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A MARKET ANALYSIS PROCESS FOR LAND DEVELOPMENT

by

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CHAPTER 1

AN INTRODUCTION TO MARKET ANALYSIS

Urban growth in a physical sense can generally be viewed as a signal indicating a strong economic base within a community. Industrial plant expansion, shopping center development, retail business openings and, most importantly to this study, a growth in housing related fields represent a positive movement in a local or regional economy.

Development and investment firms, contractors and builders interested in getting their share of the rising economic action must make critical decisions in determining the type, quality and quantity of saleable or rentable space necessary for market absorption. Most likely many highly successful subdivisions or commercial facilities have developed over the years by a mere guess or a hunch of consumer needs. These guesses, based primarily upon the visible market (the sold signs in yards, moving vans transporting families in and out of the community, or the classified section of the newspaper) generally involved very little analytical data from which a solid foundation for these business predictions could be made.

Today's developers can rarely afford to make guesses as past generations of developers have. Much greater monetary risks hover over these firms caused by increased governmental regulation (building codes, planning and zoning actions, and others), the rising cost of money, energy shortages, environmental concerns, and inflation, to name a few. The Wall Street Journal, in an

article describing the relationship between the construction business and the cost of money, states, "The problem is the rising cost of money, which has driven up construction costs to the point where builders are concerned whether they can recover their investment in new office buildings, shopping centers, warehouses and other developments."[1] With all major cost components in housing rising over 600 percent in the past thirty years[2], monetary risks to the builder have increased similarly. Although the builder will pass these costs on to the final consumer, he is continually faced with many marketing questions pertaining to such items as selling price, floor design, amenities, type of unit -- townhouse, patio home, single family and locational aspects. A poorly researched decision can spell certain disaster for the improperly informed developer or investor.

The landscape architect, architect or planner involved in the design of subdivisions may well be called upon to aid in establishing the market mix for a subject site. To aid in the development of such a program of forecasting and projecting the future needs of the consumer, economists, realtors and builders have developed (and continue to develop) the concept of the market analysis. The market analysis is a process which evaluates demand determinants (income, population, employment, retail sales, etc.) which affect the needs and requirements for space or spatial activities. The analysis is concerned with the existing economic health of a specified market area (region, city, community, neighborhood, etc.), its future and the potential for new, rehabilitated or converted spatial units (uses) within that area.[3]

At the outset, market analysis is somewhat demand-oriented with primary emphasis upon the elements which cause demand for space. For instance, an economy undergoing stepped up production in goods and in related service professions will create a need for new employees. The necessary supply of employees will come from two sources: the existing population or from an in-migrating population. With new jobs available, the aggregate earning power of the population will rise with individual households gaining in available income. The total amount of income received by these individual households and the share afforded to housing will determine the class of housing necessary -- rental or sales. These demand details may provide an idea to the analyst of the potential for housing in a particular area.

Some provision, however, must be made to match these demand projections with the available supply of space within the area under consideration. To get a true picture of the market supply, the analyst must enumerate all supply sources, including the existing inventory, that segment currently under construction and that which is in the planning stage. In addition, any building demolitions and conversions which would alter the market supply must be noted to develop an adjusted market supply figure.

In evaluating market demand for residential land uses, judgmental evaluations related to a particular site or housing concept must 'balance' with the overall economics of housing demand in a particular area.[4] The market analyst who develops a sufficient data base and updates to maintain currency should be well aware of the overall growth trends of a community or region and should be quite well-prepared in making 'solid' judgments.

However, W. O. Bowes notes "that market analyses and feasibility studies are costly and usually they are not ordered by property owners who expect negative recommendations irrespective of what the facts may be. Neither are such assignments accepted by people or companies who expect to develop a negative answer."[5] In this instance, the market analyst must interpret the market factors on one hand gaining the greatest insights into consumer needs while on the other hand shaping a recommendation to satisfy the client. These 'modified' judgmental evaluations may, in fact, prove to be as risky to the professional analyst as they are to the property owner.

Many writers of real estate articles and books support the concept of market analysis in the real estate development process. Messner, Boyce, Trimble and Ward write, "It is the basic tenet of this book that a market and/or feasibility study is a first step in the development/investment process and often in the design of marketing strategies and plans for existing properties."[6] Prior knowledge that a development project has good chances of success may well aid in convincing potential investors or banking firms to support the construction project. If, on the other hand, the preliminary market evaluation provides negative results, the only money lost would be the cost of the market analysis thus saving the property developer a tremendous amount in time, expense and worry.

Ring and Dasso expand this thesis by including the managerial importance of market analysis; "A real estate market analysis is a management tool for decision making as well as planning and budgeting."[7] The development of a managerial process necessary for successful project completion should establish a goal of total

control over the project rather than the opposite occurrence. If the market analysis data can provide the general direction for housing and consumer preference, some guesswork can be eliminated from the decision making process. This could have an advantage in simplifying the allocation of available resources and could help create a more predictable planning sequence.

Bowes points out, "Market analysis is a study of the reasons why prices are being paid. It has far more to do with the future than with either the present of the past."[8] With this firmly in mind, one could clearly state that market analysis is not an exacting science, but a process by which logical and patterned trends are studied and evaluated along with collected market data to develop a series of conclusions concerning the relationships between people and property. These conclusions are in the end, judgment, backed by data which is as accurate and up to date as is economically and feasibly possible.

Market analysis may also provide a means by which a developer can 'read' the happenings of the market place. An overbuilt and high inventory market would indicate to an analyst that a slowdown in construction may be necessary to allow a decrease in the production inventory. Because of the highly fragmented and decentralized construction trade, an individual builder will most likely not be able to reduce the inventory alone yet he can lessen his financial risk during times of low sales and the subsequent property holding period.

Ideally, when long-term demand reappears, the builder wants to be ahead of the crowd with available housing. The element

of timing is a primary goal of market analysis. Once a market segment in need of housing appears and all building firms are aware of the needs, the market will be inundated by a large supply of housing in a very narrow time frame. The builder who has kept tabs on the existing inventory and economic factors and can reasonably forecast the needs before they surface will have a better shot at successful development of his property.

This study attempts to outline a format for market analysis which may serve as an aid in the land development process. It is presented with the layperson in mind, and will not, therefore, include major mathematical equations commonly used in more advanced economic studies.

To evaluate the market analysis process, one must first understand the housing market itself. Chapter 2 has been written to provide a general overview of this market. Elements discussed in this section include characteristics of the real estate market, the effects of the economy upon the supply and demand for housing, the cycles of the market and urban growth policies and their effect upon the real estate market.

Chapter 3 delineates the determinants of supply and demand which must be noted in market analysis projects. Elements causing the demand or need for housing include population and income patterns, numbers of households and family size. Supply determinants, those factors which provide the products necessary for market satisfaction, include construction activity, housing inventory -- both present and projected, conversions and demolitions. Charts and tables necessary for the documentation of this supply and demand data have also been completed within this section.

Chapter 4 involves the development of a sample market analysis format for a specific site in the Wichita, Kansas metropolitan area. The format follows a systematic approach to analyze the housing needs including an evaluation of the local economy and trends in business, employment and industry, a description of the primary housing market area, a review of the demand (demographic) and supply factors and a final judgment as to the housing demand in the area.

Footnotes

[1]James Carberry, "Real Estate Developers Thinking Twice About New Projects as Interest Rates Rise," Wall Street Journal, November 14, 1978, p. 12, col. 4.

[2]James Carberry, "Land Plays Rising Role, Labor a Reduced One in the Long, Steep Climb in Cost of New Homes," Wall Street Journal, October 11, 1978, p. 40, col. 1.

[3]Stephen D. Messner and others, Analyzing Real Estate Opportunities-Market and Feasibility Studies, (Chicago: Realtors National Marketing Institute of the National Association of Realtors, 1977), p. 40.

[4]John McMahan, Property Development, (New York: McGraw-Hill Book Company, 1976), p. 132.

[5]W. O. Bowes, "What is Market Analysis?," The Real Estate Appraiser, July-August, 1968, p. 12.

[6]Stephen D. Messner and others, Analyzing Real Estate Opportunities-Market and Feasibility Studies, (Chicago: Realtors National Marketing Institute of the National Association of Realtors, 1977), p. 3.

[7]Alfred A. Ring and Jerome Dasso, Real Estate Principles and Practices, (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1977), p. 335.

[8]W. O. Bowes, "What is Market Analysis?," The Real Estate Appraiser, July-August, 1968, p. 11.

CHAPTER 2

CHARACTERISTICS OF THE REAL ESTATE MARKET

The residential market analysis, as a process, evaluates existing local supply and demand conditions to determine the anticipatory housing needs within a particular real estate market. The analysis itself can provide extremely valuable information as a means of predicting or forecasting future stock requirements. Full understanding of the contents of such a study is impossible without some comprehension of the many unique characteristics or qualities of the real estate market place.

This chapter provides basic information relative to the performance and function of the real estate sub-market within the total market forum. Certain characteristics are common to all market segments including such traits as supply/demand relationships and population, income status and so on. Others, however, are common, if not exclusive, characteristics to the real estate market.

ECONOMIC FACTORS OF THE MARKET PLACE.

Marketing experts and researchers possess numerous definitions and explanations for market activity. Most, however, summarize to a basic point of consideration; usually two or more parties are involved as exchangers of a good or service for some form of cash or other desirable commodity offered as a means of exchange. "A fundamental assumption of economics is that man is motivated primarily by those things which will produce the most benefits to him."[1] In most cases this benefit may be translated to mean

a money profit, however, it is not limited as such. Economic goods as opposed to free goods (the air we breathe, for example) come into being when someone expresses a desire to obtain that good. The early settlers in the United States discovered vast quantities of raw resources and land, yet only that land which was accessible to them presented a true economic value. Anticipatory values may well have been within their minds for the lands and resources beyond, however, the access and availability limited their effective values.

A person contemplating the purchase of an economic good within a market place must balance its price against the prices for alternative goods, the efforts involved in the acquisition of his wealth and the potential benefits which he may receive from the various products available. Some correlation between the cost (price) of the economic good and the decision making time can be established; in most cases, the higher the cost of the good, the greater the time period involved in the process. This is an especially true and critical factor in the real estate market.

A fundamental concept of economics is that man is basically a rational being who seeks to maximize what he receives as compared to what he pays.[2] Many implications may, however, be involved in altering this concept. Certainly the income level or the general sense of values may play important roles in the decision making process.

These assumptions provide a basic framework by which the private, free enterprise system is designed. The so-called perfect market will accomplish many tasks; tasks that in theory sound

basic enough yet in reality are difficult if not impossible to meet. For example, Knight has suggested several such traits of of a successful economic system:[3]

1) Fix standards of successful performance levels for measuring efficient market performance. Standardization of economic goods provides for some means of comparison in terms of saleability, preference and desirability;

2) Organize production for coordinated allocation of productive forces and materials. The establishment of an organized and programmed means of production allows for a prescribed level of output, a proper allocation or segmenting of resources available and greater efficiency in the market place;

3) Distribute economic products so that each person has an opportunity to acquire what he needs from the production of others. To establish a strong and competitive market structure, products must be available to the consumer for their acquisition and utilization;

4) Protect and maximize the value of goods already acquired. Over time, technology, consumer wants and resource supplies will change. The economic system must keep this assumption in mind, however, the major problem faced is the utilization of existing resources and technology to satisfy wants in the short run; and

5) Adjust consumption to production over short periods of time, in order that production may adjust to consumption as quickly as possible. To eliminate overstocking or excess inventory of a product, producers must analyze the trends in consumer purchases or indices. The interaction of many forces such as population trends, income and employment levels, competition, changing tastes and preferences, can all have significant impacts upon the consumption of particular goods and services.

A totally perfect market is extremely difficult to perceive if based upon the above characteristics. With advanced market research techniques, the imperfections may gradually lessen, however, no one can fully and substantially predict what will happen in the market place.

The real estate market place is, undoubtedly, one of the most imperfect forums for trade and exchange of the land and associated

improvements. In view of the above traits of an idealized system of trade, real estate transactions rank as one of the lowest in terms of effectiveness and efficiency. (And the situation will most likely not change a great amount in the future). Real estate is, as most desired goods and physical entities are, an economic good desired by a population for various reasons and purposes.

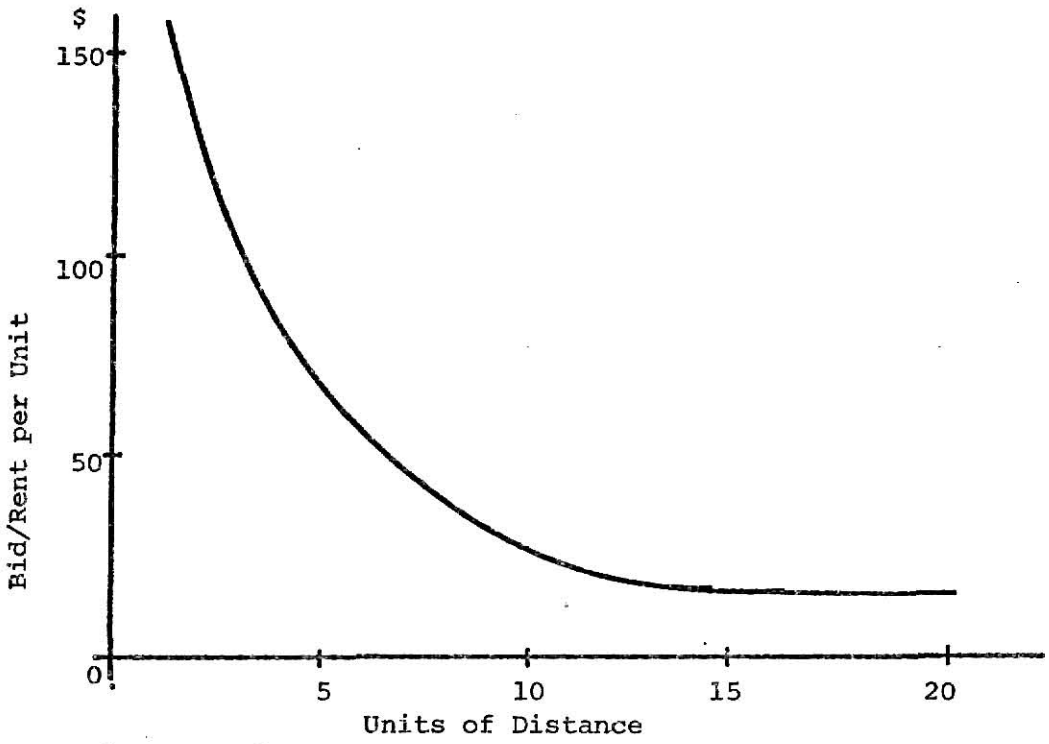
Real estate has five characteristics which cause each and every market transaction to be a unique bargaining situation which, in terms of the perfect market concept, creates a considerably different market reaction.[4] The characteristics of 1) immobility, 2) longevity, 3) high cost, 4) dependency and 5) uniqueness influence real estate values and have significant effects upon their availability to potential consumers.

Immobility is a most distinguishing characteristic of real estate because it influences property values and uses most directly. All land is a commodity with absolute fixity -- it is physically impossible to move a parcel of real estate. Some alteration such as earthwork, excavation, blasting and other such processes may be performed on the land, however, the recorded location cannot be adjusted at the whim of the market place. The valuation of a property and the potential development of said parcel is directly related to the immobility concept. If, perchance, a city was established a hundred years ago near a river or harbor and your land (recently purchased or passed along within the family) was located within a mile of the urban growth center, the fixity factor is definitely a fortunate occurrence especially if growth is in your direction. If, on the other hand, urban development

was miles away, your development possibilities may have little opportunity to succeed. Proximity to prime expansion zones in the context of urban growth plays a primary role in the valuation and exploitation of land for real estate development.

The fixity of location or situs associated with real estate plays a role in the bidding of land prices for future development. Acquisition of developable land, i.e. land possessing physical and locational qualities for residential, industrial or commercial use, are often times scarce within an urban area. This scarcity combined with growth pressures may cause stimulated bidding and higher valuations pushing land prices to new levels. Similar sites possessing equally desirable physical characteristics may loose out due to a fixed location which is out of the prime line of urban growth. In addition, convenience in location, that is, nearness to work or to other things that the family wants will cause the family to want to pay more for such conveniently located housing.[5] The nature of such a relationship is reflected in Figure 2-1 which reflects bid/rent price to distance. The assumption of such a curve explains to some extent the way in which the housing market sets price, but also the way in which a city is formed. The market values of parcels cannot escape the limitations imposed by their immediate location because the properties are immobile.[6]

Longevity is a quality which relates to the permanence of land and semi-permanence of related improvements. Land will always have value, especially when transportation systems provide direct linkages to economic centers. Improvements upon the land will, however, vary in their economic life. Urban growth affects



Source: Case

Figure 2-1. Bid/Rent to Distance Curve.

the overall longevity of real estate properties. For example, residential properties, if located in areas of strong commercial expansion, may be converted or, if feasible, torn down to make way for commercial interests. In addition, economic longevity of the housing supply means that a very large percentage of properties available on the market are used properties and, thusly, the prices offered and paid for these will tend to influence the market prices for new structures.

Improved real estate possesses a very high cost as an economic commodity when compared to the normal day-to-day purchase of goods and services. Higher prices for these parcels tend to limit the market transactions to those with sufficient capital or financing ability. Price relationships are especially critical when evaluating the supply versus demand factors of the

real estate market. For example, markets which are flooded with a surplus housing supply tend to cater to the buyer in lower price and greater selection. Once the cycle shifts, this supply dwindles, greater demand pressure develops within the market place and prices will rise due to greater competition for resources. Several other factors involved in the pricing or the cost mechanism of real estate must also be considered including interest rates, the cost of developable lands, the cost of financing and others.

Real estate values fluctuate due to their dependency upon the available public services (utilities, roads, parks, schools and others) within the area of development. Often many of such services are provided by the private developer who has created the area of demand. The market place will generally, however, create demand for public services and determine general directions of the major development, however, the success and marketability of such developments are dependent upon the decisions made by planning and zoning officials, utility companies, city commissions and financing organizations. Generally, areas which have developed with adequate public services designed and built within proximity of a site present stronger growth areas as compared with areas of limited governmental involvement. Especially critical to the development of an area is the transportation system which provides access to employment and commercial centers or other off-site services.

All real estate -- the land and the associated improvements -- is unique; no duplicates exist within the market. Although identical physical properties may be available on the market,

each individual parcel maintains some advantage or disadvantage over another. Site location, accessibility, proximity to schools, employment or commercial centers, terrain, physical improvements, vegetative characteristics and many others have a tremendous effect upon the identity of each and every parcel of real estate available on the market. The characteristic of uniqueness is important to the real estate market; with every individual within the market presenting a completely different line of qualities, no product standardization is possible. With this non-standardization involved in the market place, few assumptions as to the quality of the product can be made which, in turn, means a new fact gathering process for every available parcel. The availability of such information may, in fact, be an extremely time-consuming and difficult venture for the average consumer of realty.

Associated with the above economic qualities of the real estate market are several which, although, limited in terms of their economic substance, contribute greatly to the imperfections of the market system. As mentioned earlier, the perfect market assumes full consumer knowledge of all market variables. Quality, quantity, type, color and a variety of other items are well-known thus establishing a solid and unquestionable product. The nature of real estate markets is such that the acquisition of reliable information common to other goods is extremely difficult. The lack of objective statistics creates a blind market -- one in which the buyer is at a distinct disadvantage in comparing properties. Reasons for the lack of information include the nature of private individual sales transactions and the competition between sales organizations within a community.

Secondly, the location of a property may limit the potential number of buyers, thus conflicting with the adequate and complete distribution concept associated with the free market. Associated with this thought is the imbalance between buyers and sellers within the market. As will be discussed a bit later, the supply/demand market relationship of a free market system would provide a balance between buyers and sellers. The real estate market, however, due to location, price, tradition, taste and inumerable other factors, seldom achieves a true balance. The constantly evolving and emerging growth of the urban area provides a somewhat natural and cyclical pattern of supply and demand. Determination of this cycle by time periods is a primary objective of the real estate market analyst.

REAL ESTATE MARKET FUNCTIONS.

All markets perform the basic task of allocating resources among various uses in the economy.[7] Those uses which command the greatest demand for space due to changing economic conditions will, from the economist's highest and best use theory, be most economically acceptable for land development. As an example, strong residential development will eventually bring about demand for commercial development space to satisfy the growing consumer needs. The market place will accept this fact and allocate areas for such purposes. With the development of these new facilities, market emphasis will switch back to residential uses or possibly to industrial plant expansion. The market, then, is in a continual state of flux attempting to establish an equilibrium point between all elements of spatial demand.

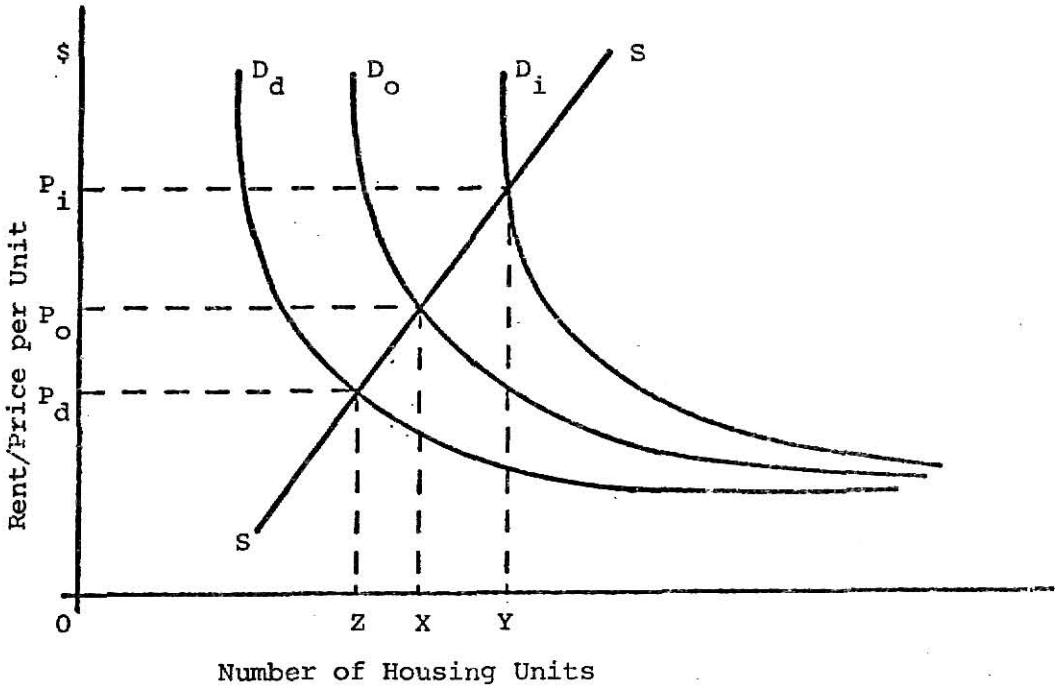
The allocation process involves the accomplishment of several

functions by a market. Weimer, Hoyt and Bloom identify three such functions: 1) apportioning existing quarters among those who need them (short-run), 2) contracting or expanding the space available in order to meet changed conditions (long-run), and, 3) determining land use.[8] A fourth market function, price establishment, has been theorized by Ratcliff and will be included within the framework of the first two functions.[9]

Short Run Adjustments. Often times within a community, adjustment within the real estate market place must be made due to sudden changes in housing requirements. The establishment of new industrial facilities, the mining of important natural resources (coal and oil) in close proximity to a city or the sudden closing of a major source of employment can have profound effect upon the housing market. When such changes occur on short notice, it is usually difficult to make immediate adjustments in the supply of housing units to accomodate such market reactions. To the real estate developer such short term changes must be studied carefully.

Function One suggests that during short-run periods with high demands, the market place may be better off to apportion the existing housing in as satisfactory manner as possible. If demand suddenly increases, additional supply cannot be provided on short notice. If demand suddenly declines, the excess supply cannot quickly be removed from the market area.[10] Figure 2-2 provides a graphical relationship between supply, demand and price during this short run period.[11]

At an established equilibrium point, the demand schedule D_o intersects the fixed supply curve S at Price P_o for X number of



Source: Ring and Dasso

Figure 2-2. Short Run Supply/Demand Relationships

housing units. The available housing has been allocated at a price which current market conditions will allow. Now, assume demand suddenly increases due to the introduction of the previously mentioned employment stimuli. With the expectation of greater job opportunities, large numbers of people will enter a community to bid on the available housing supply. In this short-run time period when new properties cannot be erected quickly, the distribution of the available space is accomplished by raising price levels.[12] In this case, the supply S (being somewhat constant) meets demand curve D_i with an increase in the price per unit, P_i, and a very small corresponding increase in the number of housing units, Y. This increase in the number of units is a direct result of the newly raised price/rent levels; those unable to afford such price levels may double up (children may move back in with parents or couples

may live together) providing the increase (X to Y). The supply of new housing during this short-run period is limited due to: a) a lag time built into the construction industry (acquisition of financing, location of suppliers, platting/zoning procedures and actual on-site construction activity), and, b) the cautious position of investors who must be convinced of the long range character of the increased demand patterns.[13] The market will, therefore, allocate the available space to those who can afford the newly established rent/price levels.

