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4 JULY, 1975.

This is to certify that a thesis on ...Planning...Standards...for ...Future...Urban...Industries...,...Based...on...The...Performance ...of...The...Present...Nairobi...Industrial...Area.....
is a bonafide work of ...J. W. Mwangi.....
.....
.....
which has been accepted in partial fulfilment of the requirements of the degree of Master of Arts (Planning).

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NAIROBI, KENYA.

PLANNING STANDARDS FOR FUTURE URBAN INDUSTRIES, BASED ON THE PERFORMANCE OF THE PRESENT NAIROBI INDUSTRIAL AREA

by James Wanjohi Mwangi

A thesis presented in part fulfilment for the degree of Master of Arts, in Urban and Regional Planning in the University of Nairobi.

Declaration by Candidate

This thesis is my original work and has not been presented for a degree in any other University.

Signed.....

Declaration by Supervisor(s)

This thesis has been submitted for examination with my (our) approval as University Supervisor(s)

Signed.....

Signed.....

Acknowledgements

I am greatly indebted to a number of people and organisations, whose help, direct or indirect has contributed to the success of this study. My special Thanks go to Professor Subahkrishniah, Head of the Department of Urban and Regional Planning of the University of Nairobi, who as my supervisor, gave me excellent guidance as well as encouragement. My thanks go to both Miss Lydiah Kihara and Miss Gladys Kimaru, who typed my work; Messrs. Amos Njuguna and T. Abutah of the University Computer Science, Centre for their assistance with the data analysis; and lastly and by no means least, Mr. W. Kahoro of the City Engineer's Department, Nairobi City Ccuncil, for his suggestions on various aspects of the study, that we have discussed.

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SUMMARY

Importance of Manufacturing Activities in Economic Development.

Industrial activity forms a part of the activities of any metropolitan area in the world today. It may be either manufacturing in nature and, thereafter an important economic factor of an area as a source of export goods, without which a region cannot sustain continued growth and hence development, or of a service nature and, therefore, necessary to support other types of activities going on in the region. Planners demarcate a zone of industrial activity in any normal planning programme for future activities. This is made possible by studies undertaken on the pattern of activities that are existing within the region, and a projection of these present activities into the future using known trends of past and present activities. In such a study, efficient use of space, given a number of competing uses requiring the use of this space is the goal or objective. To attain such a goal, accepted methods of study such as proper surveys of activities, analyses and projection of obtained data must be adhered to. A knowledge or understanding of desirable goal, both long term and short term, leads to a formulation of strategies that are likely to lead to the achievement of this goal. This normally entails a consideration of the available range of alternatives for the achievement of the desired goal and a selection of the best course of action leading to such an achievement.

The present study has been undertaken as a basis for the standards that planners should use for the location of future intrametropolitan industries in Kenya. The study aims to achieve this by a research conducted on the Nairobi Industrial Area, through a questionnaire interview subsequently analysed to provide the pertinent data on various manufacturing indus-

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tries located in the area, and their land requirement as well as their requirement for supportive services. For this purpose, sixty nine different plants were interviewed using a questionnaire aimed at determining accessibility, production patterns, markets, labour and services. As these factors are important in intra-urban industrial location, their performance at present should indicate the success that planners have so far achieved in planning especially in zoning for urban activities.

The Nairobi Industrial Area lacks both the raw material oriented and intensive labour oriented industreis. The present industries are generally market oriented industries. Raw material oriented industries as well as labour oriented industries are located elsewhere in Kenya, sometimes in small urban centres like Eldoret for the East African Tanning Extract Company, or the Pan African Paper Mills Industry at Webuye. Nevertheless, the Nairobi Metropolitan Region gains from all these industries as a large market centre, and terminal zone for many of these products.

The study has proved the importance of the Nairobi Industrial Area as a centre of manufacturing activity in Kenya and East Africa at large by the size of its export market of 53% of all its production capacity outside the metropolitan area itself. Even the publishing industry has a very sizeable market outside Kenya! Both sectoral and physical planners should take the

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opportunity to use the present Nairobi Industrial Area and the future industrial areas of this country as a basis for advanced development of the country.

Planning standards operating at present have been successful on allocation of plots, but various improvements, notably in transportation, housing and services for workers must become a prerequisite to future planning. There is no reason why entrepreneurs who wish to locate industries in Nairobi and other large urban centres cannot provide housing for their workers and as a result minimise the housing problem.

This study has been carried out with a conscious effort to report objectively and not subjectively the oft heard of plaints of industrial problems which are largely blamed on poor planning, or lack of planning. The problems that have been identified by the study have been set out with recommendations for their solutions. The ideal is to use the available knowledge to avoid future mistakes in planning. As it is now, solutions to prevaling problems have actively been sought as witness the decentralization of industry from the Nairobi Industrial Area to areas near the low income earning groups.

An understanding of the industrial structure now present could only be achieved by a knowledge of the existing theories and methodology for such a research. The literature review in this study provides these, and a bibliography of literature on industrial location supplies the necessary references on authorities of industrial location. Standards that should be used in zoning for such activity, can then be determined as an aid to efficient allocation of land and provision of supportive services.

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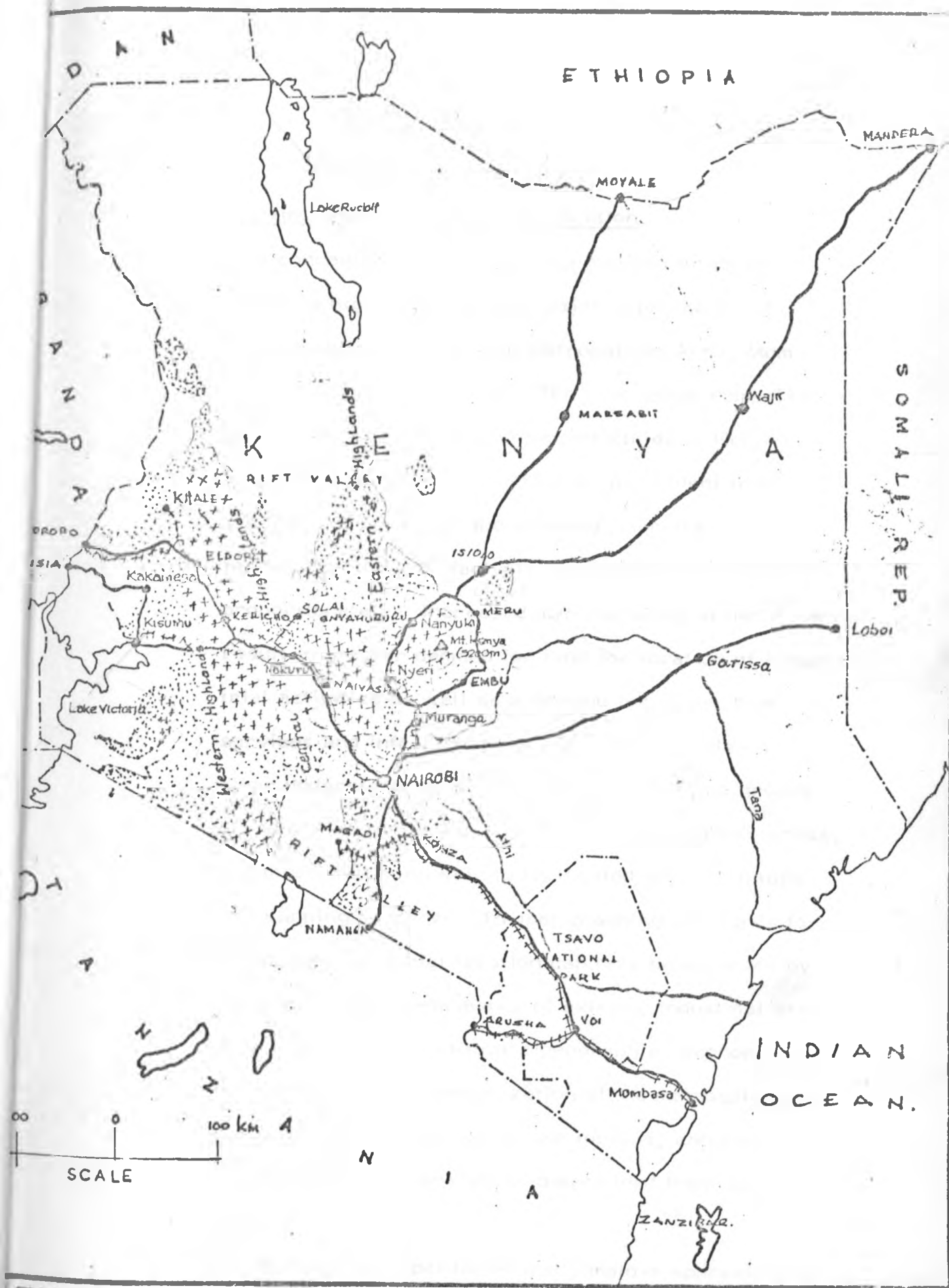

MAP Nº 1 NAIROBI — KENYA

CHAPTER I

Introduction

1.1 Intrametropolitan Industrial Location

The concentration of manufacturing industries in Kenya is highest in the four major urban areas of the replublic, viz: Nairobi Metropolitan Area, Mombasa, Kisumu and Nakuru. The four areas comprise over 90% of all manufacturing industries of Kenya. With improved economic activities as evident from the trend of growth of the economy, service industries besides the manufacturing activities will increase proportionately. Increased manufacturing activities will result in greater demand for land for location of industrial activities as well as a demand for supportive services and infrastructure. This necessitates a clear understanding of the requirements of the groups of industries that are at present located in urban areas, and those that are likely to be located there in future for planning purposes. Proper planning standards for intraurban industrial location can only be achieved by analyses of the performance of existing industrial areas. Anticipated impacts of future geographic, economic, technological and social organization of the metropolitan regions where such industries are located, can then be based on current demands as determined from such studies.

The Nairobi metropolitan Region employs approximately

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36,000 workers in various industries. This is 35% of the country's total of 102,000 industrial workers. The largest single industrial area in Kenya is the Nairobi Industrial Area employing 25,000 industrial workers, a quarter of Kenya's total industrial employment. Secondly, the Nairobi Industrial Area by its position and extent in relation to the rest of the City makes an ideal study of the location of manufacturing industries in urban areas. The problem of housing and transportation in a large industrial area poses a major planning problem for many urban authorities. This is a problem that is potenly visible in the present Nairobi Industrial Area and requires a study if planning for future industrial areas in Nairobi and other urban centres is to be done efficiently.

1.2 Purpose of Study

The purpose of the present study is to determine the performance of the industries located in the Nairobi Industrial Area. Such a study will identify the problems that are currently faced by industries located in a large metropolitan area as well as those facing authorities engaged in planning for such areas. There is a definite lack of clear understanding of the distribution of manufacturing activities within the urban area. This makes it difficult to formulate an economic theory concerned with such distribution patterns, despite the fact that diverse academic disciplines are involved in urban studies, of

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which industrial location is one.

The Nairobi urban Study Group has undertaken various studies of activities within the Nairobi Area and has recommended strategies for development. However, industrial areas have normally been divided into light manufacturing and heavy manufacturing zones without any attempt at an intensive research to enable a logical locational pattern of groups of industries to emerge. Once groups of industries can be identified and their characteristics determined, their planning becomes a fairly easy task for the planner. The diversity of manufacturing activities within the industrial area in a city at first glance seems chaotic and disorderly and only a close examination can reveal regularities of requirements for various groups of industries which exhibit similar locational tendencies. This study is an attempt to determine the requirements of given industrial categories for their efficient operation.

1.3 Importance of a Study of Nairobi Industrial Area

The Nairobi Industrial Area has been selected because it is the oldest established industrial area in Kenya. It has some firms dating back from World War I, notably Lord Delamare's Unga Limited, first established in the war years and later sold to the Kenya Farmers Association in 1928 and still expanding today. Secondly, the Nairobi Industrial Area, like any other industrial area located within a large metropolitan area, offers great attraction to manufacturing industy owing to a large population base

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necessary to support the production of industrial goods. The urban market offers varied facets for manufacturing goods. The most obvious is the concentration of large numbers of people within its confines, either forming a market for mass produced goods or providing enough specialized clientile for more esoteric products. Besides, many firms sell their products to other manufactuters, either for further processing or for assembly into large items. Finally, access to international markets is readily available in large cities like Nairobi. To understand intra urban industrial requirements, an area like Nairob Industrial Area becomes ideal for study. It will give the pattern of production and industrial trends as well as market, labour and infrastructure requirements of an industrial area. These are necessary as a guideline to the location of manufactural activities in future, here and elsewhere.

The Nairobi Industrial Area has a wide variety of manufacturing activities whose land requirements show a wide divergence. Only a comprehensive study of its individual firms can provide an insight into the planning requirements of various groups of manufacturing activities. Nairobi will get increasing shares of Kenya's industries in future, owing to the agglomeration economies it offers to various industries. This behoves the planning authorities to be clear in their minds as to the standards the industries locating in Nairobi require, to reduce the friction that results from improper allocation of sites.

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1.4 Scope of the Study

The present study aims at determining the performance of manufacturing industries in the Nairobi Industrial Area as zoned in the 1947 Master Plan for Nairobi City. This area comprises the Town Planning Traffic Districts Nos. 151 to 162 within the land use Zones Numbers 11, 13, 14, and 16. These zones can be broadly defined as:

Zone No. 11 for heavy industries.

Zone No. 13 Light industries

Zone No. 14 Noxious industries.

Zone No. 16 A built-up area mainly for the East African Power and Lighting purposes.

The study will be done through a statistical analysis of questionnaire data obtained from selected individual groups of firms in the Nairobi Industrial Area. These groups will be based on the three digit International Industrial Classification. Firms which qualify for the survey are those employing 20 or more people - approximately 1% of the total Nairobi Industrial Area employment. The employment data has been obtained from the Ministry of Finance and Economic Planning, Central Bureau of Statistics census of 1973. As the questionnaire data is for individual plants as the unit of study, the firms selected are identified by street address and plot numbers. This was possible due to the census of the Nairobi Industrial Area taken in 1973 by

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an urban Study Group from the Royal Danish Academy, School of Architecture. A comparison with the Central Bureau of Statistics Census, 1973, for the Manufacturing Industries of Nairobi City as a whole, was made. A greater degree of disaggregation of industries has not been possible owing to the time limit for this study. It is felt, however, that the present study will go far in providing a more detailed base for the allocation of sites for the various manufacturing plants, in Nairobi and other towns in Kenya.

CHAPTER 2

2.0 Review of Literature on intrametropolitan Manufacturing Industry

2.1 Urban Land Use Models and Manufacturing Theories

Hurd in 1903 showed that a relationship between urban land values and the urban transportation system existed and that the ~~vlue~~ value of land was dependent on its nearness to the City Centre. From this proposition, Haig (1926) postulated a theory to explain the spatial organization of the metropolitan area. In his theorty, the centre of the City represents the market point, and land rent is the charge imposed in order fora bidder to get a relatively accessible site, which saves him transportation costs that would result from his separation from the market point. Competitive bidding for sites, therefore, creates an order of precedence of activities within the urban area, based on the economic forces of the market. As the Hurd - Haig model stands, it implies that the costs of location are those for the rent of the land plus the costs of transportation, and that activities are organized to minimize these costs.

The model has been objected to by Alonso (1966) because like Weber's (1929) location model, it is based on minimization of the costs rather than maximization of profits, and neglects the effects of the size of the site. Ratcliff (1949) points out that the locational pattern of urban areas is a reflection of the basic economic forces within the society, of which the urban concentrations are a part. On concen-

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trations at strategic points on a network of transportation lines, Mayer (1942) provided evidence of peaking land values at traffic intersections, the differential peak values depending on the relative importance of the junctions. The use of such land determines the peak values.

Wingo (1961) constructed a model that depended on detailed assumptions he made obscured the general pattern of land use within the city. Muth (1961) and ALONSO (1966) constructed models which were more simplified than that of Wingo, but which nevertheless made quite accurate predictions of some features of city land use. That of Muth was concerned with residential land use whilst Alonso's model was for both residential and business land use. These two models were similar in their assumptions of an analysis of the firms decisions were incorporated in the model. The urban firm according to Aloso decides on a location and the amount of land to be occupied in order to maximize profits.

The theoretical model that has the most concise oritism to make on the theory of maximum accessibility or central location of an urban manufacturing firm is that of Prod (1964 a). His argument on central location proponents is that they do not take into account the fact that markets served by some metropolitan manufacturers are discontinuous, non-local and distant; that transport costs are immaterial to site selection decisions of many industries; and that the desirability or undesirability of core locations for specific kinds of industries is not taken into account.

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2.2 Descriptive Models

Of descriptive schemes that illustrate the emphasis laid on location of activities as the basis for urban land values three derive from the earlier theory of Hurd (1903), and Haig (1926). The fourth descriptive scheme attributable to Isard (1956) is a modification of the Loschian hexagonal market areas in terms of gradation that would result from the concentrations of centres given in the Losch system. The first three schematic patterns emanate from urban research undertaken at the university of Chicago. The concentric zone thesis of Burgess (1925) is the simplest model and containes five zones forming concentric circles. The zone of warehousing and light manufacturing delimited by Burgess is adjacent to the central business district and beyond this zone of transition is the low income housing zone. The second descriptive scheme is the sector or wedge theory formulated by Hoyt (1939) and based on extensive data collected or approximately two hundred American cities. In this theory, growth along a particular axis of transport takes the form of similar types of land use. Each sector is of relatively homogeneous land use and expands from the Central business District. Its relevance to industrial land use is growth along transportation lines radiating from the city centre. These two theories are complementary rather competing according to sociological data collected by Anderson and Egeland (1961), and analysed for spatial distribution of indices of social rank and urbanization of four American cities.

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The third descriptive scheme is that of multiple nuclei theory of Harris and Ullman (1945) who argue that there may be more than one focal point in an urban area, and that each discrete nuclei influence the location of certain land uses. This theory provides for a wholesaling light manufacturing nucleus, a heavy manufacturing nucleus and an industrial suburb. As Ullman (1962) argued, 'The Metropolis of today and increasingly in the future is not only one city, but a federation of general and special centres. As such the city is likely to have several hearts better located than one, and basically will be better off because of reduction in travel time, congestion, and utilization of better sites; and this strengthens the multiple nuclei concept but forward earlier' Isard's descriptive scheme modified Lösch's (1940) assumption of uniform density in his economic landscape, to include the grading of market areas ranging from the small ones around the centre to large ones away from the centre. ,His pattern of land use comprised of four separate industrial districts, and in each were concentrated producers of any given commodity. His scheme had no industrial area adjacent to theCentral Business District and was based on initution, logical analysis of principles governing land use, and facts.

