MEMPHIS DEPOT REDEVELOPMENT PLAN

Prepared For:

The Depot Redevelopment Corporation
of Memphis and Shelby County

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ACKNOWLEDGEMENTS

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*Predecessor to the Depot Redevelopment Corporation of Memphis and Shelby County

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I. EXECUTIVE SUMMARY

After 54 years of distinguished service, the Federal Government decided, in 1995, to close the Memphis Depot effective September 30, 1997. In response to this decision, the City of Memphis and the County of Shelby began the process of converting the Defense Depot to non-military use in an effort to recapture the positive contributions to be lost as the Depot ceased operations. The City and County created the Memphis Depot Redevelopment Corporation to spearhead these efforts to recreate jobs and beneficial activities at the site. As one of its major steps, the Memphis Depot Redevelopment Corporation commissioned the preparation of a plan to guide the redevelopment and reuse activities associated with converting the facilities and other assets of the Memphis Depot to non-military purposes. The outgrowth of that planning process is presented herein and summarized in the following pages.

A. REDEVELOPMENT PLAN

The redevelopment plan for the Memphis Depot derived from:

- An extensive community, business, education, public service, and government participation process.
- Redevelopment work shops with committees that included neighborhood residents and other stakeholders.
- Detailed reviews of local, regional and national markets.
- Extensive collaboration with the redevelopment corporation staff and board of directors.

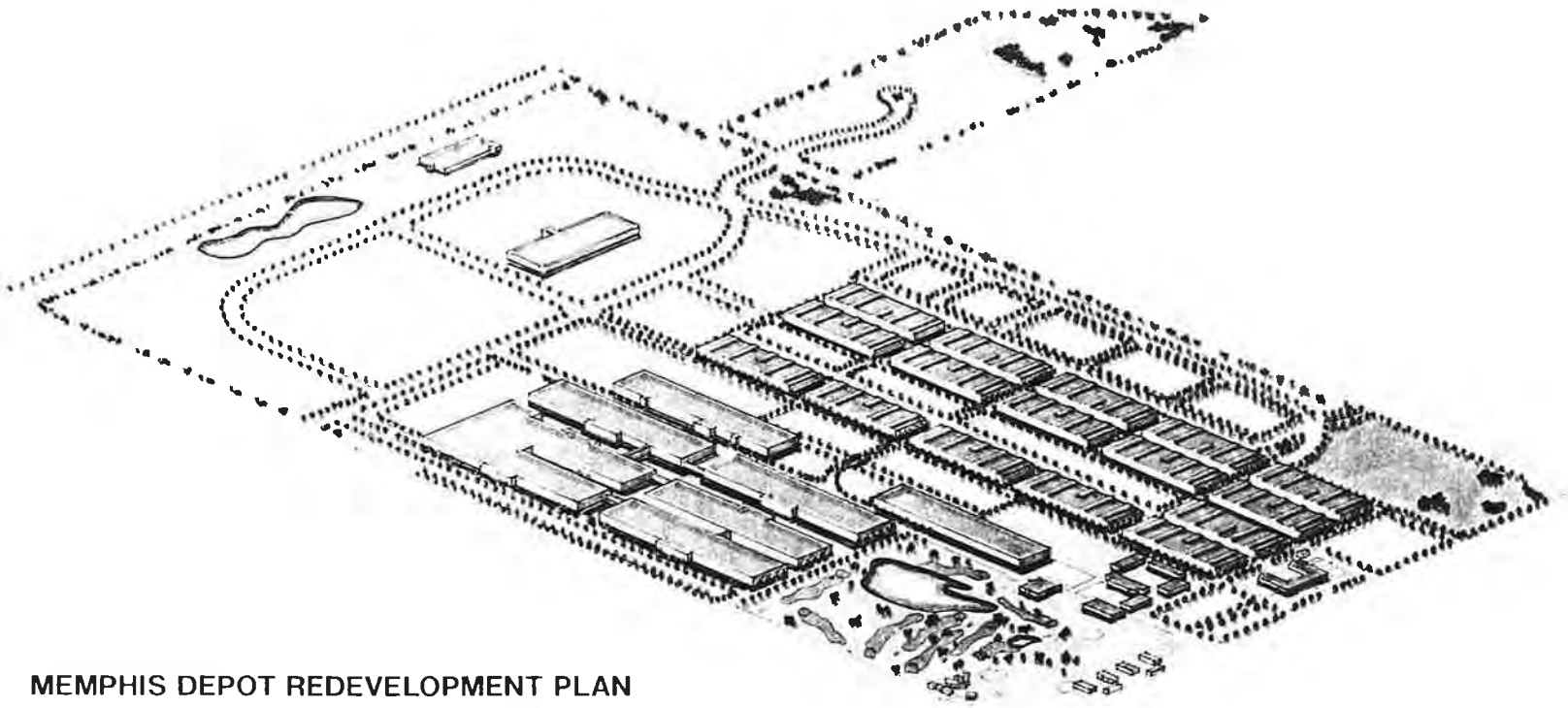
The underlying concepts for the redevelopment plan flowed through three alternative redevelopment plans that emphasized differing reuse concepts. In consideration of the Depot's market position, the

three alternative reuse plans focused on distribution, manufacturing and community development. The outgrowth of these alternatives will provide the blueprint for achieving maximum local benefits from the Depot's conversion to non-military pursuits:

- Good jobs
- Competitive incomes
- Badly needed community facilities
- A catalyst for new investment throughout the area affected most by its closure.

The "blueprint" is described in the graphic which follows immediately. That graphic depicts the preferred redevelopment plan for the Memphis Depot. This plan reduces the density of activities at the site; provides facilities for education and technical training, community services, parks, and public recreation and golf course activities; housing to assist the area's homeless population; areas set aside for the establishment of a police compound; and, extensive facilities for industrial, distribution and commercial enterprises to restore the jobs and incomes lost as a result of the Depots closure.

We estimate that the preferred alternative redevelopment plan depicted here will produce five-year employment of approximately 3,600 persons with annual wages of $73.8 million. We estimate, further that the firms establishing facilities at the Depot will invest in excess of $100 million in capital investments in addition to the amounts that the Memphis Depot Redevelopment Corporation will expend for improvements in the site and infrastructure. Taken together these activities will return a positive, cumulative cash flow, over 15 years, of approximately $3 million after all expenses are paid.



MEMPHIS DEPOT REDEVELOPMENT PLAN

MEMPHIS, TENNESSEE

The recommended redevelopment plan for the Memphis Depot will include:

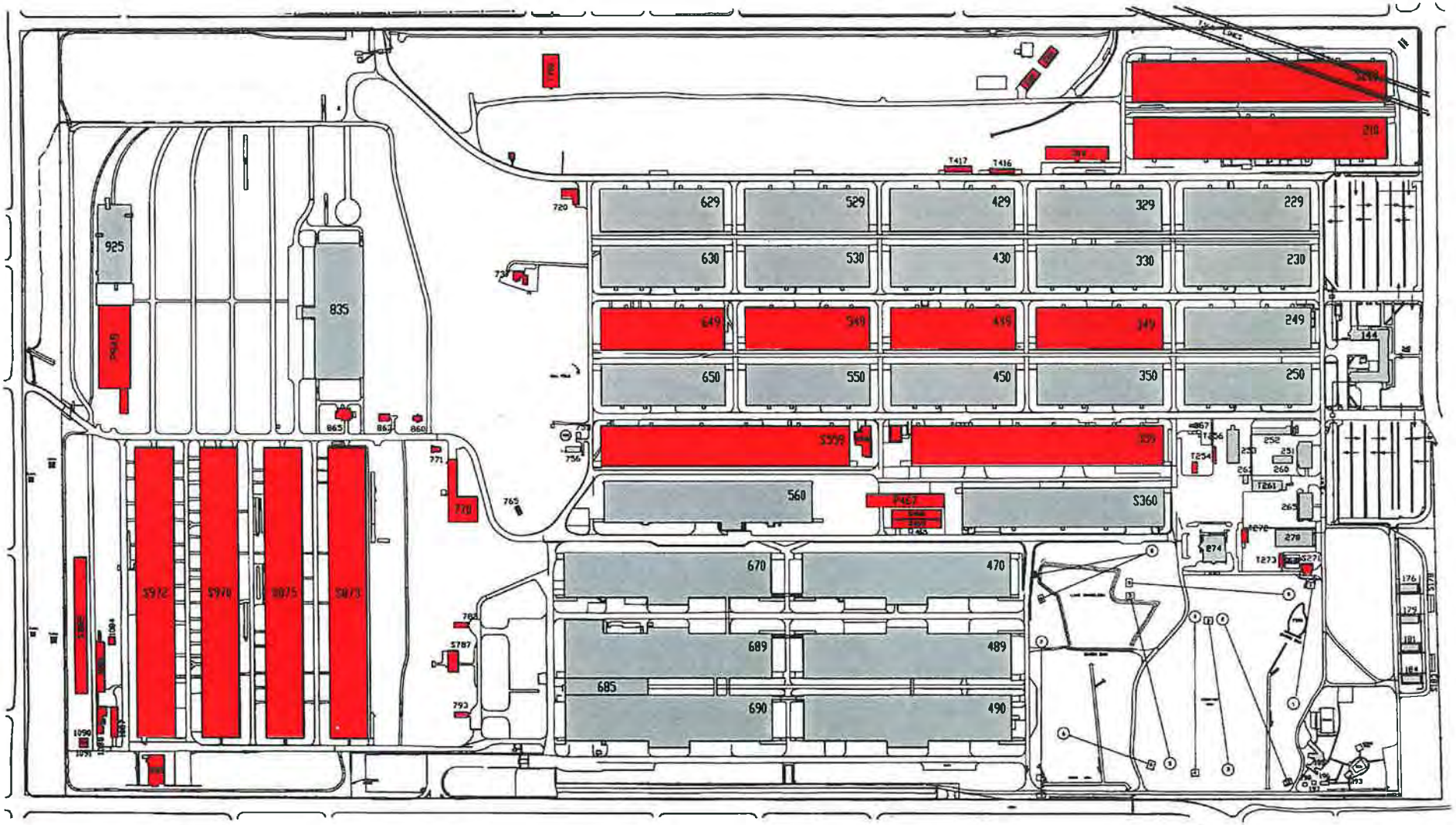
- A public recreation area composed of the golf course and its buildings
- Eight housing units dedicated to support homeless services in the Memphis area
- A prominently located police compound of some 60,000 square feet of buildings
- A community services area located near the main entrance off Airways Boulevard
- Education and training facilities totaling approximately 175,000 square feet to provide for the area's education and training needs
- 3.6 million square feet of existing light-industrial, assembly, commercial and distribution space with additional land for new development at the west end.

B. LIGHT INDUSTRIAL AND DISTRIBUTION USES

A primary focus of the Memphis Depot redevelopment effort will be attracting light industrial and distribution business to the site. Large industrial and distribution structures will be prepared for reuse by similar types of businesses and activities. The redevelopment plan anticipates that the Depot will devote approximately 60% of its buildings and area to distribution and service types of operations and 40% to light manufacturing, assembly and technical developmental types of operations.

C. DEMOLITION

To accommodate the light industrial, distribution, commercial, community service, public safety, recreational, homeless assistance and other types of activities at the site, significant demolition is necessary in order to reduce the sites density; improve the flow of traffic; provide for necessary parking areas and generally upgrade the sites esthetics. Further, many of the structures currently located at the Depot are determined to have minimal market appeal or exhibit sub-standard conditions for reuse. As a result, we have recommended some 2.6 million square feet of demolition as depicted on the map which follows immediately .



Legend

Buildings to be Demolished

Buildings to Remain

Demolition Plan

MEMPHIS DEPOT REDEVELOPMENT PLAN

Memphis, Tennessee

D. REUSE MARKET

The demolition depicted above will leave 3.6 million square feet of existing space for reuse at the Depot in addition to the public safety, public recreation, education and training, and homeless assistance activities. The remaining existing buildings will be absorbed over a 15 year period at an average of 226,000 square feet per year.

Currently, our research indicates that the primary markets for these existing facilities fall within the following sectors:

- Distribution
- Medical equipment, instruments, products and supplies
- Computers, office equipment and repair
- Printing and publishing
- Back office operations
- Food processing
- Plastics products; and related pursuits.

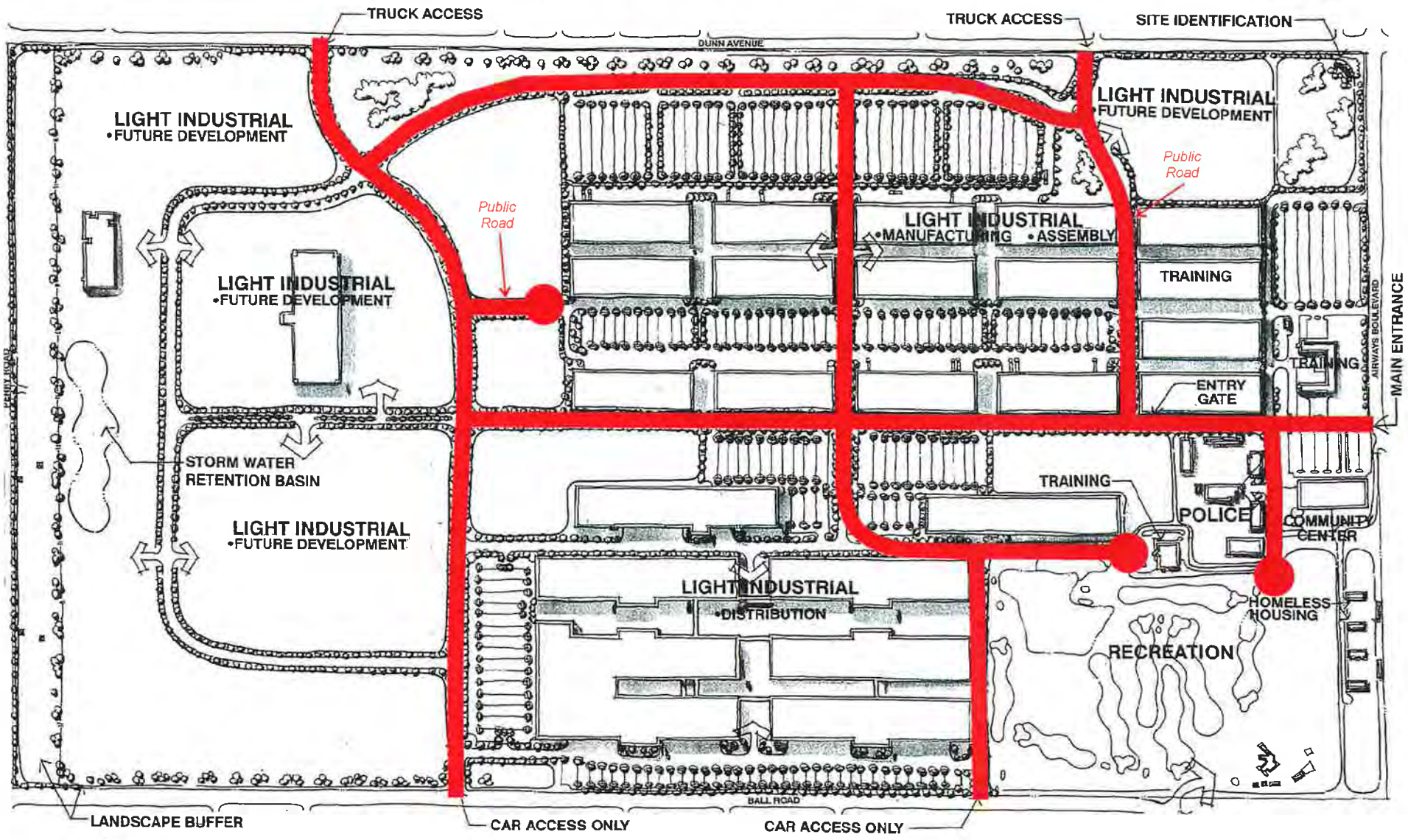
E. CIRCULATION AND TRAFFIC

Internal circulation will consist of a combination of public and private roadways as depicted on the following public roadways plan. The redevelopment plan proposed a variety of improvements including a main east/west arterial with additional east/west circulation on the northern side of the property. North/south circulation is provided by two arterials that extend the entire width of the property.

External circulation is expected to increase by approximately 8,200 vehicle trips per day over current experience. While current roadways are underutilized, improvements to Airways Boulevard will occur in the future and no truck traffic will be permitted to enter or depart the Depot properties from Ball Road and Perry Avenue. With an equal distribution of trips onto the roads expected to serve as primary ingress and egress route, the projected increase in average daily trips for these roadways can be accommodated.

Recommendations to protect adjacent residential areas and ensure adequate traffic movements at critical intersections are as follows:

- Primary ingress and egress should be limited to Airways Boulevard and Dunn Avenue
- Two limited-access points for automobile traffic to Ball Road should be provided
- Turning radius at Dunn Avenue should be improved
- A more detailed study of major Depot intersections may be required
- The City of Memphis should consider improvements to the Airways Boulevard/Ketchum Road intersection and to the alignment of the I-240 westbound on ramp
- Improvements to the Airways Boulevard/I-240 intersection should be considered
- The northern east/west internal road cannot intersect Airways Boulevard
- The State of Tennessee should be encouraged to assist in general transportation improvements



Recommended Public Roadways
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

F. ZONING

The existing light industrial (C-L) zoning of the Depot property is appropriate. Actual uses permitted within this category will be limited so as to promote high-standard development at the Depot in the future.

G. DESIGN RECOMMENDATIONS

Design recommendations for the Memphis Depot are intended to minimize the institutional look of the Depot facilities; create a more visually appealing entry into the facility; and, provide a visual barrier between the buildings and surrounding neighborhoods while addressing street lighting, signage, and pavements types.

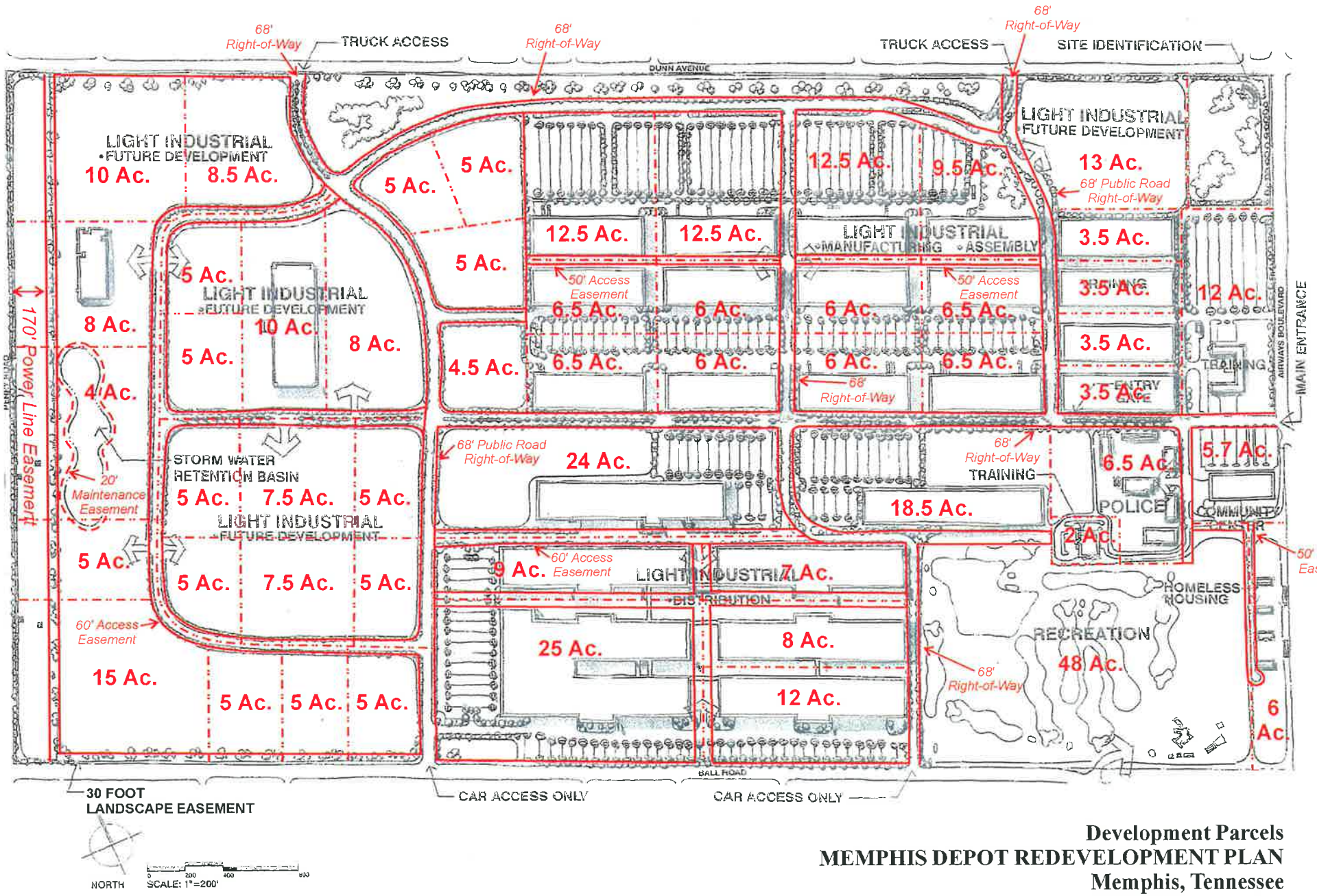
Architectural guidelines are presented to encourage overall high quality and uniformity while respecting the architectural styles that exist. The facilities recommendations are intended to establish consistency in architecture taking into account all elements of the site. Additionally, recommendations reorient the large facilities into a series of smaller forms to reduce the visual impacts of their mass and create a more manageable scale.

Signage recommendations are provided to allow Depot signs to be more informational and directional. The recommendations include providing identification signs at each of the buildings; standardizing placements and the appearance of directional signage; development of prominent signs for the main vehicular entrances disallowing billboards and other similar in respecting the city's zoning ordinances.

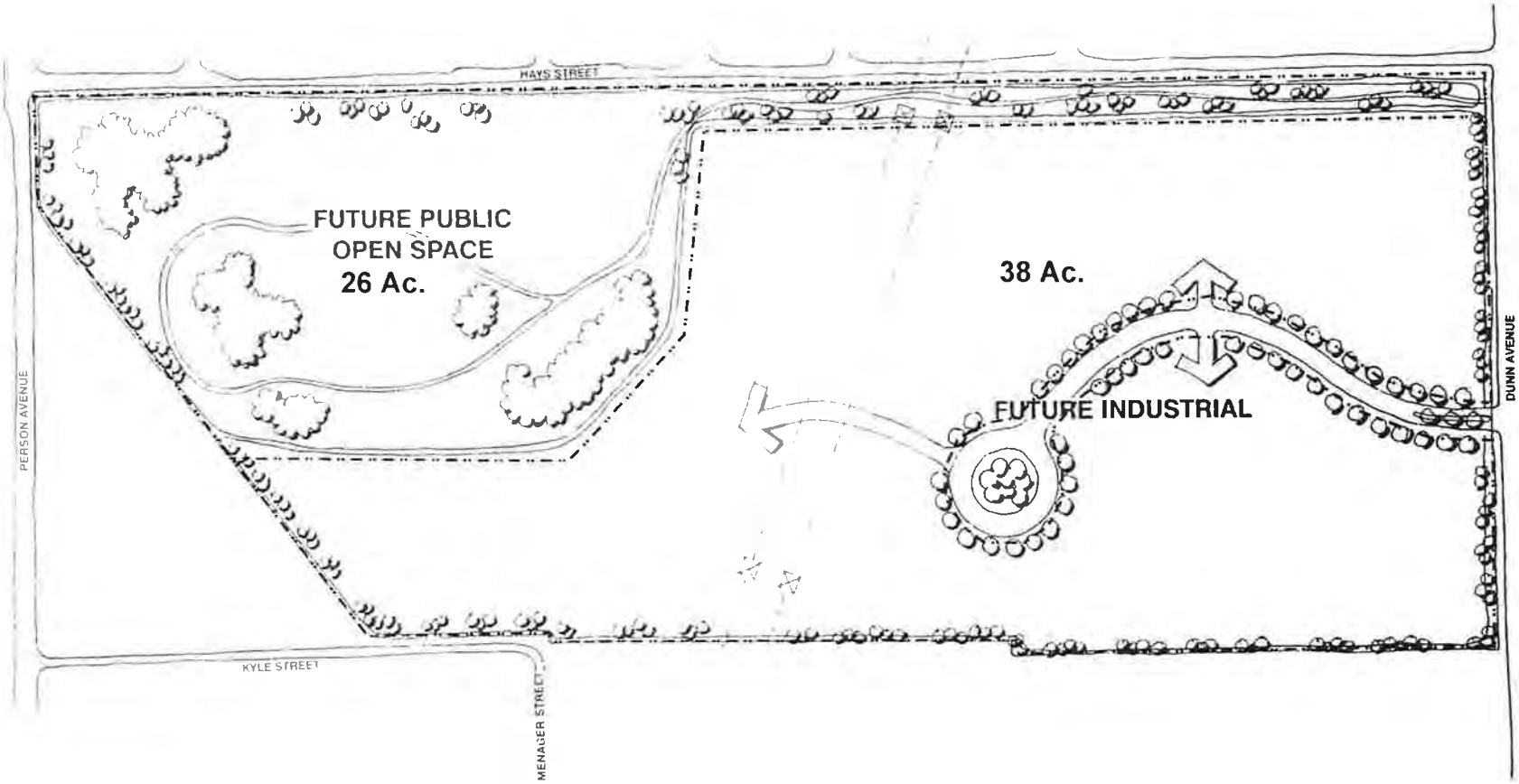
Landscape design principals and guidelines are offered with the intent of further improving the Depot landscape aesthetics, and help the Depot develop a consistent attractive look which will minimize maintenance costs while enhancing the areas attractiveness to potential tenants. Lighting guidelines are also provided to encourage safety, attractiveness and visibility.

H. PARCELAZATION

The redevelopment of the Memphis Depot will result in the utilization of the property by many different business and other types of reusers. These future users will require different amounts of lands and building sizes for their operations. The plan includes parcelazation maps that identify the parcels that can be sub-divided at the Depot. The maps take into account all uses and provide flexibility in delineating parcels in developing access.



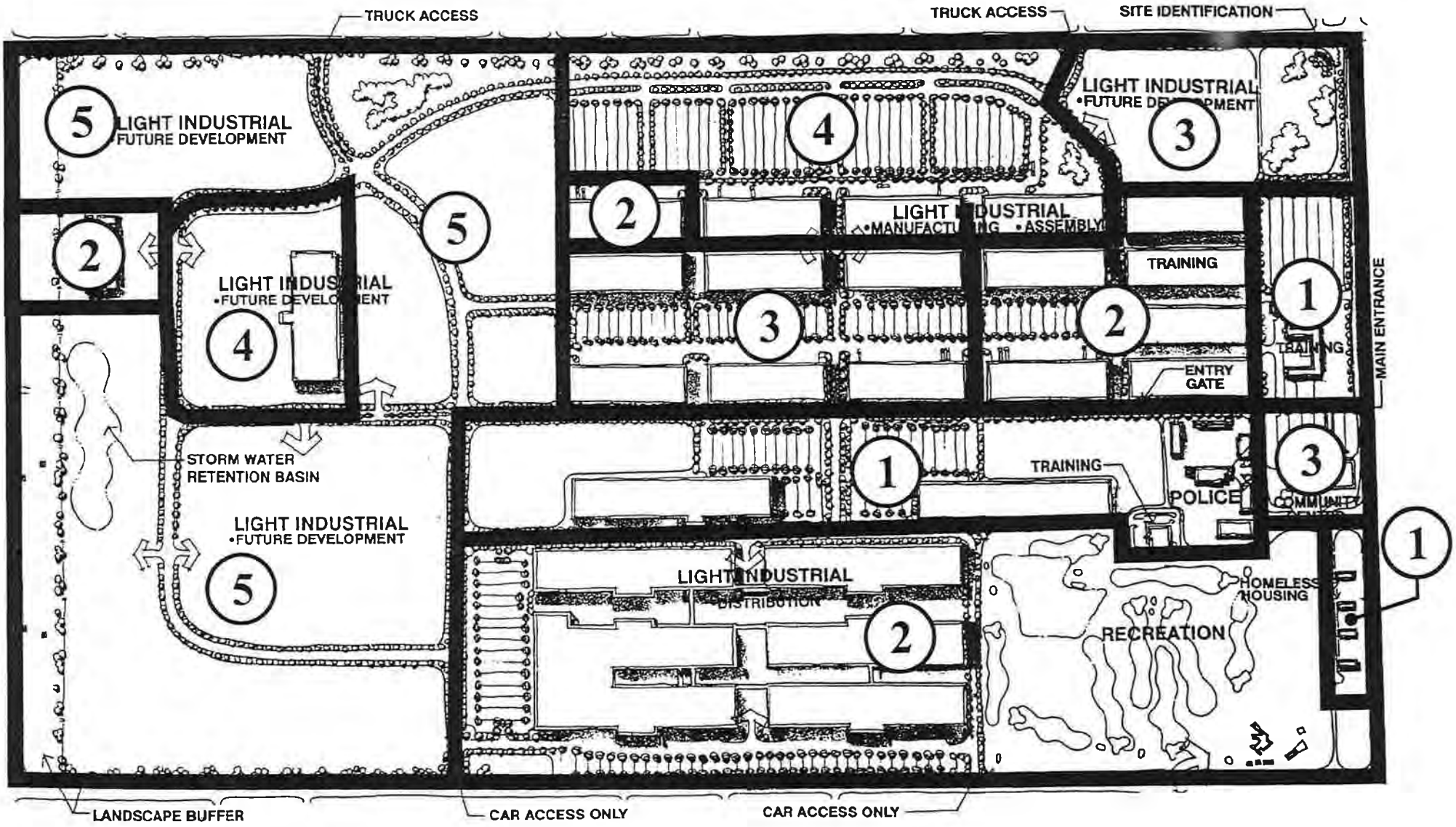
Development Parcels
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee



Development Parcels
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

I. PHASING PLAN

The phasing plan provides general guidance for the expenditure of efforts and resources in the redevelopment of the Memphis Depot site. Divided into six phases, the redevelopment schedule is dependant upon a variety of factors including environmental issues, long range marketability, and facilities conditions. The six phases are outlined and depicted on the phasing plan maps which follow immediately.

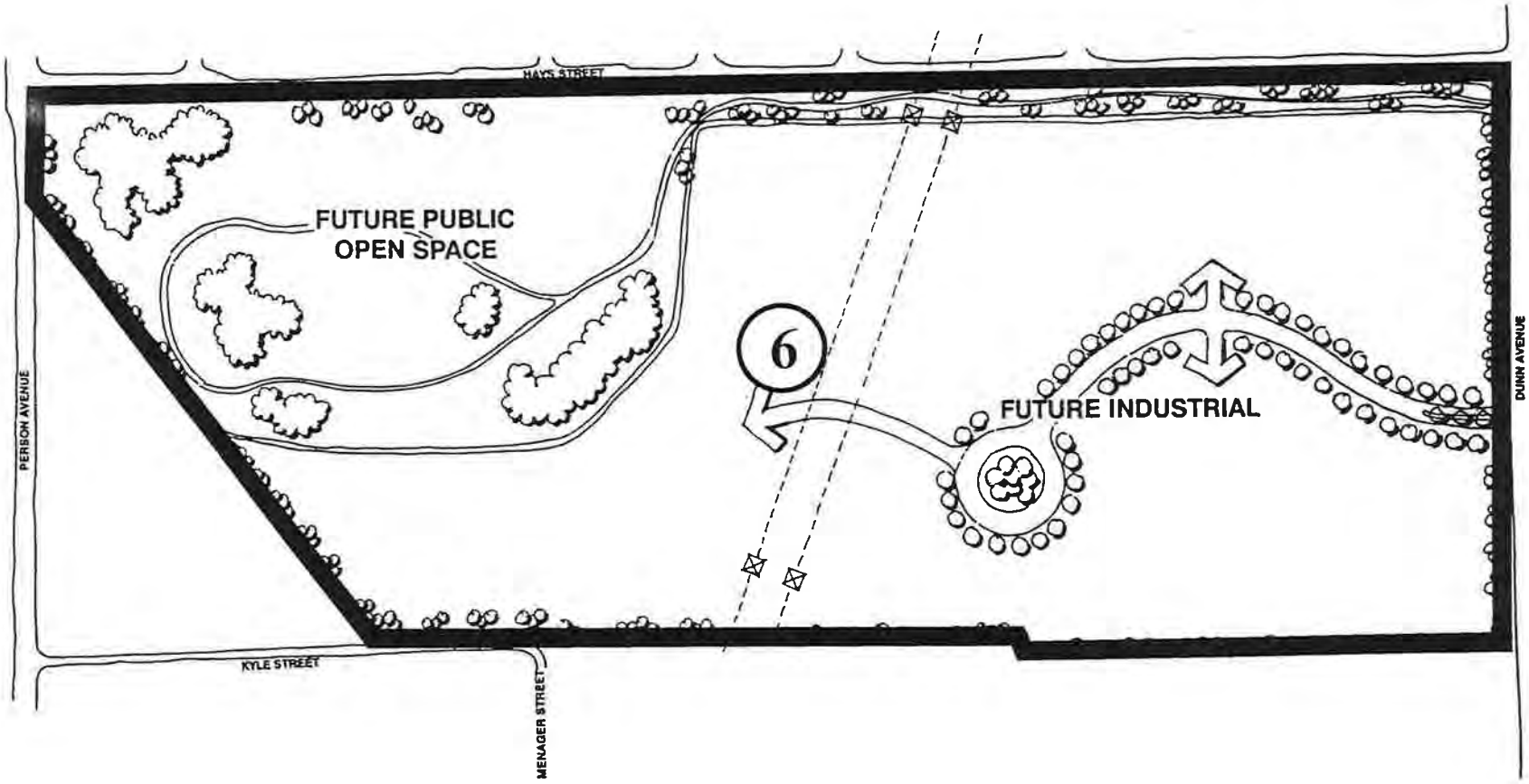


NORTH SCALE: 1"=200'

(X) Phasing Priority

Phase	Year
1	1999-2000
2	2001-2003
3	2003-2004
4	2004-2006
5	2006-2007

Phasing Plan
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee



(X) Phasing Priority

Phase	Year	Phase	Year
1	1999-2000	4	2004-2006
2	2001-2003	5	2006-2007
3	2003-2004		

Phasing Plan
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

J. PERSONAL PROPERTY

In the case of the Memphis Depot, personal property is really machinery and equipment important to the reuse of buildings remaining after the Depot closes. Accordingly, the recommendations herein provide for the retention of those items of personal property which truly add value to the buildings remaining on the site and provide additional attractiveness for business, institutional, educational, and other functions. The purpose of this personal property is to retain fully-functional buildings that can be immediately reused by private sector and other prospects and public activities. The recommendations we have provided reflect projected industrial, distribution, administrative and support equipment needs to support the recommended reuse functions set out in our redevelopment plan.

K. BUSINESS PLAN

The redevelopment plan features a 15-year business plan for the Memphis Depot reuse effort. This business plan is composed of 2 major items: (1) The 15-year cash-flow projections with explanatory notes; and, (2) the 15-year capital-improvements program with notes and borrowing schedule. The cash flow projections also include an absorption schedule, lease renewal schedule and total-area-leased computation.

The business plan projects the following:

- Annual warehouse/industrial lease space absorption is modest over the period with an average of 226,000 sf per year. Years 1 through 5 are somewhat stronger as the larger, higher-quality buildings lease.

- As the more desirable warehouse product will lease early, it is essential to invest capital early in the redevelopment process to create market interest in the older, less appealing facilities and vacant lands. Accordingly, we have proposed a comprehensive $47.4 million capital improvements program for the first 15 years of redevelopment.

- To enhance site marketability and provide required parking and truck maneuvering room, we have proposed a demolition program to remove 2.6 million sf of substandard warehouse space from the Depot inventory during the capital improvements period.

- 3.38 million sf out of 3.6 million sf of marketable space are forecast to be leased over the 15-year period at an average triple-net lease rate of $2.15 per square foot per year.

- The golf course; the police compound; the education and training area; and, the homeless service area will be transferred to public entities, thereby removing 263,320 sf of building area from the inventory. The police compound and homeless services area are considered to be "outside the fence" in this business plan.

- Overall, the Depot's redevelopment results in a cumulatively positive cash flow of $2.96 million over 15 years. The cash accumulation is, however, punctuated by six years of negative annual cash flows: a function primarily of the Depot's thirst for capital improvements coupled with the end of Department of Defense administrative and maintenance subsidies.

- The net present values of the annual cash flows at discounts of 10% and 20% are $2.3 million and $2.1 million. Further, the net present values of the net operating incomes at discounts of 10% and 20% are $24.97 million and $14.48 million. The principal remaining unamortized at the end of Year 15 is $24.6 million.

- A major challenge to the Depot's redevelopment future arises in Year 6 as Department of Defense operating subsides for administration and maintenance expire at the end of Year 5.

- The business plan does not include any Federal environmental-cleanup monies. They are unpredictable; untouched by the Redevelopment Corporation; and, subject to little, if any, local redevelopment budget influence.

L. CAPITAL INVESTMENT PLAN

This $47 million, 15-year Capital Investment Plan results from our systems analyses and redevelopment recommendations detailed in the Master Redevelopment Plan. It assumes:

- 100% debt, borrowed at 7% interest and repaid over twenty years as described in the borrowing schedule. Placement costs of 6% are included in debt service.

- New debt is incurred each year, beginning in Year 2, with final estimated borrowing in Year 15, to fund essential site and infrastructure improvements.

- Debt service builds to its highest level in Year 15 ($4.84 million), where it remains, until it begins to decline with maturities first appearing in Year 22 ($3.98 million). The final installment ($124,900) is paid in Year 33 (2031).

- The Capital Program is divided into four major components:

Infrastructure (50.6%) -	$23.98 million
Buildings (22.8%) -	$10.8 million
Demolition (13.4%) -	$6.35 million
Contingency (13.1%) -	$6.2 million

- The Capital Program is further divided into six phases:

Phase I / Years 1-3 - $16.9 million (35.7%)
Phase II / Years 4-6 - $13.7 million (28.9%)
Phase III / Years 6-7 - $7.9 million (16.7%)
Phase IV / Years 7-9 - $4.26 million (9.0%)
Phase V / Years 9-10 - $0.89 million (1.9%)
Phase VI / Years 11-15 - $3.7 million (7.8%)

- Major roadways and water, sewer, energy and telecommunications utilities will become the properties of the City of Memphis, County of Shelby, MLGW and Bell South by the end of Year 6 (Phase II).

M. MARKETING PLAN

The consideration of the strengths and weaknesses of the Memphis Depot and Memphis as a location for business and industry was undertaken from the perspective of a site-selection team which might consider the Depot as a candidate for the location of an operation. It uses the same methodology employed in site searches for corporate clients.

Numerous interviews were conducted with existing business operations in the area, as well as with utilities suppliers, transportation providers, and government and regulatory officials. Existing published data were reviewed and, importantly, similar evaluations were conducted of selected competitive locations.

The factors by which the competitive advantages or disadvantages were judged are those factors most commonly considered by prospect companies seeking locations for new business units. It provides an answer to the fundamental question of whether the Depot has the attributes which make it saleable to business and industry as a location. The answer to that is clearly "yes".

The marketing plan built on the foregoing analyses will address the targets outlined in the body of the redevelopment plan. Actions to attract the attention of such targets will include:

- Working side-by-side with the existing network of economic development professionals in the Memphis area.
- The establishment of a dedicated marketing staff at the Depot whose responsibilities will be to conduct direct mail campaigns, telemarketing campaigns, produce sales and marketing proposals, assist with trade show activities, track prospect follow-up, and handle inquires about the availability facilities of the Depot.

In addition, this marketing plan recommends printed marketing materials, direct mail activities, targeted telemarketing efforts, marketing missions, conference and trade show attendance, advertising, public relations, networking with others in the area in contact with prospective business clients, and other tactics designed to attract attention in the marketplace to the availability and desirability of the Memphis Depot as a location for investments and new jobs.

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II. INTRODUCTION

A. PURPOSE AND SCOPE

The purpose of the project outlined in this strategy document is to coordinate and prepare a Memphis Depot Redevelopment Plan for the Defense Distribution Depot Memphis. The Depot is a 700 acre general supply distribution center owned by the Army and operated by the Defense Logistics Agency. It has been approved for closure in September 1997. The redevelopment plan set forth herein provides a strategy for replacing jobs lost at the Depot as well as for generating economic development throughout the Memphis MSA. The strategy is crafted to guide the economic development of the community related to the Deoot; the replacement of the jobs lost as a result of the closure; and the improvement of the local community utilizing facilities at the Depot to meet community needs.

The plan which follows includes a physical redevelopment plan, an implementation plan, a business plan, and a marketing plan. These documents acknowledge the fact that successful reuse of the Depot is not limited by the marketplace and that the reuse challenge is to generate sufficient cash flow to operate, maintain, and redevelop the facility long-term, with an eye to achieving transfer to the private sector at the earliest feasible point.

The process from which this plan evolved employed a broad base of public input which included business and neighborhood groups. Further, it featured extensive input from city and county administration officials, military representatives, environmental specialist, developers, conversationist, transportation professionals, logistics specialists, and broad aray of individuals and institutions considered to be stakeholders in the Memphis Depot's Redevelopment outcomes.

B. GOALS AND ASSUMPTIONS

At the outset of the redevelopment process, the Memphis Depot Redevelopment Corporation Board of Directors set forth the strategic framework within which the Board and its redevelopment staff would undertake the project to restore jobs, incomes and economic activities lost as a result of Depot closure. That framework is expressed in the statement of goals below:

Memphis Depot Redevelopment Board Strategic Goals

1. Maximize community employment, wages and capital investment through redevelopment of the Depot and the surrounding area commencing immediately.
   - Place highest priority on attracting new or expanding businesses to the Memphis market area.
   - Encourage new Depot businesses to hire Depot employees and local community residents.

2. Improve the local quality of life through utilizing Depot facilities to meet community needs and ensuring redevelopment is compatible with the surrounding areas.

3. Generate cash flow early on through interim leases and other means to support maintenance, improvements and marketing efforts.

4. Maintain overall community public health as the number one priority in environmental remediation work.

Following the adoption of strategic goals, the Memphis Depot Redevelopment CorporationBoard set forth the assumptions which would guide the reuse planning process. Crafted early in the reuse planning project, the assumptions listed below provided more specific instructions regarding priorities in the production of the master redevelopment plan and implementation strategy.

Memphis Development Redevelopment Agency Board Reuse Planning Assumptions

1. The Defense Depot is scheduled to close on September 28, 1997.

2. The Memphis Depot Redevelopment Corporationwill strive to create private sector jobs on site prior to closure.

3. The Memphis Depot Redevelopment Corporationwill seek to:
   - Create more jobs on site than previously existed
   - Attract jobs which pay higher rates than local prevailing wages
   - enlarge the local tax base

4. Although Memphis has a strong distribution market, the Redevelopment Plan priorities will acknowledge a preference for:
   - High-wage employment opportunities
   - Business that offer new employment opportunities beyond the distribution sector, including industrial and service jobs
   - New business and existing business expansion

5. The Memphis Depot is an important community asset. The Memphis Depot Redevelopment Corporationwill work to meet other community needs and provide additional community benefits to the extent compatible with the primary objective of job-creation.

6. The Redevelopment Plan will recommend the means to:
   - Transfer title to Depot facilities to private sector users at the earliest opportunity
   - Create mechanisms for generating cash flow necessary to improve, operate, and maintain Depot facilities over time

7. The Redevelopment Plan will consider the need for site improvements to the Memphis Depot which will:
   - Enhance the property's marketability
   - Ensure the property's compatibility with neighboring residential and commercial area

8. The Memphis Depot Redevelopment Corporationwill work to ensure that the Army to fulfills its environmental clean-up responsibilities for the Depot. The Memphis Depot Redevelopment Corporationwill not assume permanent title of any property prior to resolution of environmental concerns.

As the reuse planning project progressed, The Memphis Depot Redevelopment CorporationBoard, staff and consulting team arrived at a list of key consensus items in the reuse plan which followed from strategic goals and redevelopment planning assumptions adopted earlier. These consensus items, which appear below, took the form of policies intended to influence the reuse plan's character and marketing its compatibility with the surrounding neighborhoods.

The Memphis Depot Redevelopment CorporationBoard's Consensus List on Redevelopment Plan Features

1. The principal land uses contemplated for the Depot include light industrial/manufacturing and distribution
2. The main "boulevard" entrance will be off Airways. The gate for the main entrance will be relocated to the west end of Building 250
3. Secondary truck access to the property will be on Dunn Ave
4. Access off Ball Road will be auto only
5. No direct access will be provided from Depot property to Perry Road

6. Buffers/landscaping will be developed and maintained near residential areas on Perry, Dunn and Ball roads
7. The fence will remain inside the easement along Perry Road
8. Main roads will be public roads, improved to public standards but not dedicated in initial phase of operation
9. No rail service will be retained on site. Lead tracks onto the site and switches for each rail line (ICG & BN) will be retained for future optional use. Site planning will allow for optional future rail service extension.
10. Community Service area will potentially include child care, financial services, health clinic, library, and convenience store (typical for servicing truckers, etc.)
11. Recreation use, but not necessarily a golf course, will be designated for the existing golf course area and related grounds/facilities. The northeast corner of Dunn Field will be reserved for public open space.
12. Police presence and compound will include the vehicle maintenance area, including Buildings 251, 252, 253, 257, 260, 261, 265, 270, and the caboose.
13. The initial training facilities commitment will include Buildings 144, 274, and 925.
14. No new residential uses are contemplated for the Depot.
15. The perimeter fence and limited points of access will be maintained during initial phases of conversion for added security.
16. Underground electrical services will be provided along main entrance boulevard. All other electrical services will be overhead.

Off-Site Improvements To Be Provided By Others

1. I-240 Interchange improvements and Airways Boulevard road improvements
2. Improvements to Dunn, Perry, and Ball roads which minimize impact of truck traffic through residential areas (planted median, cross-walks, etc. as "traffic calming" devices)
3. Streetscape improvements to Airways corridor.

C. BACKGROUND

Following is a draft redevelopment plan for the Memphis Depot. This plan is necessitated by the fact that the Base Realignment and Closure Commission recommended, and the President and Congress confirmed, that the Memphis Depot is to be closed by the Army and the Defense Logistics Agency in September 1997. This redevelopment plan and its follow-on implementation management, maintenance, operations, capital improvements and marketing elements (to be delivered in March, 1997) will compose a strategy for replacing jobs lost at the Depot and generating economic development opportunities for the Memphis MSA.

On September 28, 1995, Congress ratified the final decision to close the Memphis Depot effective September 28, 1997. Such closure acknowledged the Army proposal for fast track draw down to minimize closure costs and stimulate early reuse.

The Depot contains some 642 acres of land, in two major parcels, located centrally within the Memphis MSA near the Memphis International Airport , the Federal Express Hub and Interstate Loop 240. Its interstate highway location puts the Depot in direct reach of Interstate 40 running east and west and Interstate 55 running north and south. In addition to its interstate highway access, the Memphis Depot benefits by the area's well developed transportation infrastructure which also includes Mississippi River ports and three major intermodal facilities served by six national rail ways.

Construction on the Depot began in June 1941 and continued until approximately six-million square feet of enclosed storage and six-million square feet of open storage were completed on the instillation. The facility includes approximately 130 structures which consist of warehouses, maintenance, support buildings and communications facilities served by 28 miles of paved roadways and 26 miles of railway.

The center of the original Depot operation consisted of twenty World War II warehouses. These reinforced-concrete construction warehouses have wood truss roofs with a floor area of approximately 110,000 square feet each. There are four additional World War II warehouses of approximately 200,000 square feet each in floor area, one of which (building 209) is condemned. Building 359 is temperature controlled and contains a chill vault. All of these buildings have ceiling heights of no more than 14 feet clear with truck and rail access and gas heating systems.

A newer complex of 6 warehouses was built in 1954. These warehouses have a basic floor area of approximately 200,000 square feet and contain primary receiving, packing and transportation systems for the entire Depot operation. They also house bin-material-type storage aids. These buildings are the primary focus for automated materials handling systems and have a 20-foot clear ceiling height with truck and rail access and gas heating systems.

The two newest warehouses are roughly 207,000 square feet each with 25 foot stacking heights. These warehouses contain some operational administrative office space, restroom and break rooms in addition to operational space for the movement of material-handling equipment, maintenance activities, material-handling systems support, climate-controlled storage and other related functions.

The Depot has a state-of-the-art hazardous materials storage warehouse with approximately 140,000 square feet of floor area. Building 835 has a 25 foot stacking height, automatic fire doors and an extensive fire detection and fire suppression system. Adjacent to the hazardous materials warehouse is a hazardous recoup facility for handling damaged hazardous material storage containers in four completely enclosed area to prevent exposure to the environment. There is also a 60,000 square foot flammable storage building (building 925) at the west end of the site. Additional buildings in this area include maintenance support, motor pool functions, sand blasting, painting and related materials preparation facilities.

There are in the southwest corner of the Depot site, four World-War-II vintage sheds, each of which has a basic floor area of approximately 252,000 square feet. One of the sheds (Building 972) has been converted with covered sides and currently houses the primary woodworking facilities for packing and handling at the site. In addition to the open shed storage, there are approximately 100 acres of open yard storage in this area.

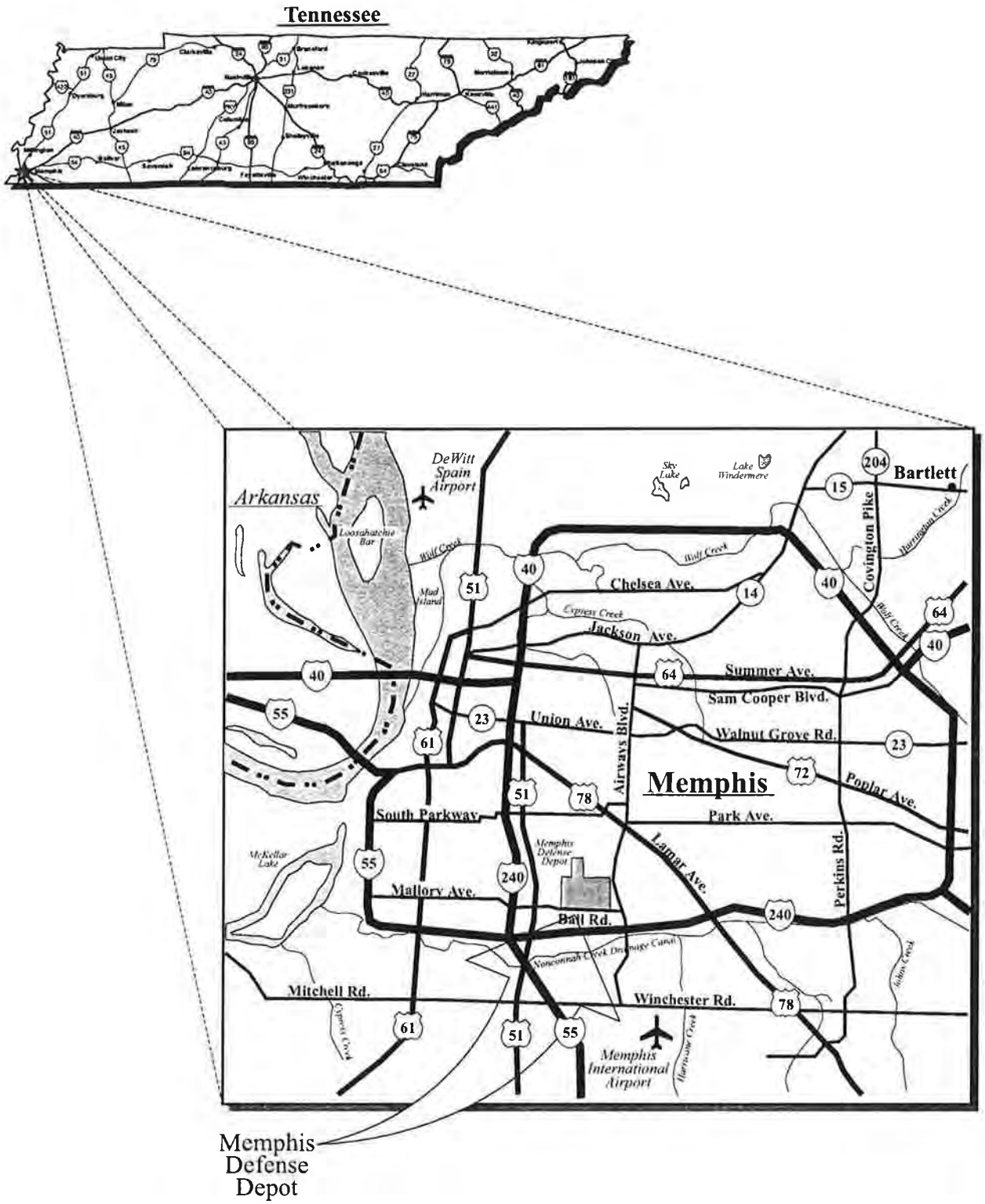
There are several automated material handling systems on the Depot. These systems include mechanized central receiving and bulk receiving facilities; a bin storage operation; a central freight terminal; an intra-Depot transportation system; and, a central packing area. Mechanization includes automated sorting systems; tow-line conveyer systems; automated stretch wrap machines; conveyorized cargo transporter systems; cargo/pallet dock conveyors; and, carousel storage and retrieval systems.