Now, if the employment numbers suddenly shift due to poor product sales, increased oil imports (reducing the need for locally mined minerals), poor management or seasonal business nature, out-migration will most likely occur. This reduction in population will cause the demand curve to shift from D_i to D_d with the results being a lower cost for housing, P_d, and a slight reduction in available housing (Y to Z). The reduction in housing numbers is a direct result of the lower price -- some of those doubling may return to affordable housing units.

Long Run Adjustments. A community enjoying sustained and stable economic growth may well be in the market for a continuous supply of new housing stock to supplement the long run demand. The observant real estate developer will undoubtedly ascertain the status of the existing stock and, with optimistic signals guiding the way proceed with new projects to get his share of the coming demand.

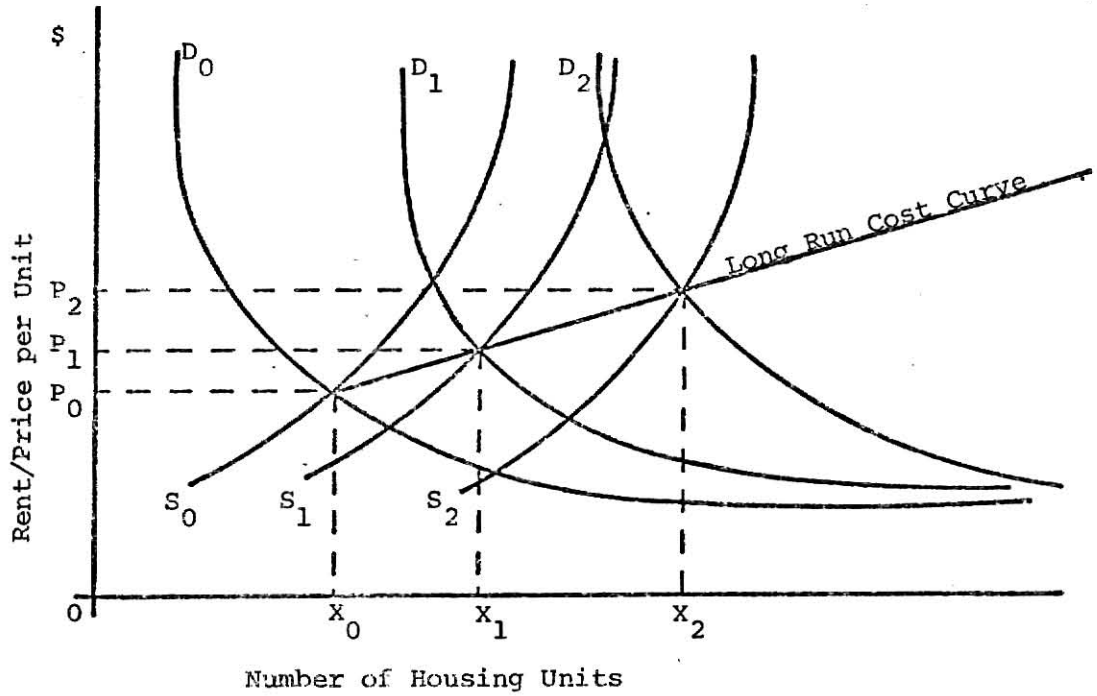
A long run demand as outlined in Function Two contracts or expands the available space to meet changing conditions.[14] The stimuli for such changes -- industrial expansion or new commercial

facilities over a period of years, aids in the establishment of a continuously growing economy. Increased employment opportunities along with greater wage and salary compensation support the expansion of the housing supplies within the community.

Figure 2-3 illustrates the price, supply, demand and cost relationships during favorable long run residential market conditions.[15] Prior to the introduction of external economic stimuli, an equilibrium point has been established within the market place -- the intersection of S_o-D_o creates an equilibrium price P_o for X units. The introduction of new demand within the real estate market will cause an immediate shift in the demand schedule D_1. Existing supply at the outset of a period of economic growth is limited due to skepticism on the part of both the builders and investors. Once, however, the level of economic growth is such that it convinces these key people to initiate residential development projects, the housing supply will expand to S_1. The new equilibrium point established at the S_1-D_1 intersection will provide the necessary housing supply at this particular point in time.

The established price at this S_1-D_1 intersection will equal the cost of production of the housing units. Under conditions of steadily increasing demand, costs of land, labor and building materials all tend to increase rapidly.[16] Owners and workers can hold out for higher prices and wages, and due to the tremendous demand, generally get these increases. This increasing cost trend is reflected by the upward sloping long-run cost curve.

Where demand shifts from D_1 to D_2 with Supply S_1, the intersection of D_2 and S_1 indicates a point well above the cost curve -- a signal to owners and workers that there are excellent possibilities of gaining profits in the construction of housing to meet demand. With a shift in supply over time from S_1 to S_2, equilibrium is at the new price level, P_2, while the number of housing units has increased to X_2. At this point, the developer will generally slow construction as demand equals supply. Little or no new construction would occur if demand decreased -- that is, if the demand curve shifted to the left. The price would be below the cost curve with limited profit incentive to justify construction starts.



Source: Ring and Dasso

Figure 2-3. Long Run Supply/Demand Relationships

Determination of Land Use. Real estate Function Three relates to the actual growth of an urban area, that is, the determination of land use. This function is viewed over a longer run period of market activity and involves many external factors entering the true theoretical view of the market place. Political pressures may well act in a manner which directs the movement of urban growth rather than direct market reactions. Financing availability (or lack of it), city comprehensive planning and growth policies will have a direct effect upon settlement patterns. In addition, the extension of service utilities and roads to areas of proposed development are critical keys for growth.

Consideration of all of these external elements is critical in the analysis of potential real estate development zones. Market development within a community develops around upturns in employment patterns, income levels, population growth and so on. Whenever there is price inducement for builders or developers, additional properties will be built. This inducement is caused by a segment of the community demanding a particular type of land use; once demanded within a market system, the use may be obtained by offering a price high enough to offset the other competing form of land use. Within an actively growing community, there is always a bidding tendency against other land uses with the highest bidder achieving their land use objectives. (Compatibility, of course, dependent upon external forces within the market area).

HOUSING CYCLES WITHIN THE REAL ESTATE MARKET.

Over time, variations in population, income levels, governmental fiscal policy and other factors cause housing cycles to become evident. This cycle may be defined as an alternating upward and downward sweep of sales or starts and is caused by the overall instability of the housing market economy.[17] As mentioned in a previous section, the imperfections common to the real estate market do not allow for quick decision making. Such a limitation can, then, cause ineffective demand analysis with a lag period between general economic reaction and the subsequent real estate market action.

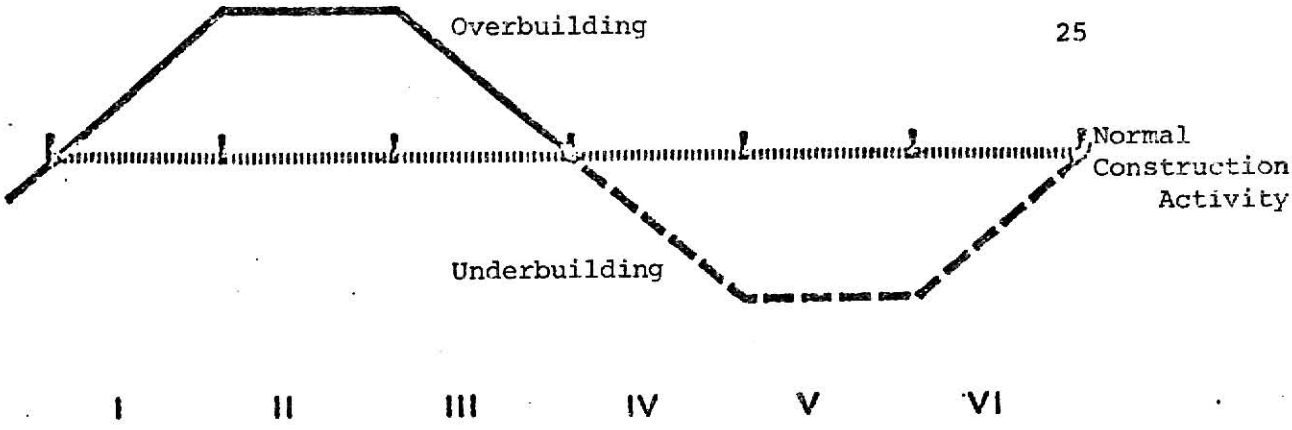
Real estate cycles run in a countercyclical manner when compared to the general business cycle.[18] During periods of business expansion (industrial plant and equipment needs, working capital needs and others) demand for investment capital increases which, in turn, drives up interest rates making real estate an unattractive investment purchase. With rising interest rates, the individual may be more inclined to invest money in savings to gain high returns which will allow institutions the use of these monies. If, however, short-term interest rates rise to a high enough level, the individual may withdraw these savings from institutions and invest directly in government Treasury bills or other short-term, high interest instruments. This process, known as "disintermediation", causes the loss of available funds to institutions which means less available money for real estate loans. The resulting credit crunch will cause the beginning of a downturn in the real estate cycle.

The opposite cycle direction will occur during periods of an

economic recession. A reduction in the demand for funds for business expansion will result in a decline in the short-term interest rates causing a flow of funds back into financial institutions. With a decrease in business activity, individuals will generally decrease consumption while increasing their savings. (With emphasis upon saving for future needs rather than for investment purposes). With an increase of money available for mortgage loans, the interest rates will tend to decline. Such a reaction may result in a period of real estate expansion during a period of economic recession.

The business cycle and the related flow of money into the real estate sector is the most important factor in the development of housing cycles. A second factor which is also important in the understanding of cycles is the construction trade itself. The construction industry has a direct relationship to real estate sales activity. As demand rises in the market place, builders will begin to supply stock to alleviate shortages generated due to higher than normal sales activity. Conversely, as demand slacks off, sales will decrease causing a high inventory to remain in the market and a reduction in residential building activity.

The relationship between real estate activity, demand and the construction industry is reflected in Figure 2-4.[19] All housing cycles are comprised of six distinct stages. Three of these stages occur during periods of overbuilding with the remaining stages during periods of underbuilding. All market reactions will pass through each stage, one at a time and in consecutive order. The tenure within each stage is dependent



Source: Siegel

Figure 2-4. The Housing Cycle

upon the local market characteristics. For rapidly growing communities the period may be in terms of months. More stable areas may have a time period in terms of years.

Each of the six stages from Figure 2-4 are discussed below with demand, real estate and construction characteristics outlined. For purposes of this study the key conditions are briefly summarized. In reality, each stage contains dynamic economic situations which could be expanded into great detail if desired.

STAGE I. CONSTRUCTION RISING ABOVE NORMAL/DEMAND PEAKS. In the stage, construction starts are beginning to rise above the normal level of demand. Early portions of this stage generally cannot be viewed as overbuilding; rather, it is a period of correction overcoming shortages due to a lack of construction. Once the shortages are removed, continued construction begins to show signs of overbuilding. Within the market place (at the beginning of the stage) there is a high demand for housing. Everything available sells with the asking prices gradually rising to new levels due to demand pressures. Eventually, however,

the demand will begin to level off. Households looking for new housing become concerned with high asking prices and withdraw from the market place.

STAGE II. CONSTRUCTION PEAKS/DEMAND BEGINS TO FALL.

During this stage, the construction starts from Stage I begin hitting the market. Home-buying may continue, however, the majority of the potential buyers have backed away from the new home market due to the excessive prices. At this point some builders are still optimistic toward the market and continue to add more stock to the supply. Others, more skeptical, will begin to reduce construction activity to allow for market absorption of existing stock.

STAGE III. CONSTRUCTION FALLS/DEMAND BELOW NORMAL.

General construction activity begins to slow at a sudden rate. High inventory and lack of sales begin to cause some caution on the part of lending institutions. To attempt to reduce inventory on the market, builders will begin to decrease prices to attract those households originally within the market place.

STAGE IV. CONSTRUCTION BELOW NORMAL/DEMAND UPTURN.

Almost all construction activity has come to a complete standstill at this point. Developers struggling with lot inventories will often establish stronger marketing programs or offer lots to builders with special concessions to reduce their inventory. The sales activity gradually begins an upturn with high demand housing categories selling well. Realtors may, in fact, begin to call for the construction of new units to fulfill high demand needs.

STAGE V. CONSTRUCTION LEVELS OUT/DEMAND INCREASES.

At this point, prices are low due to the oversupply within the market. Households that withdrew from the market in Stage I begin to re-enter the market inspired by these lower prices. With demand on the upturn, sales increase, however, the unsold stocks still within the market place limit builder participation in new housing. Real estate people observe that the well-planned housing units are in great demand while inventory that was rushed into the market in Stage II sells poorly. Builders eventually observe the need and begin planning procedures for additional units.

STAGE VI. CONSTRUCTION RISES/DEMAND STRENGTHENS.

This stage generally signals an optimistic view from the standpoint of builders, developers and real estate people. Most buyers that are interested in the purchase of housing will enter the market by this time. With demand increasing, construction starts rise again and more builders enter the market as suppliers.

At the completion of Stage VI, the housing cycle will begin another circuit dependent upon the local economy and demand factors for the duration and severity of each stage. Regardless of the stage the market analyst uses as his commencement point, some concept of cycle direction and intensity is required for preliminary analysis of housing needs within a community.

Footnotes

[1]Frederic E. Case, Real Estate, (Boston: Allyn and Bacon, Inc., 1959), pp. 101-102.

[2]Ibid, p. 102.

[3]Frank H. Knight, The Economic Organization, (New York: Augustus M. Kelley, Inc., 1951), pp. 7-14.

[4]Ernest M. Fisher, Urban Real Estate Markets, (New York: National Bureau of Economic Research, 1951), Chapter 1.

[5]Frederic E. Case, Real Estate Economics--A Systematic Introduction, (Los Angeles: California Association of Realtors, 1977), pp. 57-59.

[6]Frederic E. Case, "Real Estate Markets, Demand and Supply Analysis," Real Estate and Urban Land Analysis, eds. J. R. Cooper and K. L. Guntermann, (Lexington, Mass.: Lexington Books, 1974), p. 362.

[7]Halbert C. Smith and others, Real Estate and Urban Development, (Homewood, Illinois: Richard D. Irwin, Inc., 1977), p. 132.

[8]Arthur M. Weimer and others, Real Estate, (New York: John Wiley and Sons, 1978), p. 126.

[9]Richard U. Ratcliff, Real Estate Analysis, (New York: McGraw Hill Book Co., Inc., 1961), p. 229.

[10]Alfred A. Ring and Jerome Dasso, Real Estate Principles and Practices, (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1977), p. 51.

[11]Ibid, p. 52.

[12]Ibid, p. 52.

[13]Robert L. Siegel, How to Forecast Housing Demand, (New Orleans: Robert L. Siegel & Associates, 1978), p. 3-2.

[14]Alfred A. Ring and Jerome Dasso, Real Estate Principles and Practices, (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1977), p. 53.

[15]Ibid, p. 53.

[16]Ibid, p. 53.

[17]Robert L. Siegel, How to Forecast Housing Demand, (New Orleans: Robert L. Siegel & Associates, 1978), p. 3-1.

[18]John McMahan, Property Development, (New York: McGraw-Hill Book Company, 1976), p. 93.

[19]Robert L. Siegel, How to Forecast Housing Demand, (New Orleans: Robert L. Siegel & Associates, 1978), p. 3-11.

CHAPTER 3

GENERAL FORMAT FOR THE MARKET ANALYSIS STUDY

Often times within the home building trade, conversation turns to discussion of examples of subdivisions failing to make the grade in terms of sales and absorption into the market place. The discussion generally leads to mixed opinions as to the cause of such problems. In some cases, the problems are due to improper marketing, poor floor planning, outdated exterior features, or improper utility and street layout -- problems which could possibly have been prevented with a bit more study of the site and the market situation. Certain decisions relating to the development of housing are based upon a common sense approach to present and future technological changes and innovations as well as recognition of the 'fad' ideas in the building industry.

As the market scene begins to warm up due to an upturning economic situation, sales of real estate begin to turnover more rapidly. Those houses featuring the most modern and efficient features for the money will naturally sell first followed by those with a bit fewer amenities to offer and so on. It stands to reason that a developer can ill-afford to invest money in prime development land and then introduce a housing unit which is twenty years behind the times. The progressive builder should have a feel for the design features which will have the greatest market appeal -- color, style, floor plan, appliances and many others. His primary goal should be to introduce the most desirable structure at the time at which that structure is in the

greatest demand.

Discussion contained within earlier chapters devoted considerable time to the description of the market analysis study, the purpose of performing such a study and general trends and theories of real estate economics and market applications of the market analysis. We can, then, theorize that the prospective developer with land available for some economic usage should first analyze the community setting to identify the factors that make it tick. The employment patterns, the population fluctuations, the availability of financing for mortgages, prospective corporate employers entering the community scene and other considerations must be evaluated as a whole unit to determine the net effect, namely, an increase or decrease of housing demand.

While developing an economic feel for the market area, the analyst must also observe social factors which will influence home buying or renting. Household formation characteristics, household sizes, income levels, age distributions and mobility patterns all provide valuable information into the needs of the populations within a community.

The interfacing of the economic and social factors (supply and demand) in a market analysis study can provide a ground floor for decision-making. With an overall view of the components that make up a city's economic base, predictions can be established utilizing an information bank that, although not totally perfect, is close enough to the actual picture to make legitimate estimates of the real housing needs. Some caution must be exhibited in the collection of base data; information which is too optimistic can create false impressions which could materialize into one of

the previously mentioned real estate disasters. The analyst may be a bit safer if the information collected is more on the pessimistic side, that is, depicting an economic situation which is a bit slower in reaction. Yet, such an input may create a view point which is too conservative causing delayed response to economic changes thus driving this analyst out of business. Like it or not, market analysis maintains a degree of gambler's luck at all times.

This Chapter has been developed to provide a breakdown of the essential segments of the market analysis study. Each information area will be presented individually with remarks pertaining to critical factors which must be identified and disected in the evaluation of each.

At this point, it must be stressed that each subject area described may, in itself, be developed into a substantial thesis with greater depth of study analyzing more theoretical applications and economic implications. The intention in the body of this study is to merely present an overview of the market analysis process with an exercise in the application of said process in Chapter 4. Therefore, many technical and procedural details have been left out allowing for a more simplistic approach to the subject area.

In general, residential analysts agree that the basic purpose of the market analysis study is to evaluate existing conditions as well as projections of future economic conditions to determine effective demand for housing units. Sumichrast and Seldin[1], Case[2], Beyer[3], Smith and others[4], and the FHA[5] have developed processes for the conception of market analysis projections. Where all possess some differences in their individual study outlines, similar

material is covered to some degree in all. From these sources a logical tool can be established for simple market analysis projects. This outline is as follows:

1) Project Introduction
2) Project Abstract
3) Market Area Determination
4) Area Economic Conditions Analysis
5) Demand (Demographic) Analysis
6) Supply Analysis
7) Current Market Conditions
8) Effective Market Demand
and, 9) Statistical Abstract.

DISCUSSION OF MARKET ANALYSIS COMPONENTS.

1) Project Introduction. As a means of presenting the project topic, the introduction establishes 1) the objectives of the study, and 2) the scope of the research. The objectives are developed to present the primary goals and intentions of the study. Included goals may be a) Determination of housing potential for a subject site, b) Types of facilities needed to match existing market conditions, c) Development of in-depth market data pertaining to economic conditions, and/or, d) Recommendations as to the best use for the subject site.

The project scope may provide the reader some idea of the included components of the study. Items which may be mentioned within the scope include: market area definition, analysis of population, income and household characteristics, construction trends and/or a survey of representative developments.

Project scope and objective requirements must be developed in accordance with the client's needs. A prospective builder will most likely want market analysis results which provide specific spatial requirements, i.e. 200 single-family homes, 40

duplexes or 60 quadplexes. The client may be interested more in alternative choices for the site including residential, commercial or industrial options. Such decisions may often be conditioned upon local planning requirements including zoning ordinances, comprehensive planning or public service availability.

Often times a feasibility study is provided as a followup to the market analysis study. Such a study can "forecast whether a particular course of action regarding a parcel of real estate fulfills the objectives of an owner-investor and meets externally or internally imposed conditions or requirements."[6] One of the most important objectives of an owner-investor is the production of a specified or desired rate of return. The feasibility study can provide some estimates of the cash flow potential of a project.

2) Project Abstract. The project abstract provides a brief summary of the key elements determined from the data collection and analysis. Summary notes may relate not only to projected effective housing demand but also market expansion projections, employment and household trends and income levels.

As the purpose of the abstract is to present a capsulated view of the total project results, it must be written in brief, concise and clear terminology with reference to the generalized results of the study rather than in-depth analysis of the project statistics.

3) Market Area Determination. Of primary importance in the market analysis study is the determination of the market area. The purpose of the study may be to develop a data base for the community as a whole for city-wide projection purposes or for a specific site analysis. Regardless of the purpose, some geographic limits

must be established as a 'boundary' for data collection.

The market area may be defined as "that geographic area within which dwelling units are competitive with one another."[7] The buyer of real estate compares several properties to determine that which best suits his needs. In the end, though, the ideal house may hinge between two or three comparable units. The competitiveness of one unit over another may be due to several factors including location to employment centers, schools, shopping centers or transportation systems. Buyers with similar needs create competition by bidding on like units within the market place.

Market area definition is based upon several factors including physical, social, legal and economic elements with individual importance dependent upon the geographic location of a subject site in relation to the pattern of urban development.[8] For instance, with increasing commuting distances from employment centers, the economic effects upon fixed income employees are significant. Physical barriers -- lakes, rivers, mountains or marshlands -- may create very evident boundaries which may limit mobility. In addition, legal restrictions placed upon land within a community including zoning, annexation policies, or agricultural land preservation programs may influence or restrict market development opportunities within a community.

Competition for housing is basically of local concern except possibly in larger metropolitan areas where several sub-market regions may be observed.[9] Within the community the pattern of urban growth could greatly influence the housing development area. The last twenty years have seen the development of large areas

of suburban housing with the residential market area moving further and further from the Central Business District of the city (once the prime employment center). A prime reason for such growth, besides the desire to get away from the dirty, and crowded center city, was the expansion of employment centers to facilities in the outskirts. The key factor of market area determination is, then, the location of the major employment centers which will provide jobs to the potential owners/renters of housing units.

Urban development systems must also be studied as they also provide direct keys to the housing market area. Where strong transportation systems (expressways, subways, metropolitan bus systems and others) have developed, there may be greater opportunities to live further from prime employment centers. With these rapid and efficient systems of transportation, the limited commuting time involved may allow for lower density, single-family housing to supply the demand patterns. If, on the other hand, circulation systems are not sufficient for economical and efficient movement, there may be greater need of developing high density units on the limited land area nearer these employment centers. In many ways, pressures exerted by housing and industrial developers, Realtors, and land investors for new and improved transportation systems cause considerable development of the urban fringe areas.

Employees of downtown businesses may be influenced to live in downtown apartments or townhouses due to poor transportation systems or, in present day situations, increasingly expensive fuels. The recent energy problems may well provide a key factor in

the reduction of fringe area, low density housing types. Greater utilization of 'close-in' land may in fact dictate higher density residential unit development. The market analyst must, then, weigh many factors other than typical physical ones including social, philosophical and economical considerations.

McMahan in his book Property Development, establishes a process for the development of the market area for a subject site.[10] The four part process includes: A) Establish the general market area, B) Establish the competitive area, C) Fit to available data sources, and D) Determine site specific market and competitive areas.

A) Establish the market area. The first step in utilizing this approach is to establish the geographic area which is within 'reach' of the subject site. This area, the market area, provides the analyst with a tentative zone in which demand will be generated for housing. The analyst may need to assume maximum times that the majority of people would devote to commuting. In an interview with a market researcher, thirty (30) minutes was estimated as the maximum commuting time for individual automobile drivers.[11] Such a time limit may be appropriate for cities of similar size with similar transportation systems, however, larger metropolitan areas may warrant greater time limits. For cities with highly developed public transportation systems, the analyst must consider departure times and connection transfers. Such systems may involve a lesser amount of commuting time due to these inconveniences.

Based upon commuting times generated through interviews and observations, the market area can be mapped indicating a rough

geographic region within range of the site. See Figure 3-1, a.[12]

B) Establish the competitive area. Of primary concern in this phase of market delineation is the identification of employment centers within the previously mentioned market area. These areas should represent the primary employment base for potential buyers/ renters of housing units located on the subject site. Once these areas have been determined, the analyst must consider the delineation of the competitive area -- those geographic areas from which employment competition may draw away opportunities for market area residents. The determination of this competitive area may be determined in the like manner described above utilizing commuting times. See Figure 3-1, b.

