	**12**	**17**
Boone	77.1	14.6	8.8	45.5	61.8				
Campbell	87.9	1.7	(2.7)	37.3	57.6	14	10	12	19
Gallatin	6.7	11.5	8.7	28.6	55.3	12	12	11	20
Grant	20.3	12.9	8.8	29.7	51.2	6	7	9	16
Kenton	146.1	0.5	(4.2)	43.2	59.3	9	7	10	15
Pendleton	14.2	8.3	3.7	30.4	51.9	13	12	12	19
Subtotal	352.3	5.1	0.2	40.6	58.5	7	8	6	17
Indiana Counties						**12**	**11**	**12**	**19**
Dearborn	46.8	9.1	9.2	39.4	55.5				
Ohio	5.5	0.8	(2.3)	37.2	48.6	10	11	9	15
Subtotal	52.3	8.2	8.0	39.1	54.6	8	5	7	13
Greater Cincinnati	1,939.6	2.4	(1.7)	41.3	57.3	9	10	9	15
U.S. Average	-----	4.3	(0.4)	38.3	56.8	13	14	12	17
						12	14	12	16

- Labor demand (employment growth) and labor supply (labor force growth) are in balance in the Ohio counties. However, in Northern Kentucky and Indiana, employment growth over the most recent five years has outstripped labor supply by a wide margin.

Nevertheless, the relationship between these indicators is virtually the same as in the country as a whole. Table 35 shows supply and demand data for the most recent five-year periods for which each data set is available.

As in most metropolitan areas, area unemployment rates have dropped significantly in the 1990's. While Greater Cincinnati's 1997 unemployment rate was about 1½ percentage points under the national average of 5.6%, it is in the same range as – and, in many cases, higher than – many Midwestern and Southeastern metro areas whose economies have prospered during this decade.

TABLE 35
KEY LABOR DEMAND INDICATORS
Source: County Business Patterns, U.S. Bureau of Labor Statistics

Location	Labor Force Growth 1992-1997 (%)	Employment Growth 1990-1995 (%)	Average Unemployment Rate – 1997 (%)
Ohio Counties			
Brown	8.1	(1)	5.7
Butler	9.3	12	3.6
Clermont	8.1	22	4.2
Hamilton	1.6	1	3.5
Warren	11.7	36	3.2
Subtotal	4.8	5	3.6
Kentucky Counties			
Boone	16.7	25	3.6
Campbell	7.1	9	3.8
Gallatin	15.7	(5)	5.8
Grant	15.2	27	5.3
Kenton	6.3	21	3.6
Pendleton	12.9	61	6.7
Subtotal	9.4	21	3.9
Indiana Counties			
Dearborn	10.7	22	3.6
Ohio	4.6	39	3.3
Subtotal	9.2	23	3.6
Greater Cincinnati	**5.8**	**7**	**3.9**
U.S. Average	**6.0**	**7**	**5.6**

- **Office skills are available.** Employers interviewed by WDG with significant administrative office operations include Fidelity, Citicorp, Midland Insurance and Toyota Motor Manufacturing, with combined employment of nearly 5,500. Their responses to survey questions about labor availability (See Table 36) were encouraging, as summarized below for specific key office positions:

TABLE 36
LEADING OFFICE EMPLOYER VIEWS OF LABOR AVAILABILITY
(5=PLENTIFUL, 1=UNAVAILABLE)
Source: WDG Interviews

Position	Composite Employer Rating
Clericals, Entry Level	4.0
Clericals with Advanced Computer Skills	3.8
Customer Service Representatives	3.5
Computer/Office Technical Support Specialist	3.2

- Reflecting shortages nationally interviewed employers gave ratings of 2.3 and 2.7 for the availability of information systems professionals, entry level and experienced, respectively.

With over 16,000 graduates annually, Greater Cincinnati's 21 institutions of higher learning constitute a major asset for the area. Over half represents graduates with bachelor's degrees and nearly 20% have associate's degrees. There is a strong relationship between the business and higher educational communities, as exemplified by:

- Co-op programs at the University of Cincinnati, both in the 4-year and 2-year programs, and at Cincinnati State Technical College. The commitment of those institutions to practical work experience is impressive, with over 50% of business students at the University of Cincinnati participating in co-op programs.
- Business outreach programs, especially at Raymond Walters (the 2-year program at the University of Cincinnati) and Cincinnati State Technical College.
- Business-oriented leadership at Thomas More College and Northern Kentucky University, whose president envisions acting as a broker to bring global training resources to the Cincinnati area.

The educational profile of local residents conforms to national patterns. The same pattern prevails for educational attainment. Greater Cincinnati's educational attainment profile is a virtual mirror image of the U.S. For example, focusing on key groups for a business support office– persons with 1-3 years of education and with a bachelor's degree- the proportion of the working age population with these credentials is 36% compared to the national average of 38%. The five Ohio counties lead both Northern Kentucky and Indiana locales in this comparison. (See Table 37.)

TABLE 37
EDUCATIONAL ATTAINMENT
Source: U.S. Census Bureau

Location	Educational Attainment Levels of Working Age Population				
	No High School Diploma	High School Diploma Only	1-3 years College	Bachelors Degree	Graduate Degree
Ohio Counties					
Brown	35.1%	40.3%	17.2%	4.2%	3.2%
Butler	24.0	34.7	22.6	12.0	6.8
Clermont	27.2	36.4	21.9	9.9	4.6
Hamilton	24.4	27.7	24.3	15.1	8.6
Warren	24.5	34.1	23.4	12.1	5.9
Subtotal	24.8	30.7	23.5	13.5	7.5
Kentucky Counties					
Boone	23.6	36.4	24.7	9.7	5.6
Campbell	29.0	34.1	21.9	9.6	5.3
Gallatin	40.2	38.9	15.9	3.3	1.7
Grant	38.4	39.9	14.4	4.7	2.5
Kenton	25.6	33.1	24.2	11.4	5.6
Pendleton	39.9	40.7	12.7	3.7	3.1
Subtotal	27.6	34.7	22.6	9.9	5.2
Indiana Counties					
Dearborn	26.5	43.4	19.3	6.5	4.2
Ohio	32.3	46.5	15.2	4.2	1.8
Subtotal	27.2	43.8	18.8	6.2	3.9
Greater Cincinnati	**25.4%**	**31.7%**	**23.2%**	**12.7%**	**7.0%**
U.S. Average	**24.8%**	**30.0%**	**24.9%**	**13.1%**	**7.2%**

The quality of the Cincinnati area office labor is strong. The area's major office employers interviewed by WDG – Toyota, Fidelity, Citicorp and Midland – gave favorable ratings in response to queries on skills of job applicants, work ethic, productivity and satisfaction with training/education at area high schools, technical/vocational schools, community colleges and universities. (See Table 38.)

TABLE 38
LEADING OFFICE EMPLOYER VIEWS ON LABOR FORCE QUALITY AND TRAINING*
(5=EXCELLENT, 1=POOR)
Source: WDG Employer Interviews

Measure	Average Rating
Basic Skills	
Overall Skills	3.2
Written Skills	3.0
Reading Skills	3.3
Arithmetic/Math Skills	3.3
Basic Computer Skills	3.0
Work Ethic	3.8
Productivity	3.8
Productivity Relative to Other Sites	4.0
Satisfaction with Training/Education at:	
High Schools	2.8
Technical/Vocational Schools	3.0
Community Colleges	3.3
Universities	3.5

* Based on survey results from 18 employer interviews.

- As in most major metropolitan areas, major office employers did state that it has become more difficult to recruit qualified applicants over the past 3-5 years. With the local labor market tightening, employees enjoy increased options. Turnover is increasing, as are labor costs. Several interviewees stressed that economic development efforts have been too successful and have heightened labor market competition. One interviewee would recommend Greater Cincinnati to relocation prospects only if the prospective facilities were located at a distance. The new LEAP program should increase the supply of entry-level professionals.
- Still, Greater Cincinnati's administrative centers have good experiences regarding work ethic, and productivity (e.g., call handling time, customer conversions, and customer retention).
- Unit labor costs: although Cincinnati's salary levels tend to be slightly higher than other company locations, unit costs are lower because of better productivity.

- The relationships between the business and educational communities are excellent, due at least in part to a wide array of co-op programs at local schools and universities.

Labor costs are moderate and favorable for up-scale administrative centers such as Fidelity and Citicorp. According to national survey data, Greater Cincinnati is somewhat less costly than other mid-size cities in the Midwest and slightly higher than Southeastern cities. (See Table 39.)

TABLE 39
1998 LABOR COSTS FOR TYPICAL BACK OFFICE POSITIONS
ANNUAL SALARY ($000)
Source: Economics Research Institute

Location	Accounting Clerk	Computer Operator	Data Entry Operator	Order Clerk	Payroll Clerk	Average	Index: U.S. = 100
Greater Cincinnati	$21.0	$26.7	$19.2	$20.9	$23.9	$22.3	$98.7
Columbus, Ohio	21.4	26.9	19.6	21.3	24.4	22.7	100.4
Atlanta, GA	20.8	26.4	19.0	20.6	23.7	22.1	97.8
Nashville, TN	20.0	25.0	18.3	19.5	22.5	21.1	93.4
Charlotte, NC	20.1	25.0	18.3	19.8	22.6	21.2	93.8
Raleigh-Durham, NC	20.4	25.4	18.5	20.1	23.0	21.4	94.7
Louisville, KY	20.8	26.0	19.0	20.7	23.6	22.0	97.3
Indianapolis, IN	21.2	26.8	19.5	21.5	24.4	22.7	100.4
U.S. Average	21.3	26.7	19.4	21.0	24.4	22.6	100.0

274

- The 1998 Greater Cincinnati Compensation and Benefits Survey, as shown in Table 40 by and large confirms the salaries portrayed above.

TABLE 40
LOCAL SURVEY RESULTS FOR SELECTED BACK OFFICE POSITIONS
MEAN ANNUAL PAY AND PAY RANGES ($000)
Source: Adams, Nash and Haskell Survey

Job Title	Actual Pay (Weighted Mean)	Pay Range Minimum	Pay Range Maximum
Accounting Clerk 1	$18.6	$16.5	$24.4
Accounting Clerk 2	23.8	18.3	27.4
Credit Collections Clerk	22.0	19.8	29.2
Payroll Clerk	24.3	10.6	30.0
Computer Operator 1	22.1	21.3	31.2
Computer Operator 2	29.8	23.9	35.1
Customer Service Rep.	20.0	20.0	30.0

- Payroll taxes also are moderate, with Indiana's unemployment insurance and workers' compensation costs lower than those in Kentucky and Ohio. (See Table 41.)

TABLE 41
PAYROLL TAXES
Source: State Departments of Labor, State Chambers of Commerce

	Locale		
Payroll Tax	**Indiana**	**Kentucky**	**Ohio**
Unemployment Insurance			
Average Rate for Existing Employers 1997	1.3%	2.0%	2.1%
Taxable Base	$7,000	$8,000	$9,000
Workers Compensation			
Rate for Clericals, per $100 of payroll as of 3/97	$0.26	$0.51	$0.39
Maximum Weekly Benefit (1996)	$428	$416	$511

- Employers interviewed stressed that the area is particularly suited for high-end support operations, but is not suitable for major transaction-intensive facilities which would employ large numbers of clericals (at least 1,000) with pay ranges of $18,000 - $23,000, (e.g., credit card processors).

Of major importance is the nature of successful administrative centers in Greater Cincinnati. All are housed in attractive, modern facilities, with the campuses of Fidelity and Midland being especially appealing. All offer generous benefit programs, including both pensions, and 401k plans, and tuition reimbursement. These characteristics, again, point to the compatibility of this area with up-scale white-collar facilities.

- Other operating costs – rent and electric power – appear to be in line with comparable and competitive cities. As mentioned above, rentals can be obtained (in the suburbs) for less than $20.00 per square foot. White-collar interviewees rated electricity costs and reliability as a positive, with an average rating of 4.0 (5.0 being most favorable).

The area's operating environment received high marks. As mentioned in the Headquarters and Sales Office section, employers interviewed mentioned property tax abatements as the most common and most valuable incentive. In addition, each of the three states offer corporate income tax credits for new job creation, with Indiana and Ohio rebating any excess to the employer.

- In terms of other factors important to administrative centers, employers gave good to excellent ratings to the quality of advanced telecommunications services and, in particular, the quality of postal service. Cincinnati Bell is well regarded and was cited as having leading-edge technology. Some users have experienced difficulties in keeping track of telecommunications capabilities offered by all the long-distance carriers in the area. Nevertheless, such competition is resulting in cost breaks for local businesses. Postal service in the area benefits from extensive air service to multiple cities and was ranked ahead of cities such as Dallas and Boston by one interviewee with facilities in a number of other states.

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Dearborn County, IN	Ohio County, IN	Indiana Counties Subtotal	Indiana	Boone County, KY	Campbell County, KY
Population						
1980	34,291	5,114	39,405	5,490,235	45,841	83,317
1990	38,835	5,315	44,150	5,544,159	57,589	83,866
1998	46,779	5,512	52,291	5,892,335	77,084	87,930
2003	51,045	5,558	56,603	6,073,227	88,347	89,418
Change '80 - '90	13.3%	3.9%	12.0%	1.0%	25.6%	0.7%
Change '90 - '98	20.5%	3.7%	18.4%	6.3%	33.9%	4.8%
Change '90 - '03	31.4%	4.6%	28.2%	9.5%	53.4%	6.6%
Change '98 - '03	9.1%	0.8%	8.2%	3.1%	14.6%	1.7%
Percent Minority						
1980	1.3%	1.3%	1.3%	9.6%	1.3%	1.7%
1990	1.3%	1.2%	1.3%	10.4%	2.0%	1.8%
1998	1.7%	1.3%	1.6%	11.7%	2.4%	2.1%
2003	1.9%	1.3%	1.8%	12.4%	2.8%	2.3%
Percent Distribution by Age Group (1998)						
0-17	28.1%	25.6%	27.8%	25.9%	28.4%	26.5%
18-34	20.5%	21.4%	20.6%	23.5%	22.7%	23.1%
35-54	29.3%	28.8%	29.3%	28.4%	30.5%	28.0%
55-64	8.8%	9.4%	8.9%	8.7%	8.4%	8.4%
65-74	7.1%	7.6%	7.1%	7.1%	5.9%	7.4%
75 and over	6.1%	7.3%	6.3%	6.4%	4.1%	6.6%

2414

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Gallatin County, KY	Grant County, KY	Kenton County, KY	Pendleton County, KY	Kentucky Counties Subtotal	Kentucky
Population						
1980	4,842	13,308	137,058	10,989	295,355	3,660,771
1990	5,393	15,737	142,031	12,036	316,652	3,685,296
1998	6,707	20,250	146,130	14,201	352,302	3,928,005
2003	7,479	22,862	146,895	15,377	370,378	4,060,023
Change '80 - '90	11.4%	18.3%	3.6%	9.5%	7.2%	0.7%
Change '90 - '98	24.4%	28.7%	2.9%	18.0%	11.3%	6.6%
Change '90 - '03	38.7%	45.3%	3.4%	27.8%	17.0%	10.2%
Change '98 - '03	11.5%	12.9%	0.5%	8.3%	5.1%	3.4%
Percent Minority						
1980	3.3%	0.8%	3.6%	0.9%	2.5%	8.2%
1990	2.2%	0.6%	4.0%	0.9%	2.7%	8.3%
1998	2.4%	0.8%	4.4%	1.1%	3.0%	8.7%
2003	2.5%	0.9%	4.7%	1.2%	3.2%	9.0%
Percent Distribution by Age Group (1998)						
0-17	27.7%	28.3%	27.1%	28.6%	27.4%	25.3%
18-34	21.7%	22.1%	23.4%	22.5%	23.0%	23.6%
35-54	28.8%	28.5%	28.9%	26.9%	28.9%	28.6%
55-64	8.8%	8.9%	8.0%	8.6%	8.3%	8.9%
65-74	6.7%	6.5%	6.7%	7.1%	6.7%	7.2%
75 and over	6.3%	5.7%	5.9%	6.2%	5.7%	6.4%

ALC

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	City of Cincinnati	Brown County, OH	Butler County, OH	Clermont County, OH	Hamilton County, OH	Warren County, OH
Population						
1980	385,478	31,920	258,788	128,483	873,223	99,277
1990	364,040	34,966	291,479	150,187	866,228	113,909
1998	337,298	40,419	331,065	174,130	848,650	140,708
2003	321,624	43,229	343,761	186,215	830,134	156,053
Change '80 - '90	-5.6%	9.5%	12.6%	16.9%	-0.8%	14.7%
Change '90 - '98	-7.3%	15.6%	13.6%	15.9%	-2.0%	23.5%
Change '90 - '03	-11.7%	23.6%	17.9%	24.0%	-4.2%	37.0%
Change '98 - '03	-4.6%	7.0%	3.8%	6.9%	-2.2%	10.9%
Percent Minority						
1980	35.1%	1.8%	5.7%	1.5%	20.2%	2.4%
1990	39.8%	1.5%	6.0%	1.8%	22.7%	3.3%
1998	44.1%	1.7%	7.1%	2.2%	25.3%	3.9%
2003	46.5%	1.9%	7.7%	2.4%	26.9%	4.3%
Percent Distribution by Age Group (1998)						
0-17	26.1%	28.2%	25.7%	28.4%	26.1%	26.1%
18-34	26.3%	21.2%	24.9%	22.9%	23.5%	22.7%
35-54	26.8%	27.8%	28.9%	29.9%	28.0%	31.1%
55-64	6.8%	8.9%	8.6%	8.5%	8.4%	8.9%
65-74	6.5%	7.3%	6.8%	5.9%	7.2%	6.5%
75 and over	7.4%	6.6%	5.2%	4.4%	6.8%	4.6%

279

2414

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Ohio Counties Subtotal	Ohio	Greater Cincinnati	Cincinnati MSA	United States
Population					
1980	1,391,691	10,797,638	1,726,451	1,467,663	226,545,776
1990	1,456,769	10,847,115	1,817,571	1,526,092	248,709,872
1998	1,534,972	11,204,986	1,939,565	1,608,500	269,412,832
2003	1,559,392	11,356,818	1,986,373	1,642,612	280,885,056
Change '80 - '90	4.7%	0.5%	5.3%	4.0%	9.8%
Change '90 - '98	5.4%	3.3%	6.7%	5.4%	8.3%
Change '90 - '03	7.0%	4.7%	9.3%	7.6%	12.9%
Change '98 - '03	1.6%	1.4%	2.4%	2.1%	4.3%
Percent Minority					
1980	14.1%	11.6%	11.8%	12.9%	19.9%
1990	15.2%	12.9%	12.7%	13.9%	24.4%
1998	16.2%	14.2%	13.4%	14.7%	27.6%
2003	16.8%	15.1%	13.8%	15.1%	29.7%
Percent Distribution by Age Group (1998)					
0-17	26.3%	25.6%	26.5%	26.7%	25.6%
18-34	23.6%	23.0%	23.4%	23.1%	23.7%
35-54	28.7%	28.5%	28.7%	28.7%	28.8%
55-64	8.5%	8.9%	8.5%	8.4%	8.5%
65-74	6.9%	7.5%	6.9%	6.9%	7.1%
75 and over	6.0%	6.5%	5.9%	6.1%	6.2%

286

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Dearborn County, IN	Ohio County, IN	Indiana Counties Subtotal	Indiana	Boone County, KY	Campbell County, KY
Percent Distribution by Age Group (2003)						
0-17	27.3%	25.0%	27.1%	25.3%	27.4%	25.8%
18-34	20.6%	20.7%	20.6%	22.9%	21.5%	22.1%
35-54	28.4%	28.7%	28.4%	28.3%	30.1%	28.7%
55-64	10.2%	10.8%	10.3%	9.9%	10.2%	9.4%
65-74	6.8%	7.1%	6.8%	6.8%	6.0%	6.8%
75 and over	6.7%	7.8%	6.8%	6.8%	4.7%	7.1%
Projected Percent Change in Age Distribution (1997-2002)						
0-17	6.0%	-1.3%	5.3%	0.5%	10.5%	-0.9%
18-34	9.2%	-2.3%	8.0%	0.2%	8.8%	-2.7%
35-54	5.7%	0.6%	5.2%	2.8%	13.2%	4.3%
55-64	26.9%	15.4%	25.6%	18.4%	38.6%	14.1%
65-74	4.2%	-6.2%	3.1%	-2.0%	17.6%	-6.3%
75 and over	19.5%	7.2%	18.0%	10.3%	32.4%	10.1%
Median Age						
1998	35.8	36.9	36.0	35.4	34.3	35.2
2003	36.8	38.2	36.9	36.4	35.8	36.5
Median Household Income						
1997	$39,440	$37,153	$39,087	$38,404	$45,373	$37,336
2002	$42,475	$45,017	$42,666	$43,972	$52,237	$41,542
Change '97 - '02	7.7%	21.2%	9.2%	14.5%	15.1%	11.3%

281

24 1 4

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Gallatin County, KY	Grant County, KY	Kenton County, KY	Pendleton County, KY	Kentucky Counties Subtotal	Kentucky
Percent Distribution by Age Group (2003)						
0-17	27.0%	27.5%	26.3%	27.9%	26.6%	24.6%
18-34	21.1%	21.3%	22.3%	21.6%	22.0%	22.8%
35-54	28.2%	28.1%	29.3%	27.6%	29.2%	28.6%
55-64	10.5%	10.6%	9.5%	9.5%	9.7%	10.2%
65-74	6.5%	6.4%	6.2%	6.8%	6.3%	6.9%
75 and over	6.7%	6.1%	6.4%	6.7%	6.2%	6.9%
Projected Percent Change in Age Distribution (1997-2002)						
0-17	8.9%	9.7%	-2.5%	5.7%	2.1%	0.4%
18-34	8.7%	8.8%	-4.2%	3.7%	0.2%	0.0%
35-54	9.2%	11.4%	1.9%	11.1%	6.1%	3.3%
55-64	32.7%	34.7%	19.0%	18.6%	23.3%	19.2%
65-74	7.1%	11.3%	-6.9%	3.1%	-0.3%	-0.5%
75 and over	18.8%	20.0%	9.5%	16.1%	14.4%	10.3%
Median Age						
1998	35.4	34.7	34.7	34.2	34.7	35.7
2003	36.5	35.9	36.0	35.4	36.0	36.9
Median Household Income						
1997	$28,592	$29,707	$43,199	$30,413	$40,607	$29,541
2002	$31,452	$32,092	$52,253	$34,258	$46,604	$32,375
Change '97 - '02	10.0%	8.0%	21.0%	12.6%	14.8%	9.6%

282

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	City of Cincinnati	Brown County, OH	Butler County, OH	Clermont County, OH	Hamilton County, OH	Warren County, OH
Percent Distribution by Age Group (2003)						
0-17	26.0%	27.5%	24.9%	27.4%	25.5%	25.2%
18-34	24.1%	20.8%	23.8%	21.7%	22.7%	21.7%
35-54	29.0%	27.4%	28.8%	29.6%	28.5%	30.6%
55-64	7.6%	10.2%	9.9%	10.2%	9.3%	10.4%
65-74	5.8%	6.9%	6.7%	6.1%	6.7%	6.7%
75 and over	7.6%	7.1%	5.8%	5.0%	7.2%	5.4%
Projected Percent Change in Age Distribution (1997-2002)						
0-17	-5.1%	4.2%	0.5%	3.1%	-4.1%	7.3%
18-34	-12.7%	4.8%	-0.7%	1.5%	-5.6%	5.6%
35-54	3.1%	5.5%	3.7%	5.9%	-0.2%	9.1%
55-64	6.1%	22.9%	19.9%	27.6%	8.6%	29.5%
65-74	-15.8%	2.2%	2.7%	11.4%	-9.4%	14.1%
75 and over	-2.7%	15.1%	17.2%	20.8%	3.4%	29.0%
Median Age						
1998	33.5	35.4	34.6	34.2	35.2	35.7
2003	34.9	36.4	36.0	35.6	36.2	37.1
Median Household Income						
1997	$27,089	$31,505	$41,976	$41,792	$40,335	$50,503
2002	$30,436	$34,150	$46,968	$46,882	$46,842	$59,259
Change '97 - '02	12.4%	8.4%	11.9%	12.2%	16.1%	17.3%