Housing and quality of life facilities are located in the southeast quadrant of the Depot. Eight duplex units in four structures contain approximately 2,000 square feet of living area each. Adjacent to the housing area is a park which includes a nine-hole golf course, swimming pool, tennis courts, playground, cafeteria and community club facility. The community club facility houses the pro shop for the golf course.

The second major parcel of the Depot land area, Dunn Field, lies to the north of the main installation across Dunn Avenue. This area currently accommodates bauxite and flourospar storage piles that are part of the National Stockpile. In addition, Dunn Field was used by the Depot as a waste disposal site for various excess supplies. The Depot's current listing on the National Priority List results primarily from waste disposal activities at Dunn Field. Underground contamination has been identified and remedial activities are preparing to get under way.

Serving the entire Depot are 28 miles of roadway and 26 miles of railway. All major warehouses and storage areas are accessible by truck and rail. There are two rail switch yards on the Depot: one to the Burlington Northern Railroad and one to the CSX Railroad. Additionally, water, electric and gas are purchased from the local utility company (Memphis Light, Gas and Water). Sanitary sewer, storm drainage and fire services are provided by the City of Memphis. There are no separately-operated utilities systems on the Depot and the Depot is served by a common metering system.

As noted below, the closure of this mass of infrastructure, facilities, and distribution capacity will have significant economic impact on the Memphis area and will present a substantial redevelopment challenge. In addition, it will displace in excess of 1,300 workers as the Depot's activities draw to a close by September 1997.



North

Not to Scale

VICINITY MAP

Memphis, Tennessee

III. ECONOMIC AND MARKET ANALYSIS

A. BACKGROUND

In developing the reuse alternatives for the Memphis Depot a fundamental task was to examine its facilities to determine their reuse potential for various commercial operations. As site selection consultants for corporate clients, The Pathfinders staff members have extensive experience in assessing the reuse potential and condition of existing facilities which companies were considering for acquisition to be used for production, distribution or other business operations.

That experience has been applied to the assessment of the Depot facilities. The suitability for various uses is summarized in the Targeting section of this report, and the condition of those facilities will be presented in a separate report. While some are in poor condition, most are in relatively good condition.

In addition to the suitability of those facilities for various commercial operations, the strengths and weaknesses of the environment in which they are located - Memphis - have an impact on the reuse alternatives. While a facility on the Depot may be suitable for a given commercial operation, certain attributes of Memphis as a business location may make that reuse option unrealistic.

The assessments contained in this report identify the strengths and weaknesses of Memphis as a business location and identifies the business sectors which will be most attracted to its strengths and most tolerant of its weaknesses are identified as reuse targets. That is done to ensure that the reuse alternatives are market-driven and therefore achievable.

Factors by which we have judged Memphis's competitive advantages or disadvantages are those most commonly considered by prospect companies seeking locations for new business units. The

reader should be cautioned about placing too much value on those factors where Memphis enjoys an advantage or being too concerned about those factors where a disadvantage exists. The purpose of the comparative analysis is to determine whether significant advantages exist and where disadvantages would be so radical as to be "deal killers". Moreover, it provides an answer to the fundamental question of whether Memphis has the attributes which make it, and consequently the Depot, sellable to business and industry as a location. The answer to that question is clearly "yes".

The comparative analysis which follows should be utilized as a benchmark to evaluate the area's overall competitive position and as the basis for community self-improvement. Along with the suitability and condition assessments of facilities, it has been used in the determination of realistic reuse alternatives for the Depot. The comparative analysis is similar to that which would be presented to management by a site-selection team considering the Memphis area or Depot as a location for a business facility.

More than a dozen other communities are presented for the purposes of the quantitative factor comparative analysis. This sampling is designed solely to demonstrate how Memphis might fare when considered as a potential location for a business operation. It provides the reader with relationships by which to judge the quantitative factors of taxation and utilities cost. Commonly in the site selection process this level of detail is considered only for the dozen or so semi-finalists candidates which have survived the initial screening. A description of that site selection process follows, after a discussion of the economic impacts of the Depot closure.

B. ECONOMIC IMPACT

The following section examines the economic condition of the Memphis MSA and the potential economic impacts of the Memphis Depot closure. The analysis includes a general discussion of the economy in the areas of the labor market by sector, unemployment, income, and real estate.

The Memphis MSA includes the city of Memphis and covers the three-state area of Tennessee, Arkansas, and Mississippi. The city of Memphis is the 18th largest in the nation and the MSA has a population of more than one million persons. Other metropolitan areas in close proximity include Little Rock, Arkansas (140 miles west), Nashville, Tennessee (208 miles east), and Jackson, Mississippi (210 miles).

The economy has been based traditionally in agriculture with cotton and timber being the main crops. Beginning in the 1950's, region has worked to provide greater diversity in the economy. The major effort was to promote the region as the country's distribution hub by building on dynamic industrial markets. Investments in water, rail, road, and air transportation infrastructure as well as the establishment of a Foreign Trade Zone has allowed the region to compete at an international level. Some of the world's largest distribution and transportation logistics companies are centered in Memphis.

The DLA BRAC 95 report outlines the immediate employment impacts of the closure of the Memphis Depot. The 1995 data indicates that the closure could result in the loss of 3,349 jobs over the five-year period from 1996 to 2001 in the Memphis MSA with the majority of the job loss occurring in the first two years. This labor pool represents 0.6 percent of the total employment in the MSA. Of those jobs, 1,300 are directly associated with the Depot and another 2,049 are indirect jobs.

Employment

The job market in the Memphis MSA has experienced steady growth since 1991 (see Table 1). During the study period, the average annual increase in jobs was 2.2%. A 0.5% decrease in total employment occurred between 1990 and 1991. Increases in total employment occurred during all other years with 1995 being the highest increase at 5.5%.

Table 1

Total Employment		
Year	Memphis MSA	% Increase
1990	476,300	
1991	473,600	(.5)
1992	482,800	1.9
1993	491,800	1.9
1994	503,700	2.4
1995	531,600	5.5
1996 (thru October)	542,300	2.0
Source: U.S. Department of Labor, Bureau of Labor Statistics		

Total employment by sector in the Memphis MSA for 1994, 1995, and 1996 data through October are shown is Table 2. The Services sector is the largest employer in the economy 27% of all employment for each year during the three year period with a total increase of 13,800 jobs. The Manufacturing sector was the only sector of the economy to see a reduction in total employment. All other sectors had increases in total employment.

Table 2

Labor Market by Sector						
Year	1994 Employment	% of Total	1995 Employment	% of Total	October 1996 Employment	% of Total
Manufacturing	65,300	13	65,000	12	64,000	12
Construction and Mining	19,300	4	22,000	4	23,800	4
Transportation, Communication, and Public Utilities	51,500	10	57,100	11	59,100	11
Finance, Insurance and Real Estate	26,500	5	26,600	5	27,200	5
Retail Trade	93,000	18	98,600	19	101,300	19
Wholesale Trade	37,500	7	39,300	7	40,300	7
Services	134,500	27	143,800	27	148,300	27
Government	76,800	15	79,200	15	78,300	14
Total	503,700	99*	531,600	100	542,300	99*
* rounded calculation						
Source: U.S. Department of Labor, Bureau of Labor Statistics						

Unemployment

Unemployment rates for the Memphis MSA are shown in Table 3. Unemployment in the MSA is low as compared with the state of Tennessee and the U.S. annual averages. The highest unemployment rate in the study period occurred in 1992 at 6.0%. The low was 4.1% which is the year to date for 1996.

Table 3

Unemployment Rate			
Year	Memphis MSA	Tennessee	U.S.
1990	4.7	5.2	5.5
1991	5.8	6.7	6.7
1992	6.0	6.4	7.4
1993	5.6	5.8	6.8
1994	4.8	4.8	6.1
1995	4.9	5.2	5.6
October 1996	4.1	4.9	5.2
Source: Tennessee Department of Employment Security			

Per Capita Income

Per Capita Income in the Memphis MSA is slightly lower than the U.S. average (see Table 4). The annual rate of growth is however, greater in the Memphis MSA than in the U.S. The per capita income in Memphis increased at 5.1% over the study period versus 4.0% in the U.S. The period from 1993 to 1994 had the largest growth rate at 9% during the period.

Table 4

Per Capita Income				
Year	Memphis MSA	Growth Rate (%)	U.S.	Growth Rate (%)
1989	$16,913	5	17,690	6
1990	17,821	3	18,667	3
1991	18,405	6	19,163	5
1992	19,517	4	20,105	3
1993	20,386	4	20,800	3
1994	21,564	9	21,699	4
1995	0	0	22,788	5
* 1995 information for Memphis MSA will not be available until August 1997				
Source: Tennessee Department of Employment Security				

Real Estate

The real estate market experienced some cyclical up and downward trends during the study period. New construction as measured by valuation increased overall in the residential market. A low of $318,200,000 was experienced in 1992, followed by an upward trend to a period high of $744,200,000. The non-residential market experienced the same phenomenon as the residential market. The period low was 319,500,000 in 1992 and the high was 831,300,000 in 1996. These recoveries in both markets occurred after a downswing from 1990 to 1992. Table 5 shows the new construction market in terms of valuation.

Table 5

New Construction Valuation		
Year	Residential	Non-Residential
1990	$467,700,000	$397,500,000
1991	399,500,000	319,900,000
1992	319,500,000	318,200,000
1993	685,300,000	372,900,000
1994	602,400,000	362,000,000
1995	744,700,000	522,900,000
1996	831,300,000	744,200,000
Source: Memphis Chamber of Commerce		

Office Space

Market trends indicated an increased demand for office space during the period from 1993 to 1996 (see Table 6). With the demand for space, vacancy rates decreased more than 10% over that year period. Average rental rates remain competitive with regional and national markets increasing $1.40 for the period to $14.57 per square foot.

Table 6

Memphis Office Space				
Year	1993	1994	1995	1996
Total Market Size (sq. ft)	15,159,175	15,299,528	18,483,610	20,413,395
Square Feet Available	2,771,017	2,233,571	1,399,645	1,532,069
Vacancy Rate	17.84%	14.60%	7.57%	7.50%
Net Absorption (sq. ft.)	21,654	528,383	422,143	1,797,361
Average Rental Rates ($/sq. ft.)	$13.19	$13.57	$14.00	$14.57
Source: Memphis Chamber of Commerce				

Industrial Space

The Memphis industrial market continued to show its strength with stong indicators in all areas (see Table 7). The total market size grew almost 300% from 1993 to 1996. In this period new construction increased from 432,300 square feet to 3,4700,000 square feet and available square feet increased from 6,548,064 to 10,841,000. Much of this new industrial space was filled as seen in the vacancy rate decrease and the increase of net absorption. Rental rates also increased with the rising demand for industrial space. Average rental rates remained fairly steady around $3.00 per square foot.

Table 7

Memphis Industrial Space				
Year	1993	1994	1995	1996
Total Market Size (sq. ft.)	36,145,788	39,859,445	116,500,000	123,626,000
New Construction (sq. ft.)	432,300	1,937,126	3,650,000	3,470,000
Square Feet Available	6,548,064	4,656,561	7,900,000	10,841,000
Vacancy Rate	18.12%	11.60%	6.78%	8.77%
Net Absorption (sq. ft.)	944,642	4,823,452	5,200,000	4,185,000
Average Rental Rates ($/sq. ft.)	$2.91	$3.02	$2.88	$3.08
Source: Memphis Chamber of Commerce				

Depot Neighborhood

The Memphis Defense Depot is centrally located in a neighborhood which developed during the 1940's and 1950's. The neighborhood is characterized with mixed uses consisting of single and multiple family residential, commercial and industrial activities.

The neighborhood is comprised of 23 block groups as defined by the 1990 U.S. Census Bureau. For the purposes of this study the neighborhood boundaries are Interstate 240 on the south, Elvis Presley Boulevard on the west, the I.C.G. Railroad on the north, and Lamar Street on the east.

Population

Census block data from the 1990 Census was obtained for the neighborhood as shown in Tables 8, 9, and 10. The neighborhood population in 1990 was 23,637. The population distribution is 10,677 males (45 percent) and 12,960 females (55 percent).

Table 8

Block Group	Persons	Male	Female
471570065.00:1	1,173	540	633
471570069.00:3	1,246	571	675
471570069.00:2	1,087	504	583
471570078.10:3	2,017	877	1,140
471570078.10:4	642	288	354
471570069.00:1	1,637	753	884
471570078.10:1	13	6	7
471570078.10:2	909	418	491
471570081.20:3	634	305	329
471570081.10:2	788	370	418
471570078.20:3	1,687	758	929
471570081.10:1	771	364	407
471570081.20:4	882	444	438
471570081.20:5	416	212	204
471570081.10:3	707	320	387
471570081.10:4	611	293	318
471570081.10:5	636	292	344
471570078.20:7	811	370	441
471570078.20:2	1,850	836	1,014
471570078.20:1	1,750	713	1,037
471570081.10:6	996	420	576
471570081.20:6	775	330	445
471570078.20:8	1,599	693	906
Totals	23,637	10,677	12,960
Source: Wessex Data, 1997			

Housing

Housing data for the Depot Neighborhood indicates a somewhat recessed but stable economic condition. Within the neighborhood are 8,629 residential housing units, 722 vacancies or a 91 percent occupancy rate. The housing median valuation is $38,500, with the highest block group valuation $56,800 and the lowest block group $32,400.

Table 9

Block Group	Housing Units	Occupied	Vacant	Median Valuation
471570065.00:1	438	416	22	32,400
471570069.00:3	416	393	23	39,100
471570069.00:2	372	359	13	40,600
471570078.10:3	849	801	48	35,400
471570078.10:4	227	217	10	45,400
471570069.00:1	507	485	22	39,400
471570078.10:1	7	7	0	47,500
471570078.10:2	401	326	75	36,400
471570081.20:3	209	197	12	34,800
471570081.10:2	298	269	29	38,500
471570078.20:3	613	582	31	35,800
471570081.10:1	246	235	11	34,900
471570081.20:4	337	300	37	36,600
471570081.20:5	161	142	19	36,400
471570081.10:3	248	226	22	39,900
471570081.10:4	187	181	6	38,000
471570081.10:5	269	195	74	38,000
471570078.20:7	283	278	5	40,600
471570078.20:2	638	631	7	56,800
471570078.20:1	586	565	21	47,800
471570081.10:6	492	285	207	39,300
471570081.20:6	327	313	14	38,300
471570078.20:8	518	504	14	42,500
Totals	8,629	7,907	722	38,500
Source: Wessex Data, 1997				

Income

Table 10 shows 1990 per capita income by block group for the neighborhood. The neighborhood is severely recessed as compared to the Memphis MSA which reported per capita income of $17,821 in 1990 and the U.S. median of $18,667. The highest income per capita by block group was $16,257 and lowest $4,343.

Table 10

Block Group	Per Capita Income (1990)
471570065.00:1	$5,328
471570069.00:3	$5,432
471570069.00:2	$9,752
471570078.10:3	$7,019
471570078.10:4	$10,634
471570069.00:1	$7,956
471570078.10:1	$16,257
471570078.10:2	$4,343
471570081.20:3	$6,988
471570081.10:2	$5,691
471570078.20:3	$7,523
471570081.10:1	$6,741
471570081.20:4	$6,738
471570081.20:5	$7,548
471570081.10:3	$6,162
471570081.10:4	$5,150
471570081.10:5	$4,913
471570078.20:7	$9,748
471570078.20:2	$13,516
471570078.20:1	$5,165
471570081.10:6	$4,650
471570081.20:6	$6,349
471570078.20:8	$4,359
Median Per Capita Income	$6,738
Source: Wessex Data, 1997	

Summary

The aggregate impacts of the closure of the Memphis Depot facility will be experienced over a period of time. The closure schedule will marginally reduce the burden on the local economy. The industrial economy is strong and the job skills of the Depot workforce will fit into future distribution positions targeted for the facility. The reduction of the workforce over time will help encourage less job competition in the marketplace and provide workers with a greater opportunity to obtain employment. Additionally, the job market will have a greater opportunity to react to the number of displaced workers seeking employment.

C. THE SITE SELECTION PROCESS

A real-time example of such a site search in which The Pathfinders organization was involved was for a plastic products plant in which the geographic scope was defined as the Midwest portion of the United States. The initial base-line screening criteria included:

- A community size of from 50,000 to 200,000
- A community within a 1½-hour drive of a commercial airport with jet service, or within ½-hour drive to an airport with commuter service
- A college or university in or near the community
- Location on an Interstate quality highway
- A community with a 100,000-square foot available facility, on at least 5 acres of land, rail-served
- A community with reasonable electric costs
- A community with an absence of strong union influences or activity

It is apparent that missing from that criteria at this stage in the search is any reference to incentives or facilities cost, and that is not uncommon. It should also be noted that, with the exception of the population requirement, Memphis would meet these criteria.

Using an atlas, all communities which met the population requirements and which were located on an Interstate (quality) Highway were identified. There were almost 60 of those within the geographic scope of the search, and the objective at this stage was quickly to reduce that universe to a more manageable number by applying the other criteria. The first screening simply involved listing communities which met the population and highway criteria.

Using utilities companies and railroads as resources and through direct contacts with local economic development agencies by fax, mail, and telephone, inquiries were made of each of those to determine:

- Nearest college or university
- Nearest commercial air service and type
- Number of union plants in the community
- The availability of a rail-served, 100,000-square foot building

The point of this is to note that, under time pressures imposed by the client company, the objective was only to reduce that universe from 60 to a dozen or so. If communities failed to respond promptly, they were eliminated, and ten of the 60 were for that reason. Also, those which failed to meet any of those four secondary baseline requirements were immediately eliminated. The smart salesman responding to our inquiry would recognize that labor, taxation, etc. was of no concern at this stage, but that demonstrating that his community could meet each of those baseline requirements would keep it "in the hunt" and allow the submission of that data subsequently.

Once that universe was reduced to a list about one dozen, the second step was to reduce it further to a list of 6 for an on-site visit. At this point, further inquiries were made of the remaining candidates to determine such factors as:

- Utility rates
- Tax rates
- Typical labor rates
- Work force size
- Shipping times to specific markets
- Government cooperation
- Specific detailed data on the available building

At this stage in a site search, the process is still one of elimination and an economic development organization must be prepared to respond in detail, to the point, and promptly. It is a constant amazement to The Pathfinders that many communities seem unable to do so. It is a concern to the site-selection team that eliminating a community which might have been the best location but which fails to respond adequately will result in the second-best location being selected, but typically time constraints leave no other choice.

The real sales job on the part of the community comes when it is selected as one of the six to receive an on-site visit. Detailed sales and promotional materials which are unsolicited and, frankly, unwelcomed prior to this stage, are now critical, sought-after materials to help in the location decision. While the costs factors matrix (as presented in the comparative analysis which follows) are generally the determining factors for selecting the finalist communities, the site selection team can be swayed by other non-quantitative factors.

During the on-site visits to those surviving candidate communities, the process involves selecting the two or three finalists for a second visit by the site-selection consultant and the representatives of the client company. Incentives may become a factor at this point, but other community cooperation indicators clearly are a factor. Most importantly, the local sales effort should, at this point, discern what the most important locational issues are and focus heavily on those.

The purpose of this dissertation is to highlight the imperative for being prepared in order to be able, promptly and thoroughly, to respond to inquiries. It is also to point out that when dealing with privately or closely-held companies, the most important locational issues may lean toward quality of life and incentives, whereas those may be less important to the executives of Fortune 1000 companies who will make the location decision but will not move to the new location. Those executives tend to take a strategic view and are less swayed by the immediate benefits afforded by incentives packages.

The site selection process maybe conducted by a company's in-house team or a site selection consultant such as The Pathfinders. The description of that process provided in the foregoing may be useful in developing an understanding of the importance of the factors (beyond facilities) which will influence a company's decision to locate at the Depot. This assumes that the marketing campaign is directed at companies not now located in Memphis.

D. ANALYSIS OF BUSINESS LOCATION FACTORS

The following provides an assessment of those factors most commonly considered in the decision-making process relative to the location of a new production, distribution or other business operation. All apply to production facilities some, such as the cost of gas or availability of water, would have little influence on a back-office operation.

1. TRANSPORTATION / MARKETS

Continually affected by technological developments and changing business patterns, access to markets is taking on new meaning as electronic media and air service are increasingly relied upon to transport products and people to increasingly widespread markets. Although surface freight-sensitive companies serving a national market persist in clustering their facilities near consumer concentrations, increasing emphasis on technology and information in manufacturing, administrative, research and development, and service sectors has combined with other factors to stimulate decentralization of such operations from historic business centers. Similarly, confluence points for surface and air transportation systems have also affected regional business investment location decisions.

Traditionally, transportation services and access to markets have figured prominently in companies' decisions to locate in specific areas. Manufacturers, processors, and assemblers must be able to obtain supplies and materials and deliver finished and intermediate products to market in timely, cost-competitive, and reliable fashions. Wholesale distribution and office operations often require locations immediately adjacent to Interstate Highways or high-service arterial roads to facilitate the movement of goods and employees and to provide a high degree of visibility.

If transportation is a significant criterion the transportation advantages which Memphis offers will be compelling in their appeal. Moreover, its geographic position will be attractive for operations shipping to a national market, and even more so for companies shipping to Midwest destinations.

The Federal Express operation is magnetic in its attraction for companies needing over-night delivery, especially in the sense that it can be achieved with a midnight drop-off. That was a factor in targeting electronic/computer component repair operations. The Depot's proximity to the airport will allow it to capitalize on that asset.

A summary of the transportation advantages at Memphis include:

- Memphis International Airport - the world's busiest cargo airport three years running
- Worldwide headquarters and Superhub for Federal Express
- Memphis International Airport - 265 flights daily, including KLM flights to Amsterdam Schiphol
- Six Class I railroads and intermodal yards (UP, BN, NS, SP, IC, CSX)
- Over 200 common carriers serve Memphis at the crossroads of I-40 and I-55
- More metro areas reached overnight from Memphis than from Chicago, St. Louis, Dallas or Kansas City
- The Port of Memphis - second largest inland port on the Mississippi River; the largest slack water harbor; 5 public terminals

Additionally, Memphis' transportation infrastructure features:

Air Freight:

- Federal Express - headquarters
- United Parcel Service
- RPS
- Emery Worldwide
- Northwest Airlines/KLM

Trucking:

- M.S. Carriers - headquarters
- Roadway Express Inc.
- Yellow Freight Systems

Barge/Steamship Lines:

- All major inland river barge lines
- LASH intermodal barge transfer facility
- 14 steamship lines

International:

- Foreign Trade Zone #77
- U.S. Customs Point of Entry
- 10+ customs brokers
- 12 container depots
- 30+ international freight forwarders

Railroads:

- Union Pacific, Burlington Northern, CSX, Norfolk Southern, Southern Pacific and Illinois Central
- Intermodal facilities are available at each line

Transportation is a major strength for Memphis, although the access by truck from Ketchum Street to I-240 is a weakness for the Depot. Industrial companies use various modes of transportation for inbound and outbound shipments, depending on their operations, and Memphis is fortunate to enjoy the presence of all major transportation modes. That is a strong marketing asset, and once and individual company's product volume/destinations are known it can become a strong sales asset in demonstrating the specific transportation advantages of Memphis. There are

companies for which rail service is an absolute requirement and if rail service is not available at the Depot they will be lost as prospects. Within the target sectors food processors most commonly require rail service. There are, however, individual instances where rail service is not a requirement of a company within that sector and therefore that sector should remain as a target.

2. TAXATION

Federal, state, and local tax systems and regulatory policies clearly have an impact on business expansion and economic growth. This results from the simple fact that taxes and regulatory compliances represent daily costs of doing business which may vary according to the location in which a business is operated. Assuming Federal taxes to be fundamentally equal at all locations, state and local taxes, statutory environments, and regulatory policies may place a state and a locality at a competitive advantage or a competitive disadvantage in the attraction, retention, and expansion of business enterprise. Higher taxes, unequally distributed tax burdens, or unfavorable regulations in one state can raise the cost of materials, capital goods, labor, and financing for business in that state. Unless these costs are offset by other cost advantages (such as favorable facilities costs) of locating in that state, higher tax costs at some point will require a company to charge higher prices for products and services or accept a lower rate of profit.

Comparisons of total tax burdens, fiscal responsibility, and local government financial condition are fundamental in the site-selection process. Such considerations must, however, be taken in context as they are typically subsidiary to comparative advantages or disadvantages in other key location criteria. Disproportionally burdensome tax rates and baseline concerns over financial stability which raise the specter of significant tax increases often serve to deflect business managers' attentions away from areas which otherwise possess attractive operating characteristics. Such circumstances are mitigated in areas with overriding market appeal, such as Southern California and Central Florida. A high degree of sensitivity to tax differentials and financial inducements does exist within that universe of companies contemplating intra-market relocations.

It is important to note, moreover, that taxation and financial management issues occupy roles with varying degrees of prominence in the minds of corporate decision-makers depending upon their individual stations within firms prospectively considering a new location for their operations. Those

individuals at the corporate real estate and facilities planning levels within publicly-held firms are becoming increasingly sophisticated with respect to relative differentials in taxation and financial management.

In most instances, they see the issue of taxation as a tie-breaker, considered at the margin when the need arises to draw fine distinctions between two closely competing locations. For the most part, they recognize full-well that significant tax inducements which accrue to their local operations will at some point in time be countered with the need for their firm to pay a relatively higher proportion of taxes in response to another firm's tax benefit. Typically, they recognize the public relations cost of significant tax inducements when measured against the tax burdens of their corporate neighbors. Finally, they recognize that such tax inducements are short-term in impact and contractual in nature to the extent that tax incentives may require specific performance on the part of the firm which may be beyond its capabilities at any given point in time.

Those individuals who are private owner/managers perceive the role of tax policies, tax incentives, and financial inducements somewhat differently. In many instances, those individuals may perceive a personal financial benefit as a result of tax incentives. In other instances, they may perceive immediate financial benefits to their companies which minimize the cash flow impacts of new operation start-up costs or reduces the levels of debt necessary to fund new assets acquisition. In any event, the issue of taxes and financial inducements appears to occupy a significant position within the complex of decision factors which such companies employ to choose a final location. In this context, communities are challenged to provide an equitable tax system which generates sufficient revenues to provide quality services while at the same time offering affordable financial inducements to companies who perceive differentials in tax burdens to be significant location factors.

A comparison of local real and personal property taxes a company would encounter at Memphis relative to other communities, including those where closing bases are located, is shown on the accompanying charts (on pages 22 and 23). **Those comparisons demonstrate that the issue of property tax would be somewhat neutral in its effect on the location decision.**

3. UTILITIES

The costs, availability and reliability of electricity, natural gas, water, and wastewater treatment can be determining factors in the site-selection process if the operation relies heavily on those services for production. As an example, in three separate site searches to determine the optimum location for a float glass plant, the cost and availability of natural gas was the primary qualifying factor, considering that the process required in one instance 3,000 mcf of natural gas per day, resulting in monthly billings approaching $300,000.

Commonly, the baseline qualifying factor for a plastics production operation is the cost and reliability of electricity, a dominant variable relative to costs of production. Both examples cited are capital intensive, reducing the impact of labor costs.

No company interviewed by the consultants expressed any concern with the reliability of electrical power. In some areas of the nation, frequent degradation in service causes serious problems in maintaining levels of production. Sudden, if even momentary, interruptions in the power supply can trip motors or other production equipment, creating extreme production problems. It appears that is not the situation in Memphis.

Comparative costs of electricity and natural gas are provided (on pages 22 and 23). **The cost of those utilities in Memphis would be judged to be moderate.**

4. WATER/WASTEWATER

Unless costs are radically high, the costs of water and wastewater treatment seldom have a major effect on the business location decision. However, for operations which use large quantities of water in their manufacturing process costs and availability can be a deciding factor. Availability, more than costs, can serve to eliminate a candidate community. The site selection team may assume that cost can be negotiated where as the inability to deliver or treat water at the minimum required needed can be a "deal-killer".

Costs for water and wastewater treatment in Memphis are radical, but they are radically low. Few communities will be able to successfully compete in this factor. Some, such as Little Rock, may offer lower rates for water consumption, but when wastewater treatment is added Memphis offers an advantage. For example, the cost for eleven million gallons of water in Little Rock is about $2500 less than in Memphis ($4,684 vs $7,271), but wastewater treatment of that amount is over $13,000 less in Memphis ($6,584 vs $19,778).

The total cost for both water and wastewater treatment in Memphis for that amount would be $13,855, where as in Little Rock it would be $24,462. That compares to $59,075 in Austin, Texas or $69,658 in Houston. San Antonio would show a cost of about $25,000 (relatively low) but it would be unlikely that San Antonio could or would deliver that amount of water to a customer because of the problems with the Edwards Aquifer.

On the other hand, Memphis has a tremendous supply of water. According to a publication of Memphis Light, Gas and Water. Memphis and Shelby County are blessed with a nearly inexhaustible source of pure, pleasant tasting water. The area draws its water from artesian wells which tap the Memphis Aquifer, a series of enormous natural reservoirs located about 500 feet and 1,400 feet below the ground's surface. Containing, and it does, an estimated 100 trillion gallons of water, Memphis' water needs are secure for centuries to come.

As a result of filtration, Memphis' water is recognized nationwide as among the purest available. Taste and odor problems are virtually non-existent. The water has a near-perfect blend of minerals such as calcium, magnesium, sodium, potassium, and iron. There are virtually no traces of "heavy metals" such as lead, mercury, or arsenic. The water has no traces of man-made compounds such as pesticides or solvents. The water is a soft bicarbonate, and falls within all EPA and state limits.

The purity and abundance of water in the Memphis area make the city a natural for any business or industry, but especially attractive to brewers, food preparation companies, and cosmetic manufacturers, which require strong, steady supplies of clean water.

Cost Comparisons, Gas, Electricity and Taxation

Selected Base Closure Communities

City	Tax (annual)	Electric (monthly)	Gas (monthly)	Annual Costs
San Bernardino, CA (Norton)	$120,000	$43,270	$36,380	$1,075,800
Beeville, TX (Chase)	$345,000	$19,500	$23,000	$855,000
Big Spring, TX (Webb)	$330,000	$20,700	$23,000	$854,400
Memphis, TN	**$291,640**	**$21,934**	**$18,208**	**$773,344**
Alexandria, LA (England)*	$191,250	$20,097	$28,000	$768,414
Amarillo, TX (Amarillo AFB)	$332,000	$18,000	$18,500	$770,000
Dayton, OH (DESC)	$204,726	$17,398	$27,384	$742,110
Lubbock, TX (Reese)	$275,000	$20,000	$18,500	$737,000
Lake Charles, LA (Chennault)	$180,000	$17,100	$26,850	$707,400
Peru, IN (Grissom)	$186,000	$19,600	$18,000	$637,200

Model Used:

Taxation - $10 million in plant, $2 million equipment

Gas - 5000 MCF per month

Electricity - 400,000 KWH per month with a 1000 KW Demand

Cost Comparisons, Gas, Electricity and Taxation
Selected Communities

City	Tax (annual)	Electric (monthly)	Gas (monthly)	Annual Costs
Dallas, TX	$322,800	$22,991	$30,400	$963,492
Phoenix, AZ (Williams)*	$274,000	$29,635	$16,965	$833,200
Memphis, TN	**$291,640**	**$21,934**	**$18,208**	**$773,344**
Alexandria, LA (England)*	$191,250	$20,097	$28,000	$768,414
Jackson, MS	$289,000	$24,043	$15,726	$766,228
San Antonio, TX (Kelly)	$346,000	$18,504	$15,886	$758,680
St. Louis, MO	$288,500	$18,544	$20,190	$753,308
Dayton, OH (DESC)	$204,726	$17,398	$27,384	$742,110
Columbus, OH	$219,720	$22,261	$20,142	$728,556
Knoxville, TN	$144,500	$21,050	$23,405	$677,960
Wilmington, NC	$148,800	$18,000	$24,166	$654,792
Huntsville, AL	$139,200	$19,311	$23,460	$652,452
Indianapolis, IN	$239,290	$18,698	$15,490	$649,546
Little Rock, AR	$161,000	$24,938	$11,889	$602,924
Louisville, KY	$162,310	$17,847	$18,068	$593,290

Model Used:

Taxation - $10 million in plant, $2 million equipment

Gas - 5000 MCF per month

Electricity - 400,000 KWH per month with a 1000 KW Demand

5. LABOR

The Pathfinders' approach to making judgements about the workforce in Memphis employed the same methodology used in site searches for corporate clients. That methodology involves relying primarily on the anecdotal observations of a sampling of employers, supplemented by available published statistical information.

In confidential face-to-face interviews with employers, they were asked about:

- How long the operation had been in Memphis
- How long the individual interviewed had been at the operation
- If a recent location in Memphis, the experience with start-up hiring
- The quality of job applicants
- How applicants were obtained
- Wage rates in various job categories
- Appraisals of worker quality and productivity
- Turn-over rates
- Absentee rates
- Union issues

As noted in the targeting section of this report which follows, wherein The Pathfinders independently developed recruitment targets for the Depot before conferring with the Memphis Chamber of Commerce about their targets, these interviews were conducted prior to reading the Wadley-Donovan Labor Market Survey conducted in 1995. That was done to ensure an independent non-biased judgement could be made as a result of those interviews.

The interview process resulted in The Pathfinders reaching the same conclusions as the Labor Survey, and that is that the work force in Memphis is generally a weakness. Although some employers expressed satisfaction with that work force, some gave it extremely low ratings. That is consistent with the Wadley-Donovan report in which 29% of 571 employers rated the work force (Cost vs. Productivity) to be low or very low, while 17% rated it high or very high. 53% responded by rating it "O.K."

The Wadley-Donovan survey produced the following results relative to wage rates. (Figures represent average rates).

Production	
Entry Level ($/HR)	$ 7.43
Experienced ($/HR)	$ 9.92
Clerical	
Entry Level ($/HR)	$ 6.77
Experienced ($/HR)	$ 9.31
Sales	
Entry Level ($/HR)	$ 8.59
Experienced ($/HR)	$12.85
Maintenance	
Entry Level ($/HR)	$ 8.44
Experienced ($/HR)	$11.55
Distribution	
Entry Level ($/HR)	$ 7.26
Experienced ($/HR)	$ 9.69
Professional	
Entry Level ($/HR)	$12.49
Experienced ($/HR)	$21.66
Technician	
Entry Level ($/HR)	$9.40
Experienced ($/HR)	$13.96

Those wage rates are consistent with The Pathfinders findings during the interview process, although they may be a little higher as a result of the methodology applied to their calculations. However, they are not high to any meaningful degree. Those wage rates would be judged to be somewhat lower than most other metropolitan locations.

That survey showed the wage rate distribution with 38% under $8.00 per hour and 22% over $11.00 per hour. That would be considered a positive distribution by companies which are capital intensive and not sensitive to high wage rates.

The interview process conducted by The Pathfinders in the assessment of the labor market provided some insights that a written survey could not. A statement that discipline was a problem in the sense that "if you sit an employee down to discuss their unsatisfactory absentee rate, they will simply quit, knowing they can get another job immediately". That summarizes what several stated during the interviews. It is indicative of a very low unemployment rate and a strong demand for workers.

It is the judgement of The Pathfinders that the work force in Memphis is a weakness. A company unwilling or unable to pay good wages will have problems in hiring and maintaining a good work force. Labor intensive operations sensitive to wage rates are consequently not included in the target sectors. It is suggested that, additionally, large publicly-held companies, more accustomed to paying higher wages and providing good benefits, should be the primary targets in the near term as opposed to smaller privately-held companies.

The work force skills required by the targeted industries are varied, and they are possessed by the Memphis work force to a similar degree as most communities. The skills possessed by the Memphis work force is not the problem so much as the attitudes of the work force. Those attitudes also negatively affect the trainability of individuals in the work force.

In that regard, it is noted that several companies interviewed in that former category expressed complete satisfaction with the work force. Those would be characterized as offering an attractive work environment, offering good benefits and paying good wages.

In that context, the Depot arguably offers an appealing supply of prospective workers. As of October, 1996, the Depot employed 848 persons. Just 10 months earlier, the head count stood at 1103 persons. In October, 1992, the Depot employed 2101 thereby releasing over 1300 prospective employees into the Memphis workforce during the period. By October, 1997, nearly all the remaining workers will become available for other employers.

In excess of 90% of these individuals live within 10 miles of the Depot. More than 95% of them have earned a high-school equivalency degree or higher. One-third of this worker pool has completed one or more years of college. Nearly 15% of the total has job skills and experiences in mechanical systems, electrical systems and electronics, maintenance and fabrication areas. This labor pool also features numerous specialists in the fields of computer operations and support, telecommunications, management and administration, engineering, logistics, systems analyses, and related disciplines. Further detail is provided in the Depot workforce comparison included at the end of this section.

6. QUALITY OF LIFE

While this issue occupies varying degrees of importance in the business location decision, it is very difficult to quantify.

A recent survey conducted by The Pathfinders of corporate site-selection professionals discovered that 64% of those professionals rely principally on first-hand observations in making quality of life decisions. Following, in order, 28% rely principally on information supplied by corporations already located in the area, and the balance employed customized quality of life information from development groups, Federal government sources, and media accounts.

Quality of life is largely in the eye of the beholder. Preferences relative to climate, topography (desert or mountain), recreational and cultural opportunities will vary greatly from individual to individual. In today's environment of cost consciousness, the corporate decision-maker is less swayed by quality of life issues than is the owner of a closely held company who would personally relocate to the community.

For the target sectors identified in the following section in this report, an over-lay to the targeting is added which makes the targeting focus on larger publicly-held companies as opposed to smaller privately-owned companies as opposed to smaller privately-owned companies. In today's "bottom-line" business environment, those companies place far more emphasis on cost and operating efficiencies than on quality of life and livability. Their primary concern relative to those issues is that a location might have such a radically low quality of life quotient that it would be difficult to transfer management personnel to the new location.

The company representatives interviewed in Memphis stated that there was no problem in transferring management personnel into the community, and that most once settled found Memphis to have a good living environment.

E. TARGETS IDENTIFICATION

1. FACILITIES INFLUENCE ON TARGETING

The development of industrial sector targets for the Memphis depot was based upon a number of factors. One is, obviously, the suitability of facilities at the Depot. The consultant team's judgement is that those facilities will be attractive and suitable for a variety of operations.

Clearly, those operations include a broad scope of distribution activities, in addition to manufacturing, assembly, fabrication and other industrial operations. To a lesser extent, there are facilities on the Depot which are or could be made suitable for telecommunications activities or electronic processing operations. Flexibility and responsiveness to market conditions remain, nevertheless, the cornerstones of redevelopment success.

The four buildings (689, 489, 690, 490) to the south are best reserved for distribution operations because of the conveyors and related materials handling equipment contained in them. Order fulfillment operations come to mind and the two buildings (670, 470) immediately to the north of those four might also be best suited for distribution operations.

Building 925 on the northwest corner of the Depot is ideal for many types of industrial operations and is perhaps the most marketable of all buildings for such purposes. Its relatively moderate size (60,000 sf.), good column spacing, excellent lighting and ceiling heights make it extremely attractive. The "Hazmat" building 835 is a state-of-the-art facility for hazardous materials handling and as such is will be very appealing to that niche market.

The two new buildings (560 and 360) can serve either distribution operations or industrial operations (or a combination of the two). Building 360, with its modern, state-of-the-market facilities may also be attractive to operations with such requirements, especially in consideration of the proximity to the airport. Building 560 also has some 80,000 square feet of air conditioned space.

The complex of twenty World War II warehouses, each approximately 110,000 square feet in floor area, presents constraints for operations requiring ceiling clearances beyond 13 feet. Moreover, there is presently limited room to turn trucks; each is divided into five bays (creating restroom access problems if multi-tenant occupancy is anticipated); and, lighting is poor. However, those buildings can be used for either distribution or industrial operations. They are also well-suited for smaller operations in a multi-tenant configuration. Similar facilities, at Gentile Air Force Station/Defense Electronic Supply Center, are now used for an array of functions including office operations (space modified to provide windows/sky lights).

a. Distribution Operations

This is an obvious target for the Depot and Memphis. Added in this broad sector should be mail order/catalogue/order fulfillment operations, such as the William Sonoma and Technicolor operations. Other distribution operations are so numerous in Memphis that examples would be redundant. Beyond this obvious target, other target sectors are listed on the following pages.

b. Medical Equipment, Instruments, Products and Supplies

This sector is experiencing a Growth Rate of Annual Output of 5.7%. Locally, Baxter Health Care Products is the second largest orthopedic implant producer in the nation. Other industry leaders in Memphis include Dow-Corning Wright, Sunrise Medical, Danek Group, Viral Antigens Pfizer and Block Drug. As a target this sector includes pharmaceuticals, which may be especially attracted to building 359 with its climate control system.

Examples of 1995 Locations by Companies in Sector

State	Company Name	Location	# of jobs Created
AZ	Pacesetter Inc.	Anchorage/statewide	60
OH	Keithly Instruments	Solon	393
IL	Sammons Preston Inc.	Bolingbrook	140
NC	Banner Pharmacaps, Inc.	High Point	340
NJ	Bayer Corp./Consumer Care Div.	Morris Township	500
TX	Rx America	Fort Worth	400

Examples of 1995 Expansions by Companies in Sector

State	Company Name	Location	# of jobs Created
TX	Maxxim Medical	Athens	150
CA	Abbott Laboratories	Morgan Hill	450
GA	Rhone Merieux, Inc.	Athens	300
NY	Wyeth Ayerst Laboratories	Rouses Point	250
TN	Block Drug Company, Inc.	Memphis	103
VA	Merck & Company	Rockingham City	750

c. Computers, Office Equipment and Repair

This segment is one of the leading in Growth Rate of Output (7.3%) according to the U.S. Bureau of Labor Statistics and the U.S. Bureau of Economic Analysis. That factor alone makes it an attractive target, and the Federal Express presence enhances its appeal as a target when component repair is added to this broad sector. Thirty-two such companies now have such operations in Memphis.

Examples of 1995 Locations by Companies in Sector

State	Company Name	Location	# of jobs Created
CA	Packard Bell Electronics	Sacramento	3500
FL	Motorola	Palm Beach City	500
IL	U.S. Robotics	Morton Grove	2100
NH	Vectron Technologies	Hudson	250
OR	LSI Logic Corp.	Gresham	2000
VA	Motorola Inc.	Goochland City	5000

Examples of 1995 Expansions by Companies in Sector

State	Company Name	Location	# of jobs Created
AL	SCI Systems Inc.	Huntsville	1000
AR	Rank Video	N. Little Rock	530
KS	Allied Signal	Lenexa	1100
KY	Lexmark International	Lexington	1000
MN	Seagate Technology	Bloomington	500
MS	Howard Industries, Inc.	Laurel	500

d. Printing and Publishing

This sector is experiencing a 3.6% Growth Rate of Output. The transportation resources in Memphis can be a major advantages to those operations which must meet tight deadlines, but generally targeting in this sector should focus on those using digital printing technology (such as the R.R. Donnelley operation now in Memphis).

Examples of 1995 Locations by Companies in Sector

State	Company Name	Location	# of jobs Created
IA	Cedar River Paper Co	Cedar Rapids	200
MD	Aluglass Packaging	Worchester City	150
NC	Southern Container Corp.	Mooresville	150
SD	Universal Packaging	Mitchell	200
TX	Checks in the Mail	New Braunfels	350
WV	Quad/Graphics Inc.	Martinsburg	1100

Examples of 1995 Expansions by Companies in Sector

State	Company Name	Location	# of jobs Created
DE	Playtex	Dover	150
KY	V.G. Reed & Sons Inc.	Louisville	225
MS	ATAPCO Office Products	Kosciusko	300
NY	Visy Paper	Staten Island	400
OH	Vectra	Columbus	200
TN	World Color Press	Covington	300

e. Back Office Operations

These operations cross many business sectors, therefore the Growth Rate of output cannot be quantified. However, telecommunications (reservations centers, etc.), data processing and other such operations are very active at this time, and some of the facilities on the Depot can be converted to accommodate those operations. Facilities on the Gentile Air Station in Dayton that are very similar to the "typical" buildings are being converted to accommodate a 2000 employee Banc One processing center. Fiber- optics availability at the Depot, its location in the central time zone, and high speed data transmission being in-place are among the assets which can be offered to companies in this sector. The General Electric (ASI) operation in Memphis is an excellent example.

Examples of 1995 Locations by Companies in Sector

State	Company Name	Location	# of jobs Created
AZ	Charles Schwab Co.	Phoenix	2040
IL	Boise Cascade Corp.	Peru	150
MO	Idelman Telemarketing	Columbia	200
NV	William Sonoma	Las Vegas	350
UT	Teleperformance	Davis City	300
WA	Dakotah Direct	Spokane County	640

Examples of 1995 Expansions by Companies in Sector

State	Company Name	Location	# of jobs Created
DE	MBNA	Wilmington/Newark	1938
FL	Nationwide	Gainesville	1000
MD	Riggs National Bank	Prince George's City	625
NC	MCI	Cary	900
TX	Dell Computers	Round Rock	1600
OK	Viagraphix	Pryor	528

f. Food Processing

This sector is experiencing a Growth Rate of output of 3.1%, but more importantly, Memphis seems to be a natural attraction for food processing operations. To its transportation network, logistics advantages, competitive tax and utilities costs, and relatively low cost of energy is added the asset of an excellent quality of water available in large quantities. The Memphis aquifer contains an estimated 100-trillion gallons of water which is recognized nationwide as among the purest available. Operations in this sector could be accommodated on the Depot and only marginally affected by limited rail access. Examples in Memphis include Kellogg and Purina.

Examples of 1995 Locations by Companies in Sector

State	Company Name	Location	# of jobs Created
FL	Perdue Farms Inc.	Walton City	800
IL	Associate British Foods	Jacksonville	343
KS	Swift	Junction City	375
MD	Frito-Lay Inc.	Harford City	600
NJ	Whitlock Packaging	Wharton Boro	600
TX	Sanderson Farms Inc.	Bryan-College Station	1400

Examples of 1995 Expansions by Companies in Sector

State	Company Name	Location	# of jobs Created
CA	Mission Foods	Cucamonga	600
GA	Cagle's, Inc.	Pine Mountain Valley	1025
MN	Luigino's	Hibbing	600
MS	Choctaw Maid Farms, Inc.	Carthage	750
TN	Pillsbury Company	Murfreesboro	600
VA	Anheuser-Busch Inc.	James City	1000

g. Plastics Production

This miscellaneous plastic products sector is experiencing a 3.4% Growth Rate of Output. Relatively low cost of energy (an important criteria in the location of a plastics plant), rail availability for inbound raw materials and the facilities on the Depot make this sector a logical target.

Examples of 1995 Locations by Companies in Sector

State	Company Name	Location	# of jobs Created
DE	Zenith Products	New Castle	800
ID	Ballard Medical	Pocatello	260
IL	Crisp Containers LLC	Marion	200
KS	Thermal Plastic	El Dorado	300
KY	Cooper Tire & Rubber	Mount Sterling	400
MO	Tamor Plastics	Louisiana	130

Examples of 1995 Expansions by Companies in Sector

State	Company Name	Location	# of jobs Created
AL	Courtaulds Fibers Inc.	Axis	100
CA	Optiplast, Inc.	Los Angeles	100
IN	Berry Plastics Corp.	Evansville	116
NJ	ZETA Consumer Products Inc.	Mansfield Township	100
NY	Alliance Precision Plastics	Rochester	115
TN	E.I. DuPont deNemours	Chattanooga	150

2. OTHER INFLUENCES ON TARGETING

The analysis of the attributes of Memphis as a business location is presented in the preceding section. While the suitability of existing facilities influences targeting in consideration of constrains (none for example, is suitable for a plant to produce most glass products), the attributes of the local environment in which the Depot is located also influence targeting.

The description of the typical site selection process which is provided in the previous section may be useful in developing an understanding of how a community's attributes affect a company's decision relative to locating in a community. Those attributes, as a consequence, also influence the community's targeting of business sectors upon which to concentrate precious marketing resources. Those resources are finite, and should be applied to companies which will be most attracted by a community's strengths and most tolerant of its weaknesses.

In identifying sectors which contain those companies, The Pathfinders relied on its experience in conducting site selection projects for corporate clients over the past fifteen years, during which time it has amassed a data base of the locational criteria of companies across a broad array of business and industrial sectors. Those requirements were matched with the attributes of Memphis (as described in the comparative analysis). In addition to the application of a proprietary screening matrix to determine operations for which Memphis possesses advantages, The Pathfinders staff over-layed its field experience and the knowledge of Memphis gained during this project to identify target sectors.

In most projects conducted by The Pathfinders in military base reuse planning, the local economic development organizations are rather unsophisticated and are staffed by somewhat inexperienced economic development professionals. That is not true in Memphis.

The Pathfinders found the Memphis Chamber of Commerce to be staffed by a number of highly qualified professionals who were experienced, knowledgeable, and able to apply sophisticated techniques to the economic development process. With that as a consideration, after independently developing its target sectors for the Memphis Depot, The Pathfinders conferred with Chamber of Commerce executives to determine the extent to which they matched those sectors identified as targets by the Chamber.

It was no surprise to find that the targets identified by The Pathfinders mirrored the Chamber's's targets with the exception of one sector. Plastics products is identified as a target for the Depot but not by the Chamber.

3. TARGET IDENTIFICATION

One addition influence is considered in targeting: targets should be within relatively high-growth industrial sectors. (The exception to that is company specific, when certain companies which are down-sizing may be consolidating at a new location.) Sector growth rates, the suitability of Depot facilities and an analysis of operational needs in relation to Memphis strengths and weaknesses were considered in developing recommended target sectors for the Depot.

Overall, the manufacturing sector is projected to enjoy annual growth of 2 percent in real output during the next 10 years, led by the expected high growth in U.S. exports. The projected growth in exports is anticipated to be concentrated in the capital goods industries, especially in the computer equipment and related industries. Durable goods production is expected to enjoy one of the fastest rates of output growth in the manufacturing sector, at 2.2 percent annually. The nondurable manufacturing sector is projected to register a gain in real output of 1.8 percent during the next 10 years, slightly slower than the estimated 2 percent annual growth rate for all manufacturing.

In a subsequent report, a marketing strategy will be produced which outlines a campaign to reach companies within these target sectors with compelling reasons to consider Depot facilities as a location for operations. That campaign will have a national and international focus, rather than simply moving existing operations from one part of Memphis to facilities on the Depot.

F. LEASE RATE ANALYSIS

The information in the foregoing section has defined the strengths and weaknesses of Memphis as a business location and has described the position which it holds in the business recruitment market place. Its principal weakness is the labor force and its predominant strength is its geographic location and transportation network. Memphis is located within 50 miles of the geographic population center of the United States and 65% of the U.S. population in 152 metropolitan markets can be reached by truck overnight. The Memphis International Airport handles more cargo than any other airport in the world.

Those assessments have allowed the consultant team to identify the most appropriate business recruitment targets for the Depot distribution and warehouse operations are obvious targets, but the industrial, commercial and other business segments listed can also be attracted as tenants of the Depot facilities.

In considering the lease rates which the Depot Facilities can command, existing local demand is a dominant factor. That demand is very strong as described in the following excerpt from the "Market Update" prepared by the Society of Industrial and Office Realtors to describe the market in 1995.

> *"The city of Memphis once again experienced exceptional growth in 1995. There were some 15,000 new jobs created for the Memphis metropolitan area which represented a 3% increase in non-agricultural employment over 1994. The growth equaled 104 companies which opened new facilities and 87 existing companies which expanded. Nearly 200 new and expanding companies resulted in over $325 million in capital investment. Even though unemployment is under 4.5%, Memphis continues to be a major force as companies review locations for projects.*

The Memphis industrial market continues to experience record levels of absorption, particularly in the leasing of bulk distribution space. Also, more than 4.5 million square feet of space was absorbed in 1995. There has been a steady stream of new national companies which consolidated their distribution and telecommunication operations in Memphis. There was a much new speculative development completed during 1995 as there was vacant space at the beginning of the year. While the large bulk users of space makeup the majority of users in the industrial market, significant office space, technical repair operations, and telecommunication centers were included in the 1995 absorption rates.

Levels of positive absorption will continue in the industrial markets as companies across the country consider consolidation of their distribution operations".

That same SIOR publication quoted average prices for new industrial space as $3.00 per foot. The Pathfinders, in developing the recommended lease rates for Depot facilities polled developers and realtors active in the local market to solicit their opinions. The results were surprisingly uniform, and the following are recommended as lease rates for Depot facilities. These rates consider that the leasee pays real estate taxes, insurance, utilities and maintenance (except on the roof and structure).

- The block of "twenty typical" buildings, each approximately 110,000 square feet should be priced at $1.50 per foot.

- The six "typical" buildings recommended for distribution operations (470, 489, 490, 670, 689, 690) should be priced at $2.00 per foot.

- The two new large buildings (360 and 560) should be priced at $3.00 per foot.

- The Hazardous Materials Building (835), assuming it is reserved for an operation in need of its special features, should be priced at $3.50 per foot.

