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Environmental Assessment of the Formation of the Defense Logistics Agency Finance Center

by
Harold E. Balbach and Manroop K. Chawla

The Office of the Comptroller of the Defense Logistics Agency (DLA) has proposed the formation of a centralized organization which will assume responsibility for certain contract management, contractor payment, internal payroll management, and other financial management activities on behalf of many widely scattered DLA activities across the United States. The new organization would be called the DLA Finance Center (DFC). The DFC is proposed to be staffed by up to 2,700 persons, trained largely in the areas of financial management and data processing. No organizations would be closed, and affected employees would be given the opportunity to transfer to the new DFC or to remain in a similar position at their present location.

More than 300 possible locations for the DFC were initially screened for factors such as cost of living, personnel costs, workforce availability, facilities costs, and existing DLA support availability. Columbus, OH was selected as the location best meeting all goals.

This environmental assessment was prepared to examine the proposed action, to include the initial office facilities, for their potential to result in significant, adverse environmental consequences, as covered in 40 CFR 1500-1508, and implemented for the DLA in DLA Regulation 1000.22.

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The Office of the Comptroller of the Defense Logistics Agency (DLA) has proposed the formation of a centralized organization which will assume responsibility for certain contract management, contractor payment, internal payroll management, and other financial management activities on behalf of many widely scattered DLA activities across the United States. The new organization would be called the DLA Finance Center (DFC). The DFC is proposed to be staffed by up to 2,700 persons, trained largely in the areas of financial management and data processing. No organizations would be closed, and affected employees would be given the opportunity to transfer to the new DFC or to remain in a similar position at their present location.

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Summary

The Office of the Comptroller of the Defense Logistics Agency (DLA) has proposed the formation of a centralized organization that will assume responsibility for certain contract management, contractor payment, internal payroll management, and other financial management activities on behalf of many widely scattered DLA activities across the United States. The new organization would be called the DLA Finance Center (DFC). The DFC is proposed to be staffed by up to 2,700 persons, trained largely in the areas of financial management and data processing. These positions would be filled through transfer of personnel from 20 existing field activities engaged in similar activities on a local or regional scale. No organizations would be closed, and each affected employee would be given the opportunity to transfer to the new DFC or to remain in a similar position at their present location. Some individuals electing to remain will need to be retrained to meet the needs of the remaining organization.

More than 300 possible locations for the DFC were initially screened for factors such as cost of living, personnel costs, workforce availability, facilities costs, and existing DLA support availability. Columbus, OH was selected as the location best meeting all goals. The Defense Construction Supply Center can provide startup support. Also large, vacant offices within Air Force Plant 85 can provide an initial facility into which the DFC may move personnel with only relatively minor delays. This environmental assessment (EA) was prepared to examine the proposed action, to include the initial office facilities, for their potential to result in significant, adverse environmental consequences, as covered in 40 CFR 1500-1508, and implemented for the DLA in DLAR 1000.22.

This action was examined for possible effects on the biophysical and socioeconomic environment. No significant effects were found with respect to air quality, water quality, public utilities, transportation, ecology or the economic viability of any area. Minor adverse effects were found on the social environment, and these effects had been predicted and were being extensively mitigated. Other minor effects were identified in the area of facilities adequacy such as employee parking, asbestos and polychlorinated biphenyl (PCB) management, and other aspects of the workplace environment. These latter areas are the subject of mitigation in the form of management plans for these factors. Following implementation of these

plans, it is recommended that a Finding of No Significant Impact be prepared and published.

This report provides documentation for the Environmental Assessment completed in 1989. There is no ongoing action requiring public comment or response.

Foreword

This study was conducted for the Defense Logistics Agency (DLA) under Military Interdepartmental Purchase Request No. DMPPMO-001-89, dated 9 November 1988, "Environmental Assessment of the Formation of the DLA Finance Center." The report was originally prepared as an Environmental Assessment in 1989 to meet the requirements of the National Environmental Policy Act (NEPA) (Public Law [PL] 91-190, 40 CFR 1500-1508) and DLA Regulation 1000.22. The technical monitor was Jan B. Reitman, DLA Environmental Policy Office.

The work was performed by the Environmental Resources team of the Environmental Division, U.S. Army Construction Engineering Research Laboratories (USACERL). The principal investigator was Dr. Harold E. Balbach. Associate investigator was Manroop Chawla. Dr. Balbach is now assigned to the Planning and Mission Impact Division (LL-P) of the Land Management Laboratory (LL) and Ms. Chawla to the Natural Resource Assessment and Management Division (LL-N). Dr. David J. Tazik is Acting Chief, CECER-LL-N; Robert Lacey is Acting Chief, CECER-LL-P; Dr. William D. Severinghaus is Operations Chief, CECER-LL; and William D. Goran is Chief, CECER-LL. The USACERL technical editor was Linda L. Wheatley, Technical Resources.

We would like to acknowledge Roy F. Weston, Inc. (WESTON) of West Chester, PA, for their assistance in conducting on-site studies and preparing portions of the initial draft of Chapters 2, 4, and 5 of the Environmental Assessment. We also wish to thank Eric Schreiber and Patricia Kirby, CECER-LL-N, for their assistance in the final preparation of this report.

COL James T. Scott is Commander and Acting Director, and Dr. Michael J. O'Connor is Technical Director of USACERL.

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1 Introduction

1.1 Background

The Defense Logistics Agency (DLA) manages finance and accounting operations that are some of the most complex in the Department of Defense (DOD). This complexity evolves from both the size and the diversity of the financial operations managed. For example, DLA annually pays and must account for $6.5 billion in stock funds in support of day-to-day military troop operations and general defense readiness. DLA is the DOD contract administrator for $52 billion in military services contracts each year. The agency supports the finance and accounting needs of the DOD dependent schools, the Defense Fuels Agency, and the National Stockpile. DLA finance and accounting operations must also support all internal needs of the agency and provide payroll support to several other DOD agencies.

These financial operations are decentralized, independently operated, and regionally deployed. They are supported through a number of automated systems with limited interaction, both internally (between field activity locations) and externally (between financial systems). There is limited standardization within the nine Defense Contract Administration Services Regions (DCASRs) and the five Defense Supply Centers operate almost independently. Significant diversity also exists in operations at the 17 locations where internal financial operations are conducted.

Many operational differences evolved over the years due to variations in management decisions, differential implementation of automatic data processing (ADP) practices, and perceived variation in competence and adaptability of the local workforce. Organizationally, such differences were seen as unavoidable, and the lack of standard practices was not viewed as a severe shortcoming so long as each individual activity met local standards for efficiency. Technological advances in telecommunications and systems design now provide a vehicle to overcome pre-existing problems. The redundancy, inefficiencies, and added costs associated with widely varied operating modes are no longer considered reasonable.

1.2 Description of the Action

The action proposed is the creation of a DLA Finance Center (DFC) at which the majority of the financial support activities described above may be consolidated for efficiency and cost savings. Approximately 3,100 persons are employed in various field finance activities of the DLA. In addition, another 400 persons are employed in ADP-related operational support. Approximately 3,100 workers will be required to operate the proposed DFC when established.

Several operational assumptions also serve to shape the character of the new organization. First, it was assumed that affected employees would be allowed to transfer to the new DFC if they wished. Second, employees not wishing to relocate would be retained, with retraining if necessary, in their local geographical area without pay loss, though not necessarily in the same position.

1.3 Purpose and Need for the Action

The persons now involved in financial operations are located in 18 cities in the United States, and the consolidation of the functions involved has the potential to result in savings of more than $18.5 million annually. Even these projected cost savings may only be a portion of the gains to be realized from a well-functioning DFC. Five additional goals may be, in aggregate, more important than cost savings alone. The DFC should: (1) develop a more accurate database for both contract administration and quality assurance functions, (2) provide a single point of contact for problem resolution, (3) facilitate modernization and simplification of financial operations, (4) improve cash management, funds control and disbursements, and (5) ensure better service, allow for greater management flexibility, and increase the opportunity to introduce cost-saving and productivity-enhancing improvements that minimize operating costs to DLA and DOD.

1.4 Preferred Alternative

The action identified as the preferred alternative involved the establishment of a centralized organization to be known as the DLA Finance Center. Chapter 3 of this assessment (Alternatives Considered) includes an examination of the procedures followed in determining the best location for such a center. The alternative selected as the preferred one has the DFC located in Columbus, OH. All action benefits may be gained through selection of this location with few, if any, location-specific problems.

In Columbus, in immediate proximity to the Defense Construction Supply Center (DCSC), is Air Force Plant 85. This is a Government-Owned Contractor-Operated (GOCO) aircraft production facility that is currently not used for any significant Air Force purpose and whose administrative facilities can be made available for DFC use, at least for several years. All subsequent examination of the action and its preferred alternative will use this location and setting for all analyses.

2 Affected Environment

2.1 Biophysical Environment

This subsection was developed using the information provided in numerous published documents prepared under the Installation Restoration Program (IRP) for Air Force Plant 85 by the U.S. Air Force and their consultants. Appendix A lists these and other documents used in preparation of this report.

2.1.1 General Setting

2.1.1.1 Topographical features. AF Plant 85 is in Franklin County, Ohio within the glaciated till plains, a division of the Central Lowlands physiographic province. The ground surface is relatively flat, and the only significant relief present is in areas adjacent to streams, glacial moraines, or resistant bedrock.

A series of north-south trending slopes and terraces separate the Central Lowlands from the Appalachian Plateau east of Columbus. The lowest of these slopes rises from an altitude of approximately 800 ft to 1,010 ft* to the east of AF Plant 85. Surface elevations in Franklin County range from 1,130 ft above mean sea level (msl) in the northeast corner to 670 ft above msl along the southern border. The topography of AF Plant 85 is relatively flat with elevations ranging from 800 to 810 ft above msl.

Drainage in central Ohio is confined to the Scioto River Basin, which drains approximately 6,517 sq mi. The Scioto River, the principal river in the system, flows south through downtown Columbus to the Ohio River. Some of the Scioto River tributaries are the Olentangy River, Alum Creek, and Big Walnut Creek, which have a parallel north-south alignment. An extensive network of reservoirs in the county has been built for flood control and water supply purposes.

2.1.1.2 Climatology. AF Plant 85 is in an area of temperate continental climate. Changeable weather conditions are caused by air masses from all directions, particularly cool air from central and northwest Canada and occasionally from the Hudson Bay Region. During the summer, tropical Gulf air masses reach the

*1 ft = 0.305 m; 1 sq mi = 2.59 sq km; 1 in. = 25.4 mm; °F = (°C x 1.8) + 32; 1 gal = 3.78 L.

Columbus area. Table 1 summarizes precipitation and temperature data for the Columbus region. The average annual precipitation is about 37 in., and the average annual snowfall is about 28 in. Thunderstorms occur on an average of 42 days a year, mostly in the summer. The average temperature in January is 28 °F while in July the average temperature is 74 °F with a daily maximum of nearly 85 °F.

The monthly average wind speed is between 7 and 10 miles per hour (mph), with the prevailing wind direction from the south-southwest.

2.1.2 Water Resources and Water Quality

2.1.2.1 Surface water. AF Plant 85 lies within the Big Walnut Creek drainage basin. Surface water runoff from the plant discharges into Turkey Run in the western portion of the site and Mason's Run in the central plant area. Both of these streams enter the site from the north, flowing from Port Columbus International Airport southward, eventually joining Big Walnut Creek about 5 miles south of the site. Flow in these creeks is generally low except during periods of precipitation. Flooding is limited to the localized creek beds. Due to the large portion of paved areas and relatively impermeable soils, surface runoff is highly dependent on recent storm events. An extensive storm drainage system built throughout the main plant area discharges to Mason's Run at the plant entrance gate.

Miscellaneous fuel spills and oily discharges to Mason's Run have been reported in the past, resulting in the construction of an oil skimmer in the creek near the entrance gate. During periods of precipitation, some areas of the site become saturated for a few days. Specifically, water stands in the Fire Training Area, which is in the north-central portion of the plant property along James Road.

The City of Columbus, Division of Water, supplies water for the City and 13 neighboring communities, primarily from surface water bodies. The Morse Road Treatment Plant, which provides water to AF Plant 85, is supplied by Hoover Reservoir and serves the northern and eastern portions of the Columbus area. Hoover Reservoir is 8 mi north of AF Plant 85 on Big Walnut Creek and is used for both water supply and flood control.

2.1.2.2 Groundwater. Although the details of the hydrogeologic system at AF Plant 85 are still unclear, by knowing the regional bedrock topography and the regional hydraulic characteristics of the overlying glacial sediments, some general interpretations can be made. The southwestern portion of AF Plant 85 is underlain by glacial outwash associated with a buried preglacial bedrock valley.

This outwash is capped by 10 to 50 ft of clay till, which also covers the bedrock on the entire AF Plant 85 site. The thick till reduces the amount of rainfall infiltration and local recharge, resulting in lower well yields than for sand and gravel deposits in direct contact with surface streams. However, yields of as much as 200 gallons per minute (gpm) may be obtained.

Most of the remaining portion of the plant is underlain by lenses of sand and gravel interbedded in the clayey till that overlays the shale bedrock. Yields of as much as 25 gpm are typically obtained north of 17th Avenue where the deposits can be 200 ft thick within a buried bedrock valley. In the area of Mason's Run, yields from irregular and thinly scattered sand and gravel lenses are only 5 to 10 gpm. The eastern portion of the site between Mason's Run and Big Walnut Creek is underlain by thin glacial till over relatively impervious shale; well yields are typically less than 2 gpm in this area.

The principal groundwater aquifer in the vicinity of AF Plant 85 is in the glacial deposits overlying the impermeable shales. For the most part, recharge to this aquifer occurs through infiltration from creeks during the spring, including Mason's Run, Turkey Run, Alum Creek, and Big Walnut Creek. Minor recharge also occurs as direct infiltration of precipitation through the glacial deposits. Groundwater discharges chiefly to major streams during the fall. Hence, the water table usually declines persistently throughout the summer, reaching its lowest stage in the fall and its highest stage in the early spring. Since AF Plant 85 straddles a bedrock valley, the direction of groundwater flow is likely to vary beneath it as flow follows the slope of the underlying bedrock before discharging into Alum Creek. The depth to the groundwater table varies from 10 ft in the eastern portion of the plant to 50 ft in the western portion, with a horizontal-groundwater gradient of about 20 ft per mile.

Due to the variability of the glacial sediments at the plant, perched groundwater may be present within the clayey glacial till deposits above the regional groundwater table. This is a common but temporary condition that follows a period of precipitation and infiltration in clayey soils. If present, perched groundwater is of limited thickness and of local extent, but may contribute to saturated soil conditions near the ground surface in many areas.

Water quality within the glacial aquifers is generally good, although the water is typically high in hardness and is usually treated to remove iron. Table 2 summarizes characteristic analyses of the various groundwaters. The former Nelson Road Municipal Well Field and Water Treatment Plant is located near Alum Creek about 1 mile west of AF Plant 85. The City of Columbus stopped using the Nelson Road plant in the early 1970s because of declining water quality.

At the time of the Nelson Road plant shutdown, the water had a hardness of 500 to 1,000 parts per million (ppm). The four municipal wells at this location have not been abandoned and may be used as an alternative supply of water in the future. The existing municipal well field used to supplement surface water supplies is in south Columbus more than 10 miles from AF Plant 85, and it is developed in the glacial outwash deposits near the confluence of the Scioto River and Big Walnut Creek.

2.1.3 Ecological Resources

The flora and fauna of AF Plant 85 and vicinity are typical of what might be found in any urban, industrialized site in the Columbus area. The main plant area is basically covered with buildings, parking lots, and paved areas. The former radar test range west of the main plant area is covered with field grass that is regularly mowed. Miscellaneous young tree and brush growth, including sycamores and common shade trees, cover the western portion of the plant site west of Stelzer Road. A strip of field grass about 50 ft wide is maintained around the perimeter fence. No sites or areas of major habitats of any threatened or endangered species or other significant natural areas exist in the immediate vicinity of Buildings 4 and 6.

2.1.4 Air Quality

The Columbus area air quality is considered generally good based on the levels of the criteria pollutants (i.e., ozone, carbon monoxide [CO], nitrous oxide, lead, sulfur dioxide, and total suspended particulates [TSP]). The Ohio Environmental Protection Agency (EPA) has a current official designation of "attainment" (criteria pollutant levels are below the Federal standards) on all these pollutants except CO and TSP. An official attainment designation is awaited for CO, while TSP is classified as "secondary non-attainment," implying it has nuisance effect but is not a health hazard. The Pollution Standard Index (PSI) for the Columbus area is mainly based on TSP or ozone, whichever is higher. The PSI varies from 0 (no pollutants) to 100 (a quality standard level); ozone in the Columbus area sometimes reached a PSI of 60 to 70 in summer. However, neither ozone nor TSP had reached a PSI of 100 in the past few years. AF Plant 85 has a total of 128 sources of emissions, a majority of which are small sources on registration status (operating without a state permit to operate).