283

24 14

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Ohio Counties Subtotal	Ohio	Greater Cincinnati	Cincinnati MSA	United States
Percent Distribution by Age Group (2003)					
0-17	25.6%	25.0%	25.9%	26.1%	25.1%
18-34	22.7%	22.4%	22.5%	22.2%	22.7%
35-54	28.9%	28.4%	29.0%	29.0%	29.0%
55-64	9.7%	10.1%	9.7%	9.7%	9.8%
65-74	6.6%	7.1%	6.6%	6.6%	6.8%
75 and over	6.4%	7.0%	6.4%	6.5%	6.6%
Projected Percent Change in Age Distribution (1997-2002)					
0-17	-1.0%	-1.0%	-0.2%	-0.4%	2.3%
18-34	-2.5%	-1.3%	-1.7%	-2.0%	-0.4%
35-54	2.4%	0.9%	3.2%	3.1%	4.8%
55-64	15.6%	15.1%	17.3%	16.7%	19.6%
65-74	-2.5%	-3.6%	-2.0%	-2.9%	0.4%
75 and over	9.6%	9.0%	10.7%	9.5%	10.9%
Median Age					
1998	35.0	35.9	35.0	35.1	35.4
2003	36.2	37.0	36.2	36.2	36.6
Median Household Income					
1997	$41,392	$37,464	$41,182	$41,025	$38,302
2002	$47,618	$42,220	$47,274	$47,329	$42,246
Change '97 - '02	15.0%	12.7%	14.8%	15.4%	10.3%

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Dearborn County, IN	Ohio County, IN	Indiana Counties Subtotal	Indiana	Boone County, KY	Campbell County, KY
Household Income Distribution (1997)						
Households	16,595	2,067	18,662	2,236,754	27,482	33,284
Less than $35,000	44.7%	46.3%	44.8%	45.6%	36.7%	46.7%
Between $35,000 and $75,000	41.2%	41.8%	41.3%	38.0%	44.2%	38.5%
Greater than $75,000	14.1%	12.0%	13.9%	16.5%	19.2%	14.8%
Educational Attainment Levels						
No High School	26.5%	32.3%	27.2%	24.4%	23.6%	29.0%
High School Only	43.4%	46.5%	43.8%	38.2%	36.4%	34.1%
Associate Degree	4.8%	4.7%	4.8%	5.3%	5.1%	4.9%
1 to 3 Years College	14.5%	10.5%	14.0%	16.6%	19.6%	17.0%
Bachelors Degree	6.5%	4.2%	6.2%	9.2%	9.7%	9.6%
Graduate Degree	4.2%	1.8%	3.9%	6.4%	5.6%	5.3%
12 to 15 years of education	62.7%	61.7%	62.6%	60.1%	61.1%	56.0%
16 or more years of education	10.7%	6.0%	10.2%	15.6%	15.3%	14.9%

285

2414

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Gallatin County, KY	Grant County, KY	Kenton County, KY	Pendleton County, KY	Kentucky Counties Subtotal	Kentucky
Household Income Distribution (1997)						
Households	2,431	7,261	54,296	5,114	129,868	1,500,213
Less than $35,000	59.7%	57.4%	40.3%	56.6%	43.1%	57.1%
Between $35,000 and $75,000	33.4%	34.3%	38.2%	35.3%	39.1%	31.3%
Greater than $75,000	6.9%	8.2%	21.5%	8.2%	17.8%	11.6%
Educational Attainment Levels						
No High School	40.2%	38.4%	25.6%	39.9%	27.6%	35.4%
High School Only	38.9%	39.9%	33.1%	40.7%	34.7%	31.8%
Associate Degree	2.1%	3.1%	4.9%	2.6%	4.7%	4.1%
1 to 3 Years College	13.8%	11.3%	19.3%	10.1%	17.9%	15.2%
Bachelors Degree	3.3%	4.7%	11.4%	3.7%	9.9%	8.1%
Graduate Degree	1.7%	2.5%	5.6%	3.1%	5.2%	5.5%
12 to 15 years of education	54.8%	54.4%	57.3%	53.4%	57.3%	51.0%
16 or more years of education	5.0%	7.2%	17.0%	6.8%	15.1%	13.6%

286

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	City of Cincinnati	Brown County, OH	Butler County, OH	Clermont County, OH	Hamilton County, OH	Warren County, OH
Household Income Distribution (1997)						
Households	146,589	14,522	120,162	63,043	336,916	50,088
Less than $35,000	59.9%	53.8%	41.7%	40.5%	44.2%	33.0%
Between $35,000 and $75,000	28.4%	35.5%	37.9%	41.6%	34.5%	41.1%
Greater than $75,000	11.8%	10.7%	20.4%	17.9%	21.3%	25.9%
Educational Attainment Levels						
No High School	30.4%	35.1%	24.0%	27.2%	24.4%	24.5%
High School Only	25.0%	40.3%	34.7%	36.4%	27.7%	34.1%
Associate Degree	5.3%	4.0%	5.5%	5.2%	6.1%	6.4%
1 to 3 Years College	17.2%	13.2%	17.1%	16.7%	18.2%	17.0%
Bachelors Degree	13.4%	4.2%	12.0%	9.9%	15.1%	12.1%
Graduate Degree	8.7%	3.2%	6.8%	4.6%	8.6%	5.9%
12 to 15 years of education	47.4%	57.5%	57.3%	58.3%	51.9%	57.5%
16 or more years of education	22.2%	7.4%	18.7%	14.5%	23.7%	18.0%

287

2414

TABLE A-1
DEMOGRAPHIC CHARACTERISTICS
Source: Claritas Inc., U.S. Bureau of the Census

	Ohio Counties Subtotal	Ohio	Greater Cincinnati	Cincinnati MSA	United States
Household Income Distribution (1997)					
Households	584,731	4,291,302	733,261	613,099	100,657,536
Less than $35,000	42.6%	46.6%	42.7%	42.9%	46.0%
Between $35,000 and $75,000	36.6%	36.9%	37.1%	37.0%	35.3%
Greater than $75,000	20.9%	16.5%	20.1%	20.1%	18.8%
Educational Attainment Levels					
No High School	24.8%	24.3%	25.4%	25.6%	24.8%
High School Only	30.7%	36.3%	31.7%	31.2%	30.0%
Associate Degree	5.9%	5.3%	5.6%	5.7%	6.2%
1 to 3 Years College	17.6%	17.0%	17.6%	17.7%	18.7%
Bachelors Degree	13.5%	11.1%	12.7%	12.8%	13.1%
Graduate Degree	7.5%	5.9%	7.0%	7.1%	7.2%
12 to 15 years of education	54.2%	58.7%	54.9%	54.5%	54.9%
16 or more years of education	21.0%	17.0%	19.7%	19.9%	20.3%

288

TABLE A-2
LABOR FORCE CHARACTERISTICS
Source: U.S. Bureau of Labor Statistics, Claritas Inc., State Department of Education

	Dearborn County, IN	Ohio County, IN	Indiana Counties Subtotal	Indiana	Boone County, KY
Civilian Labor Force (Average Annual)					
1992	20,017	2,535	24,544	2,840,249	33,721
1997	22,163	2,652	26,812	3,104,288	39,356
% Change '92 - '97	10.7%	4.6%	9.2%	9.3%	16.7%
Unemployment Rate (Average Annual)					
1992	8.8%	8.2%	16.1%	6.6%	5.8%
1997	3.6%	3.3%	10.8%	3.3%	3.6%
Labor Participation (1990)					
Female	55.5%	48.6%	54.6%	57.4%	61.8%
Male	74.8%	75.7%	74.9%	75.2%	81.7%
Total	64.8%	61.7%	64.4%	65.9%	71.3%

284

2414

TABLE A-2
LABOR FORCE CHARACTERISTICS

Source: U.S. Bureau of Labor Statistics, Claritas Inc., State Department of Education

	Campbell County, KY	Gallatin County, KY	Grant County, KY	Kenton County, KY	Pendleton County, KY
Civilian Labor Force (Average Annual)					
1992	43,059	2,751	8,143	74,901	5,927
1997	46,100	3,184	9,380	79,652	6,692
% Change '92 - '97	7.1%	15.7%	15.2%	6.3%	12.9%
Unemployment Rate (Average Annual)					
1992	6.4%	6.8%	8.4%	5.9%	7.7%
1997	3.8%	5.8%	5.3%	3.6%	6.7%
Labor Participation (1990)					
Female	57.6%	55.3%	51.2%	59.3%	51.9%
Male	75.5%	71.6%	74.8%	78.5%	72.1%
Total	66.0%	63.3%	62.6%	68.3%	61.7%

240

TABLE A-2
LABOR FORCE CHARACTERISTICS

Source: U.S. Bureau of Labor Statistics, Claritas Inc., State Department of Education

	Kentucky Counties Subtotal	Kentucky	Brown County, OH	Butler County, OH	Clermont County, OH
Civilian Labor Force (Average Annual)					
1992	168,502	1,766,955	17,485	155,274	83,564
1997	184,364	1,923,415	18,894	169,769	90,303
% Change '92 - '97	9.4%	8.9%	8.1%	9.3%	8.1%
Unemployment Rate (Average Annual)					
1992	6.2%	6.9%	8.8%	6.7%	6.5%
1997	3.9%	5.2%	5.7%	3.6%	4.2%
Labor Participation (1990)					
Female	58.5%	51.2%	50.6%	56.1%	59.8%
Male	77.7%	70.8%	73.0%	75.0%	79.7%
Total	67.6%	60.5%	61.4%	65.1%	69.4%

241

2414

TABLE A-2
LABOR FORCE CHARACTERISTICS
Source: U.S. Bureau of Labor Statistics, Claritas Inc., State Department of Education

	Hamilton County, OH	Warren County, OH	Ohio Counties Subtotal	Ohio	Greater Cincinnati
Civilian Labor Force (Average Annual)					
1992	441,705	62,579	760,607	5,496,079	953,653
1997	448,606	69,880	797,452	5,755,978	1,008,628
% Change '92 - '97	1.6%	11.7%	4.8%	4.7%	5.8%
Unemployment Rate (Average Annual)					
1992	5.6%	6.1%	6.0%	7.3%	6.3%
1997	3.5%	3.2%	3.6%	4.6%	3.9%
Labor Participation (1990)					
Female	57.1%	59.2%	57.2%	54.7%	57.3%
Male	74.2%	74.0%	74.9%	73.2%	75.4%
Total	65.0%	66.6%	65.5%	63.5%	65.8%

274

TABLE A-2

LABOR FORCE CHARACTERISTICS

Source: U.S. Bureau of Labor Statistics, Claritas Inc., State Department of Education

	Cincinnati MSA	United States
Civilian Labor Force (Average Annual)		
1992	798,379	124,787,000
1997	838,859	132,304,000
% Change '92 - '97	5.1%	6.0%
Unemployment Rate (Average Annual)		
1992	6.3%	5.5%
1997	3.9%	5.6%
Labor Participation (1990)		
Female	57.6%	56.8%
Male	75.4%	74.4%
Total	66.0%	65.3%

293

2414

TABLE A-3
ECONOMIC STRUCTURE, GREATER CINCINNATI
EMPLOYMENT BY KEY INDUSTRY SECTOR (1990-1995)

Source: County Business Patterns

	Manufacturing		Wholesale and Retail Trades		Finance, Insurance and Real Estate		Services		Total Employment	
Key Industry Sector	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% Chg from 1990
Ohio Locality										
Brown	1,265	21%	1,628	27%	428	7%	1,732	29%	6,037	-1%
Butler	21,139	22%	29,239	31%	6,761	7%	24,942	26%	94,630	12%
Clermont	7,842	21%	13,422	36%	2,383	6%	9,121	24%	37,699	22%
Hamilton	95,871	18%	154,896	30%	34,476	7%	178,222	34%	522,152	1%
Warren	12,158	31%	13,972	36%	1,263	3%	9,205	23%	39,436	36%
Sub-Total	138,275	20%	213,157	30%	45,341	7%	223,222	32%	699,954	5%
Kentucky Locality										
Boone	9,137	23%	13,063	33%	830	2%	8,877	22%	39,931	25%
Campbell	4,116	20%	7,079	35%	799	4%	5,579	28%	20,206	9%
Gallatin	17	3%	476	70%	23	3%	123	18%	685	-5%
Grant	506	13%	1,946	50%	175	5%	763	20%	3,887	27%
Kenton	7,441	14%	15,700	28%	3,470	6%	18,507	34%	55,238	21%
Pendleton	631	37%	466	28%	88	5%	309	19%	1,672	61%
Sub-Total	21,830	18%	38,730	32%	5,385	4%	34,158	28%	121,619	21%
Indiana Locality										
Dearborn	2,342	22%	3,153	30%	539	5%	2,673	25%	10,581	22%
Ohio	10	2%	134	28%	21	4%	250	51%	487	39%
Sub-Total	2,352	21%	3,287	30%	560	5%	2,923	26%	11,068	23%
Total Greater Cincinnati	162,457	20%	255,174	31%	51,256	6%	260,303	31%	832,641	7%
U.S. Average	----	19%	----	28%	----	7%	----	35%	----	7%

244

TABLE A-4
CITIES ACCESSIBLE FROM CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL AIRPORT WITHIN 1-1/2 HOURS OR LESS BY NON-STOP FLIGHTS AS OF JUNE 1998

Source: Reed Travel Group

From Cincinnati International Airport (CVG)

	Destination City	Daily Direct Flights
1	Dayton, OH	10
2	Lexington, KY	9
3	Louisville, KY	11
4	Indianapolis, IN	8
5	Columbus, OH	8
6	Huntington, WV/Ashland, KY	3
7	Fort Wayne, IN	6
8	Evansville, IN	7
9	Charleston, WV	5
10	Toledo, OH	7
11	South Bend, IN	6
12	Akron/Canton, OH	6
13	Tri-Cities, TN	4
14	Cleveland, OH	16
15	Kalamazoo, MI	5
16	Knoxville, TN	7
17	Detroit, MI	17
18	Nashville, TN	8
19	Pittsburgh, PA	12
20	Lansing, MI	4
21	Chicago, IL	29
22	Grand Rapids, MI	8
23	Asheville, NC	3
24	Chattanooga, TN	5
25	Roanoke, VA	4
26	St. Louis, MO	12
27	Greenville, SC	7
28	Milwaukee, WI	10
29	Huntsville, AL	3

245

2414

TABLE A-4
CITIES ACCESSIBLE FROM CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL AIRPORT WITHIN 1-1/2 HOURS OR LESS BY NON-STOP FLIGHTS AS OF JUNE 1998

Source: Reed Travel Group

From Cincinnati International Airport (CVG)

	Destination City	Daily Direct Flights
30	Greensboro, NC	4
31	Charlotte, NC	10
32	Charlottesville, VA	3
33	Madison, WI	4
34	Atlanta, GA	12
35	Raleigh/Durham, NC	6
36	Birmingham, AL	6
37	Memphis, TN	8
38	Columbia, SC	4
39	Buffalo, NY	3
40	Appleton, WI	4
41	Washington, DC/Baltimore, MD	11
42	Richmond, VA	6
43	Toronto, Canada	7
44	Cedar Rapids, IA	4
45	Harrisburg, PA	3
46	Baltimore, MD	3
47	Rochester, NY	3
48	Norfolk, VA	3
49	Myrtle Beach, SC	2
50	Wilkes-Barre/Scranton, PA	4
51	Allentown, PA	2
52	Des Moines, IA	5

294

TABLE A-5

DEGREES GRANTED BY GREATER CINCINNATI POST SECONDARY SCHOOLS

Source: U.S. Department of Labor (1996)

School	Less than 1 Year Certificate	1-2 Year Certificate	2-4 Year Certificate	Associate's Degree	Bachelor's Degree	Master's Degree	Doctorate
Butler County Jvs District-D Russel Lee Career Ctr	30	225	-	-	-	-	-
Chatfield College	-	-	-	30	-	-	-
Cincinnati State Technical & Community College	-	11	-	702	-	-	-
Clermont College	-	-	-	216	-	-	-
College of Mount Saint Joseph	-	-	-	38	354	31	-
Fort Mitchell	-	4	-	44	-	-	-
Interactive Learning Sys	24	53	-	-	-	-	-
Kentucky Career Institute	17	-	6	239	-	-	-
Main Campus	-	-	-	493	2,938	1,198	227
Miami University – Oxford	-	-	-	192	3,303	522	44
Northern Kentucky State Vocational Tech School	-	45	52	-	-	-	-
Northern Kentucky U.	-	-	-	310	1,093	181	-
Queen City Vocational Ctr	-	207	-	-	-	-	-
Raymond Walters College	-	-	-	383	-	-	-
Southern Ohio College	2	-	-	123	-	-	-
Southern Ohio College-							
Southwestern College of Business	15	51	-	-	-	-	-
The Union Institute	-	-	-	-	286	-	508
Thomas More College	-	-	-	59	199	-	-
University of Cincinnati-							
University of Cincinnati-							
University of Cincinnati-							
US Grant Joint Vocational School	-	40	-	-	-	-	-
Warren County Career Ctr	-	23	-	-	-	-	-
Xavier University	-	-	-	71	694	645	-
TOTAL	**88**	**659**	**58**	**2,900**	**8,867**	**2,577**	**779**

297

2414

TARGET INDUSTRY PROFILE: RESEARCH AND DEVELOPMENT CENTERS

Prepared for:

GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP
JANUARY 1999

Prepared by:

The
WADLEY-DONOVAN GROUP
973.540.0012

298

2414

TABLE OF CONTENTS

Page

Introduction 1

Executive Summary 2

Industry Profile:

Section 1 Definition 6

Section 2 Target Trends 7

Section 3 Major Area Employers 9

Section 4 Principal Locational Criteria 12

Section 5 Rationale For Cincinnati 15

Section 6 Appendix: Background Data

Table A-1 - Commercial R&D Centers A-1

Table A-2 - Corporate R&D Centers A-2

Table A-3 - University and Non-Profit R&D Centers A-8

Table A-4 - Economic Structure, Greater Cincinnati Employment by Key Industry Sector (1990-1995) A-11

Table A-5 - Degrees Granted by Greater Cincinnati Post-Secondary Schools A-12

Table A-6 - Cities Accessible from Cincinnati/Northern Kentucky Intl. Airport within 1½ Hours or Less by Non-Stop Flight A-14

299

24114

INTRODUCTION

This target industry profile is the product of a contract between the Wadley-Donovan Group, Ltd. (WDG) and the Greater Cincinnati Regional Marketing Partnership. WDG was retained by the Partnership to profile three Partnership selected target industries or activities. This document profiles one of these industries: ***Research and Development Centers***. This profile defines and outlines the employment composition and recent locational trends of the target. It also presents the target's principal locational criteria and the strengths of Greater Cincinnati for the activity.

WDG is a management consulting firm that specializes in location consulting. Its clients include many of the world's leading companies. As an outgrowth of this corporate consulting, WDG is frequently asked by economic development agencies and utilities to assist them with their economic development programs. Assistance is typically provided in sales and marketing, strategic planning, database development, overall product development, and assessment. Clients have included New Orleans; Tulsa; Orange County and Orlando, FL; Memphis; Phoenix; Asheville, NC; Raleigh; Kansas City; Richmond; Jackson, TN; Mobile; and the states of Delaware, Iowa, Kansas, Kentucky, Maryland, and Washington.

To complete this report WDG analyzed published data provided by the Partnership and its member localities, interviewed local employers and educators and from its own proprietary and published databases. Throughout the report, WDG employed its knowledge of industry locational trends gained from its corporate location consulting.

300

2414

EXECUTIVE SUMMARY

The Greater Cincinnati Regional Marketing Partnership consists of the 13 counties of the Cincinnati-Hamilton, OH-KY-IN Consolidated Metropolitan Statistical Area (CMSA) plus the City of Cincinnati. Figure 1 shows the strategic location of the CMSA within the Midwest and Upper South. Figure 2 shows the location of counties within the CMSA

The metro area has an estimated 1998 population of 1.9 million, and a civilian labor force of slightly more than 1 million. It is a regional and national corporate office center, including the headquarters of 14 Fortune 1000 companies and a number of subsidiary and divisional headquarters. Many of the manufacturing companies headquartered in Cincinnati, such as Procter & Gamble, Milacron and the Ethicon Endo-Surgery division of Johnson & Johnson, also carry on research and development activities as well as manufacturing in the area.

The ability to support such a range of operations with different locational requirements points to a special situation: the metro area is one of the few locations in the country that offers excellent opportunities for combinations of headquarters, research and development, and manufacturing. Most locations offer opportunities for one or possibly two of these functions. The advantages of co-located operations include:

- Shortened lines of communications and spontaneous generation of new product ideas.
- Improved execution of major strategic initiatives.
- Enhanced time-based competitiveness, as evidenced by shortened product development cycles.
- Career paths that are unhampered by relocation considerations.
- Avoidance of a "we-they" culture.

While Greater Cincinnati can attract both research centers and development facilities, the area's strengths are more compatible with the development function. In terms of industries, development activities centered on industrial machinery and equipment and applications involving materials such as plastics, composites and metals should be the focus of marketing efforts, leveraging Greater Cincinnati's capabilities in engineering, materials science, physics and chemistry. Environmental research laboratories are a viable target; an experienced work force at the Fernald site and an existing cluster of environmental consulting and testing laboratories are relevant resources. We classify electronics, software and life sciences as secondary targets.

Key assets offered by the metro area for the targeted functions include:

1. Recruitability of top-notch talent on a regional and national basis. Selectivity and cost of housing, good public and private schools, and the presence of both alternate and spousal employment opportunities are key in recruiting efforts.
2. An attractive local labor market. R & D skills are available, at moderate costs. Local universities and colleges stress work experience as part of their curricula especially in engineering; the educational emphasis is on practical applications and problem-solving.
3. Accessibility by air and ground transportation. The development function, in particular, needs ready access to customers, suppliers, and other corporate sites, primarily manufacturing facilities. The bulk of the U.S. machine tool market is within 300 miles of Greater Cincinnati. The airport offers non-stop flights to over 100 cities, including three in Europe. Round-trip one-day travel to nearly all U.S. cities enhances managerial effectiveness and allows speedy adaptation to changing market conditions.
4. The availability of suitable real estate. Availability of rental space appears better in the northern and eastern sectors of the metro area. Land is available throughout the region, with "greenfield" sites especially prevalent in the southern and western sectors. Construction costs are moderate.
5. A favorable operating environment for R & D, especially in terms of higher education. The University of Cincinnati's Engineering College works closely with the business community. The Institute of Advanced Manufacturing Sciences is a plus, especially for development activities. The business-government climate needs improvement, however, and incentives for R & D can be strengthened.
6. A significant base of research and development centers. There are 27 commercial, 134 corporate and 62 non-profit research and development centers in Greater Cincinnati.