- Building 925 can command $3.00 per foot and should be priced at that rate, ideally for an industrial operation.

Such rates should lead to interim leases at Memphis Depot. Those leases should be in consideration of protection and maintenance and at "no cost" to the Memphis Depot Redevelopment Agency. Interim leases will serve the public interest; facilitate local economic adjustment; create and restore jobs; promote reuse; protect and maintain federal property and, otherwise meet the tests for leases below fair market value as set forth in 10 USC 2687 (f).

WORKFORCE
DDMT COMPARISON CHART
OCTOBER 1992 VS OCTOBER 1996

1996

POSITION TITLES	TOTAL EMPLOYEES
AIR CONDITIONING EQUIPMENT MECHANIC	1
AUTOMOTIVE MECHANIC	5
BASE TRANSITION COORDINATOR	1
BATTERY REPAIRER	1
CARPENTER	3
CIVIL ENGINEER	1
COMMAND SECURITY OFFICER	1
COMMUNICATIONS CLERK	1
COMMUNICATIONS LINE INSTALLER	2
COMPUTER ASSISTANT	1
COMPUTER OPERATOR	6
COMPUTER SPECIALIST	15
CONSTRUCTION REPRESENTATIVE	1
COPIER/DUPLICATING EQUIPMENT OPERATOR	1
DISTRIBUTION FACILITIES SPECIALIST	11
ELECTRICIAN OR ELECTRICAL WORKER	4
ELECTRICIAN (HIGH VOLTAGE)	1
ELECTROMOTIVE EQUIPMENT MECHANIC	1
ELECTRONIC INDUSTRIAL CONTROLS MECHANIC	2
ELECTRONIC MECHANIC	2
EMPLOYEE DEVELOPMENT ASSISTANT	1
EMPLOYEE RELATIONS SPECIALIST	3
ENGINEERING EQUIPMENT OPERATOR	2
ENGINEERING TECHNICIAN	2
ENVIRONMENTAL PROTECTION ASSISTANT	1
EQUIPMENT SPECIALIST	1
FILE CLERK	1
FIRE PROTECTION SPECIALIST	1
FORK LIFT OPERATORS	11
FREIGHT RATE SPECIALIST	9
HAZARDOUS MATERIALS REPACKAGER	6
INDUSTRIAL EQUIPMENT MECHANIC	5
INFORMATION RESOURCES SPECIALIST	6
INSTALLATION MAINTENANCE	2
INSTALLATION SERVICES MANAGER	1

WORKFORCE
DDMT COMPARISON CHART
OCTOBER 1992 VS OCTOBER 1996

1996

POSITION TITLES	TOTAL EMPLOYEES
LABOR RELATIONS SPECIALIST	1
LABORER	23
MAIL AND FILE CLERK	2
MAIL PROCESSING EQUIPMENT OPERATOR	1
MAINTENANCE WORKER OR MECHANIC	7
MANAGEMENT ANALYST	1
MANAGEMENT ASSISTANT	11
MATERIALS EXAMINER AND IDENTIFIER	28
MATERIALS HANDLER	298
MEDICAL CLERK (OA)	1
MESSENGER (MOTOR VEHICLE OPERATOR)	1
MICROFORM EQUIPMENT OPERATOR	3
MILITARY PERSONNEL CLERK	1
MOBILE EQUIPMENT OPERATOR	2
MOBILE EQUIPMENT SERVICER	1
MOTOR VEHICLE DISPATCHER	2
MOTOR VEHICLE OPERATOR	24
OCCUPATIONAL HEALTH NURSE	1
OFFICE AUTOMATION CLERK	22
OUTPLACEMENT AND TRANSITIONS SPECIALIST	3
PACKAGING SPECIALIST	1
PACKER	149
PAINTER	2
PERSONNEL CLERK	5
PERSONNEL MANAGEMENT SPECIALIST	1
PEST CONTROLLER	2
PIPEFITTER	1
POLICE OFFICER	12
PRESERVATION PACKAGER	5
PROGRAM ANALYST	2
PURCHASING AGENT	2
QUALITY ASSURANCE SPECIALIST	5
ROOFER	1
SAFETY AND OCCUPATIONAL HEALTH SPEC	1
SAND BLASTER	2
SECRETARY	13
SECURITY CLERK	2

WORKFORCE
DDMT COMPARISON CHART
OCTOBER 1992 VS OCTOBER 1996

1996

POSITION TITLES	TOTAL EMPLOYEES
SECURITY SPECIALIST	2
SHEET METAL MECHANIC	1
SOCIAL WORKER	1
STATISTICAL ASSISTANT (OA)	1
STORAGE SPECIALIST	1
SUPERVISORY ENVIRONMENTAL ENGINEER	1
SUPERVISORY GENERAL ENGINEER	1
SUPERVISORY GENERAL SUPPLY	2
SUPPLY CLERK	46
SUPPLY SYSTEMS ANALYST	3
TELECOMMUNICATIONS SPECIALIST	1
TELEPHONE OPERATOR	1
TOOLS AND PARTS OPERATOR	1
TRACTOR OPERATOR	1
TRAFFIC MANAGEMENT SPECIALIST	2
TRANSPORTATION ASSISTANT OR CLERK	21
WOOD WORKER	8
WORK ORDER CLERK (OA)	2
TOTAL POSITIONS	**848**

WORKFORCE
DDMT COMPARISON CHART
OCTOBER 1992 VS OCTOBER 1996

EDUCATIONAL LEVEL
1996

TOTAL EMPLOYEES		ACADEMIC
O		No Formal Education or Some Elementary School
1-	0.12%	Elementary School Completed-No High School
26-	3.07%	Some High School-Did Not Graduate
522-	61.56%	High School Graduate or GED
13		Terminal Occupation Program-Did Not Complete
27		Terminal Occupation Program-Certificate/Completion
48		Some College-Less Than One Year
48	5.70%	One Year College
36	4.30%	Two Years College
40	4.72%	Associate Degree
20	2.40%	Three Years College
8		Four Years College
44	5.20%	Bachelor's Degree
7		Post-Bachelor's
0		First Professional Degree
0		Post-First Professional
8		Master's Degree
0		Post-Master's

TOTAL: **848**
96.8% GED or More

DDMT COMPARISON CHART
OCTOBER 1992 VS OCTOBER 1996

ETHNIC GROUP
1996

DESCRIPTION	TOTAL	
American/Alaskan Indian	0	
Asian/Pacific Islander	4-	0.470%
African American/Not Hispanic	687-	76.300%
Hispanic	2-	0.235%
Caucasian	155-	18.280%

TOTAL: 848

WORKFORCE
DDMT COMPARISON CHART
OCTOBER 1992 VS OCTOBER 1996

1992 POSITION TITLES - TOTAL EMPLOYEES 2101

TOTAL EMPLOYEES	POSITION TITLES
1	Accountable Property Technician
1	Accountant
13	Accounting Technician
4	Air Conditioning Equipment Worker
1	Architect
1	Asst. Director, Community Club Worker
1	Asst. Personnel Officer
2	Attorney-Advisor (General)
3	Auditor
1	Automotive Equipment Repairer
10	Automotive Mechanic
1	Battery Repairer
2	Blocker & Bracer Work Inspector
1	Boiler Plant Equipment Mechanic
2	Budget Analyst
3	Budget Assistant
5	Carpentry Worker
3	Carton & Bag Maker Operator
1	Civil Engineer
10	Clerk-Typist
1	Communications Clerk
4	Communications Line Installer
7	Computer Assistant
1	Computer Manager
19	Computer Operator
32	Computer Specialist
3	Constructions Representative
16	Contract Specialist
3	Copier/Duplicating Equipment Operator
1	Crane Operator
4	Data Transcriber
2	Detective
1	Distribution Facilities Clerk
3	Distribution Facilities Manager
25	Distribution Facilities Specialist
1	Electrical Engineer
16	Electrical Worker
4	Electrical Worker (High Voltage)
7	Electromotive Equipment Mechanic
4	Electronic Industrial Controls Worker

1992 Cont'd

5	Electronic Mechanic
1	Electronics Technician
1	Employee Development Assistant
7	Employee Development Specialist
10	Employee Relations Specialist
6	Engineering Equipment Operator
4	Engineering Technician
1	Environmental Protection Specialist
5	Equal Employment Specialist
2	Equal Opportunity Assistant
1	Equipment Cleaner
1	Equipment Manager
3	Equipment Specialist (Automotive)
5	File Clerk
2	Financial Manager
3	Financial Systems Analyst
3	Fire Protection Inspector
25	Forklift Operator
16	Freight Rate Specialist
1	General Attorney
6	General Communications Equipment
3	General Engineer
2	General Equipment Inspector
6	Hazardous Materials Repackager
3	Heavy Mobile Equipment Mechanic
5	Industrial Engineer
14	Industrial Equipment Mechanic
1	Industrial Hygienist
1	Installation Services Manager
1	Instructional Systems Specialist
1	Labor Relations Specialist
28	Laborer
1	Lead Accounting Technician
3	Lead Shipment Clerk
15	Lead Supply Clerk
2	Legal Technician
55	Police Officer (10 Lead/10 Supv included in this figure)
2	Mail and File Clerk
2	Mail Processing Equipment Operator
15	Maintenance Worker
13	Management Analyst
24	Management Assistant
54	Materials Examiners and Identifier
593	Materials Handler

1992 Cont'd	
1	Mechanical Engineer
3	Messenger (MVO)
4	Microform Equipment Operator
1	Military Clerk
1	Mobile Equipment Maintenance Mechanic
2	Mobile Equipment Metal Worker
3	Mobile Equipment Operator
3	Mobile Equipment Servicer
2	Motor Vehicle Dispatcher
43	Motor Vehicle Operator
23	Office Automation Clerk
1	Offset Duplicating Press Operator
2	Packaging Machine Operator
2	Packaging Specialist
356	Packer
8	Painter
3	Peripheral Equipment Operator
22	Personnel Clerk
11	Personnel Management Specialist
14	Personnel Stuffing Specialist
6	Pest Controller
1	Photographer
2	Physical Security Specialist
4	Pipefitter
4	Planner and Estimator
10	Position Classification Specialist
24	Preservation Packager
1	Preservation Worker Foreman
3	Procurement Analyst
7	Procurement Clerk
38	Program Analyst
1	Program Manager
1	Public Affairs Specialist
21	Quality Assurance Specialist
3	Roofer
3	Safety and Occupational Health Specialist
4	Sandblaster
1	Saw Reconditioner
43	Secretary
4	Security Assistant
4	Security Specialist
2	Sheet Metal Mechanic
41	Shipment Clerk
1	Sign Painter
4	Staffing Clerk
1	Statistical Assistant (OA)

1992 Cont'd

24	Stock Handler
2	Storage Specialist
4	Student Trainee (Engineer)
1	Student Trainee (Personnel)
1	Supervisory Accountant
6	Supervisory General Supply Specialist
80	Supply Clerk
14	Supply Systems Analyst
1	Support Services Supervisor
7	Traffic Management Specialist
3	Transportation Assistant
1	Transportation Loss and Damage Clerk
6	Telecommunications Specialist
1	Telephone Operator
2	Tire and Tube Repairer
2	Tool and Parts Attendant
5	Tractor Operator
1	Visual Information Specialist
2	Welder
1	Wire Communications Equipment Specialist
2	Wood Crafter
19	Woodworker
4	Work Order Clerk
1	Writer/Editor (OA)

TOTAL: 2,101

WORKFORCE
DDMT COMPARISON CHART
OCTOBER 1992 VS OCTOBER 1996

EDUCATIONAL LEVEL
1992

TOTAL EMPLOYEES	ACADEMIC
2	No Formal Education or Some Elementary School
4	Elementary School Completed-No High School
83	Some High School-Did Not Graduate
1224	High School Graduate or GED
27	Terminal Occupational Program-Did Not Complete
85	Terminal Occupational Program-Certificate/Completion
142	Some College-Less Than One Year
131	One Year College
104	Two Years College
85	Associate Degree
41	Three Years College
11	Four Years College
111	Bachelor's Degree
22	Post-Bachelor's
2	First Professional Degree
0	Post-First Professional
24	Master's Degree
3	Post-Master's

TOTAL: **2,101**
95.76% GED or More

WORKFORCE
DDMT COMPARISON CHART
OCTOBER 1992 VS OCTOBER 1996
ETHNIC GROUPS

1992

DESCRIPTION		TOTAL	
American/Alaskan Indian		12-	0.57%
Asian/Pacific Islander		5-	0.24%
African-American/Not Hispanic		1516-	72.16%
Hispanic	7-	0.33%	
Caucasian		561-	26.70%

TOTAL: 2,101

WORKFORCE
DDMT COMPARISON CHART
OCTOBER 1992 VS OCTOBER 1996

EMPLOYEE ZIP CODE LISTING
1996

DDMT ZIP CODE	TOTAL	DDMT ZIP CODE	TOTAL
38002	4	38116	95
38004	3	38117	5
38008	1	38118	59
38011	1	38119	3
38012	1	38122	11
38017	4	38125	13
38018	6	38126	2
38023	3	38127	74
38028	4	38128	45
38029	1	38133	5
38053	11	38134	14
38057	1	38135	3
38069	1	38138	4
38101	3	38139	1
38103	1	38141	14
38104	7	38168	1
38105	3	38174	2
38106	11	38183	1
38107	21	38186	1
38108	21	38619	1

1996 Cont'd

DDMT ZIP CODE	TOTAL	DDMT ZIP CODE	TOTAL
38109	147	38632	5
38111	28	38635	1
38112	13	38637	8
38114	79	38654	6
38115	33	38671	8
38680	1	72342	1
72301	3	72364	1
72315	2	72419	1
72319	1	75570	1

IV. INVENTORY AND ANALYSIS OF FACILITIES

A. LAND USE AND ZONING

The Depot property consists of over 600 acres containing approximately six million square feet of building space. There is a total of 130 buildings on the property. These include major warehouses, maintenance facilities and support buildings. Administrative and offices uses are located along the Airways Boulevard frontage. Warehousing and distribution uses are concentrated throughout the interior of the property.

The Memphis Defense Depot has served as a major distribution center for over fifty years. During this time, it has had a significant influence on the surrounding land use pattern. The Depot planning district continues to be dominated by single-family residential development. Other uses, including commercial and light industrial businesses are also prevalent. Airways Boulevard in particular has become a major commercial corridor. Below is a description of the specific land uses existing along Airways Boulevard and the other roadways bordering the Depot. The land use map, following this section, graphically depicts this information.

Airways Boulevard

Airways Boulevard, a major thoroughfare, represents the eastern boundary of the Defense Depot. Between Dunn Avenue and Dwight Road, along the eastern side of Airways, exists a mixture of commercial, office, light industrial, and single family residential uses. On the west side of Airways Boulevard, starting south of the Depot property and extending south to Ball Road is a mixture of commercial and multi-family residential uses. Two large multi-family apartment complexes are located between several commercial developments, including automobile dealerships, automotive repair shops, a convenience store, and a gas station. The area between Dwight Road and the

terminus of Ball Road to the east of Airways Boulevard is dominated by commercial uses, including a grocery store, deli, and car wash. These uses are located between several vacant lots and vacant buildings. A day care center is located at the center of Airways Boulevard and Pecan Circle. Several vacant lots and vacant buildings are dispersed throughout the corridor.

Ball Road

Ball Road, a major street that represents the southern boundary of the Defense Depot, is dominated by residential land uses including single-family, duplex and multi-family uses. Between Airways Boulevard and Ketchum Road there is a mixture of single family and duplex residential uses, several vacant lots and a church. Land use between Ketchum and Perry Roads consists primarily of single family homes. A large multi-family complex is located west of the Ball Road/Ketchum Road intersection. Three churches are also located in this area.

Perry Road

Perry Road, a major street which forms the western boundary of the Defense Depot, consists primarily of residential uses. The area between Ball Road and Mallory Avenue is consumed entirely by single family homes. Between Mallory Avenue and Dunn Avenue is a mixture of single family homes and duplex structures, a tavern, a daycare center, and three churches.

Dunn Avenue

Dunn Avenue is a major street that runs along the northern boundary of the Defense Depot. It has a mixture of single family residential, commercial and light industrial uses. The area between Perry Road and Hays Road is dominated by light industrial uses, including the Dunn Field storage facility.

The area between Hays Road and Lapaloma Street consists entirely of single family homes. Between Lapaloma and Castalia Streets is a mixture of single family homes and single family structures converted to light industrial uses. The area between Castalia Street and Custer Street is used as a truck storage facility. Single family structures converted to various light industrial uses dominate the area between Custer Street and Airways Boulevard. A vacant commercial building is also located in this area.

1. EXISTING ZONING

The Defense Depot property is currently zoned (I-L) Light Industrial. This zoning district permits manufacturing, wholesaling and warehousing uses. The district was designed specifically for area like the Depot, that are accessible to major roadways. The existing zoning in the vicinity of the Defense Depot is a diverse mix of residential, commercial and industrial districts. Specific zoning districts are depicted on land-use map which follows and described below.

The area to the immediate north of the Defense Depot (north of Dunn Avenue) is zoned mostly Light Industrial (I-L) except for a Single Family Residential (R-S6) District located between Hayes Road and just west of Castalia Street, and a small Medium Density Multiple Dwelling Residential (R-MM) District to the west of Castalia Street.

The area to the west of the Defense Depot (west of Perry Road) is zoned residential including a Single Family Residential (R-S6) District located between Dunn Avenue and Elliston Road, and a Duplex Residential (R-D) District located between Elliston Avenue and Ball Road.

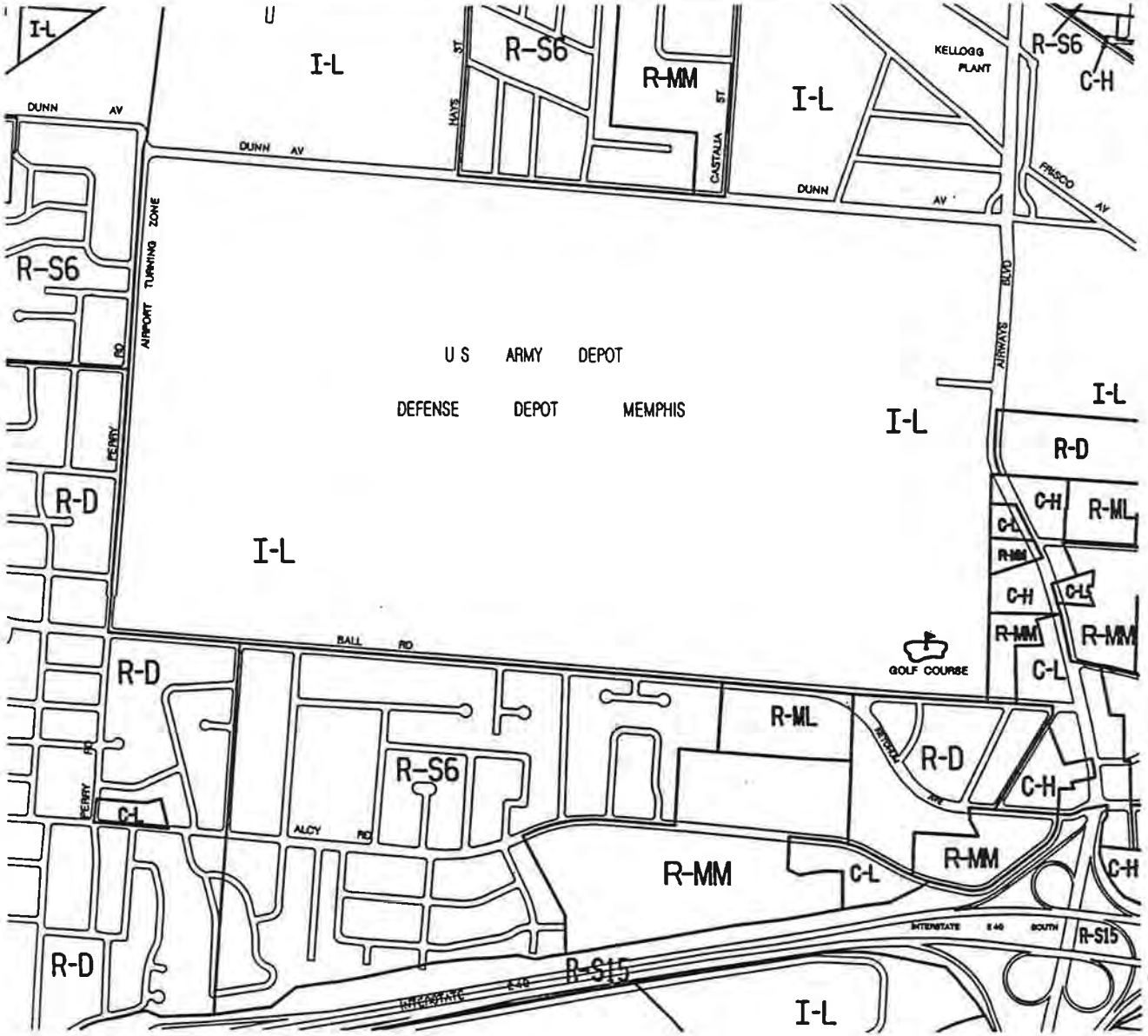
Residential zoning also predominates to the south of the Defense Depot. A large Single Family Residential (R-S6) District is located between Rozelle Street and west of Gladney Drive. There are two Duplex Residential (R-D) Districts, one located between Perry Road and Rozelle Street, and a second located between the Ball Road/Ketchum Road intersection and Lindbergh Road. A small

Medium Density Multiple Dwelling Residential (R-MM) District containing the Orchid Manor Townhouse Complex is located to the southwest of the Ball Road/Ketchum Road intersection.

Along Airways Boulevard there is a mixture of residential, commercial and industrial zoning. A Light Industrial (I-L) District is located along the west side of Airways Boulevard extending to the south of the Defense Depot's Gate 2. Further south is a small Duplex Residential (R-D) District terminating at the northern boundary of a commercial corridor which extends southward to Ketchum Road. Several small multi-family dwelling districts are dispersed between the commercial zoning in this area.

2. ZONING ANALYSIS

The existing I-L (Industrial-Light) zoning of the Depot property permits all of the uses proposed by the Recommended Redevelopment Plan. It is the appropriate designation for all light manufacturing and warehousing uses planned for the interior of the property. The I-L District also permits the majority of community service and training uses proposed for the Airways Boulevard frontage including both parks and recreation facilities. More specific design and use restrictions should be managed through a set of covenants and restrictions.



LEGEND:

I-L LIGHT INDUSTRIAL

C-H HIGHWAY COMMERCIAL

C-L LOCAL COMMERCIAL

R-MM MULTI-FAMILY

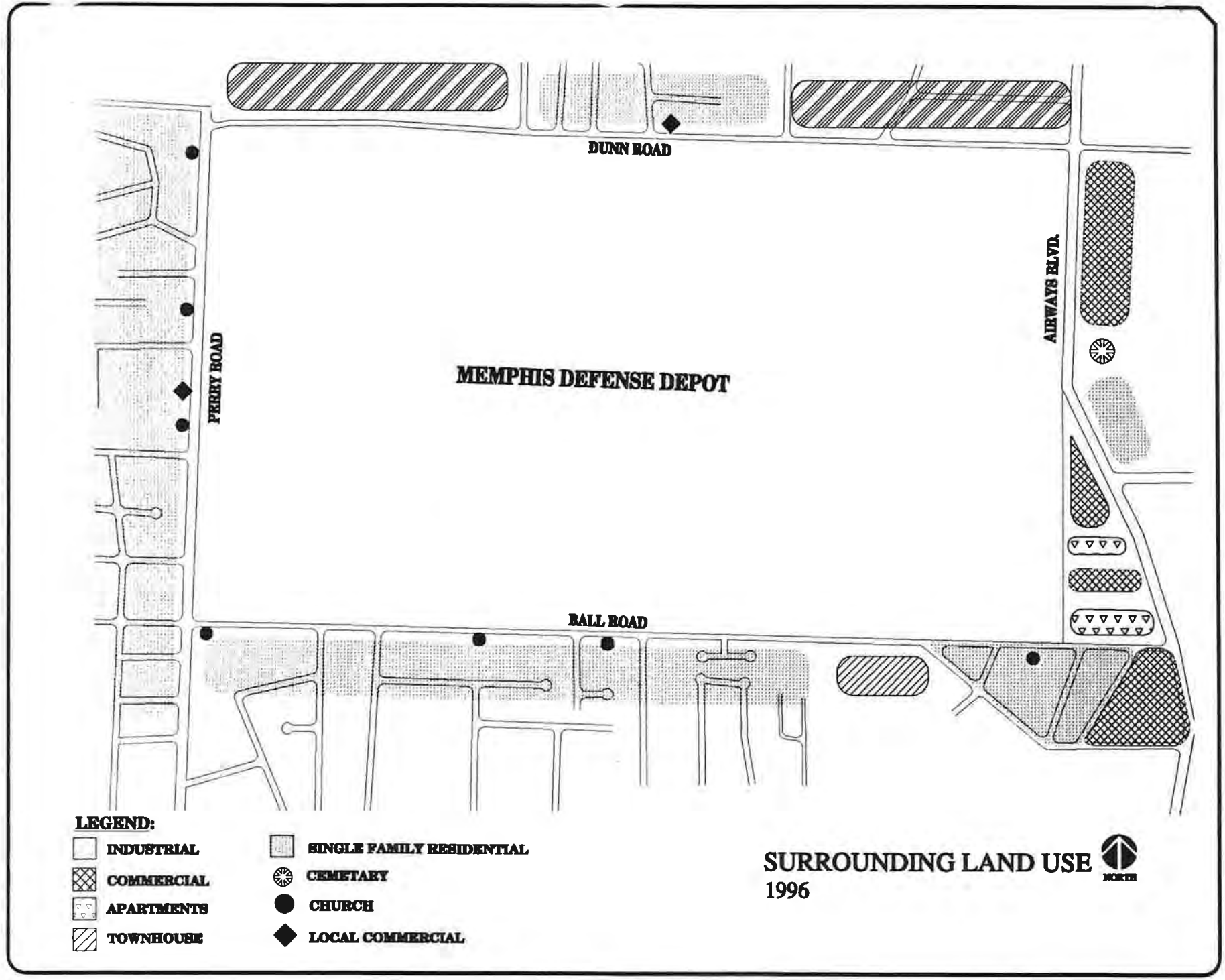
R-ML MULTI-FAMILY

R-D DUPLEX

R-S6 SINGLE FAMILY RESIDENTIAL

EXISTING ZONING
1996

NORTH


DUNN ROAD
PERRY ROAD
AIRWAYS BLVD.
MEMPHIS DEFENSE DEPOT
BALL ROAD
LEGEND:
INDUSTRIAL
COMMERCIAL
APARTMENTS
TOWNHOUSE
SINGLE FAMILY RESIDENTIAL
CEMETARY
CHURCH
LOCAL COMMERCIAL
SURROUNDING LAND USE
1996
NORTH

B. FACILITIES ASSESSMENT

This facilities assessment is intended to determine the viability of reusing certain individual buildings at the Memphis Defense Depot after closure. All existing structures on the Depot were surveyed to determine their existing physical conditions, handicap accessibility, building code compliance, and current use. These individual surveys are included in the Appendix. Each structure was rated as having "Excellent," "Good," "Fair," "Poor," or "No" reuse potential.

The four structures identified with "Excellent" ratings were all constructed within the last 10 years, and they are substantially compliant with current building codes. They are cosmetically appealing and can be most easily marketed for reuse.

Most structures identified as those with "Good" reuse possibilities are of stable, non-combustible or heavy timber construction. They may also be of less stout, yet stable construction, and have potential reuse options which would not require significant physical modifications. Many of the structures receiving "Good" ratings, such as the housing units and the administration building at the east end of the site, are assumed to remain in the same or a very similar function when turned over to the City of Memphis.

Those structures identified as "Fair" are in stable condition but they may be in a state of disrepair, have remote locations, or have other factors which detract somewhat from their reuse possibilities.

Those identified as "Poor" are those which are structurally unstable, which have minimal square footage limiting reuse possibilities, or have other physical characteristics or limitations that make reuse unlikely or cost prohibitive.

Those identified as "No" are those with no reuse potential. They may be in a state of substantial disrepair, or they may have been so tailored to a specific use, that the abandonment of that use dictates that the structure has no reuse possibilities.

1. MAJOR CONCERNS

The major points of concern in the reuse of any Memphis Depot structures are as follows:

- The structures on the installation, having been part of a Federal Government facility, were never given "Certificates of Occupancy" by the local building code enforcement authority. As a result, when ownership changes, the local authority may opt to evaluate the facilities under what are known as "Change of Use" regulations. This will dictate that each facility, even if its use remains the same as it currently is, will have to be upgraded to comply with current building and fire codes. Adequate means of egress, fire suppression, fire separation, handicap accessibility, and so on will have to be addressed. Specific requirements to upgrade the structures are not addressed at this time as the proposed uses which dictate the necessary modifications are unknown.

- For the most part, the structures receiving a "Good" rating for reuse potential currently have fire suppression systems. Most systems are however, antiquated and would not comply with current NFPA requirements without wholesale upgrades. Additionally, fire suppression systems are served by a centrally located fire pumping station which contains five fire pumps with substantial redundancy. According to Depot staff, water pressure in the area is variable and probably inadequate to serve the buildings directly from the City of Memphis water service. This would dictate that if the central pumping station is abandoned when the site is divided and sold, individual buildings may require fire pumps.

- Some structures receiving "Good" ratings may ultimately be recommended for total or partial demolition due to other factors in the study. Site modifications, for instance, may dictate that a structure or a portion of a structure be removed in order to allow access to another portion of the site or to another structure.

- Most of the structures on the site are one story, which simplifies their conformance to ADA requirements. Building 144 (Administration) has an elevator to allow access to all floors. Some upgrades for handicap accessibility have been made, but many of the "improved" toilet facilities are not fully compliant. Requirements for toilet room accessibility will have to be met as well as overall building and/or campus signage.

2. CONDITIONS OF BUILDINGS WITH REUSE POTENTIAL

Buildings 229, 329, 429, 529, 629, 230, 330, 430, 530, 630, 249, 349, 449, 549, 649, 250, 350, 450, 550, and 650 - "Twenty Typical" Warehouse Buildings

Built in 1942, these 110, 000 SF structures are constructed of cast-in-place concrete walls and columns with heavy timber roof framing. The facilities are modestly heated with unit heaters and none are air-conditioned. Antiquated dry pipe sprinkler systems provide fire suppression throughout. Numerous means of egress are available and due to the narrow widths of the buildings, travel distances are relatively short. Minimal upgrades for ADA compliance have been made but most fail to be totally compliant with current regulations. Clearances of 12'-6" at roof trusses could limit effective stacking heights for a warehouse or distribution type use. All of the buildings have built up roofs in various states of repair. Six of the buildings, in the 300 and 400 series, have had significant roof and flashing repairs completed in the last 2-3 years. Improved clearances (14'-0") are available in building 550 which has had the wood roof structure replaced with steel framing and metal deck. The original wood roofing system was destroyed by a plane crash in the mid 1980's.

Buildings 470, 489, 490, 670, 689, 690, and 685 - "Six-Typical" Warehouses and Addition

Built in 1954, these 201,000 SF structures are constructed of concrete masonry walls, steel bar joist roof framing, "Tectum" type roof deck and single-ply EPDM roof membranes. Roofing is generally in good condition, however water penetration through the CMU walls is a chronic problem. These buildings are interconnected with various elevated and floor level conveyor systems. Building 685 was added in 1985 to connect buildings 689 and 690, and contains a substantial component of the inter-building conveyor system. Unless a single tenant occupies all seven of these buildings, substantial modifications to this system would be required. In the event these buildings are sold to, (or occupied by) multiple owners or tenants, the need to salvage this conveyor system for use in these buildings would be doubtful. The system would be of value however, in that the components could easily be disassembled and sold.

- **Building 925**—This 60,000 SF warehouse is a pre-engineered metal building erected in 1993. Concrete floors were constructed so as to provide diking for spills of hazardous materials and the building has a clear stacking height in excess of 20 feet. The sprinkler system is adequate for flammable materials stored in a single tier configuration, however sprinkler system modifications would quite possibly be required to store multiple tiers of flammable materials. An evaluation of the existing system based on any material proposed for storage in the building would be required. The building has excellent reuse potential.

- **Building 835**—This 141,316 SF building was completed in 1988 and is of cast in place concrete with a precast concrete roof deck. It is largely accessible. A 25' clear height is available and in-rack fire suppression currently exists. This combined with the age of the building make it an excellent candidate for reuse.

- **Building 560**—This 207,000 SF building was constructed in 1990 with tilt-up concrete walls, a steel frame and metal roofing. Heating is provided throughout and two of the five bays are air conditioned. The building is fully accessible and has excellent reuse potential.

- **Building 360**—This 207,000 SF building was completed in 1995 with tilt-up concrete walls, a steel frame and metal roofing. Heating is provided throughout all five bays. The building has never been occupied and has excellent reuse potential.

- **Building 144 (Administration)**—This 101,270 SF building was constructed in 1942 as the Post HQ and has served until now as the administration building. Constructed with a concrete frame, brick veneer and a built-up roof, the building also has recent aluminum window replacements. No fire suppression exists, but depending on the proposed use, there is a possibility it would not be required. The existing mechanical and electrical systems are antiquated and substantial upgrades should be anticipated. Toilet rooms are for the most part inaccessible and would require modification. The building has an elevator for access to all levels.

- **Building 274 (Cafeteria)**—This 13,500 SF cafeteria building was completed in 1989. It is a steel frame with an Exterior Insulation and Finish System (EIFS) as the building skin. The roof consists of metal deck on bar joists with a single ply membrane roof. The building is largely accessible and has a fully equipped commercial kitchen and seating space for 400 people.

- **Buildings 176, 178, 179, 181, 183, 184 (Residences and Carports)**—These structures, dating from 1948, are of wood frame construction with brick veneer and asphalt shingle roofs

which were replaced in 1993. Each 4,787 SF building is a duplex and each unit in the duplex is 3 bedrooms, with 1 ½ baths. Gas forced air furnaces provide heat and the units have central air conditioning. The original double hung windows on the second floor have been recently replaced.

- **Buildings 193, 195, 196, 197, 198 (Golf and Recreation Complex)**—This collection of recreation structures was built in the late 1940's and '50's. Buildings 193, 196, 197, and 198 are all service, or golf course maintenance type buildings. They are old, in a state of minor disrepair, yet serviceable for their current function. The community center or clubhouse, (building 195), has been continually upgraded and was expanded in 1993 to approximately 6,700 SF. There is no existing fire suppression system in any of the buildings, nor would the building code require such.

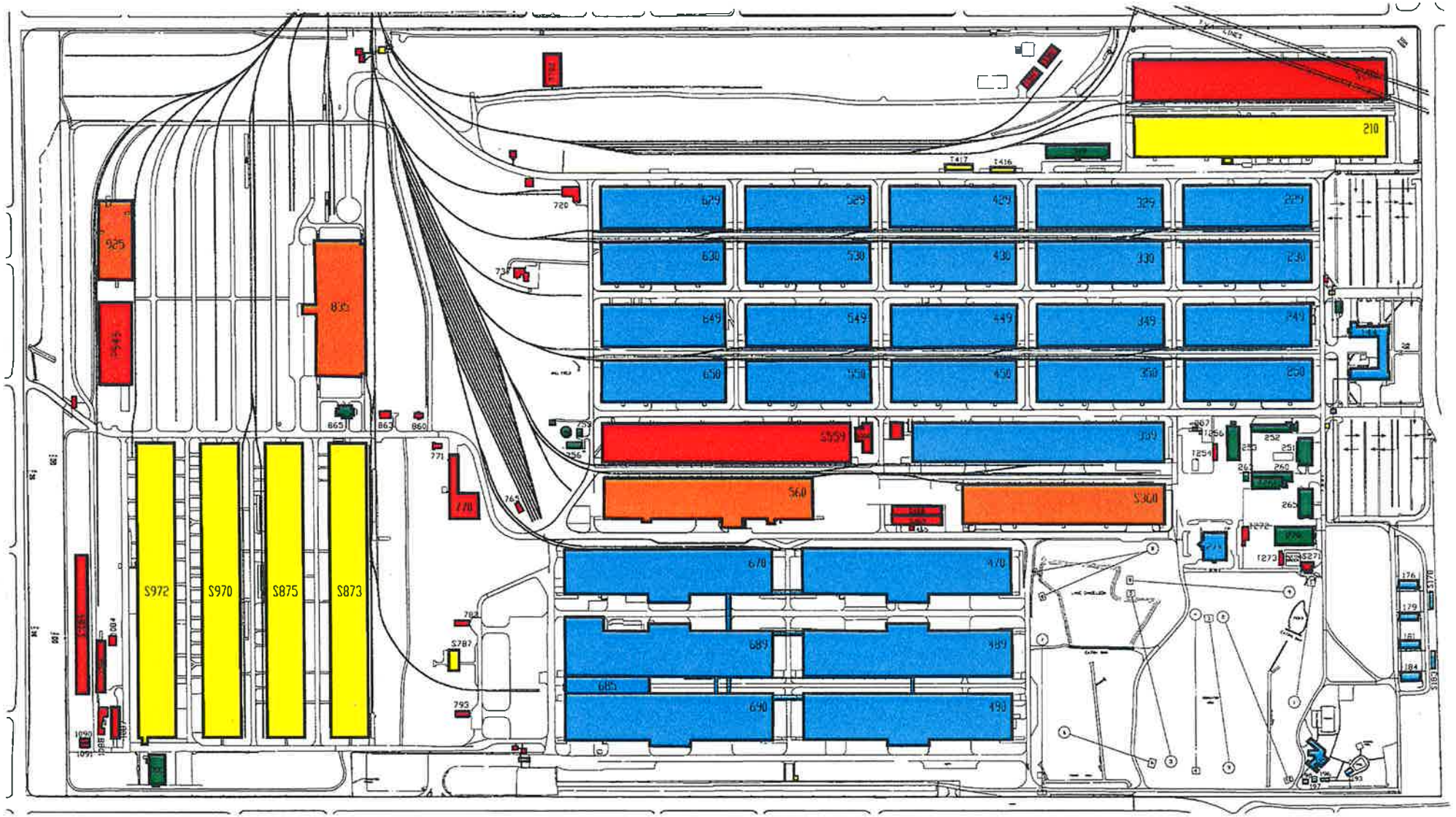
- **Buildings 251, 252, 253, 257, 260, 261, 265, 270 (Maintenance Complex)**—These structures, dating 1942 to 1952, are of concrete frame construction with brick veneer or steel frame construction with CMU or metal siding for exterior walls. None of the buildings have fire suppression, however the small building sizes would not require fire suppression for most uses. Building 270 was substantially renovated in 1994 for office use and building 252, presumed to have originally been a maintenance facility, has been converted to a physical fitness center. It could continue to serve in this capacity. The balance of the structures are currently used as maintenance shops or as vehicle storage space.

The following buildings, while significant by virtue of the available square footage, are not recommended for reuse due to the reasons noted.

- **Building 559**—Building 559, built in 1942, is a 218,105 SF wood frame warehouse building with significant cosmetic and building code deficiencies. Over time, these have made the building structurally unstable. There has been a standing seam roof added within the last five years, however the building below is unstable. Coupled with a location which impedes circulation through the heart of the site and access to buildings 550, 560, and 650, the building's deficiencies lead to a recommendation that it be demolished.

- **Building 359**—Building 359 is a concrete frame building with a reinforced, cast-in-place concrete roof. The built-up roof condition is comparable to the twenty typical warehouses. There is both 10,000 SF of refrigerated storage and approximately 4,000 SF of freezer space. Available clear height for stacking is limited to 12'-0" due to the concrete beams which frame the roof structure. A health clinic currently occupies the west end of the building. While structurally sound, this building is located such that it too impedes circulation through the heart of the site and access to buildings 350 and 450. It is recommended for demolition.

- **Building 210**—This 219,761 SF building was originally constructed as a warehouse, but 5 bays (approximately 60%) of the building have been converted to office use. Most of the office improvements appear dated and would be obsolete by current standards. Original wood framing which supports the roof has required supplemental columns at numerous locations in the space. While imminent danger of collapse is not apparent, the condition of the condemned building 209, which is similar and adjacent to 210, leads to a recommendation that this building be demolished.



Re-Use Potential
Legend

- Excellent
- Good
- Fair
- Poor
- None

Facility Re-Use Ratings
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

Bldg. No	Year Built	Description	Length (FT)	Width (FT)	Gross SF	Current Use	Original Use	Floors	Clear Height	# Truck Doors	Existing Sprinkler Rating	Handicap Accessible	Comments	Reuse Potential	Recom. for Demolition
144	1942	Post HQ Building, Admin Gen. Purpose	600	50	101,270	Administration	Administration	Floors: 3 Plus BSMT		0	N/A None	Some	Brick Veneer, Built-Up Roof	Good	
145	1943	Pass and ID	43	20	860	Housing	Housing			0	N/A None	No	Brick veneer with wood framing. Metal windows. Built-up roof on 2x8 wood rafters.	Fair	
176		Family Housing	80	30	4,787	Housing	Housing	2	NA	0	N/A None	No	3 bedrooms, 1-1/2 baths, Central Air, Gas Forced Air Furnaces, Double Hung Windows-recently replaced. Roofs new in 1993.	Good	
178		Carport	66	22	1,440	Housing	Housing	1	NA	0	N/A None	Yes	3 bedrooms, 1-1/2 baths, Central Air, Gas Forced Air Furnaces, Double Hung Windows-recently replaced. Roofs new in 1993.	Good	
179		Family Housing	80	30	4,787	Housing	Housing	2	NA	0	N/A None	No	3 bedrooms, 1-1/2 baths, Central Air, Gas Forced Air Furnaces, Double Hung Windows-recently replaced. Roofs new in 1993.	Good	
181		Family Housing	80	30	4,787	Housing	Housing	2	NA	0	N/A None	No	3 bedrooms, 1-1/2 baths, Central Air, Gas Forced Air Furnaces, Double Hung Windows-recently replaced. Roofs new in 1993.	Good	
183		Carport	66	22	1,440	Housing	Housing	1	NA	0	N/A None	Yes	3 bedrooms, 1-1/2 baths, Central Air, Gas Forced Air Furnaces, Double Hung Windows-recently replaced. Roofs new in 1993.	Good	
184		Family Housing	80	30	4,787	Housing	Housing	2	NA	0	N/A None	No	3 bedrooms, 1-1/2 baths, Central Air, Gas Forced Air Furnaces, Double Hung Windows-recently replaced. Roofs new in 1993.	Good	
195	1949	Community Club	52	20	5,500	Community Clubs	Recreation	1		0	N/A None	Some	Combination brick veneer & vinyl siding w/asphalt shingle roof.	Good	
195	1993	Community Club (New Addition)	43.3	29.3	1,271	Community Clubs	Community Club	1		0	N/A None	Some	New addition is a lounge. Seats 200 for dining.	Good	
198	1959	Admin General Purpose	19	17	323	Administration	Administration	1		0	N/A None	No	Brick veneer, metal windows & security bars, built up roof.	Good	
209	1942	General Purpose Warehouse	1,204	182	218,286	Warehouse	Warehouse	1	12'-6"	6 plus 20 rail dock	0.25 gpm/sf	No	The facility exceeds 50 years in age, has major structural deficiencies and has reached the end of its service life. Building has been condemned and is planned to be demolished.	None	X
210	1942	GPW; office conversions in 7 bays	1,204	182.5	219,761	Office/ Warehouse	Warehouse	1	12'-6"	7 plus 7 rail	0.25 gpm/sf	No	Facility exceeds 50 years in age and has minor structural roof deficiencies or is approaching the end of service life. Office square footage includes rest rooms. There is an inner parking area of 2,557 SF.	Poor	X

229	1942	General Purpose Warehouse	602.5	182 5	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0 25 gpm/sf	No	Facility exceeds 50 years in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	
230	1942	General Purpose Warehouse	602 5	182 5	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail doc doors	0 25 gpm/sf	No	Facility exceeds 50 years in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	
249	1942	General Purpose Warehouse	602	182	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0 25 gpm/sf	No	Facility exceeds 50 years in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; Restrooms: 515 SF.	Good	
250	1942	General Purpose Warehouse	602	182	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0 25 gpm/sf	No	Facility exceeds 50 years in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF. Restrooms: 515 SF.	Good	
251	1942	Thrift Shop	127	62	7,985	Thrift Shop	Maintenance Shops	1	12 ft	6	N/A None	No	Brick veneer, metal windows. Built up roof. Concrete Frame	Fair	
252	1942	Physical Fitness Center	188	40	8,455	Fitness Center	Maintenance Shops	1	N/A	1 Open, 7 blocked In	N/A None	No	Brick veneer, metal windows. Built-Up roof. Concrete Frame	Fair	
253	1952	Maintenance Shop General Purpose	180	55	9,127	Vehicle Maintenance	Motor Pool	1	14'-0"	8	Wet System-Rating Unknown	No	CMU, Metal Windows, Built-Up Roof. On steel frame with wood rafters. Restrooms and boiler room have 327 SF. Truck Wash Bay.	Fair	
257	1942	Pump House/Office Gas Station Building	22	12	264	Gas Station	Gas Station	1	8'-6"	0	N/A None	No	Brick construction wood trim steel windows built up roof. Two each 15,000 ga. underground fuel tanks, 1 gasoline, 1 diesel fuel. Pumps and valving upgrade in 1992 and 1996.	Fair	
260	1942	F.E. Maintenance Shop	188	40	5,589	Maintenance Shop	Maintenance Shop	1	12'-0"	5 of 10 open, 5 blocked	N/A None	No	Brick construction w/built up roof.	Fair	

261	1952	F E Vehicle Garage/Storage	142	48	6,249	Vehicle Storage	Vehicle Storage	1	9'-0"	2 (10 W x 8 High)	N/A None	No	Metal siding over steel framing metal roof.	Fair	
265	1942	Maintenance Shop	127	62	7,988	Maintenance Shops	Maintenance Shops	1	N/A	3	N/A None	No	Brick veneer construction w/built up roof.	Fair	
270	1954	Administrative Office	176	80	14,094	Administration	Maintenance Shops	1	N/A	6	N/A None	No	Concrete block construction w/roll roofing. Rest rooms and storage rooms have 2,370 SF.	Fair	
271	1958	Administrative Office	54	50	1,436	COE Office	Small Arms Range	1	N/A	0	N/A None	No	Wood frame construction w/asphalt shingle roof.	None	X
274	1989	Cafeteria	127	112	13,500	Cafeteria	Cafeteria	1	N/A	3	0.10 gpm/sf	Some	Insulation finish system, non-load bearing wall construction. Single ply roof. Seats 400 for dining.	Good	
308	1944	Hazardous Materials Warehouse	96	44	4,224	Hazardous Storage	Unknown	1	12 ft	1	N/A None	No	Corrugated iron siding w/roll roof.	None	X
309	1944	Hazardous Materials Warehouse	96	44	4,224	Hazardous Storage	Unknown	1	12 ft.	2	N/A None	No	Corrugated iron siding w/roll roof. Restrooms have an area of 160 SF included in warehouse SF.	None	X
319	1942	Special Purpose Warehouse-Flammable	300	60	18,000	Flammable Storage	Unknown	1	10 ft	7 plus 7 rail	0.25 gpm/sf	No	This facility exceeds 50 years in age and does not have a major deficiency. Reinforced concrete wall and roof construction. Built-up roofing.	Fair	X
329	1942	General Purpose Warehouse	602	182	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF. Rail canopy has been updated.	Good	

330	1942	General Purpose Warehouse	602	182	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	
349	1942	General Purpose Warehouse	602	182	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	X
350	1942	General Purpose Warehouse	602	182	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	
359	1942	Special Warehouse	1,205	181	217,685	Refrig Warehouse	Warehouse Boilers	1	12'-0"	9 plus 15 rail	0.25 gpm/sf	No	The facility exceeds 50 years in age, no major deficiency. Reinforced concrete wall and roof constructions. Building contains 10,440 SF for refrigerated freezer space, and 5,760 SF for vaults. Freezer, 200 SF; chiller, 4,000 SF. West end of building is the Installation Health Clinic, 2,383 SF. The building was re-roofed in 1992.	Good	X
360	1995	General Purpose Warehouse	1,011	201	206,758	Warehouse	Warehouse	1	25'-0"	14 plus 10 rail	0.25 gpm/sf	Yes	Facility is new. Same construction as Bldg. 560. Temperature controlled in five bays.	Excellent	
416	1943	General Purpose Warehouse	125	20	2,600	Storage	Storage	1	8'-0"	0	N/A None	No	Asbestos siding & wood frame construction w/asphalt shingle roof.	Poor	X
417	1943	Storage Building	130	24	3,120	Storage	Storage	1	8'-0"	2	N/A None	No	Asbestos siding & wood frame construction w/asphalt shingle roof.	Poor	X
429	1942	General Purpose Warehouse	602	183	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	
430	1942	General Purpose Warehouse	602	183	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	

449	1942	General Purpose Warehouse	602	183	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	X
450	1942	General Purpose Warehouse	602	182	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	
459	1990	Classroom Building	72	52	3,308	Classroom	Classroom	1		0	N/A None	No	Metal siding construction w/metal roof. Modular building.	None	X
465	1984	Forklift Wash Facility	20	20	400	Fork-Lift Wash	Steam Cleaning	1		0	N/A None	No	Metal siding construction w/metal roof	None	X
468	1960	Storage Building	240	40	9,600	Storage	Storage	1	12'-0"	2	N/A None	No	The facility exceeds 35 years in age, no major deficiency. Steel framed with corrugated metal roof and siding, concrete slab.	None	X
469	1960	Maintenance Facility - MHE	240	40	9,600	Storage	Storage	1		0	0.60 gpm/sf	No	Metal siding construction w/metal roof. Restroom: 137 sq.ft.	None	X
470	1954	General Purpose Warehouse	1,005	200	206,656	Warehouse	Warehouse	1	20'-0"	14 plus 20 rail	0.25 gpm/sf	No	Facility exceeds 40 years in age and has no major deficiency. Building is divided into 5 bays, each 40,200 SF. Restrooms have an area of 1,334 SF.	Good	
489	1954	General Purpose Warehouse	1,005	200	206,656	Warehouse	Warehouse	1	20'-0"	14 plus 18 rail	0.25 gpm/sf	No	Facility exceeds 40 years in age and has no major deficiency. Building is divided into 5 bays, each 40,200 sq.ft. Restrooms have an area of 1,334 SF.	Good	
490	1954	General Purpose Warehouse	1,005	200	206,656	Warehouse	Warehouse	1	20'-0"	18 plus 13 rail	0.25 gpm/sf	No	Facility exceeds 40 years in age and has no major deficiency. Building is divided into 5 bays, each 40,200 SF. Restrooms have an area of 1,920 SF. There is a machine shop on the dock with an area of 1,370 SF.	Good	

529	1942	General Purpose Warehouse	602	183	109,994	Warehouse	Warehouse	1	12'-6"	11 plus 12 rail dock doors	0 25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF. Five new docks with shelters and a finger dock have been recently added.	Good	
530	1942	General Purpose Warehouse	602	183	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	
549	1942	General Purpose Warehouse	602	183	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0 25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	X
550	1942	General Purpose Warehouse	602	183	109,994	Warehouse	Warehouse	1	14'-0"	6 plus 12 rail dock doors	0 25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies or is approaching the end of service life. Building has new steel roof deck and joists, installed in 1991 in all bays. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	
559	1942	General Purpose Warehouse	1,205	181	218,105	Warehouse	Warehouse	1	12'-0"	14 Plus 20 rail	0 25 gpm/sf	No	This facility exceeds 50 years in age, has major structural deficiencies and has reached the end of its service life. Metal standing seam roof installed within last five years. Wood frame construction with asbestos siding.	None	X
560	1990	General Purpose Warehouse	1,011	201	206,758	Warehouse	Warehouse	1	25'-0"	14 plus 10 rail	0 25 gpm/sf	Yes	Facility is five years or less in age and does not have a major deficiency. Concrete tilt-up walls, steel frame w/metal roof. Warehouse temperature controlled in two bays.	Excellent	
629	1942	General Purpose Warehouse	602	183	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0 25 gpm/sf	Yes	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	
630	1942	General Purpose Warehouse	602	183	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	Yes	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	

