

**F**ernald

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**C**ommunity

**R**euse

**O**rganization

**COMMUNITY TRANSITION  
PLAN**

**1999 - 2002**

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

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Version 1.1

PRELIMINARY DRAFT

**1999-2002 COMMUNITY TRANSITION PLAN**

**FERNALD COMMUNITY REUSE ORGANIZATION**

**P.O. Box 38**

**Ross, Ohio 45061**

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**FERNALD COMMUNITY REUSE ORGANIZATION  
COMMUNITY TRANSITION PLAN  
1998 - 2002**

**2018**

**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 initiatives that respond to the challenges confronting the region as the FEMP facility moves toward eventual closure. This Community

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 Initiatives, 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

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 and 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**

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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

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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

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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 through 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 ongoing 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.

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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

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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

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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 INITIATIVES**

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.

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- 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 because 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.

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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

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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

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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,

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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 fund. 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 and 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

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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.

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**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

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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.

**BUDGET OVERVIEW  
FERNALD CRO COMMUNITY TRANSITION PLAN  
1999 - 2001<sup>1</sup>**

NO.	PROGRAM <sup>2</sup>	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 <sup>3</sup>
2.	Marketing and Promotional Activities	\$10,000	\$1,500	\$11,500	500 Jobs <sup>4</sup>
3.	Continuation and Expansion of Project ADEPT	\$250,000	\$37,500	\$287,500	150 Jobs <sup>5</sup>
4.	Assisting Formation of Fernald Employee-Owned Business Units	\$100,000	\$15,000	\$115,000	60 Jobs <sup>6</sup>
5.	Local Development Corporation	\$250,000	\$37,500	\$287,500	50 Jobs <sup>7</sup>
6.	Business Incubator	\$1,000,000	\$150,000	\$1,150,000	50 Jobs <sup>8</sup>
	Totals	\$3,610,000	\$541,500	\$4,151,500	

<sup>1</sup> 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.

<sup>2</sup> Programs are listed in priority ranking.

<sup>3</sup> 1st year impact would be 500 jobs. 2nd year impact would be an additional 500.

<sup>4</sup> 500 1st year jobs resulting from investments made by firms influenced by marketing campaign.

<sup>5</sup> 70 jobs the first year, 80 jobs in year 2.

<sup>6</sup> 60 jobs retained by Fernald workers within the first two years of project implementation.

<sup>7</sup> 50 new jobs created over a three year period.

<sup>8</sup> This 50 jobs target would not be reached until the fourth year following initial incubator start-up.



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**DEMAND MARKET ANALYSIS -  
LIGHT INDUSTRIAL**

**Fernald Community Reuse  
Organization**

**7400 Willey Road  
Crosby Township, Hamilton County, Ohio 45030**

**September 17, 1998**

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**Prepared for:**

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

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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

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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)

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**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.

<b>DEMOGRAPHIC ANALYSIS</b>						
<b>Fernald Environmental Management Project</b>						
<b><u>One, Three and Five Mile Radii</u></b>						
	<u>One Mile</u>	<u>% Change</u>	<u>Three Mile</u>	<u>% Change</u>	<u>Five Mile</u>	<u>% Change</u>
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

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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:

<b>Cincinnati Market Overview - Industrial</b>								
	<u>Total Area (SF)</u>	<u>% of Total</u>	<u>1997 Space Survey (000's)</u>		<u>Historical Vacancy</u>			
			<u>Vacancy (SF)</u>	<u>Absorption (SF)</u>	<u>1996</u>	<u>1995</u>	<u>1994</u>	<u>1993</u>
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	<u>195,574</u>	<u>90.3%</u>	<u>3,549</u>	<u>10,131</u>	<u>1.8%</u>	<u>3.9%</u>	<u>3.9%</u>	<u>6.0%</u>
<b>Totals</b>	<b>216,436</b>	<b>100%</b>	<b>6,277</b>	<b>11,706</b>	<b>2.9%</b>	<b>4.2%</b>	<b>4.4%</b>	<b>6.9%</b>

Source: CB Commercial 1997 Overview

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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).

<b>Greater Cincinnati Industrial Development and Absorption Overview</b>				
<u>Year</u>	<u>Total Industrial Development</u>	<u>New Additions</u>	<u>Speculative Development</u>	<u>Build to Suit</u>
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

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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.

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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.

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### **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).

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

Respectfully Submitted,

PropertyAdvisors Corporation



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



Scott R. Glaser  
Ohio Certification #415371

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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

**000045**



THE  
**GEM**  
REAL ESTATE  
GROUP

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DAYTON, OH 45402

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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.

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**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.

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**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

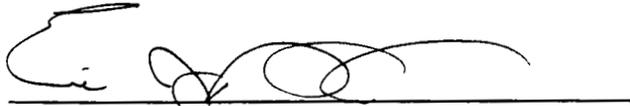
**Summary and Conclusions:** Based on our analysis of the local market in southwestern Ohio and northern Kentucky, it is our opinion that there is little or no demand for the 23 acre site as of August 1998 and for the foreseeable future date of June 2003. This lack of demand is primarily a result of 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.

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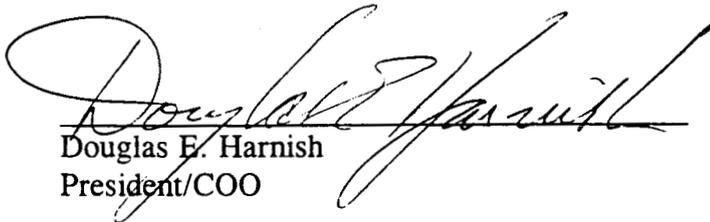
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We trust this is the information that you require. All data gathered during the course of the work are being maintained in a permanent file. If you should have any questions, please let us know. Respectfully submitted,

*The Gem Real Estate Group, Inc.*



Eric J. Gardner  
Assistant Vice President



Douglas E. Harnish  
President/COO

EJG/DEH:skb  
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# 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:

#### STRATEGIC 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.

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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 today's 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 governmental 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 their 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.

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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

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**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

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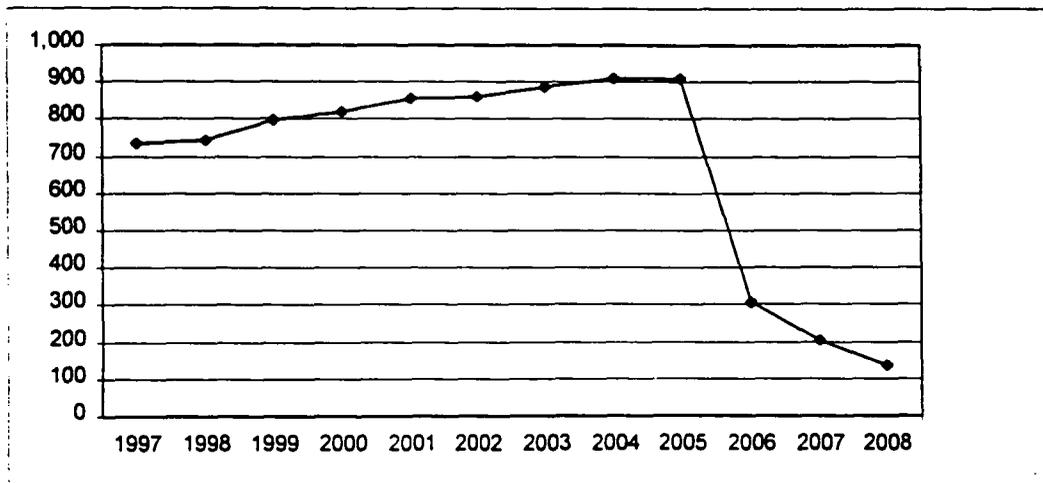
**Executive Summary**

**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)**



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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.<sup>2</sup> 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.

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<sup>2</sup> 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.

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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.

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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
<b>Total</b>	<b>\$ 594,143,553</b>	<b>100%</b>

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**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	-
<b>Total</b>	<b>\$ 257,441,000</b>	<b>\$ 90,579,000</b>	<b>2,464</b>

**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	-
<b>Total</b>	<b>\$ 594,143,553</b>	<b>\$ 140,457,957</b>	<b>4,394</b>

**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
<b>Total</b>	<b>\$ 594,143,553</b>

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**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	-
<b>Total</b>	<b>\$ 258,700,000</b>	<b>\$ 91,975,000</b>	<b>2,594</b>

**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	-
<b>Total</b>	<b>\$ 597,924,825</b>	<b>\$ 143,247,018</b>	<b>4,638</b>

**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
<b>Total</b>	<b>\$ 597,924,825</b>

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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
<b>Total</b>	<b>\$ 275,212,000</b>	<b>\$ 104,465,000</b>	<b>2,586</b>

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
<b>Total</b>	<b>\$ 633,292,150</b>	<b>\$ 162,665,468</b>	<b>4,629</b>

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
<b>Total</b>	<b>\$ 633,292,150</b>

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**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
<b>Total</b>	<b>\$ 280,589,000</b>	<b>\$ 111,820,000</b>	<b>2,390</b>

**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
<b>Total</b>	<b>\$ 646,140,069</b>	<b>\$ 174,931,912</b>	<b>4,283</b>

**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
<b>Total</b>	<b>\$ 646,140,069</b>

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**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
<b>Total</b>	<b>\$ 288,165,000</b>	<b>\$ 121,041,000</b>	<b>2,345</b>

**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
<b>Total</b>	<b>\$ 665,049,145</b>	<b>\$ 190,430,306</b>	<b>4,219</b>

**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
<b>Total</b>	<b>\$ 665,049,145</b>

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**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
<b>Total</b>	<b>\$ 295,948,000</b>	<b>\$ 113,740,000</b>	<b>2,278</b>