Theories of land use as reviewed above do not consider manufacturing singly but as one activity within the urban economic setting. Secondly the division of industry into light and heavy manufacturing is not a sufficient disaggregation for the purpose of a rigorous analysis of manufacturing activities.

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2.3 Emperical Studies

Emperical studies have been carried out to help gain understanding of location factors and patterns of industrial location rather than to test existing theories. Emperical studies that are relevant to intrametropolitan manufacturing location are many, but the majority do not attempt to formulate a significant theory. Groves (1971) considers that an ideal study of intrametropolitan manufacturing location should give recognition to four basic elements. First, that the study apply to a total metropolitan area, not to just one segment of that metropolis. Secondly, that manufacturing be treated in a highly disaggregated manner, (International Standard Industrial Classification 4-digit level), so that meaningful groupings of locationally similar industries can be established. Thirdly, that there be cartographic representation of the location of industries. Fourth, that from the emperical data collected and analysed there be some attempt at the formulation of a typology of intrametropolitan manufacturing location. Such a typology should consider factors such as central versus non-central location, market areas, transportation costs, and linkage to wholesale, retail and other manufacturing functions.

By the above criteria, four other studies that are relevant to intrametropolitan manufacturing location are those by Haig (1927), Demeirlier (1950), Chinitz (1960), and Pred (1964). These studies attempt to derive theoretical formulations from emperical data.

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2.4 CENTRAL VERSUS NON-CENTRAL SITES OF URBAN INDUSTRIES

Haig's urban land theory was based on extensive emperical data comprising twelve studies for Regional Survey of New York and its environs. Haig collected data for nine groups of industries which were sub-divided to form thirty one sub-groups, showing the distribution of each for the years 1900 to 1922. For the nine major groups shifts in the location for the survey period were discussed and the reasons for the shifts analysed.

Haig reached a conclusion that in the absence of special measures such as zoning, certain industries will adhere to sites in the centre of the city. He presented the characteristics of those industries that will cling to the central areas of the city (table I) as well as the characteristics of those industries that will abandon central sites (table 2)

Table 1

Characteristics of industries that cling to central sites.

1. No specialised buildings required;
2. Time or service factor an important element;
3. Specialized, unstandardized, highly skilled work;
4. Low ground area per work required;
5. Comparatively small scale;
6. Obsolete buildings suitable;
7. Close contact with markct required;
8. Highly seasonal, fluctuating labour force;
9. Style factor important.

Industry Group		Applicable characteristics								
1.	Women's cloaks & dresses	1	2	3	4	5	6	7	3	9
2.	Men's clothing	1	2	3	4	5	6	7	8m	9
3.	Knitted outwear	1	2	3	4	5	6	7	8	9
4.	Textile small wares	1	2	3	4	5	6	7	8	9
5.	High grade jewellery	1	2	3	4	5	-	7	-	9
6.	Small job printing	1	2	3	-	5	6	7	8	-
7.	Special furniture and cabinet work	1	2	3	-	5	-	7	-	9
8.	Metal assembling and service plants	1	2	3	4	5	6	-	-	-
9.	Technical instruments (local type)	1	2	3	-	5	6	-	-	-
10.	Cigars (high grade, hand made product)	1	-	3	4	5	6	-	-	-
11.	Photo-engtaving	1	2	3	4	-	6	-	-	-
12.	Cosmitc and toilet preparations	1.	-	-	4	-	6	-	-	-
13.	Metropolitan newspapers	-	2	-	-	-	-	7		
14.	Biscuits and crackers				4				8	
15.	Candy (large, hand-work type)				4				8	

Table 2

CHARACTERISTICS OF PLANTS THAT WILL ABANDON CENTRAL SITES

1. Comparaticely large size.
2. Time or service factor unimportant.
3. Large ground area per worker required.
4. Nuisance features (odours, noise, high fire hazard).
5. Specialized buildings required.
6. Serious problem of waste disposal.
7. Large quantities of fuel and/or water required.

Industry Group — Applicable characteristics

Industry Group*	Applicable characteristics
1. Heavy chemicals	1 2 3 4 5 6 7
2. Copper smelting and refinery	1 2 3 4 5 6 7
3. Sugar refining	1 2 3 4 5 - 7
4. Iron foundires	1 2 3 4 5 6 -
5. Explosives	1 2 3 4 5
6. Paint, soap and fertilizer	1 2 3 4 5
7. Slaughtering	1 3 4 5 6
8. Textile finishing	1 3 4 7
9. Petroleum refining	1 3 4 7
10. Lumber and planing mills	1 3 4 5
11. Candy (large, machine type)	1 2 3
12. Technical instruments (non-local type)	1 2 5
13. Periodical printing	1 2 5
14. Book Printing	1 2
15. Book binding	1 2
16. Job printing (large runs)	1 2
17. Jewellery (medium-priced)	1 2
18. Women's underwear, kimonos, corsets, etc.	

Having outlined site characteristics of various groups of industries, Haig then considered factors that would cause shifts in the industrial location of different plants. These included excess of female labour; attraction of water fronts to some industries; increase of bulk weight in the final stages of processing and thus attraction to terminal areas; and growth of local industries to serve

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increasing populations. These factors are very important to analysis of intraurban industries.

Haig's analysis of New York industry was aimed at determining the most efficient location of industrial activities, therefore, transportation and accessibility within the city was a very important factor in the planning process. His work forms the basis of modern land economics.

2.5 MARKET AND RAW MATERIAL SOURCES FOR INDUSTRIES

De Meirlier (1950) for his study of West Central Area of Chicago classified manufacturing industries on the basis of the market for their industrial products and the origin of their basic raw materials to give four divisions as follows:-

1. Local market industries with locally obtained basic raw materials,
2. National market industries with locally obtained raw materials,
3. Local market industries with nationally (non-local) obtained basic raw materials, and
4. National market industries with nationally obtained raw materials.

His analysis was, however, not detailed to support this basis for the above classification.

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2.6. TRUCK TRANSPORTATION AS A FACTOR FOR INDUSTRIAL LOCATION

Chinitz (1960) made a study of the New York Region and found that the area oftered more attraction to some industries than to others. By examining the effect of past developments in freight transport in attracting industries to the region. the future pattern of location could be predicted. His analysis was based on three broad groups of industries that accounted for 80% of New York Region's manufacturing employment, as follows:-

2.61 Communication Oriented Industries

These comprised mainly the clothing (apparel) and printing categories which are highly concentrated in the region. The locational pattern of these industries is highly influenced by a need for fast communication with suppliers, sub-contractors, and customers.

2.62 Local Market Industries

These industries include newspapers and bakeries. The characteristic of these industries is that they will sell more than half of their products inside the region.

2.63 National-Market Industries

These industries sell more than 50% of their products outside the region. They exhibit significant differences depending on size of plant and the value of the product.

Chintiz then analysed each of the above groups using a concentric ring pattern to demarcate New York Region,into three areas; New York City, the Inner Belt, and the Outer Belt. His study produced a typology based on extensive

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transportation survey data, for the manufacturing plants of the area, though he did not produce any cartographic representation.

2.7 DISTRIBUTION PATTERNS OF INDUSTRIES

Fred (1964) made a study of the intrametropolitan location of American manufacturing and produced a detailed subdivision of the manufacturing industries of the U.S. He grouped the manufacturing industries into, 'seven flexible types, each of which, theoretically, should be characterized by distributional patterns with a unique set of attributes, including, in some instances, randomness,' Fred, 1964a, p.174. The seven groups are based on a number of factors such as raw materials origins, markets, external economics, value of product, and tr ansportation with respect to media and rates.

The seven groups are:

2.71 Ubiquitous industries concentrated near the Central Business Districts (including local market, non-local raw materials).

2.72 Local Market Industries with Local Raw Material Sources.

2.73 Centrally located 'Communication-Economy Industries.

2.74 Non-centrally located 'Communication-Economy Industries.

2.75 Non-local Market Industries with High Value Products.

2.76 Non-local Market Industries on the waterfront.

2.77 Industries Oriented towards National Markets.

Pred's typology was based on generalizations concerning logical patterning of locational trends and not on analysis of a given set of data.

2.8 TYPOLOGY ON MANUFACTURING INDUSTRIES

Groves (1971) made a study of the San Francisco Bay Area based on the collection of substantial amount of data on each of twenty-three selected industries with regard to specific characteristics within the study area. Plants in separate industries were mapped by street address and plant size to allow for the production of a set of maps of selected disaggregated industries. The characteristics Grove considered most discriminating were:

1. Location Pattern for which the area was divided into sub-areas as follows:-

   2.81 Urban Clusteres,

   2.82 Traditional urban core areas,

   2.83 Central Business District,

   2.84 Peripheral Business Districts.

The possibility of an industry or group of industries being highly concentrated outside any of the areas was taken into account.

   2.85 Market area served,

   2.86 Plant charateristics such as site area required per plant and per employee, length of plant occupation of site, and the characteristics of the building occupied by the plant.

   2.87 Transportation media used, such as rail-road

or truck.

2.88 Nature of product and/or raw material such as perishability or bulk.

2.89 Communication orientation.

2.90 On the basis of the above factors, thirteen distinct intramentropolitan manufacturing locations were found as set out on Table 3.

Table 3

Typology of Intramentropolitan Manufacturing Locations

Market Groupings	Industries in study by S.I.C. Classification	
A. Local Market Industries		
1. CBD Concentrated, Communication Oriented	2751	2752
2. Dispersed Location, Large Plants Urban core oriented. General Consumer Market	2711	2026
3. Bulky Product, Linked to local manufacturer	3221	3411
B. Local/Regional Market Industries		
1. Urban Core Oriented. Rail Transportation	2851	3441
2. Urban Core Oriented. Truck Transportation	2051	2071

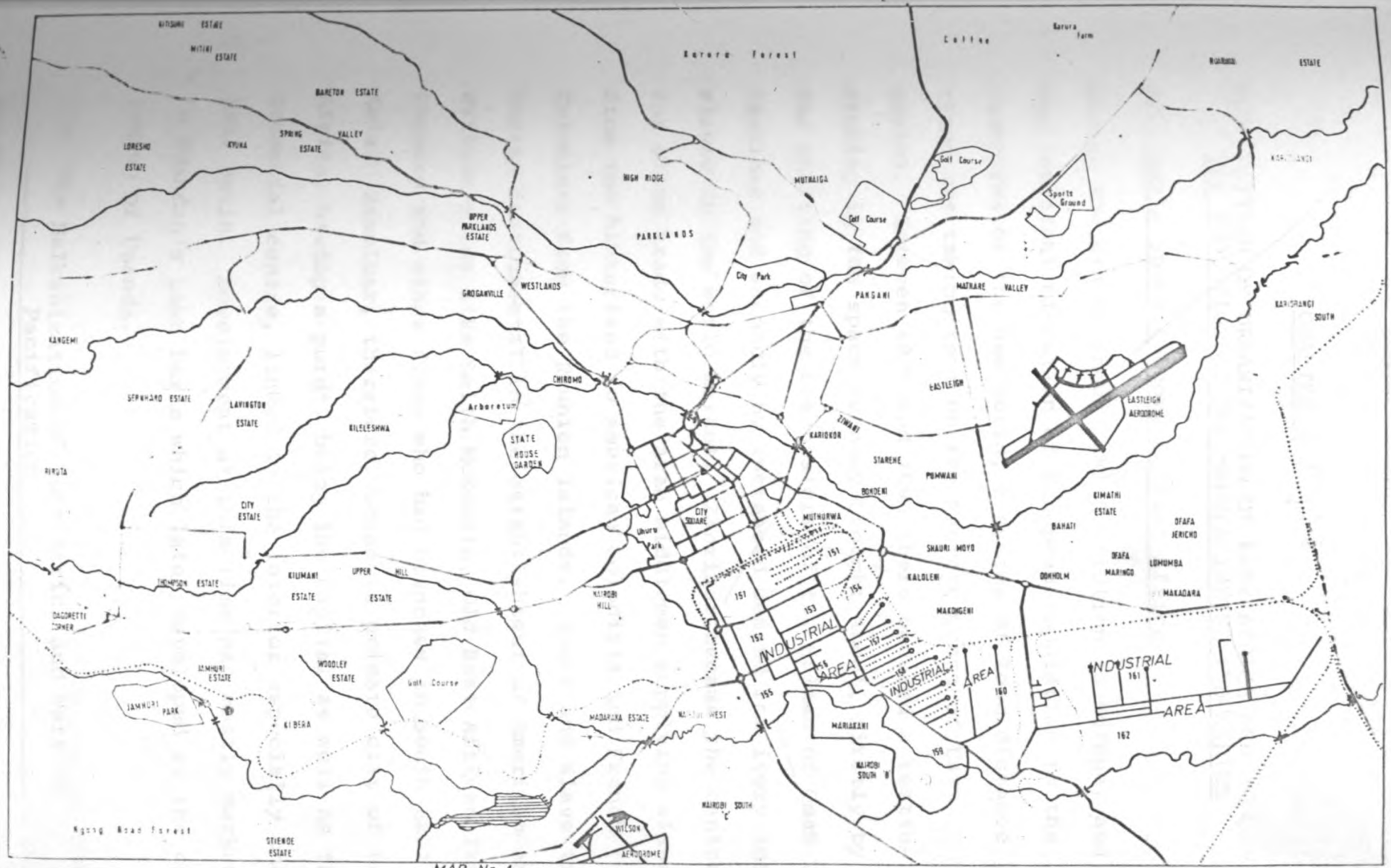
C.	Regional Market Industries		
1.	Strong Urban Core Orientation	2082	
2.	Located Outside Urban Core Areas	3312	2071
D.	Regional/Multi-Regional Market Industries		
1.	Concentrated 'Communication Oriented.' Located Outside Urban Clusters	3611	3675
2.	Random location within Urban Clusters	3511	3571
		1925	1931
E.	Multi-Regional (National) Market Industries		
1.	Concentrated Outside Urban Core Industries Local/Regional Perishable Raw Materials	2033	
F.	Waterfront Industries		
1.	Urban Core Location	3751	
2.	Non-Urban Core Location	2911	
G.	Additions From Literature (Fred 1964a)		
1.	Local Market. Random location, some CBD Association. Local Material Sources	2097	

Nairobi
River
EASTLEIGH
RACE COURSE ROAD
ZIWANI
KARIOKOR
STAREHE
PUMWANI
UHURU
HIGHWAY
CITY
CENTRE
KENYATTA
BONDENI
LANDHIES RD
KAMUKUNJI
MUTHURWA
SHAURI MOYO
HAILE SELASIE AVE
RAILWAY
HEADQUATERS
JOGOO
ROAD
KALOLENI
FACTORY ROAD
NAIROBI
HILL
COMMERCIAL RD
BUNYALA RD
MAKONGENI
MACHAKOS RD
LUSAKA ROAD
I N D U S T R
ENTERPRISE ROAD
AERODROME ROAD
NAIROBI WEST
MOMBASA
MARIAKANI
KITUI ROAD
NAIROBI
SOUTH 'B'
NAIROBI
SOUTH 'C'
ROAD
TO MOMBASA

Scale - 1 : 20,000

MAP No 3

AFRICA: PRE-INDEPEDENCE SPACE ECONOMY



MAP No. 4 NAIROBI CITY MAJOR ACTIVITIES

CHAPTER 3

3.0 PATTERN OF URBANIZATION OF EAST AFRICA AND THE EVOLUTION OF THE MANUFACTURING INDUSTRIES

3.1 Early Space Economy of East Africa

During the era of Industrial Revolution in Europe, and the resultant migration of European Population to the Countries of the New World, a system of long distance trade was taking root on the Eastern Coast of East Africa. Between 1830 and 1895 there occured a restructuring in the space economy brought about, firstly by the shifting of the headquaters of the Sultan of Oman by Zanzibar and secondly by increased demand for ivory and slaves in the world market. Zanzibar became the centre for slave trade with the Arab middlemen supplying slaves from the hinterland to American Colonists and French Colonists from the Reunion Islands. Ivory and slave trade became instrumental in the establishment of American and British firms like Smith Mckenzie, Old East African Trading Company and other firms who had branches in South East Asia. Zanzibar, therefore, became a primate city of East Africa, having a port, being the capital as well as the commecial centre, linked to the interior especially the lake basin. Development at this time was mostly marked in Ugandan's Lake basin which later developed as the core region of Uganda.

3.2 The Balkanization of East Africa and Wars of Pacification

Following the Berlin Conference of 1885, largely

conventd to direct attention of European Nations from their internal problems which threatened war, East Africa was Balkanized into four contiguous territories. These were Zanzibar ruled by the Sultan of Oman, British East African Protectorate, the Eastern Province of Uganda under Britain, and German East Africa. Explorers and Missionaries who came as commercial travellers were precursorns to colonisation. The process of colonization required establishment of colonial authority in the interial which necessitated rail links to the three territories from Mombasa, Tanga and Dar-es-Salaam. Thus in 1896, the Kenya-Uganda Railhead started at Mombasa, which now supplanted Zanzibar as the centre of East Africa. Along the rail-lines stations were established with administrative role and from these centres a process of diffusion of colonial authority began. Soldiers were sent from the stations to pacify the native populations in the interior of the land. Thus stations such as Voi, Nyeri, Machakos and Nakuru were set up and were later declared as district headquaters and formed the backbone of the present spatial system.

The spatial system was organised from Mombasa through branches of European firms and Banks, as well as Indian firms. Exports of cotton from the Lake Basin peasant enclave were financed by banks through European firms who then sold the cotton to Indian firms for exports to India. Most of the information on the activities of the

Bazaar was obtained through having Indian managers for these firms. In this way Mombasa became the primate node of East Africa having the highest interaction potential of communication lines.