649	1942	General Purpose Warehouse	602	183	112,400	Warehouse	Warehouse	1	12'-6"	9 plus 12 rail dock doors	0.25 gpm/sf	Yes	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF. A small office area exists on the second floor at the west end of the building.	Good	X
650	1942	General Purpose Warehouse	602	183	109,994	Warehouse	Warehouse	1	12'-6"	6 plus 12 rail dock doors	0.25 gpm/sf	No	Facility exceeds 50 yrs. in age and has minor structural roof deficiencies. Area of each of 5 bays: 22,037; 21,449; 17,071; 21,445; 22,037. There is an inner truck loading area of 4,929 SF; restrooms: 515 SF.	Good	
670	1953	General Purpose Warehouse	1,005	200	206,654	Warehouse	Warehouse	1	20'-0"	16 plus 19 rail	0.25 gpm/sf	No	Facility exceeds 40 years in age and does not have major deficiency. Restrooms have an area of 1,334 SF. There are 5 bays in the building. Each bay is 40,200 sq.ft.	Good	
685	1985	General Purpose Warehouse/Administrative	114	403	45,942	Warehouse	Warehouse	1	20'-0"	None	0.25 gpm/sf	No	Has no major deficiency. Built to house Hub for conveyor system serving 6 typical Warehouses.	Good	
689	1953	General Purpose Warehouse (6 typ.)	1,005	200	216,431	Warehouse	Warehouse	1	20'-0"	34 plus 9 rail	0.25 gpm/sf	No	Central Pack (87,245 SF) is in sections 2 and 3. Facility exceeds 40 years in age and has no major deficiency. Restroom area: 1,729 SF. Former flammable area is 9,380 SF. Building is divided into five bays. Each bay is 40,200 SF.	Good	
690	1953	General Purpose Warehouse	1,005	200	206,656	Warehouse	Warehouse	1	20'-0"	37 plus 9 rail	0.25 gpm/sf	No	Two finger docks for ext. truck unloading. Facility exceeds 40 yrs. in age and has no major deficiency; has 5 bays with 40,200 SF each. Restroom have an area of 1,334 SF.	Good	
720	1942	Railroad Maintenance Facility	85	73	4,665	Fueling	Fueling/Engine Repair	1	N/A	0	N/A None	No	Brick veneer construction w/built-up roof.	None	X
737	1961	Entomology Facility	69	38	5,744	Pesticides/ Herbicides	Pesticides/ Herbicides	1	N/A	4	See remarks.	No	Fire sprinkler rating: Insecticide & Herbicide rooms, existing equipment storage building; 0.35 GPM/SF. Mixing room carbolator, 0.02. GPM/SF. Toilet and locker room, 0.10 GPM/SF. Restrooms: 398 SF. Building remodeled in 1984. Concrete block and brick veneer construction. Part asphalt shingle roof & part built up roof.	None	X
770	1952	Vehicle Maintenance Shop	304	142	27,326	Equipment Maintenance	Equipment Maintenance	2 (Partial)	N/A	6	0.25 gpm/sf	No	Concrete block construction w/built-up roof.	None	X

783	1942	Underground Arms Magazine	82	29	2,406	Storage	Ammo Storage	1	N/A	0	N/A None	No	Concrete arch construction. Underground Structure.	None	X
787	1988	Storage Building on Grade	100	50	5,038	Warehouse	Steel Processing	1	13'-0"	2	N/A None	No	Metal siding Construction w/metal roof.	Poor	X
793	1942	Underground Arms Magazine	62	29	1,813	Storage	Ammo Storage	1	N/A	0	N/A None	No	Concrete arch construction. Underground Structure.	None	X
835	1988	Special Purpose Warehouse	644	214	141,316	Hazardous Storage	Hazardous Storage	1	25'-0"	14 plus 11 rail	0.25 gpm/sf	Some	Designed for hazardous material storage and has a finger dock for exterior truck unloading, the facility is seven years or less in age and does not have a major deficiency. In rack sprinkler system exists. Concrete walls and roof.	Excellent	
865	1988	Hazardous Materials Recoup Facility	81	59	3,684	Hazardous Storage	Hazardous Storage	1	N/A	0	See remarks	Some	Concrete block construction single-ply w/gravel ballast roof. Fire sprinkler rating: office and change areas, 0.10 GPM/SF. Other areas, 0.60 GPM/SF.	Fair	X
873	1942	Open Shed Warehouse	1401	181	253,581	Warehouse	Warehouse	1	14'-0"	Open 4 Sides	0.25 gpm/sf	No	Facility exceeds 50 years in age; has major deficiencies and is approaching end of service life. Wood post and beam construction. Seven bays, areas as follows: Bay 1, 38,100.5 SF; Bay 2, 36,200 SF; Bay 3, 36,200 SF; Bay 4, 32,580 SF; Bay 5, 36,200 SF; Bay 6, 36,200 SF; Bay 7, 38,100.5 SF.	Poor	X
875	1942	Open Shed Warehouse	1401	181	253,581	Warehouse	Warehouse	1	14'-0"	Open 4 Sides	0.25 gpm/sf	No	Facility exceeds 50 years in age; has major deficiencies and is approaching end of service life. Wood post & beam construction. Seven bays, areas as follows: Bay 1, 38,100.5 SF; Bay 2, 36,200 SF; Bay 3, 36,200 SF; Bay 4, 32,580 SF; Bay 5, 36,200 SF; Bay 6, 36,200 SF; Bay 7, 38,100.5 SF. Restrooms have area of 1,600 SF.	Poor	X
925	1993	Special Purpose Warehouse	370	163	60,000	Warehouse	Warehouse	1	20'-0"	2	0.25 gpm/sf	Yes	Facility is four years or less in age with one major deficiency. Used for special storage (inadequate GPM for flammable storage). Floor dyked for containment of liquids. Metal building could be disassembled and relocated.	Excellent	
949	1987	Portable Storage Structure	400	150	60,000	Storage	Storage	1	20'-0"	6	N/A None	No	Facility is 8 years in age. Does not have major deficiency. Limited remaining life span of 2 to 5 years on fabric. Asphalt paved floor, metal framed arches w/neoprene hypion. Fabric skin portable structure.	None	X

970	1942	Open Shed Warehouse	1401	181	253,581	Warehouse	Warehouse	1	14'-0"	Open 4 Sides	0.25 gpm/sf	No	Facility exceeds 50 years in age. Wood post & beam construction. Major deficiencies and approaching end of its service life. Seven bays, areas as follows: Bay 1, 38,100.5 SF; Bay 2, 36,200 SF; Bay 3, 36,200 SF; Bay 4, 32,580 SF; Bay 5, 36,200 SF; Bay 6, 36,200 SF; Bay 7, 38,100.5 SF.	Poor	X
972	1942	Closed Shed Warehouse/Boxshop	1401	181	253,581	Box Shop/Packing	Warehouse	1	14'-0"	33	0.25 gpm/sf	No	Facility exceeds 50 yrs in age. Major deficiencies. Approaching end of service life. Spec. purpose cardboard cutting machines (cutter); 4-directional lift. Restrooms directional lift. Restrooms: 1,740 SF. Six bays as follows: Bay 1, 38,100.5 SF; Bay 2, 36,200 SF; Bay 3, 36,200 SF; Bay 4, 36,200 SF; Bay 5, 38,010 SF; Bay 6, 68,870.5 SF. Originally built as open shed warehouse.	Poor	X
995	1985	Storage Facility	137	71	10,244	Storage	Storage	1	13'-0"	10	0.35 gpm/sf	No	Metal Siding Construction. Built up roof over metal deck.	Fair	X
1086	1950	General Purpose Warehouse	241	40	9,640	Loading	Loading	1	20'-0"	2	N/A None	No	Facility is over 35 years old and does not have major deficiency. Combination open and closed storage. Masonry exterior walls.	None	X
1087	1952	Paint Shop	144	34	4,927	Paint Shop	Maintenance Shop	1	N/A	2	0.25 gpm/sf	No	Metal siding construction w/metal roof.	None	X
1088	1953	Sandblasting Facility	61	20	1,272	Sandblasting	Sandblasting	1	N/A	2	N/A None	No	Metal siding construction w/metal roof.	None	X
1089	1960	Open Storage Shelter	660	60	39,600	Storage	Sandblasting	1	14'-0"	1	0.25 gpm/sf	No	Facility is 35 yrs old & does not have major deficiency. Wood post and beam construction. Galvanized sheet metal roof.	None	X
1090	1952	Metal Quanset Building	40	21	840	Storage	Storage		14'-0"	0 (Large Personnel Door)		No	Facility over 40 years old, no major deficiency.	None	X
1091	1953	Metal Quanset Building	40	21	800	Storage	Storage		14'-0"	0 (2 lrg personnel doors)		No	Facility over 40 years old and no major deficiency.	None	X

C. ELECTRICAL DISTRIBUTION SYSTEM / FACILITIES

1. ELECTRIC SERVICE

Electric service is provided to Memphis Depot by Memphis Light, Gas, and Water (LG&W). Power is supplied from a Memphis LG&W 7200/12,470 volt three phase, four wire distribution feeder running overhead east and west along Dunn Avenue. This feeder can be energized from either end. A metering pole and government owned switching station are located on the north side of the Depot in close proximity to the Memphis LG&W feeder. Attached to the metering pole is a kilowatt hours and demand meter. This pole is the transition point for ownership and responsibility between the utility and the government.

A metered, utility owned, primary feeder tap extends to the line side of a government owned 15 kv, 200 amp oil filled circuit breaker located at the switching station. The circuit breaker trip setting is coordinated with utility company protective devices.

Three 12.47 kv, 200 amp, overhead distribution circuits originate from the load side of the circuit breaker at the switching station. The primary conductors are attached to wooden cross arms fastened to wooden poles. One circuit is routed east and west along Dunn Avenue and extends to the boundaries of the Depot. This feeder forms a loop around the entire perimeter of the facility. The other two feeders are routed south out of the switching station and extend directly into the warehouse areas. A large number of pole mounted manually operated air switches are located throughout the Depot to permit fault isolation and to ensure a redundant primary source for most buildings. All three primary circuits provide power to distribution transformers which step down the voltage for local utilization. Pole mounted fused out-outs provide primary line protection.

2. DISTRIBUTION TRANSFORMERS

Distribution transformers are located adjacent to each building to step down the voltage to the required utilization level. There are some pad mounted transformers on the Depot served by short underground primary feeder extensions. However, most of the transformers are pole mounted. The most common secondary voltages are 277/480 volt three phase, and 120/208 volt three phase. These services are derived from pole mounted or ground mounted transformer banks. Single phase transformers supply 120 volts or 240 volts for street lighting and parking lot lighting.

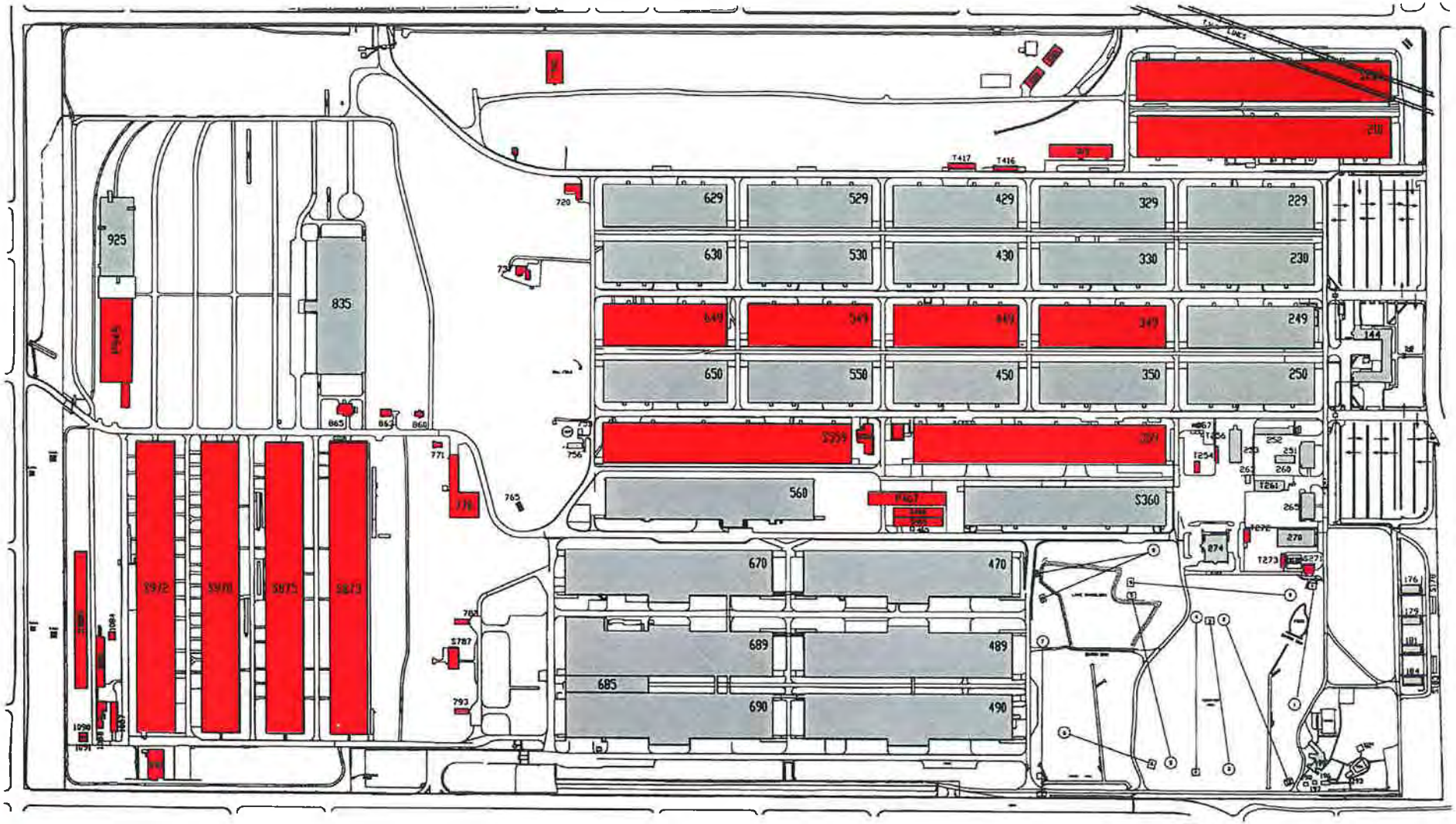
3. SITE LIGHTING

Most site lighting is provided by "cobra head" type fixtures mounted on short mast arms fastened to utility poles. Two hundred fifty (250) watt lamps will produce light levels in the range of .2 to .4 foot candles. Areas between warehouses are illuminated by floodlights mounted on the roof top every 50' or so. Large parking lots have conventional area lighting consisting of twin fixtures on metal standards. The light levels are generally adequate for an industrial area.

D. BUILDING DEMOLITIONS

In order to implement the preferred reuse plan, several existing buildings must be demolished. The majority of these buildings has been evaluated as having "poor" or "no" reuse potential in the Facility Assessment portion of this report. Other facilities listed as fair or good reuse potential have been recommended for demolition due to functional obsolescence or because they are minor structures which have minimal marketability and conflicted with the development plan recommendations.

Another significant reason for demolition of some buildings is to "open-up" portions of the Depot to provide for more efficient vehicular access and parking. A large portion of the warehouses (20 "typicals") on the northern portion of the Depot has limited maneuvering space available for trucks. To provide additional maneuvering space for trucks and to provide more convenient parking Buildings 649, 549, 449, 349, 559, 359, 467, 468, 469, 465, 417, 416, 319, 308, and 309 are recommended for demolition. Buildings scheduled for demolition may, in the event a use is proposed, and will not conflict with the Redevelopment Plan, be removed from the demolition schedule. The approximate cost for the demolition of all the structures identified in the demolition plan is $6.7 million. Testing for residual contamination would be prudent, after removal of floor slabs, where spills of hazardous materials have been documented as part of demolition contract. Facilities recommended for demolition are illustrated in the map and table which follow.



Legend

Buildings to be Demolished

Buildings to Remain

Demolition Plan

MEMPHIS DEPOT REDEVELOPMENT PLAN

Memphis, Tennessee

Table 11

BUILDING DEMOLITIONS			
Bldg. No	**Description**	**Gross Area**	**Demolition Cost**
*209	General Purpose Warehouse	218,286	$200,000
210	General Purpose Warehouse	219,761	$750,000
254	Heating Fuel Storage	1,004	$2,500
256	Storage	192	$1,500
257	Gas Station Building	264	$8,000
271	Administrative Office	1,436	$5,000
272	Lumber Shed	1,500	$4,000
273	Shed	1,400	$4,000
308	Hazardous Materials Warehouse	4,220	$15,000
309	Hazardous Materials Warehouse	4,220	$15,000
319	Special Purpose Warehouse-Flammables	18,000	$20,000
349	General Purpose Warehouse	109,994	$400,000
359	Special Warehouse	217,685	$900,000
416	General Purpose Warehouse	2,600	$5,000
417	Storage Building	3,120	$5,000
449	General Purpose Warehouse	109,994	$400,000
459	Classroom Building	3,308	$10,000
465	Forklift Wash Facility	400	$2,000
468	Storage Building on Grade	9,600	$10,000
469	Maintenance Facility - MHE	9,600	$10,000
549	General Purpose Warehouse	109,994	$400,000
559	General Purpose Warehouse	218,105	$500,000
649	General Purpose Warehouse	109,994	$400,000
720	Railroad Maintenance Facility	4,665	$25,000
737	Entomology Facility	5,744	$40,000
770	Vehicle Maintenance Shop	27,326	$150,000
771	Public Toilet	800	$2,000
783	Underground Arms Magazine	2,406	$15,000

Table 11 Cont.

BUILDING DEMOLITIONS			
Bldg. No	**Description**	**Gross Area**	**Demolition Cost**
787	Storage Building	5,038	$10,000
793	Underground Arms Magazine	1,813	$15,000
860	Administration	800	$5,000
863	Loading Operations	1,500	$10,000
865	Hazardous Materials Recoup Facility	3,684	$20,000
873	Open Shed Warehouse	253,581	$400,000
875	Open Shed Warehouse	253,581	$400,000
949	Portable Storage Structure	60,000	$25,000
970	Open Shed Warehouse	253,581	$400,000
972	Closed Shed Warehouse/Boxshop	253,581	$400,000
995	Storage Facility	10,244	$100,000
1084	Open Warehouse	1,200	$2,000
1086	General Purpose Warehouse	9,640	$30,000
1087	Maintenance Shop	4,927	$20,000
1088	Sandblasting Facility	2,272	$20,000
1089	Open Storage Shelter	39,600	$100,000
1090	Metal Quanset Building	840	$2,000
1091	Metal Quanset Building	800	$2,000
	Total		**$6,260,000**

*Demolition cost for Building 209 is for removal of elevated concrete slab and docks after general building demolition.

E. UTILITY ASSESSMENT

1. SUMMARY OF EXISTING CONDITION

- Potable Water, Fire Water and Sprinkler Systems

  1. Water System - The water system laid out in a grid system that provides domestic water and fire protection for the entire site, was originally constructed in the 1940's and upgraded in the 1960's.

  2. Fire Water Storage - The fire capacity exceeds the available supply of the 500,0000-gallon water storage tank and access to Lake Danielson must be available. Lake Danielson is currently being used for backup fire protection.

  3. Sprinkler Systems - The wet and dry sprinkler systems are in good condition requiring only regular maintenance due to the age of the systems.

- Gas Supply and Heating Systems

  1. Heating System - The main heating system for the warehouse consists of space heaters, steam boilers, or hot water boilers. The system is adequate for current needs.

  2. Gas Supply System - The 55-year-old gas supply system will require immediate attention due to the need for replacement of pipes and cathodic protection that was never maintained.

- Sanitary Sewer - If the sanitary pipe system becomes a public system, all 142 manholes will need to be locked to prevent hazardous material from entering the sewer system and the treatment plant.

- Storm Drain - The depot golf course pond and Lake Danielson both serve as storm water detention areas. Problems with the drainage system include distress of the asphalt pavement with early signs of failure, ponding occurrences in many locations, and roof drains backwashing at connection points causing roof leaks.

- Electrical System and Street Lights - The electrical and street light system is functional and adequate. Future upgrades and repairs will only be required as needed.

- Telecommunications System - Fiber optic services currently utilized at three buildings. Provisions are available to expand service to the entire depot. The telephone distribution system is antiquated and will require upgrading in the future.

    1. Fire Alarm - The existing fire alarm system, although antiquated and in need of modernization, is expandable to serve additional facilities.

    2. Intrusion Detection - The intrusion detection system is adequate.

2. WATER, FIRE PROTECTION & SPRINKLER SYSTEMS

Existing Conditions:

The main campus of the Defense Depot is bounded by City of Memphis streets. The water is supplied by Memphis Light Gas and Water Division (MLGW) at three locations, on the North, East and West. Each of the three locations has a 10" service meter with 10" back flow preventors. The water distribution system consists of 8" and 10" mains laid out in a grid system that provide domestic water and fire protection for the entire site.

The water system was originally constructed in the early 1940's with subsequent upgrading in the 1960's. The outer loop is 10" cast iron pipe, or ductile iron pipe, while the internal pipe network is mainly 8" cast iron pipe with fire hydrants at appropriate locations to meet 1996 Fire Protection Requirements. Each of the warehouses has a fire sprinkler protection system with three valve houses. Both potable and fire protection water are carried in the same system. Due to the age of the ductile iron pipe, the system when pressurized has experienced leaks in the 10" cast iron pipes in Southern Warehouse section. Throughout all of the warehouses, the sprinkler heads have popped off and had to be replaced. The majority of the buildings has dry sprinkler systems with butterfly valves and air compressors located in the adjacent valve houses which require heating during the winter months.

The existing fire protection system with all five fire pumps operating, generates higher pressure in the Defense Depot Memphis Tennessee (DDMT) system which closes the check valves at the city meter stations. The line pressure with the five fire pumps operating is around 90 psi. The pressure in regular distribution lines is roughly 50 psi. The differential pressure and subsequent increase in the water line pressure accounts for the closure of the check valves. The result is no flow from the city during the time the fire pumps are operating at capacity.

As the fire capacity exceeds the available supply of 500,000 gal water storage tank, the existing water supply does not meet the present needs of the Depot, and Lake Danielson, which contains approximately 8 million gallons, is used for back up fire protection. Although there is evidence of environmental contamination (i.e., herbicides, pesticides and PCB's) in the sediments, the water in Lake Danielson is comparatively clean. The fire department also uses this water to test their trucks and for training purposes.

The southwest section also has a dry sprinkler system with valve houses in the open sheds. The two hazardous material storage warehouses constructed in 1988 have wet sprinkler systems. A 20 inch high pressure fire line was installed to provide adequate fire protection for these buildings. The 20-inch main runs southward from the pump station along 6th Street to K Street where it turns to the east and runs directly to the valve house in Building 689. At the junction where the 20-inch main turns to the east, a 10-inch main connects and runs about 350 feet southward along 6th Street where it turns to the east and runs approximately 125 feet to a point of connection with the distribution system. At this point, there is a pressure-reducing valve which limits pressure in the older system to less than 100 psi. Near the pump house, a 10-inch main connects the previously mentioned 20-inch, high-pressure main with the older distribution system at a point about 35 feet to the east of the pump house. In this connector, there is also a pressure-reducing valve that limits pressure in the older system to less than 100 psi. The 12-inch, high-pressure main branches off from the 20-inch main near the intersection of J Street and 6th Street. It runs generally parallel with 9th Street and G Street to a point near 15th Street where it is capped.

Existing Problems:

The distribution system and the sprinkler system appear to be in good condition. The repairs and replacement of parts have resolved the problem at least on a temporary basis. It is anticipated, due to the age of the system components, that periodic system status checks and maintenance activities will be required in the future.

The pressure zone within the Depot suggests a real problem in water distribution for fire protection. The limited metering of water will require the system to be upgraded with additional backflow preventors and individual meters. The 55-year old cast iron pipes will need to be analyzed to locate the leaks, if at the joints or in a deteriorated pipe line. Since Lake Danielson is used for back up fire protection, access to Lake Danielson must be available in the event of transfer of property to a third party (i.e., City Parks Department).

3. GAS SUPPLY & HEATING SYSTEM

Existing Conditions:

The gas is supplied by Memphis Light, Gas and Water (MLGW) by a 10" high pressure gas main to 3 meters and regulators at one location: Dunn Avenue & Castalia Street. The 6" pipes are the mains which graduate down to 4" networks through the warehouse areas and 2" and 1 1/2" service lines to the smaller buildings. Each building has gas submeters & regulators. The gas pressure is maintained at approximately 50 psi. The available information indicates that black steel or ductile iron pipe were used during the installation of the gas system.

The main heating system for the warehouses consists of space heaters. However, where warehouses are utilized as office space or administration and storage, both space heaters and steam boilers are used. Buildings located in the south section 6 warehouses are heated by steam boilers or hot water boilers. The administration building # 144 as well as the operation or shop buildings, have hot water boilers.

Existing Problems:

This system appears to be well maintained. In the early 1990's MLGW survey truck detected gas leaks between the buildings. The Plumbing Department has rebuilt 90% of the valves over the past

5 years. The 55 - year old system was installed with cathodic protection, however the protection was never maintained. Depot personnel currently conduct inspections on an annual basis, usually in August prior to the onset of the winter season. System upgrades are performed where required. Inspections are conducted at the request of the Depot.

Recently all the boilers were inspected. Two of the twenty two boilers inspected required repairs, the remaining are functioning adequately. MLGW personnel indicate that in the future inspections will continue to be conducted on an annual basis.

The gas system will require replacing or monitoring to prevent system failure, due to deteriorated pipes. The gas system will require immediate attention and the replacement of pipes and cathodic protection. Due to the age of the space heaters and boilers, a detailed review of the maintenance activities and records would be required to determine their functioning life expectancy. This would also help establish if the system is flawed to the extent that it will impede reuse

5. STORM DRAIN

Existing Conditions:

The terrain of the major portion of the Depot is fairly uniform. Elevations vary from 282 to 316 feet above mean sea level (MSL). The Depot does not lie within a Federal Emergency Management Agency (FEMA) designated flood plain. The only surface water on the property is the 4-acre Lake Danielson and the Depot golf course pond. Lake Danielson is basically for stormwater detention but also is available for fire fighting. The pond serves as storm water detention.

The Depot has one National Pollutant Discharge Elimination System permit, which expires September of 1997. Application for renewal of the permit will be made prior to expiration and the Army will maintain the permit until the area is clean.

The permit authorizes eight separate discharges of industrial type waste water, swimming pool filter backwash, and Lake Danielson overflow to storm drain channel. Authorized industrial type waste waters include run off from the painting and sandblasting operation in the open storage area, boiler blow down, cooling tower blow down, and once through cooling water. Monitored parameters include flow, pH, oil and grease, suspended solids and phenols. The State of Tennessee Department of Environment and Conservation Division of Water Pollution Control notes that there are no significant problems associated with the Depot discharge at this time.

The Drainage is accomplished by concrete lined ditches and underground storm drain systems with over 600 surface inlets, 2 curb inlets and over 40 head walls. There are stormwater outfalls on all four sides of the installation. The storm water outfall on the northern Depot boundary, including all of Dunn Field, discharges into city ditches or small, unnamed creeks. These creeks flow to the north into Cane Creek, which flows southwesterly into Nonconnah Creek, which is approximately three

quarters of a mile south of Depot. The outfalls along the easterly, westerly and southerly boundaries flow into the city ditches or small creeks that flow to the south into Nonconnah Creek. Nonconnah Creek flows west into the Mississippi River.

Existing Problems:

Poor drainage conditions at several locations on the perimeter streets are causing distress of the asphalt pavement with early signs of failure. The Depot is a highly developed facility consisting of approximately 642 acres. Half of the area consists of buildings, parking lots, roads, sidewalks and hardscape. An on-site inspection of problem locations made within the installation indicated that ponding occurs in many locations throughout the installation. Typical locations are the docks, roads and tracks in the area of the 20 original warehouses.

6. ELECTRICAL AND STREET LIGHTS

Existing Conditions:

Electrical service is provided to the Depot by MLGW. The power is supplied to a change over switch over by the Depot to a 23KV primary meter. There are two 600-amp primary feeders. These branch off into three 400-amp secondary feeders. Dual feed capacity hence does exist. One of the primary feeders can take the additional load if the other feeder malfunctions. Incoming service by MLGW has ability to supply Depot with unlimited electrical power.

The internal system is 3-phase, 3-wire overhead feeder with approximately 80 transformers and 30 street light switches. The Depot has an internal street lights system with regulator switches. The various buildings on the site are not metered. The change over switch located on the North at Dunn Avenue is owned by the Depot and maintained by MLGW. The Electrical Power Supply and Distribution Per The Following Tables:

Table 12

FACILITIES ELECTRIC LOADS

Facility	Square Footage	Estimated Demand (KVA)	Transformer Connected Load (KVA)
Renovation, Admin Bldg. 144	102,000	872[1]	1,000
Administration Bldg.	120,300	1,063[1]	1,500
Dining Facility	13,000	106	112.5
General Purpose Warehouse	208,000	730[2]	750
General Purpose Warehouse	208,000	730[2]	750
General Purpose Warehouse	208,000	730[2]	750
Consolidate Bldgs. 489,490 689,690	254,000	871	1,000
DRMO Conforming Storage Facility	14,000	51[3]	75
Facilities Engineers Admin/ Shop Facility	15,000	75[4]	75
Hazardous Material/Flammable Storage Warehouse	204,066	706[2]	750
Consolidated Maintenance Facility Addition	9,100	33[3]	45
Consolidated Storage and and Hardstand Facility	750,000	1,710[5]	2,000
TOTAL		7,679	

1 From Project 1391.

2 Include 20-tons air conditioning for administrative use, remainder ventilated.

3 Assumes 10 percent square footage air conditioned, reminder ventilated.

4 Assumes 66 percent square footage air conditioned, remainder ventilated.

5 Assumes 35 percent square footage general purpose warehouse, 10,000 square feet administration, reminder enclosed storage.

Table 13

ELECTRICAL DESIGN CRITERIA

Load determined as follows:

Ventilation: 1.40 va/ft^{-2}

Air Conditioning: 1 Ton = 12,000 BTU - allow 1.35 KW/ton

Admin Bldgs	-	4 w/ft^2 (300-350 ft^2/ton)
Computer Rooms	-	16-w/ft^2 (80-100 t^2/ton)
Dining	-	7-w/ft^2 (200-ft^2/ton)
Recreation	-	6 w/ft^2 (200-250 ft^2/ton)
Shops	-	5 w/ft^2 (250-350 ft^2/ton)
Medical	-	4.5 w/ft^2 (200-300 ft^2/ton)
Schools, Classrooms	-	4.5 w/ft^2 (225-275 ft^2/ton)

General Power and Lighting - 2 w/ft^2 for UEPH
3 w/ft^2 to 5 w/ft^2 Others

Kitchen

Open Mess	-	15 w/ft^2
Cafeteria	-	20 w/ft^2
Dining Hall	-	25 w/ft^2

Electronic Data Processing - 50-60 va/ft^2

(1) Project Load = A/C + G P+L + K + EPD

(2) Connected Load = Project Load - p.f
   a. p.f = Power Factor = .90

(3) Estimated Demand Load = Connected Load x d.f
   a. d.f = Demand Factor for individual project

Street Lighting

The existing street lights 200,000 luminaries on 18' pole with 5' mask arm. This lighting is functional and adequate for the Depot.

Building Electrical Systems

All buildings at Memphis Depot receive primary electrical power from one of the three distribution circuits originating at the switching station. Distribution transformers located near each building step down the voltage to the required utilization level.

Although, there are a few individually metered electric services, most of the depot complex is metered at primary voltage level with a set of metering Potential Transformers and Current Transformers (PTs and CTs) located on a metering pole north of the switching station. These devices allow the measurements of voltage and current in high voltage circuits. Primary metering will not be acceptable for most, if any, of the new tenants. Nearly all Memphis LG&W customers are metered on the secondary side of the distribution transformer. Therefore, the secondary electrical system of any building which is to remain intact and re reused will have to be modified to incorporate an electrical consumption meter (KWH meter). The extent of additional modifications is dependent upon the building and its intended use.

A walk-through inspection was performed in ten typical buildings which, for size or structural reasons, seemed to be potentially amenable to reuse. The purpose of the inspection was to assess the general condition of the service equipment and branch circuit components where possible. The results of the walk-through inspection are presented below.

- **Building 329 (One of "Twenty Typical" Warehouses)**—This building has four 600 amp overhead 120/208 volt three phase service drops from a pole mounted 50 kva transformer bank. The electrical panels are General Electric spectra series and are in excellent condition. All warehouses have dedicated panels and circuits for exhaust fans and battery chargers. Interior lighting comes from suspended 96" fluorescent fixtures and high bay metal halide fixtures. Skylights provide supplementary illumination during the day. Lighting levels are generally inadequate for product identification. Interior wiring consists of THW copper conductors in rigid steel conduit. The main GE panels are in excellent condition and can be reused. The square D lighting panels are original and in poor condition. These panels should not be reused.

- **Building 689 (One of "Six Typical" Automated Warehouses)**—This building is part of the BIN complex and has an automated conveyor system building into the floor structure. This conveyor is part of a material handling system extending through six separate buildings. There are five 120/208 volt three phase 400 amp service drops to this building from three separate 100 kva transformer banks located along the north side of the building. Electrical panels are Square D and are in good condition. Interior lighting is provided by both 96" fluorescent fixtures and high bay HID fixtures (both high pressure sodium and metal halide). The electrical components could be reused.

- **Building 925, Warehouse**—This building has a 1200/208 volt, three phase 200 amp service supplied from a 25 kva pole mounted transformer bank. The service equipment is a 240 volt, 200 amp panel in excellent condition. Wiring methods consist of copper THW conductors in steel conduit. Interior lighting consists of high bay, high pressure sodium fixtures. This building is approximately ten years old. All electrical components are in good condition and can be reused.

- **Building 835, Hazardous Material Storage**—This building has an underground 277/480 volt three phase, 400 amp service supplied for a pole mounted 25 kva transformer bank. The service equipment is located outside the buildings (NEMA 3R enclosure) and is in good condition. The interior is well lit with high bay, high pressure sodium fixtures. All electrical components are in excellent condition and can be reused.

- **Building 560**—The building is a general purpose warehouse. There are two temperature controlled sections, and three "security" sections. The security sections are used for the storage and handling classified or sensitive material. The building has a 277/480 volt, three-phase service derived from a 1,000 kva pad mounted transformer located in the south side. Step-down transformers are used internally to create 120/208 volt three-phase power for general purpose utilization. This building is very new and well maintained; all electrical equipment is in good, reusable condition. Interior lighting consists of high bay, metal halide HID fixtures in storage areas and industrial fluorescent fixtures in office areas. Sealed fixtures are used in the temperature controlled sections.

- **Building 360**—The building is part of the bulk storage complex and is the newest large warehouse facility on the Depot. There are four 120/208 volt, three-phase 400 amp services to this building derived from a 100 kva transformer bank located on the south side. As the building is effectively new, and has never been occupied, all of the electrical panels and equipment are in excellent condition Wiring methods include the use of the THW conductors in rigid steel conduit. Interior lighting consists of high bay metal halide fixtures. Individual loading docks with electric door openers facilitate the flow of stored material.

- **Building 144, Administration**—The building has two underground electric services from two ground mounted transformer banks located on the west side of the building. Three 167 kva transformers provide a 480 volt service for mechanical equipment, and three 100 kva transformers provide a 120/208 volt service for general use. Wiring methods include steel conduit and surface wire mold. Interior lighting consists of recessed and some suspended fluorescent fixtures. This is a relatively benign environment and although the age of the electrical equipment is the same as that of the building, it is in good condition and can certainly be reused. Low voltage cables associated with recent computer installations are exposed in many places throughout the building. These should be relocated into raceways or above ceilings if the computer system is to remain intact.

- **Building 274, Cafeteria**—This building has a 120/208 volt three phase service from a 300 kva pad mounted transformer located adjacent to the building. The Westinghouse lighting and power panels are about eight years old and are in excellent condition. Recessed fluorescent fixtures provide interior lighting. The building is relatively new and all electrical components are in good condition and are certainly reusable.

- **Buildings 176, 178, 179, 181, 183, 184, Residences and Carports**—Residential facilities at the Depot are all served from single-phase pole-mounted transformers located throughout the housing area. Overhead service drops transmit conventional 120/240 volt, three-wire, single-phase power to each residence. A typical service is rated at 100 amps and terminates in a distribution panel with circuit breaker protection from each branch circuit. Bathrooms are equipped with GFCI receptacles and smoke detector shaver been installed in hallways. Interior lighting is a mixture of fluorescent and incandescent. Considering the age of these building, the electrical components are reasonably good condition. If consideration is given to the reuse of these facilities as residences, a thorough inspection should be performed to ensure compliance with current standards and code requirements.

- **Buildings 193, 195, 196, 197, 198, Golf and Recreation Complex**—A 120/208 volt three phase electrical service is provided to this building from three 50 kva pole-mounted transformers. The service conductors are underground and terminate is a 600 amp disconnect. Interior lighting is accomplished with recessed fluorescent fixtures. This building was renovated in 1993, and all of the electrical components are in excellent condition and are reusable.

The electrical services for the following buildings were surveyed, however as indicated earlier, these buildings are not recommended for reuse.

- **Building 559, General Storage Warehouse**—This is a wood frame building with only one bay in use. There are four 120/208 volt three phase, 400 amp service drops to the building from two separate 75 kva transformer banks. Interior electrical panels are General Electric or Square D and are in reasonably good condition. Interior lighting consists of two-tube 96" suspended fluorescent fixtures at 15' mounting lights. Light levels are inadequate by modern standards.

- **Building 359, Offices, Warehouse, Medical Storage**—This is a multiple use building; therefore, it has a variety of electrical requirements. There are six separate overhead service drops along the north side of the building from three separate transformer banks. Five of these services are 120/208 volt three phase 400 amp. The sixth is a 440 volt three phase service to accommodate specialized mechanical equipment associated with medical storage facilities (refrigerators, walk-in freezer, and air conditioning). There is a standby generator to ensure continuous power to the walk-in freezer. Office lighting is provided by recessed fluorescent fixtures. Warehouse lighting is provided by 96" suspended industrial fluorescent fixtures. This building is highly specialized, has many "tenants," and has been well maintained. In general, the electrical equipment is in good condition and can be reused.

- **Building 210, Warehouse and Offices**—The building has eight bays (three warehouse bays, and five office bays) and two electrical services. An original 440 volt three phase 1200 amp service from a 500 kva transformer bank is dedicated to mechanical equipment. A 480 volt three phase service from a 167 kva transformer bank serves the remainder of the building. An interior 300 kva transformer is used to create 120/208 volts for general usage. A standby generator is available to ensure continuous power to data processing equipment. Relatively new high bay, high pressure sodium fixtures are used for warehouse lighting. Suspended fluorescent fixtures are used for office lighting. Most electrical equipment is original, but is in reasonably good condition and could be reused.

Existing Problems:

The dual fed, looped electrical system is adequate to meet the current demand requirements. Upgrades may be repaired on an as needed basis. Individual buildings will need to be metered. The current system components and layouts are fairly straight forward and devoid of any unusual or unique features.

The existing electrical system has had shorts in the past due to work done by outside contractors. This system needs additional investigation due to the age of the infrastructure.

It will be costly to relocate distribution transformers and heavy switchgear. Further analysis is necessary to define utility corridors and internal building layouts such that the transformer and service equipment can remain in their present positions (except for those cases in which the building is to be demolished). The service equipment will have to be modified to accommodate the metering requirements associated with multi-tenant users.

7. TELECOMMUNICATION SYSTEM

Existing Conditions:

The telephone distribution system services building 123 with approximately a 2000-line analog phone switch. Switch services provided are DSN Watts, Commercial local and long distance. Three 2000-pair cables originate at the building 210, multiplexing or transmitting several messages on one line using narrow but different frequencies, is used at the Depot. Fiber optics network currently exists. An outside line connects to building 210 and branch lines from this building to buildings 144 and 270. Capabilities are utilized at these locations only.

Existing Problems:

The lack of accurate distribution records, brought on by the divestiture of AT&T, has made some maintenance activities difficult, but cooperation between South Central Bell and post personnel has resulted in significant progress in system understanding. The telephone distribution system is antiquated and will require upgrade activities in the future.

All areas of the Depot can be served by extension of existing lines and the exchange is expandable if upgraded.

Fire Alarm:

The existing Depot fire alarm system manufactured by ADT, was installed in the mid 1940's. The system is a four-wire, pulse-coded type with manual-coded pull stations and sprinkler-flow switches connected to a code transmitter.

The electronic digital-display recorder located in Building 249, emits an audible alarm when a signal is sent and prints out the location of the activated pull box, and the time the alarm was received.

The warehouse sprinkler systems work on a flow-meter principle whereby heat activates the sprinkler head. As excess air drains from the sprinkler lines, water begins to flow in the pipes which activates the alarm flow switch.

Existing Problems:

Parts or new equipment are available to repair the warehouse systems. The major problems do not stem from the old wiring system.

The existing fire alarm system is expandable to serve additional facilities through extension of the four-wire loop system. However, given the age and condition of the existing system, it is recommended that an alternate fire protection system, possibly a radio frequency system, be investigated for installation at the Depot.

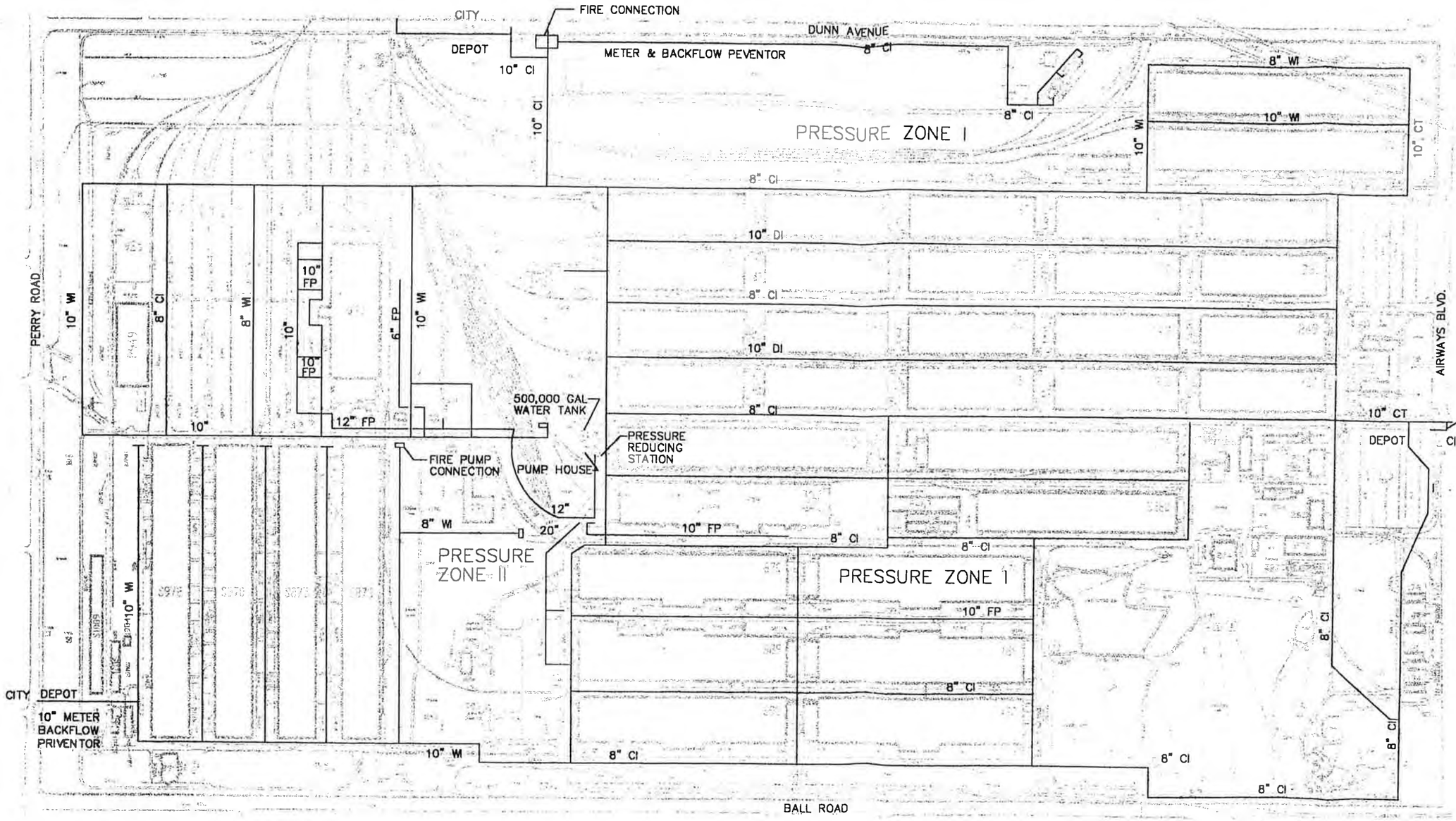
Intrusion Detection:

Buildings 144, 210, 359, and 360 are equipped with intrusion detection systems consisting of magnetic contacts at entry points. The system in building 360, manufactured by Admeco, is a zoned system which identifies the exact location at which access has been gained. The remaining systems, manufactured by ADT, simply notify post police when building security has been breached. The systems are not capable of indicating which entry point has been violated.

The command post in building 144 is also equipped with a motion detector and the vault area of bay 6 in building 210, which houses ADP and Autodin facilities, is protected by an infrared intrusion system for redundancy. All security alarms are monitored at the post police station, building 249. Each system is connected to a warning light at the station via telephone lines.

Existing Problem:

The existing intrusion detection system is adequate to meet current requirements.



N

EXISTING WATER LAYOUT

LEGEND:

162	FIREHYDRANTS
31	POST INDICATOR VALVE
WI	WROUGHT IRON
CI	CAST IRON
DI	DUCTILE IRON
FP	FIRE PROTECTION MAINLINE

REVISIONS

NO.	DATE & DESCRIPTION

PROJECT NO: 6010

DATE: JULY 8,1996

SCALE: NONE

EXISTING WATER LAYOUT

MEMPHIS DEPOT REDEVELOPMENT

MEMPHIS, TENNESSEE

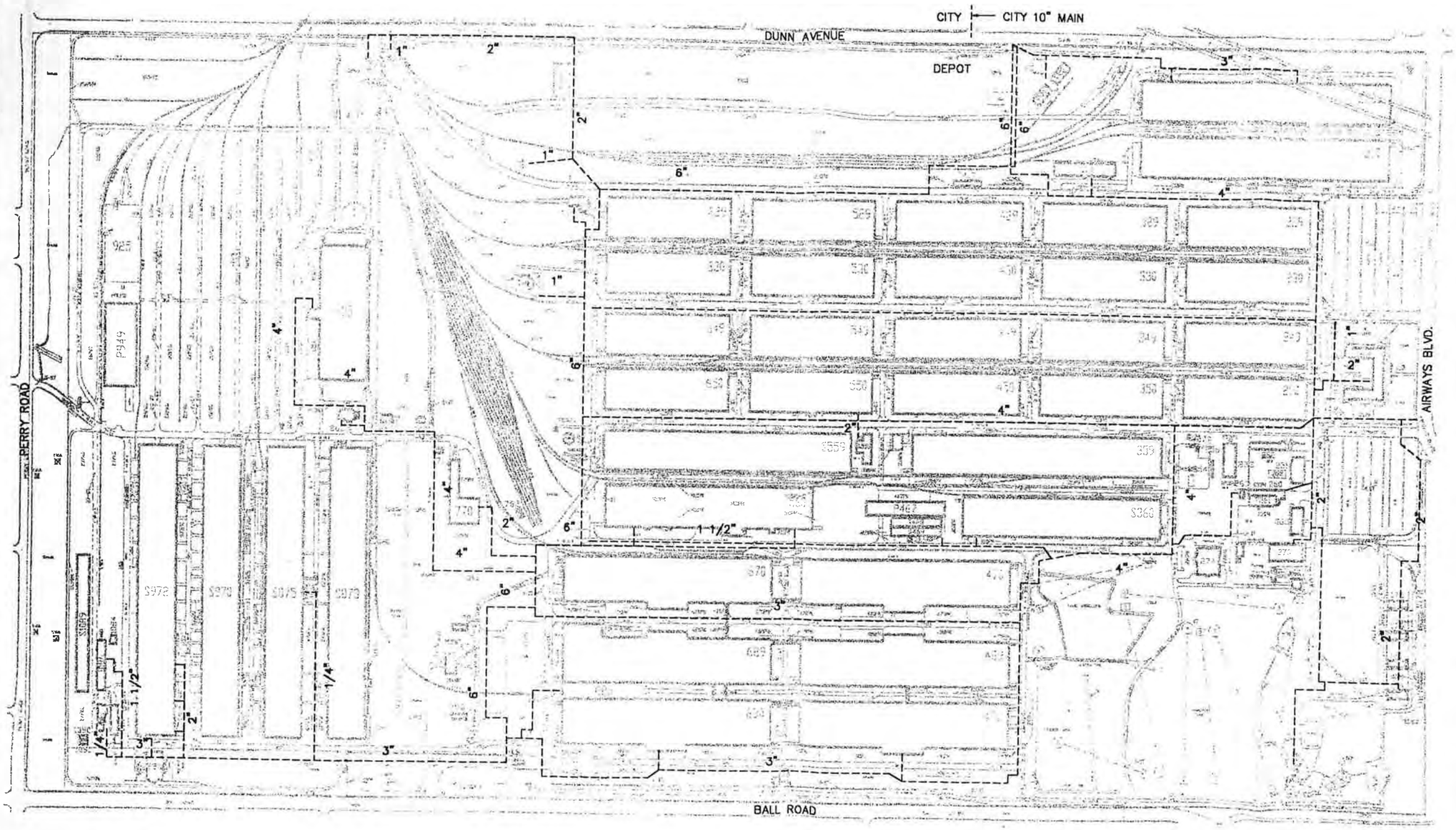
TOLES & ASSOCIATES

ENGINEERING
SURVEYING
PLANNING

2851 LAMB PLACE
SUITE 2
MEMPHIS, TN 38118
901-794-9815

CONSULTANTS:

SHEET



NATURAL GAS LAYOUT

REVISIONS

NO.	DATE & DESCRIPTION

PROJECT NO: 6010

DATE: JULY 8,1996

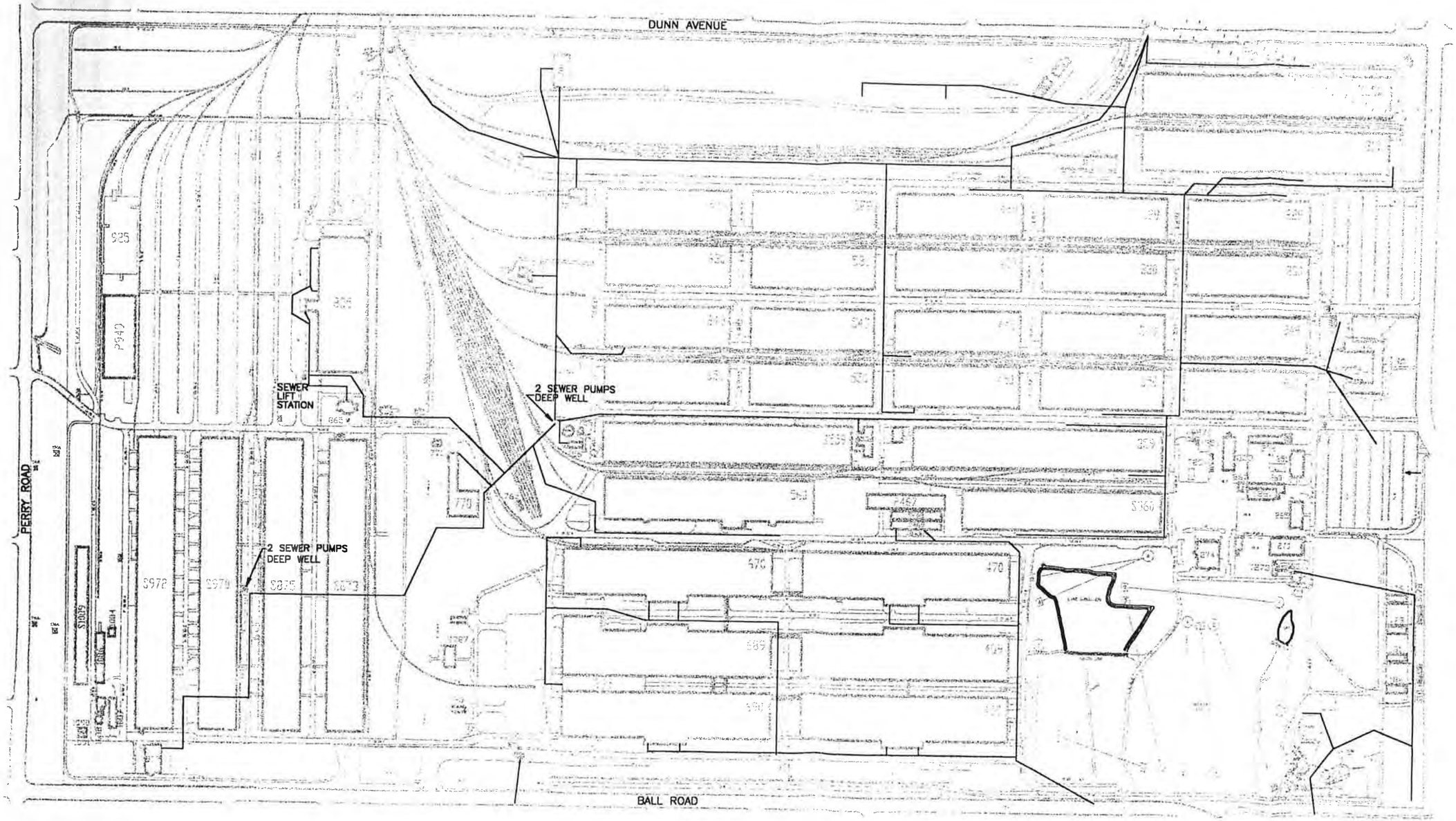
SCALE: NONE

NATURAL GAS LAYOUT
MEMPHIS DEPOT REDEVELOPMENT
MEMPHIS, TENNESSEE

TOLES & ASSOCIATES
ENGINEERING
SURVEYING
PLANNING
2851 LAMB PLACE
SUITE 2
MEMPHIS, TN 38118
901-794-9815

CONSULTANTS:

SHEET



SANITARY SEWER LAYOUT

LEGEND

142 MANHOLES
4 CLEAN OUTS
5 DISCHARGE LOCATIONS
VCP VIFRIFIED CLAY PIPE
C CONCRETE PIPE

REVISIONS

NO.	DATE & DESCRIPTION

PROJECT NO: 6010

DATE: JULY 8,1996

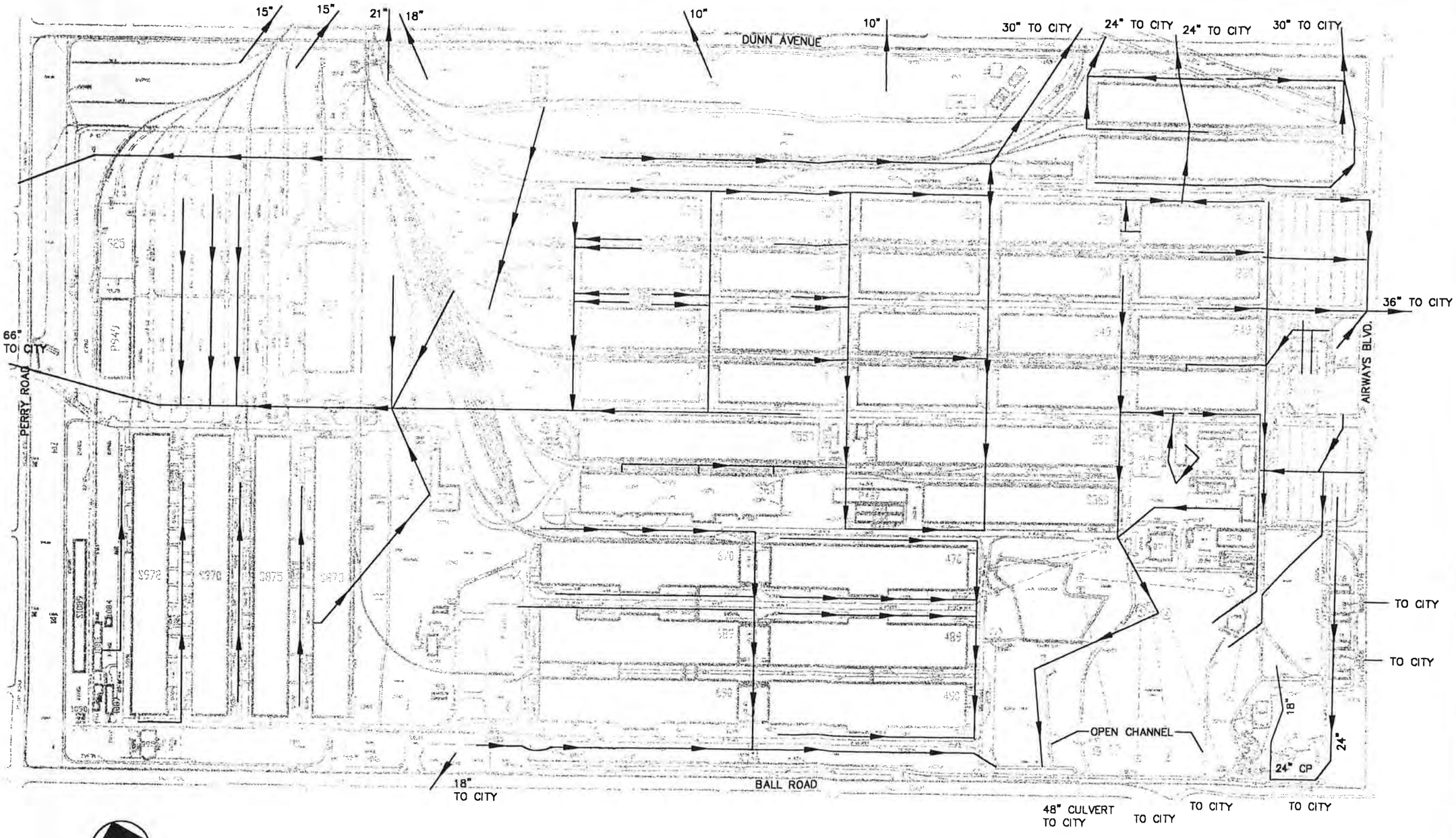
SCALE: NONE

SANITARY SEWER
MEMPHIS DEPOT REDEVELOPMENT
MEMPHIS, TENNESSEE

TOLES & ASSOCIATES
ENGINEERING
SURVEYING
PLANNING
2851 LAMB PLACE
SUITE 2
MEMPHIS, TN 38118
901-794-9815

CONSULTANTS

SHEET



STORM DRAIN LAYOUT

LEGEND:

190 MANHOLES
607 #11 INLET
2 CURB INLET
5 JUNCTION BOXES
42 HEAD WALLS

REVISIONS

NO.	DATE & DESCRIPTION

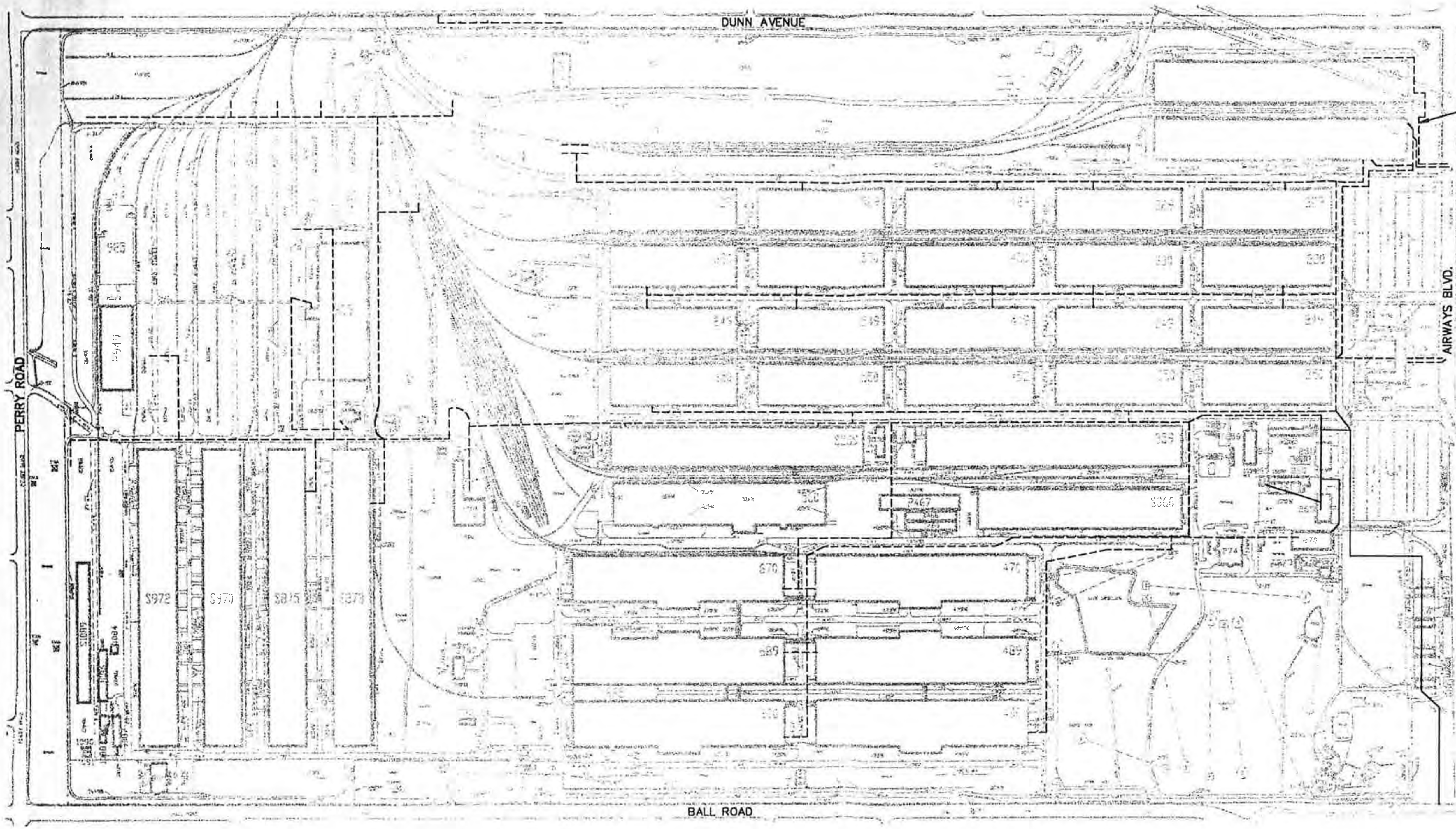
PROJECT NO: 6010
DATE: JULY 8,1996
SCALE: NONE

STORM DRAIN LAYOUT
MEMPHIS DEPOT REDEVELOPMENT
MEMPHIS, TENNESSEE

TOLES & ASSOCIATES
ENGINEERING
SURVEYING
PLANNING
2851 LAMB PLACE
SUITE 2
MEMPHIS, TN 38118
901-794-9815

CONSULTANTS:

SHEET



TELECOMMUNICATION SYSTEM LAYOUT

LEGEND:

Symbol	Description
- - - - -	95 % UNDERGROUND
—●—	28 TELEPHONE POLES
	23 PERIMETER SECURITY CAMERAS WITH FIBER OPTIC CABLES (F.O.C.)

REVISIONS

NO.	DATE & DESCRIPTION

PROJECT NO: 6010

DATE: JULY 8,1996

SCALE: NONE

TELECOMMUNICATION SYSTEM LAYOUT

MEMPHIS DEPOT REDEVELOPMENT

MEMPHIS, TENNESSEE

TOLES & ASSOCIATES

ENGINEERING
SURVEYING
PLANNING

2851 LAMB PLACE
SUITE 2
MEMPHIS, TN 38118
901-794-9815

CONSULTANTS:

SHEET

F. CIRCULATION / TRAFFIC

1. EXISTING ROADWAY CONDITIONS

The Memphis Defense Depot is strategically located approximately three miles from the Memphis International Airport. Access to the Interstate 240 loop is less than one mile from the facility. Both Interstate 40 and Interstate 55 are easily accessible via the loop.

The Depot has been a major distribution facility since its construction in 1941. For this reason the site is served by a substantial transportation system. Airways Boulevard, a major north/south arterial, borders the facility on the east and serves as the primary access road. Secondary access is provided from Dunn Avenue to the north and from Ball Road on the south. Perry Road serves as the western boundary but access to this roadway from the Depot is not recommended in the plan. Dunn Avenue and Ball Road are major streets with each roadway containing four through lanes of traffic. As indicated in Table 11, both Ball Road and Dunn Avenue are underutilized and have sufficient width to accommodate additional traffic to serve the Depot facility. A summary of the roadways is shown below.

Table 14: Adjacent Roadways

Roadway	Lanes	1995 Traffic Count	Estimated (LOS D)	Additional Trips Available
Airways Boulevard	7	32,500	41,000	8,500
Ball Road	4	6,676	22,500	15,800
Dunn Avenue	4	6,500	22,500	16,000

To take advantage of the additional traffic capability on Ball Road and Dunn Avenue, the redevelopment plan proposes two accesses to Dunn Avenue including truck access. Access is also proposed to Ball Road, but is recommended for automobile access only because of the single family homes on the south side of the street. No truck access is recommended to Ball Road.

The major truck entrance on Ball Road, the two Airways entrances flanking Bldg. 144, and Dunn Avenue intersection with Airways Boulevard are signalized. The utilization of existing signals is a major consideration for the redevelopment plan.

The traffic volumes projected in our report are based on certain assumptions. First, it is assumed that 85% of the total trips generated by a redeveloped Memphis Defense Depot would reach Airways Boulevard. This assumption is based on several factors.

According to the 1990 Census of Population, over 30,000 people live in an area generally bounded by 3rd Street on the west, Interstate 240 on the south, E.H. Crump Boulevard on the north, and Airways Boulevard on the east. This area is comprised primarily of single and multi-family residential developments. These neighborhoods have historically housed a substantial number of Depot employees.

These 30,000 persons have several direct available routes by which to reach the Depot. Persons living to the north and west can use 3rd Street and Elvis Presley Boulevard to access Person Road and then directly to the Depot via Hayes Street or Castilla Street. Direct access to the Depot is also available from Interstate 240 South via the Norris Road exit. This route is shorter and more direct for residents of these areas than one which continues south on Interstate 240, then east on I-240 to the Airways Boulevard exit before back-tracking north to the Depot.

Persons living immediately to the south and west of the Depot will most likely use Mallory Avenue and Elvis Presley Boulevard to access the Depot via Norris Road. Elvis Presley Boulevard is a major north/south corridor located between the Depot and Interstate 240. This roadway is the most direct route for persons living within the Elvis Presley Boulevard corridor north of the Depot, and for those south of I-240, north of Raines Road.

It is also important to remember that a substantial number of the total trips projected for the Depot will be for uses other than distribution and manufacturing. Some neighborhood oriented uses are under consideration for the Depot redevelopment. These include a park, training facilities and community service center. Throughout the planning process, residents of surrounding neighborhoods have expressed interest in such facilities. The proposed facilities are intended for both the community and regional employment. It is assumed that the community service trips will utilize the local street system for access.

The plan contains projections for the total volume of traffic likely to be generated by the Depot after redevelopment. These trips will enter and exit the Depot via three roads; a main internal access road, Ball Road, and Dunn Road. The plan assumes an equal split of trips between the three exits given the equidistant distribution of the access points. Truck access to the Depot will be limited to the main entrance on Airways Boulevard and truck entrances on Dunn Road.

The plan concludes that Airways Boulevard is capable of accommodating these additional trips based upon total traffic volumes. The intersections of Airways Boulevard with Dunn Road, Ball Road and the main internal access road should be signalized. Effective planning suggests the need for a more detailed analysis of these three key intersections in the next phase of planning and design. The future distribution of turning movements onto Airways Boulevard can only be accurately assessed by a more detailed critical lane analysis. Estimating the directional split of traffic on

Airways Boulevard is meaningless unless a detailed traffic study including a critical lane analysis is conducted. It can, however, be assumed that the number of left hand turning motions will be a critical factor in te efficiency of Airways Boulevard.

2. PLANNING ISSUES

The Depot is bounded by a variety of land uses. There is substantial residential development to the north, south, and west. The protection of these neighborhoods from increased traffic generated by the Depot Redevelopment is an important objective of the plan. The efficient distribution of traffic generated by future businesses must be accommodated while limiting the impact on adjacent neighborhoods. Bicycle use should be encouraged through provision of racks in appropriate locations, as an option.

Demolition of buildings in the northern and central portions of the Depot would provide enough area for approximately 5,400 new parking spaces. The parking areas can be distributed throughout the Depot to provide employees easy access to their place of employment and minimize congestion.

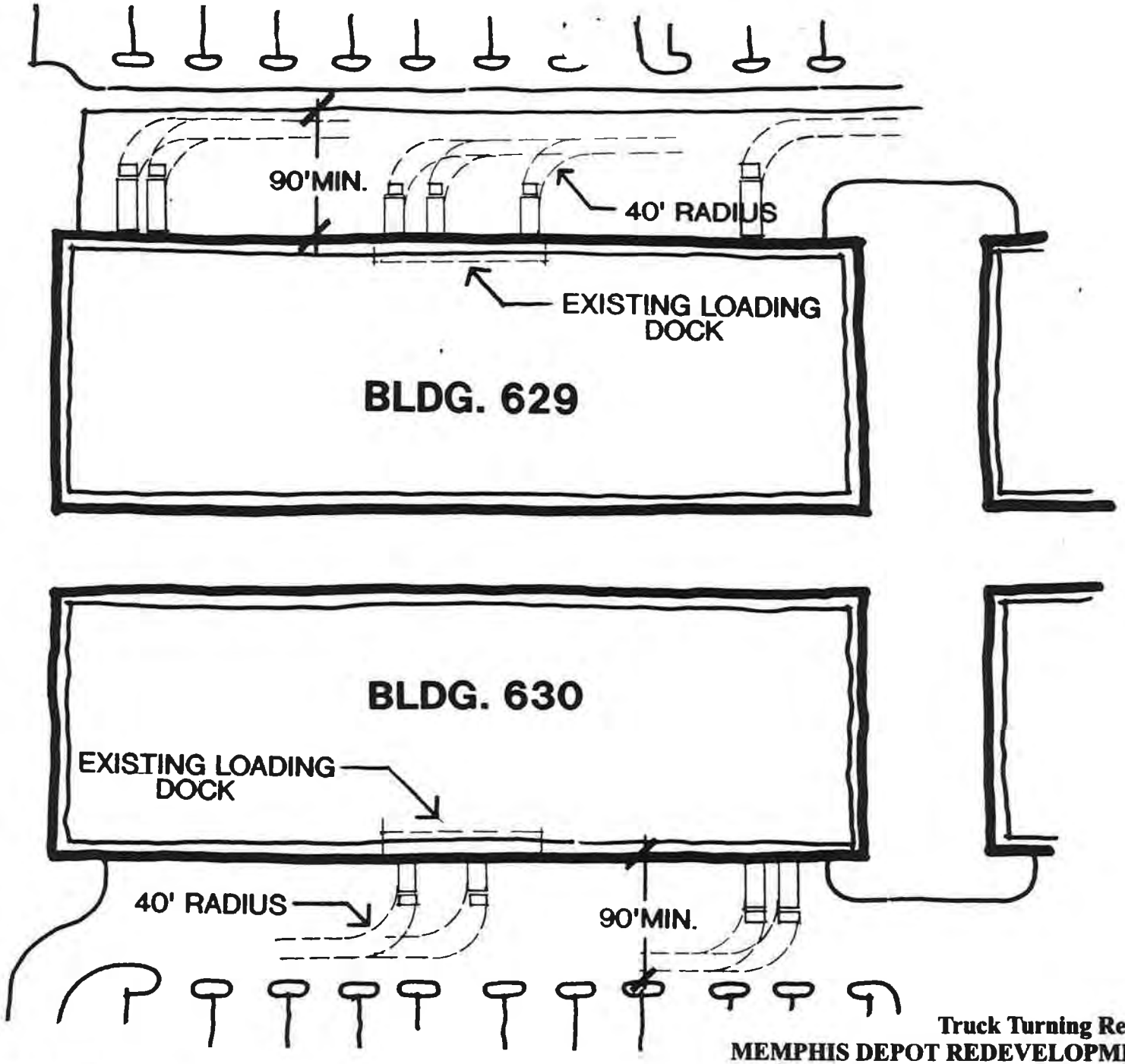
Existing parking areas on the north and south sides of Building 144 would likely be utilized for the training functions and the community services area. There are approximately 830 parking spaces available for use in those areas.

The community services center may be constructed in the parking lot on the south of Building 144. It is estimated that approximately 240 parking spaces would remain in that lot after construction of the facility. It is estimated that the police compound will have enough land within its proposed fence to store or park approximately 250 vehicles.

The new parking areas and road alignments shoould allow room for truck movements to and from each of the buildings. A typical truck utilizing a new bay in one of the "20-typicals" requires a minimum of 90 feet in front of each building to allow the driver to back up to a dock and pull away in an efficient manner. The following figure illustrates the truck maneuvering requirements at Buildings 629 and 630. These turning radius requirements are the same for all buildings. The typical turning radius for these trucks is approximately 40 feet.

For trucks using the existing truck docks in the middle of each building, there is adequate space for turning because the truck dock is recessed approximately 20 feet into the building. The parking areas are shown to be at an adequate distance from buildings to provide ample maneuvering space for trucks, backing up to, and pulling away from the manufacturing and distribution facilities at the Depot.

To supplement truck transport, rail options should be preserved by retaining the existing switching hardware and lead spur tracks up to the main post rail gates.



NORTH

0 50 100 200

Truck Turning Requirements
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

G. ENVIRONMENTAL / SITE ANALYSIS

Since 1942 the Defense Depot Memphis Tennessee (DDMT) has served as a major distribution center for hazardous materials, textile products, food products, electronic equipment, construction materials, and medical supplies. In 1995 the Defense Base Realignment and Closure (BRAC) Commission recommended the closure of the Depot. With the Department of Defense (DoD) implementation of the closure of the Depot, the U.S. Army Corps of Engineers (USACE) has the responsibility and burden of fulfilling the requirements of the Community Environmental Response Facilitation Act (CERFA) which requires federal agencies to evaluate all base closure and realignment property to identify their environmental condition and remediate properties affected by environmental contamination. The outcome of the environmental investigations and remediations implemented by the DoD and USACE could have a major impact on the schedule and overall long term success of the redevelopment and transfer of DDMT parcels to the private sector.

The following documents have been prepared by Woodward-Clyde for the USACE to address the requirements of CERFA and DoD BRAC guidance for closure of the Depot:

- the Environmental Baseline Survey (EBS);
- the Sampling and Analysis Recommendations (SAR); and
- the BRAC Cleanup Plan - Version 1 (BCP).

The Environmental Baseline Survey resulted in over 95% of the land area within the Depot being initially categorized as not suitable for transfer due to the need for additional evaluation of the environmental condition or completion of remedial actions (i.e., CERFA Categories 5, 6, and 7). Although parcels in these categories are not suitable for transfer until the completion of additional evaluations or remedial actions, they may be leased. Many of these parcels were designated as

requiring additional evaluation due to the potential for contamination from historical practices such as the application of herbicides on rail beds and open storage yards, and the fumigation of enclosed buildings. In addition, a number of parcels were recommended for additional evaluation as a precautionary measure due to the uncertainty caused by the lack of spill reporting records prior to 1980. Based on these factors and the results of the pending environmental sampling and analysis, a number of the existing Category 7 parcels may be redesignated to Category 3 parcels which should be available for transfer to the private sector for an industrial reuse.

With the incorporation of some minor revisions to the sampling and analytical protocols, the Sampling and Analysis Recommendations requires environmental investigations of a level and extent which should be appropriate to support the future transfer of BRAC parcels at the DDMT to the private sector for an industrial reuse. The implementation of the sampling and analysis recommendations began in October of 1996, and to the extent possible are scheduled for completion based on the priorities for the environmental cleanup recommended by the Memphis Depot Redevelopment Corporation(MDRC). In addition, a number of environmental investigations at the DDMT are being implemented through other DoD programs such as the Army's Installation Restoration Program (IRP). Many of the environmental investigations previously initiated through these types of programs address the more widespread and persistent environmental concerns at the DDMT. The environmental concerns covered by these programs will inherently result in more long term investigations and remedial activities than most of those addressed through the base closure process, thereby potentially delaying the transfer of the affected parcels for 10 years or more. Such uncertainty and delay may exert a severe depressing influence on the entire property's net present value.

Version 1 of the BRAC Cleanup Plan (BCP) contains the following categorization of BRAC Parcels at the DDMT with regard to their current environmental condition:

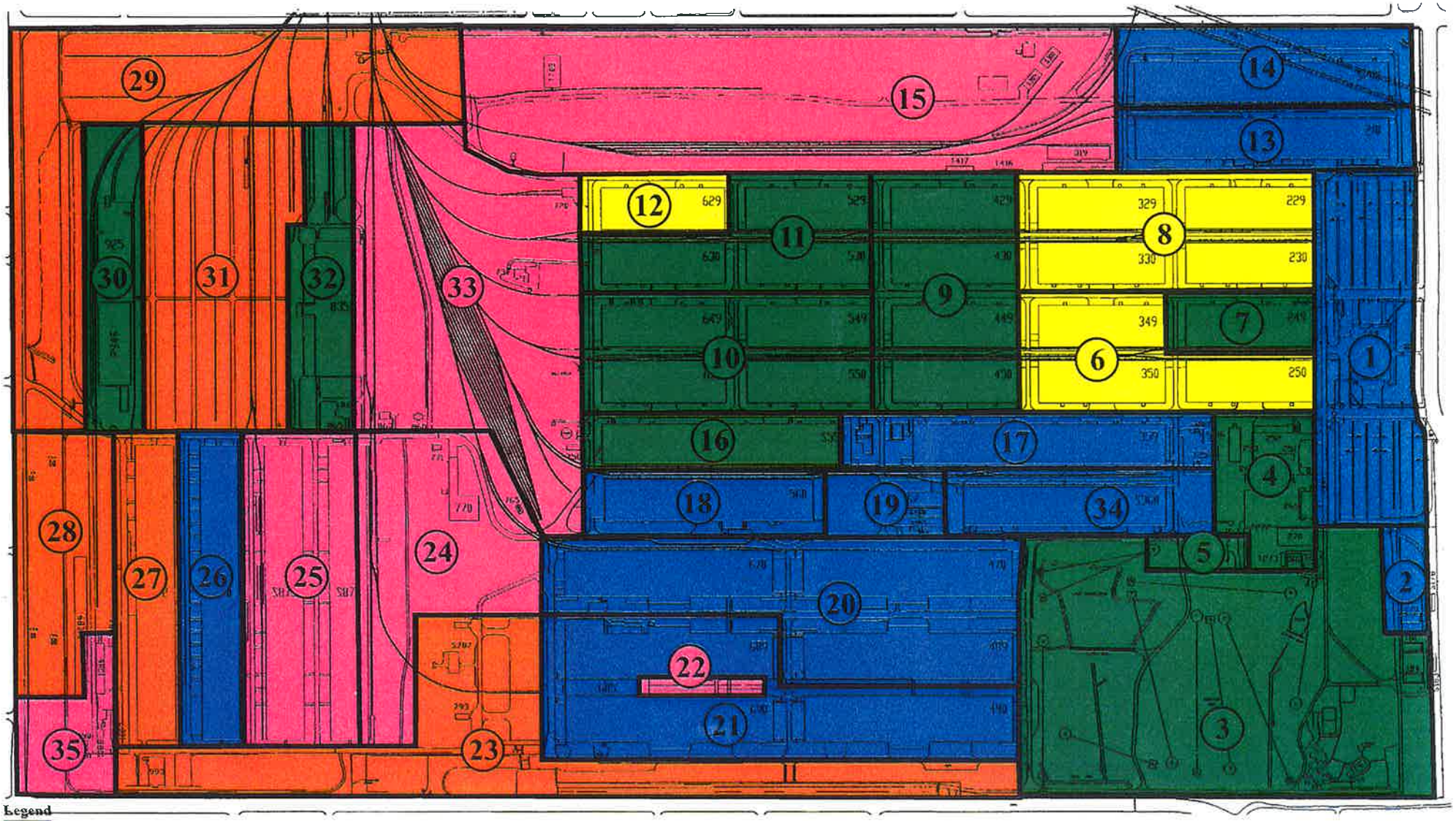
Environmental Condition	No. of BRAC Parcels	Total Area
Category 1	38	6.2 acres
Category 2	4	10.8 acres
Category 3	3	3.4 acres
Category 4	9	36.4 acres
Category 5	1	2.0 acres
Category 6	0	0.0 acres
Category 7	132	583.2 acres

Table 3-7 in Version 1 of the BCP provides a list of the 38 Category 1 BRAC Parcels. However, it should be noted that these Category 1 parcels are 38 individual buildings which do not include any of the surrounding land area or roadways as indicated on Figure 3-5 of the BCP. The extent to which these buildings can be transferred without the surrounding land areas, roadways, and parking lots is unknown. All of the open land areas, roadways, and parking lots at the Depot are currently designated as Category 7 which indicates that these areas have not been evaluated or require additional evaluation (i.e., sampling and analysis) prior to categorization of their environmental condition.

As shown above, a majority of the land area at the Depot remains in Category 7, as it was designated in the EBS. Version 1 of the BCP contains a Summary of Parcel Reuse (Table 2-1) which includes a projected transfer date for each MDRC parcel. The projected transfer dates provided in Table 2-1 appear to be overly optimistic for many MDRC parcels, with eleven (11) parcels totaling an area of over 165 acres projected to be ready for transfer (i.e., cleanup or remediation of the parcel is expected to be complete) by March of 1997. Many of these parcels are Category 7 and are currently undergoing sampling and analysis. For most of these parcels to be ready for transfer by March of 1997, it has apparently been assumed that the current sampling and analysis of these parcels will not indicate any significant amount of contamination that will require remedial action.

The requirements of the Community Environmental Response Facilitation Act should, if properly and fully implemented by the Department of Defense and the U.S. Army Corps of Engineers, identify any significant environmental concerns and, in conjunction with other environmental studies and reports prepared for the Depot, provide most of the documentation and information needed to support the future transfer of a majority of Depot parcels to the private sector for industrial reuse. However, the transfer of any significant parcels or buildings may require much longer than anticipated, depending on the proposed reuse and the completeness and applicability of the sampling and analysis results with regards to a ASTM E 1527-94 Phase I Environmental Site Assessment performed by a third party.

The transfer of certain parcels or buildings for community, recreational, or public reuses could require that a significant amount of additional environmental investigations be performed, including ASTM E 1527-94 Phase I Environmental Site Assessments. To facilitate the completion of Phase I Environmental Site Assessments for future transfers of individual buildings within a parcel at the Depot, it is imperative that all of the documentation and information contained within the Environmental Baseline Survey, and generated through the Sampling and Analysis Recommendations and BRAC Cleanup Plan, be cataloged and maintained at the Depot in a manner that is orderly and will be readily accessible to prospective buyers.



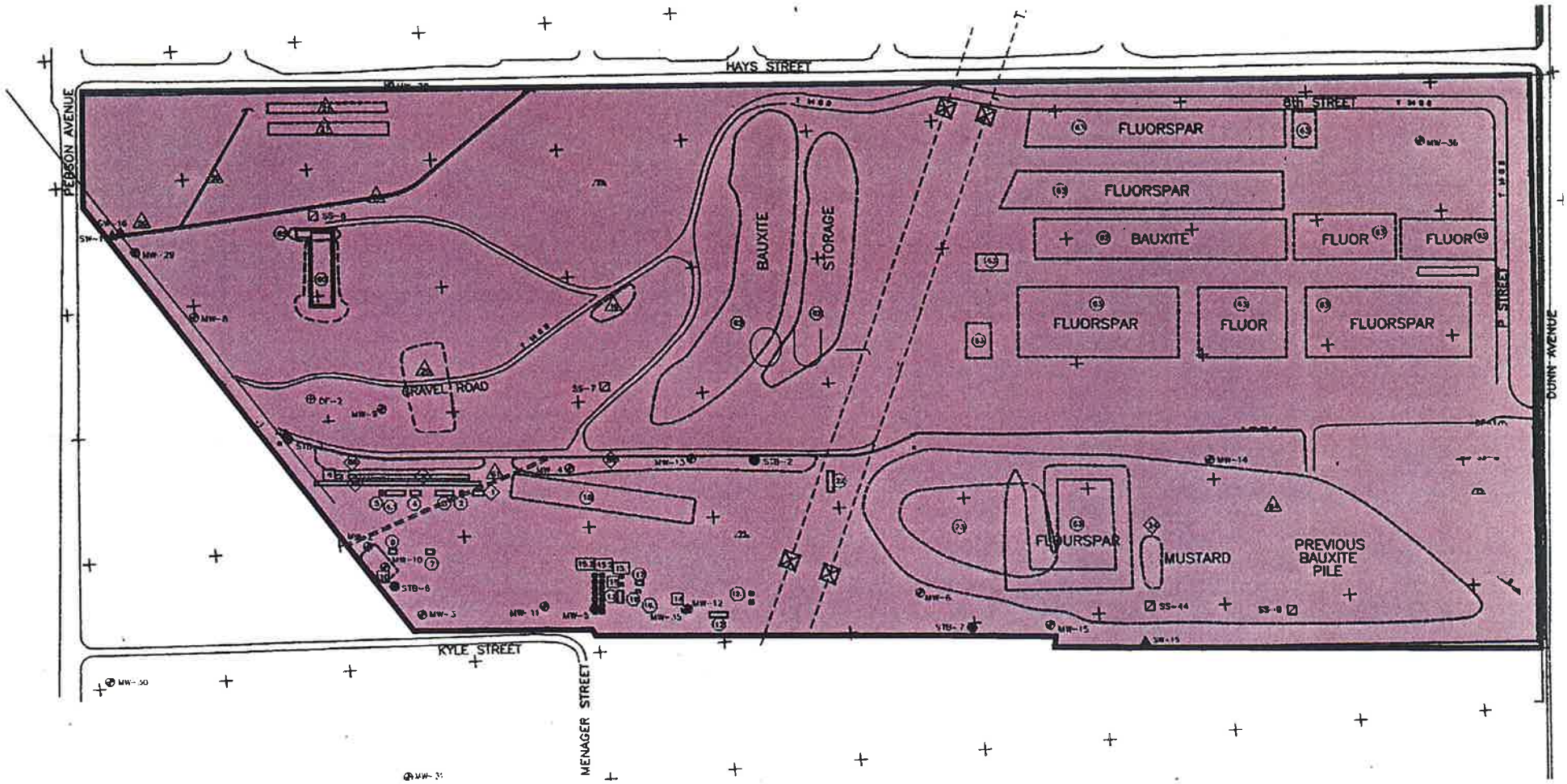
Legend

- March 97
- January 98
- February 98
- August 98
- March 99
- March 03
- (35) Designated Parcels

Environmental Cleanup Plan

MEMPHIS DEPOT REDEVELOPMENT PLAN

Memphis, Tennessee



Legend

- March 97
- January 98
- February 98
- August 98
- March 99
- March 03
- (35) Designated Parcels

Environmental Cleanup Plan
Dunn Field
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

H. CULTURAL RESOURCES

A cultural resource inventory was recently completed for the Memphis Depot. This inventory included assessment of the potential for archeological resources and architectural resources at the installation. The archeological survey concluded that most of the land at the Depot has been severely disturbed and that there is very little potential for intact archeological deposits. Although most of the Depot has been severely disturbed, the report indicated that two small areas, (the golf course and the northeast portion of Dunn Field) have been minimally disturbed and could retain the potential for archeological resources (TRC Mariah Associates, Inc, 1996) the cultural resource inventory did not substantiate its findings and further assessment has been requested by the State Historic Preservation Officer for Tennessee.

There is a large number of World War II era structures remaining at the Depot (TRC Mariah Associates, Inc., 1996). Many of these buildings are warehouses used to store and distribute military supplies. The architectural resource survey recorded 46 World War II era structures. Twenty-six of these buildings were tentatively determined not to be eligible for listing in the National Register of Historic Places (NRHP). Twenty buildings were tentatively determined to be eligible for listing in the NRHP (TRC Mariah Associates, Inc., 1996). The twenty buildings identified as potentially eligible are the twenty warehouses in the northern portion of Depot that are of identical design. The architectural resources document recommends their listing as a historic district. If the twenty "typicals" are determined to be eligible which would require that they evidence a high degree of architectural integrity, and sense of time and place (TRC Mariah Associates, Inc., 1996), there are implications for reuse of the warehouses. Although the SHPO has not yet officially concurred with the recommendations in the cultural resource inventory, it is anticipated that the SHPO will concur with the findings in the report. Since it is likely that the SHPO will concur with the report, there are serious implications for the redevelopment of the Depot as such status further marginalizes these buildings and their market appeal.

Implications for Reuse

The cultural resources inventory, although not conclusive, recommended that the two areas identified as having potential for archeological resources be formally surveyed to determine if any eligible resources are located at those sites. These surveys would be required prior to redevelopment of these parcels. If any eligible archeological resources are located at these sites, further coordination with the State Historic Preservation Officer (SHPO) will be required to ensure that no adverse effects result from redevelopment efforts.

If the SHPO concurs with the determination that any buildings are indeed eligible for listing in the NRHP, further coordination with the SHPO will be required to ensure that redevelopment efforts will not adversely affect those resources. As a number of structures identified for demolition are within the proposed historic district, redevelopment efforts may require adhering to the National Historic Preservation Act and the Secretary of Interior's Standards for Rehabilitation.

V. ALTERNATIVE PLANS AND RECOMMENDED PLAN

A. PLAN ALTERNATIVES

The following alternative land use scenarios present different approaches with which to address the goals and objectives adopted by the Memphis Depot Redevelopment Corporation(MDRC) Board of Directors. In that context, we have paid special attention to MDRC goals involving jobs, wages, capital investment and community compatibility. These alternatives include a manufacturing alternative, distribution alternative, and community development alternative. Graphic depictions of these alternatives appear at the end of this discussion.

Alternatives for reuse of Memphis Depot were developed through a multi-step process which included a review of existing conditions at the Memphis Depot; an evaluation of market factors and land use workshops with the MDRC Board; and sessions with the Board's subcommittees. The concepts developed from this process were evaluated in both economic and physical terms so that the effects of each alternative could be determined and then to establish a final direction for the Memphis Depot reuse plan.

The planning process identified a number of elements that are common to each alternative. The reason for these common elements is their overall importance to the future development of the facility, or the minimal viability of alternative redevelopment solutions. The common elements include reuse of the Depot for light industrial, distribution, training/business development, recreation and golf course, community services, and a public safety presence. Training and business development uses at the Depot could include a business incubator to aid entrepreneurial efforts in the city. Other common elements are; limited vehicle access to Ball and Perry Roads; creation of a landscape buffer around the Depot; removal of all on-site rail; demolition of certain interior structures; and construction of new site identification signage.

1. ALTERNATIVE 1

Alternative 1—the manufacturing alternative—would likely result in the highest density of new employment of the alternative scenarios. To allow implementation of this alternative a number of structures would require demolition. The demolitions would "open up" the facility by removing structures that are not structurally sound, would require an excessive amount of money to rehabilitate, or need to be removed to allow efficient circulation for trucks and automobile traffic.

The demolition plan is the same for all alternatives and is discussed in more detail in the Facilities Assessment section of this report. A summary of the demolition plan is presented with the discussion of the Preferred Alternative.

Most of the land at the Depot would be reserved primarily for light industrial purposes. The existing warehouses on the northern portion of the Depot, also called the "20-typicals" (Buildings 629, 529, 429, 329, 229, 630, 530, 430, 330, 230, 249, 650, 550, 450, and 350) would be manufacturing, although other uses such as distribution, back office, and assembly could locate in these buildings. A large portion of the Depot is reserved for development of new light industrial facilities. Most of the area reserved for new industrial development would be "opened-up" by the demolition of existing structures primarily in the northern and western portions of the Depot. A number of buildings in the central portion would also be demolished. Buildings 835 and 925 in the western portion of the Depot would be preserved for future industrial use. The buildings (560, 360, 670, 470, 689, 489, 690, 490) in the southern portion of the installation were identified as most appropriate for continued use as distribution facilities.

Buildings 251, 252, 253, 260, 261, 265, 270, and 272 have been identified as potentials for reuse by the Memphis Police Department as a police compound that would include a precinct. Immediately east of the proposed police compound is an area reserved for a community services. The community

services area could include a health clinic, day care facility, financial services, and convenience store. These community services would also enjoy the added security of the neighboring police compound. Immediately south of the community services area is the current golf course and recreation facilities that reserved for future use a recreation facility. Training for food service employees has been identified for Building 274. The current administrative building (144) as well as Building 925, are also identified for training for workers looking for new skills or re-entering the workforce. Building 250 is identified as an appropriate location for development of a business incubator.

The road network would be better defined and additional construction would be required to provide better access for trucks entering and exiting the Depot. The main entrance would be the intersection of Airways Boulevard and what is currently "G-Street" on the east side of the installation. This new main entrance would begin a new boulevard that would extend to the western portion of the Depot and become the main east-west corridor. The intersection of "C-Street" and Airways Boulevard would be re-established.

To minimize impacts to surrounding neighborhoods truck traffic will be primarily focused to entrances along Dunn Avenue on the north side of the installation. There will be no truck access along Perry and Ball Roads. The current entrance on Ball Road would be limited to automobiles.

New parking would be established where buildings 649, 549,449,349, 559, 359, 467, 468, 469, and 465 are demolished. These new parking lots would provide much more convenient access for employees. Currently most parking areas are on the perimeter of the Depot.

New roads are proposed in the western portion of the Depot to provide access to areas reserved for future light industrial development.

Landscape treatments would include street trees along interior roads and planting of a vegetative buffer around the perimeter of the Depot to minimize the visual impact of the installation from surrounding residential neighborhoods, as well as present a more pleasant view of the facility.

Private capital investments to implement the site occupancy for this alternative are estimated at approximately $107 million over the absorption period. Demolition costs would be approximately $7 million.

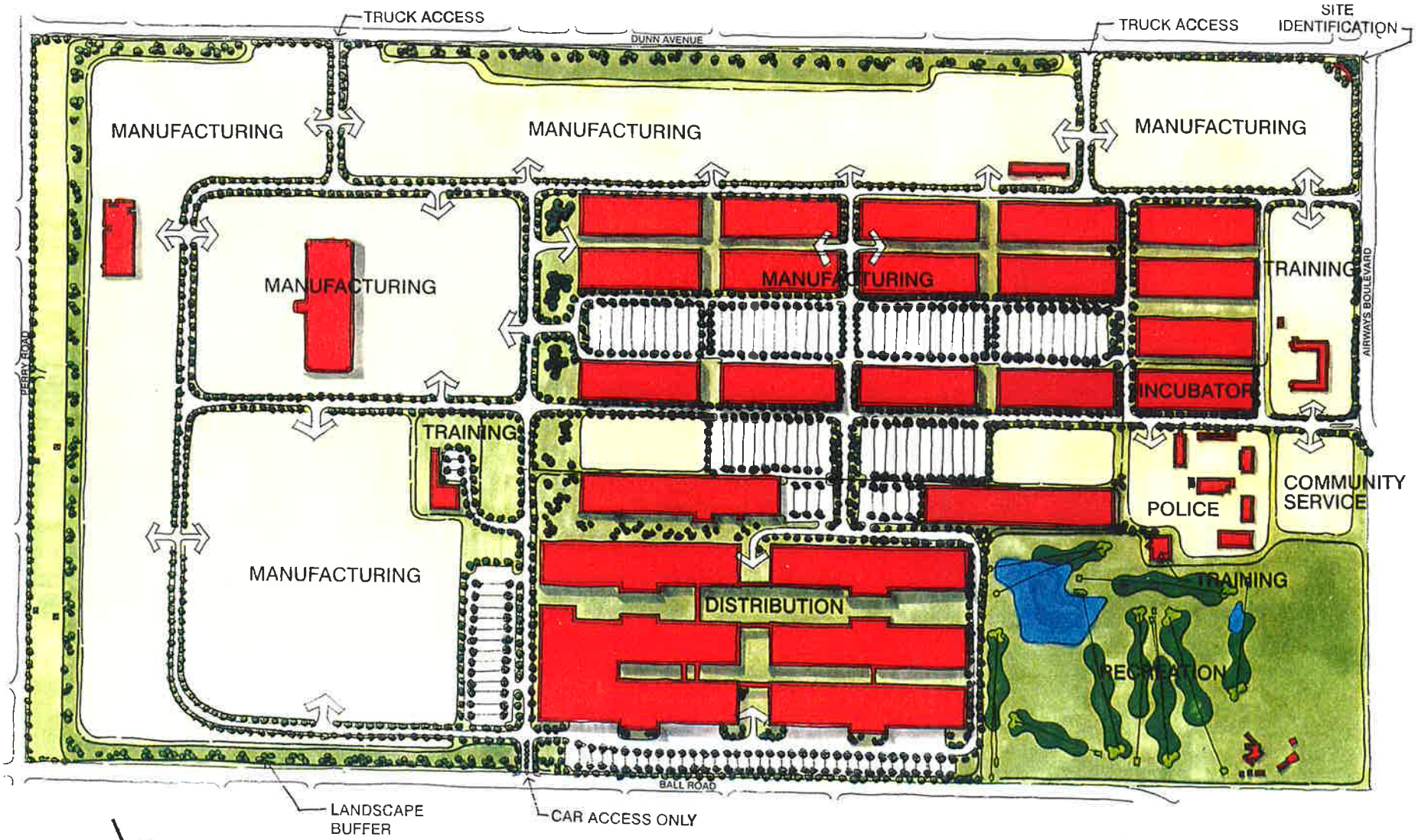
There are a number of strengths and weaknesses for this alternative. The strengths and weaknesses to Alternative 1 are:

Strengths

- Provides the greatest amount o employment opportunities.
- Highest level in annual wages.
- Features the most private capital investment.
- Provides most flexibility in on-site land use development.
- Potential for attraction of new "high profile" businesses.
- Good transportation access.
- Provides greatest economic diversity.
- Extracts maximum advantage from presence of FedEx, UPS, and other similar firms.
- Offers best opportunity for labor force improvements through training and consortium building among existing institutions.

Weaknesses

- Results in an increase in both car and truck traffic.
- Fewer opportunities for development of community-oriented facilities.
- On-site development less compatible with surrounding land uses than other alternatives.
- Most intense marketing requirements.
- May extend absorption period by two years to five years.



Manufacturing Alternative
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

2. ALTERNATIVE 2

Alternative 2—the distribution alternative—is similar to the manufacturing alternative in many respects. The only significant difference is its greater reliance on development of distribution based business. The same buildings on the southern portion of the Depot are identified as distribution. The southwest portion of the Depot in this alternative is shown as an area reserved for future development of distribution businesses. As with the manufacturing alternative, the "20-typicals" would be primarily utilized for manufacturing, although distribution and back office uses would be given the same consideration. The proposed land uses in the northwest portion of the installation are the same as the manufacturing alternative.

The land on the east side of the Depot would have the same uses as in the manufacturing alternative. The only significant difference would be the location of the community service area north of Building 144. By siting the community service area farther to the north, the businesses and services in this development would have greater visibility from Airways Boulevard. The recreation, police, and other training facilities are located in the same locations as the manufacturing alternative.

The road network and the landscaping are the same as Alternative 1. The only exception is the parking shown in the northern portion of the Depot along Dunn Avenue. This alternative would generate less capital investment ($74 million) than the manufacturing alternative, however the construction ($13.5 million) and demolition costs ($6.7 million) would be the same as Alternative 1.

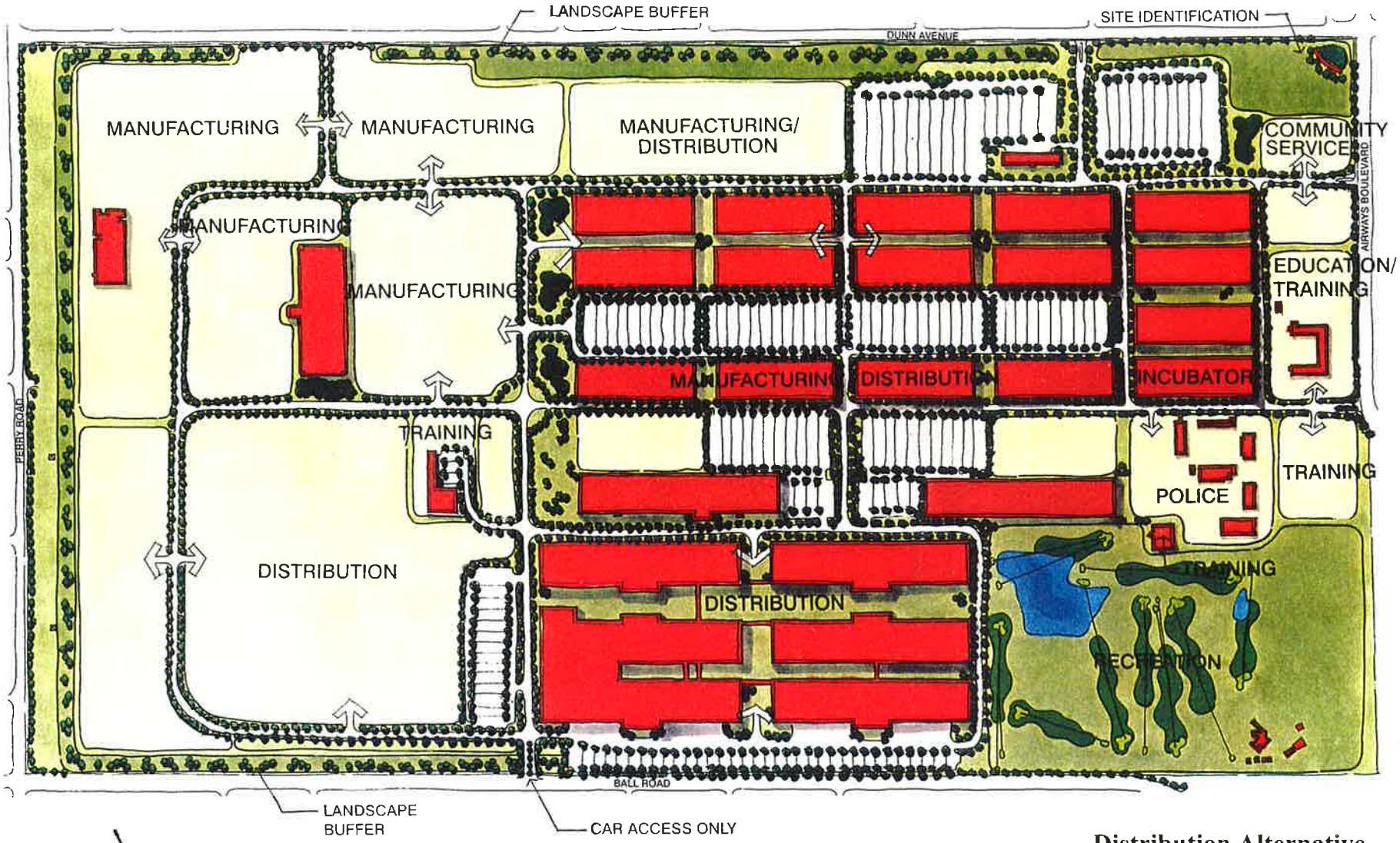
As with Alternative 1, there is a number of strengths and weaknesses for this alternative. Those strengths and weaknesses for Alternative 2 are:

Strengths

- Provides flexibility for on-site land use development (more acreage available fore development).
- Easiest convertibility of existing buildings.
- Best utilization of existing infrastructure such as airport, Interstate.
- Appeals to area's greatest current demand for facilities.
- Matches greatest depth of private-sector developer experience.
- Lesser costs and time expense in marketing and sales.

Weaknesses

- Provides fewer opportunities for development of social capital.
- Increase in both car and truck traffic from current conditions.
- Less labor oriented than manufacturing.
- Poor public perception of industry.
- Lesser opportunity for economic diversification.



Distribution Alternative

MEMPHIS DEPOT REDEVELOPMENT PLAN

Memphis, Tennessee

3. ALTERNATIVE 3

Alternative 3—the community development alternative—would likely result in the lowest density of new employment of the alternative scenarios. This alternative may provide more community benefits than the other alternatives because of the addition of a single-family residential development in the southwest portion of the Depot and utilization of existing military housing units on the southeast portion of the Depot as housing units for homeless families. Because of the addition of single-family residential development, less land is available for future industrial/distribution development, which would reduce the potential number of employees. New residential development may be restricted, however, by airport noise regulations.

The circulation within the Depot would be altered from the other alternatives to reduce the number of right-angle turns at intersections, and eliminate any access to the single-family residential area. The single-family residential development on the southwest portion of the Depot would not have any road access to the balance of the Depot. Because there would be no connecting roads, trucks would be prevented from driving through the residential area. Although the new residential area would be across Perry and Ball Roads from existing single-family neighborhoods, the intent is to integrate the new residences into the fabric of existing residences by minimizing the buffering along Perry and Ball Roads and extending the existing roads into the new development. Because these new residences would be even closer to the distribution and manufacturing uses at the Depot, a wider landscape buffer was proposed to mitigate visual impacts and noise from the north and east.

The homeless housing area would provide some support to local homeless housing providers. These former military housing units would be used for homeless families. Access to these homeless facilities would be from First Street. The education and training facilities are expanded from both the manufacturing and distribution alternatives, and the business incubator is moved to Building 350. The capital investments generated by this alternative would be approximately $52 million, much less than either Alternative 1 or 2. Demolition costs, however, would be the same as Alternatives 1 and 2. Construction costs would be only slightly lower at approximately $13 million.