**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
<b>Total</b>	<b>\$ 682,009,621</b>	<b>\$ 178,415,078</b>	<b>4,088</b>

**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
<b>Total</b>	<b>\$ 682,009,621</b>

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**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
<b>Total</b>	<b>\$ 303,937,000</b>	<b>\$ 115,541,000</b>	<b>2,236</b>

**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
<b>Total</b>	<b>\$ 702,453,116</b>	<b>\$ 183,013,803</b>	<b>4,034</b>

**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
<b>Total</b>	<b>\$ 702,453,116</b>

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**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
<b>Total</b>	<b>\$ 312,143,000</b>	<b>\$ 118,523,000</b>	<b>1,844</b>

**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
<b>Total</b>	<b>\$ 721,443,942</b>	<b>\$ 187,793,489</b>	<b>3,327</b>

**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
<b>Total</b>	<b>\$ 721,443,942</b>

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**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	-
<b>Total</b>	<b>\$ 320,571,000</b>	<b>\$ 102,680,000</b>	<b>1,757</b>

**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	-
<b>Total</b>	<b>\$ 745,808,047</b>	<b>\$ 163,833,228</b>	<b>3,179</b>

**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
<b>Total</b>	<b>\$ 745,808,047</b>

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**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
<b>Total</b>	<b>\$ 94,483,000</b>	<b>\$ 55,310,000</b>	<b>1,306</b>

**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
<b>Total</b>	<b>\$ 218,641,769</b>	<b>\$ 87,116,799</b>	<b>2,347</b>

**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
<b>Total</b>	<b>\$ 218,641,769</b>

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**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
<b>Total</b>	<b>\$ 56,965,000</b>	<b>\$ 44,496,000</b>	<b>842</b>

**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
<b>Total</b>	<b>\$ 131,307,606</b>	<b>\$ 69,427,029</b>	<b>1,507</b>

**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
<b>Total</b>	<b>\$ 131,307,606</b>

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**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
<b>Total</b>	<b>\$ 31,117,000</b>	<b>\$ 41,475,000</b>	<b>911</b>

**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
<b>Total</b>	<b>\$ 71,673,815</b>	<b>\$ 64,542,758</b>	<b>1,629</b>

**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
<b>Total</b>	<b>\$ 71,673,815</b>

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**Appendix I**  
**Description of Data**

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**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)**

**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%

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**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	\$30,280
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	\$90,582
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

## Appendix II Research Methodology

2018

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.<sup>1</sup>"

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.

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<sup>1</sup> 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.

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**TARGET INDUSTRY PROFILE:  
PROFESSIONAL BASED WHITE COLLAR  
OPERATIONS**

prepared for:

**GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP  
OCTOBER 6, 1998**

prepared by:

**THE WADLEY-DONOVAN  
GROUP, LTD.  
973.540.0012**

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## 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: Professional Based White Collar Operations. This target consists of three sectors: Corporate Headquarters and Sales Offices, Technical Support Centers, and High-End Back 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.

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## 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 major headquarters, Ashland, Inc, ranked 102 on the Fortune list, announced it is relocating its corporate headquarters to Northern Kentucky. In addition to these corporate headquarters, Cincinnati is home to subsidiary and divisional headquarters, regional and national sales centers, 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 high-end back 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.

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The key assets offered by the metro area for the targeted functions include:

1. A Delta Airlines hub with non-stop international service to London, Frankfurt, 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 high-end back 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 disciplines, 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 back 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.

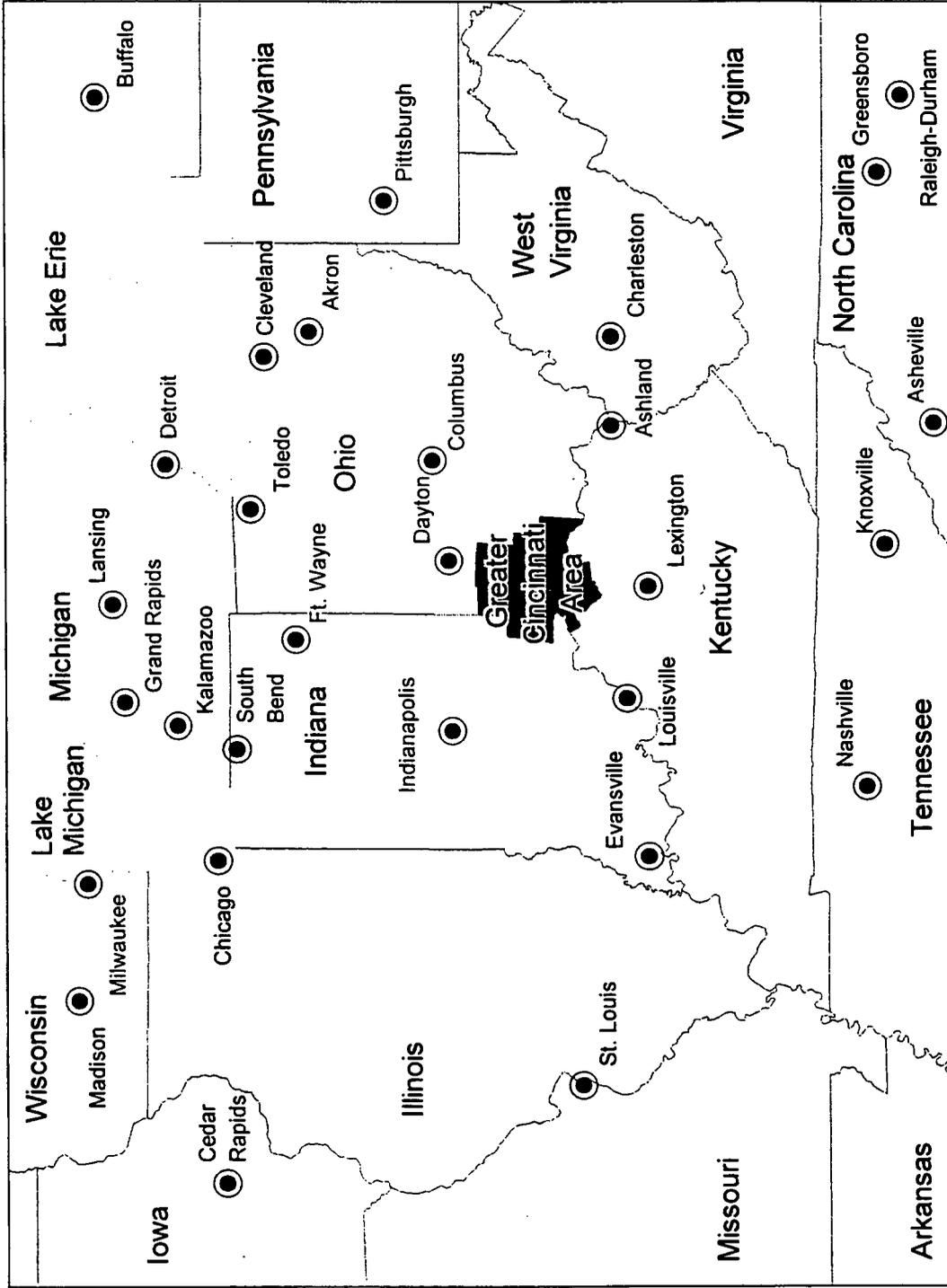
WDG recommends that the Partnership conduct a strong marketing effort to firms with the targeted functions within a 500 mile radius. Companies with operations in smaller cities offer the best marketing opportunity because of the improved air service and labor recruiting conditions in the Cincinnati area. 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 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 back offices that are truly up-scale (i.e. with college graduates comprising the bulk of the workforce). Finally, barriers to downtown office development should be remedied to allow a wider choice of location options, especially for headquarters operations.