3.3 The Settler Enclave

Until 1912, the second enclave in Kenya, the White Highlands, a Settler enclave had not become a viable economic proposition. This enclave, unlike the peasant enclave around Lake Nyanza, was founded on a weak and artificial economic base. It could not survive competition, therefore, without protection in the form of tarrifs and freight rates. Its existence could only be assured through the settler community exerting pressure on the colonial government to protect and subsidize its agricultural production. The role of the settler enclave became that of extraction of the resources of the periphery, by forcing labour from the peasant farms into the highlands, through taxation that had no representation. This enclave monopolized resources and to this end the settlers tried to force the federation of East African Territories to expand their sphere of influence. Nakuru became the centre of this enclave.

Meanwhile, with the advent of the rail head in Nairobi, in 1899, Nairobi became the new headquaters of Kenya Colony, the former British East Africa Protectorate after some boundary changes. Thus, the pattern of urban centres

form a control to the establishment of firms in Nairobi. They were instrumental in their location and have resulted in the evolution of industrial development now visible. They can be used to classify the industrial pattern existing into three catefories, viz:

A. Market Oriented Industries

205 - 209	Baking and Food Processing
250 - 259	Wood carving, saw milling and furniture making,
280	Printing and Publishing.
383 - 384	Motor works, repair and assembly.
401 - 412	Building and construction including timber mills.
313	Paints and varnishes making
220	Tobacco, beer brewing, and beverages.
202	Milk and dairy products.
350	Metal and general engineering repairs,
382	Railway repairs.

These firms depend on large concentrations of population which the Nairobi Metropolis offers. They can, therefore, maximize their profits by locating in Nairobi area, Printing and publishing and service industries are mainly local as the greater demand is within the city.

B. The second category of industries located in the Nairobi Industries Area, though material oriented to an extent is well demand based. This includes:

251 -	Saw milling
291 - 299	Leather tanning and wild game products
203	Agricultural processing
231	Cottn Yam production.

Between the 1947 Master Plan and the present decentralization policy, the development of industries in Nairobi Industrial Area has been largely on the attraction that the area offers to certain types of industry. The government policy has been one of encouraging industrial development through government parastatal bodies such as the Industrial and Commercial Development corporation set up in 1964, which has its subsidiary, the Kenya Industrial Estate, a complex of manufacturing industries which is undergoing critical appraisal and evaluation to determine its efficiency and performance. The pattern of industrial location has thus been mainly determined by entrepreneurs on consideration of agglomeration and economies of scale once the initial zone was demarcated. The factors that appear obvious in attracting industries to the Nairobi Industrial Area are:-

1. Market for mass produced goods as well as specialized goods marketable in East Africa and elsewhere.
2. Contiguity to the centre of decision making.
3. Terminal services for export production.
4. Efficient supportive services and infrasture.

Three economic considerations have combined with the geographic and metropolitan influences to gravitate industries towards the Nairobi Industrial Area. These

confined to the Nairobi Industrial Area, which was the only zone where plots for industrial activities were allocated. As a result of this policy, the Nairobi Industrial Area has been well laid out with a network of rail lines and roads and is, therefore, easily accessible.

Despite the fact that there is an efficient network of rail lines and roads within the industrial area itself, traffic delays have demanded that new industrial centres be demacarted to alleviate congestion. This congestion has resulted from the fact that the two main outlets from the area have reached their design capacities. Jogoo Road and Enterprise Road - Uhuru Highway are the only major outlets to the residential areas of most of the workers, as well as the access to the city centre. Secondly, Uhuru Highway is used as the Airport Access road as well as the Road to Mombasa. The high ownership of vehicles per capita in Nairobi city, coupled with the high employment opportunity available in the Nairobi Industrial Area, has made congestion especially at Peak hours of the morning and evening a major planning problem. The policy of decentralising industry has, therefore, been advocated as a measure for solving the transportation problem. In the light of the situation existing within the railway operations, alternative means of transporting workers and goods out of the Nairobi Industrial Area is lacking. Improvement of rail services within the metropolitan area must be emphasised since planners cannot keep decentralizing activities for ever.

The Nairobi Industrial Area as zoned in the 1947 Master Plan for Nairobi comprises an area 960 Ha., approximately 50% of which is undeveloped. The zone occupies 12% of the old Nairobi city prior to the 1963 boundary changes. The boundaries of the Nairobi Industrial Area shown on Map and are as follows:-

1. The city centre and the railway station to the west;
2. The low income residential areas to the north;
3. The Airport corridor to the east; and
4. The Nairobi national Park to the south.

These areas are located in the Kapiti and Athi plains which lie to the south and east of the Nairobi metropolitan Area. The land is generally flat lying at an average elevation of 1500 metres above sea level. The rail line passes through the Nairobi Industrial area as it proceeds to Mombasa, some 500 km. away from Nairobi. The Kisumu rail line which was completed in 1901 lies some 400 km. and passes through the Kikuyu Highland and plateau, before its descent into the Great Rift Valley. The other major branch of the East African Railway in Kenya is the Nanyuki line, that passes through Thika Town. This line was opened in 1930, and is the north-eastern access to the Mount Kenya Region only some 210 km. from Nairobi. This system of rail lines has been important in the Industrial development of Nairobi. Until a recent policy of decentralising industries to other zones of the Urban area, notably, Dandora and Ruaraka, industries were

obtaining to-day and the activities within them has been predominantly due to the colonial policy of the pre-indipendence era (1895-1960). The mercantile nature of the activities of the city rather than that of fabrication industries is due to Nairobi's emergence as a primate city of Kenya as the seat of government, commercial and industrial centre. In Uganda where peasant agriculture developed without undue influence, no primate city emerged. Entebbe developed as the capital, Kampala as the commercial centre, and Jinja as the industrial centre. This can also be explained by the fact that, the Kenya-Uganda Railway did not reach Uganda until 1928, by which time a number of towns emerged there in that way.

3.4 The Evolution of Industries in Nairobi

Official concern on the development of the Nairobi Industrial area was given expression by the colonial Government in 1947. It became obvious that the Nairobi Urban Area had achieved dominance as the administrative, commercial and industrial centre of the East African towns. A commission was set up to draw a Master Plan for the development of a Colonial Capital which envisaged Nairobi as the industrial centre of East Africa. The planning group in their 1948 report recommended that a well defined area for exclusive industrial activities be demarcated to the south east of the Nairobi Railway Station. This area is adjacent to the railway marshalling yards and was therefore an extension of the service industries area of the East African Railway.

C. The third class of industries is both material and market oriented included in this category is:

205	Grain milling
312	Animal and vegetable fats and oils
203	Fruit and vegetable canning
233	Fibre processing
209	Miscellaneous crop and food processing
241	Footwear and leather goods.
243 - 244	Clothing textile
334	Cement, glass and other mineral products
511	Electricity generation
311	Chemical industries

3.5 The Kenya Industrial Estate

The Kenya Industrial Estate was established in 1969 as a subsidiary of the I.C.D.C., with the purpose of encouraging indigeneous entrepreneurs to invest their skills and capital in the manufacturing sector of the economy. The Estate was to be constructed in two phases to provide a total number of forty five units on plot No. IL 209/7142 off Likoni Road. The first phase compromising 22 units was completed in 1971 and occupied. The second phase with 23 units was completed in 1972 and has been occupied. The activities carried out in the Estate are wholly manufacturing in nature and employ approximately 400 people on an area approximately 13 ha. The government intends to start industrial estates in all major urban areas of the country, so that the experience derived from the

Nairobi Industrial Estate can benefit the country at large. Here, the policy of the central Government to protect infant industries so established should be noted. Some imports have been banned in order to reduce competition from the better established firms outside Kenya. This policy should be applied together with strict standards of production in order to make the industries viable in their production. Secondly, as the size of the Kenya Industrial Estate precludes any appreciable effect on the market and expansion of activities should be considered since it can only be effective if its force is felt on the market.

3.6 PROBLEMS OF EXPANSION IN THE EXISTING NAIROBI INDUSTRIAL AREA

3.61 TRANSPORTATION

Transportation and housing are two major problems that confront planners faced with the development of industries in the Nairobi Area. On one hand, the existing Nairobi Industrial Area has a large area that is undeveloped, but congestion of traffic forces planners to look for alternative industrial areas. The figures of peak hours traffic counts at various junctions when compared with the design hourly volume in Table 4 clearly indicate the plight of motorists entering or leaving the Nairobi Industrial Area. Since the areas where these access roads pass are already built up, any further expansion of industries in the Nairobi Industrial Area makes the construction of fly overs at these junctions, in order to separate the through traffic

from the traffic entering the Industrial Area at the grades, necessary. This is a costly exercise at the present time when the City Authorities are faced with financial problems, hence the need to decentralize centres within the urban area, is urgent.

Table 4

Peak Hour Volumes (pcus) at given junctions of access roads to Nairobi Industrial Area

Junction	Design Hourly Volume pcus	Peak Hour Volume pcus for each Movement arm 1	2	3	4
Uhuru Highway Bunyala Road	2000/700	884	4167	2505	1719
Uhuru Highway Lusaka/Aerodrome Road	2000/1000	1545	3037	1624	1969
Mombasa Road Enterprise Road (at Firestone factory)	1000/700	624	251	-	621
Enterprise Road Lusaka Road	1000/700	878	500	835	1783
Jogoo Road Likoni Road	1000/700	1187	1602	1163	-
Enterprise Road Likoni Road	1000/700	1289	1745	-	2268
Jogoo Road Factory Street	1000/700	893	1470	996	-

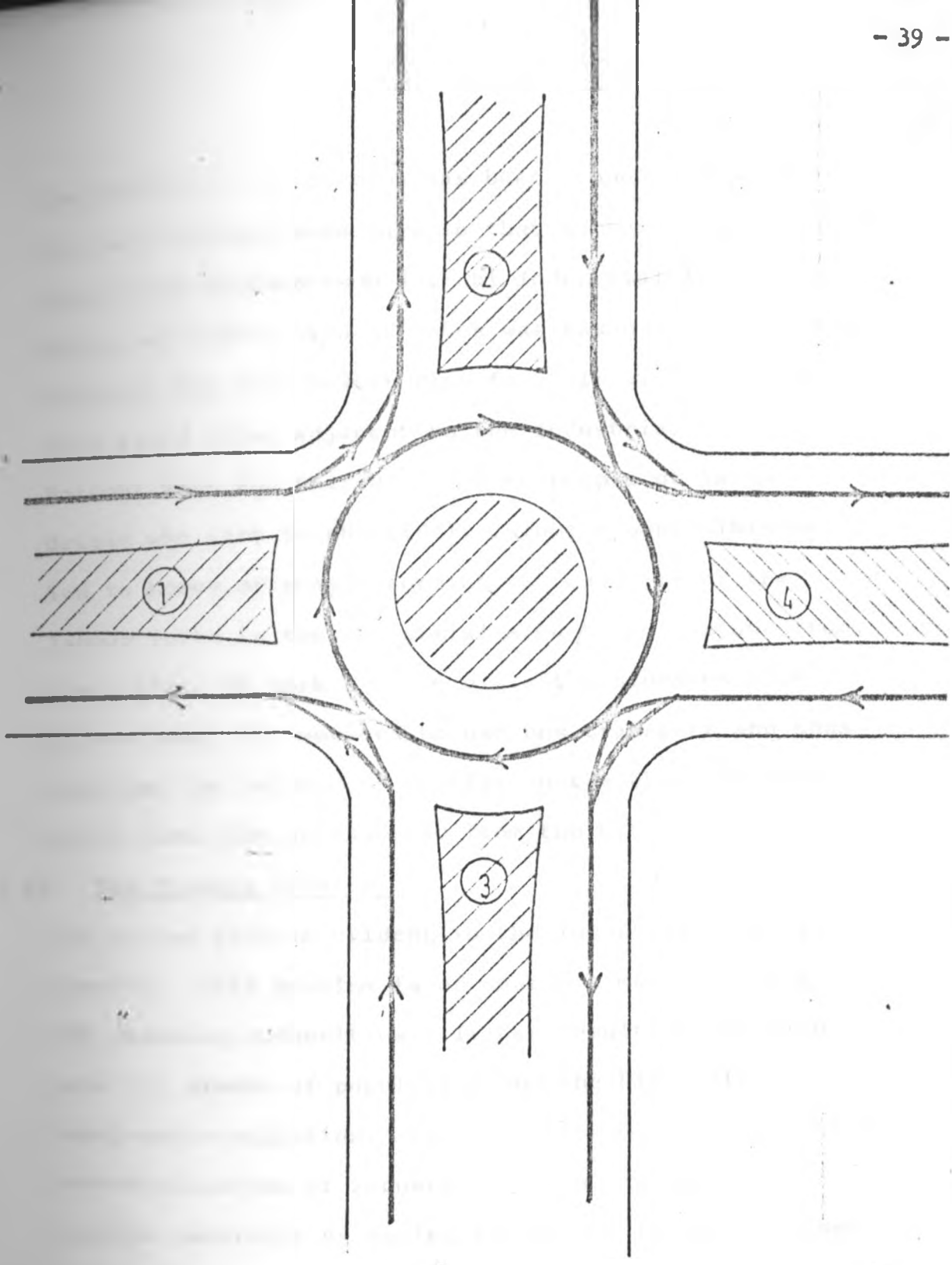


FIG. 1. ROAD MOVEMENTS AT A GRADE JUNCTION.

The problem of congestion has been compounded by the distance ~~that workers~~ have to that workers have to travel from their residences to Nairobi Industrial Area. The policy of segregation of races was taken into consideration in the 1947 Master Plan for Nairobi City. The Plan zoned areas adjacent to the Industrial Area in Nairobi West and Nairobi South to people of Asian Origin who were in the middle income group. This has led to homes of people forming the majority of the labour force in the industrial Area to be distant from their place of work. These distant residences make it necessary for workers to use bus transport and thus increase the volumes of traffic on the Uhuru Highway which forms the access road from the City centre.

3.62 The Housing Problem

The second problem evident in the industrial area is housing. This problem is of course a major one for the planning authorities. It has resulted from high natu ral growth of population and the high rate of rural-urban migration. The city Planners in advocating decentralization of industrial areas can solve this problem partially by moving industries to the peripheral residential areas like Dagoretti, Riruta, Kangemi and Mathare. Industrialists interested in starting industries in these scheduled industrial centres can imitate the examples of the British American Tobacco Company or the Kenya Breweries who provide housing to a large

proportion of their employees especially the low income group. Such schemes can accelerate the solution to the housing problem of industrial workers whilst at the same time it will be a good way of investing money by those who build. After all, if industrialists have enough confidence to invest money in industries they should have enough confidence in building as an investment. Indeed I believe the Nairobi City Council and the Central Government should make it an industrial policy for people investing large sums of money to house one third of their workers. Such policies would be profitable to the country and create a boom in the building industry as well as supporting the local industries from which building materials would be purchased.

The third problem evident in the Nairobi Industrial Area is the plot sizes for light industries such as garages, repair shops, timber mills and motor spray which require large scrap yards. These are congested in a zone which is approximately 2 ha. in area and designated zone 13. These industries cannot expand on the present sites, and considering the cost of shifting industries the problem may be termed acute. The third problem once again makes decentralization of industrial area a handy solution to the problem of Nairobi Industrial Area.

3.7 Decentralizaiton of Industrial Areas - Problems and prospects

So far the problems facing the Nairobi Industrial Area

point to a policy of decentralization of the industrial centres within the urban area as the ideal solution. However, the immediate problem in these areas must be seen in perspective if efficient planning is to be achieved.

The first problem that has to be solved in order to make the new industrial areas viable to investors is infrastructure. The proposed industrial areas at Dandora - Kassarani - Ruaraka; Langata, and Dagoretti corner do not have a sophisticated road and railway network as is found in the old industrial area. This means that the City Authorities will have to invest large sums of money for developing infrastructure within the industrial zones.

In the Dandora - Ruaraka area there are good standards of roads notably the A2 to Thika, The outer Ring road and Komarock road. Therefore, the area will be one with low threshold costs in development of infrastructure. Besides they are a number of industries here and their performance can be an indicator of the future requirement for the proposed industries.

Water for industrial use is the second problem that the City Council will have to tackle before these areas can be allocated for industrial development. At present Chania Water Scheme is progressing and will be able to supply all required water for the domestic as well as industrial use. In fact this has been the block to

industrial development on a large scale in the area. In the Dagoretti-Langata area, the problem of water will be solved as soon as the Chania water supply is fully operational as the water presently used in Eastlands can be diverted to this area. The Nairobi City Council envisages 1976 as the date of completion of this scheme so that we may expect development of industries in the sub-urban areas of Nairobi in 1977.

CHAPTER 4

4.0 National Policy on Industrialization and its Effect on Manufacturing industries in the Nairobi Metropolitan Area

The 1974-1978 Development Plan has set out both urbanization and industrialization policies for Kenya. On urbanization, the plan envisages the development of two more large towns besides Nairobi and Mombasa within the near future. The most likely towns for such growth are Kisumu on Lake Nyanza, and Nakuru, in the important large scale farming area of the Rift Valley. These towns are already important manufacturing areas of Kenya and are likely to assume more prominence in future, as they are located on the Trans-African Highway that traverses the African Continent from Mombasa, in Kenya, to Lagos in Nigeria.

4.1 On industrialization, the Development Plan, advocates;

4.12 Continued expansion of import substitution industries as a means of saving foreign exhange of the country.

4.13 expansion of production of goods for export, to earn foreign exchange,

4.14 more rural industries to stem the prevaling tide of rural urban migration.

The Government hopes to achieve points(1) and (2) through taxes as deterrents and tax concessions as inducements of industrial location the smaller towns. These factors of location have been discussed by Garwood (1952) Bridges (1965) Floyd and Taylor (1952).

They all agree that these policies have little effect on industrial location unless carried to extremes. Thus we can expect that Nairobi will continue to receive a larger share of new industries owing to its market size, labour availability and highly developed infrastructure. However, direct subsidies will be effective and decentralizing industries from larger centres. As advocated by the Ministry of Finance and Planning, long term loans given by Parastatal bodies of the Government to industries locating in the smaller urban areas will pull a substantial percentage of industries to Nakuru and Kisumu especially in the light of the construction of the Trans-African Highway. Export oriented industries will be the mostly affected by such a policy as access to African Markets will be fast. Since Nairobi has very few of these industries at present, it can be assumed that the trend of industrial expansion existing here will continue for the foreseeable future. This clearly indicates that a study of the present industrial structure is desirable, and much so when it is considered that populaion projections give the population figure for 1985 as 1 million people. With the present ratio of 6% of the City's population employed in the Industrial sector of Nairobi City Region, the figure for 1985 will be 60,000 pople if a constant growth rate of population is maintained, and the city authorities have to plan for this increase.