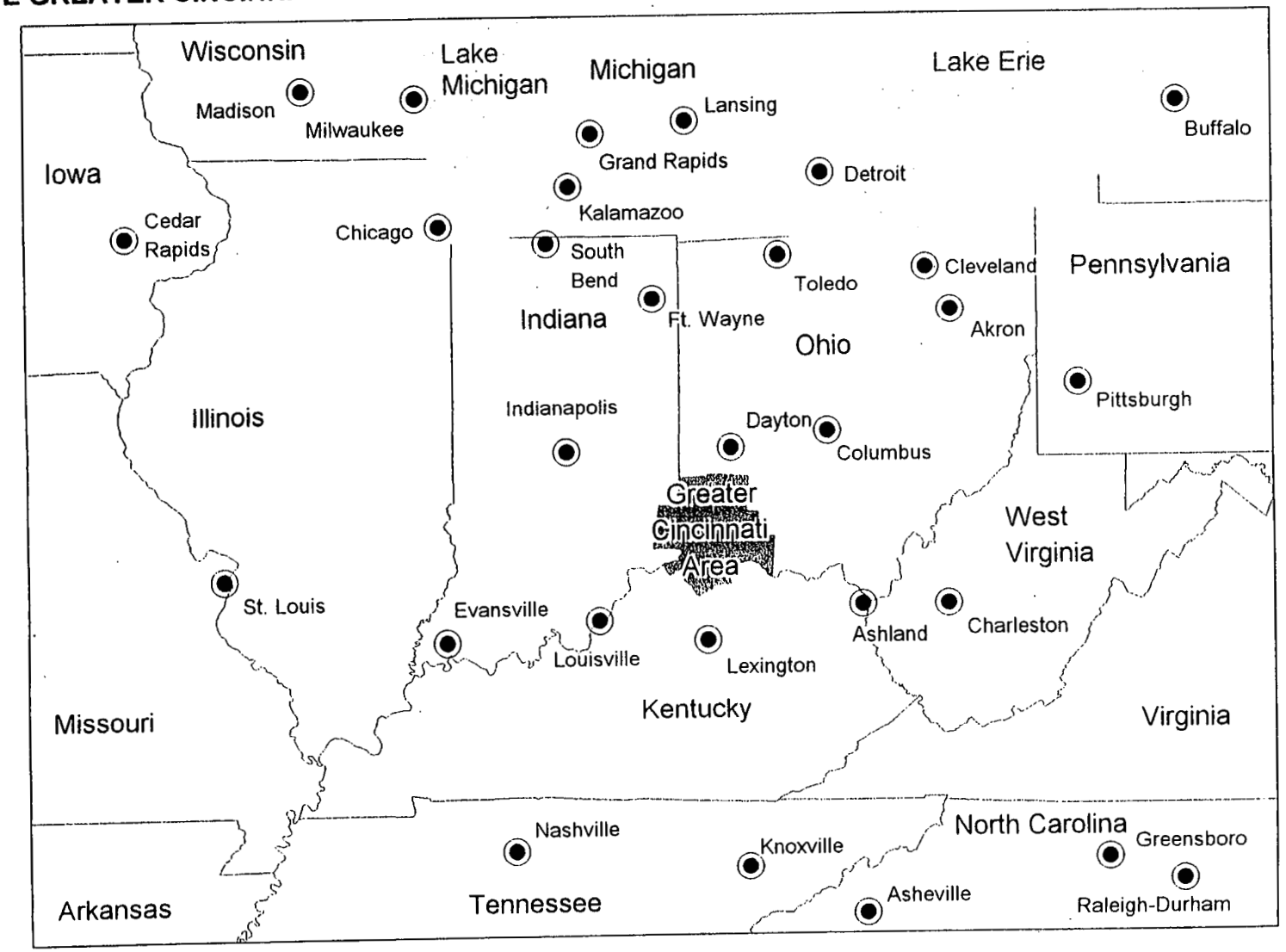
WDG recommends that the Partnership conduct a strong marketing effort to:

- Firms with R & D activities in small communities within a 500 mile radius of Greater Cincinnati. Improved recruitability of talent, the quality of the local labor market and better accessibility are major factors for such companies.
- Firms with R & D activities in higher cost locales, which would benefit from better recruitability without sacrificing the benefits of accessibility.
- European firms seeking to penetrate the U.S. Greater Cincinnati will be attractive to such firms because it offers the possibility of collaboration with local and regional universities, good international and domestic air service, and lower costs.
- Cincinnati-based firms with multiple locations across the U.S. Co-location of research and development with headquarters and/or manufacturing should enhance time-based competitiveness.

302

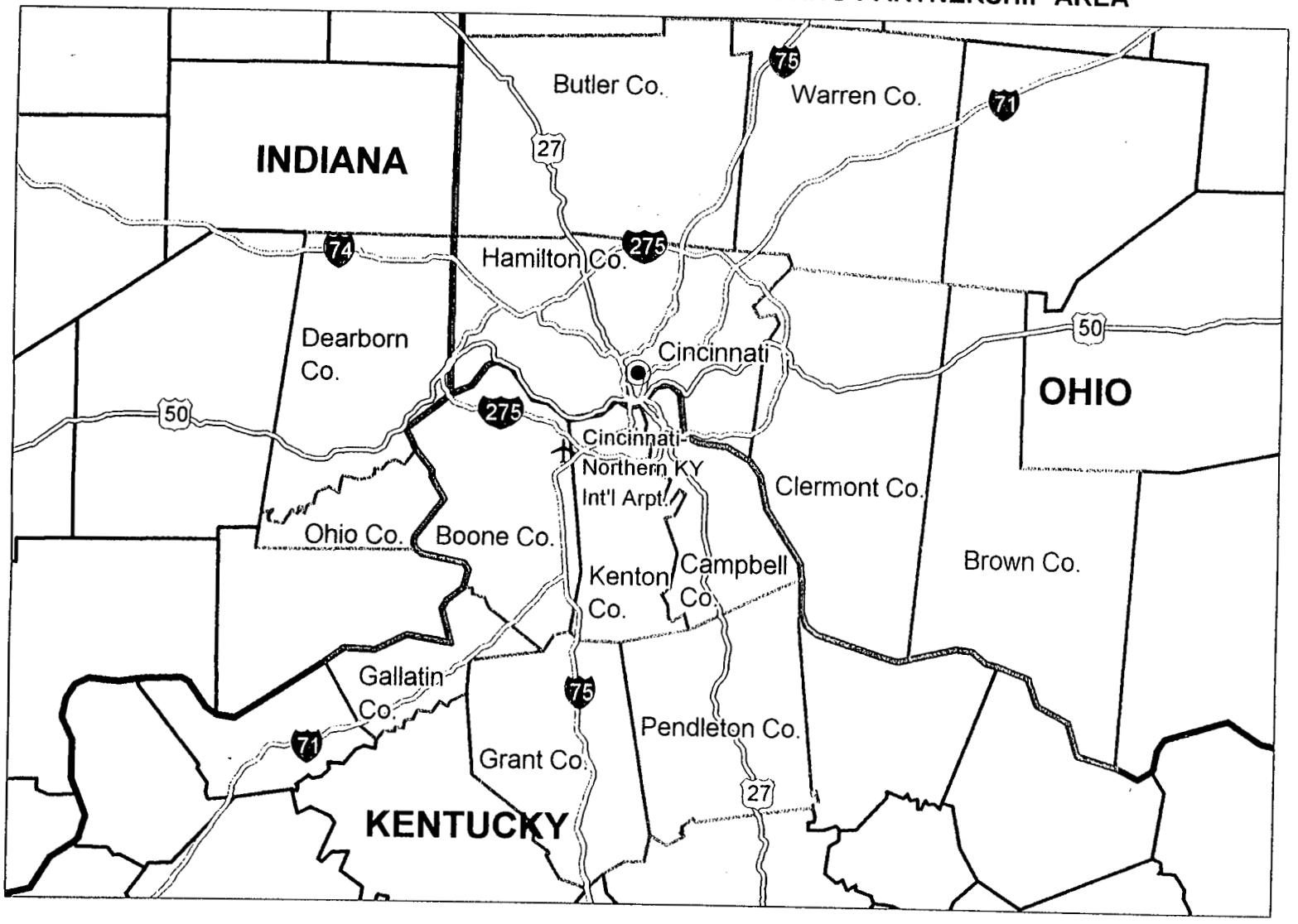
2414

FIGURE 1
THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA WITHIN THE MIDWEST U.S.



303

FIGURE 2
THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA



304

2414

DEFINITION

The definitions of both "research" and "development" vary among industries. Research activities can range from pure or basic research to applied research, while development can be an extension of applied research or an off-shoot of the manufacturing function.

Basic research is carried on by federally supported programs (e.g., health and space), universities and a small number of corporations, especially in the pharmaceutical and biotechnology industries. Applied research by corporations is more widespread, and is carried on by a broad spectrum of industries, as is the development function. Research can also be conducted on a contract, usually project specific basis by independent commercial contract research firms. There is no SIC code for research and development centers as these functions cut across industry lines. However, there is an SIC code for research and testing services (873).

Organizationally, corporations usually consider a number of trade-offs in determining the locations of the research and development functions. In pure research, the focus is on the long term with emphasis on basic (or, sometimes, brand new) technologies and materials. Applied research deals with proven technologies and their adaptation to marketable products via new design and product line extensions. Development must work closely with manufacturing and marketing to insure successful, repetitive production of product at a profit in the shortest possible time. While it could be organizationally advantageous to co-locate all these functions, research facilities usually are located in communities which are proximate to a number of universities and/or governmental research institutions, and which provide ready recruitability of talent. Manufacturing, on the other hand, needs a skilled local labor force, reasonable costs and a good logistics infrastructure.

In smaller companies, co-location of research, development, manufacturing and marketing, along with headquarters, is common. As corporations mature, these functions tend to gravitate to communities that best meet the differing locational criteria described above. In this case, interface among these functions is enhanced by efficient travel, usually by air. Strategically, the proper balance between cost competitiveness (labor, real estate, taxes) and time effectiveness (optimization of product development cycles and distribution times) is the overall aim.

Since research and development centers are capital-intensive, relocations are less frequent than start-ups. When undertaken, relocation usually is sparked by one of the following two events:

- The need for a technological upgrade at a location which is disadvantaged in terms of access to university talent, customers, suppliers or other corporate units.
- Acquisition on the part of the parent company or a major internal reorganization.

TARGET TRENDS

Classified by function, centers with an emphasis on research tend to locate in proximity to a cluster of universities that support the basic research thrust of the corporation. Centers that are oriented to development of product applications, on the other hand, need ready access to customers, suppliers, and/or corporate manufacturing facilities. These needs translate into the following locational patterns:

1. The research-driven life science industries operate research facilities that provide ready access to major universities. The pharmaceutical industry maintains such centers in the New York-Philadelphia corridor, which is anchored by at least ten medical schools within a 100 mile radius, and in Raleigh-Durham with its trio of universities. Bio-technology research centers have thrived in Boston, the San Francisco-San Jose corridor, and Greater Washington which provides easy access to both governmental and university research resources. In both cases, the time for research efforts to result in marketable products is extensive – up to ten years.

2. Spurred by substantial initiatives at Georgia Tech, a cluster of telecommunications research centers has taken root in the Atlanta area. The Dallas area also is strong in telecommunications.

3. Development centers for materials such as plastics and composites and for industrial machinery and equipment tend to locate, along with manufacturing facilities for finished products, near major manufacturing strongholds. A prime example in the Greater Cincinnati area is Mazak, the preponderance of whose customers are within 250 miles. James River Paper selected Cincinnati because the area provided far superior access to consumer products manufacturers in the Mid-West.

4. In the electrical/electronic equipment industry, technical/development centers have clustered near major defense manufacturing regions in Dallas and Phoenix.

5. Silicon Valley spawned the electronics industry because, at the outset, the industry relied on university research capabilities in the San Francisco-San Jose area. Applications software, however, is much less geographically dependent on university resources; software companies are, therefore, dispersed and will become even more so with the increasing use of virtual office technology by employers such at Structural Research Dynamics Corporation; offering the option of at-home work provides a recruiting edge for software developers.

306

2414

Relocation of research centers is infrequent because of established ties with universities, the need to retain world-class scientific talent, and the significant investment in laboratory facilities. Development centers are more mobile and often are located so as to provide easy access to or by significant clusters of customers as part of an over-arching marketing strategy. Reduction of product development time – with product life cycles now frequently measured in months, not years – is another prime objective. For companies in industries such as industrial machinery/equipment and materials (e.g., plastics), geographic positioning combined with advances in digital prototyping and modeling can yield noteworthy timesavings.

Corporate reorganizations/restructurings and acquisitions can provide the impetus for facility relocation, or of joint venture development centers. Local examples in Greater Cincinnati include International Paper, Harris Corporation, and Procter & Gamble.

1. In each case, the relocatability of professionals was enhanced by the relative isolation, in small communities, of the origin facilities (e.g., Quincy, IL and Norwich, NY).

2. Other examples include the relocation of a Philips Electronics research center from Seneca Falls, NY to Ann Arbor, MI and Quaker State's headquarters and technical center from Oil City, PA to Houston, TX. Philips gained university access while Quaker State gained market access.

European and Asian companies seeking to penetrate the U.S. market are another sphere of opportunity. Lucas-Varity recently moved its headquarters and research and development functions from Great Britain to Buffalo, NY in order to provide heightened access to the American automotive market. Many European companies will benefit from lower-cost labor (including not only salaries but also, equally important, reduced benefits cost) in the U.S.

On the other hand, a number of U.S. companies, spurred by advances in CAD/CAM software and telecommunications, are siting technical centers outside the U.S. in order to relieve domestic labor shortages and realize dramatic cost reductions. The disadvantage of losing proximity to customers, suppliers, or corporate manufacturing is offset to some extent by advances in electronic communication technology and next-day delivery services by airfreight vendors. Locales such as India and the Czech Republic can provide the requisite knowledge workers.

MAJOR AREA EMPLOYERS

The Greater Cincinnati area is home to a number of research and development operations, including nearly 120 corporate facilities. There are almost 30 commercial facilities, which are involved in research, testing, and consulting on a contract basis. Completing the roster are over 60 university and not-for-profit organizations, including 39 research centers and development groups at the University of Cincinnati.

The advantages of Cincinnati for corporate headquarters, research and development activities, and manufacturing allow many of the area's companies to combine some or all of these functions at one or multiple locations in the metro area. Therefore, the number of corporate research and development facilities cited above probably is understated since various listings of companies tend to focus on the headquarters or manufacturing functions and do not identify separate research, development or technical support activities.

A representative list of research and development facilities is shown in Tables 1, 2 and 3. More detailed lists are presented in Tables A-1, A-2 and A-3 in the Appendix.

TABLE 1
CORPORATE RESEARCH AND DEVELOPMENT CENTERS, GREATER CINCINNATI
Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Type of R & D Center	Fields of Research
Ohio-based Centers	
BASF	Polymers
Borden, Inc., Coatings & Graphics Laboratory	Inks and lithography
Clopay Plastic Products Co.	Polymers and films
CTL Aerospace	Composites for aerospace
Dames and Moore	Environmental research
Duramed	Pharmaceuticals
Ethicon	Wound closures, health care products
Equistar	Chemicals
F&C Wild Flavors	Flavors and fragrances
General Electric Aircraft Engines	Design engineering, aircraft engine manufacturing and quality support
Givaudan Roure	Flavors
Harris Corp.	Broadcast radio and TV equipment
Henkel Corporation	Industrial and agricultural chemicals, plastics
International Paper	Pulp and paper technology
International Technology Corp.	Environmental, health and safety testing
Kroger Corporate Technology	Foods

308

2414

TABLE 1 continued
CORPORATE RESEARCH AND DEVELOPMENT CENTERS, GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Type of R & D Center	Fields of Research
Ohio-based Centers continued	
Milacron	Plastics, metallurgy
Procter & Gamble	Household products, health care
International Paper	Pulp and paper technology
Cincinnati Electronics	Electro-optical and electro-Mechanical devices
Makino	Machine tools
Armco Inc.	Product development-specialty steels
Structural Dynamics Research Corp.	Software design
Kentucky-based Center	
Mazak	Machine tools

309

TABLE 2
COMMERCIAL RESEARCH AND DEVELOPMENT CENTERS, GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Type of R&D Center	Fields of Research
Ohio-based Centers	
Cincinnati Testing Labs	Materials analysis, mechanical engineering technology
Environmental Chemical	Environmental laboratories
Hill Top Research	Laboratory and chemical testing of health care products
H. C. Nutting	Materials testing
PEI Associates	Environmental consulting
Kentucky-based Centers	
BBI Marketing Services	New product evaluation and testing

TABLE 3
NON-PROFIT RESEARCH AND DEVELOPMENT CENTERS, GREATER CINCINNATI

Source: Greater Cincinnati Chamber of Commerce, Corp Tech Directory of Technology Companies, WDG Interviews

Type of R&D Center (all in Ohio)	Fields of Research
Children's Hospital Research Foundation	Medical research
Environmental Protection Agency	Environmental research
Institute of Advanced Manufacturing Sciences	Manufacturing technology
University of Cincinnati	A number of R & D centers in medical, engineering, robotics, chemistry, computer and behavioral science fields

310

2414

PRINCIPAL LOCATIONAL CRITERIA

The locational criteria described in this chapter apply to both research and development facilities. They also apply to the various industries of interest to Greater Cincinnati for research and development activities: electronics and telecommunications, medical and biotech, plastics, machinery, and software; and to the WDG recommended environmental services target.

There are five key factors that companies consider when seeking a location for research and development centers. These factors are:

1. Recruitability of world-class scientific and professional talent from outside the immediate area. Companies must insure that the location has quality-of-life assets that will enhance the recruitment of new scientists and professionals and the transferability of employees from other corporate locations. Specifically, locations should have:
   - A broad selection of housing in multiple price ranges, combined with reasonable cost of living is a pre-requisite for attracting top-notch talent. Companies will avoid the extremes – locations which are either exorbitantly expensive or lack selectivity and geographic dispersion in housing.
   - High quality suburban public schools, with an array of courses for both handicapped and gifted students, are a major plus for recruiting scientists and their families. An area also should have a wide degree of choice of private secondary schools.
   - Easy, "hassle free" commutes between home and office and to the airport. Locations that provide ample housing opportunities for executive and professional transferees within a commute time of 30 minutes or less have a market advantage.
   - Metropolitan and regional colleges and universities with an array of programs in scientific disciplines are important as opportunities for continuing education.
   - A broad assortment of cultural and recreational offerings, appealing to both families and singles. These offerings are of importance not only in the recruitment/transfer process, but also for entertaining customers, suppliers, and visiting researchers. Most companies seek amenities available only in major metropolitan areas, including five-star restaurants and hotels, major-league professional sports teams, and a variety of cultural offerings.
   - A critical mass of other research and development activities provides the assurance of alternate job opportunities if the current job does not work out and enables ready interaction among members of the scientific community.

311

- Spousal employment opportunities are necessary for today's dual-career family. Many metropolitan areas claim to have informal networks for "trailing spouse" employment, but usually these are haphazard in nature. A formal network for spousal employment provides a competitive edge for an area.
- A safe environment helps a city's image, with low crime rates providing employees with heightened assurance of family well being, especially when extensive travel is required. The same holds true for the health network; world-class medical facilities add to an area's stature.

2. A local labor market that assures a resident pool of scientific, engineering and technician talent at both the exempt and non-exempt levels. The extent and quality of appropriate curricula – e.g., computer science, engineering or medical – at local universities are major factors in the supply of exempt scientific engineering talent, which can reduce the need for relocation. The availability of laboratory, engineering and other technicians, both experienced and recent graduates of two-year college programs are of paramount importance.

3. Accessibility to domestic and international destinations. For R&D centers, ready accessibility – e.g. direct air service – to global cities is a locational prerequisite. "Just-in-time" access to customers, suppliers, university and governmental researchers, and other company locations translates into speedier product development and enhanced employee productivity.

   Non-stop flights to Canada and Mexico and to major European and Asian cities are a distinct plus. One-day turnaround to U.S. cities, i.e. the ability to get to a destination, spend a productive day, and return home in the same day, is most desirable.

4. Available low cost real estate. Real estate cost and availability are closely analyzed in the selection of a site for research and development centers. These functions can be housed in either owned or leased facilities, but very often they must be newly constructed because of specialized needs. The availability of appropriately zoned land, almost always in the suburbs, and the stance of local governmental entities regarding environmental issues, permitting, etc., are crucial in the time-line for start-up.

5. A favorable operating environment for R&D.
   - For centers whose emphasis is on research, proximity of major universities and other research centers e.g., not-for-profit and governmental facilities, is important.
   - For development centers, it is more important to have ready access to customers, and sometimes supplier manufacturing facilities to test products under development.
   - Many corporations prefer to locate research facilities in close proximity to headquarters to assure appropriate guidance and control.

312

2414

- Sometimes it is often advantageous for the development function to be at or near a production facility to streamline the process of new product introduction.
- Research and development centers benefit from the image of a scientific community and appropriate government support, including incentives.

313

RATIONALE FOR CINCINNATI

While Greater Cincinnati can attract both research centers and development facilities, WDG thinks that the area's strengths are more compatible with the development function. In addition, we urge primary marketing emphasis be directed toward industrial machinery/equipment and materials (e.g., plastics, composites) industries. Secondary marketing emphasis is recommended for the electrical/electronics, software and life science (medical, bio-tech) industries. Secondary emphasis also should be directed toward environmental science activity. We base these findings on our analysis of employment in the area, residential occupations and programs at colleges and universities in Greater Cincinnati.

1. Nearly 120 corporations maintain research and development centers in Greater Cincinnati. A representative list is contained in Table 1. There are also a number of university and not-for-profit research centers in the area including 40 at the University of Cincinnati. (See Table 3.)

2. Supporting environmental science as an R&D target are the availability of environmental professionals at the Fernald site, and the presence of 12 corporate, governmental and university environmental research and development centers.

   - Fluor Daniel employs about 2,000 at the Fernald complex in Ross, OH, all of whom will be phased out over the next eight to ten years. This total includes at least 300 engineers and scientists with experience in environmental remediation, hazardous materials, risk assessment, etc. Federal and state funds are available for retraining and employees can be released on a flexible basis to meet a new employer's timetable.

   - The Environmental Protection Agency operates a local R&D center for testing and evaluation, and it funds environmental research nationwide.

314

2414

3. Employment patterns in Greater Cincinnati favor industrial machinery and equipment and plastic products, as shown in Table 4. These patterns are measured in absolute numbers employed by sector and each sector's proportion of total employment compared to national averages.

TABLE 4
EMPLOYMENT PATTERNS IN GREATER CINCINNATI, 1996
(SELECTED R&D INTENSIVE INDUSTRIES)
Source: County Business Patterns

Industry	Greater Cincinnati Employment		U.S.	Concentration Ratio	Rankings	
	Absolute Number	% of Total Employment	% of Total Employment	Cincinnati vs. U.S. U.S. = 1.00	Absolute Number	Comparison of Concentration Ratios: Local vs. U.S.
Key Manufacturing Sectors						
Industrial Machinery/Equipment	23,304	2.79%	1.87%	1.49	1	1
Fabricated Metal Products	13,818	1.66%	1.44%	1.15	2	2
Plastic Materials/ Plastic and Rubber Products	9,612	1.15%	1.11%	1.04	3	3
Electrical/Electronic Equipment	9,089	1.09%	1.49%	0.73	4	5
Computer and Data Processing Services	7,846	0.94%	1.14%	0.85	5	4
Medical/Bio-Tech *	2,908	0.34%	0.50%	0.68	6	6
Key Service Sectors						
Health Services	85,672	10.28%	10.81%	0.95	Not ranked	Not ranked
Engineering/ Architectural Services	8,534	1.02%	0.87%	1.17	Not ranked	Not ranked
Research and Testing Services	3,693	0.44%	0.46	0.97	Not ranked	Not ranked

* Including drugs, agricultural chemicals and medical instruments and supplies.

315

4. The occupational patterns of exempt professionals show that engineering disciplines far outweigh scientific occupations and information technology specialties, both in terms of absolute numbers and concentration ratios in the workforce. The concentrations of industrial and mechanical engineers indicate an applications-oriented environment in Greater Cincinnati, favoring development functions as opposed to basic research. (See Table 5.)

TABLE 5
OCCUPATIONAL CONCENTRATIONS APPLICABLE TO R&D CENTERS
(EXEMPT & PROFESSIONALS)
Source: U.S. Census Bureau

	Greater Cincinnati		U.S.
Occupations of Residents	**Number**	**% of Labor Force**	**% of Labor Force**
Engineers			
Aerospace	2,375	0.26%	0.12%
Metallurgical/Materials	392	0.04	0.02
Chemical	1,290	0.14	0.05
Nuclear	26	---	0.01
Civil	1,570	0.17	0.20
Electrical/Electronic	2,764	0.30	0.38
Industrial	1,944	0.21	0.14
Mechanical	2,070	0.23	0.15
Engineers, Unclassified	3,267	0.36	0.28
TOTAL	15,698	1.71	1.35
Scientists			
Physicians	4,059	0.45%	0.48%
Mathematical	15	---	---
Physicists	131	0.01	0.02
Chemists	1,860	0.20	0.11
Geologists/Geodesics	117	0.01	0.04
Physical Scientists, not elsewhere classified	157	0.02	0.02
Agriculture/Food	202	0.02	0.03
Biologists/Life Sciences	458	0.05	0.05
Medical Scientists	249	0.03	0.02
Forestry/Conservation	---	---	0.03
TOTAL	7,247	0.79	0.80

316

2414

TABLE 5 (CONTINUED)
OCCUPATIONAL CONCENTRATIONS APPLICABLE TO R&D CENTERS
(EXEMPT & PROFESSIONALS)

Source: U.S. Census Bureau

	Greater Cincinnati		U.S.
Occupations of Residents	Number	% of Labor Force	% of Labor Force
Information Technology			
Computer Systems Analysts	3,647	0.40	0.38
Operations/Systems Researchers	1,789	0.20	0.20
Computer Programmers	4,906	0.54	0.54
TOTAL	10,342	1.14	1.12

5. The output of local colleges and universities is evenly balanced between engineering and science disciplines. The University of Cincinnati predominates in both engineering and science graduates. Miami University and The University of Northern Kentucky together account for about 20% of engineering graduates (BA's); these two plus The College of Mount St. Joseph, Thomas More and Xavier University have extensive science programs, with a combined total of over 300 BS graduates. As shown in Tables 6, 7, and 8, in total area institutions are producing over 2,000 graduates (BA/BS, Masters, Ph.D.'s and MD's) annually in areas of specialization applicable to R&D centers. In addition to this local output graduates of institutions in nearby Ohio communities (e.g., Dayton and Columbus) and in Indiana and Kentucky are available to R&D employers in Greater Cincinnati. Among universities within 200 miles of Cincinnati are Ohio State, University of Dayton, Purdue, Indiana University, Indiana State, Ball State, University of Kentucky and University of Louisville.