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

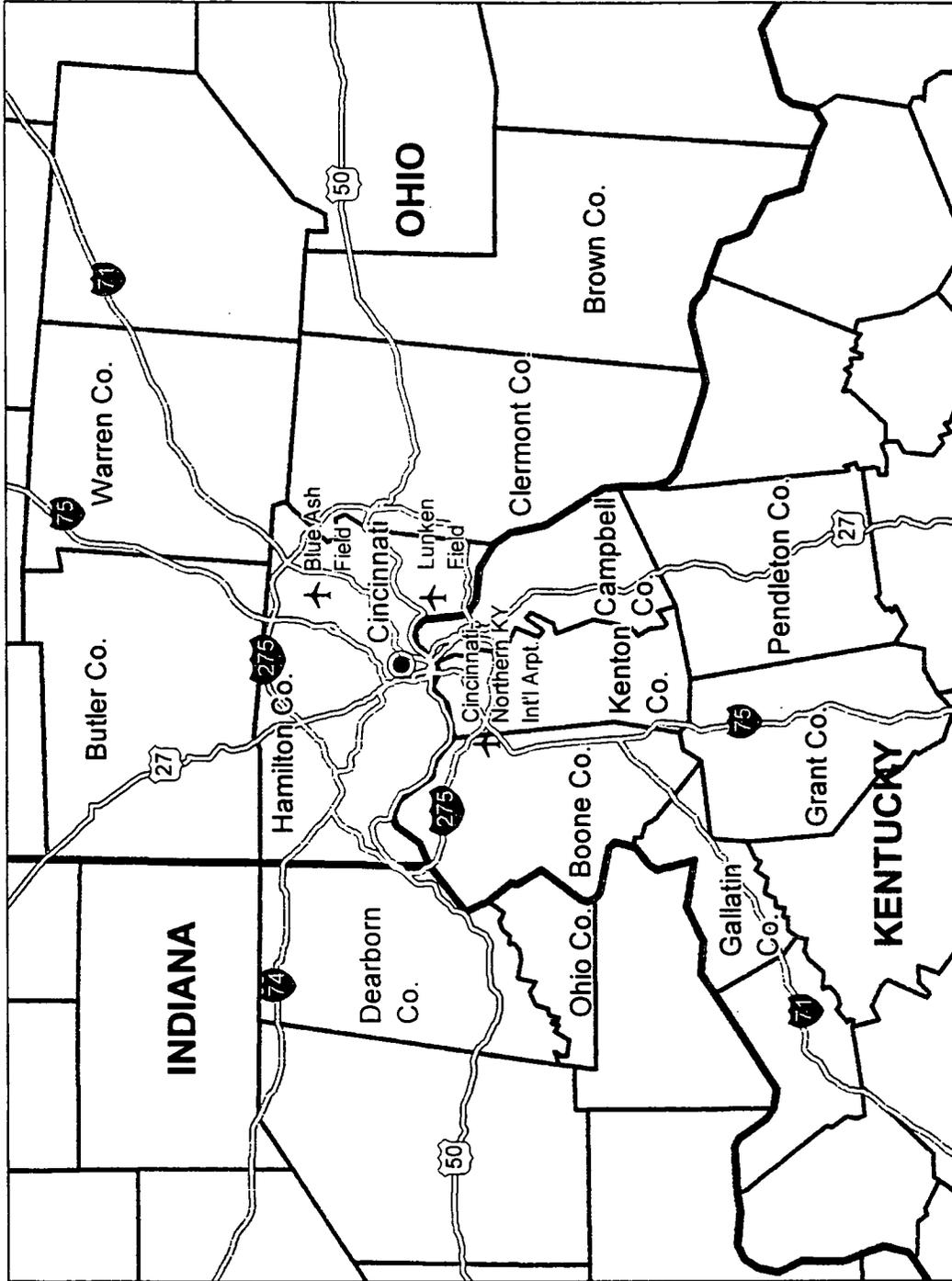


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FIGURE 2  
THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA

Source:



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## 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.

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**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.

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

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### High-end Back Office Operations

**High-end back 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. High-end back office operations are common to all business groups. Examples of high-end back 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.).

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## 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 Financial Officer
Chief Operating Officer	Controller
Vice President of Human Resources	Treasurer
Senior Vice President Technology	Product Managers
Executive Vice President, Operations	General Counsel
Senior Account Managers	Vice President of Corporate Real Estate
Chief Administrative Officer	

**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
<b>Nonexempt</b>	<b>166</b>
Senior Support	85
Entry Support	81
<b>Total Employees</b>	<b>595</b>

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TABLE 3  
 MAJOR RETAIL COMPANY REGIONAL HEADQUARTERS STAFFING PROFILE

Source: WDG Project Files

Positions	Number of Employees
<b>Exempt</b>	<b>22</b>
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
<b>Nonexempt</b>	<b>10</b>
Secretary	4
Accounting Clerk	2
General Clerk	2
Office Manager	1
Receptionist	1
<b>Total Employees</b>	<b>32</b>

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**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

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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
<b>Exempt</b>	<b>21</b>
Vice President	1
Sales Manager	1
Sales Executive	1
Sales professionals	5
Field Service Support	10
Customer Service Supervisors	2
Office Manager	1
<b>Nonexempt</b>	<b>33</b>
Receptionist	1
Order Clerk	2
Secretary	1
Data Entry Clerk	2
Billing Clerk	1
Accounting Clerk	1
Customer Service Reps	25
<b>Total Employees</b>	<b>54</b>

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### 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
<b>Exempt</b>	<b>16</b>
Management	6
Technical Support Team Leader	16
Network Technician	2
<b>Clerical</b>	<b>10</b>
Technical Support Personnel	175
Full time (75% entry level)	140
Part time (40% entry level)	35
<b>Total Employees</b>	<b>209</b>

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**High-end Back Office Operations**

**Typical size ranges for higher-end back 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
<b>Exempt</b>	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
<b>Nonexempt</b>	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
<b>Total Employees</b>	<b>204</b>

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**TABLE 9**  
**SHAREHOLDER/INVESTMENT SERVICES STAFFING PROFILE**  
 Source: WDG Project Files

Position	Number of Employees
<b>Exempt</b>	<b>325</b>
Retirement Plan Representative *	70
Retail Account Representative *	190
Retirement Plan Specialist	15
Supervisor	35
Trainer	5
Human Resources Specialist	3
Accounting	2
Manager	5
<b>Nonexempt</b>	<b>88</b>
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
<b>Total Employees</b>	<b>413</b>

\* Some companies will classify these positions as nonexempt.

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**TABLE 10**  
**SHARED SERVICES CENTER STAFFING PROFILE**  
 Source: WDG Project Files

Position	Number of Employees
<b>Exempt</b>	<b>180</b>
Accountant	70
Human Resources Specialist	25
Human Resources Customer Service	40
Supervisor	35
Manager	10
<b>Nonexempt</b>	<b>226</b>
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
<b>Total Employees</b>	<b>406</b>

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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
<b>Nonexempt</b>	<b>215</b>
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
<b>Total Employees</b>	<b>430</b>

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## 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.

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- 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.

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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.
  - 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.

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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.

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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.

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## 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).

**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.

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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.

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**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.

- 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.
- 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. Areas where turnover is high (above 25%) will generally be avoided by TSCs.

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### High-end Back Office Operations

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).

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**High-end back 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 high-end back 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 in San 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.

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**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 high-end back 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 representative list of companies with professionally based white collar operations in Greater Cincinnati are listed in Table 12.

**TABLE 12**  
**CORPORATE HEADQUARTERS**  
Source: Greater Cincinnati Chamber of Commerce, Fortune Magazine, 1998

Company Name	City	State
AK Steel Holding	Middletown	OH
American Annuity	Cincinnati	OH
American Family Insurance		
American Financial Group	Cincinnati	OH
Ashland	Covington	KY
Chiquita Brands - Carl Lindner Company	Cincinnati	OH
Chiquita Brands International	Cincinnati	OH
Cincinnati Bell	Cincinnati	OH
Cincinnati Financial	Fairfield	OH
Cincinnati Milacron	Cincinnati	OH
Cinergy	Cincinnati	OH
E. W. Scripps	Cincinnati	OH
Ethicon Endo-Surgery (Division of J&J)	Cincinnati	OH
Federated Department Stores	Cincinnati	OH
Fifth Third Bancorp	Cincinnati	OH
Formica Corporation	Cincinnati	OH
Frisch's Restaurants	Cincinnati	OH
Gibson Greetings	Covington	KY
Heinz Pet Products	Newport	KY
Hilton Davis	Cincinnati	OH

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**TABLE 12 (CONTINUED)  
CORPORATE HEADQUARTERS**

Source: Greater Cincinnati Chamber of Commerce, Fortune Magazine, 1998

Company Name	City	State
International Paper Distribution Group	Covington	KY
Kroger	Cincinnati	OH
Loyal American Life Insurance		
Mercantile Stores	Fairfield	OH
Ohio Casualty	Hamilton	OH
Omnicare	Cincinnati	OH
Procter & Gamble	Cincinnati	OH
Sakrete	Cincinnati	OH
Star-Kist Foods	Newport	KY

\* Fortune 1000 corporate headquarters

**TABLE 13  
TECHNICAL CENTERS AND HIGH-END BACK OFFICES**

Source: Greater Cincinnati Chamber of Commerce, Fortune Magazine, 1997

Company Name	City	State
American Financial - Carl Lindner Company	Cincinnati	OH
Burke, Inc. - Market Research	Cincinnati	OH
Check Mark, Inc.	Cincinnati	OH
Eagle-Picher Industries	Cincinnati	OH
Entex		
Equitable Bag - Midwest Division	Florence	KY
Fidelity Investments Operations Center	Covington	KY
GRE Insurance	Loveland	OH
Great American Insurance - Carl Lindner Company	Cincinnati	OH
Lenscrafters	Cincinnati	OH
Ohio Casualty	Hamilton	OH
Ohio National Financial Services	Cincinnati	OH
Toyota Motor Manufacturing, NA	Erlinger	KY
Union Central Life Insurance	Cincinnati	OH
Western & Southern Life Insurance	Cincinnati	OH

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## 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.

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- 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. A headquarters relocation at times will require temporary leasing of space while permanent quarters are being constructed (or refit).

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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 not only 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 a relocation.

### 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.

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- 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 carriers, 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.

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- Existing call centers with a sizable labor base of customer service representatives 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.
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.

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- 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, but 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:

- 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.
- 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.
- A minimum of seven parking spaces per 1,000 square feet of occupied office space.
- A site and building with strong curbside appeal (or image).
- Employee amenities such as fast food establishments, health and fitness centers, day care centers, and convenience shopping within walking distance of the facility.
- 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.

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**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.

**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

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**High-end Back Office Operations**

**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 high-end back 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.

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**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 high-end back 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.

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**Incentives from state and local governments are a factor in attracting back office 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 back offices, especially for offices with data centers.

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## RATIONALE FOR CINCINNATI

### 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 high-end back 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

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**“DRAFT”**

**TARGET INDUSTRY PROFILE:  
MANUFACTURING WITH HIGH ENGINEERING  
CONTENT**

prepared for:

**GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP  
DECEMBER 18, 1998**

prepared by:

**The  
WADLEY-DONOVAN  
GROUP, Ltd.  
973.540.0012**

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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 inbound 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 particulate, 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.