The central boiler plant at AF Plant 85 is currently operating without a source permit from the State of Ohio. This situation is the result of a series of administrative actions unrelated to DLA. In the 1970s, when the plant was operated by the U.S. Navy (see section 2.3, p 23), the coal-fired central boiler plant

was not in compliance with air emission limits for sulfur and particulates. The operating contractor and the U.S. Navy were cited several times for this violation. Almost immediately upon taking control of the facility, the Air Force upgraded the boiler plant to meet all current Ohio standards. The state, however, has declined to issue an operating permit until substantial fines levied against the former operators are paid. The Navy has not paid the fines voluntarily, and the Air Force believes they have no fiscal liability, because they have not been in violation during the time they have managed the facility. Thus, a technical status of noncompliance may be said to exist (e.g., the lack of a permit) in the absence of substantive present violation of air quality regulations.

2.2 Socioeconomic Setting

AF Plant 85 is on 518.1 acres immediately south of the Port Columbus International Airport and is bordered on the south by Fifth Avenue and the Conrail line that forms the northern boundary of the City of Whitehall. Other incorporated areas in the immediate vicinity are the City of Gahanna, 2 mi to the northeast, the City of Bexley to the southwest (approximately 1.5 mi), and the City of Reynoldsburg 4 mi to the southeast (see Figure 1).

The plant lies within the City of Columbus in Franklin County, which is one of the component counties of the Columbus Metropolitan Statistical Area (MSA). The MSA data indicate that, for the recent years, the area has expanded, with a population growth estimated at 12.8 percent since 1980, as per the 1986 estimates. This development has been inconsistent with all of the component counties; for the year 2000, population growth since 1986 is expected to range from a low of 2.5 percent in Pickaway County south of Columbus to 58.2 percent in Delaware County north of Columbus.

Recent development within the region has been mostly in areas generally to the north and west of the City; however, future development is expected to be in the eastern areas surrounding Columbus. The City itself has grown by annexation of unincorporated areas from a size of 39.9 sq mi in 1950 to 189.9 sq mi in 1986. Annexation is expected to continue at a moderate rate for the City; however, outlying incorporated areas like Gahanna, Westerville, Dublin, Hilliard, and Grove City may limit Columbus's growth as they are also in the annexation trend. Columbus expects to experience expansion to the northeast in the vicinity of the airport.

The cities of Bexley and Whitehall in the immediate vicinity of AF Plant 85 can be considered fully developed, with only small infill expansion possible. Gahanna

and Reynoldsburg are expanding by annexation of open areas within eastern Franklin county. Sections 2.2.1 and 2.2.2 detail the socioeconomic settings relevant to the proposed action.

2.2.1 Local Economy

The Economic Impact Forecast System (EIFS) developed by the U.S. Army Construction Engineering Research Laboratories was used for the evaluation of regional economic impacts in the Columbus area. EIFS is a computer-based modeling and information system that provides information useful for calculating social and economic changes caused by DOD actions. The EIFS database contains information from a variety of sources, including Census of Population and Bureau of Economic Analysis (BEA). This data is generally available at the county level and is retrievable for any single county or a combination of counties.

Four Ohio counties formed the study area: Delaware, Fairfield, Franklin, and Licking. A rational threshold value (RTV) profile was aggregated for this region (see Table 3). The RTV profile analyzes historic trends in business volume, personal income, employment, and population to measure the extent of their fluctuations in the past. These measures were then compared with those derived from the EIFS forecast model (see section 4.2.1) to identify significance of economic impacts due to formation of the DFC.

Business volume is an indication of a region's local aggregate economic activity. The RTV for this was indicated to be at 6.975 percent for a positive influence. Income includes wages and salary income for work performed as an employee during a specified time. DOD activities could affect personal income through direct addition or removal of income (e.g., through either an addition or reduction in the number of employees). The RTV for this study area was 6.093 percent. Employment can be measured in two ways: (1) number of employees and (2) total employment in man-years. Total employment takes both full and part-time employees into consideration. The RTV for employment was indicated to be 3.447 percent. Population changes can have both social and economic ramifications (e.g., removal of people who comprise a large portion of an institution could bring about social change brought about by population change). The RTV for this parameter was indicated at 1.491 percent.

2.2.2 Community Infrastructure

2.2.2.1 Traffic and transportation. Columbus is a large metropolitan area in central Ohio with an extensive and modern transportation network. Access to air, rail, and highway systems is readily available. Air transportation is serviced

mainly through the Port of Columbus International Airport, adjacent to AF Plant 85. The airport offers national and international access for both passenger and freight. Two additional airfields are Don Scott Field in the northwest and Bolton Field southwest of Columbus.

Three railroad systems offer interstate service and access from the project area in metropolitan Columbus to the nationwide interstate system. The three systems are the Chesapeake and Ohio, Southern (Norfolk and Western, Baltimore and Ohio), and Conrail.

Two major interstate highways intersect in the Columbus area, affording access from the project area to the national road systems. Interstate highway 71, a north-south route, crosses I-70 to the west of downtown Columbus. An outer beltway (I-270) and an inner loop (I-670) ring the greater metropolitan area connecting the interstate routes with other major roads, including U.S. Routes 33, 40, 62, 23, and Ohio Routes 3, 104, 315, 161, 317, and 710, resulting in an extensive network of freeways and limited access roads (see Figure 2).

The immediate vicinity of Buildings 4 and 6 within AF Plant 85 is accessible via wide local roads connecting the vicinity with major highways in the metropolitan area. Immediately to the south of AF Plant 85 is Fifth Street, a four-lane east-west connector road that intersects with Stelzer/James Road to the west and Hamilton Road (Ohio Route 317) to the east. Yearling Road crosses the Conrail line, east of the plant area. The Conrail line in this area acts as a divider and only the above mentioned roads cross it in the vicinity of the site, Stelzer and Hamilton Roads by elevated bridge and Yearling by level crossing. Access to the freeway system is via these three roads: to the south via Broad Street, east 4 mi to I-270; west to the downtown sections of Columbus; to the north via Hamilton Road 4 mi to I-270 in Gahanna or by Stelzer Road to U.S. Route 62.

The Mid-Ohio Regional Planning Commission (MORPC) has developed data on average daily traffic (ADT) at major intersections in the immediate vicinity of AF Plant 85 (see Figure 2). These counts are indicative of the traffic experienced when the employment at the facility was at its peak in the mid-1980s. At that time, based on discussions with facility personnel and the MORPC, no major traffic problems were experienced. No major delays or traffic jams were experienced during peak hours and during facility shift changes.

The City of Columbus has an extensive public transportation service (operated by the Central Columbus Transportation Authority [COTA]) serving the metropolitan area utilizing surface operated buses. A bus stop and regular service available at the plant entrance was abandoned when employment at the plant dropped in

1987. The present operator expects that service would be resumed if employment levels at the facility increase to a supportive level.

Several maintenance/upgrading and new road developments proposed for the immediate area of AF Plant 85 will have an impact on the existing transportation network. The City of Columbus, Franklin County, and the State will jointly construct a freeway connector from downtown to the airport (e.g., I-670). This six-lane freeway will run from the Ohio Center (north of the main downtown section), cross I-71, and follow the existing rail corridor (Conrail and B&O) and the western side of Alum Creek to meet U.S. Route 62 near the airport. The City of Columbus, Department of Development expects the I-670 construction to affect opening up of the northeast sector of Franklin County and the City in the vicinity of the airport. Several other projects are scheduled for 1989 that include the resurfacing and intersection lighting of I-270 from Reynoldsburg to U.S. Route 62, the widening of Hamilton Road (Ohio Route 317) through Gahanna to Granville Street, the widening of Granville Street, and the widening of Livingston Avenue in Reynoldsburg.

Parking for automobiles and trucks in the immediate vicinity of AF Plant 85 varies as to location. The majority of parking space is found on lots associated with the retail or commercial establishments. The three major industries/office complexes (i.e., the AF Plant 85, the DCSC, and the Western Electric Plant) as well as the airport, a major transportation hub, have dedicated off-street parking facilities. The majority of residential areas also have off-street parking associated with driveways. Most recent retail developments along Broad Street have off-street parking lots associated with the shopping center/area development.

2.2.2.2 Housing, schools, and public utilities.

Housing—In the immediate vicinity of AF Plant 85 are two housing areas distinguished primarily by the age of their development. To the south and west in the developed areas of Columbus, Whitehall, and Bexley are older housing, mostly postdating the 1940s but predating the 1960s. The areas were developed along the older roads, highways, and rail lines, Broad Street, Main Street, etc. The housing is in good repair with high owner occupancy rates and low vacancy rates. The majority of the houses are separate single-family residences. The City of Bexley and its surroundings have larger homes while the outlying areas of Columbus and Whitehall have smaller homes. Multifamily units and apartments are centered on Broad Street on the eastern end of Bexley and through Whitehall.

To the north and east, most housing dates from the 1970s and later. The later development was encouraged by the completion of I-270, the outer beltway, and

associated connector routes. Up until the 1960s the area had been basically rural and agricultural. The housing stock is new with high owner occupancy rates and low vacancy rates, and is generally in subdivisions.

The housing closest to AF Plant 85 includes residential areas about 1 mi from the facility, in Columbus and Whitehall. The Port of Columbus International Airport and the DCSC complex form distinct barriers between the residential areas to the south in Whitehall and the newer subdivisions and residential areas to the north.

Two high density housing developments exist within 1 mile of Buildings 4 and 6 of AF Plant 85. One development lies to the east of Hamilton Road north of Broad Street within Whitehall and appears to have been government housing built during the 1940s and later, perhaps for DCSC military personnel. The second high density area, built from the 1970s and later, lies to the northeast in a small pocket of the City of Columbus, isolated by Big Walnut Creek, Hamilton Road, and I-270.

To the west, nearly 2 miles from the facility, an older housing section lies between Nineteenth Avenue and the Conrail line. This area has older small homes and a trailer park off Stelzer Avenue. A number of commercial/light industrial business front Stelzer, Fifth Avenue, and Seventeenth Street, bordering the airport. In the immediate vicinity of the Plant, west on Fifth Avenue, several commercial/ industrial businesses and several older dilapidated housing units are centered on James Road.

Schools/educational facilities—Metropolitan Columbus is served by 16 suburban public school districts, with the Columbus Public School District within the city limits. The Columbus Public School District is a nationally recognized urban school system whose students traditionally score significantly higher than the national average on SATs. The city school system had an enrollment of over 66,000 students in the 1986-87 school year, and the suburban districts had enrollment of 56,000 students.

Additionally, the Columbus Catholic Diocese school program had over 13,000 students, and nine other private schools enrolled 7,500 students during the 1986-87 school year. Secondary education is offered at 12 colleges, universities, and business and technical schools including The Ohio State University, Capital University, Franklin University, DeVry Institute of Technology, and The Ohio Dominican College.

For the area surrounding AF Plant 85, three public school districts provide elementary through high school education. For the City of Columbus portion of the

plant vicinity, the Columbus Public School District is responsible for public education, and for Gahanna and the unincorporated areas of Mifflin Township, the Jefferson School District is responsible for public schools. Whitehall has its own independent schools under the Whitehall School District.

Within 2.5 mi of the plant are nine public schools, including elementary, middle and high schools, and one elementary school of the Columbus Catholic Diocese (see Table 4). Figure 3 shows the location of each school. The nearest schools are the Holy Spirit (parochial), 1.1 mile south, and the East Broad Street School (Whitehall Public School), 1.2 miles southeast of AF Plant 85.

Public utilities—Water is supplied to the developed areas around AF Plant 85, as well as to the plant, by the City of Columbus, Department of Utilities and Aviation, Water Division. Water is distributed from surface water reservoirs on the major rivers and streams to the north of Columbus, namely the Scioto River, Alum Creek, and Big Walnut Creek. Water use and added demand are unrestricted in the Columbus area because the present water treatment capacity of the system is 245 million gallons per day (mgd), while the average consumption is 125 mgd. The system has a total pumping capacity of 310 mgd. Undeveloped areas may still depend on individual groundwater wells.

The City of Columbus provides sewer service to the area around AF Plant 85. Gahanna and Whitehall are interconnected and, although responsible for their own lines, send wastewater for treatment to the City of Columbus plants. The two major wastewater treatment plants, the Jackson Pike Plant and the Southerly Waste Treatment Plant, are managed by the Division of Sewerage and Drains of the Department of Utilities and Aviation. No capacity limitations have been placed on this sewerage system.

Electricity is supplied throughout the area by Columbus Southern Power. The City of Columbus also generates part of the city electricity demand from the resource recovery facility south of the city. No capacity constraints are reported on electricity supplies to the region. Columbus Gas of Ohio, Inc. supplies natural gas in the Columbus metropolitan area.

2.2.2.3 Public health and safety. The area in the immediate vicinity of AF Plant 85 is under the jurisdiction of several separate incorporated municipalities. AF Plant 85 is located in the City of Columbus, and the City provides the municipal services such as fire and police protection to the facility. However, because Whitehall lies immediately to the south of the site across the Conrail line, a brief discussion of the services of Whitehall is also included. Discussions of the other

incorporated municipalities—Gahanna, Bexley and Reynoldsburg—are only considered as they relate to the regional setting.

Fire—Columbus has a professional fire fighting department that is responsible for fire safety in the incorporated limits of the city. Whitehall, Gahanna, and Bexley have independent fire departments. AF Plant 85 has an onsite fire brigade with trained volunteers available for immediate response to a fire emergency in the plant area. The local municipal fire departments act as backup and support to the on-site crew. Response time for local firefighting support was quoted as several minutes. All local municipal fire departments are linked through an emergency network so if a major event were to occur, teams and equipment can be dispatched to the fire from several locations throughout the region. The nearest Columbus Fire Division stations include:

- Station No. 25 at the airport, 1.2 mi from the plant
- Station No. 20 on Fifth Avenue, 2.1 mi west of the plant
- Station No. 28 on McCutcheon Road, 3.2 mi north of the facility.

Whitehall has a fire hall on Yearling Road, 1.4 mi south of the plant. Gahanna has two fire stations:

- Mifflin Township Station No. 1 located 2.3 mi to the north
- the main Gahanna station on Havens Corner Road, 4.7 mi from AF Plant 85.

Police—The Columbus Police Department is responsible for those areas of the plant vicinity within the City boundary. Similarly, the police departments of Whitehall and Bexley have jurisdiction within their respective municipalities. All local police forces have mutual assistance agreements and the Franklin County Sheriff's Office responds to calls for assistance from anyone living within Franklin County.

The nearest police departments are:

- Columbus Police Department on the airport complex about 1 mi from AF Plant 85
- Whitehall Police Department on Yearling Street, 1.4 mi south
- Gahanna Police Department at the Municipal Building on Rocky Fork Blvd. about 2.5 mi northeast.

Security at AF Plant 85 is handled by contracted security personnel under the contract of McDonnell-Douglas.

Hospitals/emergency care—Eleven hospitals and 32 other health care facilities serve the medical needs of the area population. Ten of these hospitals have 24-hour emergency room facilities. AF Plant 85 has an existing emergency care agreement with the nearest full service hospital (Mount Carmel East) on Broad Street 2.7 mi east of the facility. The next nearest medical facility is Saint Anthony's, which is north of Broad Street approximately 4 mi west of AF Plant 85.

2.2.2.4 Recreational and Cultural Resources. Franklin County and the Columbus metropolitan area offer a wide diversity of parks, swimming pools, playgrounds, recreation centers, golf courses, and other sports and recreation facilities. The City of Columbus is also home to art and science museums, symphony orchestras, ballet and opera, and other cultural organizations and activities.

Three golf courses are in the immediate vicinity of AF Plant 85. The Airport Golf Course, a public facility, is to the east of Hamilton Road across from the eastern end of the airport. The other two golf courses are private facilities. The Columbus Country Club is south of Broad Street, and a golf course is within the DCSC complex.

Three municipal parks are located within approximately 1 mi of the plant. Kramm Park and Recreation Center is west of Stelzer Avenue in the City of Columbus. Gahanna's Friendship Park is northeast of the facility on Big Walnut Creek, and the Orton-Davis Park is south in Whitehall.

2.3 Air Force Plant 85

Air Force Plant 85 is in Franklin County, Ohio, in the eastern portion of the City of Columbus, about 6 mi east-northeast of downtown Columbus. Nearby incorporated towns include Whitehall (adjacent to the installation to the south), Bexley (about 1.5 mi to the southwest), and Gahanna (about 2 mi to the northeast). All of these municipalities are part of the Columbus metropolitan area, are contiguous with each other, and are part of an unbroken urban developed area. The land area of the Plant 85 complex totals 518.1 acres.

The main industrial plant facilities are on 288.1 acres alongside Fifth Avenue, south of the Port Columbus International Airport. During periods of aircraft production, taxiways led from the plant to the airfield, giving direct access to the runways for military aircraft. About 119 acres of the main plant area, including the areas of Building 3 and the North Ramp, are leased from the City of Columbus. About 56 acres of land west of the main plant area were used as part of a former radar test range. The remaining 174 acres of the complex are located

west of Stelzer Road and contain the Instrument Landing System (ILS) for the Port Columbus Airport operated by the Federal Aviation Administration (FAA).