4.2 Balanced Growth Through Industrialization

During the current development Plan there has been constant instability in the world market for various goods that Kenya Exports. Such fluctuations in the world prices of primary goods indicate the desirability of long term investments in the industrial sector of the economy as a means of achieving balanced grow th of the manufacturing and agricultural sectors. Thus, the policy of import substitution especially for capital goods for the agricultural sector is very important to our economy. Agriculture, will determine the rate of development of the economy even if the manufacturing sector can import the durable capital goods from abroad, as the tendency to diminishing returns makes it a bottle neck to expansion of the economy. The present trend of high rural-urban migration indicates that pressure on land is prevalent. This situation inhibits the expansion in the manufacturing sector. The migrant labour should be absorbed in the industries by encouraging labour intensive production methods. The Government policy of encouraging such industries is, therefore, to be pursued vigorously. Industries presently showing export capacity should be subsidised directly as they are likely to offer hgih employment to the population besides earning foreign exchange.

Skilled manpower can be supplied to the manufacturing sector if the government sets up industrial training centres within the large towns. Nairobi already has

a vacational training school located in the Nairobi Industrial area. Large industries should send employees to such training centres to obtain skills relevant to their jobs. This will ensure that the pattern of distribution of productive activities and economic roles in the industries has a national outlook. This is important to the country as conceptual problems are detrimental to efficient industrial production, and these can occur if local people do not obtain skilled employment.

The development strategy of the Nairobi City Council should be based on the National Development Plan's recommendations. Any policy of the central government is bound to affect Nairobi much more than any other area in the country. The tendency here is to test whether a certain policy can work in Nairobi before it is recommended for other areas as witness the Kenya Industrial Estate. Secondly, entrepreneurs will normally be able to interpret a given policy, and if conducive to business ventures, they will locate here. Judging from the number of industries that have been started during the current development plan, the city authorities will have to plan for rapidly expanding industrial activities for their 1985 planning period.

Housing shortages which are at the fore front of the authorities' problems will remain so for a long time unless an inspired solution to this problem can be

found soon. The problem will be compounded by world prices of building materials that are in common use today. The government and other relevant authorities will have to think of cottage industries to produce cheaper building materials. Lower standards of buildings will have to be accepted by local authorities in their by-laws if only temporarily.

The policy of rural industrial centres should, therefore, be geared to production that will help in alleviating, not only employment, but in providing products that the country urgently requires. Brick-making, and other building materials can be easily manufactured in rural industries and these will go a long way to supplying the shortfull that exists today in the demand and supply of building materials. These industries do not require high level of skill or sophisticated machinery and are therefore ideal for rural areas. Government ecouragement is, however, necessary as most of the people who may have ambitions to start such industries do not have the capital or even the managerial ability to make the projects a success. Certainly such projects would be labour intensive and as such would be serving the policy of the Central Government of labour intensive industries. Given the initial impetus by the authorities, there is no reason why these industries cannot succeed and in the meantime supply much needed goods and employment.

CHAPTER 5

5.0 DATA COLLECTION AND ANALYSIS

5.1 The necessary data for this study was obtained from the 1973 census of industries by the Central Bureau of Statistics of the Ministry of Finance and Economic Planning, which gave a first approximation of employment size of all firms in the metropolitan area and their activities. The stree addresses of all firms were obtained from the 1973 census of the Nairobi Industrial Area by the Nairobi Group of the Royal Danish Academy, School of Architecture, the activities of various industries was classified on the 3-digit International Standard Industrial Classification.

5.20 For the entire metropolitan area 570 manufacturing firms were registered and the breakdown of their activities is as follows:

5.21	200 - 209	Food processing	60
5.22	211 - 214	Beverages	5
5.23	220	Tobacco	1
5.24	231 - 239	Textiles	9
5.25	241 - 244	Clothing, footwear and made up textiles.	75
5.26	251 - 259	Wood and cork	19
5.27	260	Furniture and Fixture	69
5.28	270	Paper and paper products)	75
5.29	280	Printing and publishing)	
5.30	291 - 299	Leather and fur products	6
5.31	300	Rubber manufacture	11
5.32	311 - 319	Chemicals	45
5.33	331 - 339	Non-setallic mineral products	23
5.34		Metal products	66
5.35	360	Machinery non-electrical	18
5.36	370	Electrical machinery and appliances	9
5.37	381 - 389	Transport Equipment	21
5.38	390	Miscellaneous manufacturing industries	58

5.40 The total number of firms located in the Nairobi Industrial Area is 365. Of these firms 196 are manufacturing industries and the remainder are warehouses and service industries. The manufacturing industries are located in 12 traffic zones as follows:-

Traffic zone	No. of firms	Manufacturing industries	Service Industries
151	5	3	2
152	57	40	17
153	25	12	13
154	11	8	3
155	27	10	17
156	41	16	25
157	51	30	21
158	39	28	11
159	39	21	18
160	58	30	28
161	26	14	12
162	0	0	
Total	365	196	169

5.50 The sample selected from the 196 manufacturing firms comprises 69 individual firms located in different traffic zones. These traffic zones lie within the larger land use zones demarcated by the Town Planning Department of the Nairobi City Council as follows:

Traffic zone	Land Use zone	Activity
151	12	Railway marshalling yards
152, 153, 154	13	Light manufacturing.
155, 156, 157, 158, 159, 160	11	Heavy industries.
161, 162	14	Noxious industries.

Thus the zones roughly demarcate the type of activities carried out on the site.

The firms selected for interview were those with an employment size of over 20 people. The selection was done so that large and small firms in each activity group were to be interviewed, with samples in each group made at random.

The questionnaire comprised 42 variables that were to be obtained by direct interview on the site. These 42 variable were to give pertinent information on location, site, value, raw material sources, transportation, production, employment, markets and services available. The information was coded for analysis using a computer programme designed by the Institute of Computer Sciences of the University of Nairobi.

5.60 The XDS 3 computer programme was used to give the correlation between various variables, and to determine those variables that bear a significant correlation between them.

5.62 The means, minimum values, maximum values and standard deviations of important variables are an indicator of the overall performance of the industrial area.

5.63 Regression value between given independent variables and chosen dependent variables can be used to give significant correllation between such variables.

5.64 Residual errors in the cross tabulation matrix indicate what differences exist between assumed values of independent variables and the calculated ones.

5.65 The results of the analysis of questionnaire data, for selected industries, that are pertinent to planners can be summarised as follows for significant correlation, obtained.

5.66 Site area and

5.662 Area of building on site

5.662 Site value

5.663 Sizes of employment.

5.67 Activity of firm according to ISIC and

5.671 Sources of raw material, whether local or imported.

5.672 Mode of haul of raw materials, whether road or rail,

5.673 Type of market whether local, regional or national.

5.674 Amount of water used per day.

5.675 Power used for production.

5.68 The print out of the results can be seen in pages following, with the conclusions reached from their interpretation, used for recomendations.

CHAPTER 6

Conclusions and Recommendations

6.1 Employment density is 146 people per hectare. This indicates that the entire Nairobi Industrial Area can accommodate 56,500 people if fully developed with the present industrial structure being maintained.

6.2 The site value is K£15,500 per hectare on the average, but land values are slightly higher in areas adjacent to the Central Business District.

6.3 The volume of traffic in car passanger units/hr on the access roads is 1200. This indicates that the reported transportation problem exists as the Design Hourly Volume of these roads ranges from 600 ppu's to 1000 pcu's.

6.4 At the present moment, the analysis of sales shows the following market pattern for the Nairobi Industrial Area Manufacturing :-

Nairobi	42%
Kenya	30%
East Africa	21%
Africa	3%
Rest of the world	4%

Most firms do not, therefore, produce for export purposes but are import-substitution firms. The sales outside Nairobi shows the importance of the Nairobi Industrial

in Industrialization, though using her capital to develop Russian Industry, must be avoided here. Industrial employment whether in the rural areas or within the metropolitant areas must be made attractive to the economically active population. This can be achieved through liaison betwecn policy makers, planners and administrators. As at present the Central Government has its own Physical Planning Department and the Nairobi City Council has its Town Planning Department. These two departments can be useful in an advisory capacity to the Central Gocernment on Industrial Policy.

6.12 The following table based on the study can be used as a guideline for industrial zoning for urban areas of Kenya, as a first approximation.

6.121 Plot Size ha.

Small 0.1

Medium 0.6

Large obove 1.0

6.122 Population density

150 ppha.

6.123 Water Requirement

70 gpcd

6.124 Power

100 KWH per 1 ton produced

6.125 Design volumes on access of roads

1500 pcu's

Area in Kenya as well as the East african Economic life. It establishes the area as the leading manufacturer of East Africa.

6.5 On raw materials destined for the industrial areas, the road handles 53% of the freight and the railway 47%. This indicates that raw materials that are bulky as well as partially finished goods are used in manufacture.

6.6 For finished products the following pattern has been established between various modes of transport for the final destination of the products.

Roads	71%
Rail	23%
Sea	4%
Air	2%

This agains demonstrates the importance of truck transportation in the present structure of the Nairobi Industrial Area, and hence the importance to be attached to construction and improvement of roads.

6.7 On employment, the Nairobi Industrial Area could employ 325,000 people in the manufacturing industries alone if a minimum number of employees was set at 20 people for each minimum plot allocated, whereas at present the ;manufacturing and service industries combined employ the same figure. This is a clear indication that full employment is not being offered in the present Industrial Area! Tl.is conclusion indicates that the industrial structure besides being capital itensive denies employment to labour.

6.8 A large number of manufacturing industries ($39\frac{1}{2}$) in the Nairobi Industrial Area depend on imported raw materials for productions. This is a high figure and further attempt to determine the nature of these imports is necessary, if we are to have industries based on local resources.

6.9 The present water usage determined in 58 gpcd and can be used for an approximation of the water requirement for any other industrial areas of similar industrial structure.

6.10 Reccommendations

The Nairobi Industrial Area having been established as the most important area of manufacturing activity in East Africa should be used as the basis for the future planning of intra-metropolitan manufacturing location, not only in Kenya but in other East African states. The city planners should base their strategy for planning future manufacturing activities on the guidelines of the present study as it has considered all the major factors that are required in the location of intrametropolitan industries. The analysis of the question-naire data must be considered as giving the most up-to-date results owing to the fact that the variables analysed prove, statistically, that the complaints of entrepreneurs are genuine. The policy of attracting investors into the country cannot succeed without conscious efforts to rectify whatever standards fall under far in any economic activity.

6.11 The aristocratic concepts that caused France, during the Industrial Revolution, to lag behind other European countries

where are other pages.....!

Appendix I

Nairobi Industrial Area Survey

Questionnaire

		No. of columns coded
1.0	**Particulars of Firm**	
1.1	Street Name	0
1.2	Serial Number	3
1.3	Plot No.	4
1.4	Zone	3
1.5	I.S.I.C.	3
1.6	Area of present site, ha.	6
1.7	Area occupied by buildings, m^2.	5
1.8	Anticipated extensions, m^2.	4
1.9	Additional land required, m^2.	
1.10	Is this land available on the present site? Yes 1, No 2	1
1.11	Present value of site £	5
2.0	**Access**	
2.1	Is there a rail line into the site? Yes 1, No 2	1
2.2	Peak hour traffic on road, p.c.u's	4
2.3	Total No. of car parking spaces on site	2
3.0	**Production**	
3.1	What is the monthly output of plant? Tonnes	4
3.2	What % of your raw materials arrives by rail?	3
3.3	What % of your raw materials arrives by road?	3
3.4	What % of your raw materials arrives by air?	2
3.5	What is your major source of raw materials? Locall, Import 2.	1

3.6	Is loading (unloading): mechanical 1, manual 2, both 3	1

4.0 Market and Distribution

4.1	What % of your product is sold within Nairobi?	3
4.2	What % of your product is sold within Kenya?	2
4.3	What % of your product is sold within E.Africa	2
4.4	What % of your product is sold within Africa	2
4.5	What % of your product is sold within the rest of the world?	2
4.6	What % of your product is hauled by road?	3
4.7	What % of your product is hauled by rail?	3
4.8	What % of your product is hauled by sea?	2
4.9	What % of your product is hauled by air?	2

5.0 Labour

5.1	What is the total No. of employees on the firm?	3
5.2	What is the total No. of unskilled/semi skilled employees on the firm?	3
5.3	What is the total No. of skilled/professional employees on the firm?	3
5.4	What % is provided with housing?	2
5.5	What % is provided with transport?	2
5.6	How many shifts do you have working/day?	1

6.0 Services

6.1	How much water do you use per day, Gallons?	5
6.2	Is it from N.C.C., 1 or private, 2?	1
6.3	Is there a main N.C.C. Sewer on site, Yes 1, No. 2	1
6.4	How much electricity do you use per month? KWH	6

6.5 How long does it take to drive to the City Centre? Minutes. 2

6.7 Do you have a public telephone on site? Yes 1, No. 2. 1

6.8 Do you have a canteen for workers? Yes 1, No 2 1

7.0 Storage

7.1 Do you store raw materials on site? Yes 1, No 2 1

7.2 Do you store finished products on site? Yes 1, No. 2 1

CONST	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	
PLOT	.4235		.4265	4	.4407	4	.5443	4	.5017	4	.4224	4			
	.1650		.1000	5	.1500	5	.1520	5	.1540	5	.1000	5			
ISIC	.3700000E	5	.3500000E	5	.2500000E	5	.2120000E	5	.3500000E	5	.3700000E	5			
	.2050	0	.3000	0	.3630	0	.3680	0	.1670	0	.1300	1			
BUILT	.2650	4	.2600	4	.4000	5	.2760000E	4	.6410000E	5	.1550000E	4			
BUILT2	.1260000E	4	.3000000E	5	.6000000E	5	.1640000E	4	.9230000E	5	.4000000E	5			
LAND1	.1500000E	0	.1500000E	0	.1500000E	0	.1700000E	1	.2010000E	0	.1000000E	0			
LAND2	.1000000E	1	.1000000E	1	.2000000E	1	.2000000E	1	.2010000E	1	.1000000E	1			
VALUE	.1090000E	5	.1090000E	5	.6500000E	4	.6500000E	4	.5270000E	4	.1570000E	5			
MODE1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1	.1000000E	1			
MODE2	.1300000E	4	.1300000E	4	.1300000E	4	.1300000E	4	.2000000E	4	.1300000E	4			
MODE3	.6000000E	1	.1200000E	2	.6000000E	1	.2000000E	2	.6000000E	1	.1500000E	2			
OUTP	.9100000E	2	.6100000E	2	.1800000E	2	.1520000E	3	.2500000E	2	.2100000E	2			
MODE4	.0000000E	0	.0000000E	0	.3000000E	2	.9500000E	2	.0000000E	0	.3000000E	2			
MODE5	.1000000E	3	.1000000E	3	.7000000E	2	.4000000E	1	.1000000E	3	.7000000E	2			
MODE6	.0000000E	0	.0000000E	0	.0000000E	0	.1000000E	1	.0000000E	0	.0000000E	0			
SOURC	.1000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1			
LOAD	.3000000E	1	.2000000E	1	.3000000E	1	.3000000E	1	.2010000E	1	.3000000E	1			
SALE1	.4000000E	2	.5000000E	2	.4000000E	2	.1000000E	2	.6010000E	2	.5000000E	2			
SALE2	.5000000E	2	.3000000E	2	.1000000E	2	.3400000E	2	.2000000E	2	.1000000E	2			
SALE3	.5000000E	1	.2000000E	2	.4000000E	2	.5000000E	2	.2010000E	2	.3000000E	2			
SALE4	.5000000E	1	.3000000E	0	.1000000E	2	.2000000E	1	.0000000E	0	.1000000E	2			
SALE5	.0000000E	0	.0000000E	0	.0000000E	0	.3000000E	0	.0000000E	0	.0000000E	0			
MODE7	.1000000E	3	.1000000E	3	.1000000E	3	.5000000E	2	.1000000E	3	.4000000E	2			
MODE8	.0000000E	0	.0000000E	0	.0000000E	0	.7000000E	2	.0000000E	0	.4000000E	2			
MODE9	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
MODE0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
EMPL1	.5400000E	2	.6200000E	2	.2700000E	2	.4000000E	2	.5100000E	2	.5900000E	2			
EMPL2	.4400000E	2	.5600000E	2	.5000000E	1	.2500000E	2	.3300000E	2	.4400000E	2			
EMPL3	.1000000E	2	.1100000E	2	.2200000E	2	.3500000E	2	.1400000E	2	.5000000E	2			
HOUSE	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
TRANS	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
EMPL4	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV1	.1000000E	4	.5500000E	4	.3000000E	4	.2500000E	4	.6000000E	5	.2000000E	4			
SERV2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV3	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV4	.4000000E	4	.3000000E	5	.5500000E	4	.1800000E	5	.4600000E	4	.6000000E	4			
TIME	.3000000E	2	.3000000E	2	.2500000E	2	.2000000E	2	.1500000E	2	.3000000E	2			
SERV5	.2000000E	1	.2000000E	1	.2500000E	1	.2000000E	1	.2000000E	1	.2000000E	1			
SERV6	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1			
STOT1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
STOT2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1					