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## 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
<b>1</b>	<b>Industrial Machinery and Equipment</b>		
	• Manufacturing 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
<b>2</b>	<b>Advanced Materials</b>		
	• 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
<b>3</b>	<b>Subassemblies and Components</b>		
	• Electronic Connectors	3678	Electronic Connectors
	• Passive Components	3679	Electronic Components, nec

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

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

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**TABLE 2  
REPRESENTATIVE PRODUCTS**

<b>1. Industrial Machinery and Equipment</b>
• 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

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2018

**TABLE 2 CONTINUED  
REPRESENTATIVE PRODUCTS**

• 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 racks
- 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

000124

2018

**TABLE 2 CONTINUED  
REPRESENTATIVE PRODUCTS**

<b>2. Advanced Materials</b>
• 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

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**TABLE 2 CONTINUED  
REPRESENTATIVE PRODUCTS**

<b>3. Subassemblies and Components</b>
• 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

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2018

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

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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

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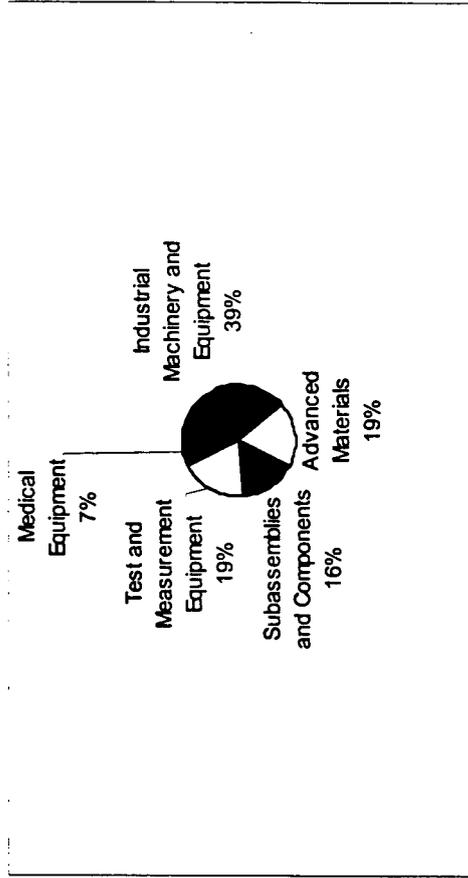
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**Overview**

National Overview

**FIGURE 3  
SECTOR SHARE OF TOTAL U.S. TARGET EMPLOYMENT**

Source: County Business Patterns



**TABLE 3  
US TARGET INDUSTRY STATISTICS (1995)**

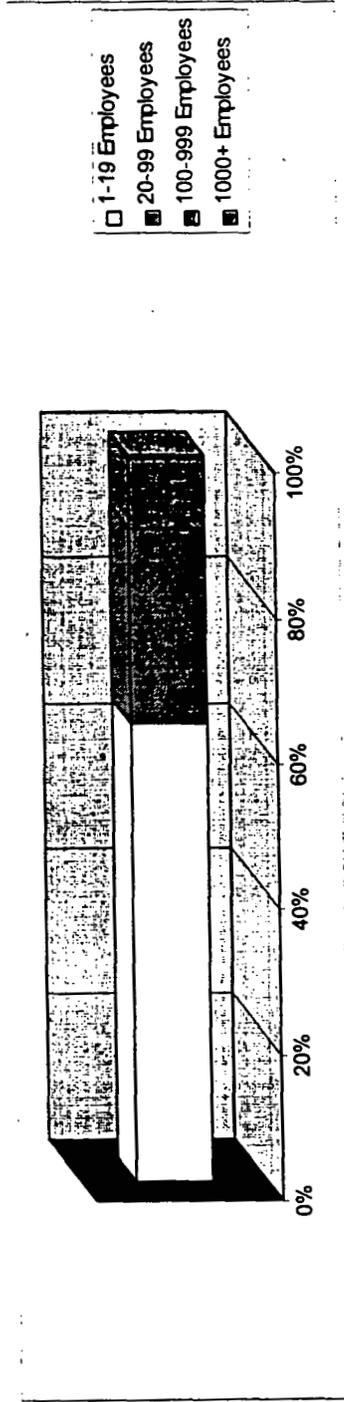
Source: County Business Patterns

	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

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**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

**TO BE COMPLETED**

Description	Total Employment	Production Workers	Average Hourly Earnings (Production Workers)
Industrial Machinery and Equipment			
Advanced Materials			
Subassemblies and Components			
Test and Measurement Equipment			
Medical Equipment			
<b>Total</b>			

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**TABLE 5**  
**MSA RANKINGS-TARGET INDUSTRY ESTABLISHMENTS (1995)**

Source: County Business Patterns

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

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**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

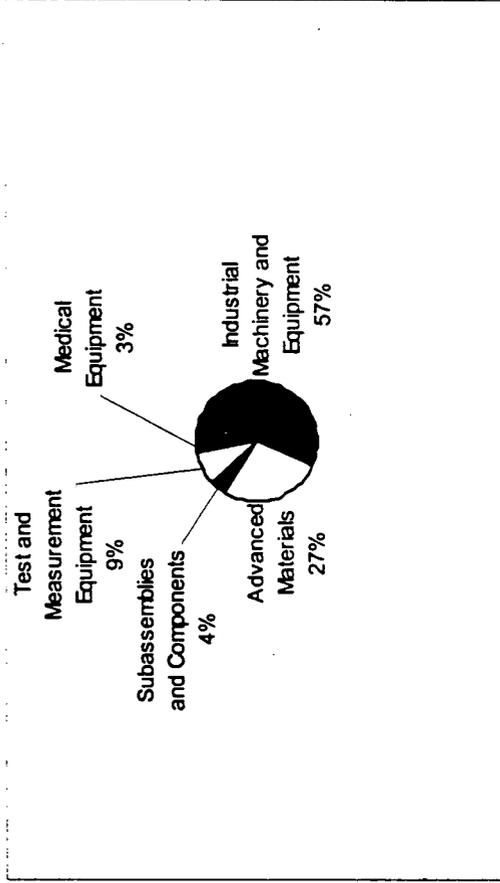
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Regional Overview

**FIGURE 6**  
**SECTOR SHARE OF TARGET INDUSTRY EMPLOYMENT**

Source: County Business Patterns



**TABLE 7**  
**CINCINNATI MSA TARGET INDUSTRY STATISTICS (1995)**

Source: County Business Patterns

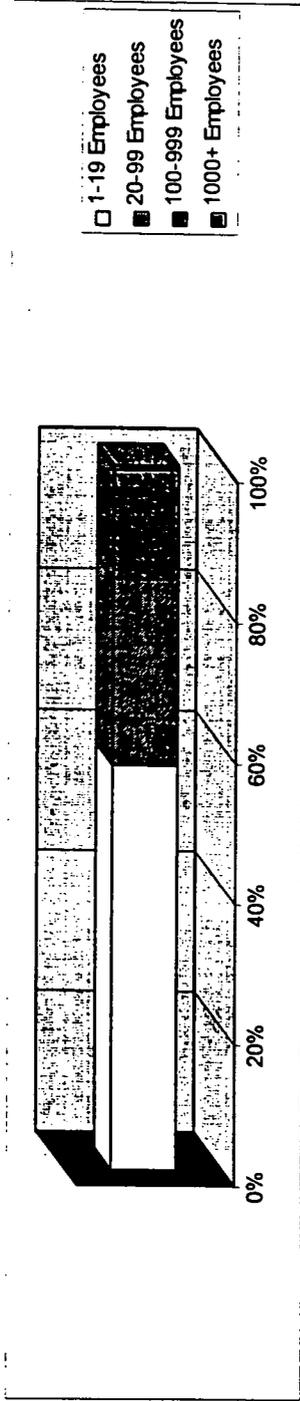
	Industrial Machinery and Equipment	Advanced Materials	Subassemblies and Components	Test and Measurement Equipment	Medical Equipment	Total
Employment	11,061	5,355	807	1,704	610	19,537
Establishments	166	57	11	30	11	275
Average Establishment Size	66.6	93.9	73.4	56.8	55.5	71.0
Average Annual Per Employee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

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**FIGURE 7**  
**DISTRIBUTION OF TARGET INDUSTRY ESTABLISHMENTS BY SIZE**  
**CINNCINATI MSA**

Source: County Business Patterns



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# 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%

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

Source: County Business Patterns

Description	New Capital Expenditure (1996) (\$ million)			Percentage Change (1992-1996)		
	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%
Medical Equipment	673	135	539	-2.3%	-18.7%	3.0%
<b>Total Industry</b>	<b>11,133</b>	<b>1,669</b>	<b>9,465</b>	<b>26.4%</b>	<b>33.6%</b>	<b>25.2%</b>

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**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	Charlottesville-Gastonia-Rock Hill, NC-SC MSA	26
25	Hartford, CT MSA	26

Rank	MSA Name	Establishment Growth
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

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**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

Rank	MSA Name	Employment Growth
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

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## Regional Overview

**TABLE 12**  
**TARGET INDUSTRY TRENDS (1990-1995)**  
**CINCINNATI MSA**

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%

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## 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	Location	Product Description	SIC	Employees
American Fan Co	Fairfield, OH	Industrial & commercial fans	3564	160
Atlas Vac-Machine Co	Hamilton County	Heat sealing packaging machinery	3565	100
Attachmate Corp	Cincinnati, OH	Industrial Measuring & Control Instruments	3823	200
B A S F Corp	Clermont County	Research & development lab: plastic, metallic & protective removable container coatings	2821	55
BASF Corporation / Container Coatings	Milford, OH	Manufacturer of interior and exterior metallic and protective coatings for metal containers.	2851	60
Balluff Inc	Florence, KY	Control Systems & Regulators Manufacturers	3822	100
Black Clawson Co	Middletown, OH	Paper Mill Machinery	3554	200
Borden Chemical, Inc. / Coatings & Graphics Division	Cincinnati, OH	Solvent-based, water-based and UV-cured printing inks and coatings.	3827	185
Boston Gear	Florence, KY	Pillow blocks, gear racks & small gears	3566	110
Cae Ransohoff Co	Cincinnati, OH	Packaging Machinery Manufacturers	3565	280
Campbell Group	Harrison, OH	Air & Gas Compressors	3563	650
Campbell-Hausfeld Co	Hamilton County	Paint sprayers, air compressors, tools & access	3563	700
Carr Tool Co	Hamilton County	Carbide tipped multifluted cutting tools	3545	60
Cincinnati Fan	Mason, OH	Blowers Manufacturers	3564	100