Construction of AF Plant 85 was begun in November 1940 and was completed in December 1941 under the Defense Plant Corporation (PLANCOR), (CH_2M Hill, 1984). The plant produced naval aircraft during World War II under contract with Curtiss-Wright Corporation. During World War II, the plant employed over 24,000 people and produced over 3,500 aircraft. Aircraft production declined substantially after the war, and Curtiss-Wright discontinued the plant's operations in 1950.

In November 1950, the U.S. Navy took possession of the plant, and the facility became the Naval Industrial Reserve Aircraft Plant (NIRAP) Columbus, (CH_2M Hill, 1984). At the time, North American Aviation (later Rockwell International) began operations at the plant and was designing, testing, and constructing numerous types of naval aircraft and missile systems. Aircraft production declined substantially during the 1970s, so that by 1979 fewer than 2,000 employees remained at the plant. NIRAP Columbus was transferred from the jurisdiction of the Navy to the Air Force in 1982, and was redesignated AF Plant 85. In 1982, production of the B-1B Bomber aircraft resumed under contract with Rockwell International.

Since delivery of the last aircraft (B-1B Bomber) to the AF in 1988, and following the nonrenewal of the B-1B contract, Rockwell has ceased production at the plant and will phase out all AF contract work by August 1989. In August 1988, McDonnell-Douglas exercised a contract option, and became the lessee of AF Plant 85. As of now, the activities they wish to pursue at the plant are unknown. AF Plant 85 is contiguous to DCSC, and the possible use of facilities at this plant for the establishment of DLA-DFC made DCSC, Columbus an attractive alternative, as discussed in Section 3.2 in Chapter 3.

2.4 Facilities To Be Used by the DFC

The facilities proposed to provide space for the DFC employees are on the south side of the AF Plant 85 complex (Figure 4). Rockwell International (the past contract operator) leased industrial facilities at AF Plant 85, which included seven major buildings with a total area of 3,400,565 sq ft. On 6 May 1988 Rockwell announced that it no longer needed AF Plant 85 and would be phasing out its Air Force contract work there within 15 months. McDonnell Douglas, the present contractor, now controls the plant. Under agreements with the Air Force,

substantial portions of Buildings 4 and 6 are to be made available for up to 5 years for the DFC employees.

Building 4 is largely warehouse space (approximately 464,000 sq ft) with a smaller two-story office complex attached to the front (south) side of the building. The front area of this building is separated from the rest of the AF Plant 85 complex by a chain link fence. This building has 20 parking spaces in front of the building and 350 parking spaces in a small general parking area immediately to the west, across a rail siding. The DFC is to occupy the office areas on both the first (28,596 sq ft) and second (27,264 sq ft) floors and, following remodeling and construction of new facilities, a part of the attached warehouse area (31,500 sq ft). Currently, a minimum of 55,000 sq ft of existing administrative space in Building 4 appears to be adequate for the initial needs of the finance center.

Building 4 has its own entrance gate and reception and security area. The areas of the building occupied by the DFC employees will be entered through the lobby in the center of the building. Offices along the outside wall surround open spaces for clerical support, where a large installation of modularized offices is planned. Stairs connect the two floors at the lobby and at the two rear corners of the building. The building is structurally sound and well maintained.

Building 6 is a large (approximately 366,288 sq ft) office and fabrication building about 600 ft to the east of Building 4. It is set off from Fifth Avenue by a large parking area (approximately 1,200 spaces) with a separate entrance gate from Fifth Avenue. The front of Building 6 is also separated from the rest of the plant complex by a chain link fence. The areas proposed to be occupied in this building include a small area on the first floor, the mezzanine located above the fabricating area to the rear of the building, and the complete second floor of the attached office building (Figure 4). These areas are entered through a security check area and lobby at the front center of the building.

The small ground floor space allotted to DLA (approximately 6,200 of the total of almost 108,000 sq ft) is in the middle section of the building, and will be used for mail service. The mezzanine area is an isolated, encapsulated office area set in at the rear of the second floor above the industrial plant. The mezzanine has three main sections set along the back wall of Building 6, interconnected by a balcony running along and over the fabrication area. The area on the mezzanine to be occupied by DFC is approximately 90,341 sq ft. The main aircraft fabrication area is open and was used for aircraft and parts assembly during 1943-1987. The east and west ends have large mechanically operated hangar doors. Access from the second floor balcony to the mezzanine office area at the rear of Building 6 is by an open, elevated bridge approximately 20 ft above the floor.

The approximately 107,899 sq ft of space on the second floor is planned to be used entirely by the DFC. This area has enclosed offices along exterior walls surrounding large open areas. All open areas are proposed to be filled with modular work spaces. The north rear of the second floor abuts the fabrication plant area. Access is gained through a single entrance in the middle of the building to a balcony running the length and overlooking the main fabrication floor on the ground level.

2.5 Status of AFIRP Program at AF Plant 85

The U.S. Air Force Installation Restoration Program (IRP) is a four-phased program designed for identification, confirmation, quantification, and remediation of problems caused by past management problems involving hazardous wastes at AF facilities. The IRP records search conducted for AF Plant 85 (CH_2M Hill, 1984) identified nine sites that had the potential for having adverse environmental impact (Figure 5). These sites were identified in the report as: (1) magnesium chip burn site, (2) coal pile leachate site, (3) PCB spill site, (4) fire department training area, (5) Mason's Run oil/fuel spill site, (6) rubble disposal site, (7) process tank acid spill, (8) James Road hazardous waste storage pad, and (9) N.E. Building No. 3 fuel tank site.

Sites 2, 3, 4, and 8 can be seen from those office areas of Buildings 4 and 6 proposed to house DFC employees. The distances involved range from 300 to more than 1,000 ft. Site 2 has been used for coal storage since 1941. Leachate containing sulfuric acid, ammonia, and copper had periodically entered Mason's Run until 1979, when an underdrain system leading to a collection sump was installed. Leachate is now pumped from the sump to the industrial wastewater treatment plant (WWTP) where it is neutralized and discharged to the sanitary sewer. Interaction with DLA personnel does not appear possible. At Site 3, the area containing the PCB spill was excavated and treated as a hazardous waste and hauled offsite. No hazard remains.

Site 4 was used to conduct on-site fire department training activities from 1941 to 1977. Approximately 900 gal of fuel were consumed in each training exercise. Although most of the materials were consumed in the training fires, some minor percolation of petroleum into the underlying soil was assumed to have occurred. In 1977, this area was deactivated by excavating and replacing the earth to a depth of about 30 in. Site 8 had been used to store drums of hazardous wastes since 1941. Some localized spillage of their contents had taken place in the past, and surface contamination was present. All currently-generated wastes are disposed of through licensed civilian contractors.

Although these spill and disposal sites may be visible from Buildings 4 and 6, access to these sites is restricted. Security provisions, as well as the chain link fence, separate Buildings 4 and 6 from the rest of AF Plant 85 complex. This prevents even inadvertent access to the sites by DFC employees.

Table 1. Meteorological data summary for Columbus, Ohio.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Temperature (°F)													
Record High	74	73	85	89	94	102	100	100	100	90	80	76	102
Record Low	-19	-13	-2	14	25	35	43	39	31	20	5	-10	-19
Normal Maximum	36.4	39.2	49.3	62.8	72.9	81.9	84.8	83.7	77.6	66.4	50.9	38.7	62.1
Normal Minimum	20.4	21.4	29.1	39.5	49.3	58.9	62.4	60.1	52.7	42.0	32.4	22.7	40.9
Normal Mean	28.4	30.3	39.2	51.2	61.1	70.4	73.6	71.9	65.2	54.2	41.7	30.7	51.5
Precipitation (inches)													
Record Maximum (in 24 hours)	4.81	2.15	3.40	2.37	2.72	2.93	3.82	3.79	4.86	1.87	2.05	1.74	4.86
Normal Mean	2.87	2.32	3.44	3.71	4.10	4.13	4.21	2.86	2.41	1.89	2.68	2.39	37.01
Mean Snowfall	8.7	6.0	4.6	0.8	Trace	0.0	0.0	0.0	Trace	Trace	2.7	5.6	28.4

Source: United States Department of Commerce, National Climatic Data Center as cited in CH_2M-Hill, 1986.
(Table 3.4-1, based on 1939 to 1982 data as cited in CH_2M-Hill, 1986).

Table 2. Characteristic analyses of groundwater in the vicinity of AF Plant 85, Franklin County, Ohio.

Aquifer	pH	Specific Conductance (umhos)	Iron (ppm)	Calcium (ppm)	Magnesium (ppm)	Bicarbonate (ppm)	Sulfate (ppm)	Hydrogen Sulfate (ppm)	Chloride (ppm)	Dissolved Solids (ppm)	Hardness as $CaCo_3$ Total (ppm)	Noncarbonate (ppm)
Glacial Outwash Deposits	7.3	726	1.8	99	31	380	81	---	7.0	456	387	75
Cuyahoga Formation	7.3	728	0.6	90	38	416	71	---	3.4	438	380	64
Berea Sandstone	6.8	756	1.2	82	35	316	122	slight	14.3	478	349	104
Bedford-Ohio Shales	7.3	1,653	0.4	136	61	531	472	---	40	1,177	590	286
Columbus Limestone	7.3	1,580	1.6	227	80	399	600	4.0	39	1,249	902	577
Columbus-Rasin River Limestones	7.3	1,859	0.7	291	98	346	838	17.0	47	1,555	1,129	855

Source: Bulletin 30, Ohio Department of Natural Resources as cited in CH M-Hill, 1984.
(Table 3.3-1, Installation Restoration Program Stage 2 by Batelle, March 1988).

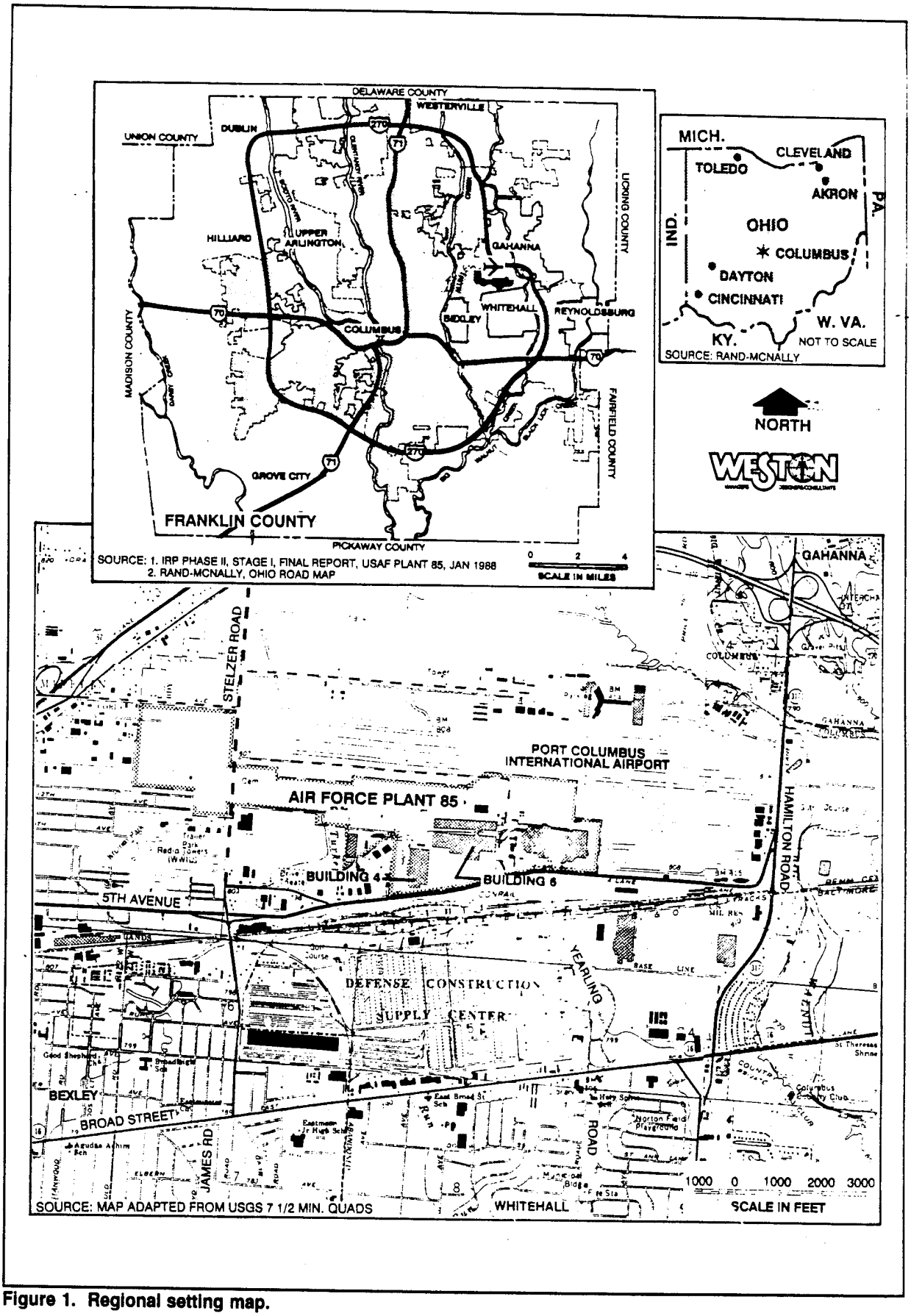

Figure 1. Regional setting map.

Table 3. Rational Threshold Values.

Economic Impact Forecast System - Version 4.0

You have selected 4 counties:

#	FIPS	County	State	'80 Population	Area (sq mi)
1	39041	Delaware	OH	53,840	443
2	39045	Fairfield	OH	93,678	506
3	39049	Franklin	OH	869,132	542
4	39089	Licking	OH	120,981	686
		Total		1,137,631	2,178

RATIONAL THRESHOLD VALUES

AREA: aggregated

All dollar amounts are in thousands of dollars.
Dollar adjustment based on Consumer Price Index (1982=100).

BUSINESS VOLUME (using Non-Farm income)

Year	Non-Farm Income	Adjusted Income	Change	Deviation	% Deviation
1969	3,417,284	8,992,853			
1970	3,643,715	9,041,477	48,624	-182,174	-2.026
1971	3,960,004	9,428,581	387,104	156,306	1.729
1972	4,375,642	10,082,125	653,544	422,746	4.484
1973	4,873,146	10,570,816	488,691	257,893	2.558
1974	5,261,214	10,275,809	-295,007	-525,805	-4.974
1975	5,473,003	9,790,703	-485,106	-715,904	-6.967
1976	6,092,598	10,308,965	518,261	28,746	2.936
1977	6,837,484	10,870,404	561,439	330,642	3.207
1978	7,601,989	11,228,936	358,531	127,733	1.175
1979	8,431,886	11,182,874	-46,062	-276,860	-2.466
1980	9,077,770	10,604,872	-578,002	-808,800	-7.232
1981	9,707,102	10,282,948	-321,924	-552,722	-5.212
1982	10,123,585	10,123,585	-159,363	-390,161	-3.794
1983	10,923,006	10,594,574	470,989	240,191	2.373
1984	12,038,474	11,293,128	698,553	467,756	4.415

1985	13,091,790	11,858,506	565,378	334,580	2.963
1986	14,027,228	12,916,416	1,057,910	827,112	6.975

average yearly change:	230,798
maximum historic positive deviation:	827,112
maximum historic negative deviation:	-808,800
maximum historic % positive deviation:	6.975
maximum historic % negative deviation:	-7.232
positive rtv:	6.975
negative rtv:	-5.424

PERSONAL INCOME

Year	Personal Income	Adjusted Income	Change	Deviation	% Deviation
1969	3,953,389	10,403,655			
1970	4,245,938	10,535,827	132,171	-203,877	-1.960
1971	4,626,525	11,015,536	479,709	143,661	1.364
1972	5,091,544	11,731,669	716,133	380,085	3.450
1973	5,680,962	12,323,128	591,460	255,411	2.177
1974	6,226,702	12,161,528	-161,600	-497,649	-4.038
1975	6,639,408	11,877,296	-284,232	-620,281	-5.100
1976	7,357,248	12,448,813	571,517	235,468	1.983
1977	8,186,185	13,014,603	565,791	229,742	1.845
1978	9,062,648	13,386,482	371,879	35,831	0.275
1979	10,064,869	13,348,634	-37,848	-373,897	-2.793
1980	11,087,258	12,952,404	-396,229	-732,278	-5.486
1981	12,172,726	12,894,838	-57,567	-393,615	-3.039
1982	12,907,932	12,907,932	13,094	-322,954	-2.505
1983	13,922,648	13,504,023	596,091	260,043	2.015
1984	15,244,837	14,300,973	796,950	460,901	3.413
1985	16,421,055	14,874,145	573,172	237,123	1.658
1986	17,502,497	16,116,480	1,242,335	906,287	6.093

average yearly change:	336,049
maximum historic positive deviation:	906,287
maximum historic negative deviation:	-732,278
maximum historic % positive deviation:	6.093
maximum historic % negative deviation:	-5.486
positive rtv:	6.093
negative rtv:	-3.675