317

The University of Cincinnati is focusing, with increasing emphasis, on medical technology. Science graduates (Table 7) are predominately in disciplines oriented to medical/bio-tech research. This characteristic combined with Procter & Gamble's emphasis on medically related research and development could attract companies in the medical/pharmaceutical/bio-tech field to Greater Cincinnati. However, the area does lack a cluster of medical schools as are found in the New York-Philadelphia corridor and in Raleigh-Durham. The area also needs an incubator facility for start-ups. The University of Cincinnati's Medical School ranks only 72nd in the U.S., per the Gourman Report. A niche possibility in this field is the management of clinical research trials, with Kendle, Phoenix International and Hilltop Research forming a local cluster.

TABLE 6
NUMBER OF DEGREES IN RESEARCH AND DEVELOPMENT DISCIPLINES IN GREATER CINCINNATI: ENGINEERING (1994*)

Source: U.S. Department of Education

Engineering Discipline	Bachelors	Masters	Doctorate
Aerospace	23	15	11
Chemical	51	12	3
Civil	65	19	2
Computer	9	7	3
Electrical/Electronics	63	18	8
Engineering Mechanics	13	2	1
Environmental	3	23	3
Industrial	63	20	5
Material	21	12	3
Metallurgical	---	---	1
Nuclear	9	8	1
Engineering Physics	6	---	---
Architectural Engineering	67	---	---
Other	---	4	---
TOTAL	506	173	52

* Latest year for which data are available.

318

2414

TABLE 7
NUMBER OF DEGREES IN RESEARCH AND DEVELOPMENT DISCIPLINES IN GREATER CINCINNATI: SCIENCE (1994*)

Source: U.S. Department of Education

Science Discipline	Bachelors	Masters	Doctorate	First Professional
Biology	197	71	---	---
Botany	39	8	---	---
Biochemistry	14	---	---	---
Molecular Biology	---	3	---	---
Microbiology	37	7	9	---
Anatomy	---	1	4	---
Radiation Biology	---	4	---	---
Misc. Biology	---	---	5	---
Pathology	---	---	1	---
Pharmacology	---	---	3	---
Physiology	---	---	4	---
Chemistry	103	24	20	---
Medicinal Chemistry	---	7	---	---
Physics	40	26	5	---
Environmental Science	9	17	---	---
Environmental Health	---	20	---	---
Medicine	---	---	---	154
Pharmacy	78	---	---	---
Health Systems/Services	---	50	19	---
Medical Technology	12	---	---	---
Biological/Physical Studies	36	---	---	---
TOTAL	565	184	70	154

* Latest year for which data are available.

319

TABLE 8
NUMBER OF DEGREES IN RESEARCH AND DEVELOPMENT DISCIPLINES IN GREATER CINCINNATI: INFORMATION TECHNOLOGY (1994*)

Source: U.S. Department of Education

Information Technology Discipline	Bachelors	Masters
Computer/Information Science	80	46
Information Science/Systems	30	6
Mathematics	88	51
Operations Research	24	14
TOTAL	222	117

* Latest year for which data are available.

As a key organizational benefit, Greater Cincinnati can attract combinations of headquarters, high technology manufacturing facilities and development functions. This is a noteworthy feature since co-location of these functions usually results in better communications, improved execution of major strategic initiatives, and shortened product development cycles. Several Greater Cincinnati corporations feature this consolidated organizational model, including:

1. Procter & Gamble (headquarters plus portions of R&D and manufacturing)
2. Ethicon (Division headquarters and R&D)
3. Harris (Division headquarters and R&D)
4. Mazak (headquarters, technical center and manufacturing)
5. Henkel Chemicals Group (headquarters, R&D and manufacturing)
6. Milacron (headquarters, R&D and manufacturing)

320

2414

When evaluated against the first major criterion for locating research and development centers, recruitability of talent, Greater Cincinnati exhibits a number of advantages.

1. Median home value in Greater Cincinnati is 7% below the U.S. average. The area features a range of housing opportunities, with employers interviewed mentioning Loveland, Westchester and Milford as likely areas for R&D professionals. As shown in Table 9, median home values are higher in the Ohio portion of the tri-state area, with Warren County values at the top of the local scale ($104,000).

TABLE 9
MEDIAN HOME VALUE BY COUNTY
Source: Claritas

Area	Median Home Value, 1998
Ohio Locality	
Brown County	$62,400
Butler County	94,400
Clermont County	92,100
Hamilton County	96,300
Warren County	103,600
Kentucky Locality	
Boone County	99,700
Campbell County	80,800
Gallatin County	58,300
Grant County	62,900
Kenton County	87,600
Pendleton County	56,300
Indiana Locality	
Dearborn County	76,100
Ohio County	61,400
Greater Cincinnati	**$93,300**
U.S. Average	**$100,600**

321

- Area housing costs will be attractive for relocatees from major urban centers, such as Chicago, New York, Boston and San Francisco, but not for those coming from southeastern locales, where housing costs are typically lower.
- Reflecting moderate housing values, the cost of living in Greater Cincinnati falls below the national average (98.5, U.S. = 100).
  - Data is not available for all the fourteen jurisdictions in the MSA, but of those available, only Hamilton County exceeds the U.S. norm (by 4%).
  - Boone and Kenton Counties in Kentucky are 5-7% below that average.

2. Easy commutes, as shown in Table 10 enhance productivity.

TABLE 10
ONE-WAY COMMUTE TIMES, GREATER CINCINNATI
Source: U.S. Census Bureau

Area	% of Workforce with Commute Times of: Up to 30 Minutes	Over 60 Minutes
Ohio Locality		
Brown County	49.9%	16.2%
Butler County	72.9	2.9
Clermont County	53.2	4.8
Hamilton County	72.6	2.9
Warren County	68.3	2.8
Kentucky Locality		
Boone County	71.0%	3.8%
Campbell County	69.4	4.1
Gallatin County	50.9	11.0
Grant County	51.6	10.9
Kenton County	73.7	3.5
Pendleton County	43.5	19.1
Indiana Locality		
Dearborn County	52.7%	8.1%
Ohio County	49.4%	16.6%
Greater Cincinnati	**69.4%**	**3.7%**
U.S. Average	**69.5%**	**6.0%**

322

2414

- The highway network in and around Greater Cincinnati includes I-75 and I-71, extending north and south; I-74 providing access to/from the west; and I-275 forming a perimeter beltway around the city. This network provides relatively easy, "hassle-free" commutes by car and offsets the lack of mass transit, especially commuter rail.
- Several interviewees, however, pointed to increasing congestion as businesses gravitate to suburban locales. Studies are underway for a mass transit link between Warren County and the airport, including commuter rail in the Eastern Corridor.
- Several corporate employers in Greater Cincinnati reinforced the supposition that easy commutes translate into enhanced productivity, pointing to the need for longer hours on the part of down-sized employee populations.

323

3. Public and private schools are an asset in recruiting. This finding reflects the position of interviewees whose companies have relocated to Greater Cincinnati from other regions. (Comparative statistics in individual school districts across the country are not available.)
   - Greater Cincinnati features a number of good to excellent suburban public schools.
     - Indian Hill, Mason, Lakota, Wyoming and Forest Hills were cited by interviewees as top school districts. Most interviewees perceived that Ohio public schools, in general, are leaders in the area.
     - Indiana schools were rated as average, with improvements needed in computer skills for production jobs. More local funding and control typify Ohio schools, with equality of funding a statewide issue (as in many other states).
     - Both Ohio and Kentucky schools offer noteworthy special education programs, for both gifted and handicapped students.
     - Schools in the city of Cincinnati are a cut above those in inner city schools in most major metro areas, with school crime a much lesser issue. The city is a leader in magnet schools and is experimenting with year-round schools, different configurations and alternative schools.
   - Parochial and private schools are excellent.
     - The Cincinnati area diocesan school system is the 10th largest in the U.S.
     - Covington diocese schools are rated tops in the U.S., by the National Conference of Bishops.
     - Typical private school cost is $8-10,000 per year; with parochial schools considerably less.
   - In all, relocatees can choose from a spectrum of school systems, both public and private/parochial, with large to small student populations and with high to moderate/low tax rates.
     - Relocatees from the South and Midwest generally will find that public school quality is better.
     - Relocatees from the Northeast and major West Coast areas can find equivalent quality.
     - No relocatee will face a downgrade in quality.
     - Relocatees need not address the typical trade-off of major metro areas: quality of schools vs. length of commute.

324

2414

4. The breadth of cultural and recreational offerings in Greater Cincinnati is attractive to relocating families

   - As summarized in Table 11, Greater Cincinnati features an impressive array of cultural and recreational opportunities for a metropolitan area of its size. And, these opportunities are readily accessible from suburban locales.

TABLE 11
SELECTED RECREATIONAL AND CULTURAL AMENITIES IN GREATER CINCINNATI
Source: Greater Cincinnati Chamber of Commerce

Cincinnati Symphony Orchestra	The Cincinnati Zoo
The Cincinnati Pops	Paramount's Kings Island, a 1,600 acre theme park
Cincinnati Ballet	The Omnimax Theater in the Museum Center at Union Terminal
Cincinnati Opera	20,000 acres of city and county parks
Playhouse in the Park	More than 20 state parks within a two hour drive
University of Cincinnati College Conservatory of Music	More than 60 public golf courses and 34 private clubs
The Ensemble Theater of Cincinnati	The Cincinnati Reds, baseball's first professional team in 1869
Riverbend Music Center	The Cincinnati Bengals of the National Football League
Showboat Majestic	The Cincinnati Cyclones of the International Hockey League
Aronoff Center for the Arts	The Cincinnati Cheetahs of the United States Interregional Soccer League
Cincinnati Art Museum	The Kroger Senior Classic Golf Tour
Contemporary Arts Center	The ATP Men's Professional Tennis Championship Tournament
Cincinnati Museum of Natural History	College and University Athletic Programs
Cincinnati Historical Society	Oktoberfest-Cincinnati, the world's largest next to the original in Munich
The Children's Museum of Cincinnati	The Cincinnati Flower Show
Riverfest	Ujima Cincinbraten
Tall Stacks	Black Family Reunion

325

   - Many of these offerings are family-oriented, enhancing the recruitability of well-educated professionals and scientists. WDG's employer interviews produced mixed signals concerning the recruitability of young singles.
     - The relatively new Labor Force Expansion and Attraction (LEAP) program should be a major asset in recruiting young college graduates to the area. The diversity of career opportunities in Greater Cincinnati should be a key focus of the program. Better communication of social opportunities such as the monthly singles gathering at the Act Museum also will help.

- Some interviewees reported difficulties in recruiting talent from the East and West Coasts, citing the same issues as noted above for singles, plus geographic drawbacks such as climate and distance from the ocean. Assimilation of ethnic groups could be improved although established local institutions such as Saturday Schools do appeal to the Japanese. There is a need for a reception or welcome center that provides guidance on mundane matters such as obtaining drivers licenses for transferees to all three states in the region.

5. The availability of alternate and spousal employment opportunities is another recruiting plus for Greater Cincinnati.
   - Many recruits need assurance of alternate career opportunities if the current job does not work out. Both the diversity of Greater Cincinnati's economy and clusters of research and development facilities provide the necessary margin of assurance.
     - The structure of Cincinnati's economy, in terms of employment by industry sector, closely mirrors that of the U.S. The only exceptions are slight under-representation in the services sector and slight over-representation in wholesale and retail trades. Table A-4 in the Appendix shows private industry employment in key sectors.
   - The Job Bank in Cincinnati, formed by a coalition of 25 companies, with Procter and Gamble as the spearhead, focuses on finding spousal employment. As such, it institutes a major recruiting asset for the area. With a paid staff of two or three, the Job Bank utilizes the services of an out-placement firm. We suggest that the services of the Job Bank be communicated to all major research and development center employers in Greater Cincinnati, with expansion in membership beyond the current 25 a distinct possibility.

6. Safety and health data also should assist in recruiting scientific talent to Greater Cincinnati.
   - As shown in Table 12, Greater Cincinnati's relatively low crime rates – both violent and non-violent crime rates are well below the national average, except for Hamilton County's non-violent rate – will appeal to potential transferees, and especially to those of international origin. This advantage bolsters the viewpoint of corporate interviewees that Cincinnati "has all the amenities of a large city without large city negatives".

326

2414

TABLE 12
CRIME RATES PER 100,000 POPULATION BY JURISDICTION (1995)
Source: Federal Bureau of Investigation

Area	Non-Violent Crime Rate	Violent Crime Rate
Ohio Locality		
Brown County	NA	NA
Butler County	3,907	444
Clermont County	2,803	131
Hamilton County	4,546	646
Warren County	NA	NA
Average (Ohio Sector)	3,711	475
Kentucky Locality		
Boone County	3,293	247
Campbell County	3,263	227
Gallatin County	1,085	146
Grant County	1,919	139
Kenton County	3,500	475
Pendleton County	958	201
Average (Kentucky Sector)	3,166	256
Indiana Locality		
Dearborn County	663	354
Ohio County	NA	NA
Average (Indiana Sector)	591	316
U.S. Average	4,338	682

327

7. Health care in the area is another asset, especially in the Ohio portion of the MSA where the concentration of physicians per 100,000 population exceeds the national average by well over 10%. (See Table 13.)

TABLE 13
HEALTH CARE BY JURISDICTION
Source: U.S. Bureau of the Census

Area	Physicians Per 100,000 Population	Total # of Hospitals
Ohio Locality		
Brown County	51	1
Butler County	105	4
Clermont County	66	1
Hamilton County	386	19
Warren County	67	0
Average (Ohio Sector)	256	25
Kentucky Locality		
Boone County	115	0
Campbell County	147	1
Gallatin County	17	0
Grant County	23	1
Kenton County	215	4
Pendleton County	23	0
Average (Kentucky Sector)	152	6
Indiana Locality		
Dearborn County	66	1
Ohio County	NA	0
Average (Indiana Sector)	56	1
Greater Cincinnati MSA	**262**	**32**
U.S. Average	**224**	**-**

328

- Area health institutions are internationally recognized. The University of Cincinnati Medical Center ranks among the top 10 in the country in medical research funding. The Children's Hospital ranks among the top three of its kind in the U.S. The Shriners Burn Institute is one of four such national facilities. Health care is affordable, with costs about 5% below the U.S. average.

8. Local WDG-interviewed employers give good marks to the recruitability of talent from outside the area, giving a 4.0 rating to recruitability from outside the area (5=best, 1=worst).

2414

The labor market in Greater Cincinnati is attractive for research and development centers. Labor availability and quality are compatible with the needs of such operations, and costs are moderate. Measured against yardsticks of labor supply, demand and quality, Greater Cincinnati closely mirrors the U.S. as a whole.

1. As shown in Table 14, Key Labor Supply Indicators, growth in population and new entrants to the labor force in Greater Cincinnati are forecast to lag slightly behind the U.S. average, however, Northern Kentucky almost exactly matches the national norm.
   - A plus is that the concentration of technicians in the labor force exceeds the national figure by about 8%.

329

TABLE 14
KEY LABOR SUPPLY INDICATORS
Source: U.S. Census Bureau

Location	1998 Population (000)	Population Growth 1997-2003 (%)	% Change 18-34 Year Olds 1997-2002 (%)	Occupational Profiles: Percentage of Workforce in Selected Occupations	
				Professional (%)	Technician (%)
Ohio Counties					
Brown	40.4	7.0	4.8	9	2
Butler	331.1	3.8	(0.7)	14	4
Clermont	174.1	6.9	1.5	11	3
Hamilton	848.7	(2.2)	(5.6)	17	4
Warren	140.8	10.9	5.6	13	4
Subtotal	1,535.0	1.6	(2.5)	15	4
Kentucky Counties					
Boone	77.1	14.6	8.8	10	4
Campbell	87.9	1.7	(2.7)	12	4
Gallatin	6.7	11.5	8.7	7	1
Grant	20.3	12.9	8.8	7	3
Kenton	146.1	0.5	(4.2)	12	4
Pendleton	14.2	8.3	3.7	8	1
Subtotal	352.3	5.1	0.2	11	4
Indiana Counties					
Dearborn	46.8	9.1	9.2	11	3
Ohio	5.5	0.8	(2.3)	5	5
Subtotal	52.3	8.2	8.0	10	3
Greater Cincinnati	**1,939.6**	**2.4**	**(1.7)**	**14**	**4**
U.S. Average	-----	**4.3**	**(0.4)**	**14**	**3.7**

2. Labor demand (employment growth) and labor supply (labor force growth) are in balance in the Ohio counties. However, in Northern Kentucky and Indiana, employment growth over the most recent five years has outstripped labor supply by a wide margin. Nevertheless, the relationship between these indicators for Greater Cincinnati is virtually the same as in the country as a whole. Table 15 shows supply and demand data for the most recent five-year periods for which each data set is available.

3. As in most metropolitan areas, area unemployment rates have dropped significantly in the 1990's. While Greater Cincinnati's 1997 unemployment rate was about 1½ percentage points under the national average of 5.6%, it is in the same range as – and, in many cases, higher than – many Midwestern and Southeastern metro areas whose economies have prospered during this decade.

TABLE 15
KEY LABOR DEMAND INDICATORS
Source: County Business Patterns, U.S. Bureau of Labor Statistics

Location	Labor Force Growth 1992-1997 (%)	Employment Growth 1990-1995 (%)	Average Unemployment Rate – 1997 (%)
Ohio Counties			
Brown	8.1	(1)	5.7
Butler	9.3	12	3.6
Clermont	8.1	22	4.2
Hamilton	1.6	1	3.5
Warren	11.7	36	3.2
Subtotal	4.8	5	3.6
Kentucky Counties			
Boone	16.7	25	3.6
Campbell	7.1	9	3.8
Gallatin	15.7	(5)	5.8
Grant	15.2	27	5.3
Kenton	6.3	21	3.6
Pendleton	12.9	61	6.7
Subtotal	9.4	21	3.9
Indiana Counties			
Dearborn	10.7	22	3.6
Ohio	4.6	39	3.3
Subtotal	9.2	23	3.6
Greater Cincinnati	**5.8**	**7**	**3.9**
U.S. Average	**6.0**	**7**	**5.6**

330

2414

4. Many technical R&D skills are available in Greater Cincinnati. R&D center employers interviewed included Procter & Gamble, Structural Dynamics Research Corporation, Equistar, Harris Corporation, Makino, Mazak and International Paper. Employer responses to survey questions about labor availability (see Table 16) were encouraging, except for engineers.

   - Reflecting shortages nationally, interviewed area employers gave ratings of 2.6 and 2.4 for the availability of entry level and experienced information systems professionals.

TABLE 16
EMPLOYER VIEWS OF LABOR AVAILABILITY
(5=PLENTIFUL, 1=UNAVAILABLE)
Source: WDG Interviews

Position	Composite Employer Rating
Technicians (non-office)	3.4
Professionals/Managers	3.3
Technicians (office)	3.2
Engineers, Entry level	2.6
Engineers, Experienced	2.5

331

5. With over 16,000 graduates annually, Greater Cincinnati's 21 institutions of higher learning constitute a major asset for the area. Over half represents graduates with bachelor's degrees and nearly 22% have advanced degrees. There is a strong relationship between the business and higher educational communities. Table A-5 in the Appendix shows the degrees granted by the area's two and four year colleges and universities.

   - Co-op programs are extensive at the University of Cincinnati in the 4-year and 2-year programs, and at Cincinnati State Technical College. The commitment of those institutions to practical work experience is impressive. The University of Cincinnati requires a minimum of four quarters of co-op work for all engineering students. The University, which is expanding its international engineering co-op program, emphasizes applied research and problem-solving in the engineering program.
   - There are business outreach programs, especially at Raymond Walters (the 2-year program at the University of Cincinnati) and Cincinnati State Technical College.
   - There is business-oriented leadership at Thomas More College and at Northern Kentucky University, whose president envisions acting as a broker to bring global training resources to the Cincinnati area.

6. The educational profile of local residents conforms to national patterns. Greater Cincinnati's educational attainment profile is a virtual mirror image of the U.S. For example, focusing on key groups for an R&D center, persons with a bachelor's degree or more, the proportion of the working age population with these credentials is virtually identical to the national average of 20.3%, composed of 13.1% with bachelor's degrees plus 7.2% with graduate degrees. (See Table 17.)

TABLE 17
EDUCATIONAL ATTAINMENT
Source: U.S. Census Bureau

Location	Educational Attainment Levels of Working Age Population				
	No High School Diploma	High School Diploma Only	1-3 years College	Bachelors Degree	Graduate Degree
Ohio Counties					
Brown	35.1%	40.3%	17.2%	4.2%	3.2%
Butler	24.0	34.7	22.6	12.0	6.8
Clermont	27.2	36.4	21.9	9.9	4.6
Hamilton	24.4	27.7	24.3	15.1	8.6
Warren	24.5	34.1	23.4	12.1	5.9
Subtotal	24.8	30.7	23.5	13.5	7.5
Kentucky Counties					
Boone	23.6	36.4	24.7	9.7	5.6
Campbell	29.0	34.1	21.9	9.6	5.3
Gallatin	40.2	38.9	15.9	3.3	1.7
Grant	38.4	39.9	14.4	4.7	2.5
Kenton	25.6	33.1	24.2	11.4	5.6
Pendleton	39.9	40.7	12.7	3.7	3.1
Subtotal	27.6	34.7	22.6	9.9	5.2
Indiana Counties					
Dearborn	26.5	43.4	19.3	6.5	4.2
Ohio	32.3	46.5	15.2	4.2	1.8
Subtotal	27.2	43.8	18.8	6.2	3.9
Greater Cincinnati	**25.4%**	**31.7%**	**23.2%**	**12.7%**	**7.0%**
U.S. Average	**24.8%**	**30.0%**	**24.9%**	**13.1%**	**7.2%**

331

2414

7. The quality of the Cincinnati area labor force is strong. Employers surveyed gave favorable ratings in response to queries on skills of job applicants, work ethic, productivity and satisfaction with training/education at area technical/vocational schools, community colleges and universities. (See Table 18.)

TABLE 18
EMPLOYER VIEWS ON LABOR FORCE QUALITY AND TRAINING*
(5=EXCELLENT, 1=POOR)
Source: WDG Employer Interviews

Measure	Average Rating
Basic Skills	
Overall Skills	3.3
Written Skills	2.9
Reading Skills	3.1
Arithmetic/Math Skills	3.4
Basic Computer Skills	3.1
Work Ethic	3.6
Productivity	3.5
Productivity Relative to Other Sites	3.6
Satisfaction with Training/Education at:	
High Schools	2.6
Technical/Vocational Schools	3.0
Community Colleges	3.3
Universities	3.9

* Based on survey results from 18 employer interviews

333

8. Labor costs are moderate. According to national data source, Greater Cincinnati's professional salaries are slightly higher than those of some leading Southeastern cities. (See Table 19.)