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**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	Location	Product Description	SIC	Employees
Cincinnati Gear Co	Cincinnati, OH	Speed Changers Industrial Drives & Gears	3566	210
Cincinnati Gilbert Machine Tool Company, L.L.C.	Cincinnati, OH	Table-top and floor-type horizontal boring mills and rotary tables.	3540	50
Cincinnati Inc	Harrison, OH	Squaring shears, shear conveyors, metal & hydraulic presses, laser cutting machines, press brakes & tooling	3542	775
Cincinnati Incorporated	Cincinnati, OH	Metal fabricating tools including shears, lasers, presses and press brakes.	3540	700
Cincinnati Industrial Machine	Cincinnati, OH	Ovens Industrial	3567	150
Cincinnati Milacron, Inc.	Cincinnati, OH	Industrial manufacturing equipment and supplies including machine tools and plastic-manufacturing machinery.	3540	13000
Cincinnati Milacron, Inc. / Machine Tool Group	Cincinnati, OH	Machine tools including milling and grinding machines and CNC turning and machining centers.	3540	2500
Cincinnati Milacron, Inc. / Plastics Machinery Group	Batavia, OH	Plastic blow molding, extruding, reaction-in-mold, plastic thermoforming, cast and blow film and plastic injection machines.	3540	1500
Cincinnati Sub-Zero Products, Inc.	Cincinnati, OH	Custom environmental test chambers.	3820	134
Cincinnati Test Systems, Inc.	Cleves, OH	Leak detection systems and instruments for component part testing.	3820	70
Cinti Sub-Zero Prods Inc	Cincinnati, OH	Hospital Equipment & Supplies Manufacturers	3841	135
Clopay Plastic Products Co.	Cincinnati, OH	Polyethylene, polypropylene and thermoplastic elastomer films and laminates.	2820	450
CTL-Aerospace, Inc.	Cincinnati, OH	Honeycomb core composites, hybrid composites and graphite/carbon and carbon composites.	3083	280
D F Electronics Inc	Hamilton County	Electronic security, control & instrumentation equipment	3823	95
Digital Controls Corp	Warren County	EDP computer data communication products & switches	3679	50
Diversified Ophthalmics	Cincinnati, OH	Surgical/Medical Instruments/Apparatus	3841	105

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TARGET INDUSTRY PROFILE  
 GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP  
 NOVEMBER 1998

**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	Location	Product Description	SIC	Employees
Dynamics Corporation of America / Ellis and Watts Division	Batavia, OH	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	190
Elison Surface Technologies	Hebron, KY	Designer, engineer, developer and applier of metallic, ceramic, dielectric and organic coatings to metal and plastic substrates.	2851	100
Emerson Electric Fusite Div	Cincinnati, OH	Electronic Equipment & Supplies Manufacturers	3679	
Ethicon, Inc. / Ethicon Endo-Surgery Division	Cincinnati, OH	Disposable surgical devices & equipment, Harmonic scalpels which cut and coagulate simultaneously.	3841	70
Fast Air Products	Florence, KY	Fans Industrial & Commercial Manufacturers	3564	100
Ferco Tech Corp	Warren County	Fixtures, tooling, jigs, specialty machinery, aircraft engine brackets, aircraft tube bending & fabricating	3544	70
Fibre Glass-Evercoat Co., Inc.	Cincinnati, OH	Body fillers for repairing cars and boats.	2899	145
Fluid Kinetics Inc	Cincinnati, OH	Automatic Controls-Residential & Commercial	3822	150
Force Control Industries Inc	Butler County	Clutch & motor brakes, 2 speed & high speed reverse drives	3568	60
Fuller, H B Co	Hamilton County	Adhesives, resins & latex compounds & emulsion polymers	2821	101
Futuro Inc	Hamilton County	Health supports, medical stockings, convalescent & first aid products & bandages	3842	335
General Polymers Corp	Hamilton County	Construction chemicals, special flooring & coatings	2899	100
Gold Crown Machinery	Cincinnati, OH	Grinding & honing machinery; machinery rebuilding	3541	130
Grace, W R & Co-CONN	Hamilton County	Silica gel	2899	65
Gusher Pumps Inc	Dry Ridge, Grant County, KY	Industrial centrifugal pumps, automotive coolant pumps	3561	115
Halma Holdings Inc	Cincinnati, OH	Industrial Measuring & Control Instruments	3823	8

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**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	Location	Product Description	SIC	Employees
Hanna Color	Boone County	Custom colorings for plastics	2851	60
Henkel Corp. / Chemicals Group	Cincinnati, OH	Resins, adhesives, radiation and epoxy curing agents, plasticizers, polymers, plastics additives, fungicides and dispersants; vitamin E; specialty chemicals for metal extraction.	2899	2000
Huls America Inc	Hamilton County	Colors & colorants	2851	55
Hydro Systems Co.	Cincinnati, OH	Liquid proportioning and dispensing systems primarily for the cleaning and food service industries.	3569	100
Hy-Q Intl	Erlanger, KY	Quartz crystals; communication products, microprocessor crystals, crystal oscillators & crystal filters	3679	105
I T T A-C Pump Corp	Hamilton County	Centrifugal pumps	3561	400
Imperial Adhesives, Inc.	Cincinnati, OH	Solvent based polyurethane, polyester and rubber based contact adhesives, nitro-rubbers and acrylics, polyamide and PVA and EVA adhesives.	2891	200
Interplastic Corp	Kenton County	Polyester resins	2821	65
ITT A-C Pump	Cincinnati, OH	Pumps & Pumping Equipment	3561	400
J W Harris Intl Inc	Cincinnati, OH	Industrial Process Furnaces & Ovens	3567	250
Jones, R A & Co Inc	Kenton County	Specialty packaging machinery, equipment & systems	3565	430
KDI Precision Products, Inc.	Cincinnati, OH	Precision mechanical devices including gears, timing chains and fuses. Company also manufactures surface mounted printed circuit boards.	3678	356
Kendall Inc	Clermont County	Health supports, medical stockings, convalescent & first aid products & bandages	3842	55
Kett Tool Co	Hamilton County	Portable electric & pneumatic saws, shears & scissor shears	3546	50
Kornylak Corp.	Hamilton, OH	Material handling equipment and systems for the production of urethane and expandable polystyrene foam products.	3569	51
Kratz-Wilde Machine Co Inc	West Chester, OH	Tool & die, automobile & aircraft precision metal stampings	3544	66

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**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	Location	Product Description	SIC	Employees
Liebel-Flarsheim Co	Cincinnati, OH	Urology surgical tables, digital injectors, disposable syringes & medical x-ray components, diagnostic imaging, angiographic and urological X-ray equipment and supplies.	3841	250
Makino	Mason, OH	Manual lathes, machining centers, machine tools, electrical discharge machines, machining cells & systems	3541	500
Marathon Monitors Inc	Hamilton County	Oxygen probes, industrial process controllers & integrated process control systems	3823	60
Mazak Corp.	Florence, KY	CNC machine tools. Products include lathes, vertical and horizontal machining centers and flexible machining systems.	3540	900
Mercury Instruments Inc	Hamilton County	Electronic & mechanical pressure temperature volume recording & billing instruments	3823	90
Meridian Diagnostics, Inc.	Cincinnati, OH	Immunodiagnostic test kits, reagents and parasitology transport systems.	3841	170
Metalex Manufacturing Co	Cincinnati, OH	Cutting Tools & Accessories & Measuring Devices	3545	120
Midwest Filtration Co	Butler County	Air & liquid filter media, absorbents, spill control products & lab services	3569	75
Millennium Petrochemicals, Inc.	Cincinnati, OH	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	3600
Morton Intl Inc	Hamilton County	Tin stabilizers & asphalt additives	2899	195
Mutual Manufacturing & Supply	Cincinnati, OH	Sprinklers Automatic Fire Manufacturers	3569	230
North American Refractories Co	Cincinnati, OH	Refractory castables cements, mortars, mixes & crucibles, nonclay refractories	3567	100
Nu-Tone Inc	Cincinnati, OH	Fans Industrial & Commercial Manufacturers	3564	700
O P W Engineered Systems	Warren County	Loading arms, floating suction, valves, pipe fittings, swivel joints & sight flow indicators	3568	80
Oakley Die & Mold Co	Hamilton County	Molds & dies; tooling, tool grinding & general machining	3544	62

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**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	Location	Product Description	SIC	Employees
Ohmart Corp.	Cincinnati, OH	On-line gauges for measuring density, mass flow, weight, level and moisture.	3825	120
Omni Technologies, Inc.	Hebron, KY	Polyurethane plastics, molding and machine shop services specializing in polyurethanes.	2820	53
OPW	Hamilton, OH	Mechanical Power Transmission Equipment	3568	350
Owens-Orten Tool & Die Co	Hamilton County	Tool & die: plastic working machinery, plastic & cutting dies, jigs & fixtures, prototypes, drilling & boring, grinding services	3544	100
Perry & Derrick Co	Hamilton County	Architectural paints & chemical coatings, polyurethane & resins	2851	130
Physician Sales & Services	Cincinnati, OH	Surgical Instruments-	3841	100
Pittsfield Of KY Inc	Pendleton County	Industrial filters	3564	80
PoleZero Corp	Butler County	Digitally tuned RF hopping filters	3679	53
Porter Precision Products Co	Hamilton County	Precision piercing punches, retainers, die buttons & urethane strippers	3544	180
Post Glover Resistors, Inc.	Erlanger, KY	Wire-wound, grid, edge-wound and ribbon power resistors.	3679	90
Precision Industrial Automation, Inc.	Cincinnati, OH	Automatic assembly systems, automatic arc and resistance welding machines, high-speed automatic mechanical presses, packaging equipment and hydraulic and manual CNC fixtures.	3569	120
R A Jones & Co	Covington, KY	Packaging Machinery Manufacturers	3565	450
Recto Molded Products Inc	Hamilton County	Custom molded thermoplastic parts	3083	172
Reliance Medical Products, Inc.	Mason, OH	Medical examination and treatment chairs, instrument stands and delivery systems and surgery stretchers.	3841	110
Richards Industries	Hamilton County	Needle, instrument, gauge & manifold valves; static pressure instruments	3823	185
Ronan Engineering Co	Boone County	Nuclear measuring instruments	3829	50