EMPLOYMENT

Year	Employment	Change	Deviation	% Deviation
1969	476,461			
1970	484,153	7,692	-6,181	-1.297
1971	494,364	10,211	-3,662	-0.756
1972	519,363	24,999	11,126	2.251
1973	543,208	23,845	9,972	1.920
1974	551,050	7,842	-6,031	-1.110
1975	540,068	-10,982	-24,855	-4.510
1976	551,188	11,120	-2,753	-0.510
1977	571,957	20,769	6,896	1.251
1978	597,367	25,410	11,537	2.017
1979	614,840	17,473	3,600	0.603
1980	620,770	5,930	-7,943	-1.292
1981	615,746	-5,024	-18,897	-3.044
1982	607,847	-7,899	-21,772	-3.536
1983	618,052	10,205	-3,668	-0.603
1984	653,226	35,174	21,301	3.447
1985	686,113	32,887	19,014	2.911
1986	712,299	26,186	12,313	1.795

average yearly change:	13,873
maximum historic positive deviation:	21,301
maximum historic negative deviation:	-24,855
maximum historic % positive deviation:	3.447

maximum historic % negative deviation:	-4.510
positive rtv:	3.447
negative rtv:	-3.022

POPULATION

Year	Population	Change	Deviation	% Deviation
1969	1,036,900			
1970	1,061,300	24,400	15,465	1.491
1971	1,079,600	18,300	9,365	0.882
1972	1,088,900	9,300	365	0.034
1973	1,098,100	9,200	265	0.024
1974	1,108,100	10,000	1,065	0.097
1975	1,116,500	8,400	-535	-0.048
1976	1,119,700	3,200	-5,735	-0.514
1977	1,128,800	9,100	165	0.015
1978	1,137,000	8,200	-735	-0.065
1979	1,142,500	5,500	-3,435	-0.302
1980	1,140,800	-1,700	-10,635	-0.931
1981	1,151,200	10,400	1,465	0.128
1982	1,157,100	5,900	-3,035	-0.264
1983	1,160,000	2,900	-6,035	-0.522
1984	1,167,600	7,600	-1,335	-0.115
1985	1,176,200	8,600	-335	-0.029
1986	1,188,800	12,600	3,665	0.312

average yearly change:	8,935
maximum historic positive deviation:	15,465
maximum historic negative deviation:	-10,635
maximum historic % positive deviation:	1.491
maximum historic % negative deviation:	-0.931
positive rtv:	1.491
negative rtv:	-0.465

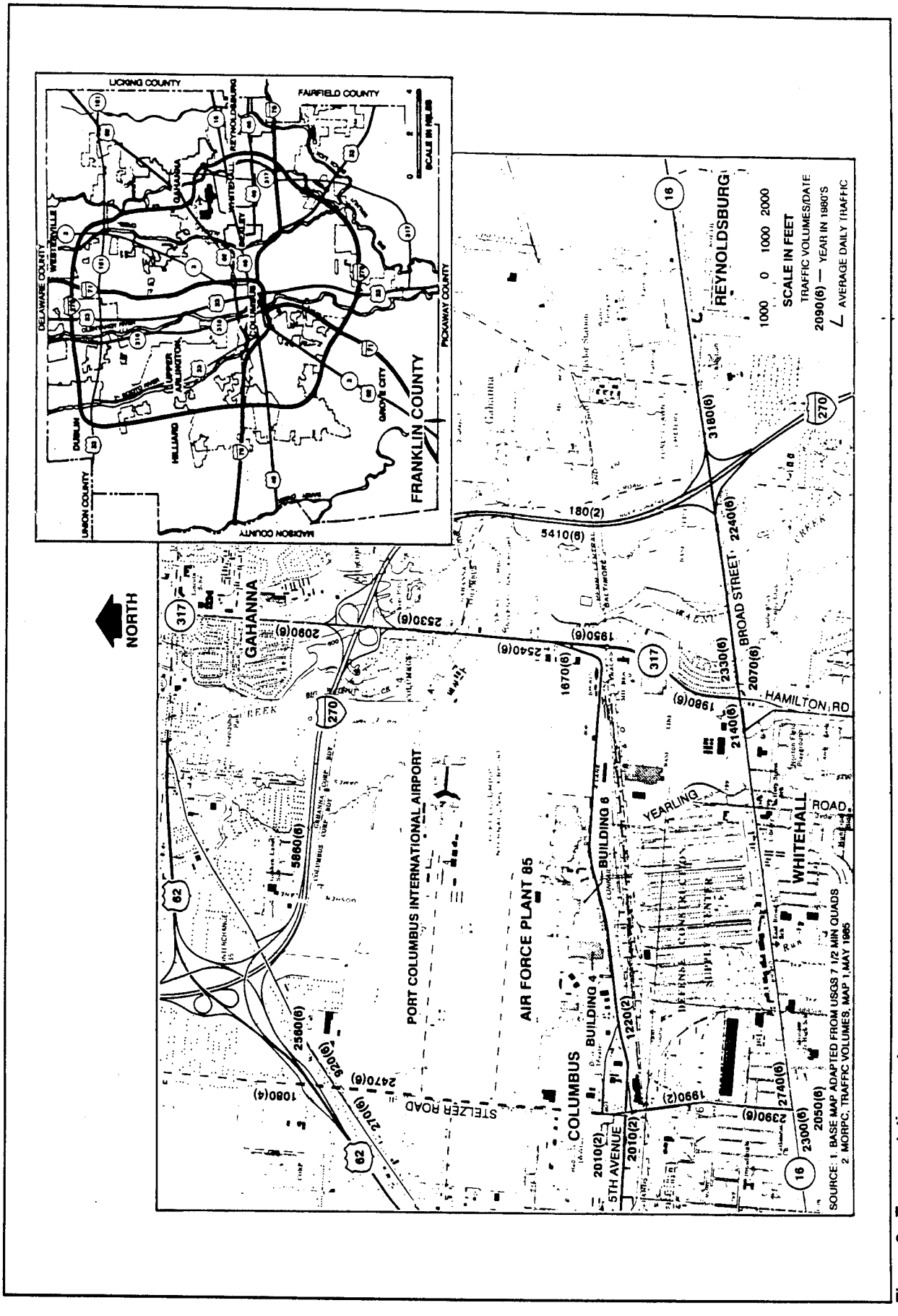

Figure 2. Transportation systems map.

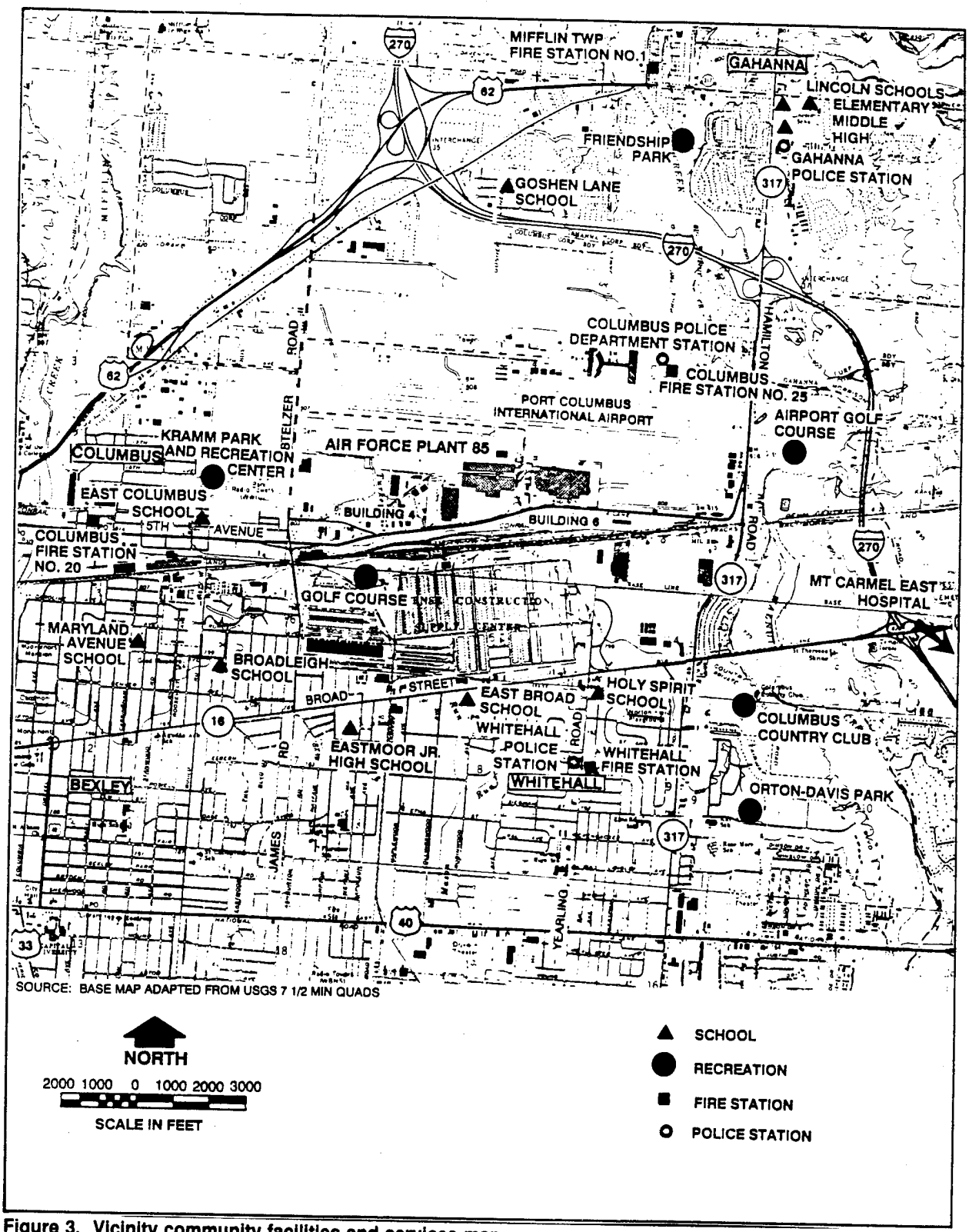

Figure 3. Vicinity community facilities and services map.

Table 4. Area schools, AF Plant 85 vicinity, Columbus, Ohio.

District/School/Location	Type of School	Distance/Direction From AF PLANT 85
Columbus Public School District		
Eastmoor Jr. High School, Columbus	Middle	1.3 miles (southwest)
Broadleigh School Maryland Ave, Columbus	Elementary	1.5 miles (west)
Maryland Avenue School Maryland Ave, Bexley	Elementary	2 miles (west)
East Columbus School Rarig Avenue, Columbus	Elementary	1.5 miles (west)
Jefferson School District		
Goshen Lane School Goshen Lane, Gahanna	Elementary	1.6 miles (north)
Lincoln Schools Complex Havens Corner Rd, Gohanna	Elementary, Middle and High	2.5 mile (northeast)
Whitehall School District		
*East Broad Street School Broad Street, Whitehall	Elementary	1.2 miles (southeast)
Columbus Catholic Diocese		
*Holy Spirit School Broad Street, Whitehall	Elementary	1.1 miles (southeast)
* Nearest schools to Buildings 4 and 6 of AF Plant 85.		

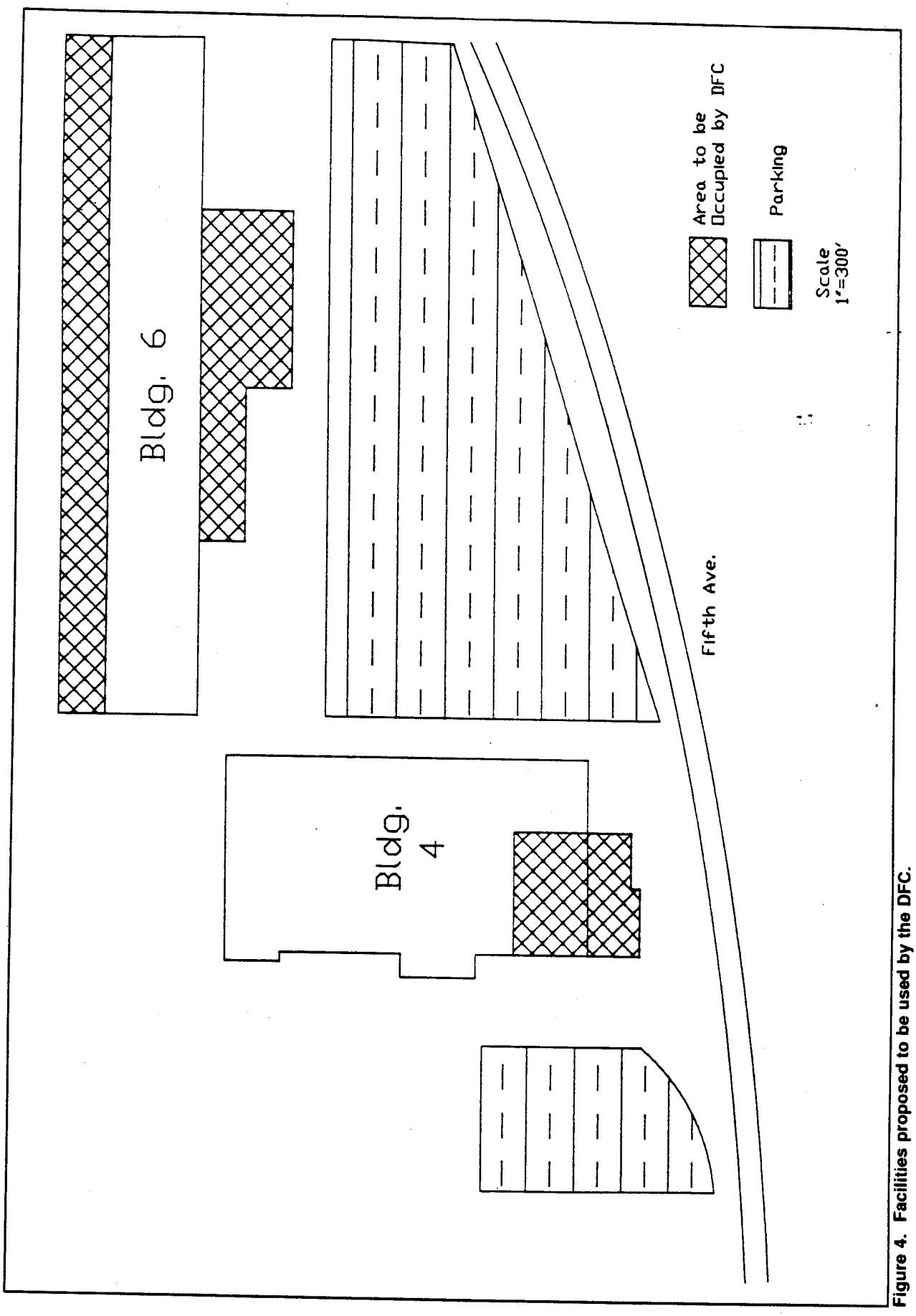

Figure 4. Facilities proposed to be used by the DFC.

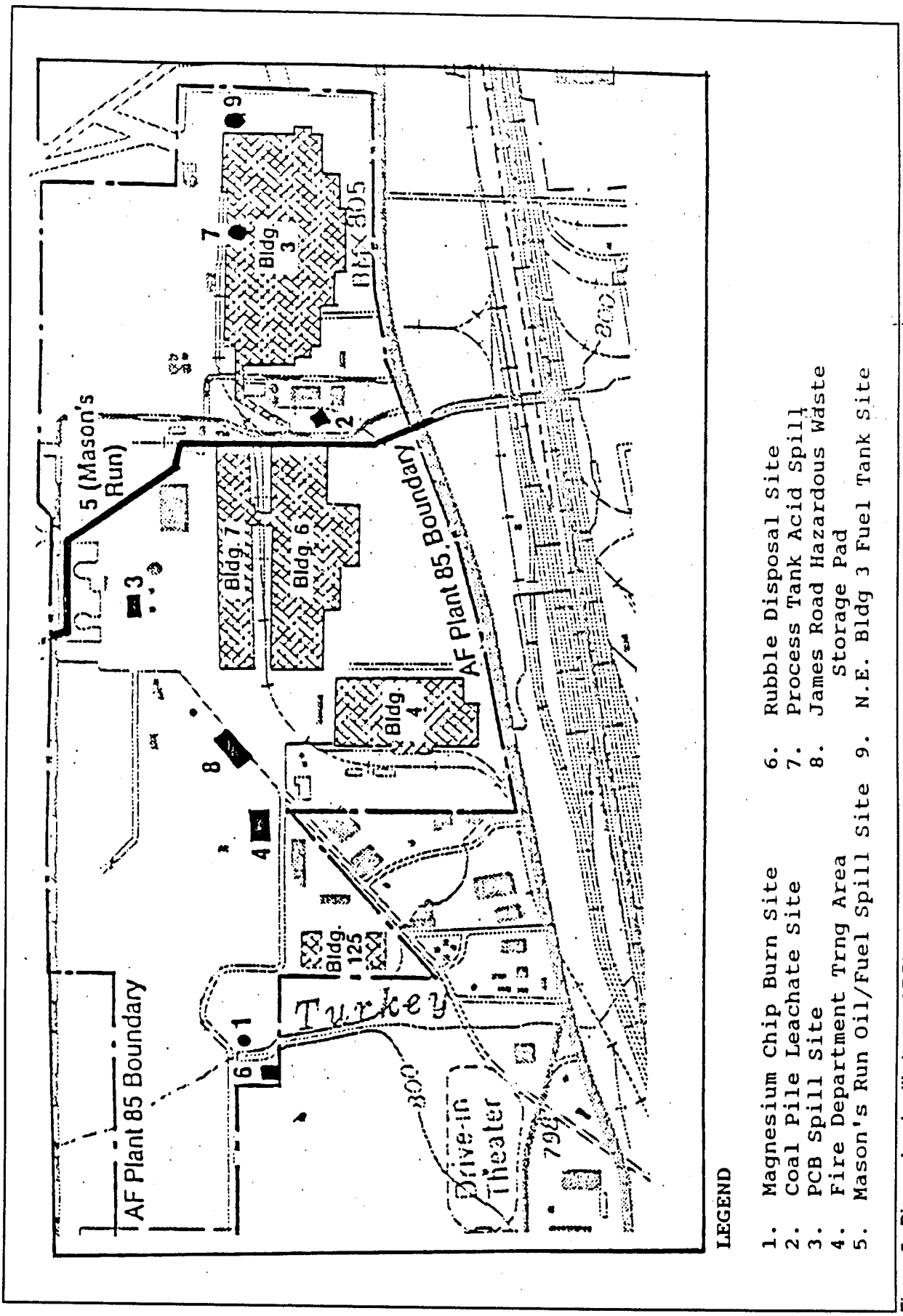

Figure 5. Disposal and spill sites at AF Plant 85.