TABLE 19
1998 LABOR COSTS FOR TYPICAL R&D POSITIONS
ANNUAL SALARY ($000)
Source: Economics Research Institute

Location	Biologist	Chemist	Chemical Technician	Electronic Technician	Medical Lab Technician	Average	Index: U.S. = 100
Greater Cincinnati	$38.3	$41.3	$32.8	$38.3	$27.4	$35.6	99.2
Columbus, Ohio	38.8	41.8	33.1	38.9	27.8	36.1	100.6
Atlanta, GA	38.1	41.3	32.3	37.8	26.7	35.2	98.1
Nashville, TN	36.1	39.2	30.7	35.4	25.4	33.4	93.0
Charlotte, NC	35.8	39.5	30.9	36.1	25.3	33.5	93.3
Raleigh-Durham, NC	36.8	40.6	32.3	36.7	25.8	34.4	95.8
Louisville, KY	38.2	42.1	32.4	38.0	26.7	35.5	98.9
Indianapolis, IN	38.3	41.5	32.6	38.0	27.6	35.6	99.2
U.S. Average	38.4	42.0	32.4	38.9	27.3	35.9	100.0

- The 1998 Greater Cincinnati Compensation and Benefits Survey, as shown in Table 20, paints an even more favorable picture of labor costs.

TABLE 20
LOCAL SURVEY RESULTS FOR SELECTED TECHNICAL POSITIONS
MEAN ANNUAL PAY AND PAY RANGES ($000)
Source: Adams, Nash and Haskell Survey

	Actual Pay	Pay Range	
Position	(Weighted Mean)	Minimum	Maximum
Electrical/Electronics Technician	$31,027	$24,119	$37,301
Electrical Engineer	63,837	39,793	67,375
Electrical Engineering Technician	30,549	25,214	36,219
Lab Technician 1	24,892	18,893	25,994

334

2414

9. Payroll taxes also are moderate. Indiana's unemployment insurance and workers' compensation costs are lower than those in Kentucky and Ohio. (See Table 21.)

TABLE 21
PAYROLL TAXES
Source: State Departments of Labor, State Chambers of Commerce

Payroll Tax	Locale		
	Indiana	Kentucky	Ohio
Unemployment Insurance			
Average Rate for Existing Employers 1997	1.3%	2.0%	2.1%
Taxable Base	$7,000	$8,000	$9,000
Workers Compensation			
Rate for Clericals, per $100 of payroll as of 3/97	$0.26	$0.51	$0.39
Maximum Weekly Benefit Rate (1996)	$428	$416	$511

Greater Cincinnati meets the accessibility requirement of research and development centers. Air and surface transportation to and from Greater Cincinnati is excellent.

335

1. For R&D installations of all types, ready accessibility to domestic and international destinations is a locational prerequisite. Non-stop air service to and from worldwide locations was a major factor in choosing a Cincinnati location by Harris and International Paper.

2. Good accessibility, primarily by air, translates into better proximity to customers, suppliers, and other company facilities located elsewhere as well as improved productivity for professionals and researchers. For facilities where the emphasis is on development (as opposed to research), ready access to both customers and suppliers means time savings in bringing products to market.

3. Largely because Cincinnati is a key hub for Delta Air Lines, non-stop flights are available to most of the major U.S. cities, as shown in Table 22, with at least three flights to each listed metro area.

TABLE 22
AIR SERVICE TO MAJOR U.S. CITIES
Source: OAG

Destination City	# of Daily Flights	Destination City	# of Daily Flights
Atlanta, GA	12	Miami, FL	3
Boston, MA	5	Minneapolis, MN	11
Charlotte, NC	10	New York, NY/Newark, NJ	21
Chicago, IL	29	Phoenix, AZ	4
Dallas/Ft. Worth, TX	9	Salt Lake City, UT	6
Denver, CO	4	San Francisco, CA	4
Houston, TX	3	Seattle, WA	4
Los Angeles, CA	4	Washington, D.C./Baltimore, MD	11

4. International destinations are accessible via non-stop flights to Toronto, Montreal, London, Paris, Frankfurt, Zurich and Brussels. A daily one-stop direct flight (through Portland, OR) provides service to Tokyo. One-stop direct flights also serve Sao Paulo and Munich.

5. The combination of superior air service and the area's extensive highway network results in ready access to cities in the industrial Midwest. Ten metro areas are readily accessible by auto within 200 miles of Greater Cincinnati. (See Table 23.) Meanwhile, there are 52 cities that are accessible from Cincinnati within 1½ hours or less via non-stop daily flights (see Table A-6 in the Appendix). Cities within a 1½-hour flight offer the opportunity for a comfortable single day round trip to customers, suppliers, manufacturing plants and other R&D related destinations.

336

2414

TABLE 23
ACCESS TO KEY REGIONAL CITIES
Source: Microsoft Automap

Location	Miles	Drive Time
Evansville, IN	215	4 hours
Toledo, OH	209	3 hours 50 minutes
Charleston, WV	200	4 hours
Fort Wayne, IN	170	3 hours 30 minutes
Huntington, WV/Ashland, KY	150	3 hours
Indianapolis, IN	114	2 hours 10 minutes
Columbus, OH	108	2 hours
Louisville, KY	99	1 hour 50 minutes
Lexington, KY	82	1 hour 30 minutes
Dayton, OH	54	1 hour

6. For many executives and managers premium airfares are warranted by the ability for one-day turnaround in travel to many U.S. destinations.
   - Helped by easy, predictable commutes to the Cincinnati/Northern Kentucky International Airport, an executive, for example, can depart for Denver at 8:50 am, arrive at 9:44 am, work a full day and return to Cincinnati on a 5:30 flight arriving at 10 p.m. The same holds true for R&D hubs such as Raleigh-Durham, Boston and the Baltimore-Washington corridor.
   - Airfares are high since Delta accounts for approximately 80% of the flights to / from Cincinnati/Northern Kentucky International Airport. Several interviewed employers are resorting to mandating that middle management personnel fly from Dayton, Lexington, Louisville or Indianapolis to capture savings of 50-70% on round trip flights to destinations such as Los Angeles, even though a change of planes at Cincinnati is necessary.

337

Real estate is available in most suburbs of Cincinnati and construction costs are favorable.

1. Vacancy rates are higher, up to 40%, to the north and east than in the western sector and Northern Kentucky.
2. According to Means Commercial Cost Index, construction costs in Cincinnati are 7% below the U.S. average.
3. Median rental rates for research and technical space are in the $6-7 per square foot range, with the Blue Ash area about $3 higher.

4. International Paper's cost for its center amounted to $80 per square foot; a level it claims is the lowest for any of its comparable facilities in the U.S.

The operating environment in Greater Cincinnati, in terms of higher education, is a plus. The University of Cincinnati's Engineering College is closely allied with the business community.

1. One-third of its funding coming from corporate research grants and contracts, with the bulk of this funding going to applied research.

2. The College has pioneered in distant-learning programs that provide post-graduate inter-active video programs to local engineering employees at either their work sites or homes. It also provides training, on a contract basis to corporations such as General Motors.

3. The university's environmental and nuclear engineering programs are ranked in the top 20 in the U.S. according to the Gourman Report. Nearby universities with top 20 rankings in engineering and scientific disciplines include:
   - Ohio State's Material Science, Industrial Engineering and Ceramic Sciences and Engineering programs.
   - Purdue's Aerospace, Electrical, Industrial, Mechanical, Civil and Nuclear Engineering programs.

4. Another local asset is IAMS, the Institute of Advanced Manufacturing Sciences. IAMS provides consulting and training services to manufacturing and technical companies to improve competitiveness. It also acts as a clearing-house for university and federal research laboratories in technology transfer to industry for commercialization. IAMS is one of six Thomas Edison Project centers, sponsored by the state of Ohio. Another nearby center is the Materials Center at Wright-Patterson Air Force Base in Dayton, whose specialty is materials research and engineering.

338

2414

Greater Cincinnati's governmental operating environment for research and development needs attention. State and local income taxes, both corporate and personal are at the higher end of the range in Ohio compared to Midwestern and Southeastern cities. (See Table 24.) An irritant for local employers is the municipal wage and income tax, which is levied in both Ohio and Kentucky.

TABLE 24
TOP CORPORATE AND PERSONAL TAX RATES
Source: Ernst & Young

Location	State Income Tax		Local Wage/Business Income Taxes	
	Corporate	Personal	County	City
Ohio				
City of Cincinnati	8.50%	7.2%	----	2.1%
Suburbs	8.50%	7.2%	----	0.5% to 2.1%
Kentucky				
Suburbs	8.25%	6.0%	0.8% to 0.95% *	1% to 2.5%
Indiana				
Suburbs	4.50%	3.4%	0.6% to 1.0%	----

* Boone, Campbell and Kenton Counties only

1. The government climate is better in the suburbs than in the city of Cincinnati.

339

- County and local governments received good marks from white-collar employers interviewed for this project, but a number of interviewees, however, were negative about the number of entities at the county and local levels that had to be dealt with (on building/expansion issues, for example). Governmental fragmentation, they claim, provides higher taxes and in-fighting among jurisdictions and is detrimental to economic development efforts. We recognize that the Partnership is aware of the need to address more collaboration among Chambers' of Commerce and economic development groups on issues such as workforce development.
- Interviewees agreed, nearly unanimously, that improvements in governance are needed in the city of Cincinnati.
- Interviewees who had expanded or relocated recently were pleased with incentives obtained in the area. Real and personal property tax abatements were cited as the most common and most valuable incentive. The Partnership needs to communicate the availability of job creation tax credits in all three states as a valuable incentive not only for new companies, but also for existing companies which are expanding employment.

- None of the three states offers tax credits specifically aimed at R&D activity. Such credits certainly would be useful in Greater Cincinnati's target marketing program. States which offer such specific incentives, under the general heading of "Research and Development Tax Credits", include:
  - California: Credit of 11% of in-house research expenses and 24% of research expenses paid to outside contractors.
  - Connecticut: Credit of 1-6% of R&D expenditures above a specified threshold or 20% of amount in excess of previous years R&D expenditures.
  - Mississippi: $500 credit per R&D job, which can be used in combination with other jobs tax credits.
  - Montana: Exemption of new R&D firms from corporate income tax.
  - Utah: Credit of 6% of qualified R&D expenditures.

340

2414

TABLE A-1

COMMERCIAL RESEARCH AND DEVELOPMENT CENTERS IN GREATER CINCINNATI (1995)

Source: Research Services Directory

	Company Name	Company Description
OHIO		
1	A.M. Kinney, Inc.	Architectural and engineering services.
2	Aldix International Corp.; AEC Magnetics Division	Magnetics development.
3	Anatrol Corp.	Noise and vibration control services.
4	ATE Management	Research, consulting and management specializing in transportation.
5	B & B Research Services, Inc.	Market research.
6	Cincinnati Testing Laboratories, Inc.	Research, specializing in material analysis and mechanical engineering technology.
7	Environmental Chemical	Research and testing.
8	Environmental Enterprises, Inc.	Analytical testing of waste disposal.
9	Gladstone Laboratories, Inc.	Physical and nondestructive testing.
10	H.C. Nutting Co.	Materials testing.
11	Hi Tech Polymers	Research and development of custom plastics, conductive plastics, adhesives, elastomers and glass-filled plastics.
12	Hill Top Research, Inc.	Testing and research in consumer goods.
13	Lambda Research, Inc.	X-ray diffraction laboratory providing materials research services.
14	Management Design Institute	Management and leadership development consulting.
15	Mar-Test Inc.	Materials testing.
16	Matrix Marketing Inc.	Market research.
17	Metcut Research Associates Inc.	Manufacturing and materials engineering research.
18	Microbiological Control Laboratories	Microbiological research and development.
19	Morris Associates	Information research.
20	PEI Associates, Inc.	Environmental consulting.
21	Procter & Gamble Co.	Chemical cellulose, soaps, detergents, pharmacology, personal care products, cleaning products, cosmetics, separation science, microelectronic products, organic chemicals and food science.
22	Q Laboratories Inc.	Testing and development laboratory.
23	Raphael Katzen Associates	Consulting engineering and design.
24	S.K. Stewart & Associates	Management consulting specializing in executive search.
KENTUCKY		
25	BBI Marketing Services, Inc.	New product evaluation and forecasting.
26	Cardinal Laboratories	Environmental consulting laboratory.
27	G.J. Thelen & Associates, Inc.	Materials testing.
INDIANA		
	No listings	

342

TABLE A-2
CORPORATE RESEARCH AND DEVELOPMENT CENTERS IN GREATER CINCINNATI (1998)
Source: Directory of American Research and Technology

	Company Name	Fields of Research
OHIO		
1	A D G O, Inc.	Product-oriented research on electrical and electronic apparatus.
2	Access Corporation	Product-oriented research in computer storage and retrieval of image data.
3	Aeronca, Inc.	Weld brazed structures; brazed sandwich structures, including super alloys and titanium, jet engine hardware, including thrust reverse; jet engine sound suppression; graphite and kevlar composites; adhesive bonded structures; metallic and non-metallic bonded structures; metal and non-metal matrix composite structures.
4	Alcon, Inc.	Electrical connectors.
5	Armco, Inc, Research & Technology	Applied research in product development of specialty steels including stainless, electrical, steels; also process research on iron and steelmaking, raw materials and welding.
6	Armor Metal Fabrication	Steel fabrication.
7	Astro Met, Inc.	Research on porous metals and ceramics with controlled porosity for industrial, electronic, chemical and aerospace uses; high-density ceramics for wear resistance and electronics; cemented carbides and ceramics for cutting tools and wear resistance; applied and product-oriented research on self-lubricating bearing and seal materials for application up to 1500 degrees Fahrenheit; porous coatings for prosthetic devices, porous ceramics for molten metal filtration.
8	Automatic Equipment Corp.	Product-oriented research in magnetics.
9	Baldwin Piano & Organ Co.	Musical instruments; electronics and assembly.
10	BASF Corporation, Container Coatings	Polymer science and chemical coatings.
11	Borden, Inc. Coatings & Graphics Laboratory	Moisture and gas barrier systems, chromatology, including solvents and residual odors, printing ink adhesion and integrity, rotogravure printing ink gravure, rheology of lithographic inks; water based ink; UV and EB coatings.
12	Buckhorn, Inc.	Research and development of rubber products.
13	Chemical Systems International, Inc.	Product-oriented research designed to propagate collect, and furnish antibody-laden plasma to pharmaceutical industry, especially in the area of blood group antibodies.
14	Chiquita Brands International, Inc.	Product-oriented research food and food processing; tropical agricultural specialties.
15	Cincinnati Boss Co.	Food processing equipment, rendering and sausage equipment, meat processing equipment and conveyors.
16	Cincinnati Electronics Corp.	Applied and product-oriented research in the fields of solid state devices, electro-optical devices and systems, and electronic and electro mechanical devices, equipments and systems applicable to a broad range of military electronics systems.
17	Cincinnati Gear Company	Basic and testing facilities for development of low speed, high torque and high speed, high horsepower epicyclic gear systems; design and development of high performance gear systems; custom power transmission design and consulting; power transmission equipment; gears and gearboxes.
18	Cincinnati Sub-Zero Products, Inc.	Development of custom engineered equipment for low temperature processing and environmental testing; design and development of ultra-low temperature equipment for metallurgical applications; temperature control equipment for medicine.
19	Cintech Industrial Coatings, Inc.	Product-oriented research in finishes and water reducible finishes; development in coatings, high solids and water reducible resins for industrial finishes.

343

TABLE A-2

CORPORATE RESEARCH AND DEVELOPMENT CENTERS IN GREATER CINCINNATI (1998)

Source: Directory of American Research and Technology

	Company Name	Fields of Research
20	Clopay Building Products Company	Basic development and research of building products.
21	Clopay Corporation	-
22	Clopay Plastic Products Company	Basic research in polymer processing, films.
23	Clopay Plastic Products Company	Research on plastics.
24	CTL-Aerospace, Inc.	Aircraft and aerospace composite fabrications, research and development and testing.
25	D'Agostino-Yerow & Associates, Inc.	Business management consulting, specializing in controlling new product release projects (R&D); technology development; cost reduction engineering; systems design and implementation.
26	Dames & Moore-Cincinnati	Basic and applied project and discipline-oriented research in environmental, engineering and earth sciences.
27	DiverseyLever	Applied research on warewashing, laundry and housekeeping products, metalworking and finishing aids, transportation vehicle cleaners; pulp and paper mill and mining specialties, water and waste treatment products, food plant cleaners, sanitizers and processing aids specialty greases, oils and hydraulic fluids, fuel combustion.
28	Dover Corporation, OPW Fueling Components	Research in the field of new product development and product improvement.
29	Duramed Pharmaceuticals, Inc.	Applied research and development in pharmaceutical preparations.
30	Eagle-Picher Industries, Inc.	-
31	Electromech Technologies	Research and development of custom AC motors, high frequency motors, compressors, fans and pumps.
32	Entek Ird International	Software for machinery predictive maintenance; structural analysis; vibration analysis.
33	Environmental Enterprises, Inc.	Applied research on waste disposal methodology, product testing and full service hazardous waste management.
34	Ethicon-Endo-Surgery Inc.	Product-oriented research and development on mechanical wound closure and various other health care products.
35	F & C Wild Flavors, Inc.	Organic synthesis of flavor and fragrance materials
36	Fibre Glass-Evercoat Co, Inc.	Applications of epoxies, polyesters and miscellaneous thermoplastic materials.
37	Flavor Research & Development Laboratory	Development, analytical and customer service work on flavors and their application in foods beverages and sweet goods.
38	Formica Corporation	High pressure laminate and solid surfacing materials.
39	GE Aircraft Engines	-
40	GE Aircraft Engines Engineering	Advanced engineering technologies, advanced design engineering; manufacturing and quality technology; engineering support; engineering materials technology.
41	Givaudan Roure	Intermediate flavors that go into pharmaceuticals and consumer products.
42	Gladstone Laboratories, Inc.	Physical and nondestructive testing; metallography and welding; certifications and procedures.
43	H C Nutting Company	Geotechnical exploration, geotechnical engineering, environmental engineering, construction inspection and testing services, materials (construction) engineering.
44	Hasbro Toy Group	Research to enhance and develop toys.
45	Henkel Corp. Chemicals Group	Production and utilization of fatty acids, glycerine, aroma chemicals, plasticizers, textile chemicals, synthetic lubricants, agricultural chemicals and cosmetic chemicals.

344

TABLE A-2
CORPORATE RESEARCH AND DEVELOPMENT CENTERS IN GREATER CINCINNATI (1998)
Source: Directory of American Research and Technology

	Company Name	Fields of Research
46	Henkel Corp. Chemicals Group	Research into production of fatty acids and fatty acid derivatives, with specialization in ozonization, polymerization, esterification and ethoxylation; applied and product-oriented work in plasticizers, polymer modifiers, synthetic lubricants, polyamides, waxes, adhesives, plastic additives; organic synthesis of aroma chemicals, pharmaceutical intermediates and specialty organic chemicals.
47	Hill Top Research	Tests for disinfectant and sanitizer efficacy, preservatives, topical antimicrobials; services provided for acute toxicology testing, delayed contact hypersensitivity, photobiology. Comedogenicity, sunscreens and intatracheal procedures; testing ethical drugs, phases II-IV, safety and efficacy studies of consumer, household OTC drugs, RX drugs and personal care products, sensory evaluation of skin feel for skin care products.
48	Hill top Research, Inc.	-
49	Hill Top Research, Inc.	Tests for disinfectant and sanitizer efficacy, preservatives, topical antimicrobials; service provided for acute toxicology testing, delayed contact hypersensitivity, photobiology, comedogenicity, sunscreens and intratrachael procedures; testing ethical drugs, phases II-IV, safety and efficacy studies of consumer, household, OTC drugs, RX drugs and personal care products, sensory evaluation of skin feel for skin care products.
50	Hillshire Farms & Kahn's Co.	Applied research in meat products, flavor formulations, spices and seasonings.
51	House of Lowell, Inc.	Product-oriented research specializing in product development and custom manufacturing of skin and hair care products.
52	Hunkar Laboratories, Inc.	Basic, applied and product-oriented research in computer products.
53	I RD Mechanalysis, Inc.	Analysis and control of vibration and noise in rotating equipment.
54	ILSCO Corporation	-
55	ILSCO Division UTILCO	Product-oriented research and development activities on electric connectors.
56	Imperial Adhesives, Inc.	Product-oriented research and development in water base, solventbase and hot melt adhesives.
57	Institute of Advanced Manufacturing Sciences	Research to help solve manufacturing problems and increase rate at which new manufacturing technology is applied in the workplace.
58	Intercontinental Chemical Corp.	Applied and product-oriented research in cleaning and maintenance chemicals.
59	Intermec Media Products	Product-oriented development of pressure-sensitive labels, tags and bar coding.
60	International Paper Technology	Product-oriented research in pulp and paper technology, process technology, energy, systems engineering and design.
61	International Technology Corp.	Environmental control; air, water and solid hazardous waste management; noise control; industrial hygiene, occupational health and safety.
62	ITT Marlow	Hydraulics, pumping equipment.
63	ITW Vortec	Ranque-Hilsch vortex tubes and systems; Coanda effect devices and systems.
64	J W Harris Co.	-
65	JacksonLea	Buffing and Compositions.
66	Jay Instrument & Specialty Co.	Industrial distributor of valves and instruments.
67	KAO Corp of America, Research & Development	Applied research on cosmetics; toiletries; soap and household items.
68	KDI Precision Products	Research in ordance fuzing.

345

TABLE A-2
CORPORATE RESEARCH AND DEVELOPMENT CENTERS IN GREATER CINCINNATI (1998)
Source: Directory of American Research and Technology

	Company Name	Fields of Research
69	Kornylak Corporation	Mechanical and electromechanical devices and machinery for conveying, live storage, continuous pressure forming; systems for production of cellular urethane slabs, panels and carpet underlay; multidirectional movement of loads; cargo vehicles with mechanization for rapid load-unload, computer analysis; production of expandable polystyrene blocks.
70	Kroger Corporate Technology	Dairy, grocery, bakery, cheese and non-foods.
71	Lambda Research, Inc.	Applied research in polycrystalline x-ray diffraction, including residual stress determinations, x-ray fluorescence, qualitative and quantitative phase analyses and other related testing services.
72	Makino Inc.	Complete line of machining centers both standard and numerical control.
73	Management Design Institute	Interdisciplinary exploration, model development and installation of new human systems with special application to nonprofit institutions.
74	Mar-Test, Inc.	Mechanical materials testing.
75	May-Hyde Corp.	Chemical specialties, paints, coatings and specialty chemicals for automatic market.
76	Meridian Diagnostic, Inc.	Product-oriented research in immunodiagnostic test kits, reagents and related products.
77	Metcut Research, Inc.	Surface integrity studies; materials research and evaluation, including stress rupture, creep, fatigue, fracture mechanics and crack propagation studies, failure analysis and product liability.
78	Miami Valley Laboratories	Applied research on detergents, soaps, fabric softners, cleaners, toothpastes, mouthwash, deodorants, shampoos, paper towels, tissues, diapers, catamenial, drug products, coffee, shortening, prepared mixes, peanut butter, citrus products, salted snacks and skin care products.
79	Michelman, Inc.	Coating for a wide variety of substrates, especially paper.
80	Midwest Feather Co, Inc.	Processing of down feathers for sleeping bags, down clothing, pillows and furniture.
81	Milacron, Inc.	Physics, chemistry, mechanics, hydraulics, electronics, metallurgy, ceramics, plastics and computer technology leading to the development of machine tools plastic machinery, electronic controls, metal working fluids, computer control systems, grinding wheels, metal cutting tools, components and other products used in the processing of metals, plastics and advanced composite materials.
82	Morris Associates	Applied research in small system consultancy; indexing service; online information service; information brokering.
83	Morton Plastics Additives Division	Stabilizers for plastics; PVC lubricants.
84	Mosler, Inc.	Product-oriented research in outside banking equipment.
85	National Label Systems, Inc.	Self-adhering industrial tapes and labels, printing and adhesive coating equipment.
86	Ohio Medical Instrument Company, Inc.	Neurosurgical instruments and equipment
87	Organic Research Laboratory	Synthesis of flavor and chemicals and pharmaceutical intermediates; the analysis and preparation of natural extractives; development of new flavors; adaptation of flavors and fragrance chemicals to new developments in the food and cosmetic industry.
88	Overhoff Technology Corporation	Design, development and manufacture of electronic instrumentation and sensor systems for measurement and control, including ultra low current electrometer measurements, tritium radon and radioactive aerosol monitoring, carbon bed and high-efficiency air filter testing, infrared, other optical, ultraviolet and nuclear gaging.