	907	908	909	910	911	912
CONST	.100000E 1	.100000E 1	.100000E 1	.100000E 1	.100000E 1	.100000E 1
PLOT	.502100E 4	[illegible] 4	.260100E 4	.551200E 4	[illegible] 4	.358400E 4
ZONE	.160000E 5	.152000E 5	.154000E 5	.158000E 5	.152000E 5	.161000E 5
ISIC	.343000E 3	.343000E 3	.206000E 3	.260000E 3	.209000E 3	.209000E 3
AREA1	.125000E 1	.158000E 0	.119000E 0	.103000E 0	.468000E 0	.209000E 0
BUID1	.642000E 4	.144000E 4	.260000E 3	.152000E 4	.415000E 4	.194000E 4
BUID2	.275000E 4	.000000E 0	.000000E 0	.100000E 4	.920000E 3	.920000E 3
LAND1	.000000E 0	.000000E 0	.000000E 0	.200000E 0	.200000E 0	.200000E 0
LAND2	.100000E 1	.000000E 0	.000000E 0	.200000E 1	.200000E 1	.200000E 1
VALUE	.150000E 5	.520000E 4	.380000E 4	.335000E 4	[illegible] 4	.225000E 4
MODE1	.100000E 1	.200000E 1	.200000E 1	.200000E 1	.100000E 1	.200000E 1
MODE2	.130000E 4	.150000E 4	.130000E 4	.150000E 4	.130000E 4	.100000E 4
MODE3	.224000E 2	.600000E 1	.000000E 0	.000000E 0	.160000E 2	.110000E 2
OUTP	.510000E 2	.100000E 2	.610000E 2	.400000E 2	.120000E 3	.150000E 3
MODE4	.150000E 2	.000000E 0	.750000E 2	.600000E 2	.250000E 2	.700000E 2
MODE5	.300000E 2	.100000E 3	.250000E 2	.500000E 2	.750000E 2	.300000E 2
MODE6	.500000E 1	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0
SOURC	.200000E 1	.100000E 1	.100000E 1	.200000E 1	.100000E 1	.100000E 1
LOAN	.300000E 1	.300000E 1	.200000E 1	.200000E 1	.300000E 1	.100000E 1
SALE1	.700000E 2	.200000E 2	.250000E 2	.150000E 2	.150000E 2	.600000E 1
SALE2	.200000E 2	.000000E 0	.250000E 2	.350000E 2	.300000E 2	.200000E 2
SALE3	.100000E 2	.700000E 2	.000000E 0	.500000E 2	.550000E 2	.140000E 2
SALE4	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0
SALE5	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0
MODE7	.700000E 2	.100000E 3	.100000E 3	.500000E 2	.400000E 2	.600000E 2
MODE8	.300000E 2	.000000E 0	.000000E 0	.500000E 2	.600000E 2	.400000E 2
MODE9	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0
MODE0	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0
EMPL1	.144000E 3	.290000E 2	.260000E 2	.330000E 2	.330000E 2	.270000E 2
EMPL2	.630000E 2	.500000E 1	.160000E 2	.200000E 2	.220000E 2	.110000E 2
EMPL3	.810000E 2	.310000E 2	.240000E 2	.130000E 2	.410000E 2	.900000E 1
HOUSE	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0
TRANS	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0	.000000E 0
EMPL4	.100000E 1	.100000E 1	.100000E 1	.100000E 1	.100000E 1	.100000E 1
SERV1	.140000E 3	.600000E 2	.120000E 4	.800000E 3	.250000E 3	.600000E 3
SERV2	.100000E 1	.100000E 1	.100000E 1	.100000E 1	.100000E 1	.100000E 1
SERV3	.100000E 1	.100000E 1	.100000E 1	.100000E 1	.100000E 1	.100000E 1
SERV4	.125000E 4	.125000E 4	.260000E 4	.100000E 4	.550000E 4	.300000E 4
TIME	.250000E 2	.150000E 2	.100000E 2	.250000E 2	.750000E 2	.250000E 2
SERV5	.200000E 1	.200000E 1	.200000E 1	.200000E 1	.200000E 1	.200000E 1
SERV6	.200000E 1	.200000E 1	.200000E 1	.200000E 1	.200000E 1	.200000E 1
STOR1	.100000E 1	.200000E 1	.200000E 1	.200000E 1	.200000E 1	.100000E 1
STOR2	.100000E 1	.200000E 1	.100000E 1	.200000E 1	.200000E 1	.100000E 1

CONST	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	
PLOT	.6371 00E	4	.1350000E	4	.4655 0E	4	.5405000E	4	.7905 0E	4	.4172 00E	4			
ZONE	.1570000E	3	.1540000E	3	.1610000E	3	.1570000E	3	.1530000E	3	.1570000E	3			
ISIC	.2070000E	3	.2090000E	3	.2080000E	3	.2060000E	3	.2050000E	3	.2050000E	3			
AREA1	.2200000E	0	.2000000E	1	.1235 0E	1	.1380000E	1	.1750000E	1	.1370000E	0			
BUIL1	.1720000E	4	.1100000E	4	.4300000E	4	.1380000E	5	.7200000E	4	.1380000E	4			
BUIL2	.9220000E	5	.2200000E	4	.1000000E	4	.0000000E	0	.0000000E	0	.0000000E	0			
LAND1	.0000000E	0	.4000000E	0	.1200000E	1	.0000000E	0	.0000000E	0	.0000000E	0			
LAND2	.1000000E	1	.2000000E	1	.2000000E	1	.0000000E	0	.0000000E	0	.0000000E	0			
VALUE	.1470000E	5	.3250000E	4	.1540000E	5	.2250000E	5	.5000000E	5	.2770000E	4			
NODE1	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1			
NODE2	.1500000E	4	.1500000E	4	.1300000E	4	.1500000E	4	.1500000E	4	.1500000E	4			
NODE3	.6000000E	1	.6000000E	1	.5000000E	2	.2000000E	2	.3500000E	2	.6000000E	1			
OUTP	.4550000E	2	.4550000E	3	.1750000E	3	.1520000E	4	.5500000E	4	.6200000E	2			
NODE4	.9720000E	2	.9720000E	2	.1000000E	2	.1500000E	2	.8500000E	2	.9000000E	2			
NODE5	.2000000E	1	.5000000E	1	.2000000E	2	.8500000E	2	.1500000E	2	.1000000E	2			
NODE6	.1500000E	1	.0000000E	0	.1000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
SOURC	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
LOAD	.2000000E	1	.1000000E	1	.5000000E	1	.3000000E	1	.3000000E	1	.2000000E	1			
SALE1	.3500000E	2	.2000000E	2	.4000000E	2	.4000000E	2	.7200000E	2	.5070000E	1			
SALE2	.2500000E	2	.4000000E	2	.5000000E	2	.5000000E	2	.5000000E	2	.5000000E	1			
SALE3	.5070000E	2	.4000000E	2	.2700000E	2	.0000000E	0	.0000000E	0	.3070000E	1			
SALE4	.1000000E	2	.0000000E	0	.2000000E	1	.0000000E	0	.0000000E	0	.2000000E	1			
SALE5	.0000000E	0	.0000000E	0	.1070000E	1	.0000000E	0	.1000000E	2	.2500000E	2			
NODE7	.1000000E	5	.0000000E	2	.2500000E	2	.1000000E	3	.2500000E	2	.1000000E	2			
NODE8	.0000000E	0	.1000000E	2	.5000000E	1	.0000000E	0	.3500000E	2	.0000000E	0			
NODE9	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.9000000E	2			
NODE0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
EMPL1	.5600000E	2	.5000000E	2	.1200000E	3	.5690000E	3	.2400000E	3	.2500000E	2			
EMPL2	.1600000E	2	.2300000E	2	.5000000E	2	.1500000E	3	.2200000E	3	.1200000E	2			
EMPL3	.2000000E	2	.2700000E	2	.1100000E	3	.2190000E	3	.1690000E	3	.7000000E	1			
HOUSE	.0000000E	0	.0000000E	0	.0000000E	0	.5000000E	1	.1000000E	2	.0000000E	0			
TRANS	.0000000E	0	.0000000E	0	.0000000E	0	.1500000E	2	.1000000E	2	.0000000E	0			
EMPL4	.1000000E	1	.1000000E	1	.2000000E	1	.3000000E	1	.3000000E	1	.2000000E	1			
SERV1	.3000000E	4	.2000000E	5	.1350000E	5	.1500000E	5	.2500000E	5	.7000000E	5			
SERV2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV3	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV4	.3000000E	4	.2000000E	5	.2500000E	5	.2500000E	5	.1200000E	0	.4150000E	4			
TIME	.2000000E	2	.2000000E	2	.2500000E	2	.2000000E	2	.2000000E	2	.2000000E	2			
SERV5	.2000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1			
SERV6	.2000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1			
STOR1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
STOR2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			

CONST	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	
PLOT	.6669 0E	4	.4172 0E	4	.4246000E	4	.4267 0E	4	.4999 0E	4	.4273 0E	4	
ZONE	.1550000E	3	.1570 0E	3	.1600000E	3	.1600000E	3	.1550000E	3	.1600000E	3	
ISIC	.2020 0E	3	.2140 0E	3	.2110 0E	3	.2150000E	3	.2120000E	3	.2200000E	3	
AREA1	.1620000E	1	.2015 0E	1	.3000000E	0	.1279 0E	1	.4000000E	0	.4050000E	1	
BOIS1	.1850 0E	4	.1500 0E	4	.5000000E	3	.3140000E	4	.4500000E	4	.1420000E	5	
BOIS2	.1000000E	4	.3000 0E	3	.6000000E	3	.2700000E	4	.0000000E	0	.4600000E	4	
LAND1	.0000000E	0	.0000 0E	0	.0000000E	0	.0000 0E	0	.0000000E	0	.0000000E	0	
LAND2	.1000000E	1	.1000 0E	1	.0000000E	0	.1000000E	1	.0000000E	0	.1000000E	1	
VALUE	.2700000E	5	.3150 0E	5	.1050000E	5	.1540000E	5	.2000000E	5	.4900000E	5	
MODE1	.1000000E	1	.1000 0E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	
MODE2	.1300000E	4	.1300 0E	4	.1300000E	4	.1300000E	4	.1300000E	4	.1000000E	4	
MODE3	.3500000E	2	.2600 0E	2	.4000000E	2	.2500000E	2	.1400000E	2	.8800000E	2	
OUTP	.4600000E	4	.1500 0E	4	.1500000E	2	.8440000E	3	.1310000E	3	.2400000E	3	
MODE4	.1000000E	2	.5000 0E	2	.1600000E	2	.9500000E	2	.5000000E	2	.8000000E	2	
MODE5	.9000000E	2	.5000 0E	2	.2000000E	2	.5000000E	1	.5000000E	2	.1900000E	2	
MODE6	.0000000E	0	.0000 0E	0	.0000000E	0	.0000000E	0	.0000000E	0	.1000000E	1	
SOURC	.1000000E	1	.1000 0E	1	.1000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	
LOAD	.3000000E	1	.3000 0E	1	.3000000E	1	.3000000E	1	.3000000E	1	.3000000E	1	
SALE1	.2000000E	2	.5000 0E	2	.3000000E	2	.2000000E	2	.7500000E	2	.1000000E	2	
SALE2	.3500000E	2	.5000 0E	2	.1500000E	2	.5000000E	1	.1500000E	2	.8500000E	2	
SALE3	.4000000E	2	.0000 0E	0	.5000000E	1	.2000000E	1	.1000000E	2	.3000000E	1	
SALE4	.4000000E	1	.0000 0E	0	.0000000E	0	.3000000E	0	.5000000E	1	.1000000E	1	
SALE5	.1000000E	1	.0000 0E	0	.0000000E	0	.0000000E	0	.0000000E	0	.1000000E	1	
MODE7	.2500000E	2	.1000 0E	3	.2500000E	2	.9500000E	2	.8500000E	2	.6500000E	2	
MODE8	.7000000E	2	.0000 0E	0	.5000000E	1	.5000000E	1	.1000000E	2	.3900000E	2	
MODE9	.4000000E	1	.0000 0E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	
MODE0	.1000000E	1	.0000 0E	0	.0000000E	0	.0000000E	0	.5000000E	1	.1000000E	1	
EMPL1	.4750000E	3	.2350 0E	3	.1470000E	3	.1150000E	3	.1440000E	3	.8560000E	3	
EMPL2	.1100000E	5	.1000 0E	5	.0300000E	2	.7000000E	2	.4200000E	2	.2450000E	3	
EMPL3	.3650000E	3	.7500 0E	2	.4400000E	2	.4500000E	2	.9600000E	2	.6870000E	3	
HOUSE	.8000000E	1	.5000 0E	1	.0000000E	0	.4000000E	2	.0000000E	0	.2500000E	2	
TRANS	.0000000E	0	.5000 0E	1	.0000000E	0	.1000000E	2	.0000000E	0	.1000000E	2	
EMPL4	.1000000E	1	.3000 0E	1	.1000000E	1	.3000000E	1	.1000000E	1	.3000000E	1	
SERV1	.6700000E	5	.6700 0E	5	.1000000E	4	.4000000E	5	.1000000E	4	.2000000E	5	
SERV2	.1000000E	1	.1000 0E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	
SERV3	.1000000E	1	.1000 0E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	
SERV4	.1200000E	6	.3000 0E	5	.3000000E	3	.1720000E	6	.6000000E	4	.7200000E	5	
TIME	.2000000E	2	.2000 0E	2	.2500000E	2	.2500000E	2	.1500000E	2	.2500000E	2	
SERV5	.1000000E	1	.1000 0E	1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	
SERV6	.1000000E	1	.1000 0E	1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	
STOR1	.1000000E	1	.1000 0E	1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	
STOR2	.1000000E	1	.1000 0E	1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	

CONST	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	
PLOT	.4217000E	4	.4538000E	4	.5607000E	4	.4130000E	4	.5413000E	4	.2821000E	4			
ZONE	.1600000E	3	.1536000E	3	.1530000E	3	.1570000E	3	.1570000E	3	.1560000E	3			
ISIC	.2310000E	3	.2520000E	3	.2330000E	3	.2390000E	3	.2390000E	3	.2430000E	3			
AREA1	.6099000E	0	.3480000E	0	.2330000E	0	.3660000E	0	.3640000E	0	.6090000E	1			
BUILD1	.2640000E	4	.4400000E	4	.3500000E	4	.2860000E	4	.3680000E	4	.2000000E	5			
BUILD2	.3200000E	4	.4000000E	4	.1400000E	4	.1400000E	4	.3600000E	5	.0000000E	0			
LAND1	.0000000E	0	.5000000E	0	.0000000E	0	.4000000E	0	.0000000E	0	.0000000E	0			
LAND2	.1000000E	1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.0000000E	0			
VALUE	.1090000E	5	.1150000E	5	.1150000E	5	.8500000E	4	.8500000E	4	.1750000E	4			
MODE1	.1030000E	1	.1000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.2000000E	1			
MODE2	.1300000E	4	.1300000E	4	.1000000E	4	.1000000E	4	.1000000E	4	.0000000E	3			
MODE3	.1500000E	2	.3600000E	1	.1500000E	2	.1000000E	2	.5000000E	1	.5000000E	1			
OUTP	.5500000E	2	.7000000E	1	.2550000E	3	.2000000E	2	.3000000E	2	.2500000E	2			
MODE4	.1000000E	2	.1000000E	2	.8500000E	2	.2000000E	2	.9500000E	2	.1000000E	3			
MODE5	.9000000E	2	.9000000E	2	.1500000E	2	.7500000E	2	.4000000E	1	.0000000E	0			
MODE6	.0000000E	0	.0000000E	0	.0000000E	0	.5000000E	1	.1000000E	1	.0000000E	0			
SOURC	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1	.2000000E	1			
LOAD	.3000000E	1	.3000000E	1	.3000000E	1	.2000000E	1	.3000000E	1	.2000000E	1			
SALE1	.3070000E	2	.4000000E	2	.1000000E	1	.7500000E	2	.1000000E	2	.2000000E	2			
SALE2	.2000000E	2	.4000000E	2	.1000000E	1	.1000000E	2	.4000000E	2	.3500000E	2			
SALE3	.4200000E	2	.0000000E	0	.1000000E	1	.1000000E	2	.4500000E	2	.4500000E	2			
SALE4	.2000000E	3	.0000000E	0	.0000000E	0	.5000000E	1	.1000000E	1	.0000000E	0			
SALE5	.0000000E	0	.0000000E	0	.2700000E	2	.0000000E	0	.4000000E	1	.0000000E	0			
MODE7	.4000000E	2	.4000000E	2	.3000000E	1	.3000000E	2	.1000000E	2	.7500000E	2			
MODE8	.6070000E	2	.6000000E	2	.0000000E	0	.4000000E	2	.8500000E	2	.2500000E	2			
MODE9	.0000000E	0	.0000000E	0	.2700000E	2	.0000000E	0	.5000000E	1	.0000000E	0			
MODE0	.0000000E	0	.0000000E	0	.0000000E	0	.3000000E	2	.0000000E	0	.0000000E	0			
EMPL1	.2240000E	3	.5500000E	2	.1020000E	3	.7000000E	2	.1330000E	3	.7500000E	2			
EMPL2	.1750000E	3	.3000000E	2	.3000000E	2	.2500000E	2	.6300000E	2	.3000000E	2			
EMPL3	.5400000E	2	.2500000E	2	.7200000E	2	.4500000E	2	.7000000E	2	.4500000E	2			
HOUSE	.2000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
YEARS	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
EMPL4	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV1	.5000000E	2	.7000000E	2	.4500000E	3	.7000000E	2	.1100000E	4	.4000000E	3			
SERV2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV3	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV4	.1942000E	5	.5000000E	4	.3500000E	5	.1000000E	4	.1950000E	4	.1500000E	4			
TIME	.2000000E	2	.2000000E	2	.2000000E	2	.2000000E	2	.2000000E	2	.1000000E	2			
SERV5	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1			
SERV6	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1			
STOR1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1			
STOR2	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.2000000E	1			