3 Alternatives Considered

3.1 Alternative Sites/Locations

In a broad sense, a new finance center might be located in almost any metropolitan area in the country. In planning at this level, 329 cities and areas were initially screened. As part of the examination of the several possible ways to modernize the DLA financial functions, a review of possible locations for such a consolidated activity was undertaken using several different approaches. At one stage, the different activities and functions that could or should be associated with such a centralized function were assembled. As a second step, the potential number of individuals required to staff these activities was determined. With an idea of the number of staff plus the number and type of computers and other required support equipment, the floor area necessary for such activities could be calculated.

An entirely separate line of study used analysis of present, known costs to support DLA (and other DOD) activities in those locations where present activities are housed. Still another approach examined quality-of-life aspects of possible locations, incorporating such elements as climate, cost of living, and environmental quality. College student enrollment was another important criterion, based upon the perceived need for trained, computer-literate persons who might be recruited for positions, including many proposed part-time and night-shift personnel.

Analyses were made of the workload-by-state, and were combined with the availability of an existing major DLA or other supporting facility that could provide startup support to the DFC. In this process, the initial list of 329 potential locations was narrowed to 38 reasonable ones, and then to 20 fully satisfactory sites. When the question of local support and available floor space in an existing structure was included, four cities became prime sites for consideration. These cities were Columbus and Dayton, OH, Richmond, VA, and Philadelphia, PA.

An extensive examination of these considerations is documented in *Site Selection Review*, prepared by the DLA Modernization of Payments Project (10 June 1988).

3.2 Preferred Site Selection

The existing Defense Construction Supply Center (DCSC), Columbus, OH, is a major DLA facility that is active and has several major military construction projects programmed that will add office space in the near future. In addition, AF Plant 85, a GOCO facility, is within 1 mile of the DCSC, and has approximately 600,000 sq ft of presently unoccupied office space. Of this area, about 400,000 sq ft could be made available to DLA. Since Columbus rated high on the potential employee availability scale, above the middle on the quality-of-life analysis, and high on the availability of startup support from DCSC, the combination of the DCSC and AF Plant 85 was designated the preferred alternative. All detailed examinations of the biophysical and socioeconomic environments and assessment of possible environmental consequences have focused on this location.

3.3 "No-Action" Alternative

The "No-Action" alternative, which in this case is interpreted to mean the retention of all existing practices, was examined in detail before development of action alternatives. It was, however, the perceived inadequacy of the existing systems and lack of coordination of activities that resulted in the establishment of the requirement to implement changes that could result in cost savings and increased efficiencies in operations throughout DLA. The lack of any change would result in the continuation of present problems, so this alternative was not considered further.

4 Environmental Consequences of the Proposed Action

This chapter assesses the potential impacts of the proposed action (e.g., consolidation of the DFC employees to Buildings 4 and 6 of AF Plant 85) on the DLA personnel and the natural and manmade environment of the project site vicinity. This assessment is based on the available information on Buildings 4 and 6 and the immediate vicinity, the environmental setting as described in Chapter 2, and the proposed action. The assessment areas incorporated are limited to those with realistic potential to be directly affected by the presence of nearly 3,100 DLA personnel. These personnel form, in turn, a significant portion of the affected human socioeconomic environment.

4.1 Biophysical Effects

4.1.1 Effect on Natural Environment

4.1.1.1 Water resources and water quality. The proposed action will have minimal effect on water resources in the area. The employees will have only minimal contact with the natural environment outside the buildings. The increase in automobiles and the expansion of the existing parking lots may slightly increase the amount of oil and other automobile-related contaminants in the runoff to Mason's Run. However, the oil skimmer in Mason's Run near the entrance gate to the facility will handle the oil contaminants, thus reducing the potential for surface water contamination.

The facility is tied to the City of Columbus water supply and sewerage systems. The increase in personnel at Buildings 4 and 6 will have no adverse effect on the capacities of these systems since they are capable of handling the metropolitan Columbus area with a total population of over 900,000 persons. Thus, the water withdrawal by the City need not be increased for the DLA reorganization-related increase in personnel at AF Plant 85. Additionally, the facility had been under the City water supply and sewerage services during the early 1980s, when between 6,000 and 8,000 employees were at this location.

4.1.1.2 Geologic resources/physiography. The proposed action will have no impact on the geologic resources of the area. The possible expansion of the parking lot may have minor effects on area topography and runoff. This construction activity is not, however, a part of the planned action, and would be the subject of separate, additional environmental evaluation if implemented.

4.1.1.3 Ecological resources. Coordination with the Fish and Wildlife Service in Reynoldsburg, Ohio has determined that the proposed action will have no adverse impact on the ecological resources because the occupancy of Buildings 4 and 6 is not directly associated with effects on the natural environment (Appendix B). The possible expansion of the parking lot will have no major impact on any natural ecological systems because the area in the immediate vicinity of Buildings 4 and 6 does not provide a habitat for any natural wildlife populations, including threatened or endangered species. No natural vegetation occurs on the site, nor does it contain other significant natural areas.

4.1.1.4 Air quality. The minimal increase in automobiles associated with the proposed action will have no adverse effect on the Columbus area air quality, which is generally considered good. The technicalities associated with the lack of an operating permit for the boiler plant constitute a de-facto air quality violation, without having real adverse effects on the air quality of the community.

4.1.2 Effects on Personnel

Since the available data provide an insufficient basis for a quantitative employee risk assessment, a qualitative evaluation of potential hazards to the DLA personnel proposed to be occupying Buildings 4 and 6 has been conducted and the conclusions are presented in this subsection.

4.1.2.1 Studies and surveys on environmental hazards at AF Plant 85. A number of contaminated disposal and spill sites on the grounds of AF Plant 85 have been sampled under the Air Force IRP (see Section 2.5, p 26). These sites include: Mason's Run oil/fuel spill site, Fire Department Training Area, James Road Hazardous Waste Storage Pad, Coal Pile Leachate Site, and the PCB spill site. These sites are described in more detail in the IRP, Phase II report (PEI Associates, 1988). According to the IRP, the closest site to Buildings 4 and 6 is the coal pile located approximately 100 ft to the east of Building 6. Sampling showed no soil or groundwater contamination at this site, thus no remediation is planned here.

All other sites are located 500 to 1,000 ft from these buildings. The DLA employees will not have direct access to any of these sites since a chain-link

security fence restricts access to these areas. In addition, the sites have a vegetative cover that greatly restricts the mobility of the contaminants as a result of wind or water erosion. It is possible that for a limited time, during remedial activities, the vegetative cover will be disturbed, increasing the possibility of contaminants becoming airborne. At this time, engineering specifications for the remedial project are not available for review; however, engineering controls and work practices such as dust suppression are regularly used to reduce migration of contaminated dusts.

If such controls were not used during remediation, the degree of potential exposure of the DLA personnel to the contaminants would depend on a number of factors, including the distance of the particular site from Buildings 4 and 6, the location and operation of ventilation system intakes, wind speed and direction, and other weather conditions. Because of the significant distance of these sites from the buildings to be occupied by DLA personnel, typical remedial engineering and work practices are expected to minimize any potential exposure of DLA personnel to airborne contaminants during remediation.

The DCSC Health and Safety Group conducted a limited air sampling for asbestos on 5 July 1988 in Buildings 4 and 6. Phase Contrast Microscopic (PCM) analysis of the samples indicated that no asbestos fibers were detected in any of the samples (e.g., airborne concentrations were below the detection limit of 0.01 fibers per cubic centimeter (f/cc) of air) (see Table 5).

The Health and Safety Group also collected two PCB wipe samples in July 1988 in Building 6. Results indicated that PCBs were detected in the cafeteria at 0.14 mg/100 cm^2 and in the vault at 0.068 mg/100 cm^2. These values are under the 10 mg/100 cm^2, PCB spill cleanup standard for indoor and high contact outdoor surfaces (40 CFR Part 761, April 2, 1987), as shown in Table 6.

The Health and Safety Group collected two potable water samples for lead analysis in July 1988. The sample from the Building 6 cafeteria contained 0.003 mg/l of lead, and the results from the second floor of Building 4 sample were not available at the time of this report. The water sample from Building 6 does not exceed any standards/guidelines except the proposed maximum contaminant level goal (MCLG) as shown in Table 7.

4.1.2.2 Identification of potential hazards. The site visit during January 1989 and a review of the available reports indicated that one of the potential hazards in Buildings 4 and 6 of AF Plant 85 includes asbestos. While there is no active health hazard in the absence of remodeling activities that may release asbestos fibers into the air stream, the reasons for concern are well known. The

microscopic asbestos fibers can remain suspended in the air for long periods of time, and can penetrate body tissue when inhaled. The potential adverse human health effects include various respiratory and digestive cancers, and asbestosis, a chronic lung disease that makes breathing difficult and frequently results in death. For this reason, asbestos management plans are frequently recommended when older buildings are undergoing renovation.

Asbestos has been classified by the EPA as a Group A carcinogen; epidemiological studies show sufficient evidence to demonstrate human carcinogenicity. Lung cancer is the most frequently observed asbestos-related disease. Exposure to asbestos may also result in mesothelioma, a rare cancer of the lining of the lung. Evidence exists that asbestos particles potentiate the action of other carcinogens, such as those present in cigarette smoke. Various standards and guidelines (see Table 5) have been recommended by Federal and state governments to limit occupational and public exposure to asbestos. Although McDonnell-Douglas reportedly retained a consultant to perform an asbestos survey in Buildings 4 and 6, their report was not available for review at the time of this report. Very limited asbestos air sampling data from Buildings 4 and 6 were received from the DCSC Health and Safety Group, who collected the samples in July 1988. PCM analysis indicated that asbestos fibers were not detected in either sample (e.g., that airborne concentrations were below the detection limit of 0.01 fibers/cc of air).

Nonetheless, a particular concern is that during the planned renovation and remodeling within Buildings 4 and 6, asbestos-contaminated materials may be disturbed. Asbestos is used in a variety of building and mechanical materials, including insulation on equipment such as pipes, boilers, and heat exchangers; floor tiles; ceiling tiles; acoustic panels and finishes; and fire proofing on structural steel members. Because the locations of asbestos-containing materials have not been identified in Buildings 4 and 6, establishment of an asbestos management plan is recommended.

This plan would include a complete inspection of the buildings by an asbestos inspector certified by the State of Ohio to conduct asbestos-in-buildings surveys. The degree of friability (tendency to produce dust when dry) of the asbestos source, as well as its proximity to potentially exposed workers are important variables to be assessed in this plan. It is important that all sources/locations of asbestos be identified since Federal and state regulations under Section 117 of the Clean Air Act require that asbestos be properly removed if demolition or renovation activities may result in the disturbance of asbestos (these regulations are embodied in the National Emission Standards for Hazardous Air Pollutants, or NESHAPS). The management plan would provide a mechanism for those involved in the remodeling activities to gain training on the recognition and handling of suspected

asbestos materials. In addition, the plan should address the supervision of the workers to ensure compliance with its provisions.

Another potential hazard in Buildings 4 and 6 is PCBs, which are stable compounds of low flammability once used as insulating materials in electrical capacitors, transformers, ballasts and switches; as plasticizers in waxes and paints; in paper manufacturing; and a variety of other industries. Industrial manufacture of PCBs ceased in 1977 (ATSDR, 1987) but PCBs may still be present in capacitors or transformers that have not reached the end of their useful service life as allowed under the Toxic Substance Control Act.

Eleven PCB transformers have been identified in Building 6, several of which are located beneath the mezzanine area (DLA memo, 26 October 1988). It is also likely that, in buildings of this age, numerous PCB-containing ballasts are in the fluorescent lighting systems in the buildings. A PCB inventory, included in a recent environmental assessment of AF Plant 85 (USAF, December 1988) also indicated that PCB switches are located in Buildings 4 and 6. This report also stated that all PCB capacitors identified at the plant were disposed of in December 1987, which cannot be independently verified at this time.

The adverse health effects associated with PCB exposure in humans include skin irritations, chloracne, and liver effects, such as alterations in serum levels of liver enzymes. The effects of PCBs observed in experimental animals include liver damage, skin irritations, low birth weights and other reproductive effects, cancer, and death (ATSDR, 1987). PCBs have been classified by the EPA as a Group B2 carcinogen, which is a probable human carcinogen based on sufficient evidence in animals and inadequate data in humans.

Various standards and guidelines have been recommended by the Federal government to limit exposure to PCBs in the work place and in the general environment. In addition, the National PCB Spill Cleanup Policy establishes criteria for cleanup based on the mass and location of a PCB spill. Table 6 lists these standards and guidelines, including the applicable PCB spill cleanup level.

The DCSC Health and Safety Group collected two PCB wipe samples in July 1988 in Building 6. Results indicated that PCBs were detected in the cafeteria at 0.14 mg/100 cm^2 and in the vault at 0.068 mg/100 cm^2. These values do not exceed the 10 mg/100 cm^2 PCB spill cleanup standard for indoor and high contact outdoor surfaces (40 CFR 761).

DLA employees could be exposed to PCBs if a leak occurred in a PCB transformer, ballast, or switch, or if a spill occurred during the removal of PCB-containing

equipment. EPA estimates that approximately 3.2 percent of transformers develop moderate leaks. AF Plant 85 has reported leaking transformers in the past; however, none were in the area to be occupied by DLA. Two recently documented PCB spills have occurred at AF Plant 85: one near Building 143 (investigated under the IRP) and one on the north side of Building 5, the painting hangar. A contaminated transformer and some concrete near Building 5 have been removed (CDM, 1988). It should be noted that an operator at AF Plant 85 has the primary job of inspecting and maintaining PCB equipment. This includes a monthly inspection of PCB transformers for leaks and an annual inventory of PCB equipment (USAF, December 1988).

Potential exposure to PCBs may also occur during transformer failure. It is possible that a rupture may occur during a failure, which may result in the dispersion of PCBs. Although violent ruptures are more likely to occur in capacitors, they may also occur in transformers. At AF Plant 85, a transformer explosion occurred in November 1986, at the Master Substation east of Building 8. However, no PCBs were released (CDM, 1988). No information was available as to the cause of the explosion.

Another potential concern with PCB-containing equipment is that, in the event of a fire, PCBs and other combustion products (such as dioxins and dibenzofurans) may be dispersed. To prevent employee exposure during such an event, a proper fire safety plan should be instituted so the building can be evacuated quickly. Fire exits to be used in evacuating the Building 6 mezzanine use several narrow stairways and infrequently used exits, so it is important that personnel be made aware of evacuation procedures.

It is not clear whether any PCB-containing ballasts have actually been located in the buildings. The age of the structure makes their presence rather likely. Low concentrations of PCBs have been found in a limited wipe sampling survey, and a more complete and more frequent survey of possible PCB presence in the buildings should be performed. Particular attention should be given to the collection of dust samples from door frames. Wipe sampling should also be done at areas of high contact potential for workers, including maintenance workers. Elevated PCB concentrations in these wipe samples may be expected to give early warning that PCB-containing equipment has failed, releasing the chemicals to the indoor environment. More frequent sampling helps assure that the failure has been detected before health consequences can arise.

Another concern with the mezzanine area in Building 6 is its proximity to the fabrication area. Air quality in the mezzanine offices may be a problem if positive pressure is not maintained with respect to the fabrication area or if sufficient

makeup air is not provided. In addition, to reach the mezzanine one must walk across an open walkway over the fabrication area, raising both air quality and noise concerns. At this time, no specific plans are available from McDonnell-Douglas as to the types of activities to be conducted or the materials to be used in the fabrication area.

Drawings and specifications were not available on the Heating, Ventilating, and Air Conditioning (HVAC) system for the building; hence, the type or location of outside air intakes could not be determined. Consequently, it was not possible to characterize the facility HVAC system with respect to compliance with standards established by the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE 1981). Until more specific information is available, no further assessment of impacts to air quality is possible. However, it is recommended that a complete air quality survey be considered in Building 6 after McDonnell-Douglas activities are fully operational.