346

TABLE A-2
CORPORATE RESEARCH AND DEVELOPMENT CENTERS IN GREATER CINCINNATI (1998)
Source: Directory of American Research and Technology

	Company Name	Fields of Research
89	P O B Inc.	aqueous and organic solvent based sealant compositions which offer the widest range of viscosity and rheological properties.
90	Performance Manufacturing Co.	Applied and product-oriented research on water heaters, high pressure washers, steam cleaners, steam generators and related equipment and accessories, such as diaphragm pumps, gas and oil burners and pressure and temperature controls.
91	Perry & Derrick Co.	Architectural paints and chemical coatings.
92	Plastic Moldings Corp.	Development of custom moldings of plastics materials.
93	Procter & Gamble: Ivorydale Technical Center	Applied research and product development on soaps, detergents, cleaners and fabric softeners.
94	Q Laboratories, Inc.	Basic and applied chemistry and microbiological research.
95	QC Laboratories, Inc.	X-ray inspection, fluorescent penetrant inspection, magnetic particle inspection and welding.
96	Quantum Chemical Company	-
97	Raphael Katzen Associates International, Inc.	Process technology, synthesis, reactor technology and separation processes; research primarily on processes, equipment and design engineering.
98	Richards Industries, Inc.	Fluid flow; valves; SIC 3494
99	Rotex, Inc.	Industrial screening machines.
100	Setco Corp.	-
101	Sharon Woods Technical Center	Applied research and product development on detergents, soaps, fabric softeners, cleansers, toothpastes, mouthwash, deodorants, shampoos and drug products.
102	Skyline Chili Inc.	Applied and product-oriented research and development in canned and frozen foods.
103	Space Dynamics Corporation	Solar energy research, heat transfer, geothermal, heat recovery, heat exchangers, aerospace, military and advanced equipment.
104	Standex Electronics	Components and assemblies for the television, automotive and communications industries; fixed and variable inductors; reed switches and relays; sensor devices.
105	Structural Dynamics Research Corporation	Supplier of mechanical design automation software and engineering services.
106	Texo Corp.	Surface active chemicals; specialty chemicals. Development laboratories located in Cincinnati, OH.
107	The Buschman Co.	Applied and product oriented research in design and developing conveyors and material handling equipment.
108	The Crystal Tissue Company	Paper products.
109	The Nine-West Group	Product-oriented research in men's and women's shoes and specialties.
110	The Procter & Gamble Company	-
111	The Shepherd Chemical Company	Basic and applied research in specialty metal chemicals.
112	The Sorg Paper Company	Product-oriented development of new grades.
113	The Stearns Technical Textile Company	Product and process oriented research and development on nonwoven fabrics for filtration, auto garment, medical and disposable applications.
114	The Witt Company	-
115	Thermo Black Clawson Inc.	Applied and product-oriented research and development in the field of waste paper recycling, pulp mill processes and machine development for these processes.
116	Three Bond USA Inc.	Product-oriented research and manufacture of medical appliances; sealants for automotive interior industry.

347

TABLE A-2
CORPORATE RESEARCH AND DEVELOPMENT CENTERS IN GREATER CINCINNATI (1998)
Source: Directory of American Research and Technology

	Company Name	Fields of Research
117	Valco Cincinnati, Inc.	Product-oriented new applications for adhesive equipment for packaging, paper converting and product assembly.
118	Western States Machine Co.	Research and development of industrial centrifuges for food and chemical process industries; depithers municipal and industrial sludge dewatering.
119	Winton Hill Technical Center	Applied research and product development on detergents, soaps, fabric softeners, cleaners, cleansers, bar soaps, toothpastes, mouthwash, deodorants, shampoos, paper tissue products, paper towels, disposal diapers, catamenial, coffee, shortening, prepared mixes, peanut butter, soft drinks, fruit juices and salted snacks.
120	Xetron Corporation	Electronic equipment.
121	Xomox Corporation	Product-oriented research in testing and development of various valves and actuators.
122	Xomox Special Products	Product-oriented research in plug valves, butterfly valves, control valves and jacketed valves.
123	Zonic Corp.	Applied and product-oriented research and development in measuring and controlling devices.
KENTUCKY		
124	A. O. Smith Corporation Protective Coatings Div.	Corrosion resistant glasses; glasses with improved physical properties; metallurgical products, protective
125	Angstrom Technologies, Inc.	Basic and applied electro-optical vision for robotics and automated guided vehicles; applied and product-oriented research in packing and material handling vision systems.
126	E. V. Engineering	Basic and applied research on the physical, chemical and biochemical aspects of water and wastewater treatment, solid wastes management and air pollution control.
127	F. N. Sheppard & Co.	Speciality fabricating and chemical coating of rubber products; bonds.
128	HITECH Polymers, Inc.	Product-oriented research and manufacture of compounds of plastic testing static and elasticity of plastic; research and development of polymers.
129	NS Group, Inc.	Product-oriented research and development in water base, solvent and hot melt adhesives.
130	Sweco	Basic and applied research in fine screening; ultra-fine grinding and dispersion; surface treatment by loose media finishing.
131	Toyota Manufacturing Corp. Services of N. America	Product-oriented research in vehicle testing and emissions.
INDIANA		
132	Hillenbrand Industries, Inc.	Product-oriented research in burial caskets, hospital equipment and locks; wound care therapy.

2414

348

TABLE A-3

UNIVERSITY AND NON-PROFIT RESEARCH AND DEVELOPMENT CENTERS IN GREATER CINCINNATI (1998)

Source: Research Services Directory

	Agency or Institution Name	Company Description
OHIO		
1	American Association for Aerosol Research	Independent, nonprofit research association
2	Applied Information Resources 9688	Independent, nonprofit organization
3	Center for the Study of Ethics & Contemporary Moral Problems	Joint activity of Hebrew Union College and the College of Cincinnati
4	Child Abuse Institute of Research	Independent, nonprofit organization
5	Children's Hospital Research Foundation	Separately endowed nonprofit research organization
6	Cincinnati Sports Medicine Research & Education Foundation	Independent, nonprofit organization at Deaconess Hospital in Cincinnati; affiliated with the College of Engineering at University of Cincinnati
7	Cincinnati Zoo & Botanical Garden	Integral unit of Cincinnati Zoo and Botanical Garden
8	Clinical Research Center	Integral unit of Children's Hospital Research Foundation under control of General Clinical Research Centers, National Institutes of Health
9	Comprehensive Sickle Cell Center	Research and patient care unit at the Children's Hospital Foundation; affiliated with the University of Cincinnati Medical School
10	Environmental Protection Agency	Integral unit of US Environmental Protection Agency. Environmental Research Center facility maintains a cooperative agreement with the University of Cincinnati and is managed by the U.S. EPA
11	Hebrew Union College 12377	Risk Reduction Engineering Laboratory
12	Heimlich Institute 3168	Independent, nonprofit research corporation
13	Institute of Advanced Manufacturing Sciences, Inc.	One of several research and development centers under the state of Ohio's Thomas Edison Program, an economic development effort; works with federal and industry laboratories as well as over 24 schools, including the University of Cincinnati, Xavier University, Miami University, Cincinnati State Technical and Community College, University of Saalford (UK) and Aachen University (Germany). Founding business partners include Cincinnati Milacron, GE Aircraft and Procter & Gamble Company
14	James N. Gamble Institute of Medical Research at the Children's Hospital	Separately incorporated, nonprofit research organization affiliated with Christ Hospital, an entity of Elizabeth Gamble Deaconess Home Association; also affiliated with College of Medicine, University of Cincinnati
15	Kemper Research Foundation	Independent, nonprofit organization
16	Miami University	English at Miami University.
17	Museum of Natural History & Science	Independent, nonprofit organization
18	Near Death Experience Research Institute	Independent nonprofit research organization
19	Ohio River Basin Consortium for Research & Education	Research and education association of universities, colleges, governmental agencies, industries and individuals concerned with water related environmental issues in the Ohio River Basin. Institution members include Illinois, Marshall, Miami, Murray, Ohio, Cincinnati, Kentucky, Louisville, S. Indiana Universities and the Tennessee Valley Authority
20	Ohio Valley Tissue & Skin Center	Independent, nonprofit organization
21	Perinatal Research Institute	Collaborative project of University of Cincinnati Medical Center and Children's Hospital Medical Center

349

TABLE A-3

UNIVERSITY AND NON-PROFIT RESEARCH AND DEVELOPMENT CENTERS IN GREATER CINCINNATI (1998)

Source: Research Services Directory

	Agency or Institution Name	Company Description
22	Society for German-American Studies	Independent nonprofit cross-cultural society
23	University Affiliated Cincinnati Center for Developmental Disorders	Separately incorporated but affiiliated with the University of Cincinnati and Children's Hospital Medical Center
24	University of Cincinnati	Integral unit of University of Cincinnati, College of
25	University of Cincinnati	Integral unit of Department of Electrical & Computer Engineering at University of Cincinnati; operates under its own board of control, comprised of representatives from private companies
26	University of Cincinnati	Integral unit of University of Cincinnati Hospital
27	University of Cincinnati	Research and educational facility at the Biology Department, University of Cincinnati
28	University of Cincinnati	Integral unit of Vascular Division, University of Cincinnati
29	University of Cincinnati	Integral unit of University of Cincinnati
30	University of Cincinnati	Integral unit of College of Engineering, University of Cincinnati
31	University of Cincinnati	Integral unit of Department of Eletrical & Computer Engineering at University of Cincinnati
32	University of Cincinnati	Integral unit of Institute for Policy Research at University of Cincinnati
33	University of Cincinnati	Integral unit of University of Cincinnati
34	University of Cincinnati	Integral unit of Department of Chemical Engineering
35	University of Cincinnati	Integral unit of Department of Phsychiatry in College of Medicine at University of Cincinnati, located on grounds of Hospital
36	University of Cincinnati	Integral unit of Department of Mechanical, Industrial & Nuclear Engineering University of Cincinnati
37	University of Cincinnati	Integral unit of University of Cincinnati
38	University of Cincinnati	Integral unit of University of Cincinnati Medical Center
39	University of Cincinnati	Integral unit of Department of Communication at University of Cincinnati
40	University of Cincinnati	Integral unit of University of Cincinnati Medical Center
41	University of Cincinnati	Research activity of the Dept. of Electrical & Computer Engineering, College of Engineering, University of Cincinnati
42	University of Cincinnati	Integral unit of College of Engineering, University of Cincinnati
43	University of Cincinnati	Integral unit of University of Cincinnati, operating under its own board of control and involving a multidisciplinary group of researchers from the Departments of Civil & Environmental Engineering, Geology and Environmental Health
44	University of Cincinnati	Integral unit of University of Cincinnati
45	University of Cincinnati	Integral unit of College of Engineering, University of Cincinnati
46	University of Cincinnati	Integral unit of Department of Chemistry at University of Cincinnati
47	University of Cincinnati	Integral unit of Department of Phsychology at University of Cincinnati
48	University of Cincinnati	Umbrella organization for the Behavioral Sciences the SW Ohio Regional Data Center and the Center for Neighborhood & Community Studies, University of Cincinnati
49	University of Cincinnati	Institute of Applied Interdisciplinary Research

TABLE A-3
UNIVERSITY AND NON-PROFIT RESEARCH AND DEVELOPMENT CENTERS IN GREATER CINCINNATI (1998)
Source: Research Services Directory

	Agency or Institution Name	Company Description
50	University of Cincinnati	Integral unit of College of Engineering, University of Cincinnati
51	University of Cincinnati	Integral unit of University of Cincinnati
52	University of Cincinnati	Integral unit of Division of Graduate Education & Research, University of Cincinnati, operated in cooperation with Leather Industries of America
53	University of Cincinnati	Integral unit of College of Engineering, University of Cincinnati; operated under control of the University Dean's Office
54	University of Cincinnati	Integral unit of University of Cincinnati
55	University of Cincinnati	Coordinates interdisciplinary research activity in polymers in Depts of Chemistry and Physics, College of Arts & Sciences and Depts in the Engineering College, University of Cincinnati, located in Rhodes Hall
56	University of Cincinnati	Research and service activity of Graduate School at University Cincinnati, continues activities of former Testing and Counseling Center
57	University of Cincinnati	Integral unit of College of Medicine at University of Cincinnati
58	University of Cincinnati	Integral unit of Department of Electrical and Computer Engineering at University of Cincinnati
59	University of Cincinnati	Integral unit of Department of Electrical and Computer Engineering at University of Cincinnati
60	University of Cincinnati	Research center of the Institute for Policy Research, University of Cincinnati
61	University of Cincinnati	Activity within the Design Group of the Dept of Mechanical and Industrial Engineering, University of Cincinnati
62	University of Cincinnati	Integral unit of College of Law at University of Cincinnati

356

TABLE A-4
ECONOMIC STRUCTURE, GREATER CINCINNATI
EMPLOYMENT BY KEY INDUSTRY SECTOR (1990-1995)

Source: County Business Patterns

Key Industry Sector	Manufacturing		Wholesale and Retail Trades		Finance, Insurance and Real Estate		Services		Total Employment	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total	#	% Chg from 1990
Ohio Locality										
Brown	1,265	21%	1,628	27%	428	7%	1,732	29%	6,037	-1%
Butler	21,139	22%	29,239	31%	6,761	7%	24,942	26%	94,630	12%
Clermont	7,842	21%	13,422	36%	2,383	6%	9,121	24%	37,699	22%
Hamilton	95,871	18%	154,896	30%	34,476	7%	178,222	34%	522,152	1%
Warren	12,158	31%	13,972	36%	1,263	3%	9,205	23%	39,436	36%
Sub-Total	138,275	20%	213,157	30%	45,341	7%	223,222	32%	699,954	5%
Kentucky Locality										
Boone	9,137	23%	13,063	33%	830	2%	8,877	22%	39,931	25%
Campbell	4,116	20%	7,079	35%	799	4%	5,579	28%	20,206	9%
Gallatin	17	3%	476	70%	23	3%	123	18%	685	-5%
Grant	506	13%	1,946	50%	175	5%	763	20%	3,887	27%
Kenton	7,441	14%	15,700	28%	3,470	6%	18,507	34%	55,238	21%
Pendleton	631	37%	466	28%	88	5%	309	19%	1,672	61%
Sub-Total	21,830	18%	38,730	32%	5,385	4%	34,158	28%	121,619	21%
Indiana Locality										
Dearborn	2,342	22%	3,153	30%	539	5%	2,673	25%	10,581	22%
Ohio	10	2%	134	28%	21	4%	250	51%	487	39%
Sub-Total	2,352	21%	3,287	30%	560	5%	2,923	26%	11,068	23%
Total Greater Cincinnati	162,457	20%	255,174	31%	51,256	6%	260,303	31%	832,641	7%
U.S. Average	----	19%	----	28%	----	7%	----	35%	----	7%

351

2414

TABLE A-5
CITIES ACCESSIBLE FROM CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL AIRPORT WITHIN 1-1/2 HOURS OR LESS BY NON-STOP FLIGHTS AS OF JUNE 1998

Source: Reed Travel Group

From Cincinnati International Airport (CVG)

	Destination City	Daily Direct Flights
1	Dayton, OH	10
2	Lexington, KY	9
3	Louisville, KY	11
4	Indianapolis, IN	8
5	Columbus, OH	8
6	Huntington, WV/Ashland, KY	3
7	Fort Wayne, IN	6
8	Evansville, IN	7
9	Charleston, WV	5
10	Toledo, OH	7
11	South Bend, IN	6
12	Akron/Canton, OH	6
13	Tri-Cities, TN	4
14	Cleveland, OH	16
15	Kalamazoo, MI	5
16	Knoxville, TN	7
17	Detroit, MI	17
18	Nashville, TN	8
19	Pittsburgh, PA	12
20	Lansing, MI	4
21	Chicago, IL	29
22	Grand Rapids, MI	8
23	Asheville, NC	3
24	Chattanooga, TN	5
25	Roanoke, VA	4
26	St. Louis, MO	12
27	Greenville, SC	7
28	Milwaukee, WI	10
29	Huntsville, AL	3

352

TABLE A-5
CITIES ACCESSIBLE FROM CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL AIRPORT WITHIN 1-1/2 HOURS OR LESS BY NON-STOP FLIGHTS AS OF JUNE 1998

Source: Reed Travel Group

From Cincinnati International Airport (CVG)

	Destination City	Daily Direct Flights
30	Greensboro, NC	4
31	Charlotte, NC	10
32	Charlottesville, VA	3
33	Madison, WI	4
34	Atlanta, GA	12
35	Raleigh/Durham, NC	6
36	Birmingham, AL	6
37	Memphis, TN	8
38	Columbia, SC	4
39	Buffalo, NY	3
40	Appleton, WI	4
41	Washington, DC/Baltimore, MD	11
42	Richmond, VA	6
43	Toronto, Canada	7
44	Cedar Rapids, IA	4
45	Harrisburg, PA	3
46	Baltimore, MD	3
47	Rochester, NY	3
48	Norfolk, VA	3
49	Myrtle Beach, SC	2
50	Wilkes-Barre/Scranton, PA	4
51	Allentown, PA	2
52	Des Moines, IA	5

353

2414

354

TABLE A-6
DEGREES GRANTED BY GREATER CINCINNATI POST SECONDARY SCHOOLS
Source: U.S. Department of Labor (1996)

School	Less than 1 Year Certificate	1-2 Year Certificate	2-4 Year Certificate	Associate's Degree	Bachelor's Degree	Master's Degree	Doctorate
Butler County Jvs District-D Russel Lee Career Ctr	30	225	-	-	-	-	-
Chatfield College	-	-	-	30	-	-	-
Cincinnati State Technical & Community College	-	11	-	702	-	-	-
Clermont College	-	-	-	216	-	-	-
College of Mount Saint Joseph	-	-	-	38	354	31	-
Fort Mitchell	-	4	-	44	-	-	-
Interactive Learning Sys	24	53	-	-	-	-	-
Kentucky Career Institute	17	-	6	239	-	-	-
Main Campus	-	-	-	493	2,938	1,198	227
Miami University – Oxford	-	-	-	192	3,303	522	44
Northern Kentucky State Vocational Tech School	-	45	52	-	-	-	-
Northern Kentucky U.	-	-	-	310	1,093	181	-
Queen City Vocational Ctr	-	207	-	-	-	-	-
Raymond Walters College	-	-	-	383	-	-	-
Southern Ohio College	2	-	-	123	-	-	-
Southern Ohio College-							
Southwestern College of Business	15	51	-	-	-	-	-
The Union Institute	-	-	-	-	286	-	508
Thomas More College	-	-	-	59	199	-	-
University of Cincinnati-							
University of Cincinnati-							
University of Cincinnati-							
US Grant Joint Vocational School	-	40	-	-	-	-	-
Warren County Career Ctr	-	23	-	-	-	-	-
Xavier University	-	-	-	71	694	645	-
TOTAL	**88**	**659**	**58**	**2,900**	**8,867**	**2,577**	**779**

BUDGET OVERVIEW
FERNALD CRO COMMUNITY TRANSITION PLAN
1999 - 2001[1]

NO.	PROGRAM[2]	PROGRAM BUDGET EST.	ADMIN. BUDGET EST.	TOTAL BUDGET EST.	PROGRAM IMPACT
1.	Revolving Loan Fund	$2,000,000	$300,000	$2,300,000	500 Jobs[3]
2.	Marketing and Promotional Activities	$10,000	$1,500	$11,500	500 Jobs[4]
3.	Continuation and Expansion of Project ADEPT	$250,000	$37,500	$287,500	150 Jobs[5]
4.	Assisting Formation of Fernald Employee-Owned Business Units	$100,000	$15,000	$115,000	60 Jobs[6]
5.	Local Development Corporation	$250,000	$37,500	$287,500	50 Jobs[7]
6.	Business Incubator	$1,000,000	$150,000	$1,150,000	50 Jobs[8]
	Totals	$3,610,000	$541,500	$4,151,500	

---

[1] Budget overview presents allocations for the first year of plan implementation. Second and third year allocations are anticipated to be approximately the same with minor adjustments based on prior year outcomes.

[2] Programs are listed in priority ranking.

[3] 1st year impact would be 500 jobs. 2nd year impact would be an additional 500.

[4] 500 1st year jobs resulting from investments made by firms influenced by marketing campaign.

[5] 70 jobs the first year, 80 jobs in year 2.

[6] 60 jobs retained by Fernald workers within the first two years of project implementation.

[7] 50 new jobs created over a three year period.

[8] This 50 jobs target would not be reached until the fourth year following initial incubator start-up.

APP. 7

Fernald Community Reuse Organization

2414

PROJECT ADEPT
ACCELERATED DEVELOPMENT OF ENTREPRENUERS PROGRAM AND TECHNIQUE
A PROGRAM OF THE FERNALD COMMUNITY REUSE ORGANIZATION (CRO)

OPERATIONAL GUIDELINES
FOR THE USE OF MANAGEMENT ASSISTANCE VOUCHERS

This program was established to meet the following goals. Please keep these goals in mind when deciding on the use of a voucher.

- To create self employment opportunities for former or current Fernald workers through provision of in-depth business planning assistance.
- To create new jobs in existing small manufacturing companies through improved management systems or expertise.

I. KEY DEFINITION FOR SERVICE PROVIDER

For the purposes of Project ADEPT, the following Small Business Development Centers (SBDCs) are considered Service Providers:

Bill Fioretti
University of Cincinnati SBDC
1275 Section Road
Cincinnati, OH 45237-2615
Phone: 556-2071
e-mail: bill.fioretti@uc.edu

Danielle Remmy
Hamilton County Development Co., Inc.
1776 Mentor Avenue
Cincinnati, OH 45212
Phone: 632-6828
Fax: 631-4887

357

P. O. Box 38 Ross, Ohio 45061 513-648-4168

Marilyn J. Collmer
Greater Hamilton Ch. of Commerce
201 Dayton Street
Hamilton, OH 45011
Phone: 844-8100
fax: 844-1999
email: hamilton@ctd.com

Bob Murray
IAMS Manufacturing SBDC
1111 Edison Drive
Cincinnati, OH 45216
phone: 948-2092
fax: 948-4433
e-mail: murray@iams.org

II. CLIENT ELIGIBILITY

A. The Client must be certified by the Service Provider as one of the following:

1. A current or former Fernald worker choosing to start his/her own business.

   Definition of current: currently employed by DOE or Fluor Daniel Fernald and has been employed at the site since January 1, 1995.

   Definition of former: former employee of DOE or Fluor Daniel Fernald who was employed at the site January 1, 1993.

2. A business that offers significant promise for re-employment or economic growth opportunities in high-wage sectors and is approved by the ADEPT Business Manager.

B. The Client must agree to the following:

1. Locate and/or maintain its primary place of business in Ohio for five years from the date the voucher is issued.

2. Provide information requested on the Request for Management Assistance Voucher form concerning workforce projections, type of business and product, and other information solicited.

3. Provide Fernald Community Reuse Organization (CRO) with an evaluation of program effectiveness when solicited twice yearly.

C. In addition, it is the responsibility of the Service Provider, to the best of their ability, to determine whether the Client has demonstrated significant commitment and planning that suggests that the business concept has viability.

III. ASSISTANCE ELIGIBLE FOR REIMBURSEMENT BY VOUCHERS

These vouchers are designed to further the development of an existing or start-up business. They are not to be used as a subsidy for day-to-day activities normally associated with operation of a small business. The use of vouchers must provide value-added assistance for the Client. Services must be completed within three months. Each voucher will have an expiration date. Each Client is eligible to receive a total of $_____ for Management Assistance Vouchers.

Examples of appropriate uses include:

- Marketing plan development/refinement
- Debt plan development/refinement
- Financial statement development/refinement
- Legal structure refinement
- Personnel policy refinement
- Computer/information systems plan development/refinement
- Technical assistance - i.e., manufacturing process engineering
- Technologies or services to promote environmentally sound business practices
- Specialized services such as patents
- Accounting, inventory, billing systems

IV. RESPONSIBILITY OF CLIENT COMPANY

As a condition of receiving funds through Project ADEPT, the Client agrees to post all job openings at the Fernald Enviornmental Management Project (FEMP) Career Development Center. The Project ADEPT business manager will assist you with this process.

V. SELECTION OF CONSULTANTS

It is the responsibility of the Service Provider to select the proper Consultant for the Client. All Consultants using the voucher program must be certified by the Service Provider. Participating Consultants may not be employed by the client company or the Service Provider and may not have a financial interest in the company.

Consultants must demonstrate and certify a minimum of five years experience in their areas of expertise and three years working with companies ranging in size from two to fifty employees. To qualify, the Consultant must complete an application. Certified Consultants must provide the service personally.