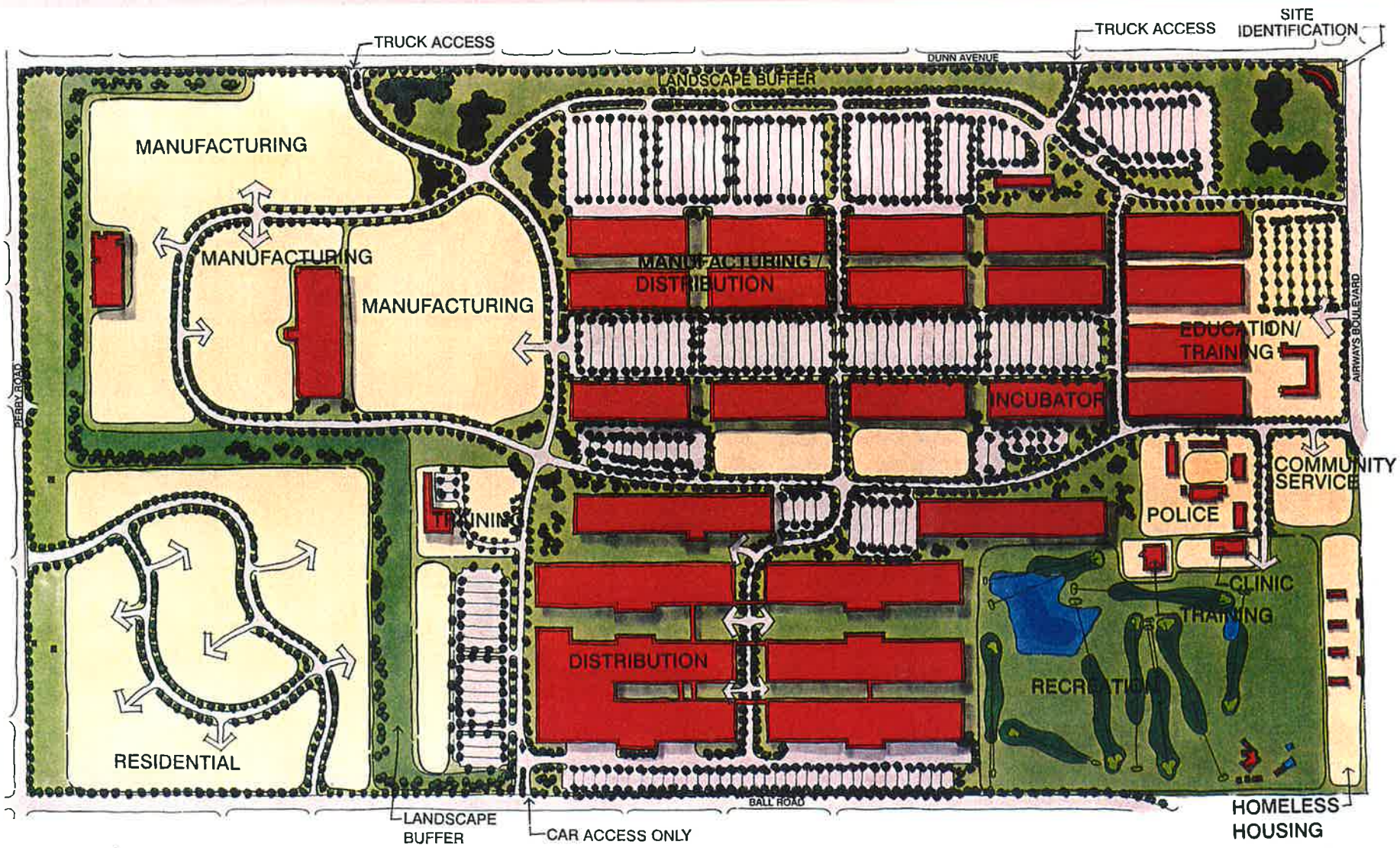
The strengths and weaknesses to Alternative 3 include:

Strengths

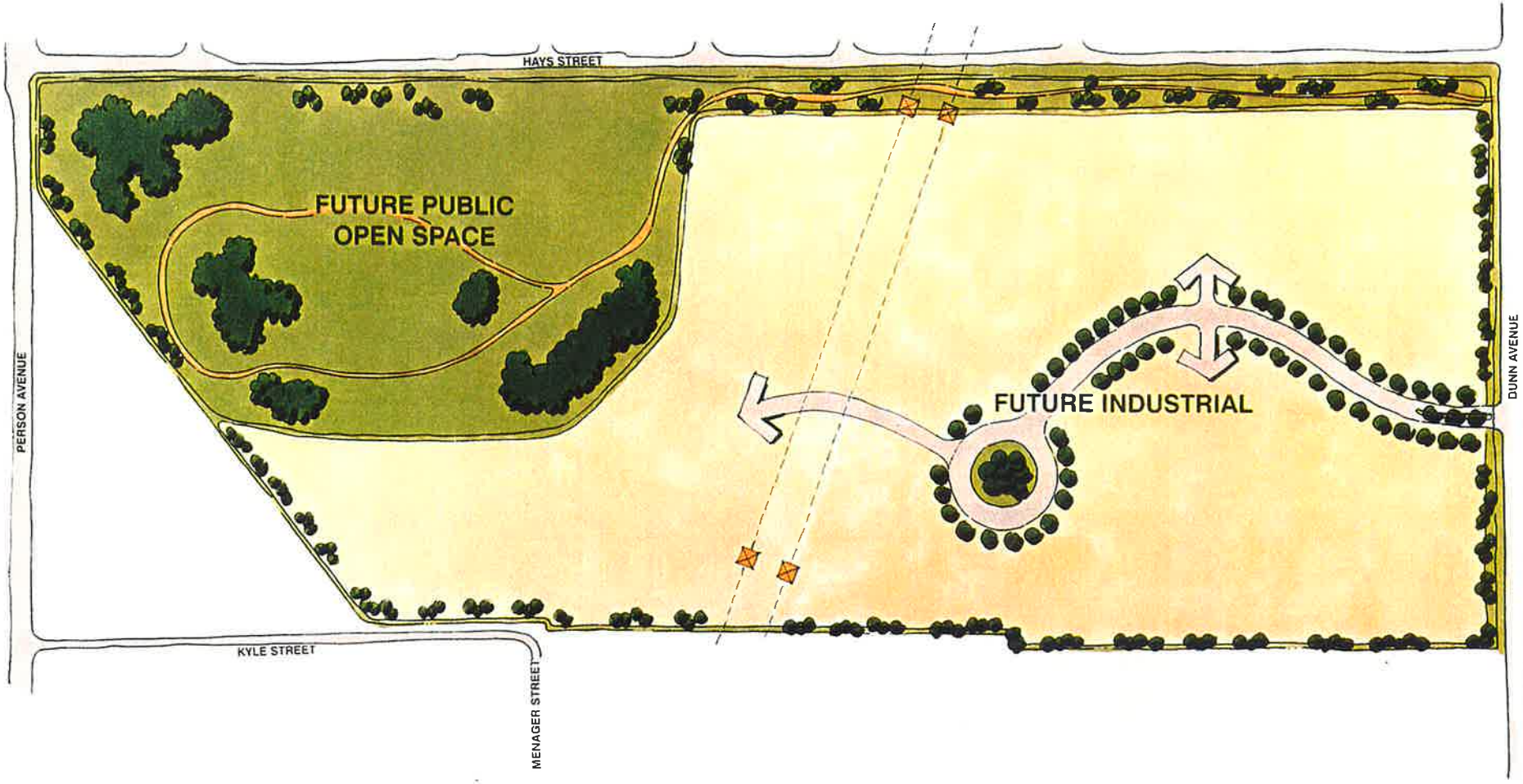
- On-site development most compatible with surrounding land uses and neighborhoods.
- Provides community services not currently available in the vicinity.
- Provides more opportunities for training/job development
- More site amenities.
- Good transportation access.

Weaknesses

- Results in less employment opportunities.
- There would be increases in both car and truck traffic.
- Produces the least amount of capital investment.
- Less flexibility in long-term development of Depot.
- Diversity of uses intensifies management tasks.
- Public uses may raise security and liability concerns and, therefore, costs for reusers.
- Residential activity dampens appeal for balance of site in distribution and industrial sectors.
- Fails to conform with Airport District Plans, with respect to airport - related noise.



Community Development Alternative
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee



NORTH SCALE 1" = 100

Dunn Field
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

Alternative's Strengths and Weaknesses Matrix
Memphis Depot Alternative Plans

	STRENGTHS	WEAKNESSES
Distribution Alternative	• Provides flexibility for on-site land use development (more acreage available for development). • Easiest convertibility of existing buildings. • Best utilization of existing infrastructure such as airport, Interstate. • Appeals to area's greatest current demand for facilities. • Matches greatest depth of private-sector developer experience. • Lesser costs and time expense in marketing and sales.	• Provides fewer opportunities for development of social capital. • Increase in both car and truck traffic from current conditions. • Less labor oriented than manufacturing. • Poor public perception of industry. • Lesser opportunity for economic diversification.
Community Development Alternative	• On-site development most compatible with surrounding land uses and neighborhoods. • Provides community services not currently available in the vicinity. • Provides more opportunities for training/job development. • More site amenities. • Good transportation access.	• Results in less employment opportunities. • There would be increases in both car and truck traffic. • Requires the least amount of capital investment. • Less flexibility in long-term development of Depot. • Diversity of uses intensifies management tasks. • Public uses may raise security and liability concerns and, therefore, costs for reusers. • Residential activity dampens appeal for balance of site in distribution and industrial sectors.
Light Industrial Alternative	• Provides the greatest amount of employment opportunities. • Highest level in annual wages. • Requires the most capital investment. • Provides most flexibility in on-site land use development. • Potential for attraction of new "high profile" businesses. • Good transportation access. • Provides greatest economic diversity. • Extracts maximum advantage from presence of FedEx, UPS and other similar firms. • Offers best opportunity for labor force improvements through training and consortium building among existing institutions.	• Results in an increase in both car and truck traffic. • Fewer opportunities for development of social capital. • On-site development less compatible with surrounding land uses than other alternatives. • Most intense marketing requirements. • May extend absorption period two years to five years.

Reuse Planning Decision Matrix
Memphis Depot Alternative Plans

INDEX	ALTERNATIVE			COMMENTS
MDRA Board Goals	Light Industrial	Distribution	Community Development	
5-Year Employment	A	B	C	A = Approximately 3,200 B = Approximately 2,700 C = Approximately 1,900
Annual Wages	A	B	C	A = Approximately $66 million B = Approximately $51 million C = Approximately $38 million
Capital Investment	A	B	C	A = Approximately $107 million B = Approximately $74 million C = Approximately $52 million
Community Compatibility	B	C	A	A = Provides greatest social benefits/compatibility with surrounding community B = Mid-range of social benefits/ compatibility with surrounding community C = Fewest social benefits/ compatibility with surrounding community
Operating Cash Flow	A	A	A	After vacancies projections each alternative produces revenue inflow approximately equal at $6.0 - 6.5 million per year
Demolition Cost	B	B	B	A = Approximately $6.0 million B = Approximately $6.7 million C = Approximately $7.2 million
Construction Cost	C	C	B	A = Approximately $12.0 million B = Approximately $13.0 million C = Approximately $13.5 million

B. PREFERRED REUSE PLAN

The preferred reuse plan for the Memphis Depot draws primarily from the manufacturing and community development alternatives. It includes land use recommendations, building demolitions, improvements to remaining buildings, infrastructure improvements, and circulation improvements. All of these elements form the foundation for the transition of the Memphis Depot from a U.S. Army Depot to a modern, marketable light industrial park. The recommended Reuse Plan for the Memphis Depot is illustrated on the map immediately following this section.

This plan provides the opportunity for maximizing employment and building absorption, as well as allowing flexibility for development of the western portion of the Depot. The existing warehouses on the northern portion of the Depot, Buildings 629, 529, 429, 329, 630, 530, 430, 330, 650, 550, 450, and 350 would be primarily light manufacturing and assembly. Because of the warehouse equipment currently located in buildings 560, 360, 670, 470, 689, 489, 690, and 490, and that they are in good condition, there are identified as most appropriate for continued use as distribution facilities. With the exception of Buildings 835 and 925, all other buildings will be demolished and the western portion of the Depot will be reserved for future light industrial development. The remaining major facilities total approximately 3.14 million square feet in floor area. That floor area is proposed to be split 49% manufacturing and 51% distribution/service.

It seems likely that new development in the western portion of the Depot would result in approximately 50 percent lot coverage generally on five to ten acre lots. Two large lots along the main east-west boulevard and a lot in the northeast along Dunn Avenue are also reserved for future development.

The intent of this reuse plan is to maximize employment opportunities so the single-family residential proposal for the southwest portion of the installation is not included, however the proposal for reuse of existing military housing for homeless housing is incorporated. The homeless housing area is directly east of the recreation area, both of which would be accessed by the public road that is located between the police compound and the community services center.

Buildings to be used for training/business development include the current administrative building (144), Buildings 229, 230, 249, 250, and 274. These uses could include a business incubator or similar operation. It was determined that Building 770 which was included in the alternative scenarios for training purposes is in fact not cost effective for reuse and was included in the demolition plan.

The community services area and the police compound are the same as proposed in the manufacturing alternative and are intended to provide opportunities for child care, financial service, a health clinic, a convenience store, as well as providing improved public safety. Other constant elements include recreation and a golf course. The area identified for recreation and the golf course is located immediately south of the proposed police precinct.

Another constant in the alternatives development for the reuse of Memphis Depot is the future use of Dunn Field, which is located north of Dunn Avenue. This portion of the Depot has more constraints to redevelopment from contamination, than the balance of the facility. Because it is likely that the environmental remediation process will be a long-term process, Dunn Field is shown as future industrial and future open space. The industrial land use portion of Dunn Field would be approximately 75 percent of the property and would be compatible with the redevelopment of the main depot and the property to the west.

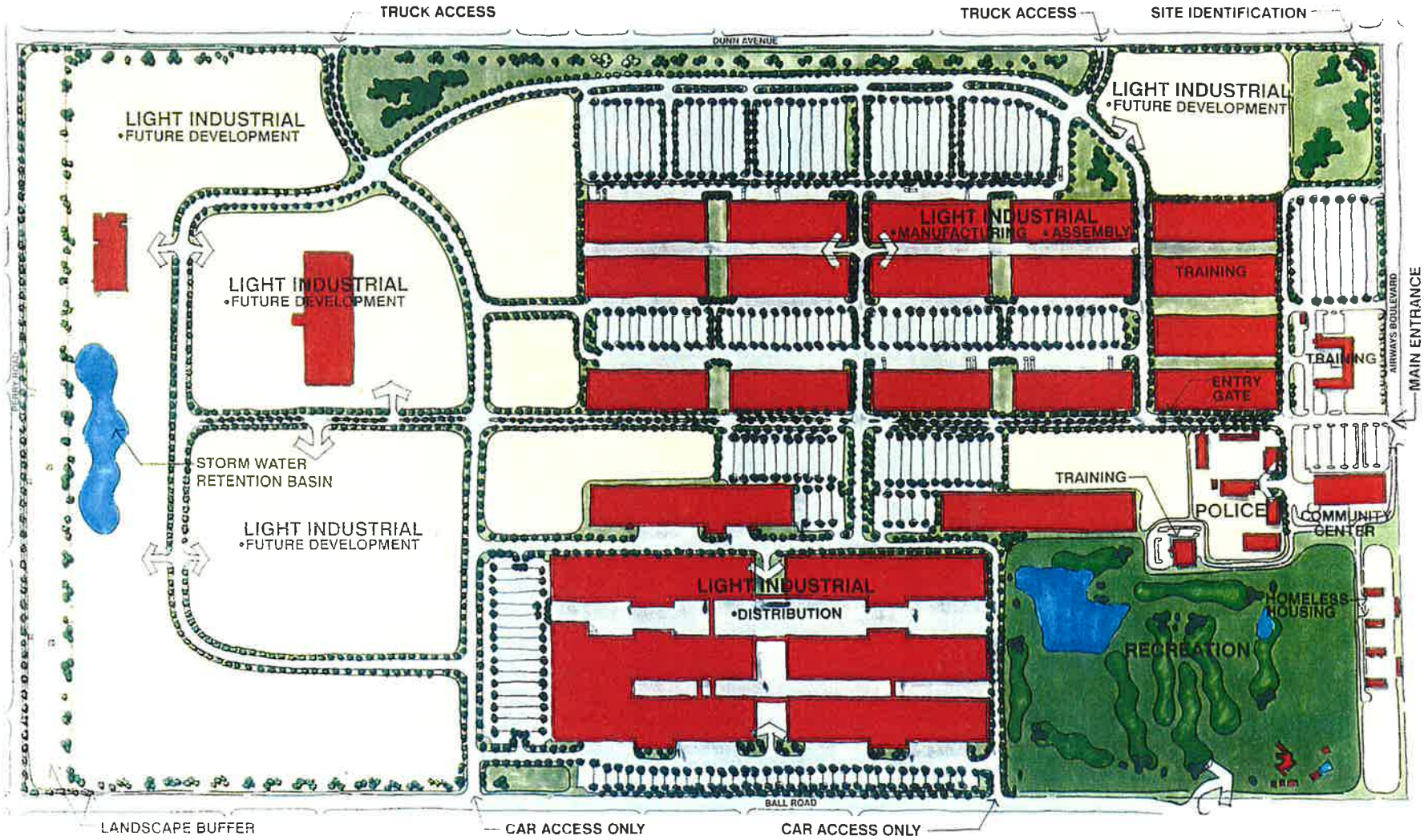
However a single-family residential neighborhood is located to the east of Dunn Field which would not necessarily be compatible with new industrial development. To minimize potential aesthetic and noise effects of new industrial development, a landscape buffer similar to the buffer around the perimeter of the Depot is proposed.

The area designated as future open space would also provide some buffering from the industrial area. The open space is proposed for an area of Dunn Field where few environmental problems have been identified. This area is partially wooded and has some walking paths already constructed. The areas on Dunn Field identified as future open space and future industrial would not be released for redevelopment until they have been remediated.

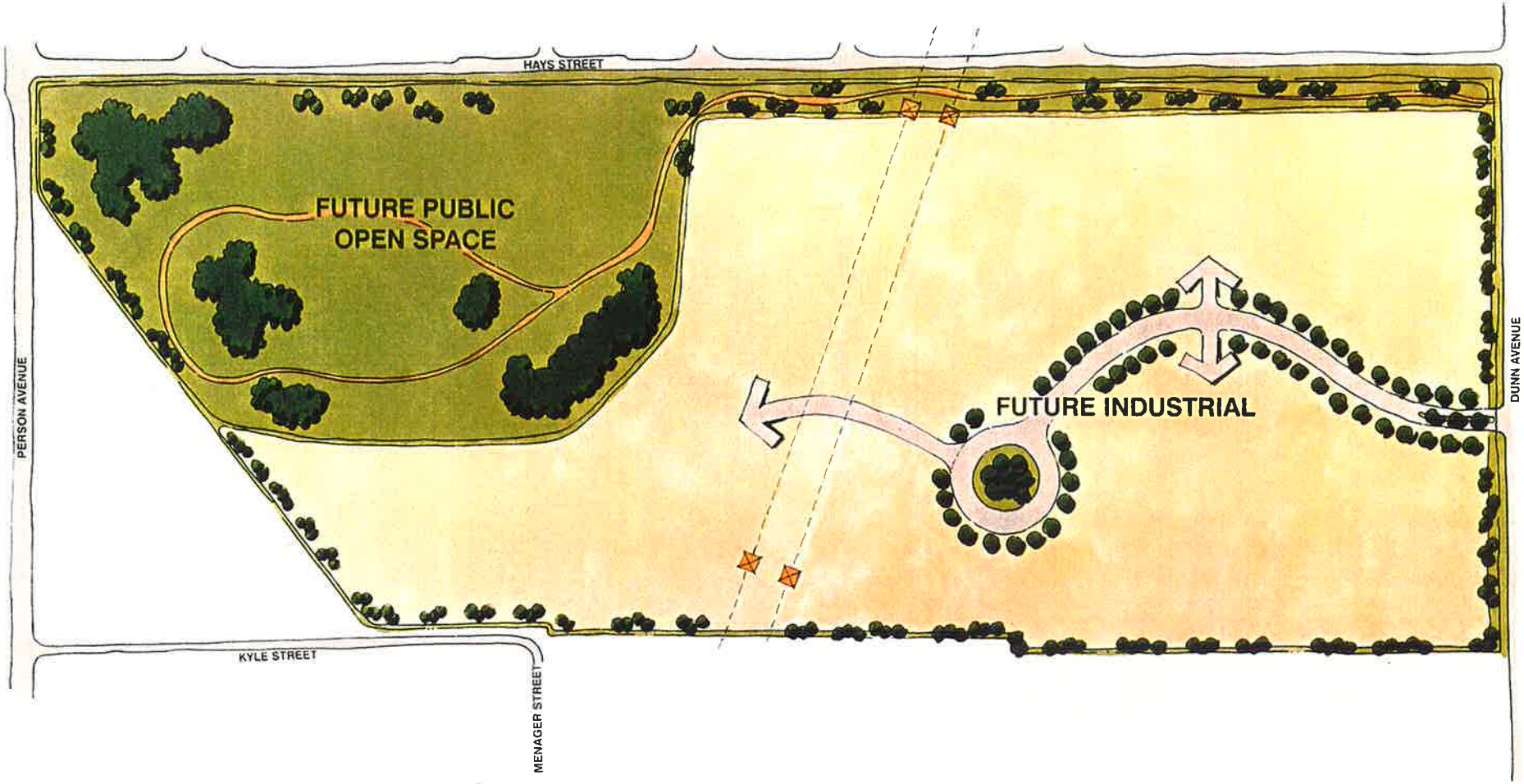
The implementation of the reuse plan for the Memphis Depot will result in employment opportunities for Memphis residents. However, to realize the potential employment and personal income associated with those jobs, improvements to the Depot facilities and existing infrastructure will be required. The following table summarizes the employment potential and the costs of infrastructure and facility improvements for the Depot. The capital investments necessary and infrastructure improvements required at the Depot are described in the Implementation section of this document.

REUSE PLAN SUMMARY	
Five-year Employment	3,675 persons
Annual Wages	$73.8 million
Capital Investment	$104 million
Demolition of structures	$6.7 million
Infrastructure improvements	$7.6 million*

*Includes cost for placing all utilities underground throughout the Depot
The cost for placing all electrical underground is approximately $900,000.
The cost for placing electrical underground along the boulevard only would be approximately $200,000.
The cost for placing telecommunications underground is approximately $130,000.
The cost for placing telecommunications underground along the boulevard only would be approximately $80,000 (BIG SWAG!)
The cost for infrastructure improvements including underground along the boulevard only would be approximately $6.8 million.



Recommended Alternative
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee



NORTH SCALE: 1" = 100'

Dunn Field

MEMPHIS DEPOT REDEVELOPMENT PLAN

Memphis, Tennessee

VI. IMPLEMENTATION

The following section addresses implementation issues at the master redevelopment plan level. Such issues include circulation factors, design guidelines, zoning and use recommendations, parcelization, project phasing, property acquisition and personal property retention and release. Additional implementation issues such as operations and maintenance, organization, capital costs and financing, caretaker function, marketing and business planning will follow later in this process. Provisionally, therefore, master plan implementation actions are outlined as recommendations below.

A. LEASE RATES

- The block of "twenty typical" buildings, each approximately 110,000 square feet should be priced at $1.50 per foot.

- The six "typical" buildings recommended for distribution operations (470, 489, 490, 670, 689, 690) should be priced at $2.00 per foot.

- The two new large buildings (360 and 560) should be priced at $3.00 per foot.

- The Hazardous Materials Building (835), assuming it is reserved for an operation in need of its special features, should be priced at $3.50 per foot.

- Building 925 can command $3.00 per foot and should be priced at that rate, ideally for an industrial operation.

B. CIRCULATION AND TRAFFIC PROJECTIONS

Traffic Projections

The redevelopment plan is dominated by light manufacturing and distribution uses. The plan additionally proposes various community services to be located along the Airways Boulevard frontage. These uses may include a police compound, training facility, and community service center. The existing golf course may also be integrated into the City of Memphis Parks system. The following traffic volumes were projected based on these uses.

MAJOR USES	Estimated Acreage	FAR	Gross Bldg. Sq. Ft.	Trip Rate/1,000 Sq. Feet	Total Trips Per Day
Distribution	96	0.3	1,256,400	1.667	2,094
Manufacturing	294	0.24	3,070,992	2.846	8,740
Community Service	6	0.18	47,225	23.789	1,123
Quasi-Public	28	0.25	305,000	4.575	1,595*
TOTAL			4,679,617	-----	13,553
Less 1995 Depot Traffic					-5,342
(Number of truck trips: 971)					**8,211**

* Includes projected 200 additional daily trips for golf course.

These projections are made using several data sources. Primary trip generation rates are based upon observed traffic counts collected at existing local distribution and manufacturing facilities. The ITE Trip Generation manual provided additional information including trip rates for various public/quasi-public uses. The future building gross square footage of each use is based upon a floor area ratio (FAR) characteristic of similar developments and applied to the gross acreage dedicated to each land use. Truck traffic has been estimated by applying observed percentages to projected total trips.

Existing traffic counts are taken from the *1995 Traffic Volumes Report* published by the Memphis and Shelby County Office of Planning and Development. During 1995 substantial traffic was still being generated by Defense Depot activities. These trips have been subtracted from the projected totals.

a. Internal Circulation

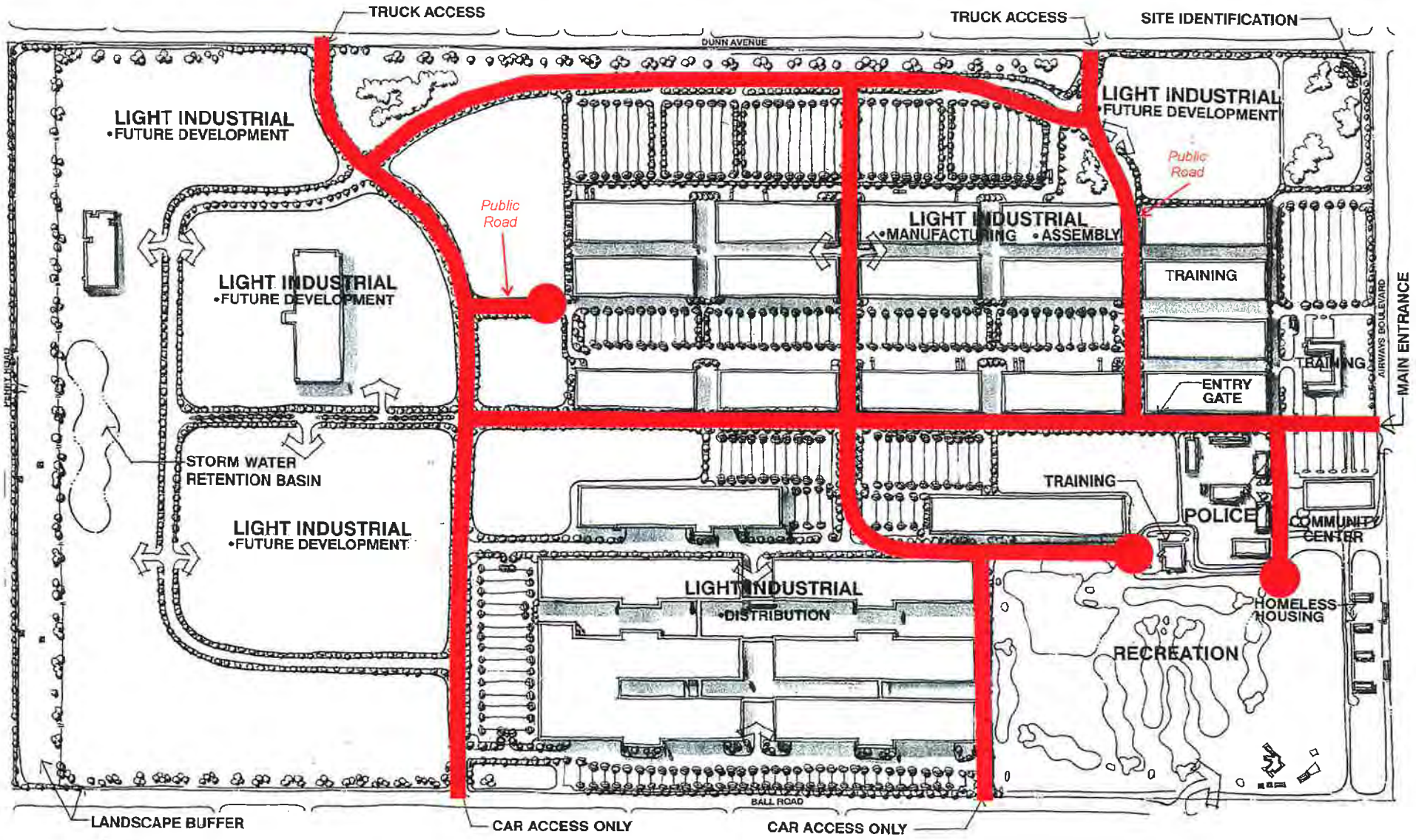
Circulation within the redeveloped Depot property will consist of a combination of public and private roadways. The major arterials that serve as connections to existing public roadways will be public. The map which follows depicts the Recommended Public Road Plan.

The Recommended Public Road Plan is designed to distribute traffic equally throughout the Depot and to access points with the existing road network. The plan directs traffic to those existing roads best able to accommodate increased volumes and maximizes use of existing signalization.

The plan proposes a main east west arterial with access to Airways Boulevard at the current signalized intersection. Additional east/west circulation is provided in the northern most section of the property. This roadway serves as a connection between two ingress/egress points on Dunn Avenue. North/south circulation is provided by two arterials which extend the entire width of the property, from Dunn Avenue to Ball Road and provide access to both existing roads. Further justification of these access points is given below.

All public roadways are proposed for 68 feet of right-of-way to permit adequate traffic flow. In some instances, however, a standard 68 foot public roadway with 48 feet of pavement may not be feasible. The public roadways should be designed to meet the needs of the traffic that they are expected to carry. Corner radii and other geometric standards should be sufficient to accommodate truck turning movements.

The estimated cost of these improvements is $3.5 million.



Recommended Public Roadways
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

b. External Circulation

It is estimated that the redevelopment of the Depot will generate approximately 8,200 new vehicle trips per day. It is assumed that approximately 85 percent of all trips generated by the Depot will eventually enter Airways Boulevard. This assumption was based on several factors.

According to the 1990 Census of Population, over 30,000 people live in an area generally bounded by 3rd Street on the west, Interstate 240 on the south, E.H. Crump Boulevard on the north, and Airways Boulevard on the east. This area is comprised primarily of single and multi-family residential developments. These neighborhoods have historically housed a substantial number of Depot employees.

These 30,000 persons have several direct available routes by which to reach the Depot. Persons living to the north and west can use 3rd Street and Elvis Presley Boulevard to access Person Road and then directly to the Depot via Hayes Street or Castilla Street. Direct access to the Depot is also available from Interstate 240 South via the Norris Road exit. This route is shorter and more direct for residents of these areas than one which continues south on Interstate 240, then east on I-240 to the Airways Boulevard exit before back-tracking north to the Depot.

Persons living immediately to the south and west of the Depot will most likely use Mallory Avenue and Elvis Presley Boulevard to access the Depot via Norris Road. Elvis Presley Boulevard is a major north/south corridor located between the Depot and Interstate 240. This roadway is the most direct route for persons living within the Elvis Presley Boulevard corridor north of the Depot, and for those south of I-240, north of Raines Road.

It is also important to remember that a substantial number of the total trips projected for the Depot are for uses other than distribution and manufacturing. Several neighborhood oriented uses are

proposed in the redevelopment plan. These include a park, training facilities and health care services. Throughout the planning process, residents of surrounding neighborhoods have expressed interest in these services. It is for these people that the proposed facilities are intended. It is assumed that these trips will utilize the local street system for access.

The plan contains projections for the total volume of traffic likely to be generated by the Depot after redevelopment. These trips will enter and exit the Depot via three roads; a main internal access road, Ball Road, and Dunn Avenue. The plan assumes an equal split of trips between the three roads given the equidistant distribution of the access points. Truck traffic will be limited to the main gate on Airways Boulevard and the two entrances on Dunn Avenue.

The total Depot projected daily trips on Airways Boulevard will be less than the estimated roadway volumes at a Level of Service (LOS) D. This Level of Service is considered acceptable for an urbanized area. The additional traffic projected for Airways Boulevard is compared with its estimated efficiency at LOS D in the table below.

Airways Boulevard

Existing Trips	New Trips	Total	Estimated (LOS D)	Difference
32,500	6,970	39,470	41,000	**1,530**

Both Ball Road and Dunn Avenue are also significantly under utilized. With an equal distribution of trips onto Dunn Avenue, Ball Road and the main interior access to the Depot, the projected increase in average daily trips for these roadways can be accommodated. Approximately 2,700 trips will be added to both Ball Road and Dunn Avenue each day. Totals for these two roadways are still projected to be 50 percent under recommended levels.

To take advantage of the additional traffic capability on Ball Road and Dunn Avenue and to minimize the negative impact of future truck traffic on residential areas, the redevelopment plan proposes two accesses to Dunn Avenue with permitted truck access. Two access points are also proposed to Ball Road, but recommended for automobiles only because of the single family homes on the south side of the street. No truck access is recommended to Ball Road.

Both the Ketchum Road and Dunn Avenue intersections with Airways Boulevard are signalized. In addition, the main entrance to the Depot from Airways Boulevard is signalized. The utilization of existing signals is a major consideration for the redevelopment plan.

c. Recommendations

The existing roadway network is adequate to serve the increased traffic generated by the Depot redevelopment. The following recommendations are made to provide protection of adjacent residential areas and to provide for adequate traffic movements at critical intersections.

1. Primary ingress and egress from the Depot should be limited to Airways Boulevard and Dunn Avenue. Both roadways are currently underutilized and can support additional traffic volumes.

2. Two limited access points to Ball Road should be provided. Two access points will permit better distribution of traffic on Ball Road and reduce the traffic impact on adjacent residential development. The roadway could also provide access to the recreational area. The distance between the two accesses is approximately 1,900 feet. This is not unreasonable spacing of city streets in an industrial area. Truck traffic should be prohibited from both access points on Ball Road.

3. The opportunity exists to improve the turning radius at the Dunn Avenue intersection with Airways Boulevard. This would provide a more efficient south bound turning movement, particularly for truck traffic. Two existing transmission towers are located far enough into the site to make any necessary improvements at the intersection including an acceleration lane if needed.

4. A more detailed study of the major intersections serving the Depot may be required. The traffic volume projections included in this report are based on general traffic planning standards. They do not include an analysis of critical lane volumes or of intersection geometries.

5. The City of Memphis should consider improvements to the Airways Boulevard/Ketchum Road intersection and to the alignment of the Interstate 240 westbound on-ramp. The on-ramp meets this intersection at a 45 degree angle, creating an inefficient and potentially dangerous situation. Trucks arriving at the Ketchum Road intersection with Airways Boulevard are required to navigate a 160° right turn to access the Interstate. The deteriorated condition of curbing at this junction is evidence of this fact. This movement creates a hazard for through traffic traveling south-bound on Airways and for those also trying to access the west-bound ramp.

6. Transportation is a major strength for Memphis, although the access by truck from Airways Blvd. to I-240 needs improvement. Local/state governments should consider improvements to the Airways Boulevard/I-240 intersection. The west bound on-ramp meets this intersection at a 45 degree angle, creating an inefficient and potentially dangerous situation. Trucks arriving at the Ketchum Road intersection with Airways Boulevard are required to navigate a sharp right turn to access the Interstate. The deteriorated condition of curbing at this junction is evidence of this fact. This movement creates a hazard for through traffic traveling south-bound on Airways and for those also trying to access the west-bound ramp.

7. The northern east/west internal road cannot intersect Airways Boulevard. Dunn Avenue is under utilized and can accommodate substantial traffic volumes. The proposed layout, featuring a parallel internal roadway that intersects Airways Boulevard, will all but eliminate the need for Dunn Avenue. Most traffic would utilize the internal east/west road rather than Dunn Avenue under these circumstances.

   It is imperative that there is not a public or private road connection between this northern east/west internal roadway and Airways boulevard. The proposed network will funnel traffic to an *unsignalized* intersection between two existing signalized intersections. Spacing is not adequate to add another signal on Airways boulevard and this new intersection will not function properly.

   In a related matter, we have investigated the intersection of Dunn and Airways per your request. The turning radius at this intersection can be improved to provide a more efficient south bound turning movement particulary for truck traffic. The towers at the intersection are located far enough into the site to make any necessary improvements at the intersection including an acceleration lane if needed. This opportunity would be lost if the internal road intersects Airways Boulevard.

8. In consideration of land transfer to State Tech, the State of Tennessee should be encouraged to assist in general improvements (e.g., road improvements, landscaping and lighting) to the Airways Boulevard corridor, between I-240 and Lamar Avenue.

C. ZONING RECOMMENDATIONS

The existing I-L (Industrial-Light) zoning of the Depot property is the appropriate designation for all light manufacturing and warehousing uses proposed by the Recommended Redevelopment Plan. The I-L District also permits the majority of community service and training uses proposed for the Airways Boulevard frontage including both parks and recreation facilities and public buildings. Design guidelines and use restrictions should be managed through a set of covenants. Some uses allowed in I-L are not conductive to the high quality industrial park. The following uses should be restricted:

D. DESIGN RECOMMENDATIONS

Design recommendations for the reuse of Memphis Depot include guidelines for individual buildings and green space along roadways and the perimeter of the installation. These recommendations are intended to minimize the institutional look of the Depot facilities, create a more visually appealing entry to the facility, and provide a visual barrier between the buildings on-site and the residential neighborhoods surrounding the Depot. These recommendations also address street and pedestrian lighting, signage, and pavement types.

Furthermore, MDRC staff must develop comprehensive protective and restrictive covenants to ensure redevelopment of the installation at the highest achievable standards. Such covenants should be recorded upon property title transfer from the army to MDRC. Equally, covenants must be reflected in leases, sublease, deeds, occupant association agreements and other appropriate documents governing reusers' occupancy and residence at the Depot.

Facility Improvements

The work environment at the Memphis Defense Depot is directly related to the physical environment created for the people that work there. This environment conveys many messages both positive and negative. Because the built environment at the Memphis Depot is largely in place, design recommendations focus on how the remaining structures can be modified to improve the overall

visual environment as well as to guide the design of new buildings constructed in the future. The following guidelines are presented in an effort to achieve unity, coherence, and harmony on the site and as a result eliminate the site's "institutional" look and improve the site's marketability.

The objective of the architectural guidelines are to provide an overall high quality and uniformity within the Memphis Depot. Emphasis is placed on architectural treatment which reduce the visual impact of the large-scale structures. The guidelines encourage creative, high quality design treatments for the existing and new buildings while establishing an overall coordinated visual effect.

The "Twenty Typical" warehouses reportedly meet criteria "A" and "C" as outlined in National Register Bulletin 15 (U.S. Department of the Interior 1990) and may be eligible for inclusion in the NHRP as an historic district. Modifications to the exteriors of the buildings would need to comply with the Secretary of the Interior's Guidelines as well as with these design guidelines, if the buildings are declared eligible.

The facility recommendations for the Memphis Depot will improve the site's visual environment by:

- Establishing consistency in architecture which takes into account all elements of the site and its surroundings by utilizing common color schemes, materials, and landscape treatments. Because of the current "typical" appearance of the group of twenty 1942 vintage warehouses, the historic status of these structures, and the low maintenance requirements for previously unpainted concrete surfaces, the addition of paint to these surfaces is not recommended.

- Articulating the large facilities at the Memphis Depot into a series of smaller forms to reduce the visual impact of their mass and create a scale which is easier for people to relate to. On the "twenty typical" warehouses, these modifications should be accomplished in such a way that the physical impact on the existing buildings is minimal and not "irreversible."

The figures at the end of this section provide specific facility improvement recommendations for the Memphis Depot structures. Costs for architectural improvements are provided in the Capital Improvements section. These figures reflect the following criteria:

- Use subtle changes in color to break up large masses and to define entries.
- Utilize mature landscaping and graceful land forms where grade changes are necessary, and provide appropriate ground cover to stabilize and enhance disturbed areas.
- All buildings should have a horizontal appearance emphasized by architectural structure and accent color.
- Place wall texture to help reduce large wall areas to human scale.
- Cluster small-scale elements such as planters around the major forms, particularly in areas where people gather.
- Discourage building signage, and roof forms which draw unnecessary attention from off the site.
- A palate of accent colors should be established to provide guidance for all building modifications.

The estimated costs for the recommendations shown in the figures which follow on pages VI 20 and VI 21:

- "Twenty Typical" Warehouses: $250,000 Each
- "Six Typical" Warehouses: $375,000 Each

Signage

Signs at the site should include identification and directional. The identification signs are both for the site as well as each building. Directional signs are necessary to assist employees and visitors in finding their destinations. Recommendations for signage include:

- Provide identification signs for each building at the Depot. Locate a sign at the main entrance of each building and at any other building entrances that are heavily used. Either wall mounted or ground-mounting signs are acceptable. The ground-mounting signs should be no more than 35 sf in size or more than four feet in height provided sight lines are not obscured at entrances. The wall mounted sign should be no more than 35 square feet in size.

- Directional signage should be standardized and placed at entrances and along main vehicular routes. These signs should include directions to parking and individual buildings. The directions should be sufficient so first-time visitors will feel comfortable in moving from one building to another.

- The main vehicular entrances to the site should have prominent signs identifying the industrial park. These signs should be large enough for people passing on Airways Boulevard to read. These signs could also be enhanced by landscaping and lighting.

- Billboards, portable signs, and roof-mounted signs should not be allowed on-site.

- All signs are required to adhere to the city's zoning ordinance.

Landscape Design Principles

To respond to the needs for an upgrade to on-site landscaping and to provide some visual relief to residents surrounding the Depot, four principles for upgrading the landscaping are discussed. These principles are also illustrated in the graphics following this section.

The first principle is to provide visual contrast and relief. The landscape should provide a respite from the massive architecture and open area that is currently a large rail yard. Plantings will buffer the residential areas surrounding the site and to improve the view of the Depot from the roads surrounding the Depot.

The second landscape design principle is simplification. This strategy addresses both initial plant installation cost and ongoing maintenance cost. The planting of landscape material should take place only where appropriate or needed. The plant materials should be positioned in informal groves or formal rows to allow ease or elimination of mowing.

Plant serviceability or tolerance is the third principle. Plants must be selected which will survive under the existing climatic conditions in southwest Tennessee. These plants must also provide the desired visual effect with low maintenance.

The fourth principle is the establishment of a planting priority. Lawn and trees should be the dominant design and planting investment.

Landscape Design Guidelines

- Place large trees in groups around all structures. This will break-up the massive scale of the buildings and provide some interest in front of large blank walls. Place plantings of shrubs at the major entrances of buildings to provide a focus to the entrance.

- Landscape internal roads with formal plantings of canopy and ornamental trees.

- Plant trees in all parking lot islands and break up expanses of parking area with lawn, mounds, and tree plantings. The recommended standard calls for trees to be uniformly distributed with at least one tree for every 20 parking spaces.

- Satellite dishes larger than 36 inches in diameter will not be allowed on roofs of structures at the Memphis Depot. These larger satellite dishes will be required to be mounted at ground level. To minimize adverse effects to the aesthetics of the Depot, all satellite dishes will be screened for its entire height from view at ground level from public thoroughfares. Screening can be accomplished with landscaping and plant material that would provide a year-round visual barrier.

- Screen the perimeter of the Depot, with a combination of both deciduous and coniferous trees. To add additional visual interest and buffering, plantings of flowering annual and perennials should be incorporated into the landscape buffer.

- Landscape the Airways Boulevard frontage with informal plantings of canopy trees and ornamental trees. To ensure the marketability of the site it is recommended that a formal program to upgrade the streetscape along Airways Boulevard be implemented by the City of Memphis.

- Recommended plant types include the following:

SHADE/CANOPY TREES

- 'Red Sunset' Maple
- 'Marshall's Seedless' Ash
- 'Cleveland Select' Pear
- Pin Oak
- Willow Oak

EVERGREEN TREES

- Loblolly Pine
- Japanese Black Pine

ORNAMENTAL TREES

- 'Muskogee' Crape Myrtle
- 'Natchez' Crape Myrtle
- Star Magnolia
- 'Otto Luyken' Cherry Laurel

SHRUBS

- Glossy Abelia
- 'Dwarf Red Leaf' Barberry
- Dwarf Burning Bush
- 'China Boy/Girl' Hollies
- Broadmoor Juniper
- 'Harbour Dwarf' Nandina

- Shrubs should be placed primarily at signage and building entrances. In this manner, they provide visual focus for special areas and help identify building entrances. Although shrubs are intended primarily for visual focus, an occasional planting of shrubs as an understory to trees along the perimeter of the Depot is encouraged to provide additional visual diversity.

- A combination of shrubs and evergreens should be used to screen outdoor storage facilities.

- Utilities are to be located underground along the main entry boulevard and other entrance corridors. The areas of the site that are reserved for future development will be required to have utilities placed underground during development. In addition to areas where new development will occur and the entrance corridors, utilities in the balance of the site should also be placed underground.

- Install vehicular lighting with a mounting height of 25 feet. To prevent damage to poles or vehicles that come in contact with them, locate light standards a minimum of three feet behind the curb along roadways, and use wheelstops or concrete bases, or locate fixtures in a planting island in parking lots.

- Install pedestrian lighting with a mounting height of 10 to 12 feet on a concrete base that is flush to the ground and six inches greater in diameter than the light base. Placement criteria is the same as for vehicular lighting.

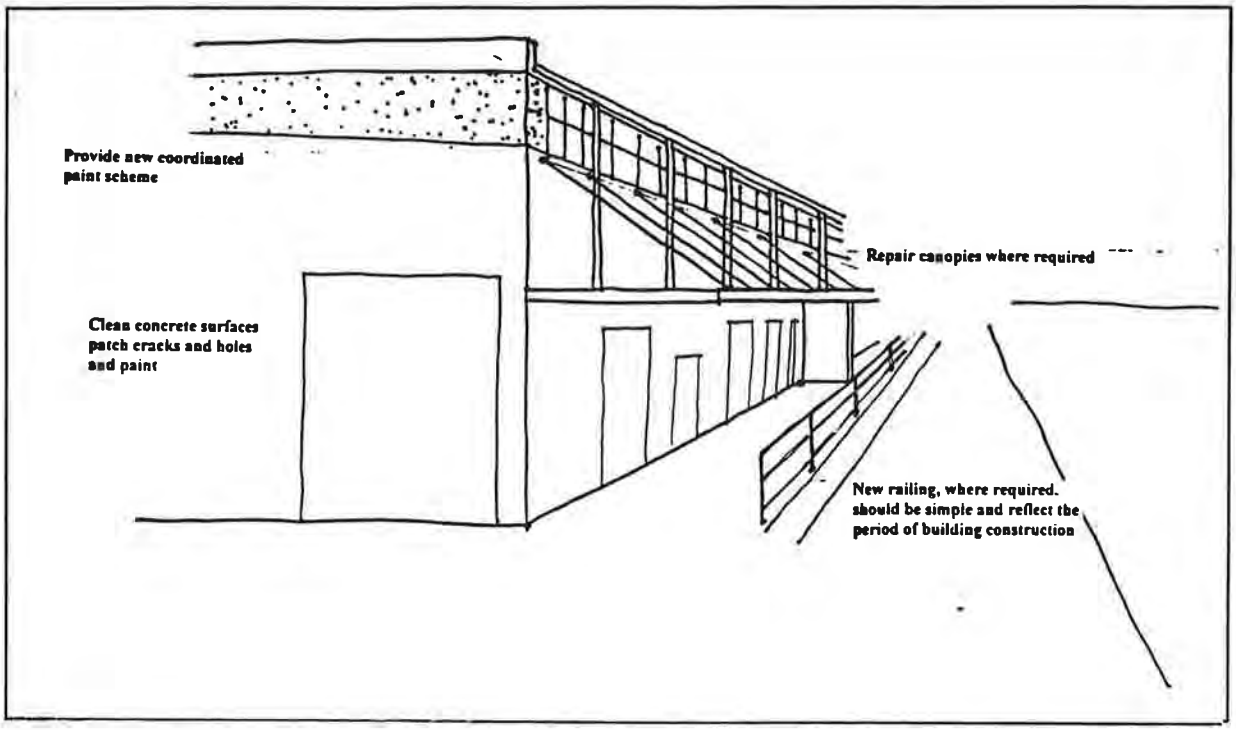
- The number of fixtures should be increased potentially hazardous locations such as stairs, intersections, and remote parking areas.

- Light fixtures should be spaced evenly to achieve desired levels of lighting based on the manufacturer's photometric diagrams and an electrical designer's input. The following provides suggested lighting levels.

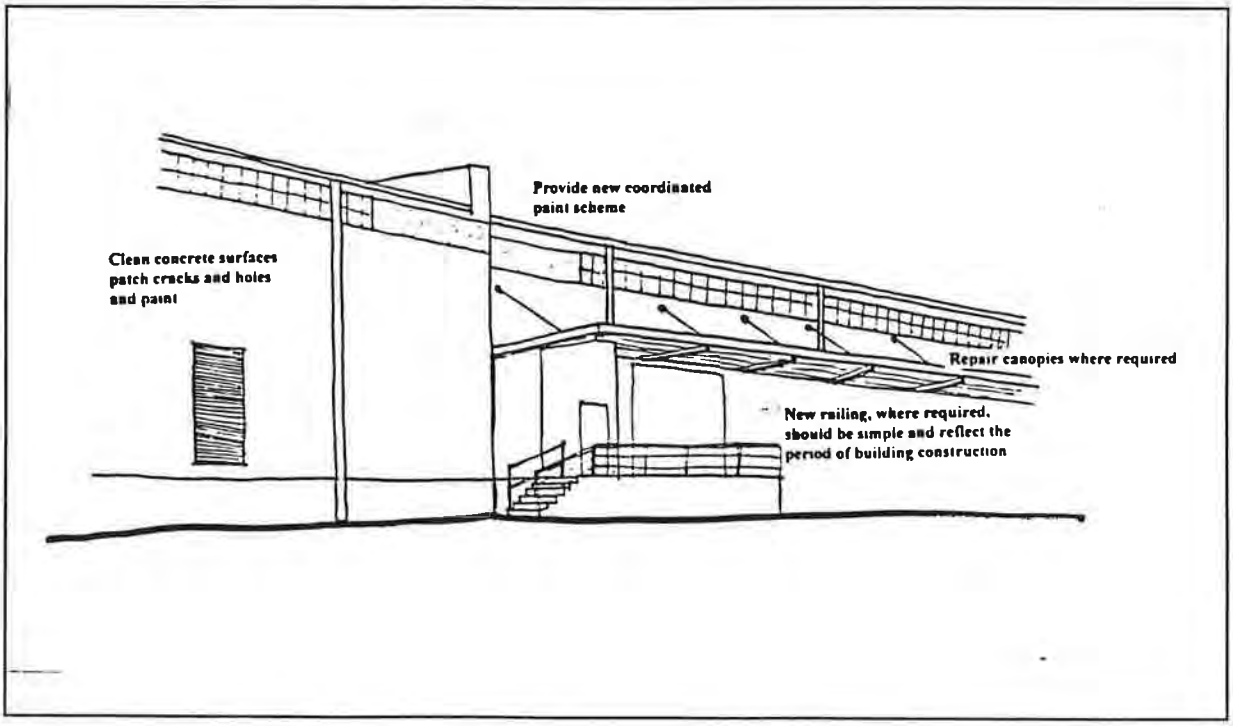
    - Roadways—1.4 Footcandles;
    - Walkways—0.6 Footcandles;
    - Parking areas—1.0 Footcandles;
    - Building entry—5.0 footcandles.

- Because of the commitment to providing an enhanced appearance, an aluminum ornamental fencing is proposed around the east end of the site where fencing is required. The aluminum fencing should be eight feet in height and painted dark green or black. The existing chain-link fencing along the balance of the perimeter of the Depot needs to be maintained but painted dark green and screened with landscaping.

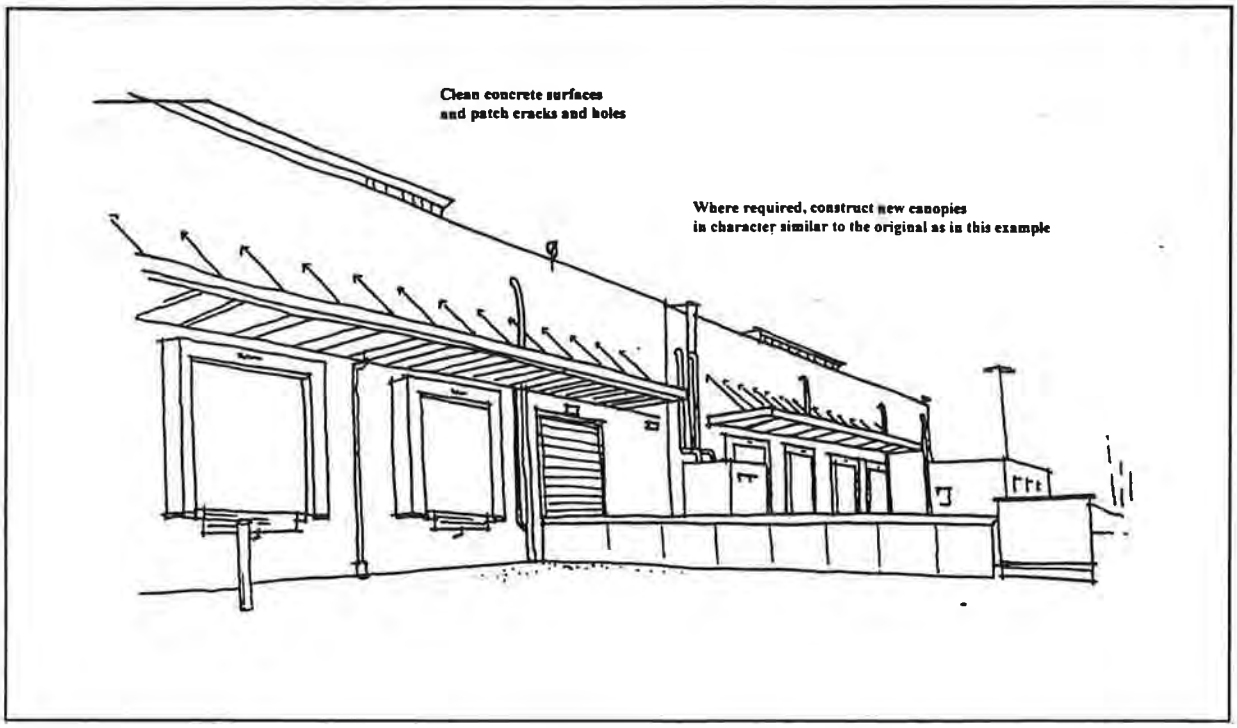
The approximate cost for landscape improvements is $500,000.