The DLA site visit (DLA memo, 26 October 1988) identified a potential water quality concern. The only water backflow prevention device is at the fence line, which may result in contamination of the facility's drinking water from on-site industrial sources. Whether the increase in water demand associated with the new occupants of Building 6 could result in water backflow is not possible to determine at this time.

Another water quality concern is possible leaching from lead pipe fittings and solder. The DCSC Health and Safety Group collected two potable water samples for lead analysis in July 1988. The sample from the Building 6 cafeteria contained 0.003 mg/l of lead; the results from the second floor of Building 4 were not available for review. These samples can be compared to available EPA drinking water standards and guidelines as presented in Table 7. Four additional samples have been taken from the DFC areas in recent months. The results of all five samples are reported by the DCSC Safety and Health Manager as "within standards."

The water sample from Building 6 does not exceed any standards/guidelines other than the proposed MCLG, which was set at zero based on subtle effects of low blood levels, an overall agency goal of reducing total lead exposure, and probable human carcinogenicity of lead at very high doses (40 CFR 141 and 142, 18 August 1988). However, it is recognized that a goal of zero is not always technically or economically feasible. No information was available on any lead pipe survey conducted in either Buildings 4 or 6. It is recommended that a more extensive survey be conducted to determine the possible presence of lead in the drinking water.

4.1.2.3 Data needs for detailed evaluation of environmental hazards. A thorough assessment of potential hazards to the DLA personnel is not possible with the available data. Detailed survey/reviews are recommended in the following areas to fill the existing data gaps for a complete assessment of possible effects on the DLA personnel to be located in Buildings 4 and 6.

- asbestos survey of the areas to be occupied by DLA personnel
- additional PCB wipe samples at various locations in Buildings 4 and 6, including increased frequency
- lead-in-drinking water survey
- water backflow prevention plan
- characterization of the existing HVAC system (design, operation and maintenance, and indoor air quality monitoring)
- understanding of McDonnell-Douglas operations planned, including staff strength and activities at specific locations of AF Plant 85.

These additional inputs could lead to a better analysis of the potential hazards to the DLA personnel and in addressing mitigating measures such that the adverse effects, if any, could be reduced or eliminated. Depending on the level of information collected through additional effort, an employee health risk assessment could be carried out using the general approach as outlined in Appendix C.

4.1.2.4 Summary of level and nature of potential hazards. Clearly no conditions present in Building 4 and 6 should be classified as Immediately Dangerous to Life and Health (IDLH), the most serious potential hazard class. The facilities do, however, present the full suite of lower-level, long-term hazards that were typical of pre-1980 construction and design, and that are now the subject of concern for a variety of reasons in every setting nationwide. It seems prudent that each of the individual hazards, as discussed above, be identified in separate or grouped management plans in a manner now considered routine in the management of larger, older structures.

4.2 Socioeconomic Impacts

4.2.1 Economic Impact Assessment

The Economic Impact Forecast System (EIFS) was used to determine the effect of approximately 3,000 employees on the local economy of the Columbus metropolitan area. This effect was determined by the use of forecast models that estimate socioeconomic impacts resulting from major changes in activity at a military installation. These impacts are estimated on five economic variables: (1) business

volume, (2) income, (3) employment, (4) government expenditures, and (5) housing demand. Information relevant to changes in employment, average income of employees (both civilian and military), and the amount contributed toward local services and supplies was used as input to the forecast model. Table 8 shows the standard EIFS model forecast.

Results of the EIFS analysis show that the DFC would have a small positive effect on the economy of this four county region. The increase in sales volume was indicated at 0.686 percent, the increase in employment was 0.729 percent, and the increase in income was 0.507 percent. These values are approximately one-tenth (6.975 percent), one-seventh (3.447 percent), and one-eighth (6.093 percent) of the respective RTV values (provided in Section 2.2.1) for these factors.

The EIFS model forecasts were also run for the 20 locations losing activity as a result of the formation of the DFC. Their outputs are provided in Appendix D, and Table 9 summarizes the very small negative effects at these locations. The changes are, at most, a few hundredths of 1 percent. None begin to approach significance.

4.2.2 Social Impacts on Personnel

Clearly when individuals are notified that their jobs, as they know it, will no longer exist, the effects are significant and adverse. While voluntary movement from one employer to another is the result of considered analysis, enforced changes are normally perceived as negative. The action tends to be personalized into "What do you have against me, anyway?" One of the first negative consequences may be financial—the absence of employment. Even if a position at a new location is offered, the vast majority of employees may not feel free to accept it. Examination of similar actions within DOD has shown that almost no clerical or support personnel below the GS-7 level will accept transfer, even if it is offered. The reasons are many. In many of the households involved, the DOD employee is not the only employed person, and the lack of a definite position for the other family members, especially spouses, is perceived as disqualifying. Higher-level persons and newly-recruited college graduates often feel more freedom of movement, and are less threatened by a reorganization.

Still other persons are unwilling, or perhaps because of care obligations, unable to relocate for family reasons. While these reasons may seem relatively unimportant to an upper-level professional administrator who has been transferred several times in the course of their DOD career, for the vast majority of lower-level employees movement away from family, friends, and social structures is not the career choice. Even the offer of a roughly comparable position in the

remaining organization may not be completely adequate to remove the feeling of rejection.

A majority of the affected employees are expected to respond in this manner to the notification of changes. Even those persons who take a position in the new organization may believe that they have undergone unwarranted hardships as a result of the decisions made. Many of these responses are unavoidable, and they must be accepted as completely natural.

Mitigation procedures that diminish some or all of these problems were developed and implemented by DLA. They involve firm offers to transfer, placement in other positions at the original activity, and retraining, if applicable, so that the employee may continue in an equivalent position. These provisions are exemplary and constitute a maximal effort on the part of DLA. While these mitigative procedures minimize adverse effects, it must be noted that they do not erase them. Some residual effects must be accepted and planned for by the managers of both the old and new organizations.

4.2.3 Community Planning Related Impacts

Two categories of impacts are associated with the proposed action. The relocation/consolidation action with the final total employment reaching 2,700 persons may have impact on the nearby communities, including vehicle traffic especially. Any such effects will be concentrated specifically in the vicinity of the facility. Also, the relocation of up to 300 to 900 employees (and their families) into the greater Columbus area may have general and diffuse development impacts beyond the immediate vicinity of AF Plant 85.

4.2.3.1 Traffic and transportation. Franklin County communities, including the City of Columbus, have an extensive modern network of limited access expressways serving the entire area. Development within the County and the City has tended to focus in northcentral and northwestern parts of Franklin and Delaware counties. About 55 percent of housing built since 1980 has occurred in this area of Franklin County (Mid-Ohio Regional Planning Commission [MORPC] Transportation Report, 1988). Commercial growth in these northern areas is projected to increase by 86 percent and new employment by 30,000 jobs. The major roads in the northern areas (e.g., the outerbelt [I-270], US 23, SR 315, I-71 and Morse Road), each carry in excess of 40,000 vehicles per day and this rate is expected to increase by 50 to 80 percent over the next 20 years.

A second area of development affecting transportation is closer to AF Plant 85. This area includes Reynoldsburg and Pickerington (in Fairfield County) to the

southeast. MORPC notes growth in residential and commercial development at 25 percent and 100 percent, respectively, over the next 20 years. Traffic is forecast to increase by as much as 120 percent during the same time.

The AF Plant 85 complex is situated between these two areas of development. The City of Columbus is beginning finalization of the I-670 connector between U.S. Route 62 near the airport and the downtown section. This new connector is expected to increase the development potential within the corridor of I-670 and the northeastern and eastern parts of Franklin County. Gahanna, which is immediately to the northeast of the airport and AF Plant 85, has already experienced the start of the growth pattern based on these facts and baseline projections.

It is assumed that, due to a shortage of available on-site parking, only one-third of the projected total of 3,000 employees at DFC will be able to commute to the facility using their own vehicles, while the remainder will use car pools and public transportation. The additional traffic of nearly 1,000 vehicles spread over three shifts is not expected to have any adverse impacts on the local transportation routes.

For the access/egress roads surrounding the AF Plant 85 complex, the proposed increase in vehicular traffic should pose no problem since during the full employment period of Rockwell International (e.g., mid 1980s) 2 to 2-1/2 times as many personnel were working at the facility, and no adverse impacts occurred at that time. Fifth Avenue, on which AF Plant 85 fronts, is a wide, four-lane road with additional turning lanes at intersections and the entrances to AF Plant 85. The intersecting roads (e.g., James/Stelzer Road, Yearling Road, and Hamilton Road [SR 317] are signalized intersections. These roads provide access to the freeway/expressway system, which allows further access to virtually all of the county. Additionally, access to I-670 and downtown Columbus will be available via the airport access spur from Stelzer Road.

These access/egress roads in the AF Plant 85 vicinity do not infringe on residential areas or neighborhoods either. Land use fronting on these roads is either industrial, commercial, or undeveloped up to the intersections with the outer beltway. The proposed action is also in conformity with development plans for the I-670 corridor by the City of Columbus and the Transportation Improvement Program being initiated by MORPC.

The impact on public transportation would be positive. MORPC has recommended that the Central Ohio Transit Authority (COTA) expand its bus fleet by 43 percent by the year 2000, and one of the planned new service routes for the year 1992-1993 is for the airport via Stelzer Road. The influx of 3,000 DFC employees

in the AF Plant complex would benefit this proposed service. Bus service had previously existed on the Fifth Avenue to AF Plant 85, and the possible reactivation of the service, combined with the planned airport service, may accelerate the COTA expansion program.

The availability of parking at the AF Plant 85 complex is an item to be evaluated. All parking will be within the complex. Separate parking areas are designated for Buildings 4 and 6. If parking for only 1,000 to 1,500 vehicles is assumed to be involved, most of this parking can be accommodated by the existing areas on AF Plant 85. The Building 4 parking lot has a total of 350 spaces at present, all usable by DFC personnel. An open area adjacent to this parking lot is a possible source for expansion of the current parking capacity, though no such expansion is proposed. For Building 6, however, no further expansion of parking spaces is possible because no open areas are readily available adjacent to the building.

The total impact from parking could not be assessed at this time because of the uncertainty of the level of employment expected at AF Plant 85 by McDonnell-Douglas operations. Should the designated parking area for Building 6 be shared equally between DLA and McDonnell-Douglas employees, only slightly more than 600 spaces will be available to DLA on that part of the site, accommodating only 25 to 30 percent of the potential demand by Building 6 DFC personnel.

4.2.3.2 Housing, schools, and public utilities.

Housing—The proposed action will not cause any significant impact on housing stock in the immediate vicinity of AF Plant 85. At most, a total of 300 to 900 employees may seek new residences in the Columbus metropolitan area, and this demand will be spread over more than 1 year.

Traffic generated by the proposed action will have no significant adverse impacts on the vicinity housing/residential area because the access/egress routes are removed from the surrounding residential areas. Any additional traffic at AF Plant 85 would be negligible compared to the traffic generated 3 years ago when Rockwell International was in operation at this facility.

Within the greater Columbus area, approximately 356,800 households and 11,599 residential building unit permits were authorized as of 1986. Also, a 7 percent vacancy rate on housing was noted for Franklin County in 1980. The impact of the 300 to 900 relocated employees, less than 1/3 of 1 percent of the total households in the region, would be negligible.

Schools—The schools nearest to AF Plant 85 are over 1 mile away and are isolated from any possible direct impact of traffic. The Columbus region has a total enrollment of over 150,000 students in the 16 public school systems and private and parochial schools in Franklin County. The influx of possibly 600 to 1,800 students (assuming two children per relocated DFC employee) would have no significant impact on the regional schools' capacities.

Public utilities—No significant impacts are expected on the water, sewerage or other utilities from the proposed action. The total proposed employment of 3,000 persons at the DFC is much less than the employment 3 years ago at AF Plant 85. The utility systems managed by the City of Columbus, Water, and Sewerage and Drains Divisions, have sufficient capacity to support the planned development of the I-670 corridor area.

4.2.3.3 Public health and safety. Both the vicinity and the region surrounding AF Plant 85 are well served by municipal, volunteer, and private health and safety facilities. Four fire stations are within 2 miles of AF Plant 85, in addition to emergency on-site fire crews. The area is also covered by police from the City of Columbus, Whitehall, and Gahanna with support from the Franklin County Sheriff's Office. Mount Carmel Hospital East is within 2.5 miles of the facility and is a large full service medical facility. These health and safety facilities supported the AF Plant recently during the height of employment; thus, the proposed action is not expected to adversely impact these services.

The relocation of 300 to 900 DFC employees to the Columbus metropolitan area has no significant impact on the health and safety services in the region since these services are currently provided to the area population of over 900,000 persons (1986 population of Franklin County).

4.2.3.4 Recreational and cultural resources. The proposed action does not include any new construction or exterior structural work. Additionally, the area recreational resources are buffered from AF Plant 85 by existing land uses. Hence, there would be no change to visual impacts of the present AF Plant 85 on the area recreational facilities. Coordination with the Ohio Historic Preservation Office has determined that no historic sites or archaeological resources will be affected by the proposed action at AF Plant 85 (see Appendix B).

Table 5. Human health standards and guidelines for asbestos.

Standard	Media	Description	Agency	Reference
0.1 F/cc (fibers/cubic centimeter)	Air	8-hour Time Weighted Ave. Action Level for Occupational Exposure	OSHA[a]	29 CFR 1910.1000 1 July 1987
0.2 F/cc	Air	8-hour Time Weighted Ave. Permissible Exposure for Occupational Exposure	OSHA[a]	29 CFR 1910.1000 1 July 1989
	Air	8-hour Time Weighted Ave. Recommended Exposure Limit for Occupational Exposure	NIOSH[b]	NIOSH, 1976
0.5 F/cc for Amosite				
0.2 F/cc for Crocidolite	Air	8-hour Time Weighted Ave. Threshold Limit Value for Occupational Exposure	ACGIH[c]	ACGIH, 1988
2 F/C for Chrysolite and other forms				
7 million fibers/liter	Water	Proposed Maximum Contaminant Level	EPA[d]	EPA, 1988a

Notes:

[a] Occupational Safety and Health Administration
[b] National Institute for Occupational Safety and Health
[c] American Conference of Governmental Industrial Hygienists
[d] Environmental Protection Agency

Table 6. Human health standards and guidelines for PCBs.

Standard/ Guideline	Media	Description	Agency	Reference
1 mg/m^3 (PCB with 42% Chlorine)	Air	8-hour Time Weighted Average Permissible Exposure Limit[a]	OSHA[b]	29 CFR Part 1910.1000 19 Jan 1989
		8-hour Time Weighted Ave. Threshold Limit Value[a]	ACGIH[c]	ACGIH, 1988
0.5 mg/m^3 (PCBs with 54% Chlorine)	Air	8-hour Time Weighted Ave. Permissible Exposure Limit[a]	OSHA[b]	29 CFR Part 1910.1000 19 Jan 1989
		8-hour Time Weighted Ave. Threshold Limit Value[a]	ACGIH[c]	ACGIH, 1988
1 ug/m^3	Air	10-hour Recommended Exposure Limit[a]	NIOSH[d]	ATSDR, 1987
0.5 ug/l	Drinking Water	Proposed Maximum Contaminant Level	EPA[e]	EPA, 1988a
Zero	Drinking Water	Proposed Maximum Contaminant Level Goal	EPA[e]	EPA, 1988b
0.2 to 3 ppm	Food	Limits are for Foods such as Infant Foods, Eggs, Milk (in milk fat), and Poultry (fat)	FDA[f]	ATSDR, 1987
10 $ug/100cm^2$ fibers/liter	Solid Surfaces	Spill Clean-up Level for Indoor and High Contact Outdoor Surfaces for Spill >500 ppm PCBs[g]	EPA[e]	40 CFR Part 761 2 April 1987

Notes:

[a] For Occupational Exposure
[b] Occupational Safety and Health Administration
[c] American Conference of Governmental Industrial Hygienists
[d] Environmental Protection Agency
[e] Food and Drug Administration
[f] There are a number of other PCB Spill Clean-up Levels based on the areas and location of PCBs spilled

Table 7. Drinking water standards and guidelines for lead.

Standard	Description	Reference
50 ug/l	Maximum Contaminant Level	40 CFR Parts 141 and 142 August 18, 1988
5 ug/l	Proposed Maximum Contaminant Level	40 CFR Parts 141 and 142 August 18, 1988
Zero	Proposed Maximum Contaminant Level Goal	40 CFR Parts 141 and 142 August 18, 1988
20 ug/day[a]	Lifetime Health Advisory	EPA, 1986
Note: [a] Based on an average adult water intake rate of 2 liters/day, 20 µg/day is equivalent to 10 µg/l.		

Table 8. Standard EIFS forecast model.