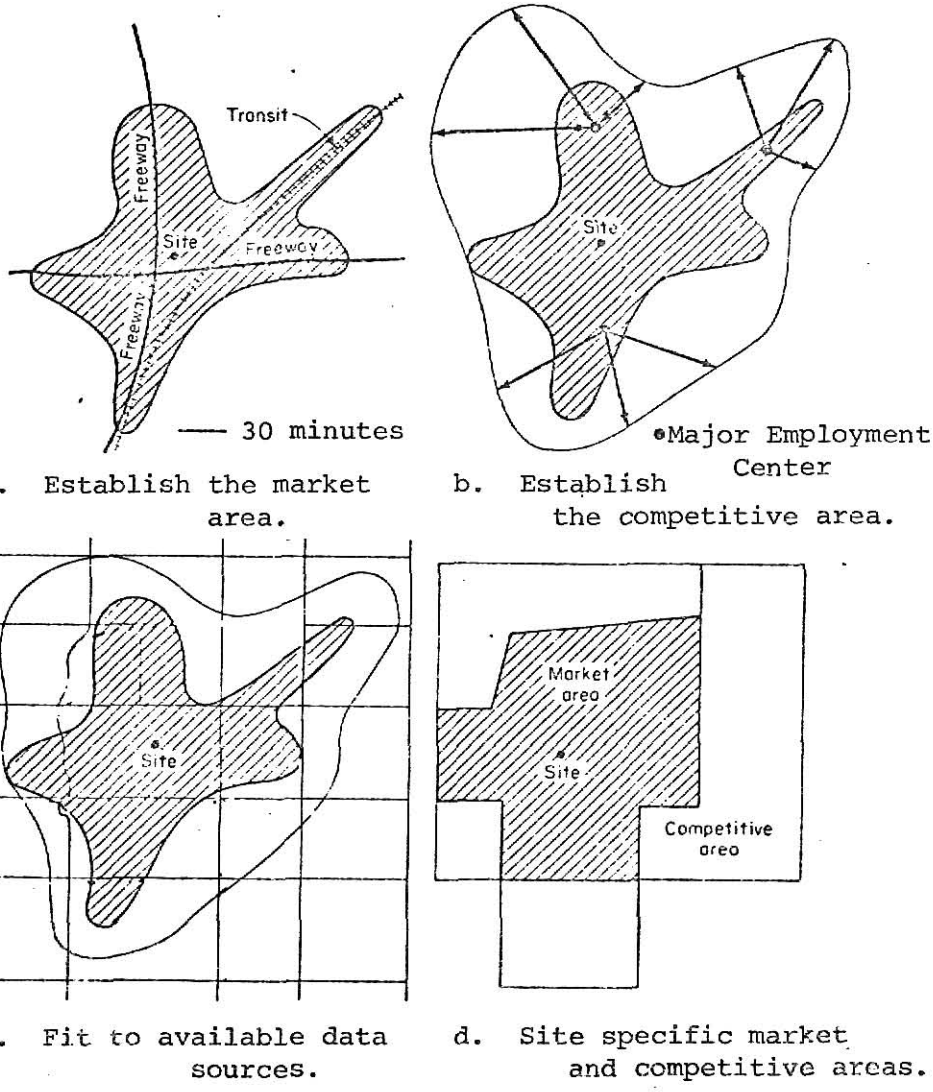
The analyst must remember to consider the competitive area; failure to do so may, in fact, mean considerably less market demand (for the market area) due to fewer available job opportunities. The result may be a higher vacancy level and eventual oversupply within the housing market.

C) Fit to Available Data Sources. The analyst must now make judgmental adjustments to reflect future changes that may affect the market area. The greatest of these changes would be the addition of new transportation systems located near the subject site which could alter the configuration of a housing market area. See Figure 3-1, c.

In addition to new transportation systems, the analyst must be aware of certain social and economic issues which may affect the market area. A key consideration which must be viewed at the present time is the energy situation. The doubling and tripling of fuel prices will most likely cause a reduction in the acceptable

commuting time and distance by employees. Unless employers move to compensate for the increasing costs involved in commuting, the market area will shrink to geographic limits acceptable to area employees.

The preliminary market and competitive areas may require alteration to adapt to physical limitations which may influence transportation systems and thereby limit mobility. Features such as rivers, lakes, mountains or other barriers must be considered in this determination.



a. Establish the market area.

b. Establish the competitive area.

c. Fit to available data sources.

d. Site specific market and competitive areas.

Source: McMahan

Figure 3-1. Market Area Determination

D) Determine site specific market and competitive areas. The primary market area is that area in which like units will be in greatest competition with one another. The associated competitive area may be considered a secondary market area or a sub-market region. Within larger metropolitan areas there may be several sub-markets, each with specific geographical advantages and disadvantages relative to the employment base centers.

To determine the primary market area, the market researcher must examine the market and competitive areas in regards to available statistical data for project analysis. The availability of such data can greatly simplify the process as well as aid in a reduction of project expenditures. Larger metropolitan areas are usually divided into census tracts with applicable information in regard to housing, population and other relative socioeconomic data. With boundaries adjusted to allow for the utilization of these materials, the analyst can reduce primary research time and client expenses. In most cases, some primary research will be required for updating the data base, however, certain items such as population projection and housing inventory and condition data are much more easily accessible through existing data sources.

Market area determination is accomplished by utilizing existing hard data (maps, census figures, physical limitations) as well as judgment -- a key ingredient in the market analysis process. The boundaries established must maintain a degree of flexibility as urban policy changes may create new growth influences which expand or contract the market area. See Figure 3-1, d.

4) Area Economic Conditions Analysis. When analyzing an area for potential growth in housing, the analyst must constantly be aware of the major economic factors within the market area under consideration. There exists a direct relationship between the economic activity within a community and the housing market itself.[13] This relationship is based upon the contention that expanding markets which cause increased job opportunities generate income necessary for the acquisition of rental/owner housing units. Several factors are involved in the types and numbers of units necessary to satisfy these needs including earning power, local taxation systems which further reduce the income levels, the construction trade's responsive time between housing need and unit introduction, types of jobs available, unemployment levels and others.

Within a given community, the employment sector varies in makeup with such classifications as manufacturing, transportation, construction, finance, government and other standard industrial classifications (SIC) codes.[14] The analyst must attempt to determine the makeup of the present labor market to aid in the determination of future labor projections. Such an employment profile can provide several indicators of the employment situation.

First, and most importantly, the analysis can provide considerable information pertaining to the diversification of the economic base. Economic stability of a community is best accomplished by a mix which includes several types of employment situations -- industrial, government, finance and others. With such a blend, a downturn in the economic cycles which affect one employment area may be offset by one of the other economic strongpoints within a community. In general, "A housing market dependent upon a single

industry may experience severe economic disruption (strikes, material shortages, shipping problems) which can have a negative impact upon housing demand."[15] The balancing quality of the diverse economic system provides for much better protection from the effects of severe recessionary pressures.

There are some exceptions to this single industry concept. A prime example would be cities where government provides an extremely high percentage of the available job opportunities. Washington, D.C. along with state capital cities (especially smaller ones) may exhibit fairly good stability even with this single industry emphasis. As most present-day governmental policies tend to provide for the perpetuation of governmental services, these cities are in somewhat unique situations.

The analysis of employment activity will eventually provide individual employment sector strengths and weaknesses. Where the point of prior discussion aids in signalling trends of the economy as a whole, the breakdown into individual industry analyses can provide evidence of those segments which may, in themselves, act as overall economic indicators of a community. Individual sectors which may be more stable in terms of economic activity include: finance, insurance, transportation, public administration and service related industry.[16] On the opposite side, those areas which will reflect more instable tendencies (and, as a result, indicate cyclical ups and downs) include: manufacturing, mining, forestry, fishing, agriculture, construction and wholesale and retail trades. From these breakdowns it may be observed that the instable sectors tend to be more closely related to tangible, consumer oriented goods and services such as homes, retail goods,

building supplies and manufactured items (all of which are dependent upon active consumer spending).

The market analyst must collect data and make judgments as to the overall status of the economic system within the study communtiy. "Economic base analysis" is the process for the intensive analysis of a community's economic support.[17] Originally a system designed for the projection of population figures, this theory assures that for every economic system within a community, you have basic and non-basic (service) sectors.[18] Such a distinction between employment classes is extremely important especially in the study of future employment and population trends.

Employment figures constitute the most useful measure of local economic base analysis.[19] Utilizing such figures, the analyst can reasonably predict several factors. Changes in job numbers can be converted to reasonably accurate changes in population. With knowledge of the industrial groups providing jobs, local income levels can be determined as well as the stability of the local economy. Population and income levels can then be combined to determine purchasing power or effective demand within a community. In addition, predictions of future employment can be utilized to project future population and income levels and the future real estate needs within a community.

Dasso has established a process for local economic base analysis utilizing readily available labor statistics.[20] The process is as follows:

A) Local Employment Analysis
B) Comparative Employment Analysis
C) Location Quotient Development
D) Employment Projection
E) Population Projection
and, F) Income Analysis.

The above procedures will be utilized in the development of an explanatory economic base analysis.

A) Local Employment Analysis. An analysis of the local economy generally commences with a determination of its employment base using the categories of the standard industrial classification (SIC) codes. These codes include the following categories:

Agriculture
Contract Contracting
Manufacturing
Transportation, Communications and Utilities
Wholesale Trade
Retail Trade
Finance, Insurance, and Realty
Services and Miscellaneous
Government
and, Self-employed.

The analysis of all employment is performed at this point, however, eventual demand analysis in residential housing performance will utilize the non-agricultural sectors, those being the sectors which usually foretell a strong housing market.[21]

Generally base information may be obtained through local and state employment services. With such information, the analyst can determine the distribution and percentage (over specified time periods) of the base force. An excerpt from Dasso's study of the Portland, Oregon market illustrates the procedures for determining the manufacturing and wholesale trade employment status.[22] Table 3-1 shows an example of local employment analysis.

Local employment analysis will reveal key growth areas within the community. Generally those employment sectors which dominate the activity of the area will represent the primary forces acting upon the overall economy.

Selection of the time periods for employment comparison should reflect durations sufficient for the occurrence of economic cycles

Table 3-I

Local Employment Analysis
1960 to 1967

Major Industry Group	1960 Average Employment	1960 Percentage Distribution	1967 Average Employment	1967 Percentage Distribution	Change: 1960-1967 Number	Change: 1960-1967 Percentage
Manufacturing	64400	19.68	81600	20.37	17200	26.71
Wholesale Trade	23000	7.03	29100	7.26	6100	26.52
PORTLAND TOTAL	327300	100.00	400600	100.00	73300	22.40

Source: Dasso

CALCULATIONS: Determination of 1960 Percentage Distribution:

Manufacturing:

$$\frac{\text{1960 Man. Employment}}{\text{1960 Total Employment}} = \frac{64400}{377300} = 19.68\%$$

Wholesale Trade:

$$\frac{23000}{377300} = 7.03\%$$

Determination of 1967 Percentage Distribution:

Manufacturing:

$$\frac{\text{1967 Man. Employment}}{\text{1967 Total Employment}} = \frac{81600}{400600} = 20.37\%$$

Wholesale Trade:

$$\frac{29100}{400600} = 7.26\%$$

Determination of Change: 1960-1967:

Manufacturing:

$$\frac{\text{Total Man. Change}}{\text{1960 Man. Employ.}} = \frac{17200}{64400} = 26.71\%$$

Wholesale Trade:

$$\frac{6100}{23000} = 26.52\%$$

within the locale. The seven year time period used in the example (1960-1967) may well be the maximum period for purposes of housing market analysis.

B) Comparative Employment Analysis. The comparative employment analysis establishes relationships between the local economy and the national economy. Such a comparison provides the analyst an opportunity to view local economic strengths as well as weaknesses when compared to the nationwide statistics. Where, for example, the local manufacturing sector employs 20.00% of the total local employment and the nationwide average is 15.00%, the manufacturing industries within the study area are a definite strong point to the economy. The first step in the comparative employment analysis is to breakdown national employment statistics into employment change and distribution categories as done in Table 3-1. Again utilizing an excerpt from Dasso's study, the process is illustrated in Table 3-2.[23]

At this point, the analyst has determined percentage and distribution breakdowns for all economic sectors within the local and national economies. For comparative purposes, a summary chart must be compiled which relates the information from Tables 3-1 and 3-2. Table 3-3 presents this summary information. Such a chart allows for comparison of employment rate change as well as percentage distribution of employment populations. Most importantly to the analyst, however, is the development of location quotients which indicate relative strength of the local economy.

C) Locational Quotient Development. The locational quotient represents a ratio for testing whether a certain industry can be considered basic economic activity or non-basic.[24] Sumichrast and Seldin describe basic employment as that portion which "generates

Table 3-2

National Employment Analysis
1960 to 1967

Major Industry Group	1960 Average Employment*	1960 Percentage Distribution	1967 Average Employment*	1967 Percentage Distribution	Percentage Change: 1960-1967
Manufacturing	16762	25.14	19339	26.00	15.37%
Wholesale Trade	3009	4.51	3556	4.78	18.18%
U. S. TOTALS	66681	100.00	74372	100.00	11.53%

*Thousands

Source: Dasso

CALCULATIONS: Determination of 1960 Percentage Distribution:

Manufacturing:

$$\frac{\text{1960 Man. Employment}}{\text{1960 Total Employment}} = \frac{16762}{66681} = 25.14\%$$

Wholesale Trade:

$$\frac{3009}{66681} = 4.51\%$$

Determination of 1967 Percentage Distribution:

Manufacturing:

$$\frac{\text{1967 Man. Employment}}{\text{1967 Total Employment}} = \frac{19339}{74372} = 26.00\%$$

Wholesale Trade:

$$\frac{3556}{74372} = 4.78\%$$

Determination of Percentage Change:

Manufacturing:

$$\frac{\text{Number Man. Change 1960-1967}}{\text{1960 Employment}} = \frac{2577}{16762} = 15.37\%$$

Wholesale Trade:

$$\frac{547}{3009} = 18.18\%$$

Table 3-3

Comparative Employment Analysis and Locational Quotient Development

Major Industry Group	Rate of Employment Change: 1960-1967		Percent Employment Distribution: 1967		Locational Quotient
	Portland	United States	Portland	United States	
Manufacturing	26.71	15.37	20.37	26.00	.78
Wholesale Trade	26.52	18.18	7.26	4.78	1.52

Source: Tables 3-1 and 3-2.

CALCULATIONS: Determination of Locational Quotient:

Manufacturing:

$$\frac{\text{Portland Percentage Distribution}}{\text{United States Percentage Distrib.}} = \frac{20.37}{26.00} = .78$$

Wholesale Trade:

$$\frac{\text{Portland Percentage Distribution}}{\text{United States Percentage Distrib.}} = \frac{7.26}{4.78} = 1,52$$

its payroll through products or services sold outside the community" and non-basic employment as that which "produces goods or services for local consumption."[25] The locational quotient (L.Q.) equals the percent of local employment in a given industry divided by the percent of national employment in the same industry.[26] Utilization of locational quotients is based upon an assumption that the allocation of basic and non-basic sectors within the study community is accurate on the basis of location quotients for similar industrial employment patterns and consumer tastes throughout the U.S..[27] If consumption or employment patterns differ among regions, the use of locational quotients in any particular area may be inaccurate. For purposes of this study, the assumption that the study area economy resembles that of the national economy provides reasoning for the use of locational quotients in the analysis of economic conditions.

Table 3-3 indicates the comparative data (obtained from previous charts) necessary for the development of locational quotients and illustrates the development procedure.[28] An LQ of 1.00 for an industrial group in a community indicates that the industry has the same proportion of employment locally as nationally.[29] The implication is that the area has established a balance between local production and local consumption -- no importing or exporting of goods or services is necessary. An LQ of less than one means the industry within the region meets less than the requirements and had to supplement its stocks through imports (as indicated by the .78 LQ for the manufacturing sector in Table 3-3). This segment would be classed as a non-basic industry for purposes of base analysis. An LQ in excess of 1.00 (such as the 1.52 for Wholesale Trade) indicates the region produces over and above its own needs thus providing considerable amounts of export goods -- a true basic industry.

Where an LQ is near 1.00 such as .97 or 1.04, the analyst must study local economic conditions to make judgments as to the final classifications. Such observations may include plant expansion, increasing capital outlays or proposed employment increases.

The breakdown of the SIC code areas into basic versus non-basic segments varies considerably between study areas. Individual industries become established and grow in particular areas in response to a wide variety of forces. The "competitive advantage" which one area possesses over another may be due to an abundance of raw materials necessary for the development of base industries.[30] Such raw materials may include natural resources, large sources of skilled labor or proximity to transportation systems. The combination of unique resource categories provides incentives for the development of base (export) industries within a community.

The basic industries are, according to research economists, the key to the city's economic growth. Gobar emphasizes that the potential for housing growth is greatest where there is a 20-25 percent manufacturing sector (of the total non-agricultural jobs) remembering that manufacturing supports a number of related job activities.[31] At the same time, an extremely high percentage of construction employees (10 percent and over) can signal future supply problems as their product may create surplus units within a marketplace.

D) Employment Projection. A key projection which must be determined by the analyst is employment; such a figure, when multiplied by the estimated earning power of individual sector employees, can provide overall estimates of purchasing power within the economy. When such estimates are compared to the spending habits of the individual household on essentials (food, clothing,

housing, and others), the analyst can estimate the amount of income available for housing.

With such importance placed upon the basic sector, the analyst must attempt to determine the actual numbers of basic employees within the SIC areas.[32] This may be accomplished by utilizing the employment figures from Table 3-1 and the location quotients from Table 3-3. The process is illustrated in Table 3-4. The manufacturing segment, with and LQ of .78, is a non-basic industry; all employment is therefore placed within the non-basic market category. Wholesale trade with an LQ in excess of 1.00 is a strong basic industry, therefore, the employment figures may be divided among the two categories. The larger the LQ for a particular industry, the greater the proportion will be of basic employees comprising the work force.[33]

The analysis of the individual industry is critical to the analyst. With such figures, the analyst can make predictions based upon the prior performance of the area economy. Once all SIC codes have been divided into proper employment categories, the total area employment numbers, total basic industry and non-basic industry figures may be utilized to establish the urban base multiplier, base-service ratios and the employment multiplier -- all necessary for employment projection.

The urban base multiplier is calculated as the ratio of the total employment to the basic sector employment for the time period under study.[34] The determination of multipliers is illustrated in Table 3-5 (with the assumption that the calculated basic employment figures are accurate). The value of 7.50 indicates that an anticipated level of basic employment in the future Portland economy

Table 3-4
Basic/Non-basic Analysis of Individual Industries

Major Industry Group	Total Employment 1960	Total Employment 1967	LQ	Market Served: Non-basic 1960	Market Served: Non-basic 1967	Market Served: Basic 1960	Market Served: Basic 1967
Manufacturing	64400	81600	.78	64400	81600	----	----
Wholesale Trade	23000	29100	1.52	15132	19145	7868	9955

Sources: Tables 3-1 and 3-3
Allman
Calculations by Author

CALCULATIONS: Determination of Market Employment

Manufacturing: LQ - less than 1.00, all employment non-basic

Wholesale Trade: LQ - 1.52, greater than 1.00

Determination of 1960 Non-basic Employment:

$$\frac{\text{Total Employment}}{\text{L.Q.}} = \frac{23000}{1.52} = 15132 \text{ Non-basic Employees}$$

Determination of 1960 Basic Employment:

Total Employment (1960) - 1960 Non-basic Employment =
23000 - 15132 = 7868 Employees

Determination of 1967 Non-basic Employment:

$$\frac{\text{Total Employment}}{\text{L.Q.}} = \frac{29100}{1.52} = 19145 \text{ Non-basic Employees}$$

Determination of 1967 Basic Employment:

Total Employment (1967) - 1967 Non-basic Employment =
29100 - 19145 = 9955 Employees

Table 3-5

Determination of Urban Base Multipliers

Total Employment		Basic Employment*		Urban Base Multiplier		Future Estimate of Urban Base Multiplier
1960	1967	1960	1967	1960	1967	
377300	400600	48500	54086	7.78	7.40	7.50

* Calculations for entire Portland employment base, by Author

Sources: Allman
Dasso
Tables 3-1 and 3-4
Calculations by Author

CALCULATIONS: Determination of 1960 Base Multiplier:

$$\frac{\text{Total 1960 Employment}}{\text{Basic Employment}} = \frac{377300}{48500} = 7.78$$

Determination of 1967 Base Multiplier:

$$\frac{\text{Total 1967 Employment}}{\text{Basic Employment}} = \frac{400600}{54086} = 7.40$$

is multiplied 7.5 times to derive future total employment for a specific year.

The base-service ratio indicates the specific relationship between basic and non-basic employment.[35] The base-service ratio established indicates that increases in the basic sector employment will increase the non-basic employment by 6.3 times in a given year. Anticipated increases in the basic sector employment will stimulate the local non-basic employment by over six times the initial increase as reflected by Table 3-6.

The final factor in employment projection analysis is the determination of the employment multiplier.[36] This multipler is calculated as a ratio between non-basic and basic employment change between the study time period. Table 3-7 indicates the employment for the Portland study would equal 12.1. This multiplier illustrates that increases in basic sector employment in the next seven year time period will add twelve times the initial increase to the non-basic employment.

Having calculated the employment multiplier, predictions of future basic, non-basic and total employment in the Portland study area can be figured. If basic employment increased in Portland for the period 1967 to 1974 at the same rate as 1960 to 1967, basic sector employment would reach approximately 59700. This is illustrated on Table 3-8.

Once the basic employment projection has been developed, the non-basic can be determined by multiplying the basic figure by the employment multiplier. With this projected increase, the analyst may develop an estimate of total non-basic employment by adding to the existing 1967 non-basic force. Table 3-9 illustrates this process.

Table 3-6

Determination of Base-Service Ratio

Basic Employment*		Non-basic Employment		Base-Service Ratio		Ratio
1960	1967	1960	1967	1960	1967	Estimate
48500	54086	278800	346514	5.75	6.41	6.30

* Calculations for entire Portland employment base, by Author

Sources: Allman
Dasso
Tables 3-1 and 3-4
Calculations by Author

CALCULATIONS: Determination of 1960 Base-Service Ratio:

$$\frac{\text{Non-Basic Employment (1960)}}{\text{Basic Employment}} = \frac{278800}{48500} = 5.75$$

Determination of 1967 Base-Service Ratio:

$$\frac{\text{Non-Basic Employment (1967)}}{\text{Basic Employment}} = \frac{346514}{54086} = 6.41$$

Table 3-7

Determination of Employment Multiplier

Basic Employment*			Non-basic Employment*			Employment	Ratio
1960	1967	Change	1960	1967	Change	Multiplier	Estimate
48500	54086	5586	278800	346514	67714	12.1	12.0

*Calculations for entire Portland employment base, by Author

Sources: Allman
Dasso
Table 3-5
Calculations by Author

CALCULATIONS: Determination of Employment Multiplier

$$\frac{\text{Non-basic Change}}{\text{Basic Change}} = \frac{67114}{5586} = 12.1$$

Table 3-8

Basic Employment Projections

1960 Basic Employment	1967 Basic Employment	Change: 1960-1967	Projected Basic Employment 1974
48500	54086	5586	59700

Sources: Table 3-5
Calculations by Author

CALCULATIONS: Determination of Basic Employment Projections:

1967 Basic Employment - 1960 Basic Employment
54086 - 48500 = 5586

1967 Basic Employment + 5586 = 1974 Projection
54086 + 5586 = 59700 (rounded)

Table 3-9

Non-basic Employment Projections

Basic Change: 1960-1967	Employment Multiplier	Projected Non-basic Change	1967 Non-basic Employment	Projected Non-basic Employ.-1974
5586	12.0	67032	346514	413546

Sources: Allman
Dasso
Tables 3-5, 3-7 and 3-8
Calculations by Author

CALCULATIONS: Determination of Non-basic Employment Projection:

Basic Change x Employment Multiplier = Non-basic Projection
5586 x 12.0 = 67032

Non-basic Change + 1967 Non-basic Employment = Projected Employment 1974
67032 + 346514 = 413546

On the basis of non-basic and basic projection calculations, the Portland employment projection in 1974 could be estimated. The procedures are illustrated on Table 3-10.

Such projections are estimates based upon economic trends. Where the analyst is on a limited budget and may not have the resources necessary to perform primary data collection, such procedures will generate information which can be utilized as a basis for decision making. A most important observation, in regard to economic base analysis, is the importance of basic industry; where future growth in basic industry is expected, growth in non-basic and total area employment is a certainty.

Table 3-10

Total Employment Projections

Projected Basic	Projected Non-basic	Projected Total
59700	413546	468246

Source: Allman
Dasso
Tables 3-8 and 3-9
Calculations by Author

CALCULATIONS: Determination of Total Employment Projections

Projected Basic	+	Projected Non-basic	=	Total
59700	+	413546	=	468246

E) Population Projection. Once an analyst has determined employment projections for the market area, it is possible to project total population for the study area. Out of the total population of a community there is a split between those that are employed and those that are unemployed. Using this fact, the analyst can establish trends in the employment participation rate, that is, the total employed divided by the total population.[37] When such percentage rates are established over several time periods, the analyst may note trends into future employment patterns.

The utilization of such figures again establish the need for judgmental evaluation on the part of the analyst. Where, for example, an area experiences an increase in available jobs, there may be a tendency for wives and mothers to join the labor force to capture available salaries. With such an occurrence, the percentage will increase indicating the expanding employment market. The analyst must be aware of the current conditions within the study area. Table 3-11 illustrates the utilization of the employment participation rate for population projection.[38]

F) Income Analysis. Analysis of purchasing power of the households and individuals within the market area is an extremely critical component especially when developing a data base for housing analysis.[39] The analyst must determine approximations for the average level of income, the distribution of incomes of various sizes and the trends relating to the proportion of incomes likely to be spent for housing.