VI. PARTIAL PAYMENT

CRO will certify to the Service Provider that the reimbursement funds are available in full at the time of approval for each voucher. Should the funds not be available in full, the CRO may offer partial payment of the voucher amount requested by the Service Provider prior to issuing the authorization to proceed.

VII. CONSULTANT REIMBURSEMENT BASIS

The private sector Consultant will be reimbursed according to the following rate table.

TYPE OF COUNSELING	RATE
Basic Legal Services (filing of corporate papers)	Up to $50/hour
Specialized Legal Services (licensing/patents)	Up to $125/hour
Accounting	Up to $45/hour
Human Resources	Up to $45/hour
General Business	Up to $45/hour
Marketing/Retailing	Up to $45/hour
Computers/Information Systems	Up to $45/hour
Product Development/Engineering	Up to $45/hour

VIII. PROJECT ADEPT PROCESS

A. Company contacts a Service Provider (listed in Section I) and schedules an appointment to determine eligibility.

B. If company meets the Project ADEPT requirements, the Service Provider determines an appropriate scope of services. The company and the Service Provider jointly complete a "Request for Management Assistance Voucher(s)" (form ADEPT-1) and submit it to CRO. The Service Provider must define the outcome expected and estimated time required from the consultant and describe it on the application. It is the responsibility of the Service Provider to ensure that the Client and the Consultant are aware of the expected outcome and are in agreement that the allocated voucher will allow for the defined outcome.

360

C. CRO reviews the voucher request, assures compliance and issues an "Authorization to Proceed." Approval or modification of the voucher shall be done at the sole discretion of CRO. Failure to approve a voucher shall not give rise to any cause of action against CRO by the Client or any other affected party. If approved, the Project ADEPT business manager will forward the "Authorization to Proceed" and Consultant's "Itemization of Services" form to the company within 10 working days. The Client company is responsible for getting these papers to its Consultant.

D. After the consulting services have been completed, the Consultant will itemize the services rendered and verify that the outcome was attained. The Consultant must sign the "Certificate of Completed Services" and return it to the Service Provider who referred the client. It is the Service Provider's responsibility to follow up with the Client to assure that the outcome was satisfactorily attained, then sign and forward the completed "Certificate of Completed Services" to CRO.

E. The "Certificate of Completed Services" will serve as an invoice from the Consultant. After this form has been submitted, CRO will compensate the Consultant an amount not to exceed the approved amount on the "Authorization to Proceed" form. NOTE: The program does not reimburse for expenses such as faxes, copies, delivery charges, postage, filing fees, or printing of marketing materials.

Fernald Community Reuse Organization (CRO)
Accounting Manual

I. GENERAL

The Fernald CRO shall serve to maintain a responsible accounting system. This procedure was developed to determine the reasonableness, allowableness and allocability of costs in accordance with OMB Circular A-122, the terms and conditions of the grant and other applicable Federal cost principles. The Fernald CRO has been incorporated as a nonprofit organization in the State of Ohio. The accounting of all funds shall be done in accordance with applicable federal and state laws and the DOE grant specifications, terms and conditions and 10 CFR 600.121 as appropriate.

This written procedure will serve to minimize the time elapsing between the transfer of funds to the Fernald CRO and the issuance or redemption of checks, warrants or payments by other means for program purposes. Any advance of DOE funds shall be deposited and maintained in insured accounts.

II. ACCOUNTING SOFTWARE

The Fernald CRO shall use 'QuickBooks', Version 5.0 for Windows as a software accounting package. This software has the capability for payroll, accounts payable, accounts receivable, purchase orders, tax accounts, budgets and reports. QuickBooks contains specific information and guidance on nonprofit organizations. The portion of the users guide which applies to nonprofit organizations has been included as Attachment A.

III. ACCOUNTING FILING SYSTEM

All pertinent documentation necessary to support each accounting activity shall be maintained in the accounting filing system. This includes at a minimum all canceled checks, receipts, paid invoices records that identify adequately the source and application of funds for federally-sponsored activities. These records shall contain information pertaining to Federal awards, authorizations, obligations, unobligated balances, assets, outlays, income and interest.

The accounting filing system shall be maintained on a fiscal year system with October 1 - September 30 defining the fiscal year. Records shall be maintained on a monthly basis by year within each of the cost categories contained on the Chart of Accounts (Attachment B.).

IV. ACCOUNTS PAYABLE

ATTACHMENT A

Showing how the organization is doing through financial reports, using either cash or accrual reporting

Before you begin

This document gives you information on how to use QuickBooks for your special needs—we won't repeat what's already in the standard information you receive with QuickBooks. Instead, you'll see references that show where you can find complete information and details on using QuickBooks features.

Printing your industry document

If you're looking at this document onscreen, you're now in a "QuickBooks and Your Industry" window.

➤ **To print this document:**

- Click Print in the Help buttonbar.

If you got to this Help window from the interview, close the Help window to return to the interview.

➤ **To see other industry documents from this window:**

- **Windows 95 users.** In the Help window, click Help Topics. On the Contents tab, click "QuickBooks and Your Industry." Then click the title of the document you want to see.
- **Windows 3.1 users.** In the Help window, click Contents. On the Contents tab, click "QuickBooks and Your Industry." Then click the title of the document you want to see.

Understanding QuickBooks terms

QuickBooks uses terms you can readily understand: accounts payable/receivable, vendors, and employees. But there are a few special terms you need to be aware of:

Chart of accounts	A list of accounts that you use to track how much money your organization has, how much money it owes, how much money is coming in, and how much is going out. You don't need extensive knowledge of the chart of accounts because you can choose a preset chart of accounts designed especially for nonprofit organizations.
Customer	A donor, patron, member, client, or sponsor.
Item list	A list of items that includes what your organization charges for or collects (for example, membership, unspecified donations, publications, seminars), miscellaneous charges, and discounts. Anything you want to include on a QuickBooks sales form should be on your QuickBooks Item list.

The chart of accounts is your most important QuickBooks list. When you set up books for your nonprofit organization, you want to track where your income comes from, where you keep it, what your expenses are, and what you use to pay them. You track this flow of money though a list of accounts called the chart of accounts.

You will probably choose the preset chart of accounts designed especially for nonprofit organizations. Before you customize your chart of accounts, it's helpful to print the current chart of accounts for nonprofit organizations and then determine which accounts you want to add, edit, or delete.

Note: You might want to show the chart of accounts to your accountant before you set up your QuickBooks company.

For more information, see:

- "Chart of accounts overview" in the *Your chart of accounts* chapter of the *User's Guide*

If you want to use QuickBooks for payroll

To use QuickBooks for your payroll, make sure the payroll preference is on, and follow the directions for setting up employees and payroll items in the documentation.

For more information, see:

- "The Payroll section" in the *Setting up a QuickBooks company* chapter of the *User's Guide*

Ways to organize income, expenses, donors, and funds

QuickBooks has three important features that let you analyze your nonprofit organization in great detail:

- The Customer:Job list, with customer types, lets you keep track of your customers, members, or donors.
- Items let you track your income and expenses, such as membership dues, donations, newsletter subscriptions, and so on.
- Classes let you track different segments of your organization, and can be especially useful to nonprofits in tracking different funds.

QuickBooks provides these ways to categorize your customers, income, and expenses because the more you know about your nonprofit organization, the better-informed your decisions. For example, you can make more informed decisions on advertising or outreach if you know what percentage of customers you have in different locations. You can use "customer types" in QuickBooks to categorize your customers by location. (See "Tracking donors or members by type" in this document.)

Although QuickBooks gives you a number of ways to track your income and expenses, don't feel you have to use all of them. Use the ones that make sense for your nonprofit organization and for the type of reporting you want to do.

Setting up members, donors, or clients as 'customers'

For more information, see:

- "Customer types" in the *Customers and jobs* chapter of the *User's Guide*

Creating 'items' for your products or services

The items on your QuickBooks Item list represent the services or products you provide to your clients or members. QuickBooks items automate your billing. They also give you a useful way to analyze your business through reports.

For more information, see:

- "Items overview" in the *Items—your products and services* chapter of the *User's Guide*

Creating 'service' items

The way you set up your Item list depends on the services you provide and the information you want to show donors, members, or clients on an invoice. You should create a QuickBooks "service" item for each type of service you provide to clients or members. You can then use these items when creating invoices in QuickBooks. You'll also be able to see reports that show your revenue for each service (or item) you provide.

For example, a nonprofit organization might want to set up service items such as these:

- Membership dues
- Pledges
- Donations
- Corporate sponsorship

If you want to track your services in more detail, you can use a combination of QuickBooks items and subitems. For example, you can enter Membership Dues as the item, and Family, Individual, and Student as subitems:

Membership Dues (service item; 0.00 rate)

Family (subitem of Membership Dues; $150 rate)

Individual (subitem of Membership Dues; $100 rate)

Student (subitem of Membership Dues; $50 rate)

All of these service items would be assigned to your income account for membership dues.

For more information, see:

- "Service items" in the *Items—your products and services* chapter of the *User's Guide*

Creating 'other charge' items

Besides creating service items, you can create items for other charges you want to include on a client/member invoice. For example, if your organization sponsors monthly dinner meetings, you can create an "other charge" item called Meeting. That way, on an item report (one of QuickBooks'

Tracking funds with 'classes'

If you want to track one or more funds in your nonprofit, QuickBooks classes give you a convenient way to separate income and expenses for each fund, including your general fund. (The general fund consists of the unrestricted money that the organization can spend as it wishes.)

When you set up each fund as a class, you'll be able to see a Profit and Loss report by fund, as well as detailed transaction reports. QuickBooks also allows you to see how much money you have in each fund, or several funds together. This is in addition to reports on your overall organization.

Using this method, you'll also be able to see expenses from the general fund (that is, your overhead) for any period of time, as a percentage of other fund expenses. This is often a "magic number" that nonprofits must report to their benefactors.

See "How to handle some typical fund transactions" and "Checking your fund balances periodically " in this document for details on how to track your funds.

Using subclasses to designate restricted and unrestricted money

You may have funds that have a portion of their money restricted, or temporarily restricted. If you need to track which portion of a fund is restricted and which portion is unrestricted, you can create a class for the fund itself, and subclasses underneath it called "restricted" and "unrestricted."

Limitations in fund tracking

Although we provide you with a procedure for determining your fund balances (see "Checking your fund balances periodically" in this document), QuickBooks cannot give you a balance sheet by class (that is, by fund). It can, however, give you a profit and loss report by fund (class). Also, although QuickBooks can give you the necessary reports to account for your funds, it cannot give you the exact format of the reports you need to submit to the government. (You can use your QuickBooks reports to get the figures you need for government reports.)

Important: If you use classes to track funds, and you want to be able to see your fund balances in a report, do not use QuickBooks' "condense data" feature. See "Condensing data" in the *Maintaining your data* chapter of the *User's Guide*.

➤ **To set up and use classes for funds:**

1. **Make sure class tracking is turned on.**

   From the File menu, choose Preferences. (Or, in the QuickBooks Navigator, click the Company tab, then click the Preferences icon.) Select Accounting in the scroll box, and make sure the "Use class tracking" checkbox is selected.

2. **Create a class for each of your funds, including the general fund.**

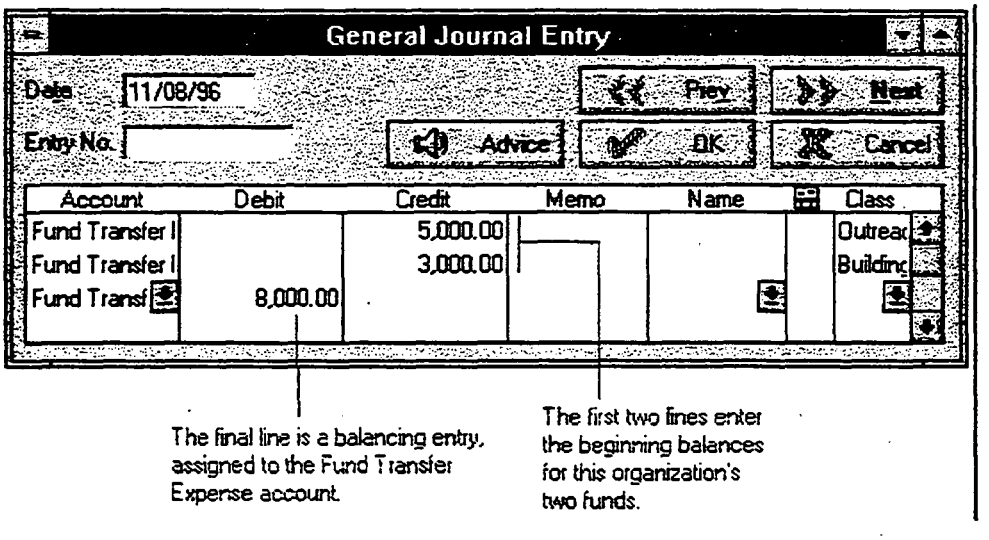
   For example, your classes could be "building fund," "outreach fund," and "general fund." (The general fund consists of the unrestricted money that the organization can spend.)

3. **(Optional) Create subclasses for funds that have a portion of their balance restricted.**

but they will always cancel each other out.

4. **From the Activities menu, choose Make Journal Entry.**
5. **In the Account field, select the "fund transfer income" account, enter the total for the first fund under Credit, and select the fund under Class.**
6. **Repeat Step 5 for each fund you have.**
7. **After you've entered the last fund balance, press Tab. You'll see a balancing entry on the next line under Debit, equal to the total for all your funds (which you entered in the Credit column).**
8. **Choose the "fund transfer expense" account on the last line (where you see the balancing entry under Debit).**

   Do not select a class on this line.



To check your beginning balance entry, you can create a Custom Report. See "Checking your fund balances periodically" in this document.

For more information, see:

- "The Opening Balances section" in the *Setting up a QuickBooks company* chapter of the *User's Guide*
- "Adding new accounts" in the *Your chart of accounts* chapter of the *User's Guide*

Transferring amounts from one fund to another

Occasionally, a nonprofit wants to transfer amounts from one fund to another. For example, you might need to transfer money if some temporarily restricted money in a fund becomes unrestricted. Suppose you created a class called "Building fund," with subclasses called "restricted" and "unrestricted." You would transfer the amount that just became unrestricted from

1. **From the Reports menu, choose Profit and Loss, then choose By Class. (Or, in the QuickBooks Navigator, click the Company tab, then click the Profit & Loss Reports icon, and choose By Class.)**
2. **Click Filters. Select Class in the Filters scroll box, and choose Selected Classes in the Class field.**
3. **Select all your classes (funds), including the class for your general fund, and click OK.**
4. **(Optional) If you created subclasses for restricted and unrestricted money within funds, you can choose those subclasses as well.**

➤ To see overhead as a percentage of total expenses:

1. **Create a Profit and Loss by Class report as described above.**
2. **Click Customize, and check "% of Row."**

This report shows you income and expenses for each fund as a percentage of total income and expenses for each fund. Look at the Total Expense figure in the column for your general fund. This should show your general fund expenses as a percentage of your total expenses.

Checking your fund balances periodically

If you've used classes to track funds as recommended in this document, use this method to see your fund balances in a report at any time.

Although you can name the report as you wish, QuickBooks cannot give you the exact format you might need for government reporting purposes. But you can use the information in this report to fill out forms specific to your type of nonprofit organization.

➤ To create a report on fund balances:

1. **From the Reports menu, choose Custom Report.**
2. **In the Report Dates field, choose All.**

   In order to get the correct balances, you must select All (even if you want to see the balances just for this month).

3. **In the Row Axis field, choose Class.**
4. **Click Filters.**
5. **Select Class in the Filter scroll box. Then choose Selected Classes in the Class field, select all of your funds, and click OK.**

   You should see balances for each of your funds. The total should equal the amount you have in the bank.

6. **Memorize this report by clicking Memorize and naming the report as "Fund Balances."**
7. **(Optional) Click Header/Footer to customize the title of the report as you wish.**

- Location or branch
- Fundraiser or sales person
- Type of service or product you sell
- Or any meaningful breakdown of your business

Important: You should use classes for one purpose only. For example, don't mix using classes for locations with using classes for fundraisers.

Tips for using classes (other than for funds)

- Think of the ways you'd like to categorize portions of your nonprofit in terms of income and expenses for each portion. The classes you set up should correspond to those portions, and can be any meaningful breakdown of the business you do.
- Set up classes on the basis of the type of reporting you want to do, and consider how you want to see your finances segmented on reports. For example, if your nonprofit has three fundraisers and you want to analyze the profitability of each fundraiser's activities, you can create a class for each fundraiser. Later, you can create a Profit and Loss Report by Class to look at income and expenses for each fundraiser.
- Classes are most useful when you can identify both income and expenses for each class you set up, because this makes your Profit and Loss by Class report more meaningful.
- Set up a class such as "other" that you can use to deliberately classify transactions that don't fit into any specific class that you've defined. This eliminates confusion between transactions that you forget to classify and those that do not fit into one of your defined classes—on reports, transactions that you forget to classify will be listed as "unclassified."
- If you want to break down your income and expenses even further, you can create subclasses.

Receiving a donation or grant

If you receive contributions, donations, or grants, there are two ways to handle them in QuickBooks:

- You can make a deposit.
- You can enter a cash sale.

Making a deposit

The simplest way to receive money is to deposit the money using QuickBooks' Make Deposits window. For example, you might deposit the money into an income account called "Grants." And if you're tracking funds with classes, you would also select a class for that sum of money, for example, "Building Fund."

You can't create a receipt from QuickBooks, but you can create donor reports periodically to show how much money you received from whom, and for which fund if applicable.

For more information, see:

- "Depositing payments" in the *Receiving and depositing payments* chapter of the *User's Guide*

You may wish to change the title before you memorize the report, by clicking Header/Footer. For example, you can use the title "Donors Report."

To find your report later, choose Memorized Reports from the Reports menu.

5. **To get figures for a specific donor, double-click the line on the report that displays the donor's name.**

   When your mouse pointer turns into a magnifying glass on any QuickBooks report, you can double-click to "QuickZoom" to details for those figures.

   If you want to change the title, click Header/Footer. (For example, you may call it "Donor Report for Jane Smith.")

For more information, see:

"Customizing a report" in the *Reports and graphs* chapter of the *User's Guide*

Tracking pledges

The method you use for tracking pledges depends on whether you report on a cash or accrual basis. If you use cash-basis reporting, see "If you report on a cash basis" in this document. If you use accrual-basis reporting, see "If you report on an accrual basis" in this document.

Important: QuickBooks assumes you are using accrual-basis reporting, unless you specified otherwise during the EasyStep interview (or in the Reports & Graphs Preferences window). To specify a different reporting preference (cash or accrual), choose Preferences from the File menu. (Or, in the QuickBooks Navigator, click the Company tab, then click the Preferences icon.) Select Reports & Graphs in the scroll box, then select "Accrual" or "Cash" for Summary Reports Basis.

If you report on a cash basis

Most nonprofits use cash-basis reporting. If you use cash-basis reporting, you can record pledges using QuickBooks invoices. Since invoice amounts do not appear on cash-basis income reports, the pledges will not show up on your books until they are paid.

The advantage of using invoices is that you'll be able to send reminder statements easily to people who have pledged money to your organization. You can also customize the invoice form, and change its title to something like "Pledge Reminder." (See "Customizing sales forms" in this document for details.)

➤ **To track pledges and send reminders:**

1. **Enter pledges on QuickBooks invoices.**

   Enter the name of the donor in the Customer:Job field.

2. **If you use invoices for another purpose, distinguish pledge invoices by typing "P" in the Memo field.**

   This will allow you to create reports and filter them to show only pledge invoices.

Important: When you receive pledges, you must receive payment in both QuickBooks companies. This will make your books accurate in the "real" company, and let you create reminder statements and reports for pledges you have not yet received in the "pledges" company.

For more information, see:

- "Entering a sale" in the *Sales and sales forms* chapter of the *User's Guide*
- "Creating custom forms overview" in the *Forms* chapter of the *User's Guide*
- "Recording an invoice or statement payment" in the *Receiving and depositing payments* chapter of the *User's Guide*

Tracking and collecting membership dues

Organizations with memberships can choose a variety of ways to charge dues. Some use a rolling calendar for membership. This means that if a member signs up in June, the membership is good until June of the next year.

Others use a calendar year membership, and may want to pro-rate membership according to which month a member joined. For example, if a member joins in August, the member pays 1/3 of regular membership.

Each of these ways of charging membership would require different procedures in QuickBooks.

➤ To charge for rolling calendar membership:

1. **From the Activities menu, choose Create Invoices. (Or, in theQB Navigator, click the Sales and Customers tab, then click the Invoices icon.)**
2. **Choose the Customer name in the Customer:Job field.**
3. **Choose the membership item in the Item column.**

   You should have set up a "service" item for membership dues. If you have not set up the item, you can set it up "on the fly."
4. **Memorize the transaction:**
   - From the Edit menu, choose Memorize Invoice.
   - In the Memorize Transaction window, click Remind Me.
   - In the How Often field, choose Annually.
   - Click OK.

For more information, see:

- "Memorizing transactions" in the *Saving time* chapter of the *User's Guide*

➤ To charge pro-rated membership:

1. **Set up service items for membership for each month of the year.**
   For example, if dues are $120 per year ($10 per month), set up January membership as $120.

How nonprofit organizations can customize sales forms

A nonprofit organization may want to make some of these changes to QuickBooks' standard sales forms:

- Remove the Item column from the printed invoice form (not from the onscreen form). If you provide a detailed description for each item you set up, you don't need to display the item name to donors and members.
- Change the title of your reminder statement from "Statement" to "Pledge Reminder."
- Change the title of your cash sales receipt from "Sales Receipt" to "Donation Receipt."

Creating sales form templates

You may also find that you need more than one type of sales form. For example, you may need one invoice format for membership dues, and another format for product sales.

QuickBooks lets you customize and save each sales form format as a separate *template.* You can name each template and simply choose the one you want from the Template field on the sales form.

For more information, see:

"Creating custom forms overview" in the *Forms* chapter of the *User's Guide*

Creating budgets

Because nonprofit organizations often depend on memberships, grants, or fund-raising for their survival, budgets that plan for your financial future can be critical. Budgets help you plan for the future, as well as understand the costs you have already committed for the fiscal year.

You can set up budgets that show your projected income and expenses and your projected account balances. You can then compare your actual income and expenses or your actual account balances against your plan by creating budget reports.

Here are some hints on setting up budgets:

- If you are tracking funds, you can create a budget by class (instead of month by month). In the Set Up Budgets window, enter the budget for the entire fiscal year in the field for the first month of the fiscal year. Be sure to choose the class you are using to track the fund. If you don't want a breakdown by account, don't choose any account.
- Budgets that extend across two fiscal years need to have the date adjusted on the report to cover two years, for example, from 1/1/94 to 1/1/96.

For more information, see:

"Setting up budgets" in the *Budgets* chapter of the *User's Guide*

Finding out how you're doing through reports

Other QuickBooks tips for nonprofits

Here are some other QuickBooks features that nonprofit organizations may find useful.

Printing mailing labels

QuickBooks will print mailing labels (and Rolodex cards) for all your donors according to the criteria you set. You can sort by name or postal code and select which donors/members and customer types to include.

For more information, see:

- "Printing labels and cards" in the *Keeping in contact* chapter of the *User's Guide*

Contact management with QuickBooks

QuickBooks has two features that will help you with contact management. You can use the customer Notepad to enter notes related to each donor, with an optional date stamp. You can also use the To Do Notes list to track tasks and have QuickBooks remind you to do them.

These two tools are related, in that you can enter a new "To Do" while entering notes in a donor's Notepad. This makes it easier for you to enter a task related to a note you're adding in the donor record.

For more information, see:

- "Keeping notes about a customer or job" in the *Customers and jobs* chapter of the *User's Guide*
- "To Do notes" in the *Keeping in contact* chapter of the *User's Guide*

Tracking information about customers, vendors, or employees

QuickBooks lets you add extra fields to your Customer, Employee, Vendor, or Item lists for any purpose. You can use these fields to track dates, personal information, and so on. For example, nonprofit organizations may want to add customized fields to the Customer list to track:

- Membership or sponsorship level
- Volunteering status or ability
- Birthdays
- Cellular phone or pager numbers
- E-mail addresses

Information you enter into the fields can be just for your use (for example, you can look up a donor record to see the name of his administrative assistant), or you can add the customized fields to your sales forms and have the information appear on your invoices and cash sales receipts.