Project name: DLA-DFC Total Activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Inputs into the EIFS model
Change in expenditures for local services and supplies: 2948000
Change in civilian employment: 2948
Average income of affected civilian personnel: 19419
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DFC Total Activity

Export income multiplier:		3.7577	
Change in local			
Sales volume.....	..... Direct:	$49,253,000	
	Induced:	$135,824,000	
	Total:	$185,078,000	0.686%
Employment.....	.....Direct:	395	
	Total:	4,431	0.729%
Income.....	.....Direct:	$5,708,000	
Total (place of work):		$78,697,000	
Total (place of residence):		$76,552,000	0.507%
Government expenditures:		$3,606,000	
Government revenues:		$4,992,000	
Net Government revenues:		$1,386,000	

Table 9. Economic effects of formation of the DLA-DFC.

Predicted Change on Local:					
Losing Activity Location	Persons Affected Number	Income Multiplier	Business Volume (%)	Employment (%)	Income (%)
Atlanta	213	3.2896	-0.017	-0.027	-0.021
Boston	361	2.3132	-0.051	-0.077	-0.061
Chicago	184	3.9797	-0.006	-0.008	-0.005
Cleveland	248	3.3316	-0.027	-0.040	-0.024
Dallas	210	3.6252	-0.014	-0.023	-0.017
Los Angeles	510	4.0780	-0.012	-0.017	-0.011
New York	304	2.6759	-0.004	-0.009	-0.005
Phila	315	4.1061	-0.016	-0.021	-0.011
St. Louis	187	3.4868	-0.021	-0.030	-0.017
DCSC	152	3.7577	-0.030	-0.036	-0.024
DESC	100	2.7262	-0.028	-0.039	-0.025
DGSC	121	2.4539	-0.051	-0.076	-0.038
DISC	83	3.8793	-0.005	-0.006	-0.004
DPSC	149	4.1191	-0.008	-0.010	-0.006
DASC	93	2.2756	-0.023	-0.032	-0.015
DRMS	34	2.1928	-0.035	-0.055	-0.032
DDMP	22	2.8515	-0.005	-0.006	-0.004
DDMT	39	3.0790	-0.006	-0.011	-0.008
DDOU	34	3.1871	-0.008	-0.010	-0.007
DDTC	32	2.4831	-0.009	-0.014	-0.009

5 Conclusion and Recommendations

5.1 Summary of Impacts

This subsection presents a summary of the environmental and socioeconomic impacts of the proposed action; the details of these impacts are presented in Chapter 4.

5.1.1 Facilities-Related Impacts

The occupation of parts of Buildings 4 and 6 of AF Plant 85 does not involve either new major construction or land disturbance except for a possible extension of the Building 4 parking lot. Hence, the proposed action will have no significant adverse effects on the biophysical environment in the vicinity of Buildings 4 and 6.

The inadequacy of employee parking as compared to the numbers of personnel eventually to be located at this site (900 to 1,200 spaces for up to 2,700 persons) is a significant gap in facilities capacity. In terms of raw space availability, a potential exists for more space adjacent to Building 4, though the greater needs will be at Building 6, which has no expansion capability. Severe DFC restrictions on parking of privately owned vehicles (POVs), combined with emphasis on car pooling and use of mass transit, will be required to alleviate this problem.

5.1.2 Socioeconomic Impacts

5.1.2.1 Economic impacts. The formation of the DFC will result in a small but positive effect on the economy of the Columbus metropolitan area. As presented in Section 4.2.1, EIFS suggests that the total effect of the center would increase the local economy by 0.5 to 0.7 percent per year. This value is approximately one-tenth of the RTVs for a positive influence. The potential question here is the creation of an unwanted (and uncontrollable) stimulus, and the projections indicate that no such problem should arise.

The 19 locations from which the positions will be transferred have also been examined for potential measurable harm to the local economy of each region where decreases will eventually occur. (The 20th location affected was the DCSC in Columbus, so this area will not be a net losing area.) Only a small number of

persons are involved in any one region and most of the regions are in very large population centers, so the maximum negative effect in any one area is measurable as a few hundredths or thousandths of a percent. This is far below the capability of measurement and is not regionally significant.

5.1.2.2 Social impacts. Some negative social effects are inevitable. Many persons whose positions are transferred to the DFC will be unable, for personal reasons, to accept a transfer. Even though extensive mitigation procedures will be implemented by DLA, a certain proportion of these employees will always believe they lost some opportunity that might have existed had they not been reorganized. Examination of the many actions taken by the proponent of the action to minimize these effects shows that there are virtually no additional measures that could be recommended. Any residual negative feelings among affected persons must be accepted as an unavoidable consequence of the action.

5.1.2.3 Community systems impacts. The proposed action will have no significant impact on the transportation systems and traffic flow in the vicinity of Buildings 4 and 6. These buildings and associated facilities within AF Plant 85 were occupied by Rockwell International during the mid 1980s. At their peak employment, 2 to 2-1/2 times as many personnel as the proposed DFC peak staff strength of 3,000 individuals used the area roads without difficulty. It is possible that additional parking space would be needed depending on the level of employment for future McDonnell-Douglas operations at AF Plant 85.

Over two-thirds (and possibly up to 85 percent) of the proposed DFC staff will be drawn from Columbus metropolitan area; the impacts on housing, school, and other utilities and services from the relocated 300 to 900 families will be negligible in comparison to the metropolitan area population and normal regional growth.

5.1.2.4 Impacts on personnel. As discussed under Subsection 4.1.2, asbestos-contaminated materials may be disturbed during the planned renovations and remodeling activities within Buildings 4 and 6. However, through the application of work practices and engineering controls provided by the Occupational Safety and Health Administration (OSHA), this potential hazard can be eliminated.

Another potential hazard present in Buildings 4 and 6 is PCBs used as insulating materials in electrical capacitors, transformers, ballasts and switches. The available information is insufficient to determine the extent of such hazards in these buildings.

The potential for water backflow as well as the possible leaching from lead pipe fittings and solder need to be investigated for assessing their effects on personnel health.

The walkway over the fabrication area leading to the mezzanine area of Building 6 could pose a health hazard from air and noise pollution associated with proposed McDonnell-Douglas operations. Insufficient information on McDonnell-Douglas operations limits any further assessment of this potential impact.

5.2 Recommendations

The proposed formation of a consolidated DLA Finance Center has been examined for the potential to result in significant adverse consequences to the environment according to the regulations at 40 CFR 1500-1508, as implemented in DLAR 1000.22. No actual effects were found that would require the preparation of an Environmental Impact Statement. Effects on the economies of the losing and gaining locations were examined and found to be extremely small, far below the threshold of significance or concern. Effects in three areas, however, were found to be important enough that decision-makers must be assured that mitigation procedures should be in place before preparation of a Finding of No Significant Impact (FONSI).

These procedures are:

1. Continue full implementation of mitigation procedures designed to allow all affected employees to transfer to the DFC or to remain in an equivalent local position.
2. Prepare a careful employee POV parking and commuting policy that will alleviate a potentially insurmountable shortage of individual parking spaces.
3 Assure that long-term employee health does not become a significant issue by preparing asbestos- and PCB-management plans in conjunction with the Air Force, McDonnell-Douglas, DCSC, DLA-HQ, and the Corps of Engineers.

Other recommended workplace health maintenance measures should also be implemented.

So far as may be determined, the employee placement and retraining activities recommended above (Item 1) are fully in place, and should be continued as long as required. The plans recommended in Items 2 and 3 are in various stages of development and implementation. They should be completed as soon as possible, and must be seen to be operational.

Upon completion and implementation of the plans recommended in Items 2 and 3, preparation of a FONSI citing "Lack of significant impact with mitigation measures in place" is appropriate. Since the only location where any effects have even the potential to become significant is in Columbus, OH, local publication of the FONSI in that area is recommended.

Appendix A: Bibliography

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Mid-Ohio Regional Planning Commission: Franklin County Housing and Community Development 1988-1990 Three Year Plan.

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Webster, R.D., and Shannon, E. "The Rational Threshold Value (RTV) Technique for the Evaluation of Regional Economic Impacts," TR-N-49/ADA055561, USACERL, June 1978.

Appendix B: Coordination

Ohio Historic Preservation Office

1985 Velma Avenue
Columbus, Ohio 43211
614/297-2470

OHIO
HISTORICAL
SOCIETY
SINCE 1885

May 8, 1989

Korah T. Mani
Roy F. Weston, Inc.
Weston Way
West Chester, PA 19380

Dear Mr. Mani:

Re: Buildings 4 and 6, Air Force Plant 85, Columbus, Ohio

This letter is in response to your correspondence dated April 6, 1989 (received April 10, 1989) concerning the project noted above. My staff has reviewed the information you provided. It is my opinion that the project will have no effect on properties listed or eligible for the National Register of Historic Places. Therefore, no further coordination is required unless the scope of the project increases.

If you have any questions about this matter, please contact Julie Kime, Catherine Stroup, or Susan Scherff at (614) 297-2470. Thank you for your cooperation.

Sincerely,

W. Ray Luce

W. Ray Luce
State Historic Preservation Officer

WRL/JAK:jk

VISIT
OHIO'S
PAST

Ohio Historic Preservation Month
May 1-31

TELEPHONE OR VERBAL CONVERSATION RECORD

For use of this form, see AR 340-15; the proponent agency is The Adjutant General's Office.

DATE: 8 August 89

SUBJECT OF CONVERSATION: Endangered Species and other wildlife resources ar AF Engine Plant 85

INCOMING CALL

PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	**OFFICE**	**PHONE NUMBER AND EXTENSION**

OUTGOING CALL

PERSON CALLING	OFFICE	PHONE NUMBER AND EXTENSION
Dr. H. Balba ch	CECER-EN	217-373-7251
PERSON CALLED	**ADDRESS**	**PHONE NUMBER AND EXTENSION**
Kent Kroonemeyer	Superintendant, USFWS Field Offices, Reynoldsburg	614-469-6923

SUMMARY OF CONVERSATION

Dr. Balbach related the nature of the proposed DLA actions at Engine Plant 85, and inquired whether the Fish & Wildlife Service could provide an opinion as to whether or not the action might have any effects on either wildlife or endangered species at that location.

Mr. Kroonemeyer replied tha t he knew the plant well, because the FWS field office had, for several years in the past, been a tenant on the facility. He believed they knew the site comprehensively without need for a specific visit, and that there were no measurable wildlife values present there. No endangered species or other high-interest species were known to utilize the site, aside from occasional visitors having no fixed location. His evaluation was stated that the proposed action should have no effect on even these minor values.

In response to a question as to whether Mr. Kroonemeyer believed it desirable to prepare a formal letter of coordination, he stated that a memorandum of the telephone conversation would be adequate for the purpose in view of the low values at the site and the extremely minor effects possible from this particular action.

Harold Balbach

Harold Balbach
Environmental Biologist

DA FORM 1 APR 66 751 REPLACES EDITION OF 1 FEB 58 WHICH WILL BE USED.

☆ U.S. GPO: 1974—580-839 8125

Appendix C: General Approach to Health Risk Assessment

The health risk assessment process involves four basic steps. The first step, the selection of indicator chemicals, involves screening the chemicals reported in the sampled media, in order to reduce these chemicals to a manageable number of substances representing the contaminants of greatest concern. The result is a final list of indicator chemicals representing the most toxic, highly concentrated, persistent and/or mobile chemicals. If a manageable number of chemicals (approximately 15 or less) are detected at a site, then all chemicals will be included in the assessment and a chemical selection process will not be necessary.

The second step is the Exposure Assessment. This part of the risk assessment identifies and characterizes potentially exposed populations, and the exposure pathways through which chemicals may migrate and contact human or environmental receptors. The concentrations of indicator chemicals at receptor points are estimated using site-specific analytical data or are predicted by mathematical modeling. The uptake and absorption of chemicals by human and other receptors are calculated to determine exposure doses. Exposure doses are calculated for all potential exposure routes.

The third step is a Toxicity Assessment in which the toxicity of the indicator chemicals is determined, and described. If the toxicities of the contaminants of concern have already been well characterized (e.g., in an EPA Health Effects Assessment), then this section may be used to present or derive carcinogenic and non-carcinogenic health effects criteria.

The final step in a risk assessment is the Risk Characterization, which integrates the exposure and toxicity assessments. The exposure doses determined in the exposure assessment are compared with non-carcinogenic reference doses (i.e., acceptable daily intakes) to determine if there is a potential for noncarcinogenic health effects. This comparison is made by dividing the exposure dose by the reference dose, resulting in a hazard index. Cumulative effects are estimated by summing the hazard indices through all exposure routes and all chemicals. In addition, potential carcinogenic health effects are estimated based on carcinogenic potency factors presented in the Toxicity Assessment, estimated exposure doses,

and exposure duration. Carcinogenic risk is summed through all pathways and all chemicals to determine total carcinogenic risk at the site under consideration.

Appendix D: Economic Impact Forecast System Results

The financial operations of DLA are decentralized and independently operated. The proposed DFC will consolidate financial operations from 20 locations in order to make their operation more efficient. The Economic Impact Forecast System (EIFS) was used to determine the economic effects of DFC on the 20 locations losing activity. The EIFS Forecast Model outputs in this appendix indicate only very small local effects at these various locations.

Economic Effects of DFC-Atlanta

Economic Impact Forecast System - Version 4.0

You have selected 5 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	13057	cherokee	GA	51,699	424
2	13067	cobb	GA	297,718	343
3	13089	de kalb	GA	483,024	270
4	13121	fulton	GA	589,904	534
5	13223	paulding	GA	26,110	312
		Total		1,448,455	1,883

STANDARD EIFS FORECAST MODEL

Project name: Atlanta activity

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 213000
Change in civilian employment: -212
Average income of affected civilian personnel: 19855
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: -1
Average income of affected military personnel: 49500
Percent of military living on-post: 0

STANDARD EIFS MODEL FORECAST FOR Atlanta activity

Export income multiplier:			3.2896	
Change in local				
	Sales volume.....	.....Direct:	-$3,175,000	
		Induced:	-$7,270,000	
		Total:	-$10,445,000	(-0.017%)
	Employment.....	.....Direct:	-18	
		Total:	-271	(-0.027%)
	Income.....	.....Direct:	-$288,000	
		Total (place of work):	-$5,205,000	
		Total (place of residence):	-$4,660,000	(-0.021%)

Economic Effects of DFC-Boston

Economic Impact Forecast System - Version 4.0

You have selected 1 county:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	25025	suffolk	MA	650,142	57
		Total		650,142	57

STANDARD EIFS FORECAST MODEL

Project name: Boston activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 722000
Change in civilian employment: -360
Average income of affected civilian personnel: 19337
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: -1
Average income of affected military personnel: 49500
Percent of military living on-post: 0

STANDARD EIFS MODEL FORECAST FOR Boston activity

Export income multiplier:			2.3132	
Change in local				
	Sales volume.....	.....Direct:	-$4,831,000	
		Induced:	-$6,344,000	
		Total:	-$11,175,000	(-0.051%)
	Employment.....	.....Direct:	-41	
		Total:	455	(-0.077%)
	Income.....	.....Direct:	-$776,000	
		Total (place of work):	-$8,805,000	
		Total (place of residence):	-$5,646,000	(-0.061%)

Economic Effects of DFC-Chicago

Economic Impact Forecast System - Version 4.0

You have selected 2 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	17031	cook	IL	5,253,655	958
2	17043	du page	IL	658,835	337
		Total		5,912,490	1,294

STANDARD EIFS FORECAST MODEL

Project name: Chicago activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 184000
Change in civilian employment: -183
Average income of affected civilian personnel: 20740
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: -1
Average income of affected military personnel: 57708
Percent of military living on-post: 0

STANDARD EIFS MODEL FORECAST FOR Chicago activity

Export income multiplier:			3.9797	
Change in local				
	Sales volume.....	.....Direct:	-$2,878,000	
		Induced:	-$8,577,000	
		Total:	-$11,455,000	(-0.006%)
	Employment.....	.....Direct:	-17	
		Total:	-252	(-0.008%)
	Income.....	.....Direct:	-$293,000	
		Total (place of work):	-$5,018,000	
		Total (place of residence):	-$4,771,000	(-0.005%)

Economic Effects of DFC-Cleveland

Economic Impact Forecast System - Version 4.0

You have selected 1 county:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	39035	cuyahoga	OH	1,498,400	459
		Total		1,498,400	459

STANDARD EIFS FORECAST MODEL

Project name: Cleveland activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 248000
Change in civilian employment: -247
Average income of affected civilian personnel: 19368
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: -1
Average income of affected military personnel: 57708
Percent of military living on-post: 0

STANDARD EIFS MODEL FORECAST FOR Cleveland activity

Export income multiplier:			3.3316	
Change in local				
	Sales volume.....	.....Direct:	-$3,603,000	
		Induced:	-$8,401,000	
		Total:	-$12,004,000	(-0.027%)
	Employment.....	.....Direct:	-25	
		Total:	-331	(-0.040%)
	Income.....	.....Direct:	-$392,000	
		Total (place of work):	-$6,149,000	
		Total (place of residence):	-$5,427,000	(-0.024%)

Economic Effects of DFC-Dallas

Economic Impact Forecast System - Version 4.0

You have selected 1 county:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	48113	dallas	TX	1,556,390	880
		Total		1,556,390	880

STANDARD EIFS FORECAST MODEL

Project name: Dallas activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 315000
Change in civilian employment: -210
Average income of affected civilian personnel: 20463
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR Dallas activity