The first income characteristic that must be reviewed is the average level of income for the study area. Some trend analysis should be utilized to gain background knowledge in terms of the

Table 3-11

Population Projections

Total 1960 Employment	1960 Area Population	Participation Rate	Total 1967 Employment	1967 Area Population	Participation Rate	Project. 1974 Employment	Projected Participation Rate	Projected 1974 Population
327300	821897	39.53%	400600	948168	42.25%	468246	45.00%	1040547

Sources: Dasso
Table 3-10
Calculations by Author

CALCULATIONS: Determination of Participation Ratios

1960 $\frac{\text{1960 Employment}}{\text{1960 Population}} = \frac{327300}{821897} = 39.53\%$

1967 $\frac{\text{1967 Employment}}{\text{1967 Population}} = \frac{400600}{948168} = 42.25\%$

Projected 1974 $\frac{\text{Projected 1974 Employment}}{\text{Projected Participation Rate}} = \frac{468246}{.4500} = 1040547$

growth rate of income levels within the study area. Table 3-12 provides an example of income trend analysis for the United States population between 1955 and 1975.[40] The rate of average income growth provides the analyst with an immediate indication of market strength. Decreasing incomes in a study area during periods of price escalation will signal limited housing market potential for an area. On the other hand, strong income growth will indicate money availability for housing purchases.

The analyst may gain valuable income information from the following sources: state and local employment offices, Department of Labor - Bureau of Labor Statistics, state taxation authorities and other public data collection agencies. General income data from these sources provides the best available information for the market study. State employment offices compile monthly payroll data according to major industry groups reported by employers covered by State unemployment insurance laws.[41] The State of Kansas provides data with high and low income ranges for major employment sectors. Such data, when associated with employment growth estimates within a community, can provide an approximation of future earning power. In addition, household income data published by Sales Management magazine is easily available and widely used throughout the industry.

The most critical concern with respect to income analysis is its distribution among the household population.[42] As will be indicated throughout this report, income, employment and housing are interrelated elements; as employment needs increase, incomes rise with resulting shifts from rental housing to home ownership. The income distribution of the market families, both recent past and current patterns, can provide some measure of the rental versus

Table 3-12

Growth in Median Family Income
United States
1955, 1965, 1975

	Dollars			Percent Change		
Median Family Income	1955	1965	1975	1955	1965	1975
	$4418.00	$6957.00	$13991.00	216.7%	57.5%	101.1%

Source: National Association of Home Builders, Economics Department

sales housing potential especially when such figures are compared to area housing costs.

To illustrate the importance of income distribution, Table 3-13 provides a summary chart indicating the family income distribution for the United States in 1973.[43] The median income level of $12051. indicates that 50 percent of all U. S. families earn less than this amount. The right side of the chart indicates the eligible sales price range (utilizing the standard mortgage company figure of 2.5 times imcome) for each of the groups. At the median income, the family would be eligible to purchase up to a $30128 ($12051 times 2.5) house. If the existing inventory has a number of houses in this price range, and finance conditions are acceptable, this family will most likely choose home ownership. Where available sales homes are extremely high priced, rental housing will most likely be the forced choice.

For an analysis of future housing market potential, the behavior of each income group in relation to the proposed price of homes is of prime importance. Once the analyst determines future income estimates for the various income distribution categories and applies the 2.5 times income ratio, some estimate of future home pricing can be determined. Such a process may indicate the future need for less expensive homes in an area with lower income groups. It is also important to note that those families in the lowest part of the distribution pattern have almost no potential for changing housing type while the potential for a shift in housing type improves directly with increasing income amounts.

The final component of income analysis relates to the percentage distribution of personal expenditures for housing. The type of

Table 3-13

Family Income Distribution
United States
1973

Income Range	Families by Income: Percent Distribution	Families by Income: Number of Families	Eligible Price Range (2.5 times income): Low	Eligible Price Range (2.5 times income): High
Under $1000	1.1%	605583	$ -	$ 2500
$1000 - 1499	0.7	385371	2500	3748
$1500 - 1999	1.1	605583	3750	4998
$2000 - 2499	1.4	770742	5000	6248
$2500 - 2999	1.7	935901	6250	7498
$3000 - 3499	2.0	1101060	7500	8748
$3500 - 3999	2.1	1156113	8750	9998
$4000 - 4999	4.5	2477385	10000	12498
$5000 - 5999	4.6	2532438	12500	14998
$6000 - 6999	4.8	2642544	15000	17498
$7000 - 7999	4.9	2697597	17500	19998
$8000 - 8999	5.1	2807703	20000	22498
$9000 - 9999	4.9	2697597	22500	24998
$10000 - 11999	10.7	5890671	25000	29998
$12000 - 14999	14.8	8147844	30000	37498
$15000 - 24999	26.2	14423886	37500	62498
$25000 - 49999	8.3	4569399	62500	124998
$50000 and over	1.0	550530	$125000 plus	
Total Families	100.0	55053000	-	-

Median Income: $12051; Median Price: $30128

Mean Income: $12622; Mean Price: $34055

Source: U.S. Department of Commerce, Bureau of the Census

accomodation chosen and the price a family will set aside for payment of rent are determined by family income, the price level, the desirability of other goods, and the amount a family will be able to borrow.[44] Table 3-14 shows that monthly mortgage payments have increased more than income, sales price and other housing costs. Interest rate fluctuations determined by monetary policy and competing demand sectors within the economy have been a major cause for the increase.

A family can, in most median income situations, advance to larger housing. To do so may require a reduction in other material goods previously anticipated. If increase housing is a primary goal, a family may be willing to accept 14-15 percent mortgage rates to fulfill the goal. Such a decision will cause a considerably larger proportion of the total income to go toward housing costs.

The analyst may utilize decennial Census reports to establish some data pertaining to the proportion of total income spent on housing. In addition, some general data may be available through mortgage institutions and real estate firms.

Table 3-14

Growth in Income,
Sales Price and Other Housing Cost related to Mortgage Costs

Factor	1955-1965	1965-1975	1955-1975
Median Family Income	60%	90%	210%
Median Sale Price	50%	97%	190%
Monthly Mortgage Payment	75%	165%	330%
Heat, utilities, Repair, etc.	55%	125%	230%

Source: National Association of Home Builders, Economics Department

5) Demand Analysis. Demand or Demographic Analysis is concerned primarily with the population and households within the study area.[45] Such analysis is of vital importance to the successfulness of real estate research projects. In-depth research into area economic conditions can provide a base from which the analysis process can begin, yet such procedures provide only a partial view of the actual situation. Tha analysis must concentrate considerable effort into the characteristics of the population within the study area including family size, family make-up, age and so on, for these factors provide information which is the basis necessary to substantiate research findings and insure reliability. The population and household characteristics are principal factors in analyzing the quantitative demand for housing. The determination of demand levels is difficult; the reliability of such determination must be based upon the most available and accurate data for the market area.

Demand Data Sources. In most cases, cost factors eliminate the possibilities of primary population or household research. For this reason, the demographer must have access to available population and household data to base future projections. One principle exists when collecting such data for utilization within a professional study -- consistency.[46] The consistency factor pertains to the definitions used to classify persons during the collection process. Two terms are used by demographic data collection agencies to classify persons:

De facto: Persons are counted where they are found on census day, and,
De jure: Persons are counted at their usual place of residence.

For the market analyst, the most readily and most widely used

data source is the Department of Commerce, Bureau of the Census publications. The information derived by the Bureau is collected on April 1 every ten years utilizing the de facto classification. The only exception to this technique occurs if persons were traveling on census day and were out of their usual place of residence; these persons were allocated to their usual place of residence. The Federal Census has maintained excellent consistency in the use of definitions from census to census.[47]

The one disadvantage to the utilization of Census data is it's decennial collection period. The Bureau of the Census provides yearly population estimates based upon projection techniques rather than in-field observation. The analyst may utilize these figures or develop population and household projections in-house. Such techniques will be presented later in this Chapter.

A second source of census information in Kansas is from the Board of Agriculture yearly county census.[48] This information is gathered by county assessors on January 1 every year except during Federal Census years. The Agricultural census classifies residents on a de jure basis and collects name, address, sex and age information, of which only the total population count is published. This limitation somewhat lessens the value of the Census, however, the analyst may choose to utilize such information rather than project population from the Federal Census.

The third source of demographic data in Kansas is the Department of Health, Division of Vital Statistics in Topeka.[49] The state office records the number of births, deaths, marriages and divorces which occurred to residents of counties and cities throughout the state. Data is collected on a de jure basis. This definition is the

only reasonable one since most births and deaths occur in hospitals. If different criteria were used, cities with hospitals would have a much higher birth and death rate as compared cities without such facilities.

A yearly summary of vital statistics is published for the State. More detailed information may be obtained by contacting the Department of Health. For detailed market studies, the death and birth rate information gained from this source is extremely useful.

ANALYSIS OF POPULATION.

Components of Population Change. The analysis of population within a study area establishes the initial data necessary for the projection of potential household formation. General population estimates alone are not sufficient to provide accurate estimates of demand; the additional necessary step must include the study of household characteristics. Information pertaining to the analysis of household characteristics will follow in later discussion. Population analysis is, at this point, the most critical step in the study of demand.

Population change in an area over a given time is of internal and external origin.[50] Internal growth is due to the natural growth cycle, that being birth and death changes of the area. The difference between birth and death rates determines the rate of net natural increase. Birth and death rates may be influenced by a number of factors including educational, economic and social status. Generally the more industrialized areas maintain lower birth and death rates with higher net natural increase than do more agrarian oriented areas.[51] Such tendencies may be due, in part, to the availability of

health care facilities, desires to maintain higher standards of family living and differences in the reliance upon manual labor and automated delivery systems in the production processes.

Internal growth statistics are generally well-documented and available to market analyst through state and local vital statistics departments. The analyst may quite easily study past trending within the study area in terms of birth and death rates. On the whole, the United States has experienced a decline in the number of births due partly to the changing sex structure of the population.[52] This tendency is expected to be maintained in the future as the marriage structure, economic conditions and zero population growth programs continue. At the same time, the death rate continues to display a declining nature due to increased medical knowledge (prolonging life expectancy) and improved sanitation systems.[53]

The second component of population change is composed of two external elements: migration and political boundary alteration.[54] With economic conditions exhibiting increasing job opportunities, growth and in-migration will be present. At the same time, the lack of opportunity may create decline, out-migration and stagnation. For communities where economic conditions vary little in upward or downward opportunity, in-migration will generally be offset by patterns of out-migration. Areas of sudden economic improvement such as the coal and oil cities of Wyoming and Alaska may experience a tremendous period of in-migration with resulting increases in demand for housing units.

The determination of net migratory change within a community is difficult to pinpoint. The analyst may be able to establish general trends within the community by canvassing Realtors, bankers and

city utility offices. Such procedures may provide a portion of the in-migration numbers, however, data gathering would require constant day-by-day updating to record overall gross change. Census data provides some estimates of migration within localities and may be particularly useful in instances where used in conjunction with the analysis of the economic tendencies of an area.

Another means of estimating the migration numbers utilizes a combination of two data collection sources. The analyst may obtain yearly total population counts (Federal Census or Board of Agriculture census) for the area of concern, then subtract the net natural change as determined by the Division of Vital Statistics. This will provide an estimated count of the in/out-migration for the area. Such figures will, of course, be dependent upon the quality and accuracy of the collection techniques.

The second area of external sector population change occurs where municipalities extend political boundaries through annexation. Such change is generally quite easy for the analyst to record through city records and prior census tract figures.

Population Trends. There exists a strong correlation between economic growth within a city and the corresponding population numbers. As observed in earlier discussion, opportunity for employment is of utmost importance in the attraction of people to a community. With positive economic stimulation within a locale, the chance of population growth is extremely strong even if some of the new population is forced to live in inadequate or doubled up quarters. The alteration of population due to such an economic change will cause change within the housing market -- with such change dependent upon the quantities and pricing of housing

available.

To the analyst, population trends serve to indicate the changes in numbers over a specific time frame. When these changes are studied with the related economic history of the area, the analyst may develop some theories as to the effects of certain economic stimulants/depressants upon the economy. To illustrate, in the early 1970's, the Wichita area suffered population losses exceeding 14000.[56] A market analyst reviewing population trends for the area must associate the area economic conditions with the corresponding population loss. Historical data would indicate that the economy of Wichita was primarily based upon a single force -- the aircraft industry. Due to reductions in governmental spending on military aircraft and in commercial airline expansion, employment layoffs were widespread. Because the strength of the single industry effected all segments of the local economy -- housing, finance, real estate, and so on -- large numbers of people left the area in search of new employment opportunities. The preceding discussion illustrates the importance of background research into the reasons for population trend differences.

Population trend analysis provides the market researcher with an opportunity to review the area's growth history. The identification of key economic introductions -- new industry, plant expansion, available energy supplies and others -- through trend analysis may provide an indication of the sequences to be expected if such occurrences are eminent in the future. The analyst may utilize such cause-effect relationships in the development of employment and population estimates for the future.

Historical population growth trends may be reviewed by the

analyst to associate related economic factors causing such changes. Such population studies are utilized more for their background information provided to the analyst. When past trends are utilized for projection purposes, the time period will vary with the type of study. For housing analysis studies, the analyst should consider a period since the last decennial census and, if that occurred within the past four or five years, the preceding census.[57] Such a time period will allow the analyst an opportunity to review cycles within the economic system noting overall reaction tendencies. Certain situations may require shorter interval analyses such as impact related housing studies where population is known to have changed dramatically due to the introduction of the previously mentioned oil and coal related economic stimulants.

Population change during the trend period is analyzed in terms of numerical change and percentage change. For purposes of housing market studies, all such data should be prepared on an annual basis. See Table 3-15.

The analyst may desire general averages for the study period. In this case, annual average change and percentage change may be calculated as follows[58]:

$$\text{Annual Average Change} = \frac{\text{Total Numerical Change}}{\text{Number of Years}} = \frac{423}{5} = 84.6 \text{ persons/yr.}$$

$$\text{Annual Percent Change} = \frac{\text{Annual Average Change}}{\text{Year 1 Population}} = \frac{84.6}{1000} = 8.46\%/\text{yr.}$$

The preceding calculations are generally included within the text of the market analysis study. The analyst may include additional population breakdowns in the statistical abstract. Such information may include natural population increase and migration for each trend year.

Table 3-15

Population Trend Format

Year	Population	Numerical Change	Percentage Change
1974 (Year 1)	1000		
		194	19.4%
1975 (Year 2)	1194		
		79	6.6%
1976 (Year 3)	1273		
		109	8.6%
1977 (Year 4)	1382		
		41	3.0%
1978 (Year 5)	1423		

CALCULATIONS:

Numerical Change: Year 2 - Year 1 = Change

Percentage Change: ((Year 2 - Year 1) ÷ Year 1) x 100 = Percentage

Source: Author

Population Characteristics. The preceding discussion dealt primarily with quantitative aspects of population, that is, present and past numbers of people which may create a need and demand for housing. There are also manay qualitative characteristics of this same population which may cause a dramatic impact upon these demands. The characteristics of age, race, family mobility and household relationship may all create significant effects upon the marketibility of developed real estate. Advance research on the part of the marketing staff can provide considerable information as to the proper market mix for a given market locale.

The best source of data pertaining to such aspects is the decennial Federal Census. In the publication, General Population Characteristics, information is outlined for age distribution, race classification, mobility and marital status -- all at considerable depth.[59] Unfortunately, due to the infrequency of such data, the market analyst may find the material outdated especially later in the decade after the Census. In this case, the analyst may draw upon other sources such as locally prepared reports, the Department of Vital Statistics or the Department of Human Resources (both in Topeka). These alternative sources generally base their intercensal figures upon yearly census reports and the general population proportions developed during the Federal Census year.

Age. The age structure of the population plays an important role, not only in demand for housing, but also in the type of real estate demanded. Distribution between young and old age categories have strong effects upon the occupancy tenure, that is, home ownership or rental housing. In addition, the financial position of the younger and older populations clearly dictate the types of housing

required.

The age composition of the United States during the last twenty years shifted to a lower average age.[60] This shift was created due to considerably larger propertions of the population within the younger age categories caused by post war baby booms and improving economic conditions. The age composition of the U. S. will continue to maintain a lower average age relative to years prior to the 1950s, however, the long-term prospect is for an increasing average age of the population.[61] The following paragraph provides statistical data to support this thesis within the adult sector of the population[62]:

> During the 1960s, the adult population of the United States (as measured by people over age 15) grew at a rate of 2.0 million per year. By the 1970s, the annual rate increased to 3.0 million. For the 1979-1985 span, however, adult population gains are projected to drop significantly, averaging 1.8 million annually.

Not only will the total adult numbers change, but the distribution within age categories will shift considerably. Of the projected 1.8 million for period 1979-1985, more than 900,000 are expected in the 35-45 year-old category, while people in the 15-25 age group will decline in number during the period.[63]

Another factor which is critical to age distribution is the rate of population growth. During the past twenty years, economic stability was taken for granted -- low inflation rates, cheap gas, five percent mortgage rates and so on. Recently, however, greater economic pressures upon the pocketbooks of newly formed families have caused not only fewer of the aforementioned luxuries, but also tendencies toward fewer children or, in the case of professional couples, no children at all. These changes, caused in part due to economic pressures and in part to changing social views, have

caused the rate of population growth to decrease. Over the past five years, school systems around the country have projected continually decreasing numbers in enrollment especially in the lower grade levels.

As the rate of increase of the population slows, the average age of the population will increase.[64] The effects of this age shift can already be noted in the real estate market, especially in larger cities. The figures mentioned previously in regard to the shift in the adult population are important for two reasons[65]:

> First, by age 25, one out of every four people owns a single-family dwelling unit. This ratio improves to 3 out of 8 by age 35. The incidence of purchase grows rapidly between ages 15 to 35, thereafter, the growth in the rate of ownership starts to decline; and,
>
> Second, people aged 35 to 45 tend to be the prime buyers of newly constructed housing, but they are unable to make purchases unless they can find buyers for their existing units. If, in fact, younger sectors of the population are declining in either size or growth rate, the support that this age group gives to a strong market in new housing is eroded.

The built-in phenomenon of filtering, that is, the shift of adequate housing from one income group to lower income groups[66], has in the past been an inherent quality of the real estate trade. This 'moving up' assumption may require new thinking in the next decade of housing development.

Age also determines the type of housing that will be required within a market area. As noted before, an area with families - - mostly in the twenty-five to forty-five group is more apt to prefer single-family detached housing. An area with large numbers of elderly people and/or singles or couples may be ideal for apartment, townhouse or condominium development. The increasing numbers of apartments built in larger cities in the late 1960s/early 1970s

clearly indicated the growing numbers of young people entering the housing market. The reasons for apartment living are quite clear for the younger age group -- easy mobility, limited financing available for home purchase, the 'social life' as advertised by marketing organizations, low maintenance requirements and limited space needs.

Recently there has been considerable attention turned to elderly housing (rental and owned) especially in sun-belt states across the country. The reasons for this change are numerous -- lesser space requirements, higher energy costs for maintaining the larger family home and decreasing incomes. The emphasis upon housing for the elderly will most likely increase a great deal in the future as older populations make up a larger proportion of the population.

A survey of occupancy tenure conducted in 1971-72, indicated that home ownership is considerably higher at older ages than the younger ages.[67] See Table 3-16. Unmarrieds under age 45 showed a much greater tendency toward multifamily housing than did the married couples under 45 with children. This survey indicates a minor number of multifamily dwellings within the over 45 group, however, the great emphasis upon retirement living in recent years has added additional points to this area of housing. Overall, this survey indicated that sixty-six percent of all non-farm families owned their dwelling unit.[68] See Table 3-17.

The age factor is a critical component in population analysis. Later discussion will indicate that other factors associated with the age factor -- race, mortgage financing conditions, migration -- all create an interrelated structure which must be analyzed for a complete view of the market conditions.

Table 3-16

Family Distribution of Housing Types

Family Characteristics	Single-Family House	2-4 Family Structure	Apartment, 5 or More Units	Trailer
Under Age 45				
Unmarried, no children	33	24	36	7
Married, no children	45	19	23	13
Married, youngest child under 6	70	19	4	7
Married, Youngest child 6 or older	86	8	4	2
Age 45 and Older				
Married, has children	87	9	3	1
Married, no children, head of labor force	80	10	7	3
Married, no children, head retired	82	8	5	5
Unmarried, no children, head in labor force	65	17	14	4
Unmarried, no children, head retired	65	10	21	4
All Families	71	14	11	4

Source: Mandell and others

Table 3-17

Home Ownership Distribution

Age and Family Characteristics	Percentage Distribution
Under Age 45	
Unmarried, no children	15
Married, no children	42
Married, youngest child under 6	62
Married, youngest child 6 or older	76
Age 45 and Older	
Married, with children	79
Married, no children, head in labor force	87
Married, no children, head retired	78
Unmarried, no children, head in labor force	61
Unmarried, no children, head retired	67
All Families	66

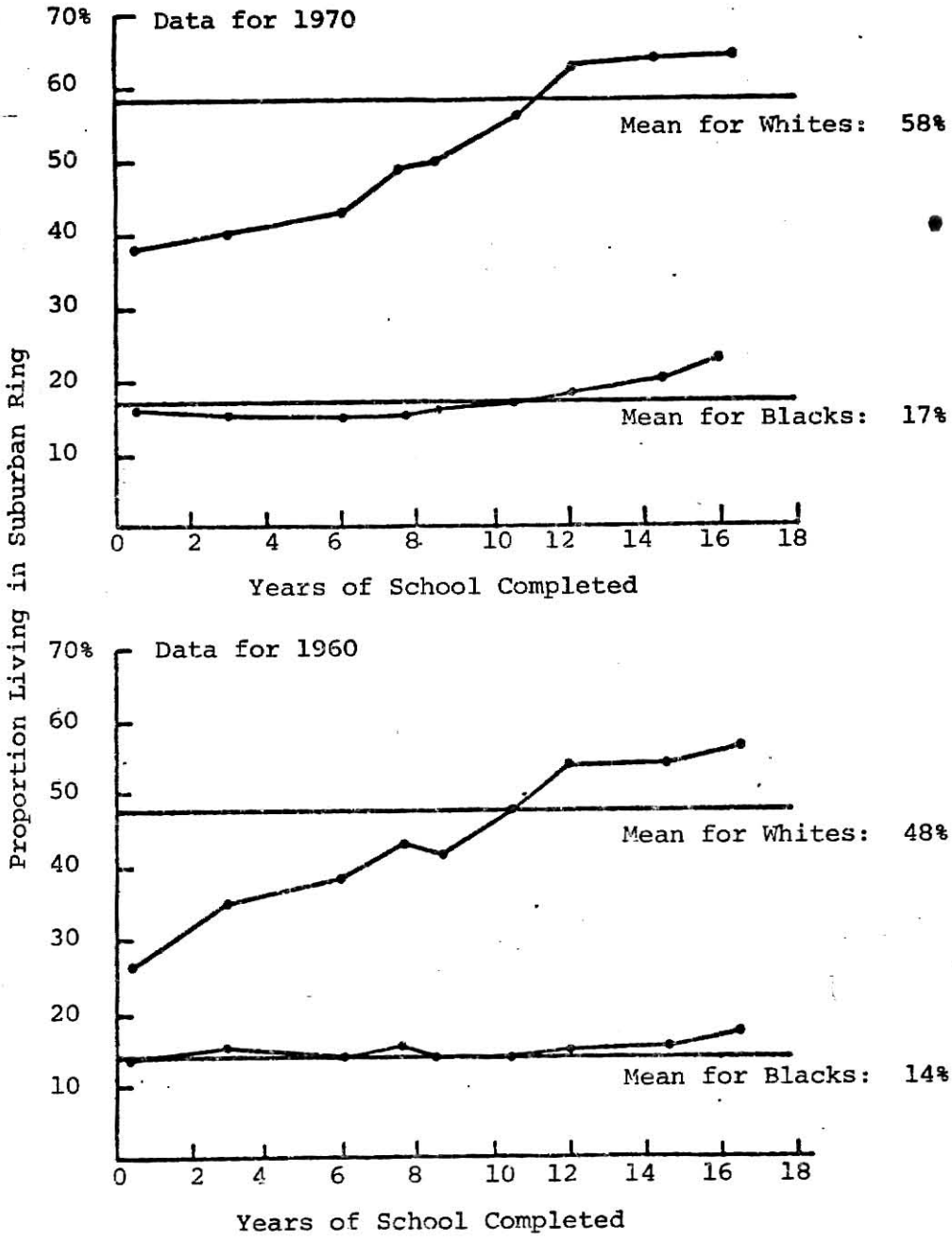
Source: Mandell and others

Color and Race. Considerable progress has been made in lessening racial discrimination in the housing industry. Racially restrictive covenants, racial zoning and steering (the practice of showing certain homes to people in minority groups) have been declared unenforceable by various courts across the country. In addition, practices such as red-lining (where certain neighborhoods are refused mortgage loans because of high risk or lack of profit potential[69]) have been reduced considerably due to certain mortgage disclosure requirements.

Despite these fairly recent actions, race and ethnic background are still major factors in some market areas. This is especially true in larger cities where concentrations of people from a particular ethnic background indicate highly selective housing preferences based upon traditional customs and practices. Real estate developers that are involved in areas of rapid integration must be aware of potential tensions during the integration process.

To some degree, segregation within an area, may be a result of differences in preference or ability to pay rather than actual discrimination.[70] Research has found that preferences for housing do not differ significantly among racial groups, however, racial distribution within suburbs by education level shows that blacks of equal education to whites and thus with somewhat comparable incomes are less likely to live in the suburbs.[71] See Figure 3-2.