	#57		#58		#59		#60		#61		#62	
CONST	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
PLOT	.4218000E	4	.2547000E	4	.4251000E	4	.5471000E	4	.2775000E	4	.2776000E	4
ZONE	.1630000E	3	.1550000E	3	.1600000E	3	.1550000E	3	.1540000E	3	.1530000E	3
ISIC	.2500000E	3	.2500000E	3	.2500000E	3	.3530000E	3	.2710000E	3	.2710000E	3
AREA1	.1400000E	1	.2520000E	0	.5000000E	0	.7000000E	0	.2750000E	0	.1524000E	0
BUIL1	.3200000E	4	.1210000E	4	.2110000E	4	.3630000E	4	.2020000E	4	.1470000E	4
BUIL2	.2750000E	4	.6500000E	3	.0000000E	0	.7200000E	3	.9200000E	3	.1450000E	4
LAND1	.0000000E	0	.0000000E	0	.0000000E	0	.3600000E	0	.2000000E	0	.3000000E	0
LAND2	.1000000E	1	.1000000E	1	.0000000E	0	.2000000E	1	.2000000E	1	.2000000E	1
VALUE	.1790000E	5	.7250000E	4	.1090000E	5	.1340000E	5	.9250000E	4	.7250000E	4
MODE1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1
MODE2	.1330000E	4	.1010000E	4	.1000000E	4	.1350000E	4	.9000000E	3	.9000000E	3
MODE3	.3500000E	2	.5000000E	1	.4000000E	1	.5000000E	1	.9010000E	1	.0000000E	0
OUTP	.5000000E	2	.2000000E	2	.3500000E	2	.5050000E	3	.1340000E	3	.7500000E	2
MODE4	.9000000E	1	.9500000E	2	.1000000E	2	.9500000E	2	.7000000E	2	.4000000E	2
MODE5	.9000000E	2	.5000000E	1	.9000000E	2	.1500000E	2	.1000000E	2	.6000000E	2
MODE6	.1000000E	1	.0000000E	0	.0000000E	0	.0000000E	0	.2000000E	2	.0000000E	0
SOURC	.1000000E	1	.2000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.2000000E	1
LOAD	.3000000E	1	.3000000E	1	.3000000E	1	.3000000E	1	.3000000E	1	.3000000E	1
SALE1	.5000000E	2	.7000000E	2	.1000000E	2	.3500000E	2	.7500000E	2	.5000000E	2
SALE2	.1500000E	2	.1000000E	2	.5000000E	2	.4500000E	2	.1500000E	2	.1500000E	2
SALE3	.2000000E	2	.2000000E	2	.5000000E	2	.2000000E	2	.5000000E	1	.0000000E	0
SALE4	.5000000E	1	.0000000E	0	.2000000E	2	.0000000E	0	.5000000E	1	.5000000E	1
SALE5	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
MODE7	.5000000E	2	.5000000E	2	.4000000E	2	.3500000E	2	.7500000E	2	.5000000E	2
MODE8	.1500000E	2	.2000000E	2	.6000000E	2	.5500000E	2	.2500000E	2	.1000000E	2
MODE9	.0000000E	0	.0000000E	0	.5000000E	1	.5000000E	0	.0000000E	0	.0000000E	0
MODE0	.0000000E	0	.0000000E	0	.1500000E	2	.0000000E	0	.0000000E	0	.0000000E	0
EMPL1	.5500000E	2	.5000000E	2	.7400000E	2	.7500000E	2	.5200000E	2	.4500000E	2
EMPL2	.1200000E	2	.1200000E	2	.1100000E	2	.2500000E	2	.2000000E	1	.2500000E	2
EMPL3	.4500000E	2	.4400000E	2	.4500000E	2	.5000000E	2	.4400000E	2	.2000000E	2
HOUSE	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
TRANS	.5000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
EMPL4	.1000000E	1	.1000000E	1	.1010000E	1	.1050000E	1	.1000000E	1	.1000000E	1
SERV1	.5200000E	3	.1350000E	3	.1450000E	4	.1000000E	4	.6700000E	3	.5750000E	3
SERV2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
SERV3	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
SERV4	.1200000E	4	.1400000E	4	.1500000E	4	.2000000E	5	.3000000E	4	.4000000E	4
TIME	.2500000E	2	.1500000E	2	.2500000E	2	.2500000E	2	.2000000E	2	.2500000E	2
SERV5	.1000000E	1	.2000000E	1	.1000000E	1	.2000000E	1	.2500000E	1	.2000000E	1
SERV6	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1
STOR1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1
STOR2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1

CONST	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	
PLOT	.3033300E	4	.4453000E	4	.5361000E	4	.5504700E	4	.4157000E	4	.2824000E	4			
ZONE	.1550000E	3	.1590000E	3	.1586000E	3	.1580000E	3	.1586000E	3	.1560000E	3			
ISIC	.2390000E	3	.2470000E	3	.2510000E	3	.2590000E	3	.2600000E	3	.2600000E	3			
AREA1	.4700000E-	1	.6900000E-	1	.4370000E	1	.2150000E	0	.1370000E	0	.1388000E	0			
BUIL1	.2940000E	3	.6900000E	3	.5940000E	4	.2750000E	4	.5500000E	3	.3300000E	3			
BUIL2	.8000000E	0	.0000000E	0	.2200000E	4	.0000000E	0	.1650000E	4	.0000000E	0			
LAND1	.0000000E	0	.0000000E	0	.1700000E	1	.0000000E	0	.4000000E	0	.0000000E	0			
LAND2	.0000000E	0	.0000000E	0	.2000000E	1	.0000000E	0	.2000000E	1	.0000000E	0			
VALUE	.1350000E	4	.1650000E	4	.5230000E	5	.1280000E	5	.2650000E	4	.3650000E	4			
MODE1	.2000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.2000000E	1	.2000000E	1			
MODE2	.9000000E	3	.9000000E	3	.1300000E	4	.1300000E	4	.1300000E	4	.1000000E	4			
MODE3	.2000000E	1	.1000000E	2	.5000000E	2	.1800000E	2	.4000000E	1	.6000000E	1			
OUTP	.4000000E	1	.2500000E	2	.2110000E	3	.1000000E	3	.5000000E	1	.9000000E	1			
MODE4	.1000000E	3	.1000000E	3	.9000000E	2	.5030000E	2	.6000000E	2	.9000000E	2			
MODE5	.0000000E	0	.0000000E	0	.1000000E	2	.2000000E	2	.4000000E	2	.1000000E	2			
MODE6	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
SOURC	.2000000E	1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.2000000E	1			
LOAD	.2000000E	1	.2000000E	1	.3000000E	1	.3000000E	1	.3000000E	1	.2000000E	1			
SALE1	.2500000E	2	.4000000E	2	.3000000E	2	.3000000E	2	.9500000E	2	.4000000E	2			
SALE2	.5000000E	2	.6000000E	2	.5000000E	1	.2000000E	2	.5000000E	1	.3000000E	2			
SALE3	.0000000E	0	.0000000E	0	.2000000E	1	.5000000E	2	.1000000E	0	.0000000E	0			
SALE4	.2500000E	2	.3000000E	0	.1000000E	1	.0000000E	0	.0000000E	0	.0000000E	0			
SALE5	.0000000E	0	.0000000E	0	.2000000E	1	.9000000E	0	.1000000E	0	.1000000E	2			
MODE7	.7500000E	2	.1000000E	3	.8500000E	2	.4000000E	2	.1000000E	3	.8000000E	2			
MODE8	.0000000E	0	.0000000E	0	.1300000E	2	.4000000E	2	.0000000E	0	.1000000E	2			
MODE9	.0000000E	0	.0000000E	0	.2000000E	0	.0000000E	0	.0000000E	0	.5000000E	1			
MODE0	.2500000E	2	.0000000E	0	.2000000E	1	.0000000E	0	.0000000E	0	.5000000E	1			
EMPL1	.5500000E	2	.7900000E	2	.1470000E	3	.4500000E	2	.2200000E	2	.6400000E	2			
EMPL2	.1500000E	2	.2000000E	2	.8500000E	2	.1000000E	2	.7000000E	1	.1000000E	2			
EMPL3	.4000000E	2	.5900000E	2	.3200000E	2	.3500000E	2	.1500000E	2	.5400000E	2			
HOUSE	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
TRANS	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
EMPL4	.1000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV1	.5000000E	2	.7200000E	3	.1400000E	4	.1400000E	4	.1700000E	3	.2200000E	3			
SERV2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV3	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV4	.1700000E	4	.1300000E	4	.1400000E	5	.1600000E	5	.5000000E	3	.5000000E	3			
TIME	.1000000E	2	.9500000E	2	.2500000E	2	.2500000E	2	.2000000E	2	.1500000E	2			
SERV5	.2000000E	1	.2000000E	1	.1000000E	1	.2000000E	1	.2000000E	1	.2000000E	1			
SERV6	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1			
STOP1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
STOP2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			

CONST	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	
PLOT	.7224500E	4	.6870000E	4	.4650000E	4	.5411000E	4	.4231000E	4	.5743000E	4			
ZONE	.1530000E	3	.1600000E	3	.1590000E	3	.1600000E	3	.1600000E	3	.1580000E	3			
ISIC	.2720000E	3	.2720000E	3	.2720000E	3	.2800000E	3	.2800000E	3	.2800000E	3			
AREA1	.3660000E	0	.1667000E	1	.1130000E	0	.2226000E	1	.1130000E	0	.2280000E	1			
BUILD1	.1230000E	4	.5420000E	4	.4610000E	3	.9036000E	4	.3650000E	4	.7000000E	4			
BUILD2	.1230000E	4	.0000000E	0	.2200000E	3	.0000000E	0	.0000000E	0	.1330000E	4			
LAND1	.0000000E	0	.0000000E	0	.2070000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
LAND2	.1000000E	1	.0000000E	0	.2000000E	1	.0000000E	0	.0000000E	0	.1000000E	1			
VALUE	.4500000E	4	.2000000E	5	.2600000E	4	.2095000E	5	.1090000E	5	.9250000E	5			
MODE1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
MODE2	.1300000E	4	.1300000E	4	.1000000E	4	.1000000E	4	.1300000E	4	.1300000E	4			
MODE3	.2000000E	1	.2500000E	2	.5000000E	1	.5700000E	2	.5500000E	2	.5500000E	2			
OUTP	.3100000E	2	.6970000E	3	.3100000E	2	.2540000E	3	.1480000E	3	.5080000E	3			
MODE4	.1000000E	5	.1000000E	5	.1000000E	5	.1500000E	2	.5000000E	2	.5000000E	1			
MODE5	.0000000E	0	.0000000E	0	.0000000E	0	.8000000E	2	.5000000E	1	.9500000E	2			
MODE6	.0000000E	0	.0000000E	0	.0000000E	0	.5000000E	1	.5000000E	1	.5000000E	1			
SOURC	.2000000E	1	.2000000E	1	.1000000E	1	.2000000E	1	.2000000E	1	.2000000E	1			
LOAD	.3000000E	1	.3000000E	1	.3000000E	1	.3000000E	1	.3000000E	1	.3000000E	1			
SALE1	.7000000E	2	.1000000E	2	.3000000E	2	.4000000E	2	.4200000E	2	.7500000E	2			
SALE2	.2000000E	2	.2700000E	2	.2500000E	2	.2700000E	2	.3000000E	2	.1300000E	2			
SALE3	.1000000E	2	.1000000E	2	.4000000E	2	.3100000E	2	.2600000E	2	.8200000E	1			
SALE4	.0000000E	0	.3000000E	1	.5000000E	1	.2000000E	1	.1000000E	1	.5000000E	1			
SALE5	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.1000000E	1	.0000000E	0			
MODE7	.9000000E	2	.0000000E	0	.5000000E	2	.8000000E	2	.9000000E	2	.9500000E	2			
MODE8	.1000000E	2	.1000000E	3	.5000000E	2	.1500000E	2	.0000000E	0	.0000000E	0			
MODE9	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0			
MODE0	.0000000E	0	.0000000E	0	.0000000E	0	.5000000E	1	.1000000E	2	.5000000E	1			
EMPL1	.2400000E	2	.2100000E	3	.6300000E	2	.3670000E	3	.2670000E	3	.3020000E	3			
EMPL2	.6000000E	1	.6000000E	2	.1400000E	2	.1530000E	3	.8000000E	2	.1500000E	3			
EMPL3	.1800000E	2	.1500000E	3	.4900000E	2	.2140000E	3	.1870000E	3	.1720000E	3			
HOUSE	.0000000E	0	.0000000E	0	.0000000E	0	.1000000E	2	.5000000E	1	.0000000E	0			
TRANS	.0000000E	0	.0000000E	0	.0000000E	0	.1000000E	2	.5000000E	1	.0000000E	0			
EMPL4	.2000000E	1	.2000000E	1	.1000000E	1	.3000000E	1	.5000000E	1	.2000000E	1			
SERV1	.5000000E	3	.2700000E	4	.2700000E	3	.2500000E	5	.4500000E	4	.3400000E	4			
SERV2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV3	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV4	.3500000E	4	.2000000E	5	.4500000E	4	.1000000E	6	.1120000E	6	.6000000E	5			
TIME	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2			
SERV5	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
SERV6	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1			
STOF1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1			
STOF2	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1			

	#49		#50		#51		#52		#53		#54	
COAST	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
PLOT	.3680000E	4	.4445000E	4	.4340000E	4	.4475000E	4	.7116000E	4	.5982000E	4
ZONE	.1610000E	3	.1550000E	3	.1560000E	3	.1560000E	3	.1570000E	3	.1570000E	3
ISIC	.2910000E	3	.2920000E	3	.3000000E	3	.3000000E	3	.3120000E	3	.3110000E	3
AREA1	.1210000E	0	.3801000E-	1	.3680000E	0	.3114000E	0	.3590000E-	1	.1526000E	1
EDIT1	.4600000E	3	.4600000E	3	.2330000E	4	.3900000E	3	.1560000E	4	.3670000E	4
BUID2	.5570000E	3	.2800000E	3	.4600000E	3	.0000000E	0	.2750000E	4	.2000000E	5
LAND1	.1210000E	1	.2000000E	0	.4000000E	0	.0000000E	0	.4600000E	0	.0000000E	0
LAND2	.2000000E	1	.2000000E	1	.2000000E	1	.1000000E	0	.2000000E	1	.0000000E	0
VALUE	.1500000E	4	.1550000E	4	.6500000E	4	.6500000E	4	.1500000E	4	.1900000E	5
MODE1	.2000000E	1	.2000000E	1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1
MODE2	.1000000E	4	.9000000E	3	.1000000E	4	.1000000E	4	.5000000E	3	.1500000E	4
MODE3	.4000000E	1	.4000000E	1	.8000000E	1	.8000000E	2	.8000000E	1	.1500000E	2
OUTP	.1000000E	2	.3000000E	1	.7400000E	2	.3000000E	2	.1525000E	4	.4170000E	2
[illegible]	.3000000E	0	.4000000E	0	.0000000E	0	.0000000E	0	.5000000E	2	.1000000E	2
MO[illegible]	[illegible]		[illegible]	3	.2800000E	2	.1000000E	3	.5000000E	2	.2800000E	2
MODE0	[illegible]		[illegible]		.2000000E	1	.0000000E	0	.0000000E	0	.0000000E	0
SHOPC	[illegible]		[illegible]		.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1
LOAF	.2000000E	1	[illegible]		.2000000E	1	.2000000E	1	.3000000E	1	.2000000E	1
SALE1	.1500000E	2	.2500000E	2	.1000000E	3	.4000000E	2	.3000000E	2	.6500000E	2
SALE2	.1000000E	2	.1000000E	2	.0000000E	0	.1500000E	2	[illegible]	2	.1200000E	2
SALE3	.5000000E	[illegible]	[illegible]	2	.0000000E	0	.4600000E	2	[illegible]	0	.2100000E	2
SALE4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	.0000	[illegible]	.0000000E	0	.0000000E	0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	.5000000E	1	.0000000E	0	.2000000E	1
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3	.9500000E	2	.7500000E	2	.8500000E	2
MODE3	.1000000E	2	.5000000E	2	[illegible]	0	.0000000E	0	.2500000E	2	.0000000E	0
MODE4	.4500000E	2	.0000000E	0	.3000000E	0	[illegible]	1	.0000000E	0	.0000000E	0
MODE0	.2000000E	2	.0000000E	0	.0000000E	0	[illegible]	0	[illegible]	0	.1500000E	2
EMPL1	.4000000E	2	.3700000E	2	.1210000E	3	.5700000E	2	[illegible]	2	.7200000E	2
EMPL2	.2500000E	2	.1100000E	2	.5700000E	2	.1500000E	2	[illegible]	2	.2100000E	2
EMPL3	.2300000E	2	.2600000E	2	.5700000E	2	.4200000E	2	.1300000E	2	.5100000E	2
HOUSE	.5000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
TRANS	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
EMPL4	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1	.1000000E	1
SERV1	.3000000E	2	.5000000E	2	.2700000E	4	.1600000E	4	.3400000E	3	.3300000E	4
SERV2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
SERV3	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
SERV4	.5000000E	3	.5000000E	3	.7000000E	3	.1050000E	3	.2710000E	0	.4510000E	4
TIME	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.1500000E	2	.2000000E	2
SERV5	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1
SERV6	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1
STOR1	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.2000000E	1	.2000000E	1
STOR2	.1000000E	1	.2000000E	1	.2000000E	1	.1000000E	1	.3000000E	2	.3000000E	2

	455		456		457		458		459		460	
CONST	.1000000E	1	.1356000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
PLOT	.4230000E	4	.5796000E	4	.4230000E	4	.5506800E	4	.4542000E	4	.4479000E	4
ZONE	.1600000E	5	.1610000E	5	.1600000E	5	.1556000E	5	.1610000E	5	.1560000E	5
ISIC	.3130000E	3	.3130000E	3	.3110000E	3	.3130000E	3	.3140000E	3	.3190000E	3
AREA1	.0000000E	0	.1210000E	1	.1579000E	1	.5490000E	0	.4150000E	0	.6040000E-	1
BUILD1	.1230000E	5	.4000000E	4	.4220000E	4	.5080000E	4	.2010000E	4	.4600000E	5
BUILD2	.1000000E	5	.1530000E	5	.5700000E	5	.1890000E	4	.5503000E	5	.2500000E	4
LAND1	.0000000E	0	.0000000E	0	.3000000E	0	.3000000E	0	.0100000E	0	.2000000E	0
LAND2	.1000000E	1	.1000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.2000000E	1
VALUE	.1090000E	5	.1255000E	5	.1560000E	5	.9300000E	4	.4650000E	4	.1700000E	4
MODE1	.3000000E	1	.1000000E	1	.3100000E	1	.1000000E	1	.3000000E	1	.2000000E	1
MODE2	.1500000E	4	.1000000E	4	.1300000E	4	.1360000E	4	.9600000E	3	.9600000E	3
MODE3	.2200000E	2	.3500000E	2	.2400000E	2	.1800000E	2	.1400000E	2	.1000000E	1
OUTP	.5000000E	2	.2540000E	3	.1000000E	3	.7100000E	2	.5000000E	2	.7100000E	2
MODE4	.3000000E	2	.2400000E	2	.8900000E	2	.5000000E	2	.3000000E	2	.0000000E	0
MODE5	.7000000E	2	.7500000E	2	.1000000E	2	.5000000E	2	.7000000E	2	.1000000E	3
MODE6	.0000000E	0	.1000000E	1	.1000000E	1	.0000000E	0	.0000000E	0	.0000000E	0
SOURC	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.1000000E	1	.2000000E	1
LOAD	.2000000E	1	.2000000E	1	.3000000E	1	.2000000E	1	.3000000E	1	.2000000E	1
SALE1	.7000000E	2	.5500000E	2	.4400000E	2	.5000000E	2	.2500000E	2	.2500000E	2
SALE2	.3000000E	2	.3400000E	2	.2700000E	2	.5000000E	2	.1500000E	2	.5000000E	2
SALE3	.0000000E	0	.1000000E	2	.2900000E	2	.0000000E	0	.4500000E	2	.1500000E	2
SALE4	.0000000E	0	.1000000E	1	.0000000E	0	.0000000E	0	.1500000E	2	.5000000E	1
SALE5	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
MODE7	.2000000E	2	.2500000E	2	.5000000E	2	.4000000E	2	.2000000E	2	.2000000E	2
MODE8	.1000000E	2	.1500000E	2	.2000000E	2	.2000000E	2	.0000000E	0	.1000000E	2
MODE9	.0000000E	0	.1000000E	1	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
MODE0	.0000000E	0	.1000000E	1	.0000000E	0	.0000000E	0	.1000000E	2	.0000000E	0
EMPL1	.4000000E	2	.1430000E	3	.1570000E	3	.1400000E	2	.4400000E	2	.5100000E	2
EMPL2	.5000000E	1	.3270000E	2	.4530000E	2	.3000000E	1	.1500000E	2	.1500000E	2
EMPL3	.4000000E	2	.3110000E	3	.2400000E	2	.3000000E	2	.3100000E	2	.4200000E	2
HOUSE	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
TRANS	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
EMPL4	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
SERV1	.2200000E	4	.5540000E	4	.4540000E	4	.1640000E	4	.2600000E	4	.6400000E	3
SERV2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
SERV3	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
SERV4	.4000000E	5	.5000000E	5	.1110000E	6	.2800000E	4	.4000000E	4	.5870000E	5
TIF1	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.1500000E	2
SERV5	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1
SERV6	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1
STOR1	.2000000E	1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.2000000E	1
STOR2	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1