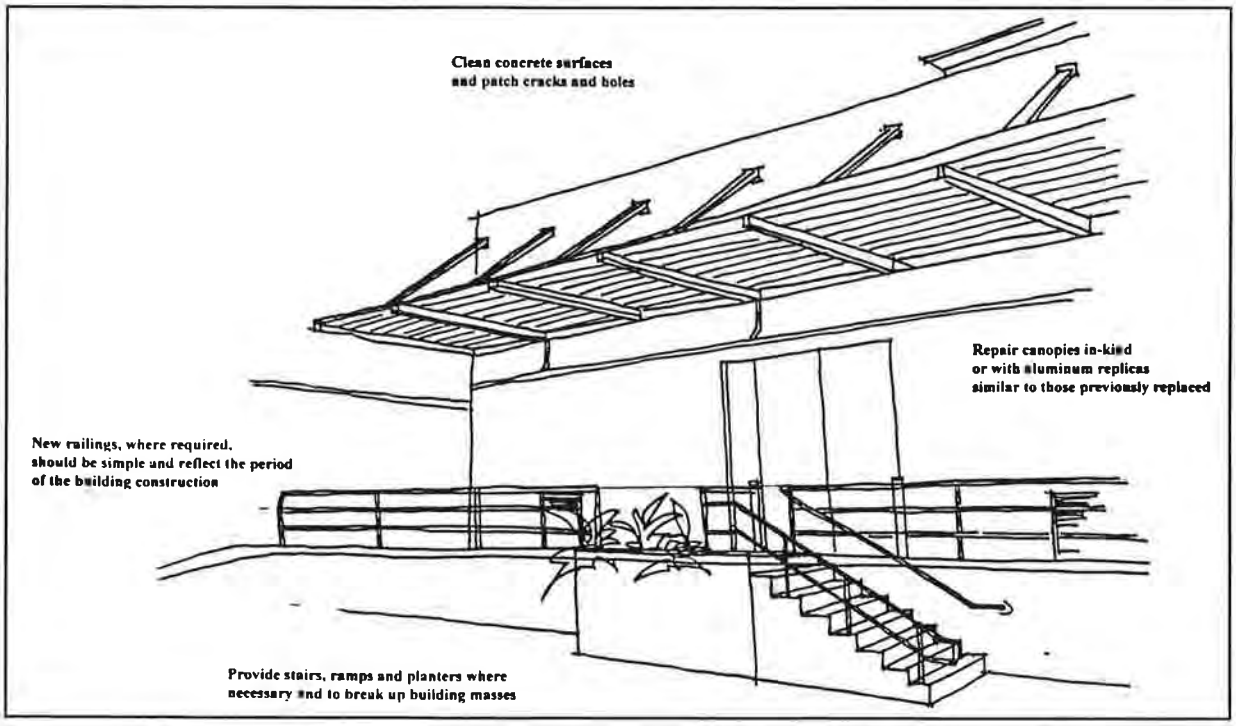
Facility Enhancements—Korean War Era Buildings



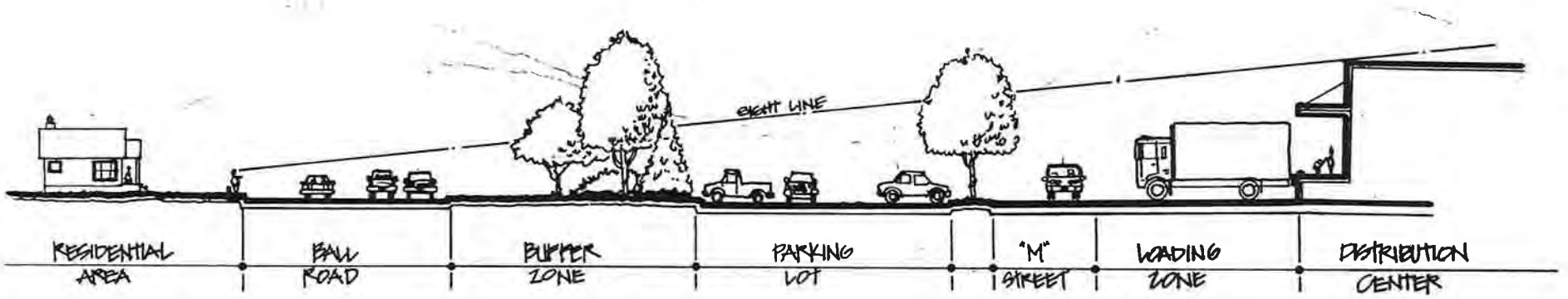
Facility Enhancements—Korean War Era Buildings



Facility Enhancements—"Twenty Typicals"



Facility Enhancements—"Twenty Typicals"



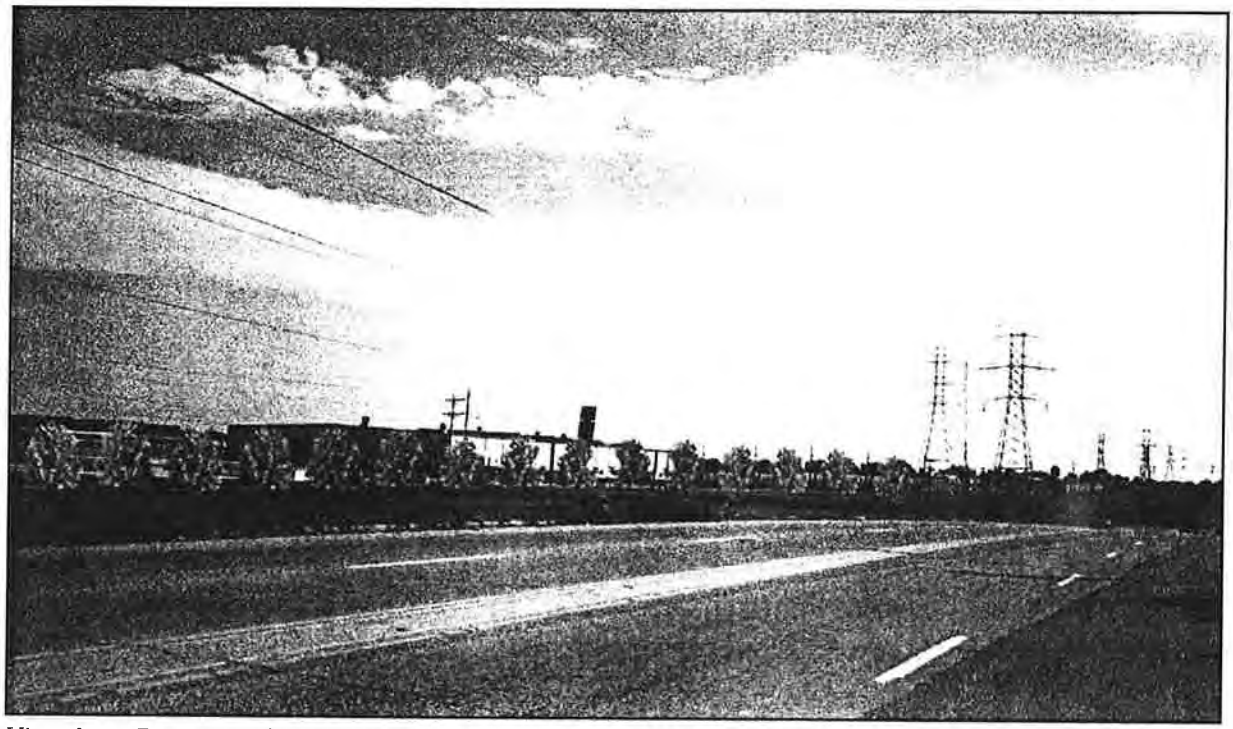
NOT TO SCALE

Proposed Landscape Buffer

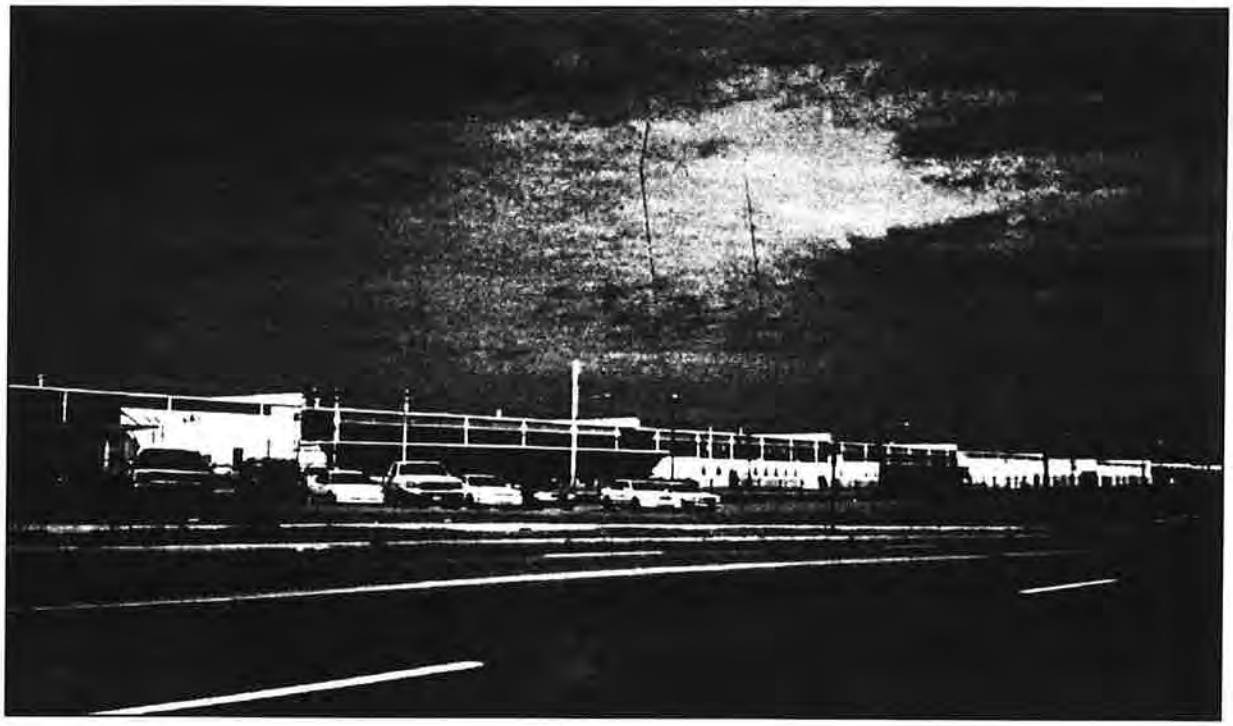
MEMPHIS DEPOT REDEVELOPMENT PLAN

Memphis, Tennessee

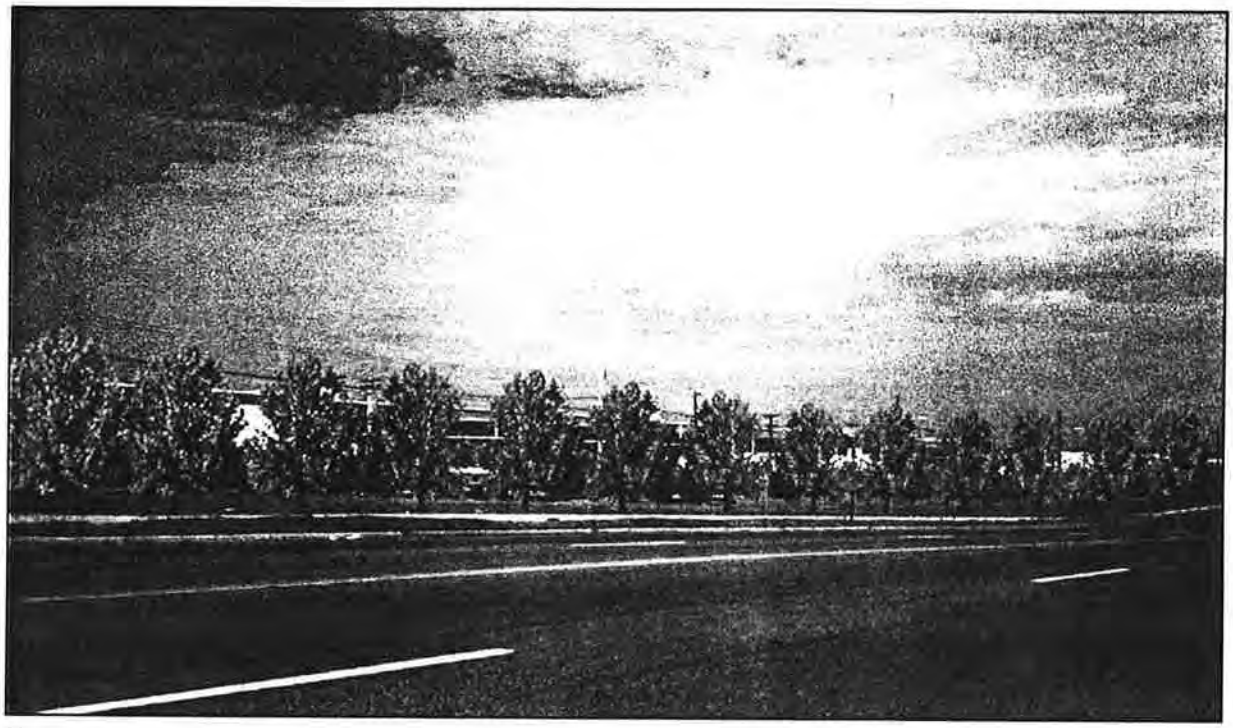
Current View from Perry Road



View from Perry Road with Proposed Landscape Buffer

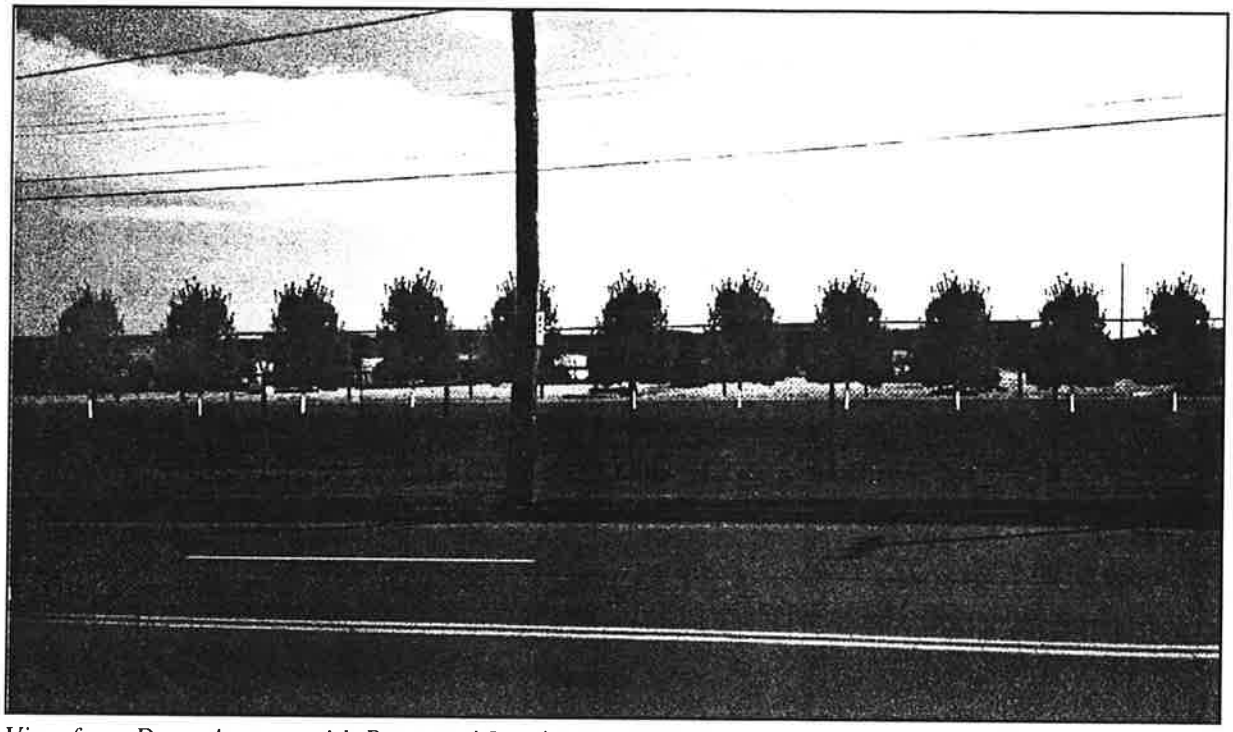


Current View from Ball Road



View from Ball Road with Proposed Landscape Buffer

Current View from Dunn Avenue



View from Dunn Avenue with Proposed Landscape Buffer

E. PARCELIZATION

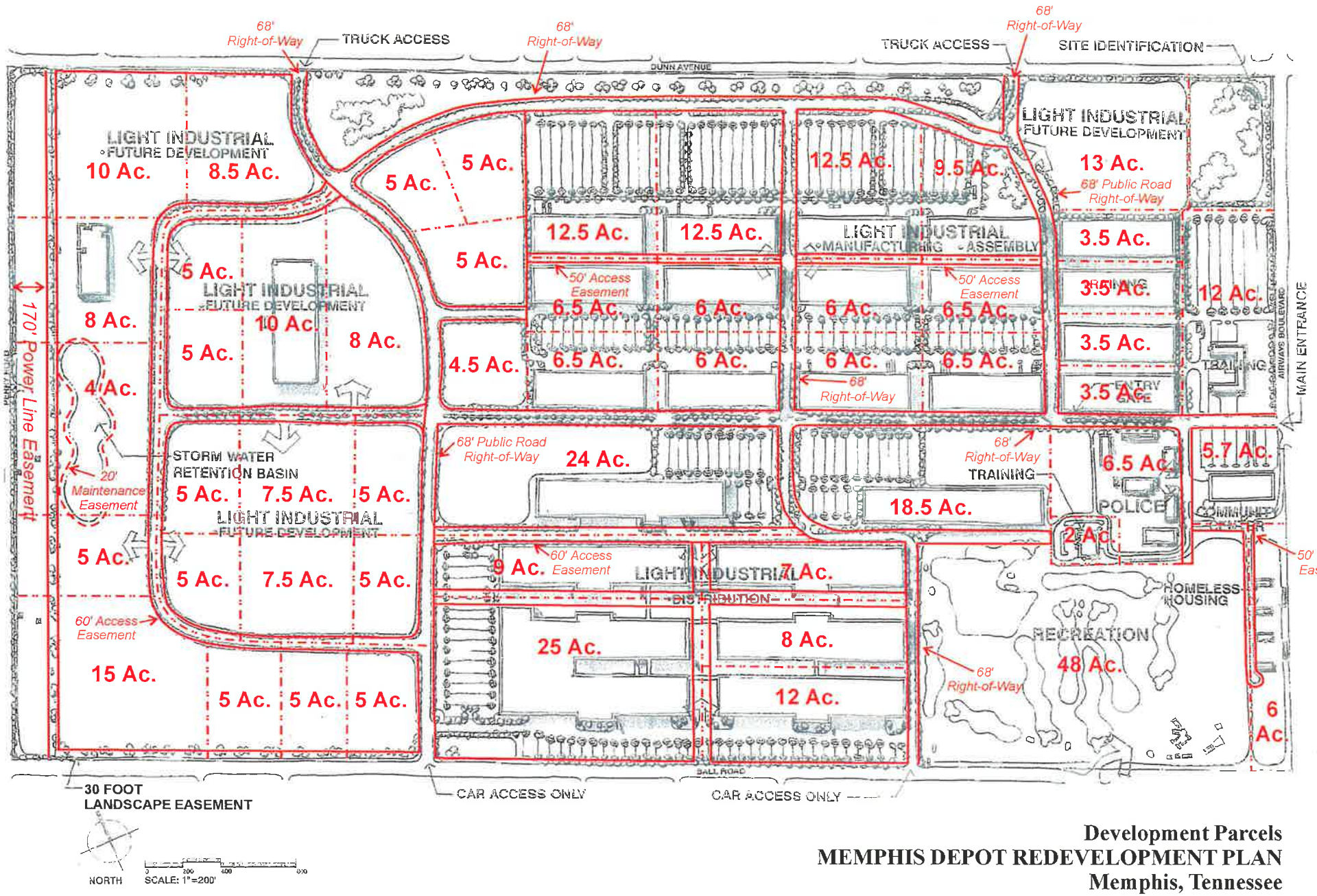
The redevelopment of the Memphis Depot will result in the utilization of the property by many different businesses. These businesses will require differing amounts of land and building size for their operations. The parcelization maps which conclude this section identifies the parcels of that can be subdivided at the Depot. These parcels are of varying sizes and include built and unbuilt portions of the Depot. The parcels are shown to centerline of private roads, and extending to the outer extents of the public road Right-of-Way (ROW). Each building should occupy a separate parcel, for flexibility in re-use, except the police compound and homeless housing area.

The twenty "typicals" are parcelized to provide individual buildings with space for truck movements and storage and parking for employees. East of the twenty typicals are the parcels for training and the community service center. The parcel delineated for training/business development includes Building 144 and Buildings 229, 230, 249, and 250.

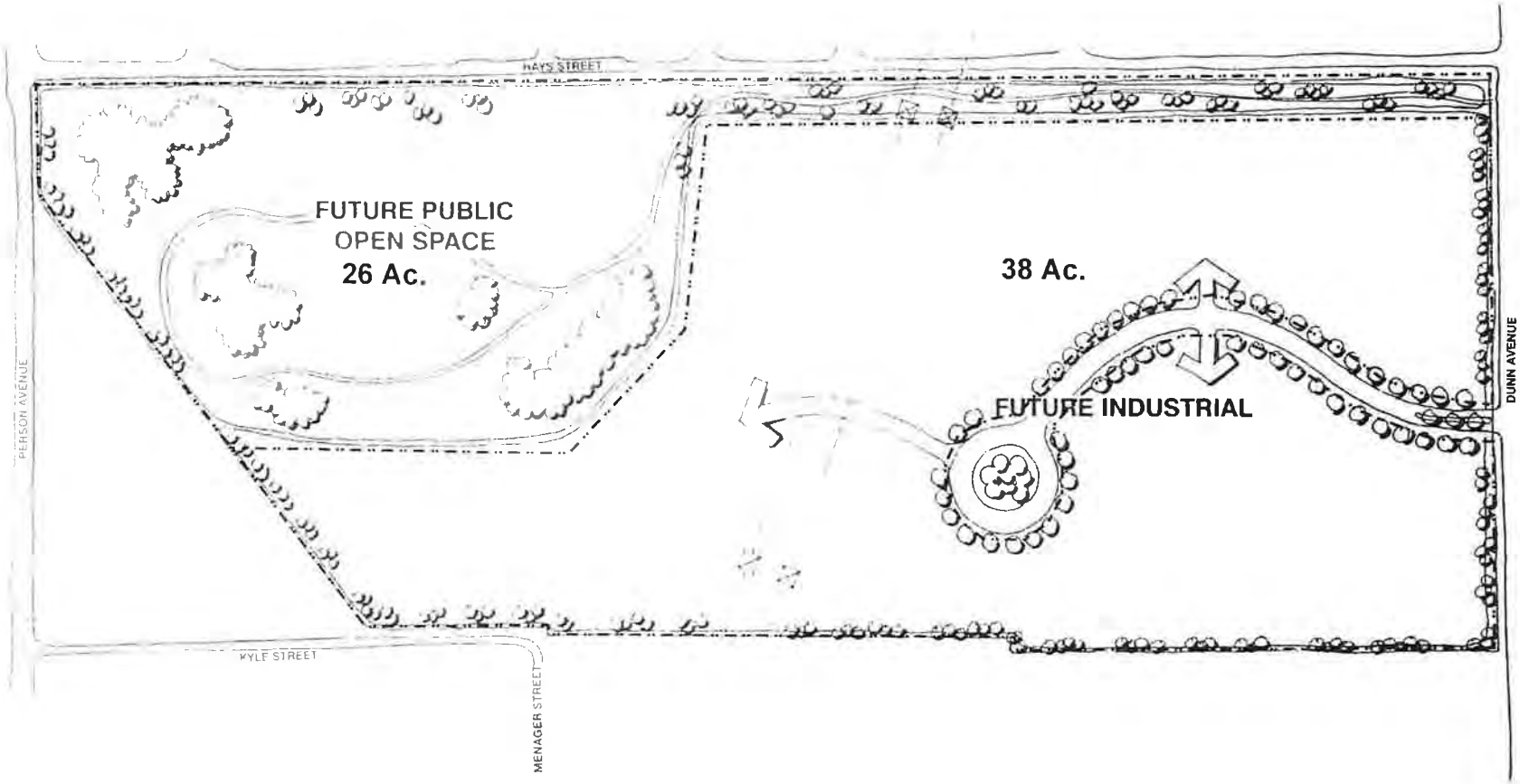
The parcels in the southeast portion of the Depot follow the same land use delineations for the police compound, homeless housing, recreation, and training. Buildings 560 and 360 have been parcelized to include enough visitor and employee parking, truck movement and storage, and additional land for building expansion or construction for large warehouse/manufacturing operations. The six warehouses south of Buildings 560 and 360 have been separated into five parcels, with Buildings 689, 690, and 685 (which are connected) in one parcel.

The west portion of the Depot provides flexibility in delineating parcels since most buildings in this area will be demolished. These parcels will range in size from approximately two to twenty acres. The range in parcel size will encourage a variety of business types and create a more "industrial park" look to the development. This development pattern will likely be more marketable to a variety of businesses, but will also present a transition from the much larger industrial structures to the east

to the single-family residential neighborhoods to the south and west of the Depot. The parcels on the western boundary, along Perry Road have been delineated to ensure enough buildable land east of the utility easement. Access to these parcels will be from internal roads, no direct access to Perry or Ball Roads will be incorporated into the redevelopment plan.



Development Parcels
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee



Development Parcels
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

F. PHASING PLAN

The Phasing Plan provides general guidance for the expenditure of efforts and resources in the redevelopment of the Memphis Depot site. Implementation efforts should proceed generally in accordance with the phasing outlined in this plan.

The Depot site was evaluated in terms of environmental issues, long-range marketability, and facility conditions. The cumulative effects of these issues were analyzed and an appropriate implementation sequence recommended. By considering these issue areas as implementation criteria, future actions, improvements, and, most importantly, tenant attraction, can be enacted in a way that does not conflict with the myriad of site preparation activities that will be taking place. Environmental issues include the level of any contamination and the schedule of clean-up activities. Long-range marketability issues focus on the market demand for specific facility types the means with which to provide occupancy or deliver other property rights; and, the consideration of existing expressed interest in certain facilities. Building condition issues include the overall structural condition of each facility and also the amount of site preparation work necessary for areas slated in demolition and reuse.

Following is the proposed phasing plan:

Phase 1: Phase 1 includes Building 144 and the surrounding area, the residential area (Buildings 176, 179, 181, and 184 and the associated garages), Building 360, Building 560, and the proposed police compound (the area bounded by 2nd Street, G Street, 1st Street, and K Street). These include the facilities in the best condition on the Depot and are in areas that are scheduled for early environmental clean-up. Because of the quality of the facilities and the expressed interest on the part of the police and others, these facilities are highly marketable. This phase should begin in 1999 or 2000.

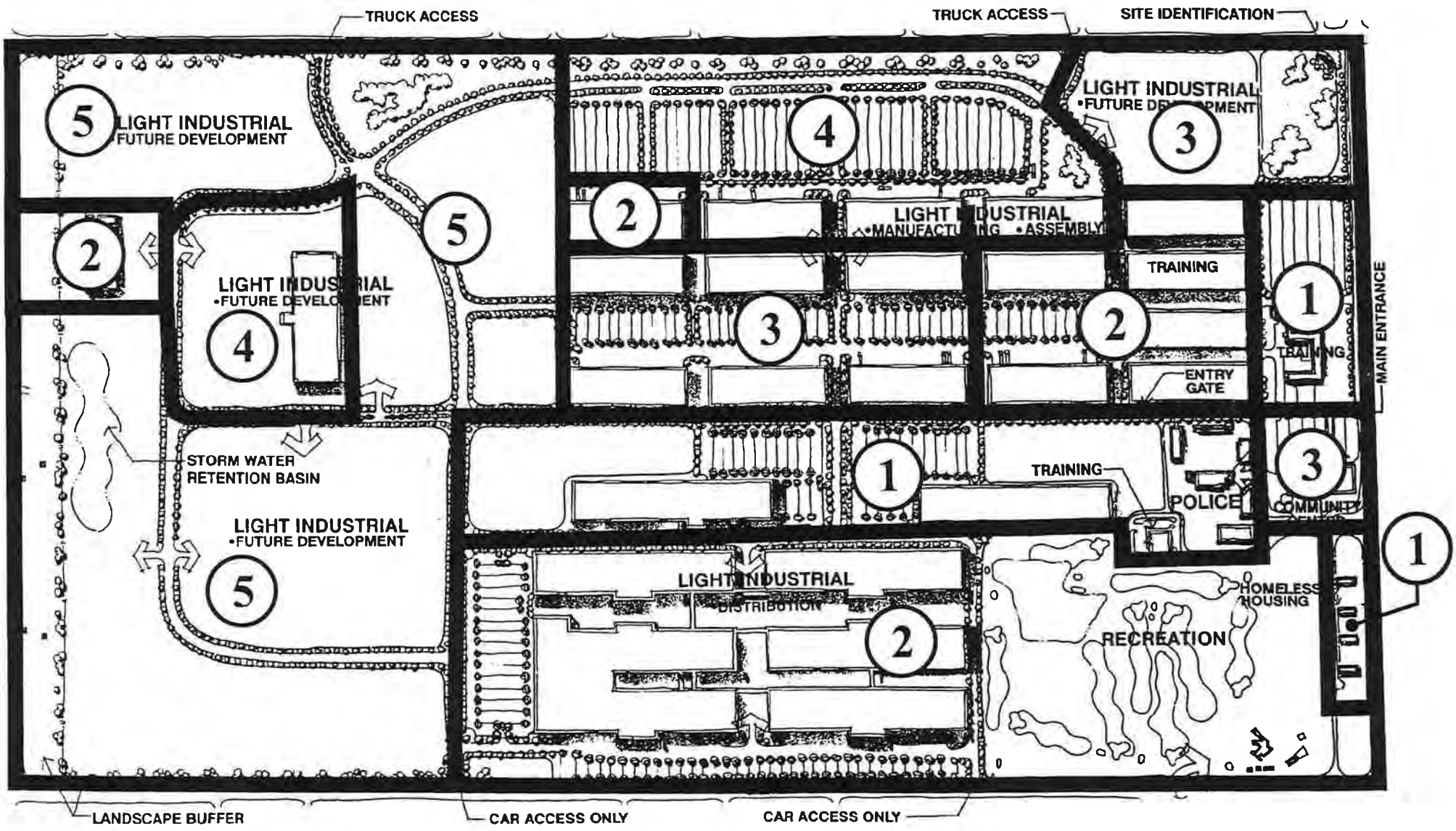
Phase 2: Phase 2, which should begin during the years 2000 - 2004, includes the six Korean Era warehouse facilities, Buildings 229, 230, 249, 250, 330, 350 and 629 within the "twenty typicals" area, Building 925, and the Golf Course. In general these facilities are in good condition and are located in areas where environmental clean-up is relatively early (Jan.-Feb. 98). Buildings 629 and 925 are included primarily because of their excellent marketability. Building 629 has recently been updated and includes valuable handling equipment, and Building 925 has good market potential due to the condition and type of structure.

Phase 3: Phase 3 includes the community service area near the main entrance due to its early environmental clean-up and easy site preparation, as well as the desire to quickly redevelop the "front door" of the depot. This phase also includes Buildings 430, 450, 530, 550, 630, and 650, because of their good condition but mid time-frame environmental clean-up (Feb. 98). Also included is the proposed light industrial site at the northeast corner of the depot. This area has early environmental clean-up and should have relatively minor site preparation requirements, so this phase will begin during the years 2001 to 2003.

Phase 4: Phase 4 includes the remainder of the "twenty typicals" due to the late schedule of the environmental clean-up (Mar. 99) of the proposed parking area for these facilities. It also includes Building 835 where the environmental clean-up is scheduled for August of 1998 and the marketability is moderate. This phase should start in the 2004 to 2006 time frame.

Phase 5: Phase 5, which should begin in 2004 or 2006, includes the raw land reserved for light industrial use at the west end of the site. This area is expected to have significant site preparation concerns (demolition, utilities, roadways) and has an August 1998 environmental clean-up target.

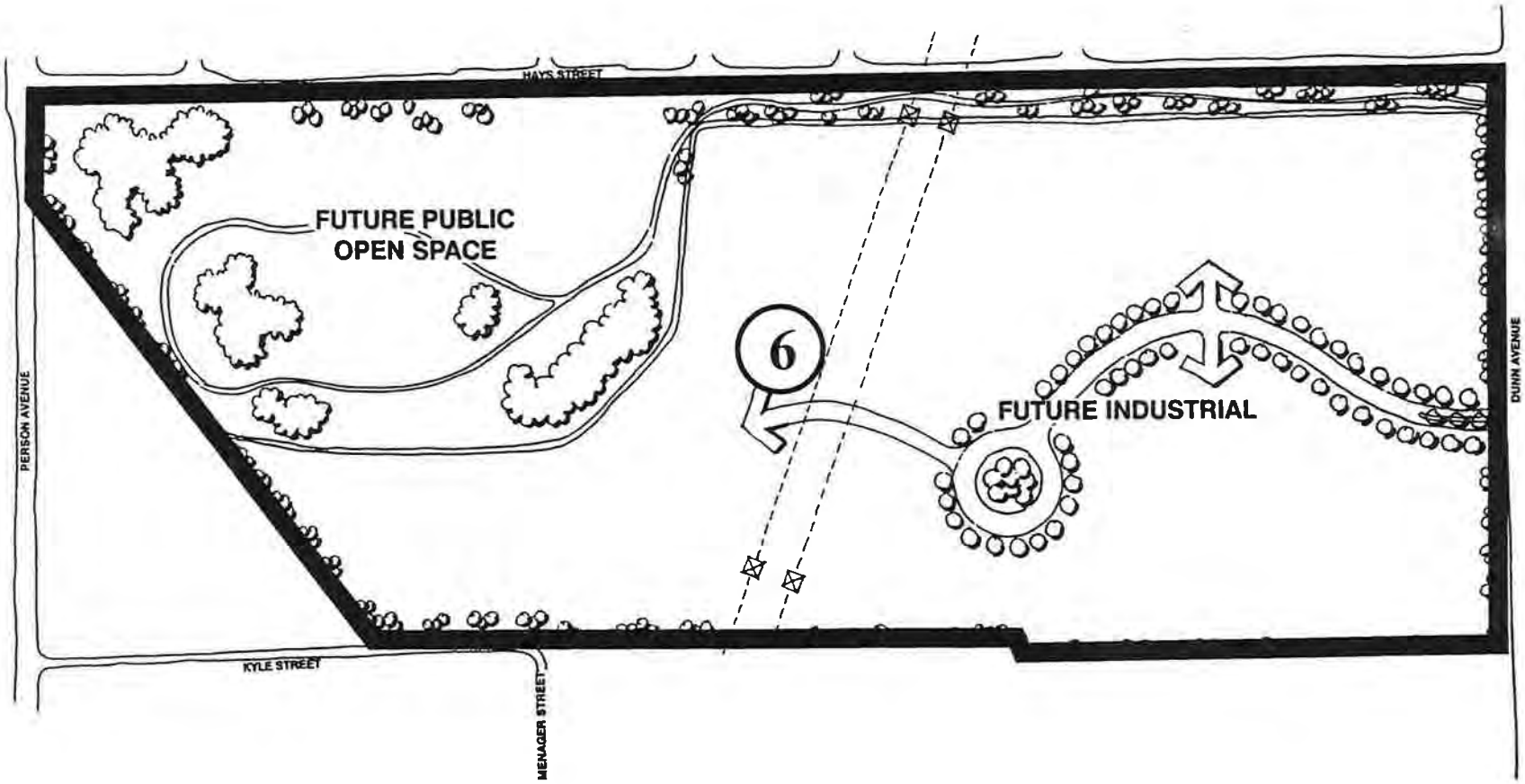
Phase 6: The final phase includes Dunn Field. This is due to the late proposed environmental clean-up date (Mar. 2003). Because of the late lean-up date, this phase will not start until 2005, at the earliest.



(X) Phasing Priority

Phase	Year	Phase	Year
1	1999-2000	4	2004-2006
2	2001-2003	5	2006-2007
3	2003-2004		

Phasing Plan
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee



(X) Phasing Priority

Phase	Year	Phase	Year
1	1999-2000	4	2004-2006
2	2001-2003	5	2006-2007
3	2003-2004		

Phasing Plan
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

G. PROPERTY ACQUISITION

1. "PRO's" AND "CON's" OF ALTERNATIVE DoD PROPERTY TRANSFER APPROACHES FOR MEMPHIS DEPOT

In approving the Base Closure and Realignment Acts of 1988 and 1990, Congress assigned the base closure property disposal role to DoD, but made the property transfer process subject to GSA Regulations and the Federal Property and Administrative Services Act of 1949. Subsequently, a new Economic Development Conveyance transfer authority, resulted from the 1993 Defense Authorization Act. The 1994 Base Closure Redevelopment and Homeless Assistance Act (and Subsequent Defense Authorization bills) also encouraged the balanced reuse of base closure facilities to meet job-creation and housing-the-homeless needs.

This summary of the "Pros" and "Cons" of the several property disposal mechanisms endeavors to capture the essential features of the DoD mechanisms, and those strengths and weaknesses derived from the Federal implementing regulations.

PUBLIC BENEFIT TRANSFERS: Excess federal property can be conveyed for a variety of public purposes, such as: parks and recreation; public health, including sewer and water systems; education; public airports; historic preservation; wildlife preservation; housing-the-homeless; correctional facilities; port facilities; and among others, public highways.

Some of the public benefit transfers (such as parks and recreation and public airports) are made "in perpetuity". Full title for other public benefit transfers (PBTs) can be "earned" over thirty years through active use of the property for educational or public health purposes. In general, land used for economic purposes cannot be transferred through PBTs -- with the exceptions being revenue-producing properties at airports, and certain historic preservation property. The value for such public purpose transfers can be discounted, often at 100 percent.

The "pros" and "cons" for the several property transfer mechanisms can be summarized, as follows, as they relate to some of the initial expressions of interest at the Memphis Depot:

Pros:

- The "price is right!"
- New public facilities/services can be acquired on a low start-up cost basis: e.g. training through State Tech.
- Land use buffers and public amenities, such as the golf course, can be acquired without cost.
- Public activities can also have important job-creation influences.

Cons:

- Public activities sometimes do not pay for pro-rata Depot overhead support.
- It can be difficult to attract private sector investment on some PBTs with permanent deed restrictions (e.g. park and recreation).
- Transfers for education and health cannot have business or research parks on the PBTs.
- Federal agency supervision and enforcement has become more demanding in recent years.

NEGOTIATED PURCHASE: Public agencies are authorized to purchase base closure property at negotiated fair market value. The Army and the Corps of Engineers will retain a public appraiser to determine the fair market value of the property. The public agency must accept this fair market value estimate.

Pros:

- For some simple property transfers, the negotiated sale approach can be achieved with minimum delay.

- The negotiated purchase process allows the public agency to transfer fee-simple title (after three years) to its private sector prospects.

Cons:

- The disposal agency cannot share its fair market value appraisal with the community. The sales transaction must be accepted on a "take it or leave it basis," leaving little room for "negotiation."

- The negotiated purchase mechanism does not recognize the economic plight of the community or the need for new job creation.

- Negotiated purchase transactions in excess of $100,000 must be approved by the Government Reform & Oversight Committees of the Congress. In recent years, the House Committee has failed to approve most complex, negotiated purchase transactions.

- A three-year "excess profits" clause is involved.

PUBLIC BID SALE: Excess property can be placed on the open market by the Army, subject to local zoning. In addition to private sector bids, the Memphis Depot Redevelopment Corporation(MDRC) can also submit its own bid.

Pros:

- Public bid sale opens the process quickly to private sector interests, and places the property immediately on the local tax rolls.

- For strong local real estate markets, the public bid sale process can realize the highest return from the property, while still allowing the community to negotiate development entitlements with the successful developer.

- The public bid process allows the community MDRC to conserve development resources, especially in the case of parcels which are not essential to the base reuse effort.

Cons:

- Other than land use zoning, the MDRC has little control over the timing or quality of development on the site.

- There may not be a market for some parcels with high demolition requirements or outmoded facilities. Some parcels could remain as eye-sores.

- It is not possible to mix the "good with the bad" (i.e., the valuable parcels with unmarketable property), and thereby to formulate a comprehensive development project.

ECONOMIC DEVELOPMENT CONVEYANCES: Under the authority of Section 2903 of the 1994 DoD Authorization Act, the Secretary of Defense (and the Secretary of the Military Department) can convey base closure properties at or below fair market value, or "for consideration" for the purposes of new job creation and economic development. The EDC can be approved by the Secretary of the Military Department without referring the transaction to the Congress for approval.

Pros:

- The EDC process recognizes the need for new job creation.
- The EDC transfer also allows the Military Department to provide payment terms to the MDRC.
- The MDRC's cost of infrastructure improvements, marketing and maintenance can be included in a long-term business plan for the property.
- Valuable properties can be combined with unmarketable parcels in a comprehensive reuse plan.
- Cost savings to the Army (such as early protection and maintenance costs, clean-up to agreed-upon environmental standards, etc.) can be included as a cost offset in the EDC business plan.
- The EDC transfer process allows the MDRC to provide fee-simple title to its private sector prospects.
- The financial terms and conditions can be hand-tooled to fit the specific transfer situation involved.

Cons:

- The business plan process required for an EDC can be time-consuming.

- The 15-year, discounted-income benefit from the property reuse is also included in the EDC calculation. Accordingly, the army may seek to share in this income as a transaction enhancement.

FEDERAL AGENCY LEASE BACK: There is one minor new property transfer mechanism in Section 2837 of the 1996 Defense Authorization Act, which allows the transfer of base closure property for the subsequent lease-back of specific facilities to a retained Federal agency on a "zero-cost" lease basis. This authority is usually used in concert with an EDC transfer, but it most likely will not be used at the Memphis Depot.

Pros:

- Section 2837 avoids the creation of separate minor Federal property enclaves (or the "spotted leopard" effect).

- The MDRC is not required to proceed again through the Federal property transfer process for minor changes in Federal agency facility needs.

Cons: There are no negative implications from Section 2837 transfers.

It is important to note that there is no single property transfer mechanism which will work universally for a complex property such as the Memphis Depot. The effective redevelopment solution will likely involve a combination of two or more of the property transfer approaches, as noted below, for specific major parcels at the Depot.

2. MEMPHIS DEPOT PROPERTY ACQUISITION RECOMMENDATIONS

On the basis of our analysis, the recommendations which follow stem from a central focus on the Economic Development Conveyance as the primary means for property acquisition as noted on the map attached. That Economic Development Conveyance is supplemented by a Homeless Assistance Conveyance; a Parks and Recreation Conveyance; a Public Competitive Sale; and, other optional Public Benefit transfers whose applicability must be considered in the formulation of an Economic Development Conveyance strategy. Further, that applicability must be measured in terms of the degree to which the properties considered contribute to the economic redevelopment goal in a direct or indirect fashion. In addition, we have suggested that the southerly half of Dunn Field be conveyed by a competitive public sale at the Army's direction rather than transferred to the Memphis Depot Redevelopment Corporation by an Economic Development Conveyance. Such recommendation acknowledges the enormity of the redevelopment tasks at hand and the uncertainties surrounding clean-up timing, methodology and technology for known contaminants at the site.

Recommendations for primary transfer mechanisms are as follows:

a. Economic Development Conveyance

Below market value transfer by the army to the MDRC costs and terms to be negotiated for the bulk of the Depot. The EDC may include properties which further and facilitate economic redevelopment even though other conveyance mechanisms are available for such properties (e.g., power lines, water and sewer). The EDC should encompass all properties other than the homeless assistance, parks and recreation and public sale areas. As they are noted below and depicted on the acquisition plan map which immediately follows this section.

b. Homeless Assistance Conveyance

Direct United States Army transfer at no cost to the homeless service provider. This transfer should be subject to legally binding agreements between the MDRC and the homeless service provider, acknowledged by the army, to cover property reversion, municipal services, and zoning. The area includes 4 duplexes and no more than five acres of land. Buildings to be included here are structures numbered 176, 178, 179, 181, 183 and 184.

c. Parks and Recreation Public Benefit Transfer

Sponsored by the Department of the Interior at no cost in perpetuity. This conveyance will include the golf course and the northeastern section of Dunn Field. Buildings to be included with the golf course are numbered 193, 195, 196, 197 and 198.

d. Education Public Benefit Conveyance

Optional means to obtain property for education and training through the Department of Education sponsored transfer. The transfer will occur at no cost but will include a 30-year restriction period.

e. Public Competitive Sale

A public competitive sale via sealed bid or auction by the Army to the highest bidder. Such approach should be utilized for the southern half of Dunn Field. Local zoning should establish appropriate land use guidelines to assist in the sale.

In the event that the Army insists that the MDRC exhaust all other potential public conveyances mechanisms prior to incorporating the subject properties into an EDC, we recommend that you pursue the following PBT's:

f. Highway Public Conveyance

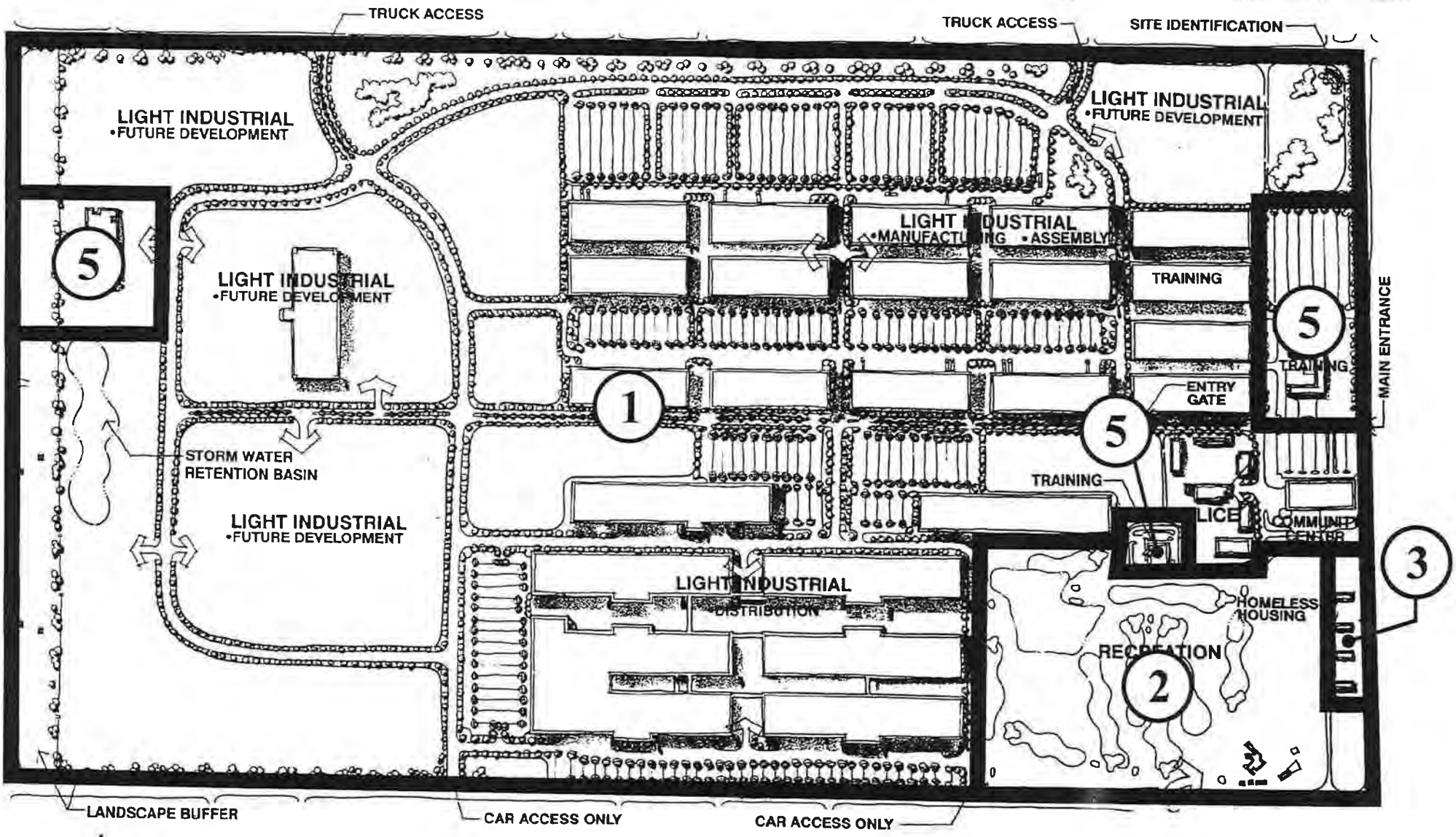
Optional method to acquire public streets at no cost if required, by the Economic Development Conveyance process. Also, an optional means to acquire the eastern border of Dunn Field if so desired for the widening of Hays Road. Streets to be conveyed by the U.S. Department of Transportation and land area for widening Hays Road by the Army at no cost.

g. Public Health Benefit Conveyance

Optional method to acquire water and sewer systems on Depot through the Department of Health and Human Services sponsored transfer. The transfer occurs at no cost with a 30-year restriction period.

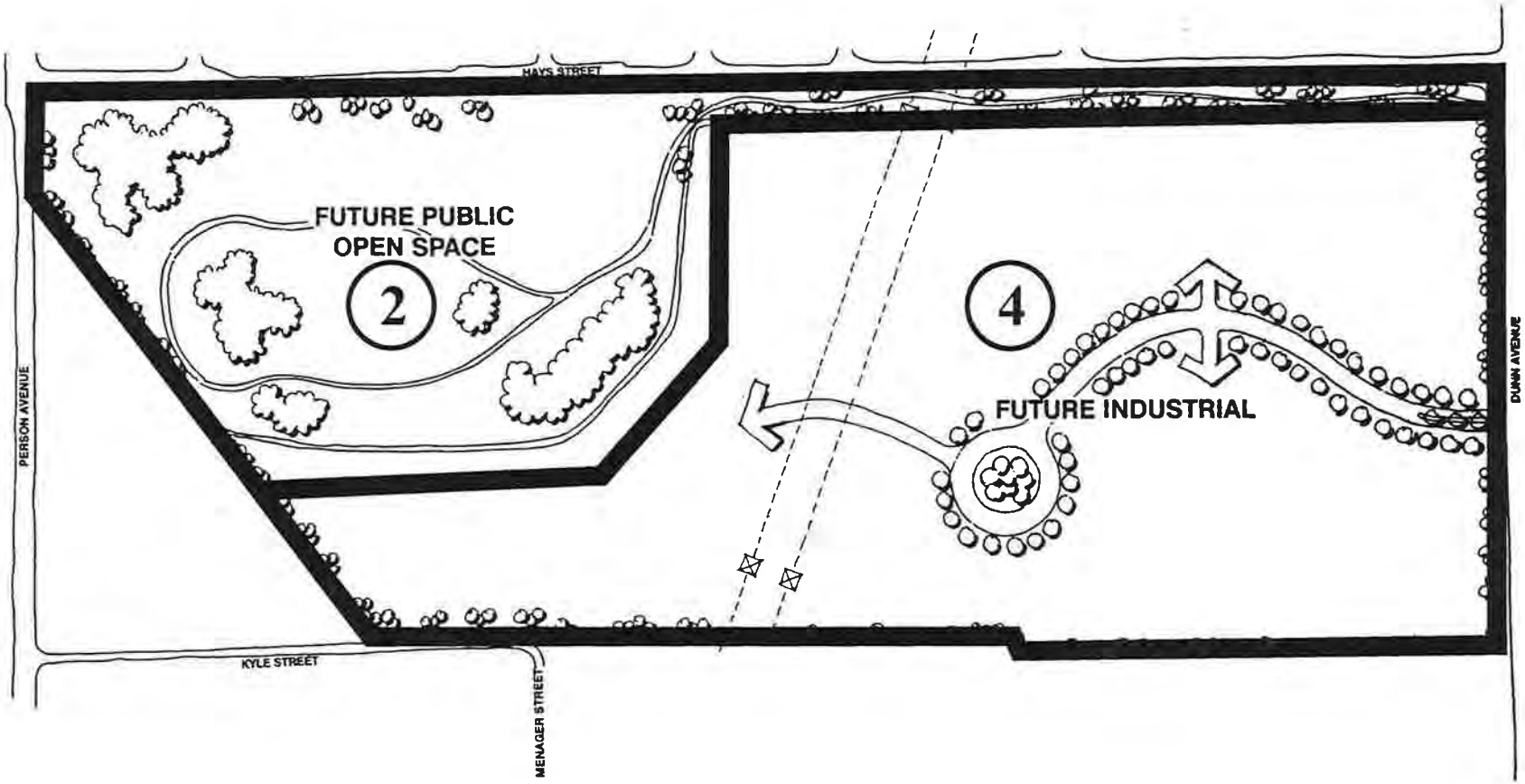
h. Power Transmission Line Conveyance

Optional acquisition/conveyance method at negotiated price between the monopoly electric service provider and the United States Army for power transmission lines and rights of way associated with the transmission system. This option may address both TVA and MLGW systems.