In general, the effects of race on the housing market place cannot be attributed to ability to pay, housing need or housing preference. Rather the history of the real estate market coupled with the overall nature of the population in terms of prejudices and restrictions continue to limit the opportunities for minorities within the market. The developer must be aware that even the presence of a particular



Source: Farley

Figure 3-2. Racial Distribution within Suburban Housing

race or ethnic background does not necessarily mean that there is weak demand, rather it means that a considerable amount of research is required to grasp the racial conditions and attitudes of the area.

Mobility. As mentioned earlier, migration tends to be movement from one housing market area to another. The term 'mobility' refers to the movement of a population within a single market area. This movement is indicative of occupant turnover and, in comparison with other areas, it is a guide to the dynamics and relative degree of fluidity in the market.[72] In addition, it is also a factor which provides an insight into the filtering process -- the rate at which housing units shift from one income category to the next lower group. Where mobility is relatively slow, the population may be characterized as an older population with very little shift in housing needs. Rapid mobility is indicative of a younger population group with increasing income and social status as well as increasing space needs for family development.

The decennial census provides some information regarding mobility, however, the limitation as to time period is a considerable disadvantage. This data relates to the change of place of residence during a five year period (1975 to 1980, as an example). Available data indicates that owners are less mobile than renters and elderly persons are less mobile than the population as a whole.[73] In addition, past trends indicate that the overall characteristics do not change significantly, however, dynamic change may occur in some localities as a result of increasing job opportunities and incomes or younger average age populations.

The market analyst must be aware of this change as it plays a critical role in identifying housing needs and types required. Very

little local data is recorded for such change, however, consultation with Realtors and loan officers may provide considerable information to assist in making market decisions.

Marital Status. When analyzing the population within a market area, it is critical that some figures be developed that indicate a breakdown into marital status groups. As will be indicated in the forthcoming discussion on Households, marital status is a key factor in the identification of household numbers. The household, rather than the family, is the unit of housing demand.[74] A population may consist of large numbers of divorced individuals, married couples, unmarried couples, each of which represents a household and a unit of demand.

Considerable information is available in the decennial census as to the makeup of the population. In addition, county-wide statistics are available in most states indicating divorces and annulments during the annual period. Utilizing such data, trends can be established which when coupled with population figures may aid in developing estimates as to future divorce numbers and increases/decreases in units of housing demanded.

Current Population Surveys and Estimates. When preparing to project the population within a market area, some estimates of the current population are essential to establish a benchmark figure from which to base projections. Rarely are decennial census tabulations available close enough to the census date to permit usage without some error due to shifting population numbers.

There are several sources of current population estimates which the analyst may use. Two states conduct population count surveys.[75] In Kansas, an annual enumeration is conducted by county assessors for

the Kansas State Board of Agriculture and available by county and city. Massachusetts also conducts a State census in years ending in '5' with figures developed by city and county also. No other states develop intercensal estimates of population.

A second source of intercensal data is the Bureau of the Census. Current Population Reports, Series P-25 provides estimates of resident population for all States and the largest SMSA's. Estimates developed through this report are some of the most reliable available for study.

Population estimates are also developed by many regional and local planning agencies for counties, cities and townships. A list of State and local agencies which prepare current population estimates and projections is available in "Inventory of State and Local Agencies Preparing Population Estimates, Survey of 1975," Current Population Reports, Series P-25, No. 328, Bureau of the Census.

Finally, the analyst may develop estimates based upon the previously mentioned sources plus his own knowledge of current market developments and trends in the area. Cross examination of the various sources may aid in establishing some statistical reliability.

Techniques for Estimating Current Population. There are several techniques the analyst may utilize when estimating population for an area. Most of these techniques of estimating current population are also useful for making estimates or projections of future population.[76] Four of the less complicated methods in use are: extrapolation, ratio, school enrollment and housing unit methods. Each has advantages and disadvantages which will be mentioned below. Additional methods utilizing computer assisted programs provide

considerably greater detail, are more costly and involved and, consequently, yield more accurate results.

Extrapolation. The extrapolation method utilizes past population trends in the estimation or projection of population. This method is performed under the assumption that the economic, demographic and sociological factors between the previous census date and the present have continued.[77] Changes in persons per household, migration, marriages and other factors can cause adjustments which may render such estimates/projections useless or subject to considerable error.

There are two possible uses of the extrapolation process.[78] The first involves the development of number of percentage change between the most recent census dates, reducing this to an annual rate and converting to the year in question. The conversion added to the last census figure is the population estimate. See Table 3-18.

Table 3-18

Extrapolation #1

Year	Population	Number Change	Annual No. Change	Percentage Change	Annual Percent. Change
1960	200000				
		38000	3800	19.0%	1.9%
1970	238000				

Source: Author

CALCULATIONS: 1979 POPULATION ESTIMATE

9 years x 3800 Annual Change = 34200 + 238000 = 272200

or, 9 years x (1.9% x 200000) = 34200 + 238000 = 272200

The second use of the extrapolation technique is to determine percentage changes for a number of decades from census data, average them, reduce to an annual rate and again add to the last available census date for the population estimate. See Table 3-19.

Table 3-19

Extrapolation #2

Year	Census Population	Number Change	Percent Change	Decade Average	Annual % Change
1940	172000				
		12000	6.98%		
1950	184000				
		16000	8.70%	11.56%	1.16%
1960	200000				
		38000	19.00%		
1970	238000				

Source: Author

CALCULATIONS: 1979 POPULATION ESTIMATE

9 Years x (1.16 x 238000) = 24849 + 238000 = 262849

As can be noted, significant differences are created utilizing the different extrapolation methods. The analyst must be familiar with the overall population trends of the city and must be aware of favorable conditions which may accelerate growth at a greater rate in the near future.

Ratio. The ratio method of estimation utilizes the past relationships of the market area under study and the state, nation or economic area as a whole for which a current population estimate is available.[79] The proportions developed are based upon the assumption that the population growth rates are constant for both the state/nation and the study area. Any major change in growth

relationships will cause considerable error in the population estimates.

The ratio method may be utilized in two possible applications.[80] The first utilizes census data from state or national sources to create proportions. See Table 3-20.

Table 3-20

Ratio Method

Year	Market Area Population	State Population	Nation Population
1970	238000	2400000	201000000
1979(Estimate)	X	2600000	210000000

Source: Author

CALCULATIONS: 1979 POPULATION ESTIMATE

Market Area/State Proportion:

$$\frac{238000}{2400000} = \frac{X}{2600000}, \quad X = 257833$$

Market Area/National Proportion:

$$\frac{238000}{201000000} = \frac{X}{210000000}, \quad X = 248029$$

The second method utilizes a proportion between the most recent market area census data and the civilian labor force for the same area. This proportion, the labor participation rate, indicates the approximate percentage of the total population making up the civilian labor force. With a fairly accurate estimate of the labor force for the estimate year, the analyst may apply the labor participation rate to the civilian labor force to create an estimate of the population for the market area. See Table 3-21.

Table 3-21

Labor Force Method

Year	Civilian Labor Force	Market Area Population
1970	120000	238000
1979 (Estimate)	135000	X

Source: Author

CALCULATIONS: 1979 POPULATION ESTIMATE

1970 Labor Participation Rate:

$$\frac{120000}{238000} = 50.4\%$$

1979 Estimated Market Area Population:

$$\frac{135000}{X} = 50.4\%, \quad X = \frac{135000}{.504}, \quad X = \underline{267857}$$

The assumption that the labor participation rate will remain constant may create error in the projection figures. Generally, however, this rate will shift slowly and will do so as the local economy turns upward. The participation rate in recent years has shown a continual increase due largely to the 'two wage earner' concept common to our present day society. With continued inflation, the rate may be expected to maintain this upward shift. Thusly, the market analyst must be aware of the make-up of the local economy when utilizing this estimation/projection method.

School Enrollment. The school enrollment method is another form of the ratio method. This method utilizes the ratio of school children to total population as the basis for estimating current population.[81] Most school enrollment data is fairly reliable as such data is utilized as the basis for the apportionment of state funding. In addition, school statistics tend to be fairly accurate nationwide due to compulsory attendance requirements.

The data utilized for the projection method must be consistent; the same census date and the same grade coverage are key elements.[82] Generally grades one through six or one through eight are preferable and, where possible, both public and private schools should be included in the count.

The school enrollment technique is based upon 1) the ratio of school population in specific age groups to the total population in the most recent census to 2) the school population in the same age groups in the current year.[83] An additional implication indicates uniformity in birth and death rates and in family composition. Fairly accurate results are gained when utilizing data within a few years of the last census date. See Table 3-22.

Table 3-22

School Enrollment Method

Year	Market Area Population	School Enrollment
1970	238000	23000
1979 (Estimate)	X	21000

Source: Author

CALCULATIONS: 1979 POPULATION ESTIMATE

Market Area Population/School Enrollment Proportion:

$$\frac{23000}{238000} = \frac{21000}{X}, \quad X = 217304$$

Housing Unit. This method involves a current estimate of occupied housing units and an average number of persons per unit.[84]

The assumption in utilizing this method is that as the number of occupied units changes the population will reflect similar change in population. This may be a somewhat false assumption as the national trend in household size has been decreasing for the past twenty years. Decennial census data provides estimates of both the household size and the number of occupied units. This data, in turn, may be used by the analyst with projections/estimates close to the census date being more reliable than later in the decade.

The reliability of this method also depends upon the estimate of new number of housing units added since the last census date less the total number of vacant units and demolitions within the market area.[85] Once this figure is added to the last census figure a current housing unit figure is obtained. The analyst must now estimate the average household size for the estimate year in question. Utilizing historical trends of the state and nation, the analyst may predict slight decreases in household size. Such estimates must be based upon good judgment with some study of the local family structure and the school enrollment characteristics. See Table 3-23.

Table 3-23

Housing Unit Method

Year	Occupied Housing Units		Average Persons/Unit		Market Area Population
1970	70000	x	3.40	=	238000
1979 (Estimate)	81000	x	3.20	=	259200

Source: Author

Population Summary. Utilizing the above methods, several population figures may be developed. Assuming that all data utilized for such methods is of a consistent and reliable nature, the analyst may develop an average figure based upon past population trends, employment force, housing and household characteristics and school figures. Table 3-24 indicates the development of the population averages for the current year.

The broad scope of demographic data reviewed by the process will reveal high and low population extremes for the period. The analyst may also be required to provide subjective input into the final projection figure based upon present patterns of employment within the market area. Judgment is, then, the final ingredient to the estimation process.

Table 3-24

Summary of Current Year Estimates

Method of Estimation	Estimate
Extrapolation #1	272200
Extrapolation #2	262849
Ratio: State	257833
Ratio: National	248029
Ratio: Labor Force	267857
School Enrollment	217304
Housing Unit	259200
Average 1979 Population	255039

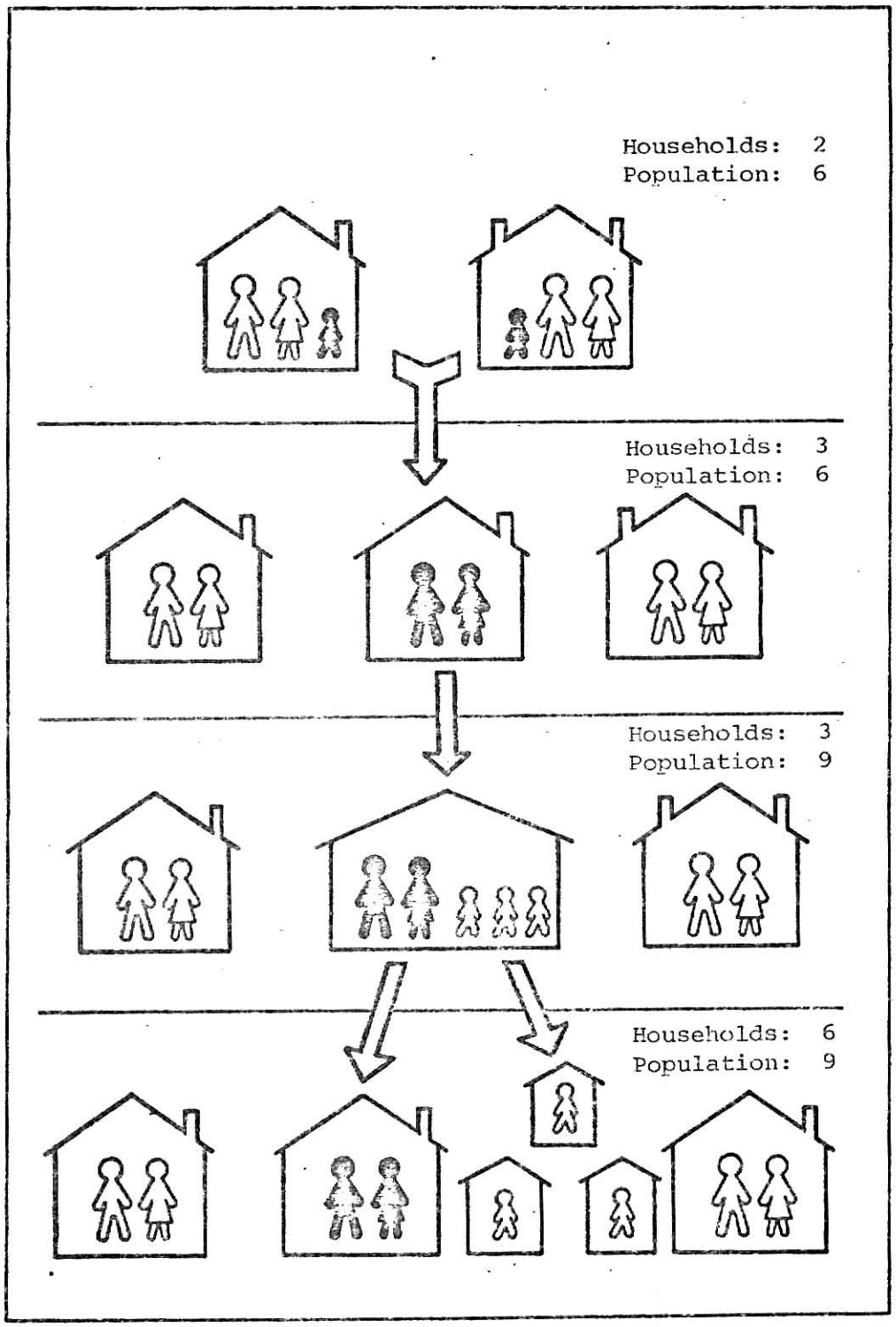
Source: Author

ANALYSIS OF HOUSEHOLDS

Over the past ten to fifteen years, population growth has increased in Kansas by approximately five percent. During the same time period, the number of households has increased by over fifteen percent.[86] This change is extremely significant; "It is the formation of households rather than changes in population per se which directly influences the housing market."[87] This statement should not serve to lessen the importance of population data and analysis, however, in a relative sense the key demand unit in the housing market is the household. Figure 3-3 provides an illustration reflecting the significance of households and population.[88] The number of housing units needed is dependent on the number of households. Population affects the number of housing units needed only in terms of the manner in which the population is divided into households.

By census definition, the household includes all persons who occupy a house, apartment or a room which constitutes a housing unit.[89] The household may contain a single individual, a group of unrelated individuals, a single family or two or more families living together. National household trends as recorded by census data indicate a consistent drop in the number of family households with an inverse relationship in the number of non-family units.[90] See Table 3-25.

Types of Households. The number of households is equal to the number of household heads.[91] Generally, households may be grouped according to the following classifications:



Source: Lindamood and Hanna

Figure 3-3. Household and Population Relationships in Housing Unit Demand

Table 3-25

Distribution of

Family Households and Other Households

United States

1940-1980

Year	Number (in thousands)			Percentage Distribution		
	Total Households	Family Households	Other Households	Total	Family	Other
1940	32949	31491	3458	100%	90.1%	9.9%
1950	43554	38838	4716	100	89.2	10.8
1960	52799	45111	7688	100	85.4	14.6
1965	57436	47956	9480	100	83.5	16.5
1970	63401	51586	11815	100	81.4	18.6
1971	64778	52227	12551	100	80.6	19.4
1972	66676	53296	13380	100	79.9	20.1
1973	68251	54373	13878	100	79.7	20.3
1975	71514	56095	15419	100	78.4	21.6
1980*	78159	60974	17185	100	78.1	21.9

* Projection

Source: U.S. Department of Commerce, Current Population Reports

1 - The husband-wife household. All married couples living together, with or without children, in their own housing accomodations.

2 - Other households with male head. Men living alone or with relatives other than a wife and classified as household heads.

3 - Other households with female head. Similar to the male head household with a female in the head role.

All of the above household categories contain either "primary families" or "primary individuals".[92] Such distinction is dependent upon the relationship of those living together and, if studied for an entire market area, can indicate considerable information on household formation characteristics. The following definitions clarify these groups:

> Primary family. A group of two or more related individuals that includes among its members, the head of the household, i.e. all husband-wife households and all other households which include relatives of female or male heads. These groups may also contain sub-families (related), secondary families (non-related) or secondary individuals (non-related). The predominant type of household is the primary family.[93]
>
> Primary individual. A household head living alone or with non-relatives only. The non-relative category may be either secondary individuals or a secondary family.

A family, in census terms, is a group of two or more persons residing together and related by blood, marriage or adoption. The sub-family is a married couple with or without children, related to, but not including, the head of the household. The secondary family is a family group not related to the head of the household.

Household Trends. Primary emphasis in the analysis of households is placed on the trends of growth.[94] This analysis is concerned with household formation, that is, the rate of household growth during specific

past periods and the expected rate of growth during the forecast period covered by the market study. The household numbers analysis is directly dependent upon the trends in household size. With population continuing to increase, a decreasing size per household will create an increase in the total number of households. In the opposite situation, increasing population and increasing size per household, the numbers of households will be reduced. Historical trends in the United States have indicated not only a continual increase in population but a lower size per household, thus an overall increase in the number of households. See Tables 3-26[95] and 3-27[96]. This phenomenon has been a major contributor in the demand for housing units in the United States during the past fifteen to twenty years.

Presentation of trend analysis data should be made in a format similar to the previously discussed population data. The analyst soon discovers that household statistics are much more scarce than general population data. The decennial census provides data from which household trends can be established. Intercensal household figures may be determined for years other than these census years by the following process[97]:

1 - Obtain yearly population estimates for the market area for the years required.

2 - Subtract any non-household population, that is, any institutional population, students in dormitories or military personnel. If included, such data may create improper statistics.[98] This data is available through the appropriate offices of universities or military bases.

3 - Divide these adjusted population figures by the estimated average household size for the market area. The analyst should study past household size trends to establish this figure.

4 - The calculated household size for the current year must reflect general trend characteristics as well as good judgment.

Table 3-26

Distribution of Households
by Number of Persons
United States
Selected Years 1790-1976
Percent Distribution

Year	One	Two	Three	Four	Five	Six or More
1790	3.7	7.8	11.7	13.8	13.9	49.0*
1890	3.6	13.2	16.7	16.8	15.1	34.6*
1900	5.1	15.0	17.6	16.9	14.2	31.3*
1930	7.9	23.4	20.8*	17.5	12.0	18.5
1940	7.1	24.8*	22.4	18.1	11.5	16.1
1950	10.9	28.8*	22.6	17.8	10.0	10.0
1960	13.1	27.8*	18.9	17.6	11.5	11.1
1970	17.0	28.8*	17.3	15.8	10.4	10.7
1976	20.6	30.6*	17.2	15.7	8.6	7.3
1977	20.7	30.3*	17.4	15.6	8.4	7.1

* Indicates highest percentage group of total

Source: Siegel & Associates
Historical Statistics of the U.S.

Table 3-27

United States

Household Numbers, Average Household Size

and

Population

1890 - 1977

Year	Number of Households	Average Household Size	Population
1890	12,690,000	4.93	62,561,700
1930	29,905,000	4.11	122,909,550
1940	34,949,000	3.67	128,262,283
1950	43,554,000	3.37	146,776,980
1960	52,799,000	3.33	175,820,067
1970	63,401,000	3.14	199,079,140
1977	74,142,000	2.86	212,046,120

Source: Lindamood and Hanna
U.S. Department of Commerce, Current Population Reports
Historical Statistics of the U.S.

Growth trends may also be determined by utilizing the following method[99]:

1 - Obtain base year decennial census figures for household numbers.

2 - Bring this figure to a current date by estimating the housing stock increase between the decennial data and the current date. These figures may be obtained from city permit departments, developers or, in smaller cities, by windshield surveys.

3 - Deduct the estimated number of vacant housing units from the total current housing inventory (1 plus 2).

Adjustments in the data and estimates of household numbers should be made consistent with any adjustments made in population data. This is especially critical when utilizing several decennial census reports as data collection and analysis may vary in some categories. It may, then, be required that the analyst make minor adjustments in these census statistics to establish consistent data for project analysis.

The analyst should attempt to associate major change in household size averages with the corresponding cause in such alteration. It is especially important to reflect possible economic and real estate developments which prompted change in household formation. The analyst should attempt to provide some discussion of trends of growth which may be utilized or referenced to when making household formation projections for the forecast period.

The second method of trend estimation indicated that vacancies must be subtracted to determine net households for an area. It must be noted that "Every market must provide a certain number of vacant units, to allow for the movement of households from one vacant unit to another."[100] The amount of vacancy required for an area varies, however, the 1970 Census indicated that 7.6% of all

housing was vacant.[101] Just as household numbers increase in an area, the number of vacant units will also increase to maintain a proportionate share of total housing. Additional information pertaining to vacancies will be mentioned in the Supply Analysis section.

Household Formation. As mentioned earlier, there are several classifications of households. Basically, these groups are 1) families of different types or 2) individuals.[102] The status of these households is dependent upon the manner in which they live (alone or in some combination). In terms of the U.S. population as a whole, there have been changes in the formation patterns since the 1940 Census period.[103] See Table 3-28. Considerable change has been shown in the number of households with female heads with possible reasons for this change being more favorable survival rates for women, increased independence and participation of women in the labor force.

Marriage and Divorce. Household development is generally associated with a number of life cycle states referring to the changes that occur over the years in family composition.[104] As such, these cycles provide some value in predicting the probable changes in housing patterns and preferences of families. The basic life cycle stages and related characteristics are indicated below:

1) - The single person. This stage may last from the time a person leaves the family home until marriage. Housing is generally restricted to apartment accomodations due to low cost and high mobility.

2) - The couple. This stage consists of the husband and wife. As career orientation is important, the couple maintains a mobile lifestyle with less emphasis upon home ownership than in later years. Again apartment or small house living will tend to be the most prevalent housing dependent

Table 3-28

Family Units by Type

United States

1940, 1950, 1960, and 1970

(in thousands)

Family Unit Type	Total Number				Decennial Change		
	1970	1960	1950	1940	1960-1970	1950-1960	1940-1950
All Households		52610	43554	34949		9056	8605
Husband-wife households		39260	34075	26571		5185	7504
Other, male head		3811	2837	3109		974	-272
Other, female head		9539	6642	5269		2897	1373
Primary families		44856	38838	31491		6018	7347
Primary individuals		7754	4716	3458		3038	1258
Male		2624	1668	1599		956	69
Female		5130	3048	1859		2082	1189
All Married Couples		40205	36091	28517		4114	7574
With own household		39260	34075	26571		5185	7504
Without own household		945	2016	1946		-1071	70
All Families		45062	39303	32166		5759	7137
Husband-wife families		39335	34440	26971		4895	7469
Other, male heads		1233	1184	1579		49	-395
Other, female heads		4494	3679	3616		815	63
Primary families		44856	38838	31491		6018	7347
Secondary families		206	465	675		-259	-210
All Subfamilies		1511	2402	2062		-891	340
Husband-wife subfamilies		870	1651	1546		-781	105
Other, male heads		113	113	52		0	61
Other, female heads		528	638	464		-110	174

Source: U.S. Department of Commerce, Current Population Reports

upon cost and location to the employment centers.

3 - The expanding family. This stage lasts from the time of the first child until one or more of the children reach adolescence. Housing needs must be flexible to allow for the age variance of children. Home ownership is typically a goal with emphasis upon single family structures with adequate activity space.

4 - The launching family. The stage begins as children reach adolescence until the last one leaves home. Single family home ownership is well established with considerable emphasis upon storage, private family spaces and entertainment or recreation areas.

5 - The empty nest. This stage takes place after the children have left home, with the couple still active in employment. Greater economic freedom allows more money for entertainment and travel with housing needs consisting of storage of family momentos, and visitation from children. In most cases, the couple will remain in the family home for the above reasons.

6 - Active retirement. Retirement while the couple (or surviving spouse) is still active is the basis for this stage. Activities will tend to be limited to hobbies and some travel with the home used as the base. Some change in housing space may occur with smaller homes or apartments the most widely accepted units.

7 - Restricted retirement. Health conditions cause limited activity that may hinder independent living. Considerable emphasis is placed upon smaller houses or apartments that allow some supervisory assistance.

As the above stages indicate, the predominant form of household formation begins with the married couple.[105] This characteristic will most likely be continued in the future, however, increasing numbers of divorces and annulments are providing additional household formation numbers.[106] See Table 3-29. Trends of the United States population indicate the marriage rate has been fairly constant over the last forty years. A major factor in household formation is the divorce rate; the number of divorces has nearly doubled in the last thirty years with nearly one out of three present marriages ending in divorce.