CONST	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
PLOT	.5507000E	4	.5732000E	4	.3624000E	4	.4124000E	4	.4233000E	4	.4266000E	4	.4266000E	4	.4266000E	4	.4266000E	4	.4266000E	4	.4266000E	4
ZONE	.1530000E	3	.1610000E	3	.1550000E	3	.1570000E	3	.1600000E	3	.1600000E	3	.1600000E	3	.1600000E	3	.1600000E	3	.1600000E	3	.1600000E	3
ISIC	.3190000E	3	.3190000E	3	.3190000E	3	.3190000E	3	.3330000E	3	.3290000E	3	.3290000E	3	.3290000E	3	.3290000E	3	.3290000E	3	.3290000E	3
AREA1	.1830000E	0	.2117000E	1	.5160000E	0	.1720000E	0	.2160000E	0	.4550000E	0	.4550000E	0	.4550000E	0	.4550000E	0	.4550000E	0	.4550000E	0
BUILD1	.9200000E	5	.5310000E	4	.1540000E	4	.5700000E	5	.2580000E	4	.4000000E	5	.4000000E	5	.4000000E	5	.4000000E	5	.4000000E	5	.4000000E	5
BUILD2	.5500000E	4	.5500000E	5	.2200000E	5	.5600000E	5	.1553000E	4	.5000000E	2	.5000000E	2	.5000000E	2	.5000000E	2	.5000000E	2	.5000000E	2
LAND1	.1600000E	1	.0000000E	0	.3000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
LAND2	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
VALUE	.3350000E	4	.1415000E	5	.2650000E	4	.4000000E	4	.1090000E	5	.1235000E	5	.1235000E	5	.1235000E	5	.1235000E	5	.1235000E	5	.1235000E	5
MODE1	.2000000E	1	.1000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
MODE2	.1500000E	4	.1000000E	4	.7000000E	5	.1500000E	4	.1500000E	4	.1500000E	4	.1500000E	4	.1500000E	4	.1500000E	4	.1500000E	4	.1500000E	4
MODE3	.1000000E	2	.2500000E	2	.5000000E	1	.1700000E	2	.1000000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2
OUTP	.1200000E	5	.4000000E	5	.6300000E	2	.8000000E	1	.2540000E	5	.9070000E	5	.9070000E	5	.9070000E	5	.9070000E	5	.9070000E	5	.9070000E	5
MODE4	.0000000E	0	.4000000E	2	.1000000E	2	.0000000E	0	.1000000E	2	.1500000E	2	.1500000E	2	.1500000E	2	.1500000E	2	.1500000E	2	.1500000E	2
MODE5	.1000000E	5	.6000000E	2	.7000000E	2	.1000000E	5	.5000000E	2	.3500000E	2	.3500000E	2	.3500000E	2	.3500000E	2	.3500000E	2	.3500000E	2
MODE6	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
SOURC	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
LOAD	.5000000E	1	.5000000E	1	.2000000E	1	.2000000E	1	.5000000E	1	.5000000E	1	.5000000E	1	.5000000E	1	.5000000E	1	.5000000E	1	.5000000E	1
SALE1	.2500000E	2	.2500000E	2	.1000000E	2	.1500000E	2	.4000000E	2	.3400000E	2	.3400000E	2	.3400000E	2	.3400000E	2	.3400000E	2	.3400000E	2
SALE2	.4500000E	2	.2500000E	2	.2000000E	2	.2400000E	2	.2000000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2
SALE3	.3600000E	2	.3000000E	1	.5500000E	2	.5100000E	2	.0000000E	0	.4000000E	2	.4000000E	2	.4000000E	2	.4000000E	2	.4000000E	2	.4000000E	2
SALE4	.0000000E	0	.0000000E	0	.2000000E	1	.0000000E	0	.1000000E	2	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
SALE5	.0000000E	0	.0000000E	0	.1000000E	0	.9000000E	0	.1000000E	2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
MODE7	.4000000E	2	.0000000E	2	.5400000E	2	.1000000E	2	.2000000E	2	.4900000E	2	.4900000E	2	.4900000E	2	.4900000E	2	.4900000E	2	.4900000E	2
MODE8	.4000000E	2	.1000000E	2	.5500000E	2	.0000000E	0	.2000000E	2	.5100000E	2	.5100000E	2	.5100000E	2	.5100000E	2	.5100000E	2	.5100000E	2
MODE9	.0000000E	0	.0000000E	0	.1000000E	1	.0000000E	0	.1000000E	2	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
MODE0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
EMPL1	.5200000E	2	.1550000E	3	.5700000E	2	.4220000E	2	.2490000E	2	.2600000E	2	.2600000E	2	.2600000E	2	.2600000E	2	.2600000E	2	.2600000E	2
EMPL2	.1400000E	2	.4500000E	2	.2000000E	1	.2000000E	1	.6000000E	1	.1600000E	2	.1600000E	2	.1600000E	2	.1600000E	2	.1600000E	2	.1600000E	2
EMPL3	.4800000E	2	.2500000E	2	.4000000E	2	.4500000E	2	.2500000E	2	.1200000E	2	.1200000E	2	.1200000E	2	.1200000E	2	.1200000E	2	.1200000E	2
HOUSE	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
TRANS	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0	.0000000E	0
EMPL4	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
SERV1	.8100000E	4	.4000000E	4	.1000000E	4	.1000000E	5	.2000000E	3	.3700000E	5	.3700000E	5	.3700000E	5	.3700000E	5	.3700000E	5	.3700000E	5
SERV2	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
SERV3	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
SERV4	.2500000E	5	.1100000E	5	.2500000E	4	.3500000E	4	.2000000E	5	.2500000E	4	.2500000E	4	.2500000E	4	.2500000E	4	.2500000E	4	.2500000E	4
TIME	.2500000E	2	.2500000E	2	.1500000E	2	.1500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2	.2500000E	2
SERV5	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1
SERV6	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1	.2000000E	1
STOR1	.2000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1
STOR2	.1000000E	1	.1000000E	1	.2000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1	.1000000E	1

COEST	.100000E	1	.100000E	1	.100000E
PLOT	.422500E	4	.427400E	4	.431000E
ZONE	.160000E	3	.160000E	3	.153000E
ISIC	.339000E	3	.319000E	3	.390000E
AREA1	.322000E	0	.202400E	1	.397400E
BUID1	.139000E	4	.407000E	4	.120000E
BUID2	.900000E	3	.600000E	3	.920000E
LAND1	.000000E	0	.000000E	0	.120000E
LAND2	.100000E	1	.100000E	1	.200000E
VALUE	.109000E	3	.245000E	3	.265000E
MODE1	.100000E	1	.100000E	1	.100000E
MODE2	.130000E	4	.100000E	4	.130000E
MODE3	.140000E	2	.200000E	2	.630000E
OUTP	.188000E	3	.300000E	2	.171000E
MODE4	.920000E	2	.250000E	2	.850000E
MODE5	.180000E	2	.750000E	2	.140000E
MODE6	.200000E	1	.000000E	0	.100000E
SOURC	.200000E	1	.200000E	1	.200000E
LOAD	.300000E	1	.300000E	1	.300000E
SALE1	.500000E	2	.400000E	2	.250000E
SALE2	.100000E	2	.400000E	2	.500000E
SALE3	.490000E	2	.200000E	2	.250000E
SALE4	.000000E	0	.000000E	0	.000000E
SALE5	.000000E	0	.000000E	0	.200000E
MODE7	.800000E	2	.900000E	2	.400000E
MODE8	.200000E	2	.100000E	2	.570000E
MODE9	.000000E	0	.000000E	0	.300000E
MODE0	.000000E	0	.000000E	0	.000000E
EMPL1	.330000E	2	.119000E	3	.246000E
EMPL2	.180000E	2	.360000E	2	.364000E
EMPL3	.150000E	2	.610000E	2	.262000E
HOUSE	.000000E	0	.000000E	0	.100000E
TRANS	.000000E	0	.000000E	0	.150000E
EMPL4	.100000E	1	.100000E	1	.300000E
SERV1	.190000E	3	.500000E	4	.481200E
SERV2	.100000E	1	.100000E	1	.100000E
SERV3	.100000E	1	.100000E	1	.100000E
SERV4	.600000E	3	.500000E	4	.494000E
TIME	.250000E	2	.250000E	2	.200000E
SERV5	.200000E	1	.200000E	1	.100000E
SERV6	.200000E	1	.200000E	1	.100000E
STOR1	.100000E	1	.100000E	1	.100000E
STOR2	.100000E	1	.100000E	1	.100000E

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PLOT	.479526E	4	.135000E	4	.722400E	4	.124994E	4
ZONE	.157943E	3	.153000E	3	.151000E	3	.226053E	1
ISIC	.275565E	3	.202000E	3	.390000E	3	.547973E	2
AREA1	.928738E	0	.470000E	1	.623000E	1	.113065E	1
BUID1	.295653E	4	.120000E	3	.135000E	5	.286689E	4
BUID2	.119174E	4	.000000E	0	.920000E	4	.153219E	4
LAND1	.213768E	0	.000000E	0	.170000E	1	.422952E	0
LAND2	.108696E	1	.000000E	0	.200000E	1	.781009E	0
VALUE	.139572E	5	.135000E	4	.965000E	5	.172130E	5
MODE1	.131884E	1	.100000E	1	.200000E	1	.469441E	0
MODE2	.118936E	4	.700000E	3	.200000E	4	.216350E	3
MODE3	.187681E	2	.000000E	0	.600000E	2	.192485E	2
OUTP	.377037E	3	.300000E	1	.590000E	4	.939065E	3
MODE4	.465478E	2	.000000E	0	.100000E	3	.373464E	2
MODE5	.526116E	2	.000000E	0	.100000E	3	.379145E	2
MODE6	.698551E	0	.000000E	0	.200000E	2	.273939E	1
SOURC	.156522E	1	.100000E	1	.200000E	1	.499360E	0
LOAD	.262319E	1	.100000E	1	.300000E	1	.545070E	0
SALE1	.414058E	2	.100000E	1	.100000E	3	.245892E	2
SALE2	.304203E	2	.000000E	0	.850000E	2	.210995E	2
SALE3	.213188E	2	.000000E	0	.700000E	2	.205791E	2
SALE4	.252174E	1	.000000E	0	.250000E	2	.472045E	1
SALE5	.433333E	1	.000000E	0	.970000E	2	.171213E	2
MODE7	.707101E	2	.000000E	0	.100000E	3	.280232E	2
MODE8	.231159E	2	.000000E	0	.100000E	3	.250206E	2
MODE9	.392754E	1	.000000E	0	.970000E	2	.165816E	2
MODE0	.217391E	1	.000000E	0	.300000E	2	.583607E	1
EMPL1	.125826E	3	.220000E	2	.856000E	3	.155883E	3
EMPL2	.532319E	2	.500000E	1	.480000E	3	.817232E	2
EMPL3	.729275E	2	.700000E	1	.687000E	3	.916188E	2
HOUSE	.200000E	1	.000000E	0	.600000E	2	.283302E	1
TEAMS	.115942E	1	.000000E	0	.153000E	2	.344547E	1
EMPL4	.139130E	1	.100000E	1	.300000E	1	.690639E	0
SERV1	.721964E	4	.350000E	2	.670000E	5	.154709E	5
SERV2	.100000E	1	.100000E	1	.100000E	1	.000000E	0
SERV3	.100000E	1	.100000E	1	.100000E	1	.000000E	0
SERV4	.363254E	5	.300000E	3	.494000E	6	.733768E	5
TIME	.219565E	2	.100000E	2	.300000E	2	.463502E	1
SERV5	.178261E	1	.100000E	1	.200000E	1	.415493E	0
SERV6	.182609E	1	.100000E	1	.200000E	1	.381812E	0
STOR1	.131884E	1	.100000E	1	.200000E	1	.469441E	0
STOR2	.124638E	1	.100000E	1	.200000E	1	.434057E	0

REGR,INDUST.CROS

DEF VAR AREA DOES NOT EXIST

ACCOUNT CODE	T01	DATE	25/06/75	TOTAL FILL TIME	70
JOB NAME	JU01	START TIME	14/59/35	INPUT RECORDS	229
USER NAME	ANDS	END TIME	15/02/58	OUTPUT RECORDS	276
PERIPHERALS USED: 21				MAX. CORE SIZE	11712

RESTART ENTRY USED: 26

	PLOT	ZONE	ISIC	AREA1	BUID1	BUID2	LAND1	LAND2	VALUE	MODE1	MODE
PLOT	1.000	0.123	-0.014	0.331	0.344	0.015	0.046	-0.120	0.275	-0.365	0.305
ZONE	0.123	1.000	0.130	-0.191	0.060	-0.212	-0.159	-0.137	-0.030	-0.278	-0.026
ISIC	-0.014	0.130	1.000	0.046	-0.052	0.142	0.015	0.123	0.066	-0.076	0.066
AREA1	0.331	-0.191	0.046	1.000	0.698	0.322	0.066	-0.070	0.934	-0.460	0.154
BUID1	0.344	0.060	-0.052	0.698	1.000	0.364	0.097	-0.105	0.691	-0.449	0.144
BUID2	0.015	-0.212	0.142	0.322	0.364	1.000	0.533	0.479	0.465	-0.062	0.051
LAND1	0.046	-0.159	0.015	0.066	0.097	0.533	1.000	0.586	0.150	0.133	0.045
LAND2	-0.120	-0.137	0.123	-0.070	-0.105	0.479	0.586	1.000	-0.015	0.124	-0.012
VALUE	0.275	-0.030	0.066	0.934	0.691	0.465	0.150	-0.015	1.000	-0.414	0.175
MODE1	-0.365	-0.278	-0.076	-0.460	-0.449	-0.062	0.133	0.124	-0.414	1.000	-0.112
MODE2	0.305	-0.026	0.066	0.154	0.144	0.051	0.046	-0.012	0.175	-0.112	1.000
MODE3	0.218	0.312	-0.062	0.663	0.565	0.270	0.025	-0.167	0.631	-0.369	0.141
OUTP	0.355	-0.029	-0.203	0.293	0.296	0.071	-0.016	-0.103	0.345	-0.183	0.216
MODE4	-0.066	-0.152	-0.367	-0.002	0.025	-0.009	-0.021	-0.125	0.033	-0.048	-0.065
MODE5	0.075	0.157	0.362	-0.006	-0.035	0.010	0.018	0.116	-0.042	0.055	0.076
MODE6	-0.161	-0.080	0.052	0.090	0.114	-0.004	0.031	0.128	0.110	-0.089	-0.173
SOU[illegible]	0.173	-0.313	0.357	-0.029	-0.084	-0.090	-0.065	-0.128	-0.003	0.035	-0.163
LOAD	0.330	0.176	0.071	0.369	0.354	0.164	0.045	-0.060	0.338	-0.558	0.125
SALE1	-0.002	-0.157	0.129	0.125	-0.015	0.024	-0.013	0.092	0.123	-0.044	0.155
SALE2	0.119	0.075	-0.140	0.140	0.292	0.170	0.033	-0.050	0.103	0.029	-0.067
SALE3	-0.074	0.062	0.116	-0.201	-0.201	-0.106	-0.028	0.053	-0.170	-0.063	-0.00[illegible]
SALE4	-0.102	0.050	-0.024	-0.064	-0.158	-0.152	-0.088	-0.112	-0.060	-0.056	-0.211
SALE5	-0.015	0.044	-0.145	-0.096	-0.057	-0.077	0.043	-0.078	-0.085	0.118	-0.07[illegible]
MODE7	-0.162	-0.037	0.167	0.047	-0.077	-0.168	-0.184	-0.114	-0.009	0.089	0.14[illegible]
MODE8	0.208	0.020	-0.020	0.022	0.157	0.262	0.197	0.233	0.074	-0.204	-0.05[illegible]
MODE9	-0.018	0.023	-0.151	-0.099	-0.061	-0.066	-0.001	-0.091	-0.085	0.101	-0.08[illegible]
MODE0	-0.056	0.014	-0.066	-0.042	-0.046	-0.148	0.043	-0.131	-0.038	0.171	-0.23[illegible]
EMPL1	0.234	0.049	-0.152	0.667	0.764	0.354	-0.007	-0.176	0.694	-0.302	0.08[illegible]
EMPL2	0.214	-0.025	-0.196	0.589	0.659	0.369	0.038	-0.134	0.674	-0.258	0.16[illegible]
EMPL3	0.208	0.102	-0.168	0.626	0.704	0.281	-0.048	-0.161	0.597	-0.288	0.00[illegible]
HOUSE	-0.005	0.323	-0.197	0.263	0.310	0.259	-0.076	-0.075	0.244	-0.172	0.06[illegible]
TRANS	0.097	-0.034	-0.113	0.455	0.744	0.333	0.009	-0.175	0.520	-0.232	0.15[illegible]
EMPL4	0.271	0.145	-0.205	0.563	0.659	0.249	-0.004	-0.200	0.531	-0.300	0.09[illegible]
SERV1	0.151	0.029	-0.124	0.347	0.269	0.270	0.014	-0.011	0.404	-0.215	0.11[illegible]
SERV2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SERV3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SERV4	0.150	-0.119	0.129	0.398	0.499	0.365	0.239	0.110	0.565	-0.117	0.04[illegible]
TIME	0.110	0.041	0.208	0.202	0.146	0.043	0.052	0.196	0.083	-0.302	0.3[illegible]
SERV5	-0.227	-0.177	0.255	-0.671	-0.626	-0.157	-0.075	0.195	-0.636	0.361	-0.1[illegible]
SERV6	-0.234	-0.120	0.237	-0.601	-0.650	-0.159	0.015	0.199	-0.605	0.514	-0.2[illegible]
STOR1	-0.083	-0.181	-0.020	-0.516	-0.281	-0.058	-0.052	-0.057	-0.264	0.266	-0.0[illegible]
STOR2	0.037	-0.173	-0.023	-0.268	-0.211	-0.165	-0.123	0.023	-0.210	0.253	-0.13[illegible]