Export income multiplier:			3.6252	
Change in local				
	Sales volume.....	.....Direct:	-$3,110,000	
		Induced:	-$8,165,000	
		Total:	-$11,275,000	(-0.014%)
	Employment.....	.....Direct:	-16	
		Total:	-267	(-0.023%)
	Income.....	.....Direct:	-$273,000	
		Total (place of work):	-$5,287,000	
		Total (place of residence):	-$4,613,000	(-0.017%)

Economic Effects of DFC-Los Angeles

Economic Impact Forecast System - Version 4.0

You have selected 1 county:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	06037	los angeles	CA	7,477,503	4,070
		Total		7,477,503	4,070

STANDARD EIFS FORECAST MODEL

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

(Enter decreases as negative numbers)
Change in expenditures for local services and supplies: 765000
Change in civilian employment: -508
Average income of affected civilian personnel: 19735
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: -2
Average income of affected military personnel: 50490
Percent of military living on-post: 0

STANDARD EIFS MODEL FORECAST FOR Los Angeles activity

Export income multiplier:			4.0780	
Change in local				
	Sales volume.....	.....Direct:	-$7,273,000	
		Induced:	-$22,385,000	
		Total:	-$29,658,000	(-0.012%)
	Employment.....	.....Direct:	-49	
		Total:	-710	(-0.017%)
	Income.....	.....Direct:	-$877,000	
		Total (place of work):	-$13,701,000	
		Total (place of residence):	-$12,930,000	(-0.011%)

Economic Effects of DFC-New York

Economic Impact Forecast System - Version 4.0

You have selected 5 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	36005	bronx	NY	1,168,972	42
2	36047	kings	NY	2,230,936	70
3	36061	new york	NY	1,428,285	22
4	36081	queens	NY	1,891,325	108
5	36085	richmond	NY	352,121	59
		Total		7,071,639	301

STANDARD EIFS FORECAST MODEL

Project name: New York activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 456000
Change in civilian employment: -303
Average income of affected civilian personnel: 19682
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: -1
Average income of affected military personnel: 49500
Percent of military living on-post: 0

STANDARD EIFS MODEL FORECAST FOR New York activity

Export income multiplier:			2.6759	
Change in local				
	Sales volume.....	.....Direct:	-$4,320,000	
		Induced:	-$7,240,000	
		Total:	-$11,560,000	(-0.004%)
	Employment.....	.....Direct:	-17	
		Total:	-349	(-0.009%)
	Income.....	.....Direct:	-$333,000	
		Total (place of work):	-$6,905,000	
		Total (place of residence):	-$5,579,000	(-0.005%)

Economic Effects of DFC-Philadelphia

Economic Impact Forecast System - Version 4.0

You have selected 7 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	34005	burlington	NJ	362,542	808
2	34007	camden	NJ	471,650	223
3	34015	gloucester	NJ	199,917	327
4	42017	bucks	PA	479,211	610
5	42045	delaware	PA	555,007	184
6	42091	montgomery	PA	643,621	486
7	42101	philadelphia	PA	1,688,210	136
		Total		4,400,158	2,774

STANDARD EIFS FORECAST MODEL

Project name: Philadelphia activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 472500
Change in civilian employment: -314
Average income of affected civilian personnel: 17193
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: -1
Average income of affected military personnel: 57708
Percent of military living on-post: 0

STANDARD EIFS MODEL FORECAST FOR Philadelphia activity

Export income multiplier:			4.1061	
Change in local				
	Sales volume.....	.....Direct:	-$3,852,000	
		Induced:	-$11,963,000	
		Total:	-$15,815,000	(-0.016%)
	Employment.....	.....Direct:	-29	
		Total:	-433	(-0.021%)
	Income.....	.....Direct:	-$442,000	
		Total (place of work):	-$7,269,000	
		Total (place of residence):	-$7,269,000	(-0.011%)

Economic Effects of DFC-St. Louis

Economic Impact Forecast System - Version 4.0

You have selected 8 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	17027	clinton	IL	32,617	472
2	17119	madison	IL	247,691	728
3	17133	monroe	IL	20,117	388
4	17163	st clair	IL	267,531	672
5	29071	franklin	MO	71,233	922
6	29099	jefferson	MO	146,183	661
7	29183	st charles	MO	144,107	558
8	29189	st louis	MO	973,896	505
		Total		1,903,375	4,906

STANDARD EIFS FORECAST MODEL

Project name: St. Louis activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 187000
Change in civilian employment: -187
Average income of affected civilian personnel: 20466
Percent expected to relocate (enter <cr> to accept default): (0.0) 0
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR St. Louis activity

Export income multiplier:			3.4868	
Change in local				
	Sales volume.....	.....Direct:	-$2,872,000	
		Induced:	-$7,143,000	
		Total:	-$10,015,000	(-0.021%)
	Employment.....	.....Direct:	-19	
		Total:	-254	(-0.030%)
	Income.....	.....Direct:	-$281,000	
		Total (place of work):	-$4,806,000	
		Total (place of residence):	-$4,806,000	(-0.017%)

Economic Effects of DFC-DCSC (Columbus)

Economic Impact Forecast System - Version 4.0

You have selected 4 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	39041	delaware	OH	53,840	443
2	39045	fairfield	OH	93,678	506
3	39049	franklin	OH	869,132	542
4	39089	licking	OH	120,981	686
		Total		1,137,631	2,178

STANDARD EIFS FORECAST MODEL

Project name: DCSC activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 152000
Change in civilian employment: -152
Average income of affected civilian personnel: 18835
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DCSC activity

Export income multiplier:			3.7577	
Change in local				
	Sales volume.....	.....Direct:	-$2,135,000	
		Induced:	-$5,889,000	
		Total:	-$8,024,000	(-0.030%)
	Employment.....	.....Direct:	-17	
		Total:	-216	(-0.036%)
	Income.....	.....Direct:	-$247,000	
		Total (place of work):	-$3,793,000	
		Total (place of residence):	-$3,690,000	(-0.024%)

Economic Effects of DFC-DESC (Dayton)

Economic Impact Forecast System - Version 4.0

You have selected 2 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	39057	greene	OH	129,769	415
2	39113	montgomery	OH	571,697	458
		Total		701,466	873

STANDARD EIFS FORECAST MODEL

Project name: DESC activity

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 100000
Change in civilian employment: -100
Average income of affected civilian personnel: 19687
Percent expected to relocate (enter <cr> to accept default): (0.0) 0
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DESC activity

Export income multiplier:			2.7262	
Change in local				
	Sales volume.....	.....Direct:	-$1,473,000	
		Induced:	-$2,543,000	
		Total:	-$4,017,000	(-0.028%)
	Employment.....	.....Direct:	-13	
		Total:	-136	(-0.039%)
	Income.....	.....Direct:	-$184,000	
		Total (place of work):	-$2,469,000	
		Total (place of residence):	-$2,292,000	(-0.025%)

Economic Effects of DFC-DGSC (Richmond)

Economic Impact Forecast System - Version 4.0

You have selected 9 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	51036	charles city	VA	6,692	181
2	51041	chesterfield	VA	141,372	434
3	51075	goochland	VA	11,761	281
4	51085	hanover	VA	50,398	467
5	51087	henrico	VA	180,735	238
6	51109	louisa	VA	17,825	497
7	51127	new kent	VA	8,781	213
8	51145	powhatan	VA	13,062	261
9	51149	prince george	VA	25,733	266
		Total		456,359	2,839

STANDARD EIFS FORECAST MODEL

Project name: DGSC activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 121000
Change in civilian employment: -121
Average income of affected civilian personnel: 18858
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DGSC activity

Export income multiplier:			2.4539	
Change in local				
	Sales volume.....	.....Direct:	-$1,702,000	
		Induced:	-$2,475,000	
		Total:	-$4,177,000	(-0.051%)
	Employment.....	.....Direct:	-13	
		Total:	-154	(-0.076%)
	Income.....	.....Direct:	-$177,000	
		Total (place of work):	-$2,717,000	
		Total (place of residence):	-$2,717,000	(-0.038%)

Economic Effects of DFC-DISC (Philadelphia)

Economic Impact Forecast System - Version 4.0

You have selected 5 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	34005	burlington	NJ	362,542	808
2	34007	camden	NJ	471,650	223
3	42017	bucks	PA	479,211	610
4	42091	montgomery	PA	643,621	486
5	42101	philadelphia	PA	1,688,210	136
		Total		3,645,234	2,263

STANDARD EIFS FORECAST MODEL

Project name: DISC activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 83000
Change in civilian employment: -83
Average income of affected civilian personnel: 18330
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DISC activity

Export income multiplier:			3.8793	
Change in local				
	Sales volume.....	.....Direct:	-$1,132,000	
		Induced:	-$3,260,000	
		Total:	-$4,393,000	(-0.005%)
	Employment.....	.....Direct:	-9	
		Total:	-116	(-0.006%)
	Income.....	.....Direct:	-$134,000	
		Total (place of work):	-$2,040,000	
		Total (place of residence):	-$1,953,000	(-0.004%)

Economic Effects of DLA-DPSC (Philadelphia)

Economic Impact Forecast System - Version 4.0

You have selected 7 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	34007	camden	NJ	471,650	223
2	34015	gloucester	NJ	199,917	327
3	42017	bucks	PA	479,211	610
4	42029	chester	PA	316,660	758
5	42045	delaware	PA	555,007	184
6	42091	montgomery	PA	643,621	486
7	42101	philadelphia	PA	1,688,210	136
		Total		4,354,276	2,724

STANDARD EIFS FORECAST MODEL

Project name: DPSC activity

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 223500
Change in civilian employment: -149
Average income of affected civilian personnel: 19315
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DPSC activity

Export income multiplier:			4.1191	
Change in local				
	Sales volume.....	.....Direct:	-$2,069,000	
		Induced:	-$6,454,000	
		Total:	-$8,524,000	(-0.008%)
	Employment.....	.....Direct:	-15	
		Total:	-210	(-0.010%)
	Income.....	.....Direct:	-$228,000	
	Total (place of work):		-$3,819,000	
	Total (place of residence):		-$3,811,000	(-0.006%)

Economic Effects of DFC-DASC (Alexandria)

Economic Impact Forecast System - Version 4.0

You have selected 2 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	51059	fairfax	VA	596,901	393
2	51153	prince william	VA	144,703	339
		Total		741,604	733

STANDARD EIFS FORECAST MODEL

Project name: DASC activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 93000
Change in civilian employment: -93
Average income of affected civilian personnel: 19426
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DASC activity

Export income multiplier:			2.2756	
Change in local				
	Sales volume.....	.....Direct:	-$1,351,000	
		Induced:	-$1,723,000	
		Total:	-$3,074,000	(-0.023%)
	Employment.....	.....Direct:	-12	
		Total:	-121	(-0.032%)
	Income.....	.....Direct:	-$213,000	
	Total (place of work):		-$2,291,000	
	Total (place of residence):		-$2,291,000	(-0.015%)

Economic Effects of DFC-DRMS (Battle Creek)

Economic Impact Forecast System - Version 4.0

You have selected 3 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	26015	barry	MI	45,781	560
2	26023	branch	MI	40,188	508
3	26025	calhoun	MI	141,557	711
		Total		227,526	1,780

STANDARD EIFS FORECAST MODEL

Project name: DRMS activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 34000
Change in civilian employment: -34
Average income of affected civilian personnel: 21196
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DRMS activity

Export income multiplier:			2.1928	
Change in local				
	Sales volume.....	.....Direct:	-$542,000	
		Induced:	-$647,000	
		Total:	-$1,189,000	(-0.035%)
	Employment.....	.....Direct:	-6	
		Total:	-46	(-0.055%)
	Income.....	.....Direct:	-$62,000	
		Total (place of work):	-$856,000	
		Total (place of residence):	-$856,000	(-0.032%)

Economic Effects of DFC-DDMP (Mechanicsburg)

Economic Impact Forecast System - Version 4.0

You have selected 5 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	42001	adams	PA	68,292	521
2	42041	cumberland	PA	178,541	547
3	42043	dauphin	PA	232,317	528
4	42055	franklin	PA	113,629	774
5	42133	york	PA	312,963	906
		Total		905,742	3,275

STANDARD EIFS FORECAST MODEL

Project name: DDMP activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 22000
Change in civilian employment: -22
Average income of affected civilian personnel: 18492
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DDMP activity

Export income multiplier:			2.8515	
Change in local				
	Sales volume.....	.....Direct:	-$303,000	
		Induced:	-$561,000	
		Total:	-$864,000	(-0.005%)
	Employment.....	.....Direct:	-3	
		Total:	-30	(-0.006%)
	Income.....	.....Direct:	-$34,000	
		Total (place of work):	-$504,000	
		Total (place of residence):	-$491,000	(-0.004%)

Economic Effects of DFC-DDMT (Memphis)

Economic Impact Forecast System - Version 4.0

You have selected 1 county:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	47157	shelby	TN	777,113	772
		Total		777,113	772

STANDARD EIFS FORECAST MODEL

Project name: DDMT activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 39000
Change in civilian employment: -39
Average income of affected civilian personnel: 18388
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DDMT activity

Export income multiplier:			3.0790	
Change in local				
	Sales volume.....	.....Direct:	-$534,000	
		Induced:	-$1,110,000	
		Total:	-$1,644,000	(-0.006%)
	Employment.....	.....Direct:	-3	
		Total:	-47	(-0.011%)
	Income.....	.....Direct:	-$40,000	
		Total (place of work):	-$840,000	
		Total (place of residence):	-$793,000	(-0.008%)

Economic Effects of DFC-DDOU (Ogden)

Economic Impact Forecast System - Version 4.0

You have selected 3 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	49011	davis	UT	146,540	299
2	49035	salt lake	UT	619,066	756
3	49057	weber	UT	144,616	566
		Total		910,222	1,621

STANDARD EIFS FORECAST MODEL

Project name: DDOU activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 68000
Change in civilian employment: -34
Average income of affected civilian personnel: 19703
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment:

STANDARD EIFS MODEL FORECAST FOR DDOU activity

Export income multiplier:			3.1871	
Change in local				
	Sales volume.....	.....Direct:	-$464,000	
		Induced:	-$1,015,000	
		Total:	-$1,479,000	(-0.008%)
	Employment.....	.....Direct:	-4	
		Total:	-46	(-0.010%)
	Income.....	.....Direct:	-$54,000	
		Total (place of work):	-$843,000	
		Total (place of residence):	-$832,000	(-0.007%)

Economic Effects of DFC-DDTC (Tracy)

Economic Impact Forecast System - Version 4.0

You have selected 2 counties:

#	FIPS	County	State	'80 Population	Area(sq mi)
1	06077	san joaquin	CA	347,342	1,415
2	06099	stanislaus	CA	265,900	1,506
		Total		613,242	2,921

STANDARD EIFS FORECAST MODEL

Project name: DDTC activity

Default price deflators:

baseline year	(CPI - 1982) = 100.0
local services and supplies	(PPI - 1988) = 106.9
output and incomes	(CPI - 1988) = 117.0

Change in expenditures for local services and supplies: 64000
Change in civilian employment: -32
Average income of affected civilian personnel: 18731
Percent expected to relocate (enter <cr> to accept default): (0.0)
Change in military employment: 0

STANDARD EIFS MODEL FORECAST FOR DDTC activity

Export income multiplier:			2.4831	
Change in local				
	Sales volume.....	.....Direct:	-$412,000	
		Induced:	-$611,000	
		Total:	-$1,023,000	(-0.009%)
	Employment.....	.....Direct:	-3	
		Total:	-41	(-0.014%)
	Income.....	.....Direct:	-$49,000	
		Total (place of work):	-$720,000	
		Total (place of residence):	-$720,000	(-0.009%)

List of Acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
ADP	automatic data processing
ADT	average daily traffic
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
BEA	Bureau of Economic Analysis
CO	carbon monoxide
COTA	Central Columbus Transportation Authority
DCASR	Defense Contract Administration Services Region
DCSC	Defense Construction Supply Center
DFC	DLA Finance Center
DLA	Defense Logistics Agency
DOD	Department of Defense
EIFS	Economic Impact Forecast System
EPA	Environmental Protection Agency
f/cc	fibers per cubic centimeter
FAA	Federal Aviation Administration
FDA	Food and Drug Administration
FONSI	Finding of No Significant Impact
GOCO	Government-Owned Contractor-Operated
gpm	gallons per minute
HQ	headquarters
HVAC	Heating, Ventilating, and Air Conditioning
ILS	Instrument Landing System
IRP	Installation Restoration Program
MCLG	maximum containment level goal
mgd	million gallons per day
MORPC	Mid-Ohio Regional Planning Commission

MSA	Metropolitan Statistical Area
msl	mean sea level
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NIOSH	National Institute for Occupational Safety and Health
NIRAP	Naval Industrial Reserve Aircraft Plant
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PCM	Phase Contrast Microscope
PLANCOR	Plant Corporation
POV	privately owned vehicle
ppm	parts per million
PSI	Pollution Standard Index
RTV	Rational Threshold Value
TSCA	Toxic Substances Control Act
TSP	total suspended particulates
USAF	U.S. Air Force
WWTP	Wastewater Treatment Plant

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