Table 3-29

Marriages and Divorces

United States

1940-1978

Year	Marriages		Divorces	
	Number (000)	Rate*	Number (000)	Rate*
1940	1596	12.1	264	2.0
1950	1667	11.1	385	2.6
1955	1531	9.3	377	2.3
1960	1523	8.5	393	2.2
1965	1800	9.3	479	2.5
1970	2159	10.6	708	3.5
1971	2196	10.6	768	3.7
1972	2269	11.0	839	4.1
1973	2284	10.9	913	4.4
1974	2223	10.5	970	4.6
1975	2126	10.1	1026	4.9
1976	2133	9.9	1077	5.0
1977	2176	10.1	1097	5.1
1978	2190	10.1	1100	5.1

* Per 1000 population

Source: Siegel & Associates

Current Household Data and Estimates. Current household data and estimates on a local basis are practically nonexistent.[107] In some cases, local studies performed by academic sources or governmental agencies provide estimated current data. Such information should be thoroughly scrutinized to determine the adequacy of techniques utilized in the statistical development. Processes indicated under the prior section Household Trends, may be utilized to develop current estimates for household numbers. In addition, local health departments, university sociology departments and city planning offices can often provide intercensal household data pertaining to the study area.

Estimating Household Size. The analyst must exercise good judgment in the determination of an approximate household size for the current time period. Technically, average household size is the population in households divided by the number of occupied housing units.[108] Population data is readily available through census publications or may be estimated as indicated under the Population section. The housing unit number may be approximated by adding the total new construction (from the census date to the current date) to the latest census figure for housing units less any demolitions or unit vacancies. Utilizing these figures, an estimate of the current household number may be developed.

The analyst may also develop an estimate of average household size by reviewing past statistics available through prior census dates. If trends have indicated a decline in household size, the number of households would increase (total population divided by decreasing household size). Conversely, a projected increase in household size will tend to decrease household numbers.

6) Supply Analysis.

Purpose of Supply Analysis. Supply Analysis is concerned primarily with the review of a number of factors including residential construction activity, housing inventory, conversions and demolitions within the market.[109] The analysis involves finding out what commitments have been made to development, what constraints there are on future commitments, and what the current market situation is.[110] When analyzing the supply of housing within an area, the major determinant of new supply is the expectation that suppliers have of demand. If optimism about future demand is high, newly created real estate will be developed. If, however, the outlook is pessimistic, levels of construction activity will generally be low.

The existing housing supply must be assessed in terms of certain housing characteristics including tenure, types of structures available within the market area, rent and price ranges of the existing supply and an overall analysis of the conditions of area housing. These key characteristics provide considerable information as to present space utilization, spending habits of the population (in terms of housing), housing preferences and the overall quality of the available supply.

The market should develop considerable information pertaining to the growth of the housing inventory in the market area. Trend analysis provides short-term historical data reflecting annual construction starts, types of units built, market vacancies and, most importantly, strengths and weaknesses in market activity. Through trend analysis, the market researcher can establish relationships between overall market conditions and the growth in

housing stock. With these cause-effect relationships, the analyst may be in a better position to predict growth patterns over the next few years.

Sources of information for supply analysis are limited. Some statistics may be obtained through the decennial census and, where reports are available, some intercensal studies provide updated information for study utilization. One point must be emphasized when developing a data base for the analysis of housing. The supply of real estate, on an overall basis, is highly inflexible.[111] Change in inventory is slow, and the location, size, age, type and material used are generally known. Sumichrast and Seldin estimate that the relationship of new units to total standing inventory is about 2 or 2.5 new units to each 100 standing units.[112] Once an analyst develops an accurate data base for housing supply, the update is a fairly simple matter. With slowly reacting market and housing conditions coupled with a strong network of professional contacts within a community, an established analyst can predict housing movements with fairly good accuracy.

There are, however, several factors which the analyst must estimate. Migration patterns, changing household characteristics, and shifts in income buying power may require professional judgment. As this judgment is often critical in developing final conclusions, the analyst may utilize national, state or local trend patterns to substantiate his projection decisions. With such statistics available, risks involved with opinions may be lessened considerably.

Characteristics of the Housing Supply. There are considerable variations in the supply of housing. Some is of extremely high quality,

while in other areas it is of poor quality. The Census of Housing is the primary source of information on the housing stock on a national scale. The housing census includes data on the number of dwelling units, the value of the units, the number of persons living in each unit, the number of rental and owner-occupied units, the conditions of structures and the location of units within the state. These characteristics provide considerable information as to the types of housing stock required by the market area population.

A great deal of research may be spent accumulating information which relates to housing characteristics. Sumichrast and Seldin emphasize the need for this research, "It is not sufficient to understand the local character of the housing demand, since the geographical housing market is further segregated into various subgroupings."[113] Table 3-30 indicates a detailed list of housing characteristics according to these subgroupings. Few analysts have the time or money to develop this data through primary research, thusly, considerable amounts of information must be accumulated through indirect sources including local planning reports, savings and loan newsletters, investment house publications and local builder and Realtor associations.

A majority of the Sumichrast and Seldin characteristics are self-explanatory. For purposes of this study, the following key characteristics will be discussed: tenure, structure type, price or rental range and condition.

Tenure. Tenure refers to the occupancy characteristics of the housing unit and is the most important individual housing characteristic.[114] There are three occupancy categories which must be addressed: owner-occupied, renter-occupied and vacant units

Table 3-30

Characteristics of Housing

1. BY TENURE
   a. For-sale housing
   b. For rent (lease) housing
2. BY PRICE RANGE OR RENTAL RANGE
   a. Under $30,000
   b. $30,000 - $39,999
   c. $40,000 - $49,999
   d. $50,000 - $59,999
   e. $60,000 - $69,999
   f. $70,000 - $74,999
   g. $75,000 and over
3. CONVENTIONALLY BUILT OR GOVERNMENT FINANCED
   a. No subsidy
   b. Subsidized units
   c. FHA insured
   d. VA insured
   e. Farm Home Administration programs
   f. Combination of private and government funding
4. BY CONSTRUCTION TYPE AND OWNERSHIP
   a. Single-family detached
   b. Duplexes
   c. Three to four unit structures
   d. Townhouses
   e. Condominiums
   f. High-rise construction
   g. Combination of some of these
5. BY TYPE OF INVESTOR
   a. For owners
   b. For investors
   c. Both
6. BY CONSTRUCTION
   a. Brick
   b. Brick veneer
   c. Wood
   d. Aluminum siding
   e. Combinations
7. BY SIZE
   a. Number of bedrooms
   b. Number of bathrooms

Source: Sumichrast and Seldin

(year-round and seasonal units). Table 3-31 provides, in summary format, an example of tenure data as would be required by the market analyst.[115] This Table provides national characteristics pertaining to the housing inventory.

The analyst will find considerable data provided in the decennial census. In addition, the U.S. Department of Commerce, Bureau of the Census, conducts an Annual Housing Survey in which informational updates are provided for the nation and individual states. Some larger cities also have planning departments which conduct yearly housing counts. In smaller cities or those without any data collecting department, the analyst may be required to perform windshield surveys to develop a data base.

Owner- and renter-occupied housing may be estimated according to building type (discussed later). The vacancy rate may be defined as the number of vacant units divided by the total number of year-round housing units.[116] The vacancy rate provides an excellent signal of market conditions. When, for instance, large numbers of vacancies exist in particular rental units, the problem may be in rent prices rather than overall economic conditions. Accumulations of vacant single-family housing are generally indicative of an overbuilt market caused by tight money situations or just too many houses for the area demand. The real estate market requires that "sufficient numbers of units remain vacant" because at any given time some people will desire to move and find suitable accommodations in a vacant unit.[117] In a nationwide survey, the average vacancy rates for 'for sale' and 'for rent' housing were approximately 1.5% and 6.0%, respectively.[118] These figures vary geographically and are also altered by the prevalent economic conditions within an

Table 3-31

Tenure Characteristics of the Housing Inventory
United States
1960-1974 (selected years)
(thousands of units)

Characteristic	Year 1960	1970	1973	1974
All housing units	58326	68672	75969	77602
Vacant-seasonal/migratory	1742	973	676	1715
All year-round units	56584	67699	75293	75886
Owner occupied	26172	39886	44653	45785
Median Value $	11900	17100	24100	27200
Median income	5900	9700	11500	12800
Value/income ratio	2.02	1.76	2.10	2.13
Renter occupied	19294	23560	24684	25046
Median gross rent $	71	108	133	143
Median income	4200	6300	7200	7700
Rent-% of income	20.3	20.6	22.2	22.3
Vacant year round	5302	4254	5956	5056
For sale only	522	501	502	547
Homeowner Vacancy Rate	1.6	1.2	1.1	1.2
For rent	1453	1666	1545	1630
Rental Vacancy Rate	6.7	6.6	5.8	6.0
Owner occupied	57.6	62.8	64.4	64.6

Source: U.S. Department of Commerce, Bureau of the Census, Annual Housing Surveys.

area. Tight money situations may, for instance, cause a tremendous decrease in the number of vacant rental units in a market. The inverse reaction, ready mortgage money funds, may cause a corresponding increase in the overall vacancy rates.

The tenure classification of the housing inventory can be estimated with a reasonable degree of accuracy when allowance is made for the following factors: vacancies, units authorized, units under construction, demolitions, conversions and other changes.[119] The estimated current tenure is derived as follows:

1) The number of vacant units for sale and for rent in the Census year are added to the number of owner- and renter-occupied units during the same Census year;
2) Units authorized by permit for permanent occupancy are added to the totals obtained in the preceding step, with one-unit structures in the owner category and two- or more-unit structures in the rental group;
3) Allowance is made for demolition (subtract), conversion (add), by tenure; and,
4) The current estimate of vacancies, by tenure, is subtracted from the results in step 3.

See Table 3-32 for an example of this process.

Type of Structure. The supply of housing within a market area may be divided according to the type of structural unit. The strong correlation between housing tenure and the type of structure utilized was indicated earlier, that is, single-family housing is generally tied to owner-occupancy and multi-family housing is tied to tenant-occupancy. Because of this correlation, the analyst may develop tenure relationships according to the type of structure found within the marketplace. (This relationship may be utilized when adequate tenure data is lacking). Table 3-33 reflects figures for national housing inventory by occupancy and structure.[120] In most cases, the analyst will attempt to identify structural types by the common

Table 3-32

Estimates of Current Tenure
1970-1979

Characteristic	Numbers	
	Renter-Occupied	Owner-Occupied
1970 Census Estimate of Units	20000	55000
1970 Census Estimate of Unit Vacancies	+2400	+3700
Total Units Authorized, 1970-1979	+12800	+25500
Total Units Demolished, 1970-1979	-600	-800
Total Units Converted, 1970-1979	+300	+400
1979 Current Estimate of Vacancies	-1500	-1800
Total - 1979 Unit Estimate	33400	82000

Source: Author
U.S. Department of Housing and Urban Development, FHA Techniques of Housing Market Analysis.

description - duplex, single-family, townhouse, etc.

The market mix, in terms of structural type, undergoes continual change in response to occupant preference, cost of land, availability of finance money, and income levels. The analyst should attempt to develop an up-to-date estimate of the current market segments along with a general picture of vacancies by group. One check on additions to the inventory is the number of authorized permits provided by the governmental unit. Once this information has been accumulated, some spot-checking in the field should be done to establish the lag time between the permit authorization and delivery of a completed housing unit. Every effort should be made to detect significant changes in local housing customs or preferences during the recent past and the causal factors or developments.[121]

Rent and Value. Distribution of the housing inventory by rent and value are used primarily in providing an understanding of the quality of the housing units, the price ranges commanded for housing and general market conditions. The analyst should compile information on the pattern of rents and prices of new and older units at the current time and during the recent past, the absorption levels of units of these various prices and rents and the relative pricing strength or weakness in the various types of units.

Very few private market analysts are provided the unlimited financial backing required to perform an independent survey of housing prices. For this reason, most data utilized for market analysis studies is based upon public sources such as census agencies and local planning organizations, trade groups such as

Table 3-33

Housing Units by Type of Ownership and Structure
(1960-1974, selected years)
(thousands of units)

Characteristic	Number				Percentage			
	1960	1970	1973	1974	1960	1970	1973	1974
All year-round housing units	58315	67699	75293	75886	100.0%	100.0%	100.0%	100.0%
1 unit detached	40103	44801	47953	48227	68.77	66.18	63.69	63.55
1 unit attached	3655	1990	3334	3952	6.27	2.94	4.43	4.02
2-4 units	7552	9007	9639	9459	12.95	13.30	12.80	12.46
5 units or more	6238	9829	11089	11430	10.70	14.52	14.73	15.06
Mobile home or trailer	767	2073	3278	3718	1.31	3.06	4.35	4.90
Owner occupied	32797	39886	44653	45785	100.0%	100.0%	100.0%	100.0%
1 unit detached	28436	34397	37516	38478	86.70	86.24	84.02	84.04
1 unit attached	1526	1113	1637	1524	4.65	2.79	3.67	3.33
2-4 units	1899	2161	2145	2067	5.79	5.42	4.80	4.51
5 units or more	258	464	555	543	9.79	1.16	1.24	1.19
Mobile home or trailer	677	1752	2800	3173	2.06	4.39	6.27	6.93
Renter occupied	20227	23560	24684	25046	100.0%	100.0%	100.0%	100.0%
1 unit detached	7891	7736	6973	7113	39.01	32.84	28.25	28.40
1 unit attached	1861	794	1456	1325	9.20	3.37	5.90	5.29
2-4 units	5027	6218	6591	6523	24.85	26.39	26.70	26.04
5-9 units	1771	2284	2770	2874	8.75	9.69	11.22	11.47
10-19 units	1141	2219	2270	2458	5.64	9.42	9.20	9.81
20-49 units	1283	1873	1973	1917	6.34	7.95	7.99	7.65
50 units or more	1165	2115	2172	2291	5.76	8.98	8.80	9.15
Mobile home or trailer	90	321	478	545	0.44	1.36	1.94	2.18
All occupied housing units	53024	63446	69337	70831	100.0%	100.0%	100.0%	100.0%
1 unit detached	36327	42133	44489	45591	68.51	66.41	64.16	64.37
1 unit attached	3387	1907	3093	2849	6.39	3.00	4.46	4.02
2-4 units	6926	8379	8736	8590	13.06	13.21	12.60	12.13
5 units or more	5618	8955	9740	10083	10.59	14.11	14.05	14.23
Mobile home or trailer	767	2073	3278	3718	1.45	3.27	4.73	5.25

Source: U.S. Department of Commerce, Bureau of the Census, Annual Housing Survey, 1974.

local associations of builders and Realtors, or through commercial organizations including savings and loans, abstract offices and investment houses. Regardless of the source, the factor of change must be recognized and, as such, the analyst should be acquainted with study area pricing trends and the reactant forces which may alter the pricing mechanism. An example of a force which has altered pricing systems in recent months is the increasing mortgage rate. As the percentages increased, fewer people could purchase homes causing greater emphasis upon existing rental unit occupancy. Because additions to the housing inventory are limited due to zoning policies, acquisition of financing, plan development and so on, the supply of new rental units is extremely limited. Supply-demand factors, then, have resulted in a gradual increase in rental price ranges with such increases continuing until landlords begin to note vacancy tendencies among rental units. At this point, market price allowances have reached their maximum with the given conditions and landlords may rely upon rental price reductions to offset unit vacancies.

Table 3-34 provides an example format for owner- and renter-occupied housing units by value and gross rent distributions for the United States as a whole.[122] Such a breakdown allows the analyst to observe total numbers of each category of housing within various price ranges and, when compared to average annual income figures, some determination of a value to income ratio for owner-occupied housing and rent to income percentage for tenant-occupied housing can be developed.

Conditions. The chief usefulness of the distribution of housing

Table 3-34

Housing Units by Value and Gross Rent Distribution
1970, 1973, 1974
(thousands of units)

Characteristic	1970 Units	1970 %	1973 Units	1973 %	1974 Units	1974 %
Value of Owner-occupied units						
Total Units	31727	100.0%	35108	100.0%	36151	100.0%
$5000 or less	1824	5.7	787	2.2	652	1.8
5000 - 7499	2253	7.1	1119	3.2	956	2.6
7500 - 9999	2654	8.4	1487	4.2	1225	3.4
10000 -12499	3303	10.4	2176	6.2	1868	5.2
12500 -14999	3089	9.7	2111	6.0	1752	4.8
15000 -17499	3317	10.5	2780	7.9	2384	6.6
17500 -19999	3116	9.8	2910	8.3	2359	6.5
20000 -24999	4680	14.8	5102	14.5	4904	13.6
25000 -34999	4444	14.0	8237	23.5	8886	24.6
35000 -49999	2050	6.5	5545	15.8	6994	19.3
50000 -more	997	3.1	2854	8.1	4171	11.5
Median value	$17100.		$24100.		$27200.	
Value/income ratio						
Total units	31426	100.0%	34755	100.0%	36051	100.0%
Less than 1.5	12083	38.4	9765	28.1	10350	28.7
1.5 - 1.9	6237	19.8	6802	19.6	6960	19.3
2.0 - 2.4	4056	12.9	5025	14.5	5341	14.8
2.5 - 2.9	2401	7.6	3431	9.9	3677	10.2
3.0 - 3.9	2434	7.7	3815	11.0	3834	10.6
4.0 or more	4215	13.4	5917	17.0	5889	16.3
Gross rent						
Total units	22334	100.0%	24349	100.0%	24363	100.0%
Less than $50	1422	6.4	1259	5.2	1122	4.6
$50-69	2395	10.7	1590	6.5	1466	6.0
$70-79	1649	7.4	962	4.0	915	3,8
$80-99	3701	16.6	2742	11.3	2232	9.2
$100-119	3332	14.9	2997	12.3	2643	10.8
$120-149	3772	16.9	4090	16.8	4093	16.8
$150-199	3304	14.8	5561	22.8	6063	24.9
$200-299	1194	5.3	2922	12.0	3756	15.4
$300 or more	265	1.2	598	2.5	830	3.4
No cash rent	1300	5.8	1628	6.7	1243	5.1
Median gross rent	$108		$133		$143	
Gross rent as a percent of income						
Total units	20579	100.0%	22438	100.0%	22990	100.0%
Less than 10%	2012	9.8	1855	8.3	1945	8.5
10-14%	3979	19.3	3849	17.2	3801	16.5
15-19%	3786	18.4	4238	18.9	4241	18.4
20-24%	2657	12.9	3322	14.8	3339	14.5
25-34%	2936	14.3	3706	16.5	3884	16.9
35% or more	5209	25.3	5468	24.4	5780	25.1

Source: U.S. Department of Commerce, Bureau of the Census, Annual Housing Survey, 1974.

stock by condition and age is to reveal in the analysis a guide to the number of units in need of replacement.[123] There is really no good way of defining the condition of the housing inventory. The Bureau of the Census utilizes such factors of plumbing conditions and dilapidated conditions (sagging rooflines, failing foundations and similar features.

Table 3-35 provides an example format of general conditions characteristics for the U.S. housing inventory.[124] This table provides considerable information related to not only dilapidation and plumbing conditions but also to crowding problems. The overall quality of the housing inventory has improved greatly over the past thirty or forty years as noted by decreasing percentage figures. Social and political actions expressed in such programs as Model Cities, Community Development Block Grant programs and others have targeted considerable amounts of money and assistance to improve or remove poorer quality housing stock within cities. Eventually the need for reviewing and analyzing housing conditions may be eliminated as overall qualities have gradually improved to accepted standards. The individual analyst must make the final judgment as to the need for reviewing such conditions within his study area.

The analyst must consider conditions analysis when a number of poor quality units exist within his market area. These dilapidated units will generally not maintain high competitiveness with sound housing and, in an active market, are potential candidates for demolition. A suggested approach for estimating the number of dilapidated units for a given market area is outlined below.[125] See Table 3-36 for an example of this process.

Table 3-35

Housing Inadequacies in the United States
1940-1976
By Percentage

Condition	Year 1940	1950	1960	1970	1976
Lacking Complete plumbing	44.6%	34.0%	14.7%	5.5%	2.6%
Dilapidated or needing major repair	17.8	9.8	5.0	4.6	N/A
Dilapidated or lacking complete plumbing	49.2	36.9	18.2	9.0	N/A
Overcrowded (1.01 persons per room)	20.3	15.8	11.5	8.0	4.6
Severely Over-crowded (1.51 or more persons per room)	9.0	6.2	3.6	2.0	1.0

Source: Lindamood and Hanna
U.S. Department of Commerce, Bureau of the Census, Current Housing Reports, Annual Housing Survey, 1976.

1) From the last two censuses, derive differences in numbers of dilapidated units and those lacking plumbing facilities, and convert these to an annual average. (These differences represent net change in the two categories of substandard housing).

2) Adjust the 1960-1970 average annual changes to reflect variations in these categories due to post censal change. Judgment, based upon opinion supplied by local persons involved in housing, may provide an estimate by which the annual figure may be altered. Such judgmental evaluation will reflect relative economic conditions, vacancy levels, construction activity, community improvement programs and social attitudes which may alter the rate of change in substandard segments of the housing stock.

3) Convert the adjusted annual rate of change into aggregates for the number of years since the last census date, and subtract these aggregates from the respective housing stock in each category. These results represent the estimated current number in each category.

4) Apportion the estimated number of units in each substandard category between occupancy and vacancy status. These figures represent potential units to be removed from the market due to limited competitiveness and provide the analyst a quantitative figure which may indicate subtractions from the overall housing supply.

Housing Supply.

Trend Analysis. Housing supply must be analyzed in terms of the overall inventory available within the market place. The analyst may first develop growth trends in the housing supply over a number of years. This trend analysis can indicate the strong and weak market years and with background research, the analyst may identify reasons for these high and low production periods.

Trend analysis is useful in indicating the aggregate (total) inventory during a given time frame, however, the value of historical trends in rent and value, tenure and age have little significance beyond the short-term past. These characteristics tend to fluctuate considerably over time due to varying economic conditions, employment patterns and shifting population numbers. For this reason, comparison

Table 3-36

Substandard Housing Numbers
1960, 1970, present
(thousands of units)

	Dilapidated Units	Lacking Plumbing Facilities
1960 Census Estimate	15275	8765
1970 Census Estimate	12350	6275
1960-1970 Total Change	2925	2490
1960-1970 Average Annual Change	292.5	249.0
Post Censal Adjusted Average Annual Change	345.0	290.0
1970-1979 Aggregate Change (times 9)	3105	2610
Current Estimate of 1979 Substandard Units still in Marketplace	9245	3665
Apportionment of Units		
a. Occupancy Units	1850	2100
b. Vacancy Units	7395	1565

Source: Author
Department of Housing and Urban Development, FHA Techniques of Housing Market Analysis.

of more than the last census report and the current estimate is generally unnecessary.[126]

Utilizing decennial census data, the analyst can develop a benchmark for housing supply within the market area. Intercensal housing unit change (including conversions, demolitions and new stock) acquired from city permit departments provide an adequate measure of housing stock change. For cities lacking this unit of measure, the analyst may be required to make windshield surveys to ascertain new supply additions or inventory changes along with the locations of new subdivision activity. With this data, the analyst may develop yearly numerical and percentage change by means of trend analysis charts. Table 3-37 provides an example of such an analysis.

Trend analysis provides some reflection of the change in magnitude of the total housing stock over the reviewing period. Periods of major inventory change - either increase or decrease - should be reviewed to determine reasons for the observed market reaction.

Current Residential Building Activity. Construction activity within the marketplace must be continually monitored by the analyst to note increasing or decreasing numbers of new introductions to the market. Long periods of strong building activity may indicate the possibility of a weakening market especially if vacancies are rising and new houses remain on the market for long periods of time before being sold.[127] Construction trends over the past decade as well as monthly additions over the past year can provide an essential data base for the analyst to develop projections.

As mentioned previously, the analyst may rely upon construction

Table 3-37

Housing Supply Trend Analysis

Year	Housing Numbers (Total)	Numerical Change*	Percentage Change
1970	54000		
		3500	6.50%
1971	57500		
		1700	2.96
1972	59200		
		800	1.35
1973	60400		
		2100	3.48
1974	62500		
		500	0.08
1975	63000		
		200	0.03
1976	63200		
		800	1.27
1977	64000		
		100	0.02
1978	64100		
		1100	1.72
1979	65200		

Source: Author

$$\text{Annual Average Change} = \frac{\text{Total Numerical Change}}{\text{Number of Years}} = \frac{11200}{9} = 1244 \text{ Units}$$

$$\text{Annual Percent Change} = \frac{\text{Annual Average Change}}{\text{Year 1 Numbers}} = \frac{1244}{54000} = 2.30\%$$

*Numerical Change including conversions, new housing.

permits to estimate new housing activity. The key to the utilization of this information is knowledge of the number of units actually completed during the period under construction. The time lag to assure completion and availability for occupancy may be an average of three months for single-family structures and six to eighteen months for multifamily structures.[128] Such time figures would represent average construction scheduling with variances figured for over or under-active markets. The analyst may estimate, on the basis of these time lag periods, numbers of new single family and multifamily structures built during a time period with final analysis based upon the prevalent local conditions.