	MODE3	OUTP	MODE4	MODE5	MODE6	SOURC	LOAD	SALE1	SALE2	SALE3	SALE4
PLOT	0.213	0.358	-0.066	0.078	-0.131	0.121	0.330	-0.002	0.119	-0.084	-0.102
ZONE	0.312	-0.029	-0.152	0.157	-0.190	-0.112	0.176	-0.157	0.075	0.062	0.050
ISIT	-0.062	-0.203	-0.367	0.362	0.052	0.337	0.071	0.129	-0.140	0.116	-0.024
AREAT	0.585	0.193	-0.092	-0.006	0.090	-0.029	0.369	0.125	0.140	-0.201	-0.064
BUIP1	0.365	0.296	0.025	-0.035	0.114	-0.064	0.354	-0.015	0.292	-0.201	-0.155
BUIP2	0.270	0.171	-0.009	0.017	-0.104	-0.090	0.164	0.024	0.171	-0.106	-0.152
LAND1	0.025	-0.016	-0.021	0.018	0.031	-0.065	0.045	-0.018	0.035	-0.028	-0.088
LAND2	-0.167	-0.103	-0.125	0.117	0.128	-0.129	-0.060	0.092	-0.050	0.031	-0.112
VALUE	0.631	0.365	0.033	-0.042	0.110	-0.033	0.335	0.123	0.103	-0.170	-0.060
MODE1	-0.369	-0.123	-0.046	0.055	-0.089	0.035	-0.556	-0.044	0.029	-0.063	-0.056
MODE2	0.141	0.216	-0.065	0.078	-0.173	-0.184	0.129	0.159	-0.067	-0.003	-0.211
MODE3	1.000	0.428	0.015	-0.021	0.079	-0.098	0.350	0.025	0.152	-0.079	-0.127
OUTP	0.428	1.000	0.030	-0.074	-0.076	-0.254	0.216	-0.101	0.266	-0.122	-0.105
MODE4	0.015	0.030	1.000	-0.997	0.013	-0.025	0.011	-0.138	0.217	-0.166	-0.041
MODE5	-0.021	-0.074	-0.997	1.000	-0.085	0.030	-0.019	0.121	-0.204	0.177	0.035
MODE6	0.079	-0.076	0.013	-0.085	1.000	-0.065	0.092	0.233	-0.176	-0.131	0.061
SOURC	-0.098	-0.254	-0.025	0.030	-0.065	1.000	-0.125	0.035	0.018	0.148	-0.008
LOAD	0.350	0.216	0.011	-0.019	0.092	-0.125	1.000	0.161	-0.114	-0.016	0.060
SALE1	0.025	-0.101	-0.138	0.121	0.233	0.035	0.161	1.000	-0.453	-0.464	-0.105
SALE2	0.152	0.266	0.217	-0.204	-0.176	0.018	-0.114	-0.453	1.000	-0.255	-0.088
SALE3	-0.079	-0.122	-0.166	0.177	-0.131	0.148	-0.016	-0.464	-0.255	1.000	0.008
SALE4	-0.127	-0.105	-0.041	0.035	0.061	-0.008	0.060	-0.105	-0.088	0.008	1.000
SALE5	-0.094	-0.008	0.140	-0.142	0.021	-0.246	-0.089	-0.297	-0.254	-0.212	-0.025
MODE7	-0.037	-0.134	-0.190	0.191	-0.017	0.120	-0.136	0.519	-0.051	-0.184	-0.035
MODE8	0.115	0.204	0.134	-0.132	-0.075	0.018	0.243	-0.383	0.261	0.354	-0.083
MODE9	-0.093	-0.042	0.143	-0.143	-0.003	-0.228	-0.073	-0.309	-0.253	-0.165	-0.010
MODE0	-0.061	-0.110	-0.057	0.042	0.128	0.006	-0.181	0.023	-0.137	-0.107	0.542
EMPL1	0.773	0.006	0.093	-0.095	0.056	-0.114	0.303	-0.127	0.367	-0.150	-0.119
EMPL2	0.566	0.204	0.115	-0.106	0.021	-0.132	0.276	-0.067	0.308	-0.176	-0.158
EMPL3	0.613	0.414	0.065	-0.072	0.080	-0.079	0.274	-0.153	0.349	-0.101	-0.067
HOUSE	0.366	0.265	0.174	-0.195	-0.099	-0.194	0.175	0.129	0.064	-0.153	-0.105
TRANS	0.456	0.455	0.140	-0.144	0.144	-0.150	0.236	-0.027	0.282	-0.172	-0.151
EMPL4	0.533	0.424	0.215	-0.219	0.065	-0.139	0.319	-0.034	0.267	-0.290	-0.199
SERV1	0.517	0.633	0.022	-0.019	-0.056	-0.196	0.273	-0.004	0.193	-0.097	-0.139
SERV2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SERV3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SERV4	0.462	0.437	0.109	-0.110	0.007	0.080	0.196	-0.075	0.239	-0.159	-0.155
TIME	0.254	-0.164	-0.179	0.177	0.022	-0.040	0.234	0.121	-0.082	-0.013	-0.047
SERV5	-0.550	-0.099	-0.050	0.055	-0.058	0.176	-0.367	-0.004	-0.284	0.145	-0.040
SERV6	-0.636	-0.357	-0.135	0.092	-0.077	0.137	-0.320	0.036	-0.292	0.168	0.100
STOR1	-0.205	-0.176	-0.015	0.025	-0.146	0.224	-0.213	-0.014	0.032	0.117	0.073
STOR2	-0.155	-0.141	-0.131	0.103	-0.041	0.162	-0.099	0.161	-0.249	0.167	-0.143

	SALES	MODE7	MODE8	MODE9	MODE0	EMPL1	EMPL2	EMPL3	HOUSE	TRANS	EMPL
PLOT	-0.015	-0.152	0.236	-0.018	-0.056	0.234	0.214	0.208	-0.005	0.097	0.271
ZONE	0.044	-0.037	0.030	0.023	0.014	0.049	-0.025	0.102	0.123	-0.034	0.145
ISIC	-0.145	0.167	-0.079	-0.151	-0.058	-0.152	-0.106	-0.168	-0.197	-0.113	-0.285
AREA1	-0.096	0.147	0.122	-0.090	-0.042	0.467	0.589	0.520	0.298	0.455	0.565
BUILD1	-0.057	-0.077	0.137	-0.061	-0.046	0.764	0.669	0.704	0.310	0.744	0.669
BUILD2	-0.077	-0.108	0.252	-0.066	-0.146	1.354	0.363	0.281	0.259	0.333	0.249
LAND1	0.043	-0.124	0.197	-0.001	0.043	-0.007	0.038	-0.048	-0.076	0.009	-0.004
LAND2	-0.078	-0.114	0.219	-0.091	-0.131	-0.176	-0.134	-0.161	-0.075	-0.175	-0.200
VALUE	-0.035	-0.109	0.074	-0.085	-0.036	0.694	0.674	0.597	0.244	0.520	0.531
MODE1	0.113	0.789	-1.204	0.101	0.171	-0.362	-0.253	-0.288	-0.172	-0.232	-0.580
MODE2	-0.078	0.144	-0.055	-0.061	-0.238	0.084	0.164	0.003	0.065	0.154	0.096
MODE3	-0.094	-0.057	0.115	-0.093	-0.041	0.773	0.566	0.813	0.346	0.483	0.535
OUTP	-0.003	-0.134	0.234	-0.042	-0.110	0.608	0.700	0.414	0.265	0.450	0.420
MODE4	0.140	-0.190	0.134	0.143	-0.057	0.093	0.105	0.065	0.134	0.140	0.215
MODE5	-0.142	0.191	-0.132	-0.143	0.042	-0.098	-0.104	-0.072	-0.193	-0.144	-0.219
MODE6	0.121	-0.117	-0.025	-0.003	0.136	0.056	0.021	0.080	-0.009	0.044	0.065
SOURC	-0.246	0.120	0.018	-0.228	0.006	-0.114	-0.132	-0.079	-0.104	-0.130	-0.139
LOAD	-0.089	-0.138	0.243	-0.073	-0.121	0.303	0.276	0.274	0.175	0.236	0.319
SALE1	-0.297	0.519	-0.383	-0.309	0.023	-0.127	-0.067	-0.153	0.129	-0.027	-0.034
SALE2	-0.254	-0.051	0.261	-0.258	-0.137	0.367	0.303	0.349	0.064	0.262	0.267
SALE3	-0.212	-0.184	0.354	-0.185	-0.107	-0.150	-0.175	-0.101	-0.155	-0.182	-0.290
SALE4	-0.026	-0.135	-0.053	-0.010	0.542	-0.119	-0.150	-0.067	-0.103	-0.151	-0.199
SALE5	1.000	-0.454	-0.179	0.085	0.113	-0.050	-0.032	-0.072	-0.047	-0.050	0.119
MODE7	-0.454	1.000	-0.773	-0.664	-0.144	-0.108	-0.074	-0.114	0.062	0.060	0.013
MODE8	-0.179	-0.773	1.000	-0.157	-0.114	0.135	0.150	0.177	-0.021	-0.089	-0.071
MODE9	0.925	-0.664	-0.157	1.000	0.063	-0.079	-0.071	-0.071	-0.053	-0.069	0.113
MODE0	0.113	-0.144	-0.114	0.063	1.000	-0.048	-0.080	-0.008	-0.052	-0.046	-0.063
EMPL1	-0.059	-0.108	0.135	-0.079	-0.048	1.000	0.887	0.914	0.419	0.752	0.700
EMPL2	-0.032	-0.074	0.150	-0.071	-0.080	0.887	1.000	0.624	0.362	0.751	0.709
EMPL3	-0.072	-0.114	0.177	-0.071	-0.008	0.914	0.624	1.000	0.389	0.602	0.566
HOUSE	-0.047	0.062	-0.021	-0.053	-0.052	0.419	0.362	0.389	1.000	0.619	0.545
TRANS	-0.050	0.060	-0.089	-0.069	-0.046	0.752	0.751	0.602	0.619	1.000	0.795
EMPL4	0.119	0.013	-0.071	0.113	-0.056	0.700	0.709	0.566	0.546	0.795	1.000
SERV1	-0.075	-0.127	0.110	-0.080	-0.111	0.518	0.515	0.456	0.600	0.565	0.554
SERV2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SERV3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SERV4	-0.046	-0.054	0.091	-0.042	-0.101	0.571	0.612	0.425	0.406	0.652	0.575
TIME	-0.033	-0.060	1.129	-0.044	-0.167	0.024	-0.109	0.044	1.091	0.017	0.056
SERV5	0.097	0.113	-0.067	0.100	-0.026	-0.691	-0.609	-0.644	-0.470	-0.644	-0.724
SERV6	0.081	0.005	-0.075	0.083	0.027	-0.777	-0.696	-0.714	-0.547	-0.750	-0.798
STOR1	-0.165	0.138	-0.079	-0.159	0.044	-0.251	-0.251	-0.172	-0.152	-0.166	-0.164
STOR2	-0.136	0.089	-0.018	-0.138	0.133	-0.179	-0.174	-0.158	-0.122	-0.145	-0.130

PLOT	0.151	0.000	0.000	0.150	0.110	-0.227	-0.234	0.063	0.037
ZONE	0.029	0.000	0.000	-0.119	0.641	-0.177	-0.120	-0.161	-0.173
ISIC	-0.124	0.000	0.000	0.129	0.208	0.255	0.237	-0.020	-0.023
AREA1	0.347	0.000	0.000	0.398	0.202	-0.671	-0.601	-0.316	-0.260
BUID1	0.269	0.000	0.000	0.499	0.146	-0.628	-0.650	-0.281	-0.211
BUID2	0.270	0.000	0.000	0.565	0.043	-0.187	-0.159	-0.063	-0.165
LAND1	0.014	0.000	0.000	0.239	0.052	-0.075	0.015	-0.052	-0.123
LAND2	-0.011	0.000	0.000	0.110	0.196	0.195	0.109	-0.037	0.023
VALUE	0.404	0.000	0.000	0.563	0.083	-0.636	-0.605	-0.204	-0.210
MODE1	-0.215	0.000	0.000	-0.117	-0.392	0.361	0.314	0.266	0.258
MODE2	0.115	0.000	0.000	0.045	0.071	-0.188	-0.200	-0.084	-0.139
MODE3	0.517	0.000	0.000	0.462	0.254	-0.650	-0.638	-0.205	-0.155
OUTP	0.535	0.000	0.000	0.452	-0.084	-0.499	-0.556	-0.178	-0.141
MODE4	0.022	0.000	0.000	0.109	-0.178	-0.030	-0.085	-0.015	-0.101
MODE5	-0.019	0.000	0.000	-0.110	0.177	0.058	0.092	0.025	0.105
MODE6	-0.056	0.000	0.000	0.007	0.022	-0.058	-0.087	-0.146	-0.041
SOURC	-0.196	0.000	0.000	0.089	-0.040	0.176	0.137	0.224	0.162
LOAD	0.275	0.000	0.000	0.196	0.238	-0.367	-0.320	-0.213	-0.099
SALE1	-0.004	0.000	0.000	-0.025	0.121	-0.004	0.036	-0.014	0.181
SALE2	0.193	0.000	0.000	0.236	-0.082	-0.204	-0.292	0.032	-0.249
SALE3	-0.097	0.000	0.000	-0.139	-0.016	0.146	0.168	0.117	0.187
SALE4	-0.139	0.000	0.000	-0.155	-0.047	-0.046	0.100	0.023	-0.143
SALE5	-0.085	0.000	0.000	-0.046	-0.038	0.097	0.081	-0.165	-0.136
MODE7	-0.027	0.000	0.000	-0.054	-0.060	0.013	0.005	0.158	0.069
MODE8	0.110	0.000	0.000	0.091	0.129	-0.067	-0.075	-0.079	-0.018
MODE9	-0.080	0.000	0.000	-0.042	-0.044	0.100	0.093	-0.159	-0.134
MODE0	-0.111	0.000	0.000	-0.101	-0.147	-0.038	0.027	0.044	0.135
EMPL1	0.513	0.100	0.000	0.571	0.024	-0.691	-0.777	-0.251	-0.170
EMPL2	0.515	0.000	0.000	0.612	-0.009	-0.609	-0.696	-0.251	-0.174
EMPL3	0.456	0.000	0.000	0.425	0.044	-0.644	-0.714	-0.172	-0.138
HOUSE	0.600	0.000	0.000	0.606	0.091	-0.476	-0.547	-0.152	-0.122
TRANS	0.565	0.000	0.000	0.652	0.017	-0.643	-0.739	-0.186	-0.145
EMPL4	0.554	0.000	0.000	0.575	0.056	-0.724	-0.798	-0.164	-0.130
SERV1	1.000	0.000	0.000	0.611	-0.005	-0.568	-0.663	-0.124	-0.155
SERV2	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SERV3	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
SERV4	0.611	0.000	0.000	1.000	-0.058	-0.460	-0.544	-0.061	-0.033
TIME	-0.005	0.000	0.000	-0.058	1.000	-0.120	-0.054	-0.257	-0.097
SERV5	-0.368	0.000	0.000	-0.460	-0.120	1.000	0.871	0.285	0.220
SERV6	-0.303	0.000	0.000	-0.544	-0.054	0.871	1.000	0.232	0.174
STOR1	-0.184	0.000	0.000	-0.061	-0.257	0.285	0.232	1.000	0.691
STOR2	-0.155	0.000	0.000	-0.033	-0.097	0.220	0.174	0.691	1.000

FMSS..INDUST..S

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14/59/45  0#XDS3    HALT    21
14/59/51  0#XDS3    MT21   2   *00010213    ICL STATFILE   0   *00000000
15/02/37  0#XDS3    HALT    F9
15/02/37  0#XDS3    HALT    F1
15/02/53  0#XDS3    GO  26
15/02/54  0#XDS3    HALT    29
15/02/55  0#XDS3    CLKD    63
15 02 55  0  D 3    DL D
15/02/56  0#XDS3    CLOSED  MT21
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ESS	WORD N	WORD N+1	WORD N+2	WORD N+3
	OCTAL CHAR INSTRUCTION	OCTAL CHAR INSTRUCTION	OCTAL CHAR INSTRUCTION	OCTAL CHAR INSTRUCTIO
1	00004751 0051 000 0 0 2537	00000002 0002 000 0 0 2	00002005 00 3 000 0 0 1027	00001727 0027 000 0 0 9
6	00000001 0001 000 0 0 1		00004757 0060 000 0 0 2545	
12	25742245 %S"C 076 2 17571	07705401 7XL1 176 0 0 2517	17240004 ?$04 165 1 0 4	10000012 800: 000
16	20000013 00: 001 2 0 11	07700076 6X0↑ 156 0 0 62	05600025 3P0# 074 0 19	07045444 74L0 161 0 0 28
20	03602250 3P"H 074 0 1192			

Appendix 3

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