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**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	Location	Product Description	SIC	Employees
Ronan Engineering Co. / Measurements Division	Florence, KY	Level measuring equipment, radiation gauges and instruments used to measure density, weight and gravitational pull, nuclear measuring equipment.	3825	50
Rotek Inc	Florence, KY	Ball & Roller Bearing		
Rotex, Inc.	Cincinnati, OH	Particle size analyzers for large and small analysis and screening equipment for dry and wet separations, screening and sifting equipment.	3562	140
Sealtron Inc	Cincinnati, OH	Glass to metal hermetic connectors & seals	3820	140
Setco	Cincinnati, OH	Precision machine-tool components, metal working spin industrial and metal working tables.	3678	
Smith, A O Corp	Boone County	Frits & protective coatings	3540	330
Standex Electronics	Hamilton County	Relays, switches, coils & connectors	2899	50
Surgical Appliance Industries	Cincinnati, OH	Surgical garments & convalescent products	3679	65
SWECO	Florence, KY	Vibratory fine screening and grinding equipment and vibratory deburring machines.	3842	100
Tape Products Co	Cincinnati, OH	Orthopedic Prosthetic & Surgical Appliances	3540	300
Tekmar Dohrmann Co	Hamilton County	Scientific research equipment, laboratory analytical instruments, environmental analysis equipment	3842	100
Truform Orthopedic/Prosthetic	Hamilton County	Back & surgical supports; knee braces	3821	150
U S Drill Head Co	Hamilton County	Multiple spin industrial drill heads & machine tool access	3842	250
U S Turbine Corp	Warren County	Gas turbine generators	3545	125
U.S. Precision Lens, Inc.	Clermont County	Lenses for projection televisions, medical equipment, optical storage devices and other industrial applications.	3569	91
United States Drill Head Co.	Cincinnati, OH	Multiple spin industrial drill heads which are used on drilling equipment.	3827	1020
Utilico	Cincinnati, OH	Machine Tools Manufacturers	3540	150
			3541	500

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**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	Location	Product Description	SIC	Employees
Valentine Research, Inc.	Cincinnati, OH	Radar detectors, G-force measurement devices and LED digital displays.	3825	
Vickers Electronic Systems	Lebanon, OH	Contract electronics manufacturing services and manufacturer of programmable controllers and computer numerical controls.	3823	550
Voith Sulzer Paper Technology	Monroe, OH	Paper machinery & repairing	3554	225
Vulcan Oil Co	Hamilton County	Petroleum & synthetic coolants & lubricants; rust inhibitors; cleaners; compound blending; cutting, hydraulic & industrial oils	2992	100
Wagstaff Inc	Boone County	Custom aluminum molds & castings	3544	50
Western States Machine Co	Hamilton, OH	Industrial centrifugals for chemical process industries, sugar, chemical, municipal & industrial sludge dewatering	3569	140
Wolf Machine Co	Hamilton County	Cloth cutting machinery & power meat saws	3552	60
Xetron Corp	Cincinnati, OH	Electronic Equipment & Supplies Manufacturers	3679	150
Xtek, Inc.	Cincinnati, OH	Heavy industrial equipment including gears, rolling mill rolls, crane wheels and gear couplings.	3540	425
Zellerbach	Cincinnati, OH	Orthopedic Prosthetic & Surgical Appliances	3842	100

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## 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 exempt positions such as precision machining, technicians, operation of CNC equipment, etc. Lower level exemptions 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.
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.

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## 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. Cincinnati 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)

**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 in these industries (at least 16,000, see Table 12). Except for special industry machinery, each of these industries has increased employment with growth far outpacing the national averages. See Table 14 for a list of total local employment in the full range of high-end manufacturing sectors.

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**TABLE 14**  
**EMPLOYMENT PATTERNS IN MANUFACTURING WITH HIGH TECHNOLOGY CONTENT**

Source: County Business Patterns

Source	Ohio Counties		Kentucky Counties		Indiana Counties		Greater Cincinnati Total		U.S. Total	
	1995 Employment	% Chg. from 1990	1995 Employment	% Chg. from 1990	1995 Employment	% Chg. from 1990	1995 Employment	% Chg. from 1990	1995 Employment	% Chg. from 1990
Pharmaceuticals and Biologicals	820	(78%)	137	NA	--	--	957	(75%)	149,451	(6%)
Plastics Products	3,283	29%	1,412	62%	--	--	4,695	38%	486,668	19%
Machine Tools and Accessories	3,840	29%	760	(15%)	--	--	4,600	14%	104,122	4%
Special Industry Machinery	4,261	(5%)	142	(23%)	10	--	4,413	(3%)	179,617	1%
General Industry Machinery	2,881	16%	1,419	24%	--	--	4,300	17%	256,978	2%
Computer/ Office Equipment	360	(53%)	--	--	--	--	360	(53%)	232,091	(23%)
Electrical Industrial Apparatus	2,078	19%	245	308%	--	--	2,323	28%	163,994	(3%)
Communications Equipment	1,500	27%	20	(67%)	--	--	1,520	24%	235,363	(6%)
Electronic Components and Accessories	1,637	59%	120	(35%)	10	(7%)	1,767	54%	559,910	2%
Instruments and Related Products	4,709	(5%)	80	(66%)	--	--	4,789	(7%)	832,706	(14%)
Total	25,369	(3%)	4,335	22%	20	--	29,724	(0.9%)	3,200,900	(4%)

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2. The concentrations of employment compared to U.S. totals, also favors plastic products, machine tools, special and general industry machinery and electrical industrial equipment, as shown in Table 15. In each case, employment as a percentage of total employment outweighs the comparable U.S. number. Conversely, an employment concentration in other technology-intensive manufacturing sectors either show no advantage for Greater Cincinnati or fall below the U.S. average.

**TABLE 15**  
**EMPLOYMENT CONCENTRATIONS IN MANUFACTURING WITH HIGH TECHNOLOGY CONTENT**  
**% OF TOTAL EMPLOYMENT (1995)**

Source: County Business Patterns

	Greater Cincinnati	U.S.
Pharmaceuticals and Biologicals	0.1%	0.1%
Plastics Products	0.6%	0.5%
Machine Tools and Accessories	0.5%	0.1%
Special Industry Machinery	0.5%	0.2%
General Industry Machinery	0.5%	0.3%
Computer/Office Equipment	--	0.2%
Electrical Industrial Apparatus	0.3%	0.2%
Communications Equipment	0.2%	0.2%
Electronic Components and Accessories	0.2%	0.6%
Instruments and Related Products	0.6%	0.8%
Total	3.5%	3.2%

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.

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**TABLE 16**  
**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 on Selected Occupations					
				Precision Production	Machine Operations	Transportation	Laborers/ Handlers	Technicians	
<b>Ohio Counties</b>									
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	
<b>Kentucky Counties</b>									
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	
<b>Indiana Counties</b>									
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	
<b>Greater Cincinnati</b>	1,939.6	2.4	(1.7)	10.9	7.0	4.0	4.2	3.9	
<b>U. S. Average</b>	-----	4.3	(0.4)	11.3	6.8	4.1	3.9	3.7	

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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.
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 (See Table 17).

**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 (%)
<b>Ohio Counties</b>			
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
<b>Kentucky Counties</b>			
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
<b>Indiana Counties</b>			
Dearborn	10.7	22	3.6
Ohio	4.6	39	3.3
Subtotal	9.2	23	3.6
<b>Greater Cincinnati</b>	5.8	7	3.9
<b>U. S. Average</b>	6.0	7	5.6

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4. Manufacturing skills are available. Manufacturing employers interviewed included Procter & Gamble, Cincinnati 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

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%.

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**TABLE 19**  
**OCCUPATIONAL CONCENTRATIONS: SELECTED MANUFACTURING POSITIONS**

Source: U.S. Bureau of the Census

Occupations of Residents	Percentage of Labor Force	
	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	----
<b>TOTAL</b>	<b>1.28%</b>	<b>0.95%</b>

- 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

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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, Louisville, Purdue, Ohio State, and Wisconsin.

**TABLE 20  
EMPLOYER VIEWS ON QUALITY OF TRAINING AND EDUCATIONAL SERVICES**

(5 = EXCELLENT, 1 = POOR)  
Source: WDG Employer Interviews

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

- 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.

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- 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.
- 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 area 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 20.3% (See Table 21).

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**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 (%)
<b>Ohio Counties</b>					
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
<b>Kentucky Counties</b>					
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
<b>Indiana Counties</b>					
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
<b>Greater Cincinnati</b>	25.4	31.7	23.2	12.7	7.0
<b>U. S. Average</b>	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).

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**TABLE 22**  
**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

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

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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).

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### TABLE 25 PAYROLL TAXES

Source: State Departments of Labor, State Chambers of Commerce

Payroll Tax	Indiana	Kentucky	Ohio
Unemployment Insurance	1.3%	2.0%	2.1%
Average rate for existing employers, 1997	\$7,000	\$8,000	\$9,000
Taxable Base, 1997			
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.