When viewing housing from the standpoint of the qualitative characteristics, the analyst may be required to rely upon field survey and observation of new subdivisions within his study area. Little true value information may be gained from building permits as such estimates are of general construction values for these new units. Field surveys may yield estimates of unsold inventory, future intentions of builders and approximations of rent and price levels.

The analyst must also be aware of conversions and demolitions within the market area. Generally, conversions represent alteration of present space from one use to some form of residential usage. A great deal of conversion from apartments to condominiums has occurred in recent years all across the country. On a local level, such changes would shift units from the renter- to the owner-occupancy category and, if done on a grand scale, could cause considerable market change.

Demolitions can be the result of highway construction, urban renewal or increases in housing density needs.[129] The rate of

demolition will vary from one market to the next, depending upon the age of housing structures, public policy in regard to public transportation system improvement and the amount of redevelopment activity.

Demolitions represent subtractions from the total housing supply. Conversions, on the other hand, generally represent additions to the supply. The analyst must evaluate conversions to check for quantitative change. If, for instance, a single housing unit is subdivided into three units (as in the case of many college units), the change to the housing supply may yield a net of two. If, on the other hand, apartments are converted to condominiums on a one to one basis, the new change will be zero.

Some review of local policies must be done by the analyst when projecting potential demolitions and conversions within a marketplace. Removal of certain numbers of units due to projected highway construction, estimates of loss due to fire or other such catastrophies and conversion trends must be studied to gain estimates of future action. These estimates, more than any, will be based upon somewhat subjective data; historical trend data may be analyzed, as a basis, however, natural catastrophies and the secretiveness of the conversion process will considerably limit objectivity.

Housing Projections. After the review of housing demand and supply data, the analyst may be required to develop short-term projections of housing need. There are, of course, many variables which must studied prior to making such projections. Economic conditions, employment patterns and growth, market conditions and

many others must be examined for final analysis. With these variables in mind, the development of projections is a blend of solid, objective data (renter/owner percentage trends, permit data, household formation trends, etc.) as well as somewhat subjective, judgmental information (demolitions, financing availability, future building activity, etc.).

Tables 3-38 and 3-39 provide example formats for the projection of housing within a community.[130] Table 3-38 provides summary data in terms of trends, actual housing figures and projected figures. This summary combines all housing units under a single heading (instead of owner- and renter-occupied categories). Total inventory figures at the end of the period are carried forward to the beginning of the next study period whereupon estimates of demolition, conversions and new construction are applied.

Table 3-39 provides support information for the summary chart with detailed data pertaining to types of units required, percentage distributions and a breakdown of average annual new constructions by type.

Data provided by the summary tables must be judgmentally weighed regarding any major changes occurring in the market area. As the figures are projections based upon a blend of objective and subjective data, the analyst must maintain considerable flexibility in final calculations. Often times the analyst may develop a statistical range with high, low and middle projection figures, however, a decision must eventually be made as to which numerical values should be utilized in the final analysis.

Table 3-38

Changes in Housing Inventory
(in thousands)

Components	Actual		Projected	
	1960-1970	1971-1979	1980-1985	1985-1990
Inventory-Beginning of Period	11.2	21.6	36.6	42.0
Less: Demolitions	0.4	1.0	1.3	1.6
Add: New Construction	10.6	15.2	5.6	6.3
Add: Conversions	0.2	0.8	1.1	1.3
Total Inventory-End of Period	21.6	36.6	42.0	48.0
Average New Construction Annual Basis	1.1	1.7	1.1	1.3

Source: Author
McMahan

Table 3-39

Types of New Housing Required
(in thousands)

Component	Actual 1960-1970	1971-1979	Projected 1980-1985	1985-1990	Total 1960-1990
Percentage Distribution of New Construction					
Single-Family	63.2	57.3	53.8	51.1	56.4
Multifamily	36.8	42.7	46.2	48.9	43.6
Total	100.0	100.0	100.0	100.0	100.0
New Construction by Type of Unit					
Single-Family	6.7	8.7	3.0	3.2	21.6
Multifamily	3.9	6.5	2.6	3.1	16.1
Total	10.6	15.2	5.6	6.3	37.7
Average Annual New Construction by Type of Unit					
Single Family	0.7	1.0	0.6	0.7	0.8
Multifamily	0.4	0.7	0.5	0.6	0.5
Total	1.1	1.7	1.1	1.3	1.3

Source: Author
McMahan

7) Current Market Conditions. Previous sub-sections outlined various demographic, economic and social factors which are important in the determination of housing demand within a community. As noted throughout the discussion, considerable emphasis is placed upon the interwoven relationships of these factors. Where one factor, such as employment, is altered, there will, in all probability, be related changed in family income, housing needs or long term family size structure determination.

There is continual change within the housing market. Finance rates, housing materials and construction costs, land availability, public zoning tendencies, housing prices and rents and vacancy levels are all key elements of the housing market. Changes in these factors may not be discernible immediately, however, long-range observation provides considerable evidence as to the fluctuation of these components.

The study and analysis of current market conditions provides the final step in the prognosis of prospective housing demand. There are a number of key elements which must be reviewed, each of which could be discussed in considerable detail. The following indicators will be discussed briefly:

1) Mortgage market,
2) Construction costs,
3) Land Availability and Subdivision activity,
4) Sales Market, and
5) Rental market.

Mortgage Market.

The availability of mortgage funds to the prospective buyer plays a key role affecting new construction and the subsequent size of the vacancy inventory.[131] An active housing market area which

has a readily available supply of mortgage money provides a fairly optimistic stage for new housing construction. Likewise, situations in which money is extremely tight and expensive cause undue hardship upon all segments of the real estate market.

Construction - and residential construction in particular - has the distinction of being the most cyclical sector of the economy.[132] The primary reason for this pattern is a well-known key - the supply of mortgage credit. The most predominant source of capital for mortgages is household savings with additions to this supply made on a voluntary basis (savings or checking accounts) or through forced savings (retirement and pension funds or insurance premiums).[133]

The mortgage market tends to be interest-rate sensitive; that is, as demand for the limited supply of available capital increases, the cost of that capital simultaneously increases. As long as interest rates are low and the savings rate is high, and the demand for funds by other sectors of the economy is low, the supply of mortgage funds will be great. The late 1979-early 1980 situation has been quite the opposite. With money becoming extremely tight due to monetary policy aimed at curbing inflation, considerably greater demand has been placed upon the capital supply. The result has been an emptying of 6 percent passbook accounts with the proceeds going to higher return investments - government bonds, gold, money market accounts and others.

The resulting outflow of funds from savings accounts, called disintermediation, has an immediate impact upon lenders.[134] The fear of further outflows of funds generally causes a tremendous reduction in the commitments for future mortgage or construction loans. Besides lessening future home building activity, the home

buying and selling industry is curtailed considerably.

The majority of mortgage funds are available through institutional lenders as indicated below with percentage figures[135]:

Lending Organization	Percentage of Funds
Savings and Loans	38%
Commercial banks	18
Life insurance companies	12
Federal agencies	12
Savings banks	10
Others	10

All of these lending institutions are subject to rules and regulations that govern the use of their funds for mortgage loan purposes. Savings and loan companies are in particular trouble when it comes to interest rates and regulatory agencies. With extremely high demand for money, many people have withdrawn from 6 percent regulated passbook accounts and reinvested in recently established S & L six-month, market level certificates paying a yield of more than twice as much. So S & Ls are losing funds that cost them 6 percent a year and gaining funds that cost more than twice as much.[136] With such an occurence, lenders are locked into paying higher rates to savers and are pressured to keep their mortgage rates up as long as possible so as to produce a marginal profit.

Sources and Availability of Funds. The analyst can best determine mortgage money conditions in consideration of the sources of mortgage money available, its relative adequacy for current and potential production, and the suitability of financing requirements to prospective borrowers.[137] During stable economic times, this information may be readily obtained through local institutional lenders, brokers or builders. As each represents a different segment of the market with different financing viewpoints, the analyst may be required to sort

the available information into a useable study format.

During periods of escalating interest rates, caused by additional tightening of the money supply, local mortgage money suppliers may hesitate to provide clear estimates of avilable funds. The analyst must develop some judgmental opinions of the future money supply based upon bits and pieces of current market knowledge. Trend analysis will do little good during periods of increasing interest rates due to time period variations.

In some market areas, low interest mortgage bonds passed under county jurisdiction provide large amounts of mortgage money for home purchase. Such programs should be evaluated in terms of interest rates, down payment requirements and income and purchase price limitations. This housing bond program introduces a major economic stimulant which creates an artificial set of market conditions within an otherwise sluggish and inactive market area. Such programs are often introduced in areas of extremely high housing demand during very tight monetary policy times.

Interest Rates and Terms of Mortgages. The price of money - the interest rate - varies directly with demand in the free money market.[138] In basic terms, if the money supply is cut back or tightened, interest rates will go up. If the money supply is increased due to high unemployment or recession, the availability of money supplies increase with a resultant drop in interest rates.

National monetary policy decisions can have direct effects upon local lending availability and interest rates. The Federal Reserve Banking System to a large extent, manages the nation's money supply which affects private financial institutions.[139] Recent increases in the discount rate charged by the Fed to its member

banks has caused a corresponding increase in the prime interest rate -- all in an attempt to curb spending a slow down the economy..

The market reaction in the early 1980's has shown a steady increase in the interest rates charged for new mortgages with the outlook for fairly high levels. Interest increases point to an increase in builders' costs (to 18-22 percent for short-term financing), with the higher financing costs passed on to the buyers.[140] The effect of such an increase in interest rates is quite evident; a greater proportion of the housing cost is associated with financing, thus reducing the actual home size and, in some cases, the overall quality.

High interest rates will also pressure builders to try to hold down prices. Merrill Butler, president of the National Association of Home Builders, predicts a growing tendency toward higher-density subdivisions, more attached housing and smaller units.[141] Trends to eliminate high-cost options and use cheaper materials will be apparent in the coming months and probably the coming years. The high cost of money may well be a major factor in the determination of future housing types.

Besides the interest rate figures, the analyst should have some knowledge of current down-payment requirements and the term (period of time) of the mortgage. Tight money situations may require the home buyer to provide considerably more for the down payment. With an 80/20 mortgage to down payment ratio instead of a 90/10 ratio, the lender is required to expose less money to fluctuating interest rates. In addition, if the borrowers have a greater amount of their own money invested in the homes, they are less likely to default on the loan.

In addition to variations in down-payment requirements, the length of time over which the mortgage is to be repaid, the term, may vary according to the current economic situations. If money is tight or if the future is uncertain, lenders may not be willing to lend for such a long time and may establish 25 or even 20 years instead of 30-40 years as the maximum term.[142] If market interest rates increase over the long term, the lender may be faced with a lower yield on outstanding loans, however, a shorter term associated with these loans may lessen the exposure.

Construction Costs. Material prices and wages of construction labor vary considerably from region to region and between localities.[143] Even within large metropolitan areas, housing is so diverse in construction character, material and technique that composite construction cost indexes are often difficult to develop. Coupling this with rapidly rising material and land costs, the analyst faces a major task. Due to the variables which must be investigated, the cost analysis of individual labor and material components is usually beyond the capability of the individual analyst.[144]

Construction cost trends are not directly applicable in the estimation of housing demand. This information is, however, important in assessing the housing market conditions of an area. Selling prices for housing must exceed total construction costs for new construction to be justified.[145] If new houses sell for $30 per square foot and costs are $27 per square foot, contractors will continue to build new units. If, however, an inventory of unsold units develops, the selling price will eventually turn downward and, as the cost and selling price range narrow, the construction of new housing will slow due to the lack of profit incentive. Increasing

construction costs due to materials price increases, finance rate increases and land costs may begin to signal a weakening in the demand vitality of an area. When these conditions occur, the money supply will lessen impacting mortgage opportunities as well as construction loans.

Trend analysis of cost components in the housing market reveal considerable information as to the fluctuating pattern of these cost factors. Carberry, in a Wall Street Journal article, indicated that while all costs associated with construction have increased on a dollar basis in the past thirty years, the proportions of the total have shifted significantly.[146] Table 3-40 provides an illustration of the shift in cost component trends for selected years between years 1949 and 1978.[147] The cost of land for development has increased dramatically while the cost of labor and materials has decreased in proportion. Shifts in finance costs from five to eleven percent will most likely continue to an even higher proportion during tighter money situations.

The analyst may obtain information regarding construction costs and trends from a number of local sources including builders, materials, suppliers, loan institutions and Realtor-developers. For the analyst, these construction cost figures provide general conditions regarding the local economy and do not play a direct role in demand analysis. In an indirect sense, however, price and rent levels are a function of construction costs. Increases in construction costs will tend to slow construction activity within a community when coupled with tight money and decreasing demand. As these costs are passed along in the way of increased price or rent levels, some households are forced to double-up or pass-up their home purchase plans thus causing shifts in space requirements and

Table 3-40

Cost Components
Typical, New Single-Family House

Component	1949	1969	1975	1978
Labor and Materials	69%	55%	49%	47%
Land	11	21	24	25
Finance	5	7	10	11
Builder's Overhead and Profit	15	17	17	17
Total Cost	100%	100%	100%	100%

Source: National Association of Home Builders

and ultimately in overall demand.

Land Availability and Subdivision Activity. As indicated earlier, land is fast becoming a greater and more important component in new housing development. In active areas where home building booms there is generally always an accompanying increase in land prices. The increasing demand for developable land close to city services places a premium price upon a continually decreasing land area. Major concern has been voiced in the past ten to fifteen years pertaining to the loss of forest and agricultural lands to subdividers and real estate developers. Such concern will most certainly be a source of major controversy in the future especially where growth pressures risk complete development of available agricultural lands.

Several generalized concepts dealing with land availability and prices provide considerable market information which must be understood by the analyst. Pricing of developable land is in direct relationship to market demand. The following points confirm this fact[148]:

1) High land prices caused by speculation and excessive land improvements tend to price land 'out of the market' for immediate improvements,
2) A general prevalence of overpriced land inflates sale prices and rents, thus tending to reduce demand,
3) An oversupply of subdivided land ultimately depresses prices and causes financial difficulties for developers,
4) The depressed lot prices succeeding subdivision excesses contribute to an eventual resumption of an upward trend in building activity, and,
5) Lot prices are more representative of free market action and more sensitive to demand fluctuations than are other housing production costs.

The pattern of development in an area pretty well indicates which locations are suitable for a desired project.[149] Many cities

have established patterns of growth to eliminate 'leap-frog' tendencies which can cause additional tax burden due to the extension of municipal services including streets, sewer, water, fire and police protection and school service. Land located within the existing city boundaries or in the immediate fringe may be in a favored position for land development and may also command higher sales prices.

The analyst must be aware of local governmental policies toward growth and development especially in regard to utility expansion. With such knowledge, the aggregate amount of potential residential land and the number of available lots in existing subdivisions can be determined to ascertain future shortages or surpluses.

The analyst may have some difficulty procuring current and precise data in regard to subdivision recordings and available lots. Planning commissions, real estate boards, local builders organizations, county deed offices and tax authorities can provide the best available information for charting developable land. The analyst may chart recorded plats as illustrated by Tables 3-41 and 3-42, thus providing some idea of potential subdivision activity.[150]

Prevailing price level information for these land parcels may be obtained from builders, appraisers, financing companies or others acquainted with local land and lot prices. The degree of detail in the land price and availability analysis is dependent upon the project requirements. Where extremely detailed data is required for very marginal demand markets, the analyst may rely more upon personal interviews with key characters. Otherwise indirect sources may provide a sufficient data base for analysis.

Table 3-41

Recorded Plats
1975-1979

Subdivision	Number of Units	Type	Date Recorded
Village Green	42	SFD	2/75
Beechwood	46	SFD	5/75
Runnymeade	29	SFD	9/75
Willow Green	32	SFD	3/76
Irongate	15	SFD	7/76
Rockhill	16	SFD	9/76
Jamestown	26	TH	4/77
Windsor East	35	SFD	6/77
Park Place	43	TH	7/77
Hickory Point	22	SFD	8/77
Park South	18	SFD	5/78
Innsgate	29	TH	7/78
Park North	32	SFD	9/78
Port Henry	42	SFD	3/79
Walden	18	TH	5/79
Indian Hills	32	SFD	9/79

Source: Sumichrast and Seldin

Table 3-42

For-sale Units Approved
1975-1979
Summary

Component	1975	1976	1977	1978	1979
Single-family, detached units	117	63	57	50	74
Townhouses	0	0	69	29	18
Totals	117	63	126	79	92

Source: Sumichrast and Seldin

The analyst should be knowledgeable as to the current conditions within both the sales and rental market sectors of the study area. Each of these should be studied in terms of the following characteristics:

1) Price (Rent) Determinants,
2) Scope of the Sales (Rental) Market,
3) Quality of Units, and,
4) Competitiveness of Existing Houses (Rentals).

Sales Market.

Price Determinants. Price levels for single-family structures are dominated by current land and construction costs and the prevailing level of builders' profits.[151] New housing introducted on the market will be priced according to current demand and associated costs while existing properties run at varying prices in accordance with quality distinctions. In times of excess housing supply, product quality may be discounted while in long periods of excess demand quality may be sold at premium prices.

During periods of high unemployment and job scarcity, housing vacancies generally are at a peak with few purchases. Newly constructed housing appears high priced in relation to existing housing as the latter may be price discounted to make sales. Prospective buyers will generally prefer existing house bargains causing new construction volumes to remain low. With the introduction of economic stimulants within a community, the market surplus gradually disappears with reduced vacancies, more new home purchasers and gradually increasing prices in existing homes thus improving the new home competitiveness.

Once market surplus disappears, the demand for housing (new or existing) exceeds the availability causing price rises which

are generally followed by increasing costs of materials, wages and land. As construction volume catches up to demand, prices for new homes tend to be maintained at fairly stable levels in hopes of maintaining market competitiveness. The builder may reduce profit margins and introduce new marketing tools in an effort to maintain construction volume during gradually declining demand periods. Finally, after vacancy rates begin to appear, or new homes are rented to gain some return on investment, construction activity declines at a rapid rate. The term of this cycle varies with location and conditions, however, a general time period for this peak-valley-peak cycle is seven years.[152] Awareness of this cycle and the approximate phase of this cycle may provide tips as to the present and future pricing strategies of builders, Realtors and investors.

Scope of the Sales Market. A current investigation of the new and existing house market is essential to all reports leading to conclusions pertaining to the demand for sales type housing.[153] The analyst must obtain most of this information in the field from brokers, builders, mortgage lenders and other informed sources. In most cases, both FHA and conventionally financed construction should be reviewed with not only single-family sales structures observed but also two-, three- or four-family sales structures such as condominiums or townhouses which may comprise significant market segments.

Quality of Units. Volumes and trends of new construction may be obtained by the analyst from sources mentioned earlier. The qualitative aspects of new housing with respect to sales prices, location, number

of rooms, amenities and overall market appeal may be determined by spot checking recently completed homes.. Table 3-43 provides a sample format indicating,in summary fashion, characteristics of current subdivision activity.[154] Such a competitive survey is an essential part of the market analysis process and provides a tremendous data base from which future decisions may be generated.

Established market analysts with good contacts in the building industry, may gain valuable knowledge from builders in respect to public response to their offerings as well as their general feelings on marketability and competitiveness within the study area. In addition, some data should be generated pertaining to speculative versus custom built housing. Roughly sixty percent of single-family homes built each year are 'spec' homes, built speculatively on the builder's land and put up for sale.[155] Another twenty percent are custom-built by a contractor on land already owned by the potential owner-occupant with the remaining twenty percent of homes classified as owner-built.

It is important to be aware of the proportions of 'spec' housing to 'custom'built' housing within the market area. Custom built housing is built with a specific buyer in mind, thus, the risks involved in the turnover of the property are extremely limited. Speculative housing is built more in response to market demand; for instance, if new industry is introduced to an area, builders may gear up with large numbers of 'spec' houses to meet the anticipated demand. Home buyers may have the opportunity to make some choices of carpet and paint colors, but for the most part, buyers must simply choose the house that best fits their needs.

Some speculative construction trends should be established within the analyst's mind by comparing the current proportion

Table 3-43

Competitive Survey

Project	Plan or Model	Type Unit	Unit Value Size	Price	$/Ft.^{2}	Sales Absorption Planned	Built	Sold	Absorption*	Features Unit	Project	Financing
Northglen	A	2Bdr/1Ba	1150	33500	29.13	200	75	60	4.0	Crpt,	Rec Rm.	Convention.
Superior	B	2Bdr/2Ba	1200	35000	29.16	300	125	115	7.7	Dw,	Pool	12.5%,30 yr.
Builders	C	3Bdr/2Ba	1350	40000	29.63	300	100	87	5.8	Dr,TV		1 pt.,10% down
Open 3/79						800	300	262	17.5			
Meadow Brook	Aspen	2Bdr/1Ba	1050	33500	31.90	200	120	27	2.3	Crpt,	Rec Rm.	Convention.
World	Poplar	2Bdr/2Ba	1100	34000	30.91	300	180	36	3.0	A/C,	Pool,	13%, 30 yr.
Construc.	Birch	3Bdr/2Ba	1250	37500	30.00	200	180	44	3.7	Dw,TV	Sauna	1.5 pt., 10% down
Open 4/79						700	480	107	9.0			
Total						1500	780	369				

* Monthly Absorption

Source: McMahan

with that of the previous year and with builders' plans for the future year. Some measure of completed and unsold, speculatively-built houses should be obtained with price class information and and the length of time the houses have remained unsold. The total number of houses under construction and the number unsold are important elements in evaluating the unsold inventory and in estimating the quantitative demand for sales housing.[156]

Competitiveness of Existing Housing. A portion of the existing inventory will always be offered for sale or for rent (A vacancy characteristic common to the real estate industry). Pricing of existing housing is dependent upon the current market conditions and the amount of new construction available. Characteristics of pricing were discussed in the previous Price Determinant section.

The character of existing housing sales and pricing activity may be determined through interviews with Realtors and brokers. The analyst should attempt to ascertain the competitive strength or weakness of the existing house market along with general characteristics of the available supplies. The competition between new and existing housing varies from city to city. Some cities maintain an extremely strong market in older, more exclusive sections with premium prices paid for these properties. If the analyst has access to multiple listing services, considerable information may be generated to pinpoint neighborhoods according to market strengths and qualities.

Rental Market.

Rent Determinants. The levels of rents in the rental market is dominated by maximized profit considerations.[157] Apartment

managers seek to maximize rental income by offering their dwelling units at the highest price the market will allow. At low levels of demand with high vacancy rates, high unemployment and low incomes and a minimum volume of new construction, rents will be low. If, in the process of adjusting rental rates, management overprices units, an increase in vacancy will generally occur. Such an occurrence will justify a reduction in rents to attain an improved level of occupancy.

New rental accomodations will not increase in volume, except through conversions, until obtainable rents are sufficient to offer a considerable 'risk' profit above fixed and operating charges.[158] Apartment construction requires a greater investment of money as well as a greater length of time for construction. These two factors strengthen the concept of limiting construction until targeted profits are certain and have endurable potential. With high employment and income levels, household formation rates are likely to place considerable demand pressure on the existing rental facilities. Rental rates will generally rise and stay at this high level until new production becomes available on the market. At this point, rents will begin to drop gradually as managers attempt to maintain high occupancy in their units. Eventually the market will gain vacancies due to oversupply, and if associated with reductions in employment and income levels, new construction will decline at an accelerated rate with accompanying rental reductions aimed at maximizing returns.

Scope of the Rental Market. Investigation of the rental market should cover both new and existing rental housing to ascertain

the type, quality and absorption of new units and the competitiveness of existing units.[159] Information may again be obtained from real estate boards, builders, management firms, mortgage companies or local housing authorities.

Some areas have considerable amounts of both FHA-insured and conventionally financed rental properties. The analyst should investigate these properties in terms of competitiveness in respect to the income groups served. Where pertinent to the objectives of the market analysis, special purpose rental housing such as elderly, subsidized housing, nursing homes or college housing may require special investigation. In most cases, however, these types of facilities will require considerably less attention.

Quality and Absorption of New Rental Units. As in the case of sales housing, the qualitative character and absorption of new rental units is ascertained primarily by spot checking a representative sample of projects recently completed. Additional detailed information may be acquired from the above mentioned sources.

The marketability of rental projects is of prime importance especially when viewing the absorption of units into the market. It is often difficult to obtain specific information on projects within the market area, however, acquisition of such data provides a considerably better base for market analysis. The analyst may also develop a competitive survey similar to the sales format for summarizing area housing.

Competitive Position of Existing Rental Housing. The major portion of the occupants of new rental housing are drawn from existing structures.[160] The units vacated along with others in the existing housing stock are available to other occupants in the marketplace.

The competitive status of existing housing reflects a composite of elements including rent, location, condition, design, unit size, management and environment. The analyst should determine the status of available rental units in the determination of estimates of demand for rental housing.

8) Effective Market Demand. The final step in the analysis of a local housing market involves the synthesis of conclusions regarding the demand for additional new housing. These conclusions will include estimates of overall demand for market sales and rental housing. At this point, the market analyst must make considerable use of judgment especially where making future estimates of household formation and population, income, employment and finally, actual housing needs.

The analyst must develop decisions which reinforce the objective of the market study, that is, seeking out projects that anticipate the future market. The market is continually shifting; as the market for single-family housing is overbuilt due to rising interest rates, new rental housing markets develop to satisfy the need. If the analyst can develop well-based decisions pertaining to potential markets, his client may be able to acquire land in strategic market areas at reduced rates and may also be able to initiate plan development and zoning processes to bring the land into a ready state for actual site development.