For more information, see:

- "Adding customized fields" in the *Working with lists* chapter

ATTACHMENT B

ATTACHMENT C

ATTACHMENT D

Fernald Community Reuse Organization (CRO)
Procurement Procedures

I. GENERAL

A. Objectives

The Fernald Community Reuse Organization (Fernald CRO) Procurement Procedures shall serve to maintain a responsible purchasing program in which all persons associated with such program must act in a cooperative sense, as well as be totally aware of the program, its benefits and consequences. The purpose of these procedures is to concisely formalize the policy of the Fernald CRO toward purchasing, to serve as a guideline in all purchasing activity, and to standardize procurement procedures.

These procedures will address the following primary objectives:

1. To minimize or eliminate disruptions in operation resulting from the lack of materials, equipment or supplies;

2. To procure goods that are of sufficient quality to reliably accomplish the operative function rather than those that rank highest in absolute quality;

3. To strive to secure the desired quality at the lowest possible cost; the term "cost" is not restricted to the initial expenditure, but includes the ultimate or use expense associated with the consumption or application of a good or service;

4. To avoid duplication, waste, and obsolescence with respect to the procurement of goods and services;

5. To treat all prices and technical information submitted by suppliers as confidential in order to preserve a good business reputation and obtain competitive prices to the maximum extent practicable;

6. To provide adequate budgetary and fiscal control over all public expenditures; and

7. To comply with the DOE Uniform Administrative Requirements for Grants .... in 10 CFR 600 for the procurement of supplies and other expendable property, equipment, real property and other services with Federal funds.

H. Fixed-Price Contract - a contract which is fixed in price.

I. Cost Reimbursement Contract - a contract in which the consideration paid is equal to the amount expended by the Contractor for the costs required to perform the contract.

J. Incentive Contract - a contract in which the Contractor is able to earn more than the cost of the contract through specific, pre-approved incentive-type agreements such as performance which is ahead of schedule and under budget.

K. Purchase Order - the form prescribed by the Fernald CRO which authorizes a vendor to release goods or services to the Fernald CRO and informs the vendor that funds have been set aside to pay for the goods or services. A Purchase Order becomes a binding contract when the vendor demonstrates acceptance through the initiation of some action to fill the order.

L. Progress Payment - payments to a Contractor upon acceptable completion of interim milestones established within the contract.

III. PROCUREMENT METHODS AND REQUIREMENTS

All procurement transactions shall be conducted in a manner to provide, to the maximum extent practical, open and free competition. The Fernald CRO shall be alert to organizational conflicts of interest as well as noncompetitive practices among contractors that may restrict or eliminate competition or otherwise restrain trade.

A. Small Purchase Procurement - applies to purchases of goods or services in the amount of $25,000 or less. Small purchase procedures are those relatively simple and informal procurement methods for securing services, supplies, or other property that do not cost more than $25,000.

1. Written approval by both the Chairman and Treasurer of the Fernald CRO is required for any small purchase procurement.

2. Any small purchase procurement in excess of $5,000 shall be submitted to the Board for review and consideration.

3. A minimum of three comparison price quotes must be obtained for non-consumable supplies and ongoing services, and for one-time services in excess of $1,000. Comparisons may be obtained by telephone or by written price quotes. Any documentation of comparison prices quotes will be retained in the procurement file.

1. The Board shall establish a Bid Review Team that shall contain, at a minimum, the project staff director and two member of the Board of Directors.

2. The Fernald CRO shall publicly advertise its invitation for bids (IFBs), and it shall solicit bids from an adequate number of known suppliers, providing bidders sufficient time prior to the date set for opening the bids.

3. The IFBs shall contain the following information:
   a. Where the bidder can obtain bid documents;
   b. Any costs of bid documents;
   c. Bid submittal deadline;
   d. Date, time and location of bid opening;
   e. Any bond and/or insurance requirement;
   f. Any special requirements;
   g. A statement to the effect that the Fernald CRO reserves the right to reject any and all bids, and to accept the bid deemed to be the lowest responsive and qualified bidder;
   h. General conditions;
   I. Specifications;
   j. Bid proposal form;
   k. Delivery date or completion date;
   l. Period of bid validity;
   m. Evaluation criteria;
   n. A statement that contracts will be awarded only to responsible prospective contractors.

4. All Contractors shall be required to carry insurance in the following amounts:
   a. Worker's compensation and employer's liability in the amounts required by Ohio state statute.
   b. Comprehensive general liability and property damage in the amount specified by the Fernald CRO in its IFB.
   c. Comprehensive auto liability in the amount specified by the Fernald CRO in its IFB.

5. The Fernald CRO shall develop specifications with attention to the following guidelines:
   a. Specification should be concise, free of ambiguities, and provide a sound basis for competitive bidding.
   b. Specifications should not require features or quality levels unnecessary to the function or operation.
   c. Performance specifications are preferable as they promote innovation and cost reduction.

The Fernald CRO shall make available for DOE, pre-award review and procurement documents, such as request for proposal or invitations for bids, independent cost estimates, etc. when any of the following conditions apply.

1. The procurement is expected to exceed the small purchase threshold fixed at 41 U.S.C. 403 (11) (currently $25,000) and is to be awarded without competition or only one bid or offer is received in response to a solicitation.

2. The procurement, which is expected to exceed the small purchase threshold, specifies a "brand name" product.

3. The proposed award over the small purchase threshold is to be awarded to other than the apparent low bidder under a sealed bid procurement.

4. A proposed contract modification changes the scope of a contract or increases the contract amount by more than the amount of the small purchase threshold.

Competitive proposals will elicit greater response from the providers of solicited services and promote competitive and creative methods in the performance of professional services.

1. The Board shall establish a proposal review team that shall contain, at a minimum, the project staff director and two members of the Board of Directors.

2. The Fernald CRO shall publicly advertise its requests for proposals (RFPs), and it shall identify all evaluation factors and their relative importance.

3. The RFPs shall contain the following information:
   a. Where the proposer can obtain proposal documents;
   b. Any costs of proposal documents;
   c. Proposal submittal deadline;
   d. Any bond and/or insurance requirement;
   e. Any special requirements;
   f. A statement to the effect that the Fernald CRO reserves the right to reject any and all proposals;
   g. General conditions;
   h. Specifications;
   I. Proposal form;
   j. Delivery date or completion date;
   k. Period of proposal validity;
   l. Evaluation criteria;

additional factors as an integral part of the proposal evaluation process. Such factors include, but are not limited to:

a. The proposer's ability, capacity and skill to perform within the specified time limits;
b. The proposer's experience, reputation, and integrity;
c. Proposer's past performance;
d. Sufficiency of proposer's financial and technical resources to fulfill the contract;
e. Other applicable factors as the Fernald CRO determines necessary or appropriate that are specified in the RFP.
f. Contracts with certain parties are restricted by DOE's implementation in 10 CFR part 1036, of E.O.'s 12549 and 12689, "Debarrment and Suspension."

D. Sole Source Procurement - applies to purchases of goods or services in excess of $25,000 where there is solicitation of a proposal from only one source or, after solicitation from a number of sources, competition is determined inadequate. Sole source purchases may be made if it has been determined that the goods or services to be procured are available from a single vendor, eliminating the opportunity to seek competitive bids or proposals.

1. In order to qualify as a sole source procurement, the Fernald CRO must make a determination that,

a. The item is available only from a single source;
b. Public necessity for the product or service will not permit a delay resulting from competitive solicitation; or
c. After solicitation of a number of sources, competition is determined inadequate.

Or, the DOE must authorize in writing the sole source procurement.

2. The Fernald CRO shall perform a cost analysis on each sole source procurement. (See section VI.C.)

3. Any sole source procurement in excess of $25,000 requires prior approval by the DOE.

V. PROCUREMENT AWARD PROCEDURES

A. Procurement Records - Procurement records and files for purchases in excess of the small purchase threshold shall include the following at a minimum: basis for contractor selection, justification for lack of competition when competitive bids or offers

VI. CONTRACT ADMINISTRATION SYSTEM

The Fernald CRO shall ensure that the contractor conforms with the terms and conditions and specifications of the contract and that there is adequate and timely follow up of all purchases. The Contractors performance will be evaluated and documented whether the Contractor has met the terms and conditions and specification of the contract.

A. Types of Contracts

1. The Fernald CRO may use any of the following types of contracts in its procurement methods:
   a. A time and materials contract shall only be used after a determination that no other contract is suitable and if the contract includes a ceiling price that the contractor exceeds at its own risk;
   b. Fixed Price Contract; and
   c. Cost Reimbursement Contract.

2. The Fernald CRO may not use any of the following types of contracts in its procurement methods:
   a. Open End Time and Materials Contract;
   b. Cost-Plus-a-Percentage Contract; or
   c. Contingency Contract.

B. List of Sources - The Fernald CRO shall maintain on file a list of an adequate number of known suppliers which it shall use to solicit contracts for small purchases and as an additional resource for RFPs and IFBs beyond the public advertisement, as an effort to promote competitive bidding from qualified vendors and to establish a source of suppliers. Any person or organization is invited to submit its name for future solicitations. No person or organization shall be precluded from participation in the competitive bidding or proposal selection process due to failure to be included on the Fernald CRO's list of sources. In addition, the Fernald CRO shall advertise, at a minimum on an annual basis, in the Cincinnati Enquirer, Journal News, Harrison Press, and the Commerce Business Daily, to solicit potentially interested firms to add to the list for future solicitations.

C. Cost/Price Analysis - The Fernald CRO shall perform an independent cost or price analysis in connection with every procurement action, including contract modifications, prior to receiving bids or proposals.

Methods of Cost and Price Analysis to be used: Price Analysis - comparison of price quotes and market price and similar indicia. Cost Analysis - review and evaluation of each element of cost to determine reasonableness, allowableness, and allocability.

to the CRO all plans, specifications, estimates, reports, data, and miscellaneous items purported to contribute to the completeness of the project, which shall become the property of the Fernald CRO.

4. The Contractor shall submit to the Fernald CRO a final termination settlement proposal within 45 days from the effective date of termination. If Contractor fails to submit the proposal within the time allowed, the Fernald CRO may determine the amount, if any, due Contractor because of the termination and shall pay the amount determined. The failure of the Contractor and the Fernald CRO to agree on amounts to be paid due to termination shall be a dispute.

E. Contract Dispute - The Fernald CRO shall be responsible for the settlement of all contractual and administrative issues arising out of procurement.

1. If the Contractor objects to any decision, action or order of the Fernald CRO, the Contractor may file a written protest with the Fernald CRO, stating clearly, and in detail, the basis for the objection within one week after the event.

2. The written objection will be the subject of non-binding mediation between the parties. The Fernald CRO shall select the mediator and the cost shall be equally shared by the Contractor and the CRO.

3. Should the dispute remain unresolved the Fernald CRO or the Contractor may resort to other methods of dispute resolution, including initiating a civil suit or mutual agreement to submit the dispute to arbitration.

4. In all instances the Fernald CRO shall disclose information regarding the protest to the DOE. The Contractor must exhaust all administrative remedies with the Fernald CRO before pursuing a protest with the DOE. DOE review of protests is limited to violations of federal law or regulations, and violations of the Fernald CRO's protest procedures for failure to review a complaint or protest.

VII. CONTRACT CLOSEOUT

A. Project Completion Requirements

1. Upon completion of the project, the Contractor shall submit to the Fernald CRO a written letter stating that the Contractor believes the project to be complete. The letter shall request an inspection of the project by the Fernald CRO, where applicable, and a certificate of completion of the contract.

2. The Fernald CRO shall deliver to the Contractor a certificate of completion

the project.

3. The Fernald CRO shall release retainment of funds, if any, to the Contractor upon acceptance of the project and final payment.

VIII. ATTACHMENTS

A. Purchase Order

Fernald CRO

P.O. Box 38
s, OH 45061

Purchase Order

2414

DATE	P.O. NO.
3/26/97	1

Vendor

SHIP TO
Fernald CRO P.O. Box 38 Ross, OH 45061 (513) 648-4168

DUE DATE	Expected	SHIP VIA
3/26/97	3/26/97	

CHARGE #	ITEM	DESCRIPTION	QTY	RATE	AMOUNT

Total $0.00

ved By Board Chair: _____
oved By Treasurer: _____

386

April 30, 1997 *Revision 0*

Fernald Community Reuse Organization (CRO) Travel Policy

I. GENERAL

Fernald CRO members, Board of Directors, consultants and CRO employees shall comply with Federal Travel Regulations for business travel.

II. TRAVEL AUTHORIZATION

A. Board of Directors

A.1: The Board of Directors must preapprove all business trips and associated travel arrangements for members, consultants, the Executive Director and staff employees.

B. Travelers

B.1: All travelers must complete the Approval for Travel Form (Attachment A), and submit the form to the Board of Directors Treasurer for approval prior to making any travel arrangements.

B.2: Upon approval of the Treasurer, all travelers must complete a Cash Advance Form (Attachment B) and submit to the Treasurer for approval.

C. Treasurer

C.1: The Treasurer checks all forms for completeness and accuracy, signs the forms, and issues a check for the amount specified, usually within 30 days prior to the trip.

III. PER DIEM

Travelers shall receive per diem allowance for meals and incidental expenses incurred when performing official business for the CRO within the continental United States.

Travelers shall be reimbursed for actual expenses for lodging, including applicable taxes, with paid receipts up to the standard per diem established for lodging.

Meals and incidental expenses, as defined by Federal Travel Regulations, will be reimbursed and do not require receipts. Per diem shall not be allowed when local travel is performed in a day and within a 50-mile radius of the employee's official work location.

V. DOCUMENTATION OF TRAVEL

A. Travelers

A.1: Travelers are required to have receipts for the following:

- when a single, miscellaneous expense is over $25;
- all rental and personal car expenses regardless of cost, including parking and tolls;
- transportation ticket stubs for commercial transportation regardless of cost;
- personal calls which are limited to a total of $12 per week or $4 per day;
- lodging regardless of amount.

A.2: For all business travel-related expenses, travelers should complete an Expense Report (Attachment C) within 10 days of completing a trip, and submit the Expense Report to the Treasurer. Travelers should attach required original receipts. Local mileage may be submitted monthly.

A.3: If the cash advance exceeded the expenses of the trip, the traveler should return the excess funds to the Treasurer with the Expense Report.

B. Executive Director

B.1 The Executive Director shall review and approve Expense Reports for CRO staff members and submit the reports to the Treasurer.

C. Treasurer

C.1: The Treasurer shall review, approve and process all Expense Reports from CRO members, consultants, and the Executive Director, and process Expense Reports for the CRO staff.

C.2: The Treasurer shall collect excess funds when the cash advance exceeded the amount of the trip, or reimburse the traveler when the travel advance did not adequately cover the expenses.

C.3: The Treasurer shall maintain a file of records.

VI. FORMS

Attachment A: Approval for Travel Form
Attachment B: Cash Advance Form
Attachment C: Expense Report

ATTACHMENTS A & B (combined)

REQUEST FOR TRAVEL ACCOMMODATIONS/TRAVEL APPROVAL

SECTION I

ATE SUBMITTED:	NAME OF TRAVELER:	TELEPHONE NUMBER: 2414
	SOCIAL SECURITY NO.:	
CONTACT PERSON:		TELEPHONE NUMBER:
LENGTH OF STAY:		DEPARTURE DATE: ☐ AM ☐ PM
DESTINATION:		RETURN DATE: ☐ AM ☐ PM
PURPOSE OF TRIP:		

SECTION II

LENGTH OF STAY: _____

*LODGING: $ _____ TOTAL: $ _____

MEALS & INCIDENTALS: $ _____ TOTAL: $ _____

☐ RENTAL CAR/RATE PER DAY $ _____
NO. OF DAYS _____
TOTAL: $ _____

RSONAL VEHICLE/EST. MILES _____ $ _____
(Cost @ .31¢ Per Mile)

☐ ESTIMATED AIRFARE $ _____

☐ AIRPORT PARKING/NO. OF DAYS _____ $ _____

TOTAL EXPENSES: $ _____
(Estimated Airfare Included)

ADVANCE TOTAL ONLY: $ _____
CHECK WILL BE CUT AS INDICATED
(Estimated Airfare Not Included)

SECTION III

DATE ADVANCE IS REQUIRED: _____ CASH ADVANCE RECEIVED BY: _____

AMOUNT RECEIVED: $ _____ DATE: _____

THE CHARGE NUMBER TO WHICH TRAVEL IS CHARGED: _____

☐ APPROVED ☐ NOT APPROVED

OTHER SIGNATURES:

Board of Directors Treasurer Approval — Date

Chairman of the Board Approval — Date

Signature — Date

NOTE: If advance is required, turn original completed form to Treasurer and retain a copy in your file, to be attached to expense report when submitted.

NOTE: *If Per Diem is exceeded, approval must be obtained from Treasurer before travel begins.

ATTAC[illegible]T C

EMPLOYEE EXPENSE REPORT

NAME *(PRINT OR TYPE)*	
SOCIAL SECURITY NUMBER	BADGE NUMBER
DEPARTMENT/MAIL STOP	PHONE NUMBER
COST ACCOUNT	
PERIOD COVERED _____ through _____	

SECTION C - ADVANCES RECEIVED	AMOUNT
1. CASH ADVANCES	
2. AIRLINE TICKET	
3. REGISTRATION FEE	
4. TOTAL ADVANCES	

SECTION D - DISBURSEMENTS *SEE BACK FOR DESCRIPTIONS*		CHARGE NO.-OBJECT C[illegible]	AMOUNT
5. CAR RENTAL	(Section A, Column 4)		
6. LOCAL MILEAGE	(Section A, Column 6)	·690	
7. AIRFARE/RAIL	(Section A, Column 1)	·699	
8. RELOCATION	(All Columns)	·700	
9. REGISTRATION FEES	(Section C)	·710	
10. TEMPORARY ASSIGNMENT	(See back)	·718	
11. OTHER EXPENSES	(Section A, Columns 2,3,5, & 8)	·719	
12. OTHER	(Section B)		
13.			
14.			
15. TOTAL DISBURSEMENTS (LINES 5-14)			
16. DIFFERENCE (LINE 4 LESS LINE 15)			
17. LESS CASH RETURNED (Check attached or copy of cash receipt)			

SECTION A - TRAVEL

DATE (DD/MM/YY)	TRAVEL FROM AND TO AND AT *(SHOW BUSINESS REASONS FOR EACH TRIP)*	(1) AIR/RAIL	(2) LODGING	(3) MEALS *(SEE BACK)*	(4) CAR RENTALS	(5) TAXI/BUS LIMO	(6) USE OF PERSONAL CAR	(7) MILEAGE	(8) OTHER ALLOWABLE TRAVEL EXPENSES *(TELEPHONE, PARKING, TOLLS, ETC.) (EXPLAIN)*

Total Section A - Enter here and on lines 5-11, Section D

390

SECTION B - (OTHER BUSINESS MEETINGS, REGISTRATION FEES, AND MISCELLANEOUS EXPENSES)

DATE	PLACE	DESCRIPTION	AMOUNT	NAMES AND RELATIONSHIPS OF GUESTS
		TOTAL (ENTER HERE AND ON LINE 12, SECTION D)		

2414

I approve the disbursements hereby reported and certify that they were necessary and proper and are reported in accordance with prescribed Company requirements.

NAME OF AUTHORIZED APPROVER *(PRINT OR TYPE)*:

SIGNATURE OF AUTHORIZED APPROVER:

I certify that this report is a correct statement of my disbursements made on behalf of Fernald Environmental Restoration Management Corporation.

If automobile mileage in personal car is involved, I certify that I have not less than $25,000, $50,00 liability insurance effective when car is used for Company business.

_____ _____

(SIGNATURE OF EMPLOYEE) DATE

Fernald Community Reuse Organization (CRO)
Time Sheet Procedure

I. GENERAL

Fernald CRO employees must submit complete, accurate time sheets so that they can be paid correctly and labor costs can be charged to proper accounts. Records of hours to be paid shall be kept on a daily basis, either on an original time sheet or on some consistently kept record, such as a daily log book, to be transferred to a time sheet.

II. DEFINITIONS

A. Exempt Employee - salaried employee eligible for overtime compensation at a straight time rate.

B. Nonexempt Employee - salaried employee eligible for overtime compensation at time and one half.

III. PROCEDURE

A. All Fernald CRO employees shall submit an original time sheet to the Executive Director by 5:00 pm each Friday.

B. The Executive Director shall approve and sign all Fernald CRO employees' time sheets.

C. The Executive Director shall submit an original time sheet to the Chairman of the Board by 5:00 pm each Friday.

D. The Executive Director shall submit all original, approved time sheets to the Treasurer by 12:00 noon on each Monday.

E. Each time sheet shall contain the following information:

1. Employee name
2. Employee social security number
3. Designation of exempt or nonexempt status
4. Hours worked each day on each charge number or off code
5. Total hours worked each day
6. Total hours worked for week

ATTACHMENT A

Fernald Community Reuse Organization (CRO) Personnel Policies

Work Schedule
The Fernald CRO office will be open from 8 a.m to 5 p.m. Monday through Friday. Full-time employees shall work an eight-hour day with 60 minutes for lunch. The lunch break will not be compensated if not taken. Alternative schedules for special circumstances must be approved by the Board of Directors.

Holiday Schedule
The Fernald CRO office will be closed on nationally recognized holidays (listed below). If the holiday falls on a Saturday, then the office shall be closed on Friday; if the holiday falls on a Sunday, then the office shall be closed on a Monday.

New Years Day
President's Day
Good Friday
Memorial Day
July 4th
Labor Day
Veteran's Day
Thanksgiving and day following
Christmas Eve
Christmas Day

Pay Periods
Pay will be on the last working day of each month. For purposes of Fair Labor Standards provisions, the work week shall be Saturday through Friday.

Vacation
The Executive Director shall accrue 10 hours per month vacation (15 days per year). Other employees shall accrue 8 hours per month vacation (12 days per year). Up to 40 hours of unused vacation will be compensated on December 31 of each year and upon termination (at the rate of pay in place at the time of termination). Vacation time for full-time employees may be carried over for no longer than two years. If a holiday is celebrated during an employee's vacation period, the holiday shall not be charged as a vacation day.

Part-Time Employment

Part-time employees shall receive benefits prorated according to their full-time equivalency as an employee.

Fernald Community Reuse Organization (CRO) Policies

Equal Opportunity Policy

It is the Fernald CRO's policy that no person shall, on the basis of race, color, national origin, sex, age, marital status, religion, or handicap, be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in any program or activity of the Fernald CRO. The Fernald CRO shall not discriminate in its employment practices including recruitment, hiring, layoff, termination, promotion, rates of pay, training, testing, leaves of absence or other employment policies based on race, color, national origin, sex, age, marital status, religion or handicap. All employees must be committed to supporting and maintaining a positive, professional work environment free from harassment, discrimination, offensive or inappropriate behavior.

Drug/Alcohol Free Workplace Policy

It is the Fernald CRO's policy that unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the CRO office. The Fernald CRO shall conduct a drug/alcohol awareness program to:

- inform employees about the dangers of drug/alcohol abuse in the workplace;
- the Fernald CRO's policy of maintaining a drug/alcohol free workplace;
- how to receive drug/alcohol counseling or rehabilitation;
- any penalties that may be imposed upon employees for drug/alcohol abuse violations occurring in the workplace.

This information shall be communicated to employees in an appropriate manner on an annual basis. All employees shall acknowledge receipt of this policy and related information. Employees must comply with this policy as a condition of employment -- violations shall subject the employee to appropriate disciplinary action.

Pursuant to law, any employee who is convicted under any criminal drug statute for a violation occurring in the workplace shall notify the Chairman of the Board of Trustees no later than five days after the conviction. Under federal law, the Fernald CRO is obligated to notify the appropriate federal agency within ten days after receiving notice of such conviction, and to take appropriate personnel action which may result in the employee's participation in a drug abuse rehabilitation program or termination.

Drug/Alcohol Free Workplace Policy Statement

I, the undersigned employee of the Fernald Community Reuse Organization, have received a copy of the Drug/Alcohol Free Workplace Policy and:

- I agree to abide by the terms of the Policy.
- I agree to notify the Chairman of the Board of Trustees if I am convicted of violating a criminal drug/alcohol statute in the workplace, no later than five days after the date of such conviction.

_____
Employee Name (printed)

_____
Employee Signature

_____
Date