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

Source: Greater Cincinnati Chamber of Commerce

Locality	Vacancy Rates, M & D - 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.

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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 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

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

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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 ("obscenely high", commented one Northern Kentucky interviewee).

**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.

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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-75 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.

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**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 Airlines, 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 1/2 hours or less via non-stop daily flights. Cities within a 1 1/2 hour flight offer the opportunity for a comfortable single day round trip to customers and other constituents.
8. Access to Asian markets is limited to stops at a West Coast gateway city, Atlanta, Chicago or Minneapolis.
9. Our employer interviews pointed to one major drawback to the extensive air service offered at the Cincinnati/Northern Kentucky International Airport: costs are high since Delta accounts for approximately 80% of the flights.
  - Several interviewed employers are resorting to mandating that middle management personnel fly from Dayton, Lexington or Louisville 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.
10. For many executives and managers, however, 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 a.m., arrive at 9:44 a.m., work a full day and return to Cincinnati on a 5:30 flight arriving at 10 p.m..

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**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 which exacerbate the problem.

1. Ozone non-attainment is classed as moderate in the following counties:

- Ohio
  - Butler County
  - Clermont County
  - Hamilton County
  - Warren County
- Kentucky
  - Boone County
  - Campbell County

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2. At best, 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 at 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 - has plummeted from 85 in the 1982-85 period to 16 in the 1992-95 (See Table 33).

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**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

- 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.
- 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.

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**TARGET INDUSTRY PROFILE:  
RESEARCH AND DEVELOPMENT CENTERS**

Prepared for:

**GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP  
NOVEMBER 1998**

Prepared by:

**The  
WADLEY-DONOVAN  
GROUP, Ltd.  
973.540.0012**

**2018**

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## 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.

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## EXECUTIVE SUMMARY

The Greater Cincinnati Regional Marketing Partnership consists of the 13 counties of the Cincinnati-Hamilton, OH-KY-TN 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, Cincinnati 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. Construction costs in the region 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.

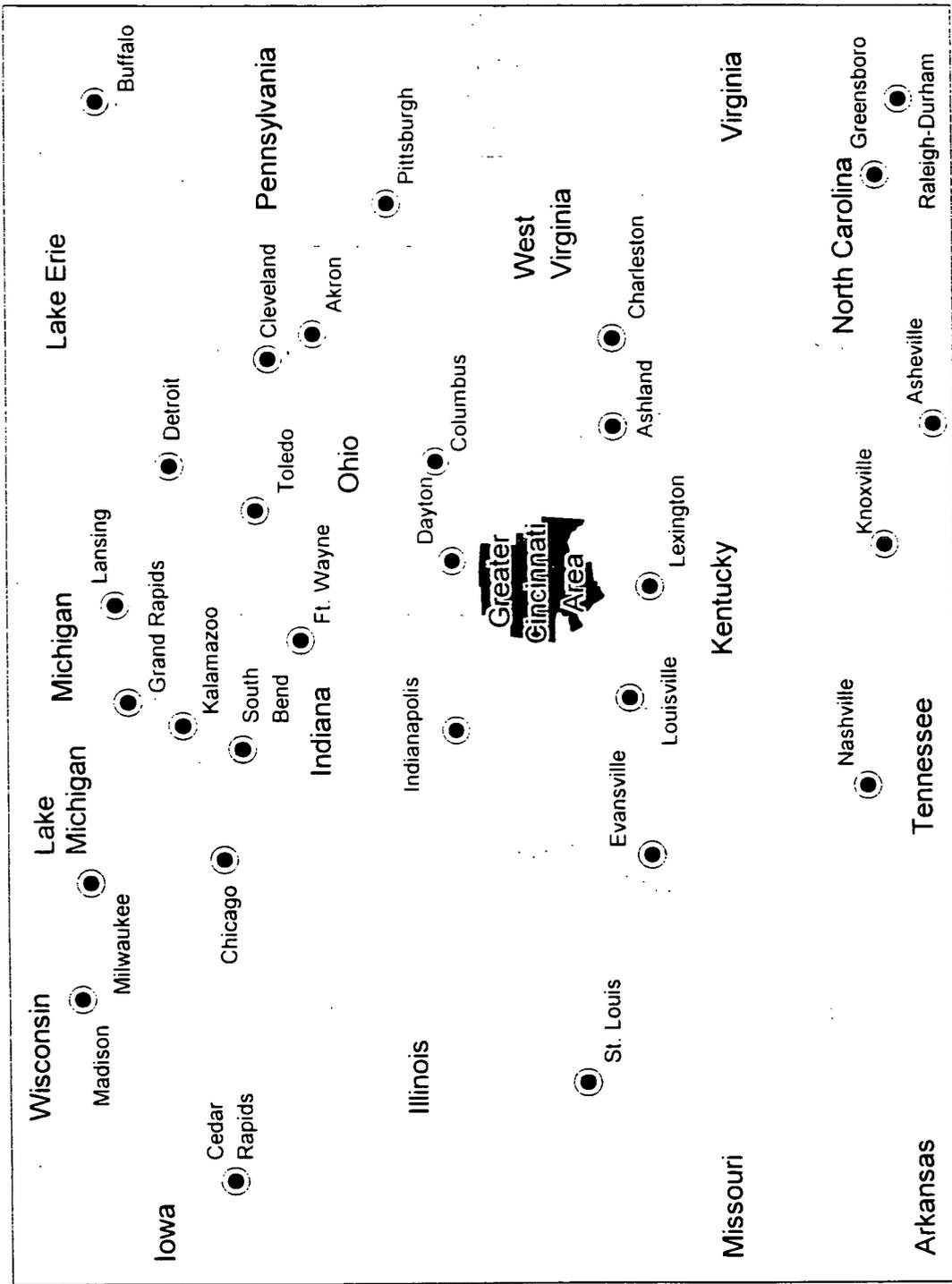
WDG recommends that the Partnership conduct a strong marketing effort to:

- 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.

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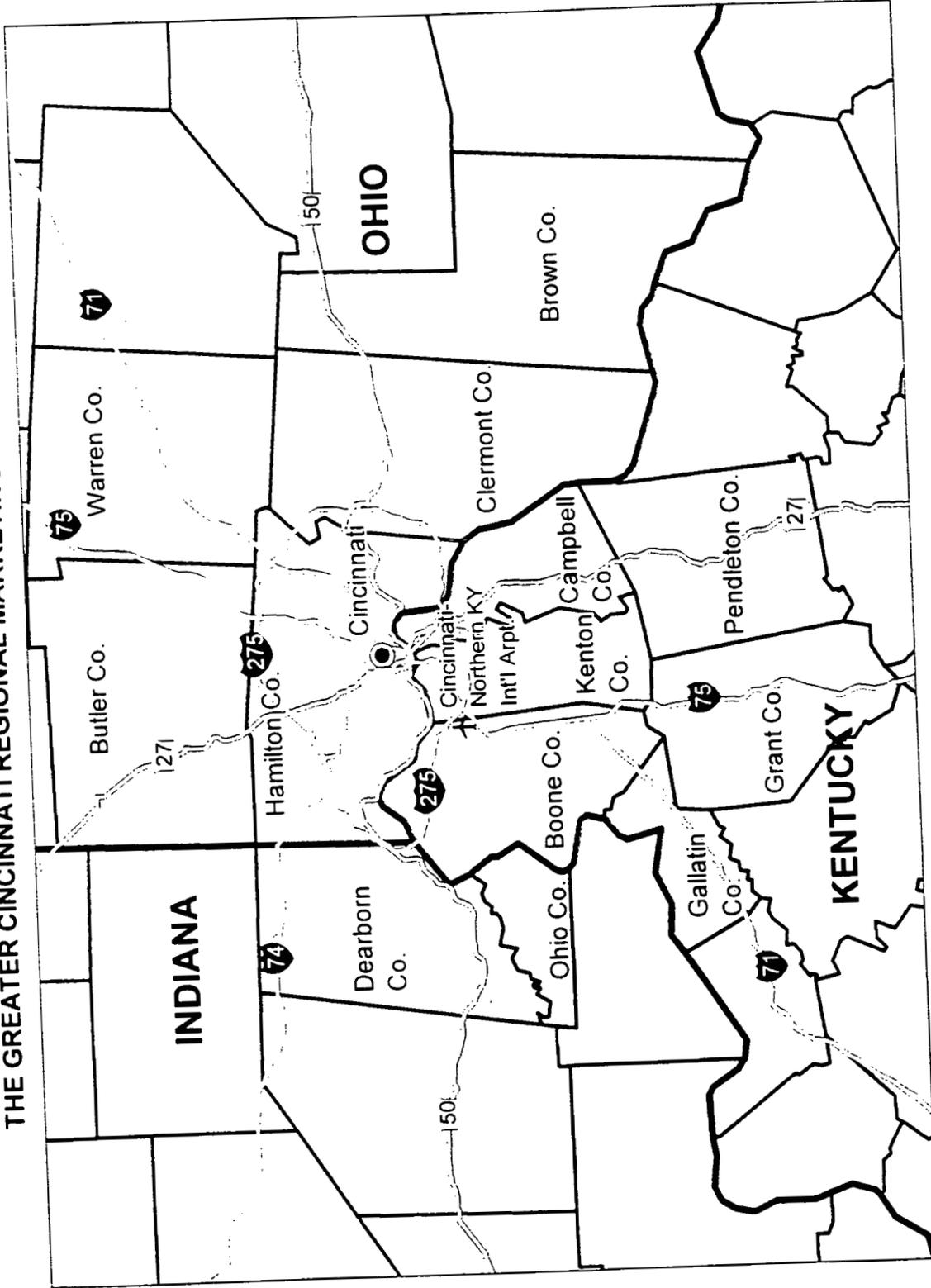
FIGURE 1 THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA WITHIN THE MIDWEST U.S.