1 Economic Development Conveyance
2 Parks & Rec. Public Benefit Transfer
3 Homeless Assistance Conveyance
4 Public Competitive Sale
5 Education Public Benefit Conveyance

Acquisition Plan
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee



1 Economic Development Conveyance
2 Parks & Rec. Public Benefit Transfer
3 Homeless Assistance Conveyance
4 Public Competitive Sale
5 Education Public Benefit Conveyance

Acquisition Plan
MEMPHIS DEPOT REDEVELOPMENT PLAN
Memphis, Tennessee

H. PERSONAL PROPERTY & EQUIPMENT

Under the authority of Section 2902 of the 1993 Defense Authorization Act, the Defense Logistics Agency (DLA) will retain personal property and equipment needed to support the MDRC's reuse plan for the Memphis Depot. Personal property which can be retained to support civilian reuse of the Memphis Depot includes all of the equipment that is not documented to be: (1) needed for a relocating military mission; (2) military unique; and (3) Non-Appropriated Fund (NAF) equipment. (NAF property may be acquired through negotiated purchase from the NAF property owner.)

Equipment needed at other military bases but also needed to support the approved the Depot reuse plan cannot be relocated by DLA: (1) until some suitable substitute or replacement equipment item is identified, or (2) until any conflict over equipment needed to support the MDRC's base reuse plan is resolved at the Assistant Secretary level within DLA.

Due to numerous complaints from communities about severe reuse limitations when facilities are transferred without their equipment (personal property), revised procedures have been put in place which make it much more difficult for the military to remove equipment from closing buildings and to relocate other property used to perform the mission of the closing or realigning command. Personal property can be designated as not available for reuse only if one of eight criteria are met. As you can see in these eight rules below, the onus will be on DLA to justify removal of any equipment.

The reuse planning now underway must consider reuse of personal property in addition to facilities. Careful documentation of the MDRC's requirement for the personal property will be very important to transfer of the personal property to the community. Also, such a documented need for a successful reuse will be necessary if the MDRC seeks to challenge the local personal property decision through the chain of command.

The DoD regulations published in mid-1995 concerning disposition of personal property at closing bases place an emphasis on negotiations between the base commander and the MDRC. As you know, the process begins with preparation of a personal property inventory and a walk-through of the facilities by the MDRC. The process continues with the identification of required personal property in the MDRC's redevelopment plan.

The following eight criteria (i.e., "exclusions" in DLA parlance) are used to determine if personal property is available for continued use by DoD instead of transfer to the MDRC for community reuse:

1. The property is required for the operation of a transferring unit, or function.

As we understand the BRAC recommendation, there is no unit transferring from Memphis to another DoD facility, so this part of exclusion 1 would not be applicable.

The justification given by DoD for the Memphis closure is that its storage capacity is excess to DLA's future needs. The closure recommendation states:

> "Material remaining at DDMT at the time of closure will be relocated to optimum storage space within the DoD Distribution System."

The clear implication of that language is that Memphis' function is not being transferred, but instead being accommodated within the remaining DLA infrastructure. Without a transfer of function, the second part of exclusion would not be applicable.

If there is a current function at DDMT that is unique within DLA and has special equipment that is needed to perform the function, then there might be an arguable exclusion 1 justification. However, we are not aware of any function at Memphis that meets this requirement.

2. The property is required for the operation of a unit or function at another installation within the military department.

Almost any equipment in new or good condition could be a target of this criterion. Consequently, it is the one most likely to be misused. However, personal property on a closing base cannot be moved to another base under this criterion without consulting with the MDRC. If the DLA seeks to transfer the personal property, but the MDRC does not concur with the transfer, then the issue is presented to the DLA Deputy Director for Material Management for a decision.

As we mentioned before, DLA should be requested to provide a detailed justification if it seeks to use this exclusion, thereby providing the necessary facts needed for contesting transfers based on this criterion.

3. The property is uniquely military with no civilian use.

This includes equipment specifically designed for use with military-only components such as weapons or nuclear systems.

4. The property is stored at the facility for distribution.

This primarily covers spare parts and materials that are stored at the Depot for supply to DoD customers. However, parts that are stored to support equipment and facilities that are being excessed are available for MDRC reuse.

5. The property meets the known requirement of another Federal agency.

Another Federal department or agency must make written request for the equipment.

6. The property is needed elsewhere for national security needs.

DLA may direct the equipment to any DoD or Federal agency if there is an important national security need.

7. The property belongs to a non-appropriated fund (NAF) or non-DoD organization.

Any equipment that belongs to a NAF organization such as the Exchange or morale, welfare and recreation (MWR) would not be eligible for reuse without separate negotiations between the MDRC and that organization. The same rules apply to personal property of a non-DoD organization such as the Coast Guard.

8. The property is not needed by the MDRC for reuse of the base.

If the MDRC does not need the equipment, then DLA will either use it at another base or dispose of it. The MDRC must, however, formally say they don't need it. This can be done by not including the property in the MDRC's redevelopment plan document.

We have reviewed the two exclusions, 1 (required for a transferring unit or function) and 2 (required for operations at another DLA facility), used by DLA for the DDMT property. A reasonable construction of criterion 1 raises questions about its applicability to Memphis. We believe no units are transferring from Memphis. Also we are not aware of functions actually transferring to another DLA facility; quite simply, items currently stored at Memphis will be stored at another depot which already has storage as its function. Transfer of a DLA-unique function using very specialized equipment might be applicable to criterion 1, however, we are not aware of any such function at Memphis, and were this the case, the BRAC language is written in such a fashion to provide protection to the MDRC.

Criterion 2 is a general statement that can best be disputed with specific information about DLA's plans for the property at its new location. There may be a tendency for the military department to cherry-pick among the personal property at a closing base to replace older equipment at remaining bases. To justify the transfer, DLA must demonstrate that the property is "required for the operation" at another DLA facility. This can be contested by distinguishing truly essential equipment with others that would be nice to have because it is newer or in better condition than existing property at another DLA depot.

General Personal Property & Equipment Needs:

The 1995 personal property regulations as set forth in the DoD Base Reuse Implementation Manual, provide much stronger support to local communities when they seek to retain personal property at a closing facility, particularly when the personal property facilitates implementation of the community reuse plan. When the community and the base commander cannot resolve differences, the dispute can be contested through the DLA chain of command. The final resolution of these disputes has been delegated to the Deputy Director for Material Management, RADM McCarthy at DLA Headquarters at Fort Belvoir, Virginia.

The purpose of related personal property is to retain fully functional buildings that can be immediately reused by private sector prospects and public activities with a minimum of delay.

As a general rule, DLA must retain in place all installed and semi-installed equipment, (e.g., compressors, overhead cranes, installed machinery) where removal of such equipment would fundamentally change the functional use of the structure or diminish the value of the real property as provided in with the General Service Administration's Federal Property Management Regulations.

In addition, the new Base Reuse Implementation Manual, calls for the retention of all building fixtures, such as lighting fixtures, HVAC equipment, plumbing, electrical equipment, and other similar items.

Redevelopment Equipment Needs:

The identification of the equipment needs by building is based upon projected equipment needs to support the recommended reuse alternative.

In some instances, the structures can best be marketed as empty buildings suitable for back office or industrial purposes. Wherever equipment can be identified for release, the MDRC should ask DLA to arrange for early shipment and to retain only that equipment needed to secure early civilian reuse.

Some buildings will be demolished (e.g., Building 209,359,559, and so on) and much of the installed equipment should not be retained. A summary of the major building-by-building retention of equipment follows:

- Retain all personal property in and associated with buildings in the following list. Further, MDRC should retain all furnishings and equipment including engineering documentation for the Depot, modular office systems and administrative furnishings, material handling systems, and forklifts. That list of buildings includes:
  Building 144 - main administration building
  Building 270 - maintenance engineering building
  Building 274 - J Street Cafe
  Building 360 - unoccupied 207,000 square foot warehouse building
  Building 560 - 207,000 square foot partially air conditioned warehouse facility

Building 835 - hazardous materials handling facility

Building 925 - flammable materials storage facility

- Retain all modular-office and administrative furnishings and fixtures in and associated with Building 210 (the telecommunications and support office function center) Building 685 and Building 359 (refrigerated storage and pharmaceutical warehousing facility). Buildings 210 and 359 are scheduled for demolition.

- Retain all facilities records and support equipment such as CADD systems, blue print machines, Mylar copiers, plotters and related items.

- Retain of two fork trucks for each bay of buildings retained for distribution. For the twenty typical warehouse buildings, retain a minimum of one per bay. Such fork trucks should be battery powered and, in general, no older than 1992 models. Battery change systems, extra batteries and maintenance equipment must be retained as well to support these trucks.

- Retain all personal property associated with facilities to be reused by the Police, Parks and Recreation Agency (where not non-appropriated funds property) and that useful for training activities to be conducted by State Tech and others. As example, this would include the woodworking property in Building 972 together with associated storage and lumber handling equipment necessary for manufacture of pallets and wood containers.

- Release all hand-receipted personal property valued at less than $500.00 that does not appear on personal property inventories with the exception of modular furniture units, desks, tables, chairs, and related support furniture in Buildings 144, 210, 270, and 359; and, audio/visual equipment. Retain only unique items for caretaker, such as tools and supplies for equipment maintenance.

- Release all non-essential personal property at the earliest convenience to maximize removal prospects. Examples of such equipment include all stacking frames other than new green stacking frames; all bins and gravity flow systems; all scooters and other personal transport vehicles; pager, fax machines, microwaves and other personalty of similar nature; and, items which cannot contribute to the core mission of the MDRC. Special attention should be paid to releasing all items of non essential personal equipment currently housed in buildings scheduled for demolition including Buildings 210, 649, 549, 449, 349, 559, 359, 770, 873, 875, 970, 972, 949, 1086, 1087, 1088, 1089, 1090, 1084, 467, 468, 469, 465, and 949.

Under any circumstances a thorough inventory of personal property in the foregoing categories must be conducted by MDRC with such items tagged for retention. Further, timely responses to DLA requests for relocation of on-base property are essential in order to establish the MDRC interests and high probability of retaining such property. Finally, early release of personal property will facilitate its removal as the ongoing drawdown of personnel at the site will impede removal of nonessential personal property items as time passes.

VII. BUSINESS PLAN

Following is a 15-year business plan for the Memphis Depot redevelopment effort. This business plan is composed of 2 major items: (1) The 15-year cash-flow projections with explanatory notes; and, (2) the 15-year capital-improvements program with notes and borrowing schedule. The cash flow projections also include an absorption schedule, lease renewal schedule and total-area-leased computation.

The business plan projects the following:

- Annual warehouse/industrial lease space absorption is modest over the period with an average of 226,000 sf per year. Years 1 through 5 are somewhat stronger as the larger, higher-quality buildings lease.

- As the more desirable warehouse product will lease early, it is essential to invest capital early in the redevelopment process to create market interest in the older, less appealing facilities and vacant lands. Accordingly, we have proposed a comprehensive $47.4 million capital improvements program for the first 15 years of redevelopment.

- To enhance site marketability and provide required parking and truck maneuvering room, we have proposed a demolition program to remove 2.6 million sf of substandard warehouse space from the Depot inventory during the capital improvements period.

- 3.38 million sf out of 3.6 million sf of marketable space are forecast to be leased over the 15-year period at an average triple-net lease rate of $2.15 per square foot per year.

- No sales of property are recorded during the period.

- The golf course; the police compound; the education and training area; and, the homeless service area will be transferred to public entities, thereby removing 263,320 sf of building area from the inventory. The police compound and homeless services area are considered to be "outside the fence" in this business plan.

- Overall, the Depot's redevelopment results in a cumulatively positive cash flow of $2.96 million over 15 years. The cash accumulation is, however, punctuated by six years of negative annual cash flow: a function primarily of the Depot's thirst for capital improvements coupled with the end of federal administrative and maintenance subsidies.

- The net present values of the annual cash flows at discounts of 10% and 20% are $2.3 million and $2.1 million. Further, the net present values of the net operating incomes at discounts of 10% and 20% are $24.97 million and $14.48 million. The principal remaining unamortized at the end of Year 15 is $24.6 million.

- A major challenge to the Depot's redevelopment future arises in Year 6 as Federal operating subsides for administration and maintenance expire at the end of Year 5.

- The business plan does not include any Federal environmental-cleanup monies. They are unpredictable; untouched by the Redevelopment Corporation; and, subject to little, if any, local redevelopment budget influence.

The details of the proposed, business-operating and capital plans follow.

MEMPHIS DEPOT REDEVELOPMENT AGENCY
CASH FLOW PROJECTIONS *

SPACE LEASED

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
Annual Absorption (sf)	413,414	523,408	457,966	362,592	316,650	219,988	206,656	109,994	109,994	109,994	109,994	1[illegible]
Area Leased/Year (sf)	413,414	523,408	457,966	362,592	316,650	633,402	730,064	567,960	472,586	426,644	743,396	
Total Area Leased (sf)	**413,414**	**936,822**	**1,394,788**	**1,757,380**	**2,074,030**	**2,294,018**	**2,500,674**	**2,610,668**	**2,720,662**	**2,830,658**	**2,940,650**	

REVENUES ($000'S)

Lease Revenues	$981.9	$2,077.1	$3,079.4	$3,738.1	$4,316.4	$4,969.7	$5,403.0	$5,608.0	$5,806.7	$6,003.9	
Other Revenues	$173.3	$200.0	$200.0	$135.0	$70.0	$50.0	$50.0	$50.0	$50.0	$50[illegible]	
CAM Fees (5%)	$49.1	$138.8	$188.9	$221.9	$250.8	$274.8	$305.1	$315.4	$325.3		
OEA / Funding	$576.1	$600.0	$600.0	$400.0	$200.0	$0.0	$0.0	$0.0	$0.0		
DLA Funding	$4,000.1	$3,698.3	$3,124.0	$2,435.9	$2,171.2	$0.0	$0.0	$0.0	$0.0		
Total Revenues	**$5,780.5**	**$6,714.2**	**$7,192.3**	**$6,930.9**	**$7,008.4**	**$5,294.5**	**$5,758.1**	**$5,973.4**	**$6,182.0**		

EXPENDITURES ($000's)

Administration	$768.1	$800.0	$800.0	$800.0	$800.0	$800.0	$800.0	$800.0	$800.0
Marketing	$125.0	$125.0	$125.0	$150.0	$150.0	$150.0	$150.0	$150.0	$150.0
Commissions	$294.6	$328.6	$300.7	$197.6	$173.5	$241.3	$304.6	$209.1	$186.6
Maintenance Unoccupied Facilities	$4,000.1[illegible]	$3,698.3	$3,124.0	$2,435.9	$2,171.2	$1,526.6	$1,306.6	$1,099.9	$998.0
Common Area Maintenance Security	$49.1	$138.8	$188.9	$221.9	$250.8	$274.8	$305.1	$315.4	$325.3
Total Expense	**$5,236.9**	**$5,090.7**	**$4,538.6**	**$3,805.4**	**$3,545.5**	**$2,992.7**	**$2,866.3**	**$2,574.4**	**$2,459.9**
Net Operating Income	**$543.6**	**$1,623.5**	**$2,653.7**	**$3,125.5**	**$3,462.9**	**$2,301.8**	**$2,891.8**	**$3,399.0**	**$3,722.1**
Debt Service	$0.0	$865.3	$1,730.6	$2,193.3	$2,664.0	$3,130.7	$3,534.2	$3,937.7	$4,082.8
Annual Cash Flow	**$543.6**	**$758.2**	**$923.1**	**$932.2**	**$798.9**	**($828.9)**	**($642.4)**	**($538.7)**	**($360.7)**
Cummulative Cash Flow	**$543.6**	**$1,301.8**	**$2,224.9**	**$3,157.1**	**$3,956.0**	**$3,127.1**	**$2,484.7**	**$1,946.0**	**$1,585.3**
NPV Of Annual Cash Flows at 10% Discount	**$2,274.1**								
at 20% Discount	**$2,055.7**								
NPV Of Net Operating Income at 10% Discount	**$24,972.5**								
at 20% Discount	**$14,482.95**								
Unamortized Principal at End of Year 15	**$24,617.8**								

*Notes following on page

A. EXPLANATORY NOTES FOR CASH FLOW PROJECTIONS

1. SPACE LEASED

The business plan concentrates on leasing the primary warehouse facilities. It assumes:

- Year 1 is 1998
- A total of 3,600,614 sf of leaseable space comprises the Depot.
- Total leases over the 15-year period consume 3,382,570 sf thereby leaving 218,044 sf unleased at the end of the period.
- Leases are generally 5-year terms with options to renew.
- Only leasing occurs. No sales are recorded during the period.
- A 10% vacancy factor is included in all renewals from Year 6 onward.
- The following areas are assumed transferred via public benefit transfer or other mechanism by the end of Year 4 (263,320 sf of building floor area):
  - Golf Course (6771 sf of buildings)
  - Homeless Housing (22,028 sf)
  - Police Compound (59,751 sf)
  - Education and Training (174,770 sf)
    - #144 Administration (101,270 sf)
    - #274 Cafe (13,500 sf)
    - #925 Shop/Storage (60,000 sf)

- During the period, demolition will remove an additional 2.6 million sf from the Depot inventory. (See Table 11, Section IV, pp. 28-29)

- Leasing activity over the period appears as follows:

YEAR	BLDGS. LEASED	NEW AREA (SF)	RENEWAL (SF)	TOTAL (SF)
1	#360, 1 Korean Typ.	413,414	----	413,414
2	#560, 1 Typ. 20, 1 Korean Typ.	523,408	----	936,822
3	#835, 1 Typ. 20, 1 Korean Typ.	457,966	----	1,394,788
4	#685, 1 Typ. 20, 1 Korean Typ.	362,592	----	1,757,380
5	1 Korean Typ., 1 Typ 20	316,650	----	2,074,030
6	2 Typ. 20's	219,988	413,414	2,294,018
7	1 Korean Typ.	206,656	523,408	2,500,674
8	1 Typ. 20	109,994	457,966	2,610,668
9	1 Typ. 20	109,944	362,592	2,720,662
10	1 Typ. 20	109,994	316,650	2,830,656
11	1 Typ. 20	109,994	633,402	2,940,650
12	1 Typ. 20	109,994	730,064	3,050,644
13	1 Typ. 20	109,994	567,960	3,160,638
14	3 Bays Typ. 20	65,996	472,586	3,226,634
15	7 Bays Typ 20	155,936	426,644	3,382,570

Buildings leased at the end of Year 15:

#360 - New Unoccupied Warehouse
#560 - New Warehouse
#835 - Hazardous Materials
#685 - Korean Typical Connector
6 - Korean Era Typicals
14 - Typical Twenties

2. REVENUES

- All leases are assumed 5 years.

- Lease revenues (all triple net) rates are:

  Typical 20 - $1.50/ft²

  Typical 6 - $2.00/ft²

  #360 - $2.75/ft²

  #560 - $2.50/ft²

  #835 - $3.00/ft²

  - Rates for renewals are escalated by a factor of 1.13141 beginning at Year 6.

  - New space leases are escalated by a factor of 1.13141 beginning in Year 11.

  - A 10% vacancy factor is applied to renewal revenues beginning in Year 6.

  - All projections are in 1997 dollars.

  - Lease revenues are rounded to the nearest hundred.

  - Lease revenues are based on absorption projections.

- Other Revenues - This category derives from local matching contributions, short-term or seasonal leases/rentals, special events and related items.

- Common Area Maintenance (CAM) Fees are assessed to tenants (and other users) at a rate of 5% of estimated, fair market lease rates. This factor is applied to the Education and Training Area at an average lease rate of $4/sf (174,770 sf) beginning in Year 2 ($34,954.00)

- CAM fees should be geared to actual costs

- OEA Funding - OEA funding is assumed for 5 years. OEA provides 75% of administration costs in Years 1-3; 50% in Year 4; 25% in Year 5; and, 0% thereafter.

- DLA Funding - DLA Funding equals the Defense Logistics Agency monies provided to the Memphis Depot Redevelopment Corporation through a Cooperative Agreement for installation maintenance over a five-year period. The DLA Funding amount is provided on an actual-cost, 100% reimbursement basis and declines as properties are leased, decommissioned or abandoned in place. DLA Funding, unless otherwise negotiated, will end after Year 5.

3. EXPENDITURES - (No acquisition or environmental clean-up costs are included here)

- Administration (Does not include caretaker personnel)

The base budget includes ($000's):

Salaries (4)	$176.3
Fringes	$ 44.1
Operations	$417.2
Capital	$ 1.0
Subtotal	**$638.6**

Add to Administration ($000's)

Director's Salary	$10.0
Marketing Professional	$60.0
Fringes	$17.5
Capital	$ 2.0
Insurance	$40.0
Subtotal	**$129.5**

Total Administration	**$768.1**

- This administrative expense is built upon the existing Memphis Depot Redevelopment Corporation budget.

- Salaries - This category includes an additional position to provide specific, focused marketing and sales services. The salary is base $60,000 added to the current category and $15,000 added to fringes.

- Director's Salary - OEA has agreed at other locations to fund its share of salary up to $65,000 ($65,000/0.75 = $86,667). We recommend raising the salary to a range of $75,000 - $87,000 plus 25% fringes. For planning purpose's, we have added $10,208 to the current salary line and $2,552 to fringes.

- Operations

  Legal Sources - In our opinion, City legal staff will be unable to provide timely, specialized services as development progresses. Accordingly, we have added $50,000 a year for outside counsel. OEA will match 50% of this amount up to a total of $50,000 or a maximum of 2 years.

  Audit - An independent annual audit is essential. We have added $15,000 for this item.

  Professional Services - This amount should remain generally the same during the first 3 years to provide for legal, financial, accounting, surveys, engineering, architectural, design, planning, development and other transition planning and implementing services. Thereafter, the category deserves re-evaluation. We have reduced it by 25%.

- Overall Administration - We have assumed a 75% OEA share through Year 3. We reduced the OEA share by one-third per year in Years 4 and 5. No OEA monies are present from Year 6 onward.

- Insurance - The budget includes $40,000 in Year 1 and $60,000 per year thereafter (escalated by 1.13141 at Years 6 and 11) for property, machinery and directors liability.

- Marketing - A base marketing expenditure of $125,000 - $150,000/year is included to stimulate demand in cooperation with other regional economic development marketing agencies.

- Commissions

  Commissions on all new lease transactions are assumed to be 6% on the value of the initial term (6% broker).

  Commissions on all renewals are assumed to be 3% on the term value.

- Unoccupied Facilities Maintenance - Decreasingly, the Cooperative Agreement between The Defense Logistics Agency and The Memphis Depot Redevelopment Corporation will fund installation maintenance over the first 5 years. Generally, the agreement will fund maintenance of unleased and untransferred areas. Employing maintenance experience at other locations, we have estimated the initial costs for total maintenance, security, fire protection and related functions at $0.73/ft². The funds are granted for reimbursement of 100% of actual maintenance costs.

  Leased facilities are maintained by occupant. As leased area and occupancy rise, DLA reimbursements deline to "zero" in year 6.

  Maintenance expenditures include provision for downstream, major structural and roof repairs.

Facilities to be demolished are deleted at time of scheduled demolition. No estimate is included for asbestos removal and disposal.

- Common Area Maintenance - This factor is 5% of fair market value lease rates on occupied facilities (with the exception of the police compound and homeless service area) to supplement site security needs and common area requirements.

- Debt Service - Debt service is the annual installment debt which results from capital improvements program implementation. That program is detailed herein.

  All such debt is assumed to be raised by the City of Memphis and County of Shelby and repaid by The Depot Redevelopment Corporation of Memphis and Shelby County.

B. CAPITAL IMPROVEMENTS PROGRAM

Major Capital Improvement items have been identified based on existing information from the installation, site surveys and the current age of the assets. As uses of system and facilities change, the total demand should be monitored in order to ensure that the infrastructure system continues to maintain adequate capacity for all of the users on the installation.

The following section presents a summary of the buildings and systems currently maintained at the installation and our recommendations for immediate work and work we expect to be required over the 15 year evaluation period. Costs for work that we considered as normal maintenance, including items which can be completed for less than $5,000, work normally performed by the on-site maintenance staff, or work which is routinely contracted, are not included in the CIP. Examples include elevator maintenance, mechanical equipment maintenance, cleaning, minor painting and minor repairs.

Recommended work items include the following:

Immediate Repairs: Items considered building or fire code violations; items considered life safety concerns; items that could be considered urgent repairs; and deferred maintenance items that are causing rapid deterioration to the building systems by their delay.

Anticipated Repairs: Include repairs or replacements, in excess of normal maintenance, which are projected to occur within the next 15 years and which are required to restore a building component to satisfactory condition and would likely be performed by outside contractors rather than maintenance staff due to large quantity of defects or specialized capability required.

Suggested Upgrades: Include improvements, modifications or replacements which could reduce operating costs or maintenance costs, but are not required to repair a system. The costs and benefits of the suggested upgrades would need to be considered in more detail fully evaluate their merits.

This $47 million, 15-year Capital Investment Plan results from our systems analyses and redevelopment recommendations detailed in the Master Redevelopment Plan. It assumes:

- 100% debt, borrowed at 7% interest and repaid over twenty years as described in the borrowing schedule which follows. Placement costs of 6% are included in debt service.

- New debt is incurred each year, beginning in Year 2, with final estimated borrowing in Year 15, to fund essential site and infrastructure improvements.

- Debt service builds to its highest level in Year 15 ($4.84 million), where it remains, until it begins to decline with maturities first appearing in Year 22 ($3.98 million). The final installment ($124,900) is paid in Year 33 (2031).

- The Capital Program is divided into four major components:

Infrastructure (50.7%) -	$23.98 million
Buildings (22.8%) -	$10.8 million
Demolition (13.4%) -	$6.35 million
Contingency (13.1%) -	$6.2 million

- The Capital Program is further divided into six phases:

  Phase I / Years 1-3 - $16.9 million (53.7%)

  Phase II / Years 4-6 - $13.7 million (28.96%)

  Phase III / Years 6-7 - $7.9 million (16.7%)

  Phase IV / Years 7-9 - $4.26 million (9.0%)

  Phase V / Years 9-10 - $0.89 million (1.9%)

  Phase VI / Years 11-15 - $3.7 million (7.8%)

- Major roadways and water, sewer, energy and telecommunications utilities will become the properties of the City of Memphis, County of Shelby, MLGW and Bell South by the end of Year 6 (Phase II).

MEMPHIS DEPOT REUSE CAPITAL IMPROVEMENT PROGRAM ($000's)							
ITEM	PHASE 1 (1998-2000)	PHASE 2 (2000-2003)	PHASE 3 (2003-2004)	PHASE 4 (2004-2006)	PHASE 5 (2006-2007)	PHASE 6 (2008-2012)	Improvements-TOTAL
INFRASTRUCTURE							
Perimeter Landscaping							
Landscape Buffer	$300.0						$300.0
Wrought Iron Fence on Airways Blvd.	$150.0						$150.0
Entrance Landscaping	$50.0						$50.0
Interior Landscaping	$100.0	$50.0	$50.0				$200.0
Street Trees	$200.0	$200.0					$400.0
Parking lot landscaping	$75.0	$50.0					$125.0
Signage							
Main Entrance	$20.0						$20.0
Sign at Airways Blvd. and Dunn Avenue	$20.0						$20.0
Secondary Entrances	$10.0						$10.0
Internal Road Signs	$10.0	$10.0	$10.0				$30.0
Sanitary Sewer Upgrade							
Inspection Report, Tape, etc.	$350.0						$350.0
Removal/Replacement of Pipes/Mains	$250.0	$150.0			$120.0		$520.0
Structures	$125.0	$50.0	$200.0		$50.0		$425.0
Service Lines	$60.0	$40.0			$30.0		$130.0
Water Distribution Upgrade						$250.0	$250.0
System Modification (West & Northeast L1 areas)	$200.0	$100.0	$250.0		$100.0		$650.0
Removal & Installation of Fire Hydrants/Valve boxes	$200.0	$150.0	$200.0		$150.0		$700.0
Meters/Connections	$150.0	$150.0	$200.0		$100.0		$600.0
Telecommunications Upgrade	$150.0	$100.0	$100.0	$100.0		$200.0	$650.0
Electrical System Upgrade						$300.0	$300.0
Electrical Poles Removal/Installation	$500.0				$100.0		$600.0
3 & 1 Phase Primary Removal/Installation & Riser Installation	$200.0				$75.0		$275.0
3 & 1 Phase Transformers Removal/Installation	$225.0				$50.0		$275.0
Underground Extension	$700.0	$200.0					$900.0
Metering (25 S-12 & 1 S-18 Meters) & Removal of Primary Meter	$65.0						$65.0
Storm Water System Upgrade						$250.0	$250.0
Existing System Modification/Changes due to Parking Areas	$200.0	$150.0					$350.0
Removal/Installation of Pipes & Sturctures	$150.0	$100.0					$250.0
Changes to system in Area Slated for Future Development	$100.0	$100.0					$200.0
Natural Gas System Upgrade	$450.0	$350.0	$600.0			$185.0	$1,585.0

MEMPHIS DEPOT REUSE CAPITAL IMPROVEMENT PROGRAM ($000's)							
ITEM	**PHASE 1 (1998-2000)**	**PHASE 2 (2000-2003)**	**PHASE 3 (2003-2004)**	**PHASE 4 (2004-2006)**	**PHASE 5 (2006-2007)**	**PHASE 6 (2008-2012)**	**Improvements-TOTAL**
Internal Roadways						$1,000.0	$1,000.0
Upgrade Boulevard (G Street) , 1st Street south of G St.	$1,000.0						$1,000.0
New road that parallels Dunn Avenue, upgrade 2nd St.			$800.0				$800.0
Upgrade 4th street, J street, 3rd street		$700.0					$700.0
Roads on the west portion of the installation	$400.0	$1,400.0	$250.0				$2,050.0
Parking Lot Construction	$800.0	$1,800.0	$1,700.0	$2,500.0		$1,000.0	$7,800.0
BUILDINGS							
Main Administration Building 144 - code compliance	$100.0						$100.0
Main Administration Building 144 - fire suppression	$200.0						$200.0
Typical Twenties Buildings - code compliance	$400.0	$450.0					$850.0
Typical Twenties Buildings - fire suppresion	$1,200.0	$1,600.0					$2,800.0
Typical Twenties Buildings - enhancements	$1,500.0	$1,500.0	$750.0				$3,750.0
Korean Typical Buildings - code compliance	$300.0	$150.0					$450.0
Korean Typical Buildings - fire suppression	$1,800.0	$400.0					$2,200.0
Korean Typical Buildings - enhancements	$250.0	$100.0					$350.0
Building 835-code compliance	$50.0						$50.0
Building 925-code compliance	$50.0						$50.0
DEMOLITION							
Building 209,359,465,467,468,469,559	$1,650.0						$1,650.0
Building 210,308,309,319,416,417,949		$900.0					$900.0
Building 349,449,549,649,720,737,770,771,783,787,793,860,863		$950.0	$950.0				$1,900.0
Building 873,875,970,972			$800.0	$800.0			$1,600.0
Building 995,1084,1086,1087,1088,1089,1090,1091				$300.0			$300.0
SUBTOTAL	$14,710.0	$11,900.0	$6,860.0	$3,700.0	$775.0	$3,185.0	$41,130.0
CAPITAL IMPROVEMENT PLAN CONTINGENCY							
Contingency 15%	$2,206.5	$1,785.0	$1,029.0	$555.0	$116.3	$477.8	$6,169.5
TOTALS	$16,916.5	$13,685.0	$7,889.0	$4,255.0	$891.3	$3,662.8	$47,299.5

MEMPHIS DEPOT REUSE CAPITAL IMPROVEMENT PROGRAM BORROWING SCHEDULE (100% debt @ 7% / 20 years - 6% soft cost)			
YEAR	AMOUNT ($000's)	ANNUAL P & I ($000'S)	YEAR OF LAST INSTALLMENT
1	$0.0	$0.0	0
2	$8,458.3	$865.3	2018
3	$8,458.3	$865.3	2019
4	$4,561.7	$466.7	2020
5	$4,561.7	$466.7	2021
6	$4,561.7	$466.7	2022
7	$3,994.5	$403.5	2023
8	$3,994.5	$403.5	2024
9	$1,418.3	$145.1	2025
10	$1,418.3	$145.1	2026
11	$1,418.3	$145.1	2027
12	$925.8	$94.7	2028
13	$1,220.9	$124.9	2029
14	$1,220.9	$124.9	2030
15	$1,220.9	$124.9	2031
TOTAL*	$47,434.1		

*Minor differences in totals result from rounding.

VIII. MARKETING STRATEGY

The marketing of the Memphis Depot facilities is actually an economic development project for the community. As such, it suffers from the fuzzy origins and unclear definitions of terms which confound the field of economic development as a whole. Virtually every economic development professional has witnessed the blank stare which follows after telling a lay person at a social gathering that his or her job is economic development. Even more surprisingly, there is a persistent lack of understanding of economic development among community leaders or, equally often, a redefinition of the term to suit a particular agenda. Accordingly, a working definition of economic development is essential as a starting point for this strategic planning process.

In consideration of the tasks here, economic development is defined as fundamentally different from economic growth to the extent that economic growth is something which happens, typically, as a result of external forces beyond the community's control. Economic development, however, is something which a community does for itself by enhancing environmental factors over which it may exercise influence. In this regard, economic development is the qualitative improvement in an area's economic circumstances achieved over time as a result of the purposeful, coordinated, and consistent application of resources to stimulate investment which evokes (1) economic base diversification, (2) net real income growth, (3) net employment growth, (4) net real gross-area-product growth, and (5) value added to human and community resources.

The activities commonly labeled economic development may be more appropriately characterized here as business recruitment. Business recruitment is that subset of economic development which seeks qualitative improvement via the attraction of new firms.

Optimally, the business recruitment activities will focus upon those firms which are export-based in their operations to the extent that they sell their goods and services beyond the borders of the local economy. This creates wealth through the importation of money with which, in part, to purchase fundamental local inputs such as utilities, labor, infrastructure, governance, and basic services. To achieve true clarity in establishing strategic priorities, a further narrowing of the business recruitment function is appropriate so that it focuses on those export-oriented sectors and firms for which the resources available in the area present the greatest appeal.

A key element of the business recruitment function is marketing. Here again, the economic development professional must deal with a general lack of understanding which exists relative to the unique challenge that economic development marketing presents. These marketing challenges relate not to the product, which may be a site, a community, or a region, but rather to the market itself.

A professional responsible for marketing or sales of a product such as office supplies can clearly identify those companies which are potential customers. Moreover, that potential customer will be in need of those products on a constant basis. Therefore, that sales or marketing professional can be certain that marketing efforts and resources devoted to those potential prospects are not wasted.

In the field of business recruitment, however, actual prospects for a business location on a site or in a community are not so readily identified. At any given time, only a minute percentage of companies is seeking a new location for operations, and these firms commonly do not publicize that fact. Moreover, even within those companies only a handful of people may know of plans to seek a new location. Depending on the company, decisions in the planning stage may come from production management, in another real estate management, and another finance.

This implies that community leaders must recognize that the business recruitment aspects of economic development require patience and the application of sufficient resources to penetrate that elusive market effectively, even when the product is superior. Over time, the return on investment in jobs, tax-base enhancement, and improvement in the economic well-being of the community will more than justify the costs of sustaining an economic development and marketing campaign for the Depot.

The consideration of the strengths and weaknesses of the Memphis Depot and Memphis as a location for business and industry was undertaken from the perspective of a site-selection team which might consider the Depot as a candidate for the location of an operation. It uses the same methodology employed by The Pathfinders in site searches for corporate clients.

Numerous interviews were conducted with existing business operations in the area, as well as with utilities suppliers, transportation providers, and government and regulatory officials. Existing published data was reviewed and, importantly, similar evaluations were conducted of selected competitive locations.

The factors by which the competitive advantages or disadvantages are judged are those factors most commonly considered by prospect companies seeking locations for new business units. It provides an answer to the fundamental question of whether the Depot has the attributes which make it saleable to business and industry as a location. The answer to that is clearly "yes".

TARGETS

In marketing, the terms "vertical" and "horizontal" marketing targets are common. As an explanation, "vertical market" refers to a very narrow band of closely-related prospects, while a "horizontal market" contains a broad spectrum of loosely-connected prospects. Companies which sell computer chips deal with the vertical market of computer manufacturers, whereas a company which sells office supplies may sell to the horizontal market made up of virtually any business operation.

The Depot's attributes will appeal to a broad array of companies and we suggest, therefore, that the targeting and marketing campaign could be horizontal in nature rather than focusing on one industry group. However, a group of vertical target sectors is identified in a previous section of this report which should be the focus, although not exclusively, of the marketing campaign. They include:

a. Distribution Operations

This is an obvious target for the Depot and Memphis. Added in this broad sector should be product servicing and mail order/catalogue/order fulfillment operations, such as the William Sonoma and Technicolor operations. Other distribution operations are so numerous in Memphis that examples alone would fill a volume.

b. Medical Equipment, Instruments, Products and Supplies

This sector is experiencing a Growth Rate of Annual Output of 5.7%. Locally, Baxter Health Care Products is the second largest orthopedic implant producer in the nation. Other industry leaders in Memphis include Dow-Corning Wright, Sunrise Medical, Danek Group, Viral Antigens Pfizer and Block Drug. As a target this sector includes pharmaceuticals, which may be especially attracted to Building 560 with its climate control system.

c. Computers, Office Equipment and Repair

This segment is one of the leading in Growth Rate of Output (7.3%) according to the U.S. Bureau of Labor Statistics and the U.S. Bureau of Economic Analysis. That factor alone makes it an attractive target, and the Federal Express and UPS presences enhance its appeal as a target when component repair is added to this broad sector. Thirty-two such companies now have such operations in Memphis.

d. Printing and Publishing

This sector is experiencing a 3.6% Growth Rate of Output. The transportation resources in Memphis can be a major advantages to those operations which must meet tight deadlines, but generally targeting in this sector should focus on those using digital printing technology.

e. Back Office Operations

These operations cross many business sectors, therefore the Growth Rate of output cannot be quantified. However, telecommunications (reservations centers, etc.), data processing and other such operations are very active at this time, and some of the facilities on the Depot can be converted to accommodate those operations. Facilities on the Gentile Air Station in Dayton that are very similar to the "typical" buildings are being converted to accommodate a 2000-employee BancOne processing center. Fiber- optics availability to the Depot; its location in the central time zone; the digital signal protection, security and redundancy imbedded in loop diversity; and, high-speed data transmission capability being in-place are among the assets which can be offered to companies in this sector. The General Electric (ASI) operation in Memphis is an excellent example.

f. Food Processing

This sector is experiencing a Growth Rate of output of 3.1%, but more importantly, Memphis seems to be a natural attraction for food processing operations. To its transportation network, logistics advantages, competitive tax and utilities costs, and relatively low cost of energy is added the asset of an excellent quality of water available in large quantities. The Memphis aquifer contains an estimated 100-trillion gallons of water which is recognized nationwide as among the purest available. Operations in this sector could be accommodated on the Depot and only marginally affected by limited rail access. Examples nearby in Memphis include Kellogg and Purina.

MARKETING ACTIONS

The marketing campaign must identify a potential user which has an immediate need for existing facilities similar to those at the Depot. In searches for existing production facilities for corporate clients (an example of which is provided in a subsequent section), neither price nor the structure of the real estate transaction is commonly considered a factor at the outset of the search. What is initially considered is the availability of a facility which meets the criteria for the intended use.

As a guiding principal, the consultant team views sales and marketing as two distinct, although related, functions. It considers marketing to be those functions designed to create a product awareness and to identify a potential prospect who may have a serious interest or who may simply be inquisitive. It is a further marketing function to qualify those prospects.

Sales, as defined for these purposes, is the function designed to secure a commitment by the prospect to locate a business operation in the Depot facilities. It is actually a process of incremental sales steps taken in dealing with prospects which the marketing program has identified and qualified. The first of those sales steps is to obtain information on what the prospect's requirements are and a commitment to consider the information sent. The second, and often the most difficult, is to secure a prospect visit to the site. Obviously, the final sales steps involve a commitment to purchase or lease.

Moreover, both the sales and the marketing campaigns must deal with issues which go beyond the characteristics of the facilities themselves. Consideration is given in this marketing strategy to the local operating environment a user would encounter in Memphis. Those issues include transportation, labor, utilities, taxation, and quality of life, and are presented in a previous section of this report.

Such consideration applies primarily to industrial or business operations other than warehouse/distribution operations which are less sensitive to certain of those factors. Moreover, the Depot's geographic location makes it a natural attraction for warehouse/distribution operations. It was clearly stated in the Request for Proposal that a strategy should be produced to attract other types of business and industrial operations.

As a consequence, this marketing strategy focuses on attracting those targets other than distribution/warehouse operations. However, it recognizes the importance of distribution/warehouse operations for their potential to produce revenues from lease payments early-on in the redevelopment process.

The most cost-effective marketing for those operations will include an initiative to involve the local real estate brokerage community in both the sales and marketing of the Depot facilities. For distribution/warehouse operations local Realtors are, in effect, the primary targets of that marketing campaign.

Personal visits should be made to every major brokerage operation in Memphis, and each should be provided with a supply of marketing and sales materials for the Depot. Tours of the Depot facilities should be scheduled for their sales and management staff. A 6% commission should be offered on the initial term of a lease with a 3% commission paid on renewals.

It should be made clear that short-term leases, including month-to-month, will be available on certain of the buildings, at least during the first two years of the redevelopment process.

In addition to local Realtors, the local economic development organizations should be considered to be critical allies in the marketing of the Depot facilities, whether in the distribution/warehouse

sectors or the other industrial/service sectors. Key among those is the Memphis Area Chamber of Commerce, which is uniquely effective in business recruitment.

The Memphis Chamber of Commerce conducts an aggressive business recruitment marketing campaign and, to the extent that it is possible, the Depot marketing campaign should "piggy-back" on those efforts, especially in trade show participation. At the least, the Depot marketing campaign should be coordinated with that of the Memphis Area Chamber of Commerce relative to direct mail, telemarketing, trade show attendance and marketing missions to ensure efficiencies.

The following is recommended for the marketing actions to attract those targets outside of the distribution/warehouse operations to the Memphis Depot facilities.

STAFFING

In order to achieve the optimum absorption levels, the marketing campaign must be aggressively implemented. The central element in the optimum campaign is hiring a sales and marketing professional to devote full time to marketing. That individual should have a competent assistant who possesses the ability and talent to:

- Conduct the direct mail campaign
- Conduct the telemarketing campaign
- Produce sales and marketing proposals
- Assist with booth-staffing at trade shows
- Track prospect follow-up
- Handle inquiries in the absence of the marketing director

That person would be considered to be an exempt professional and must have excellent communication, word processing, telephone and filing and tracking skills required in marketing. The word processing skills requirement goes beyond simply producing a document or letter. It requires the ability to produce a proposal in a format which sells.

It is critical that the marketing professional who serves as a marketing director is not encumbered with other duties unrelated to marketing. Effective marketing requires not only absolute concentration of purpose, but also the time required to implement the marketing program which, as outlined, leaves little time for other activities.

It is suggested that a minimum compensation package of $60,000 will be required to recruit a competent marketing professional.

a. Print marketing materials

The marketing program must prepare an inventory of marketing materials based on a clear, consistent theme to be utilized to provide reliable investment promotion information to target decision-makers in order to stimulate greater awareness and interest in the Depot as a business location. Known as site selection consultants for corporate clients, The Pahtfinders receives on the average about one dozen promotional documents such as these each week of the year. It is that recipient's perspective which guides our recommendations for marketing materials.

The prospect who needs an existing facility will simply want to know where it is located; what size it is (in this case a range of sizes); is the quality poor, average or high; is the cost low or high and lease or sales terms. The objective of these marketing materials is not to

make a sale but to generate a telephone call to answer a question, there-by a prospect is identified upon which to concentrate sales efforts. The marketing materials recommended include:

A Tri-Fold

This piece is the "work horse" rather than the centerpiece of the marketing materials. It is used as a hand-out at trade shows and conferences and as an enclosure for the direct mail campaign.

It should be printed on 8 1/2" x 11", 65 - 80 pound stock, and designed to be folded in a tri-fold fashion so that it fits in a standard envelope. It will have three inside and three outside panels, each about 4" by 8 1/2". Those panels must not be cluttered. When enclosed with a letter, it will allow mailings at the minimum level of postage.

This piece is designed only to stimulate the recipient's curiosity and prompt that recipient to seek further information.

5,000 of these will be needed annually.

Four-Color Brochure

This piece can be used in a variety of ways, but its primary use is for presentation as a follow-up to those prospects which have demonstrated some interest in the Depot. As a follow-up (in most instances to the Tri-Fold), it is designed to provide additional information, including some demographics data. It will also provide information on the number, type and size of Depot buildings.

The natural tendency is to attempt to communicate too much, ignoring the fact that this is a marketing piece and not a sales piece. It is intended to assist in the incremental sales step of securing a prospect visit to the site. It should be limited to four 8 1/2" x 11" panels on very high quality paper.

This brochure is intended to create an image for the depot. That image should be related to its location in Memphis and its proximity to the airport and Federal Express. Photos used in this brochure should be consistent with that objective. Only one or two photos of buildings on the Depot should be used, and those should depict a very high quality facility, implying (in the mind of the viewer) that others are of an equal quality. If building photos cannot communicate that they should not be used. The oblique - view rendering of the depot may also be used.

- About 1,000 per year will be needed.

b. Direct Mail

After an initial "flood" mail shot to the horizontal market, the marketing program should employ direct mail at a minimum level of 100 pieces per month (with response cards) to the horizontal and vertical markets. When and if response cards are returned, intense sales efforts should begin. In addition, the program should employ direct mail to targeted decision-makers in identified companies to increase their awareness of the area and the Depot as a business location and to establish the business's interest in the area for short-term, midterm, and long-term projects. These mailings should be phased and serialized so as to provide those business leaders interested in the area with an ever-increasing level of detail about the business opportunities which exist at the Depot. Further, such mailings should

strive to keep business decision-makers apprised of positive events and favorable changes in the area's business environment. National real estate brokerage firms should be included in the direct mail campaign.

c. Telemarketing to Targeted Companies

Telemarketing is critical in combination with the direct mail program. The marketing program should employ telemarketing not only to establish points of contact with targeted business decision-makers, but also to determine whether the direct mail efforts are having desired results. Further, they should work to identify specific decision-makers within target companies so as to ensure that the Depot's message is reaching the proper individuals. Finally, it will set the stage for personal sales calls in which detailed presentations on business opportunities will occur.

d. Marketing Missions

The marketing program should feature at least four highly-focused marketing missions in various regions of the country. Such calls should be made for the purpose of identifying and qualifying prospects and providing direct marketing presentations to those prospects in an effort to convince them to locate a facility in the area. Such personal calls must occur in the context of an aggressive outreach program which is designed to identify a company that is considering establishing or relocating a facility and which may consider the Depot as the site for that facility. Such calls should occur in clusters with companies in selected geographic areas. Each trip should last approximately five days for the national program and should begin after acceptable marketing materials are available. Significant time must be devoted to setting up appointments for each mission.

Suggested locations might include Dallas, Atlanta, New York, Chicago and Los Angeles or others tied to Chamber/Memphis allies coordinated marketing plans.

e. Conference and Trade Show Attendance

Travel for marketing presentations in various cities can represent a significant portion of budgeted time and expenses in a marketing program. A successful campaign will not be concentrated on any one geographic area and, therefore, prospects identified in the marketing elements of the program will be scattered throughout the United States and possibly other countries. In order to conserve resources, events should be identified which bring together large numbers of corporate decision-makers in a single location, such as trade shows or conferences. At those gatherings, the opportunity exists to make multiple contacts with and presentations to potential prospects.

The Memphis Area Chamber of Commerce has already established a very aggressive trade show, conference and sales/marketing mission schedule for the coming year. The Depot marketing campaign should investigate the possibility of joint participation in those initiatives.

Consideration should be given to participation in:

- The NCOF (National Catalogue Operations Forum), which attracts senior level executives in mail order operations
- The Council for Logistics Management show, a general logistics and distribution show
- The TCCS (Telemarketing Call Center Solutions) show
- National Association of Manufacturers (a horizontal show)

- IDRC Conference (2) (horizontal)
- NACORE Conference (horizontal)
- SIOR Conference (2) (horizontal)

Given that participation in the three conferences listed is only effective after a number of years during which personal relationships are developed, it might be wise to have the Memphis Area Chamber of Commerce be responsible for the participation in those conferences.

f. Advertising

In the context of available funds, advertising should be limited to about $25,000 per year.

g. Public Relations

In addition to limited advertising, positive editorials and articles on the Depot as a business location should be encouraged. The objective of the program is to enhance the Depot's image as a positive place in which to do business. In the media placement campaign for focused articles, contact should be made with key regional business publications, newspapers, and trade journals in an effort to stimulate unpaid, objective editorial coverage. Such coverage is often substantially more effective than paid advertising and will also provide additional material with which to market the Depot's assets.

Tours of the Depot should also be conducted for members of the City Council, County Commissioners and the State legislative delegation.

h. "Multiplier" Networking

The economic development program should place continued emphasis on networking with those individuals or organizations which by the nature of their business are in contact with potential prospects. These include, but are not limited to, consultants, venture capitalists, accountants, bankers, trade association executives, utility company representatives, transportation company representatives, and State of Tennessee economic development officials. Local allies such as the Memphis Area chamber of Commerce, the City of Memphis and Shelby County will be the most important "multipliers".

MARKETING CAMPAIGN BUDGET

The majority of base closures and defense conversions have occurred in rural areas or relatively small communities. As a consequence there is rarely a local economic development organization with the capability of mounting an effective business recruitment campaign. The result is that the marketing strategy must provide direction in the creation of one and specific detailed action plans for the conduct of a marketing campaign for those closing installations.

Moreover, most of those closures have occurred in areas, where there is no appreciable local market demand for facilities. In many cases, absorption is virtually nil. The marketing campaign must therefore contemplate creating demand in the national rather than local market, based primarily on attractive facilities costs at the closing installation.

Neither of these conditions exist in Memphis. The Memphis Area Chamber of Commerce, the City of Memphis and Shelby County collectively have sophisticated business recruitment programs in-place with competent professionals conducting them.

The real estate market demand is Memphis in intense. As a consequence, there is an existing base of experienced, active real estate professionals and developers who can be allies in the marketing of the Depot.

Those factors have an influence on the marketing budget, requiring lesser expenditures than at closing military installations where neither real estate demand nor marketing expertise exist. This budget contemplates a significant reliance on those positive factors in Memphis to recruit distribution/warehouse operations. It further contemplate a significant commitment on the part of the MDRC to penetrate a national market in the recruitment of industrial users.

The marketing expenditure is an investment in achieving the goal of creating better jobs, and has the greatest impact on the marketing budget. In that sense, it is an investment in economic development for the community and is not necessarily comparable to what a private commercial operation might budget for marketing given projected absorption and revenue projections.

And it is an investment in economic development for the community, given the fact that some prospects generated by the MDRC's marketing will not find the Depot's facilities suitable once those prospects visit Memphis to examine them. Those prospects should be handed-off to the local economic development organizations in an attempt to ensure that they will locate in Memphis, if not at the Depot.

This marketing plan represents an ambitions undertaking by the MDRC in its investment of financial resources but even a greater undertaking for the marketing executive. Five conferences are recommended, which with travel will consume a total of 5 weeks. The critical follow-up calls and contacts after the conference will consume another 5 weeks.

Approximately five trade shows will consume another 10 weeks, based on the same reasoning. The four marketing missions will require 1 week each, but also with 2 weeks each required for preparation and appointments and at least 1 week each for follow-up contacts. That totals 16 weeks for the marketing mission.

Out of a 48 week year, if a two-week vacation and a two-week "dead-time" during the holiday season is accounted for, 12 weeks remain for local marketing, sales and other activities. The commitment of time to implement this marketing strategy will be significant.

The recommended commitment of financial resources follows:

■ Printing, supplies, mail lists, computer programs, etc.	$15,000
■ Five trade shows, including travel	$20,000
■ Five conferences, including travel	$15,000
■ Four marketing missions, two people on each	$12,000
■ Direct mail/telemarketing	$10,000
■ Sales travel, for sales presentation that marketing has produced (6 trips)	$10,000
■ Advertising	$25,000
■ Entertainment	$ 5,000
■ Contingencies (trade show booth, etc.)	$13,000
	$125,000