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FIGURE 2  
THE GREATER CINCINNATI REGIONAL MARKETING PARTNERSHIP AREA



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## 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.

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## 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 as Structural Research Dynamics Corporation; offering the option of at-home work provides a recruiting edge for software developers.

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**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.

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## 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	City	State	Fields of Research
Borden, Inc., Coatings & Graphics Laboratory	Cincinnati	OH	Inks and lithography
Clopay Plastic Products Co.	Cincinnati	OH	Polymers and films
CTL Aerospace	Cincinnati	OH	Composites for aerospace
Dames and Moore	Cincinnati	OH	Environmental research
Duramed	Cincinnati	OH	Pharmaceuticals
Ethicon	Cincinnati	OH	Health care: wound closures
General Electric Aircraft Engines	Cincinnati	OH	Design engineering, aircraft engine manufacturing and quality support
Hentel Corporation	Cincinnati	OH	Industrial and agricultural chemicals, plastics
International Technology Corp.	Cincinnati	OH	Environmental, health and safety testing
Kroger Corporate Technology	Cincinnati	OH	Foods
Procter & Gamble	Cincinnati	OH	Household products, health care
International Paper	Loveland	OH	Pulp and paper technology
Cincinnati Electronics	Mason	OH	Electro-optical and electro-Mechanical devices
Makino	Mason	OH	Machine tools
Armco Inc.	Middletown	OH	Product development-specialty steels
Structural Dynamics Research Corp.	Milford	OH	Software design
Mazak	Florence	KY	Machine tools

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**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	City	State	Fields of Research
Cincinnati Testing Labs	Cincinnati	OH	Materials analysis, mechanical engineering technology
Environmental Chemical	Cincinnati	OH	Environmental laboratories
Hill Top Research	Cincinnati	OH	Laboratory and chemical testing of health care products
H. C. Nutting	Cincinnati	OH	Materials testing
PEI Associates	Cincinnati	OH	Environmental consulting
BBI Marketing Services	Covington	KY	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	City	State	Fields of Research
Children's Hospital Research Foundation	Cincinnati	OH	Medical research
Environmental Protection Agency	Cincinnati	OH	Environmental research
Institute of Advanced Manufacturing Sciences	Cincinnati	OH	Manufacturing technology
Ohio River Basin Consortium	Cincinnati	OH	Water-related environmental issues
University of Cincinnati	Cincinnati	OH	A number of R & D centers in medical, engineering, robotics, chemistry, computer and behavioral science fields

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## 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.

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- 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.

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- 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.

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## 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. There are also a number of university and not-for-profit research centers in the area including 40 at the University of Cincinnati. Major corporate centers include:
  - Procter & Gamble (consumer goods and pharmaceuticals)
  - Cincinnati Milacron (plastics, metallurgy)
  - General Electric (advanced design engineering, aircraft engines)
  - Henkel (plastics, specialty organic chemicals)
  - Equistar (chemicals)
  - International Paper (pulp and paper technology)
  - Harris Corp. (broadcast radio and TV equipment)
  - Structural Dynamics Research Corporation (software)
  - Makino (machine tools)
  - BASF (polymers)
  - Mazak (machine tools)
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

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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. The Ohio River Basin Construction conducts research and education activities associated with environmental water issues.
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. % of Total Employment	Concentration Ratio Cincinnati vs. U.S. = 100	Rankings	
	Absolute Number	% of Total Employment			Absolute Number	Comparison of Concentration Ratios: Local vs. U.S.
<b>Key Manufacturing Sectors</b>						
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
<b>Key Service Sectors</b>						
Health Services	85,672	0.28%	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.

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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

Occupations of Residents	Greater Cincinnati	U.S.
	Number	% of Labor Force
Engineers		% of Labor Force
Aerospace	2,375	0.26%
Metallurgical/Materials	392	0.04
Chemical	1,290	0.14
Nuclear	26	---
Civil	1,570	0.17
Electrical/Electronic	2,764	0.30
Industrial	1,944	0.21
Mechanical	2,070	0.23
Engineers, Unclassified	3,267	0.36
<b>TOTAL</b>	<b>15,698</b>	<b>1.71</b>
Scientists		
Physicians	4,059	0.45%
Mathematical	15	---
Physicists	131	0.01
Chemists	1,860	0.20
Geologists/Geodesics	117	0.01
Physical Scientists, not elsewhere classified	157	0.02
Agriculture/Food	202	0.02
Biologists/Life Sciences	458	0.05
Medical Scientists	249	0.03
Forestry/Conservation	---	---
<b>TOTAL</b>	<b>7,247</b>	<b>0.79</b>

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**TABLE 5 (CONTINUED)**  
**OCCUPATIONAL CONCENTRATIONS APPLICABLE TO R&D CENTERS**  
**(EXEMPT & PROFESSIONALS)**  
 Source: U.S. Census Bureau

Occupations of Residents	Greater Cincinnati		U.S.
	Number	% 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
<b>TOTAL</b>	<b>10,342</b>	<b>1.14</b>	<b>1.12</b>

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, Ball State, University of Kentucky and University of Louisville.

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 72<sup>nd</sup> 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.

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**BUDGET OVERVIEW**  
**FERNALD CRO COMMUNITY TRANSITION PLAN**  
 1999 - 2001<sup>1</sup>

NO.	PROGRAM <sup>2</sup>	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 <sup>3</sup>
2.	Marketing and Promotional Activities	\$10,000	\$1,500	\$11,500	500 Jobs <sup>4</sup>
3.	Continuation and Expansion of Project ADEPT	\$250,000	\$37,500	\$287,500	150 Jobs <sup>5</sup>
4.	Assisting Formation of Fernald Employee-Owned Business Units	\$100,000	\$15,000	\$115,000	60 Jobs <sup>6</sup>
5.	Local Development Corporation	\$250,000	\$37,500	\$287,500	50 Jobs <sup>7</sup>
6.	Business Incubator	\$1,000,000	\$150,000	\$1,150,000	50 Jobs <sup>8</sup>
	Totals	\$3,610,000	\$541,500	\$4,151,500	

<sup>1</sup> 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.

<sup>2</sup> Programs are listed in priority ranking.

<sup>3</sup> 1st year impact would be 500 jobs. 2nd year impact would be an additional 500.

<sup>4</sup> 500 1st year jobs resulting from investments made by firms influenced by marketing campaign.

<sup>5</sup> 70 jobs the first year, 80 jobs in year 2.

<sup>6</sup> 60 jobs retained by Fernald workers within the first two years of project implementation.

<sup>7</sup> 50 new jobs created over a three year period.

<sup>8</sup> This 50 jobs target would not be reached until the fourth year following initial incubator start-up.

**PROJECT ADEPT  
ACCELERATED DEVELOPMENT OF ENTREPRENEURS 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

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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 Environmental 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.

- 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**

*April 30, 1997*

**2018**

*Revision 0*

**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 through 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.

**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.

General Journal Entry						
Date	11/08/96		<input type="button" value="Prev"/> <input type="button" value="Next"/>			
Entry No.	<input type="button" value="Advice"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/>					
Account	Debit	Credit	Memo	Name	Class	
Fund Transfer I		5,000.00			Outreach	
Fund Transfer I		3,000.00			Building	
Fund Transf	8,000.00					

The final line is a balancing entry, assigned to the Fund Transfer Expense account.

The first two lines enter the beginning balances for this organization's two funds.

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 the QB 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

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**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, "Debarment 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

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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 Community Reuse Organization (CRO) Travel Policy

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**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

REQUEST FOR TRAVEL ACCOMMODATIONS/TRAVEL APPROVAL

SECTION I

DATE SUBMITTED:	NAME OF TRAVELER:	TELEPHONE NUMBER:
		<b>2018</b>
	SOCIAL SECURITY NO.:	
CONTACT PERSON:		TELEPHONE NUMBER:
LENGTH OF STAY:	DEPARTURE DATE: <input type="checkbox"/> AM <input type="checkbox"/> PM	
DESTINATION:	RETURN DATE: <input type="checkbox"/> AM <input type="checkbox"/> PM	
PURPOSE OF TRIP:		

SECTION II

<p>LENGTH OF STAY: _____</p> <p>* LODGING: \$ _____ TOTAL: \$ _____</p> <p>MEALS &amp; INCIDENTALS: \$ _____ TOTAL: \$ _____</p> <p><input type="checkbox"/> RENTAL CAR/RATE PER DAY \$ _____ NO. OF DAYS _____ TOTAL: \$ _____</p> <p>PERSONAL VEHICLE/EST. MILES _____ \$ _____ <small>(Cost @ .31¢ Per Mile)</small></p>	<p><input type="checkbox"/> ESTIMATED AIRFARE \$ _____</p> <p><input type="checkbox"/> AIRPORT PARKING/NO. OF DAYS _____ \$ _____</p> <p><b>TOTAL EXPENSES:</b> \$ _____ <small>(Estimated Airfare Included)</small></p> <p><b>ADVANCE TOTAL ONLY:</b> \$ _____ CHECK WILL BE CUT AS INDICATED <small>(Estimated Airfare Not Included)</small></p>
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SECTION III

DATE ADVANCE IS REQUIRED: _____	CASH ADVANCE RECEIVED BY: _____
AMOUNT RECEIVED: \$ _____	DATE: _____
THE CHARGE NUMBER TO WHICH TRAVEL IS CHARGED: _____	
<input type="checkbox"/> APPROVED <input type="checkbox"/> NOT APPROVED	
_____ 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.



**Fernald Community Reuse Organization (CRO)  
Time Sheet Procedure**

**2018**

**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

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ATTACHMENT A

2018

## Fernald Community Reuse Organization (CRO) Personnel Policies

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### 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.

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## Fernald Community Reuse Organization (CRO) Policies

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### 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.

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**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