There are two basic questions the analyst must answer in determining the effective market demand in an area. First, where are the markets located within the city and second, what are the characteristics of the markets.[161] These questions may be answered

by evaluating demand forces, supply conditions and buyer preferences. The discussion in this section will provide a brief overview of the analysis process with considerably greater detail shown in the text of Chapter 4.

Demand Analysis.

The most obvious means of identifying demand conditions within the market place is by observing what seems to be selling well.[162] Many developers make land commitments based upon the strength of certain housing types in the market. Such observations may actually provide false impressions of future conditions, that is, the closer the downturn in the demand cycle, the greater the risk. Housing trends and markets may be changed significantly after the recessionary cycle.

The market analyst must review the underlying demand forces and estimate future demand forces to develop future housing projections. These forces include the following: Population characteristics, Household formation and size, Income analysis and employment patterns.

Population Characteristics. The analyst must identify probable population change within the market area for the study period. Trend analysis can provide growth patterns and the utilization of various projection techniques can develop a range of population probabilities. The analyst must then adjust these population projections to local economic conditions.

Household Formation and Size. The household is the basic unit of housing demand. The analyst must determine which household types are increasing and decreasing in number and the characteristics associated with these groups (income, tenure, unit size requirements and unit cost). Important components to be reviewed include: marriage and divorce data and doubling-up tendencies.

In addition, the analyst must project average household size figures for the study period. Some estimate of total numbers of households may be determined by associating this figure with the projected population figures.

Income Analysis. An important component of the household analysis is the determination of purchasing power. Recent past and current estimations of average income levels, income distribution and proportion of gross income spent on housing should be developed from local and state data sources. Based upon local economic conditions, income growth trends and employment demand, some estimation of future income levels may be generated.

Income patterns influence demand through their effect upon the rate of growth in the number of households.[163] If incomes rise and a general feeling of well-being persists, individuals and sub-families may break off from existing households and form households of their own. Existing households will seek higher quality accommodations. The reverse tendencies will be effective should incomes fall.

Employment Patterns. The growth of employment opportunities within the study area is a signal of economic viability. A strong economy based upon diverse manufacturing, trade and service industries provides a considerably better setting for housing development than one based upon a single industry.

Increasing and decreasing employment trends have tendencies similar to those experienced in income fluctuations. The analyst must evaluate past employment trends as well as recent statistics to determine the status of employment opportunity. Patterns of strong growth provide an encouraging signal for the introduction of new housing.

The net output of these demand analyses is the critical judgment what the demand will be when the houses are ready to market.[164] The demand analysis must be conducted at various times during the planning process. It is first undertaken when the decisions is made to develop in a particular market area. An update is then required when selecting the development property and again when the final development and planning process is near completion, prior to building.

Supply Analysis.

A strong market may, in fact, signal a potential downturn in housing sales. As more developers enter the market to capture a piece of the action, the aggregate may sooner or later destroy the market due to overbuilding. The result may be a few financially successful individuals (who entered the market at the correct time) and a number of less fortunates with a considerable amount of land committed to development at an inopportune time.

Overbuilding is a typical characteristic of the housing industry due, in part, to the lack of exact market statistics. The observant developer/analyst utilizes the best information on available supply and attempts to slow or stop his construction prior to the declining activity. Ascertaining what is needed can be achieved by determining what units are in the production process and comparing it with demand factors. The key supply factors which must be observed and recorded include the number of unsold houses and the number of new housing starts.

Unsold Housing Inventory. A large inventory of unsold new homes will take a considerable amount of time to reduce. Builders who foresee this large unsold inventory may be able to time their production to come on the market after this excess has been absorbed.

In most market areas, some vacant units are a requirement to allow for movement of the population from one job area to another. A very small percentage of completed, unsold houses may signal latent unfilled housing demand.[165] Builders may miss sales in this situation by not having enough units available for delivery.

Current estimates of unsold inventory - new and existing - are difficult to predict in exact numbers. Units available through real estate brokers or development companies are fairly easy to chart (with adequate professional contacts), however, those sold by individuals or small scale construction companies may be more difficult to account for. Many of these private individuals must advertise in newspapers to gain a large marketing audience, therefore, the analyst may obtain some estimates from this source.

Housing Starts. The second supply indicator which should be reviewed is housing starts. If the local government maintains some record of the actual number of starts, there will be good data for the supply analysis. Building permits may be utilized as an alternative source, however, in some cases permits do not lead to a start and in some areas there are starts without permits. Analysts may, however, utilize permits to know what is planned for production.

The analyst must be concerned not only with numbers of unsold units but also the tenure classification of the units. For example, if all indications point toward a growth in the requirements for rental housing, the builder/analyst may be inspired to begin production of new apartments immediately. With a minimal market study he determines that there are currently nine hundred near completed/vacant units - six hundred of which are apartments. Such a determination may provide reasoning enough to delay new

introductions into the market. The analyst should continue watching the absorption rate of these so that, with continued demand, he can begin his new construction when the existing supplies begin to dwindle in number.

The analyst may also maintain contacts with local planning and zoning boards and municipal utility divisions. Planning and zoning boards, being public bodies, can provide accessible information in terms of subdivision planning or residential zoning changes. In addition, city utility branches may provide some idea of sewer tap requests or water expansion plans. City officials may also provide some information on utility bonding issues in the works which may lead to future development activity.

Once the analyst has developed some measurement of production activity, the key objective is to determine the gap between housing demand and supply. Filling that gap makes money; building an excess loses money.[166]

Buyer Profile Analysis.

To determine the gap between demand and supply means identifying a desired price range and type of unit, sale or rental. The analyst would benefit considerably by conducting a survey of buyer preference similar to the competitive survey indicated in an earlier sub-section. The buyer analysis catagorizes buyers by the types of units and architecture they would absorb most easily and surveys buyer's preferences as to product amenities.[167] Observing what the competition produces and how well it is absorbed into the market is an important part of the process; limited attention to this element will considerably lessen the ability to predict future housing needs.

As the analyst views the competition, he should note special design features within housing units that may help make the sale or improve tentant occupance. Design features vary with the primary target class. Large populations of two-income families during foreseeable high interest periods, may yield high rent, luxury apartments with special time saving appliances. At the same time, the buyer profile can provide information on room layout. Population and household information developed in the demand analysis may indicate potential growth in family sizes, thus greater emphasis should be placed upon the development of houses with adequate room for children's activities. Growth in the elderly population may signal the need for smaller housing units and smaller lot requirements or extablished grounds maintenance programs.

Nowadays progressive builder/analysts view the national market for new developments which may provide competitive edge in their developments. Many developers have observed the California market for housing innovations establishing the trends that will follow in the remainder of the country.[168] The condominium, garden apartment and zero lot line development introduced new concepts in the real estate industry. Some of these new ideas may face skeptical acceptance if introduced in other market areas. If adequate advance demographic, social and economic review is completed, and the results indicate possible acceptance of these new concepts, the developer may have considerable success marketing them.

In general, the best market segment to serve is the one which is most profitable and which best fits the builders' capabilities.[169] With market research, the builder should have some idea of potential market targets. The builder should then review

each of these areas ascertaining the products required, the ability to deliver these products and, the availability of adequate development land.

The purchase of land must be carefully considered because it influences what the product will be and what market will be served. In most cases, market analysis should be conducted prior to the purchase of land; subsequent knowledge of the market requirements will provide a guide to land requirements. Buying land first because it is offered, then developing it may prove to be quite profitable, however, the success may be much less than without advance analysis.

Land decisions are based upon specifications related to the type of land needed to serve the selected market. High-priced housing may require larger lot sizes, more isolated locations and special amenity features such as golf courses, stables or recreation centers. Lower price range housing may be better suited closer to the employment centers on smaller lot sizes or in apartment developments. The simplest approach to land selection is to build where similar products are being built, however, this may result in higher land prices for those entering the development scene later.

Some emphasis must also be placed on the developability of land, that is, the availability of utilities, zoning status, and accessibility to transportation routes. In addition, the impact upon schools and other public facilities must be considered when plan approval is required by local government.

Overall, conclusions pertaining to new housing requirements include: 1) Demand Analysis, 2) Supply Analysis, 3) Buyer Profile Analysis, and, if development land has not been purchased, 4) Land Selection.

9) Statistical Abstract.

The statistical abstract is intended to contain detailed tables of only key data used in the analysis. Much of the data used in the analysis can be included in the body of the text along with tables, charts and maps. Text tables should be condensed and minimized; detailed data may be provided in the abstract.

The analyst must avoid overloading the text with statistics thus reducing the readibility and distracting from key findings and market observations.

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CHAPTER 4

SAMPLE MARKET ANALYSIS PROJECT

As a means of illustrating the usage of the market analysis, a sample format has been developed. In this example, the market study shall be directed toward a specific 160 acre site in northeast Wichita, Kansas. The data provided in the analysis has been collected from Federal, State and local units of government along with contributions from private individuals and organizations within the Wichita, Kansas business community. Where data availability is limited or non-existent, the author has developed approximations based upon indirect sources, i.e. local economic reports, newspaper coverage, personal interviews, institutional analyses or, in some cases, performances of general trend analyses.

MARKET ANALYSIS

FOR

160 Acre Site

21st and Webb Road

Wichita, Kansas

Prepared by:

William Edward Small
Landscape Architect

April, 1980

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Project Introduction

Growth in the Wichita, Kansas area is inevitable; the availibility of energy supplies, proximity to the sunbelt states, accessibility to major shipping routes (truck, train and air) across the country and favorable public development policies prove this point. Because of this optimistic view into the future, the following market analysis has been developed for a 160 acre site at 21st and Webb Road in Wichita, Kansas.

Objectives of the Research.

The primary objectives of the research have been:

1. To determine the housing market potential available to the subject site;
2. To identify the market components that could be most successfully attracted to the development with recommendations as to the type of development, mix of units and price range;
3. To develop in-depth data related to the market, including population, household, income, current housing and vacancy trends;
4. To recommend the best use of the site.

Scope of the Research.

The scope of the research covers the following areas:

1. Definition of the market area;
2. Analysis of population trends and characteristics, income levels, and household characteristics;
3. Analysis of residential construction trends;
4. Survey and analysis of representative subdivisions, their vacancy patterns, sale or rental price ranges, amenities and mix of units to determine which have the best market acceptance.

CHAPTER 2

Project Abstract

The following conclusions have been developed for the subject site:

1) During the late 1970s, the demand for multifamily housing expanded rapidly with single family housing purchases dashed due to mortgage market conditions.

2) Employment, households and income grew during the 1970-1979 period and are expected to show continued increases during the next four years. Household income has shown continued growth with over 70 percent of the households earning over the $10000 level. The $10000 to $25000 income group will be the primary target group for houses in the $25000 to $62500 price range.

3) In analyzing the potential for high density developments on the site, it was found the site has all necessary factors (natural environment, location, access) to compete successfully with other comparable projects. The current housing activity in garden apartments and townhouses is extremely strong, based on houses currently under construction, recently occupied, or in the planning stages.

4) The analysis contained in this study shows that the subject property can readily absorb a total of 8.75, 15.0 and 17.7 units per month during the 1981, 1982 and 1983 periods. The completion of this project should be approximately fourteen months for the apartment units and six months for single family housing.

(3)

5) Based upon all aspects of the market analysis as presented in this study, as well as additional data and information available to the consultant, the summary of the development recommendations are as follows:

A. A clustering of fourplex units with mixed townhouse and garden apartments at a density of 8.0 units to the acre, which is consistent with other units in the area. A total of 365 units for the 46 acres in scattered clusters would facilitate marketing over the three year period.

There shall be two types of units:

a. 1 bedroom/1 bath, $295.00/month rent
   125 units or 34 percent of the total multifamily mix.
b. 2 bedroom/1 bath, $340.00/month rent
   240 units or 66 percent of the total multifamily mix.

The multifamily units shall include centrally located site amenities as indicated below:

a. Pool
b. Clubhouse
c. Carports

B. The planned development shall also include 133 single family detached units with the following characteristics:

a. 2 bedroom/1 bath, 1400 square foot at a sales price of $42000.
   48 units or 36 percent of the total single family units.
b. 3 bedroom/2 bath, 1650 square foot at a sales price of $51000.
   85 units or 64 percent of the total single

(4)

family units.

Single family houses shall be at a density of 3.4 units to the acre utilizing 39 acres of the site.

6) Because of the location and access, twenty acres of the site should be considered for future commercial development area. The ideal location would be at the intersection of Webb Road and 21st Street.

7) The remaining forty three acres of the site shall be reserved for the following uses: 1) twenty (20) acres drainage reserve, and 2) twenty three (23) acres for future development.

(5)

CHAPTER 3

Market Area Determination

This study is targeted toward a specific site, thusly, some determination of the market area must be developed to aid in establishing the required statistical data base. As the market area is the geographic area within which units compete against one another, it is important to realize the extent of these boundaries. Figures 3-1 and 3-2 provide political boundaries for the Wichita SMSA area and Wichita City limits, respectively.[1,2] Besides the political boundaries, transportation systems must be reviewed to ascertain commuting distances to employment and commercial centers. Figures 3-3 and 3-4 illustrate existing and proposed transportation systems within the Wichita SMSA and the Wichita City vicinity.[3] Associated with these systems are existing public transit lines (Figure 3-5)[4], employment centers (Figure 3-6)[5] and commercial centers (Figure 3-7)[6].

The identification of the market area shall be based upon a four phase process: A) Establish the general market area (Figure 3-8), B) Establish the competitive area utilizing the major employment centers as the target of competition with a twenty minute commuting time in all directions from these centers (Figure 3-9), C) Fit the competitive area to the physical character of the area, that is, the existing and proposed transportation systems, any physical boundaries or rivers (Figure 3-10), and

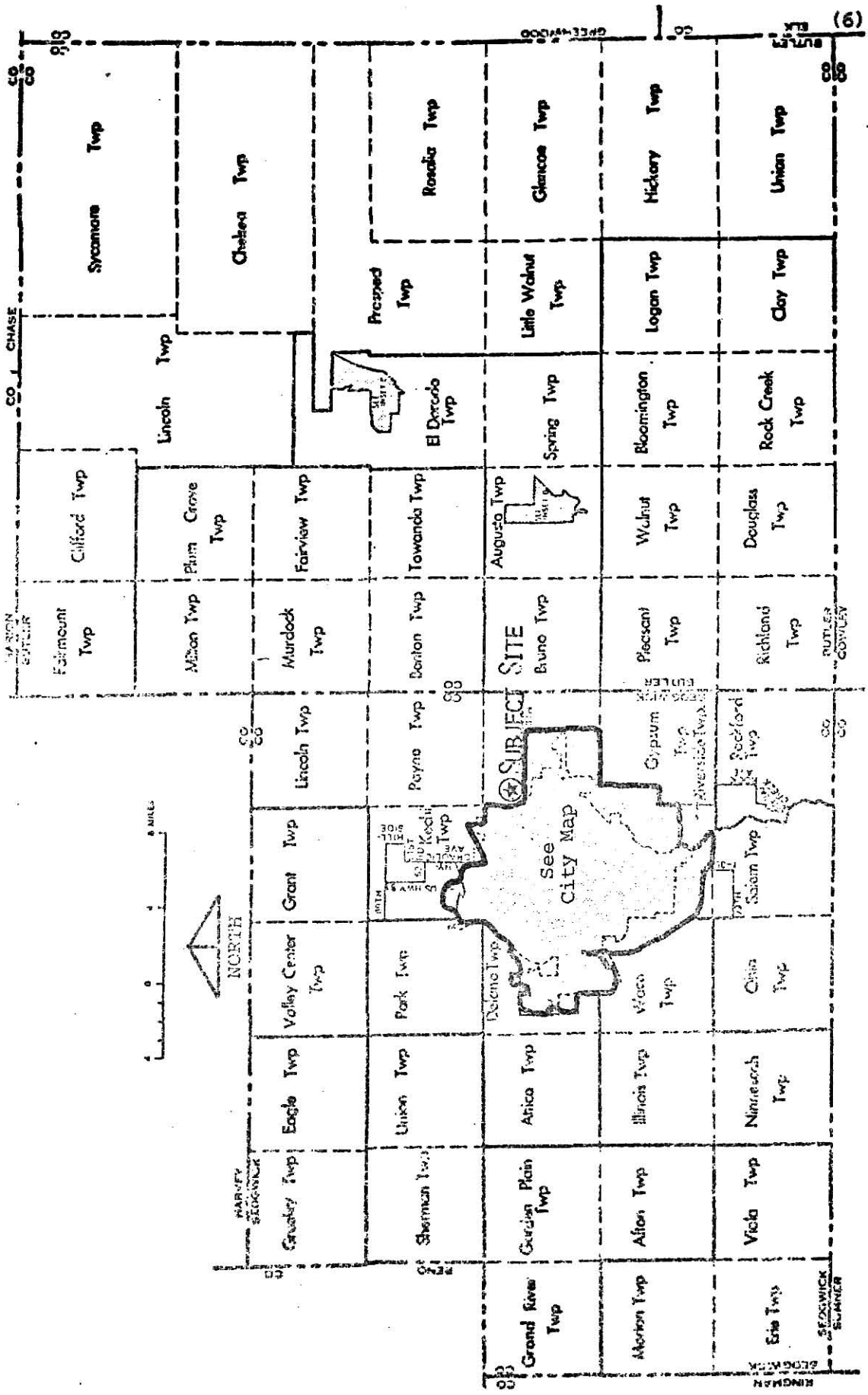

Figure 3-1. Wichita SMSA Boundaries

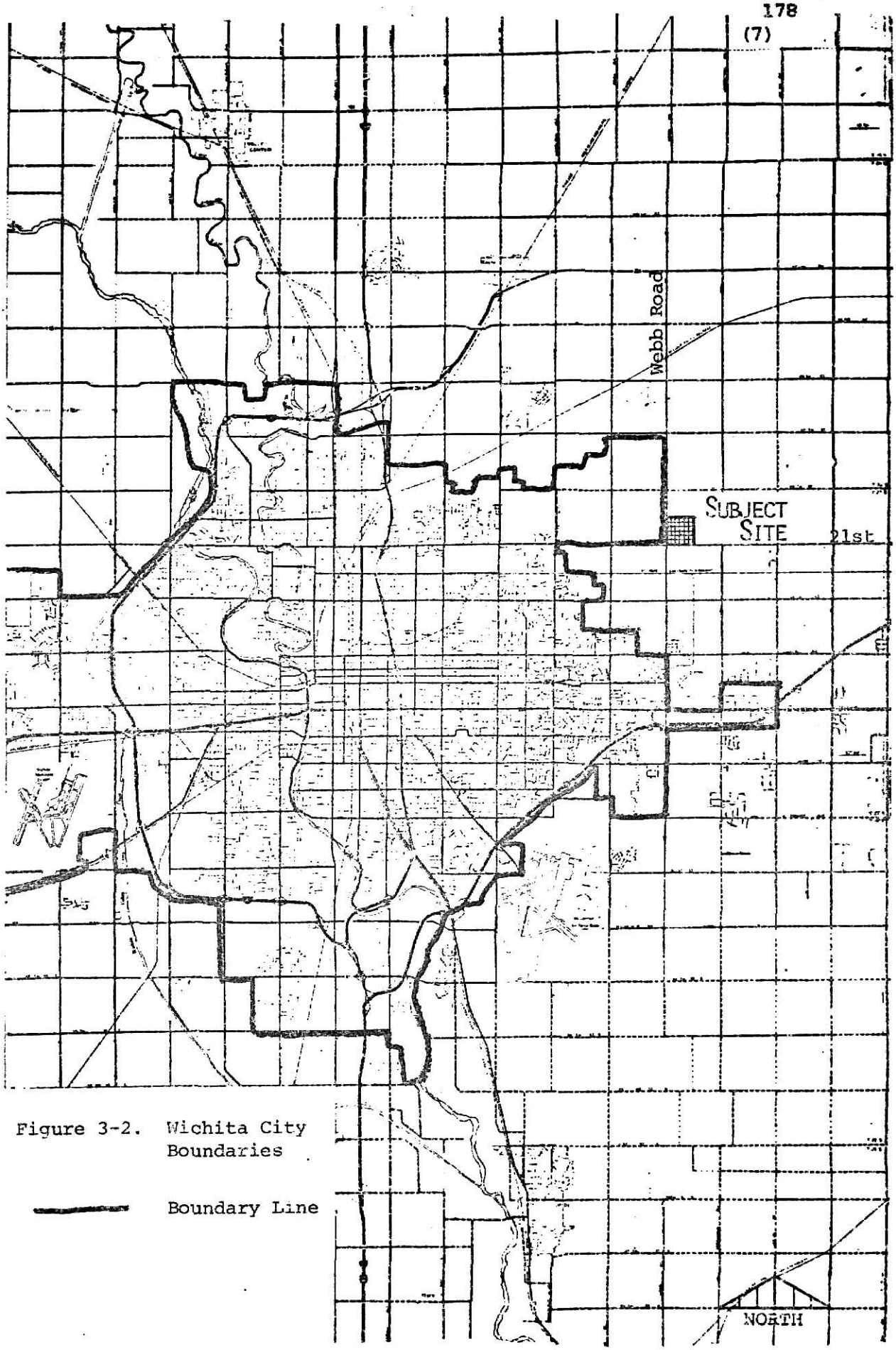

Figure 3-2. Wichita City Boundaries

Boundary Line

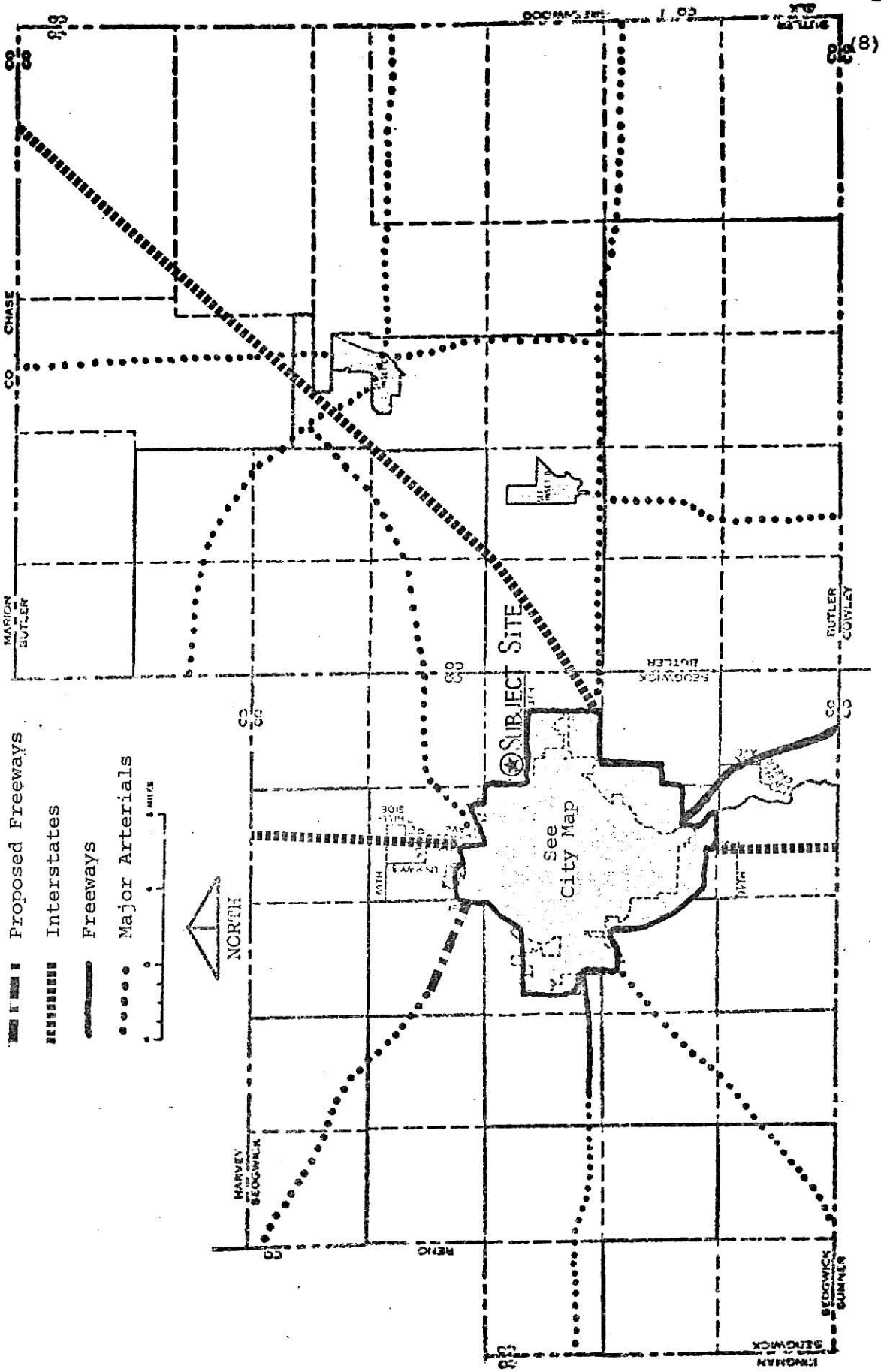

Figure 3-3. Existing and Proposed Transportation Systems, Wichita SMSA

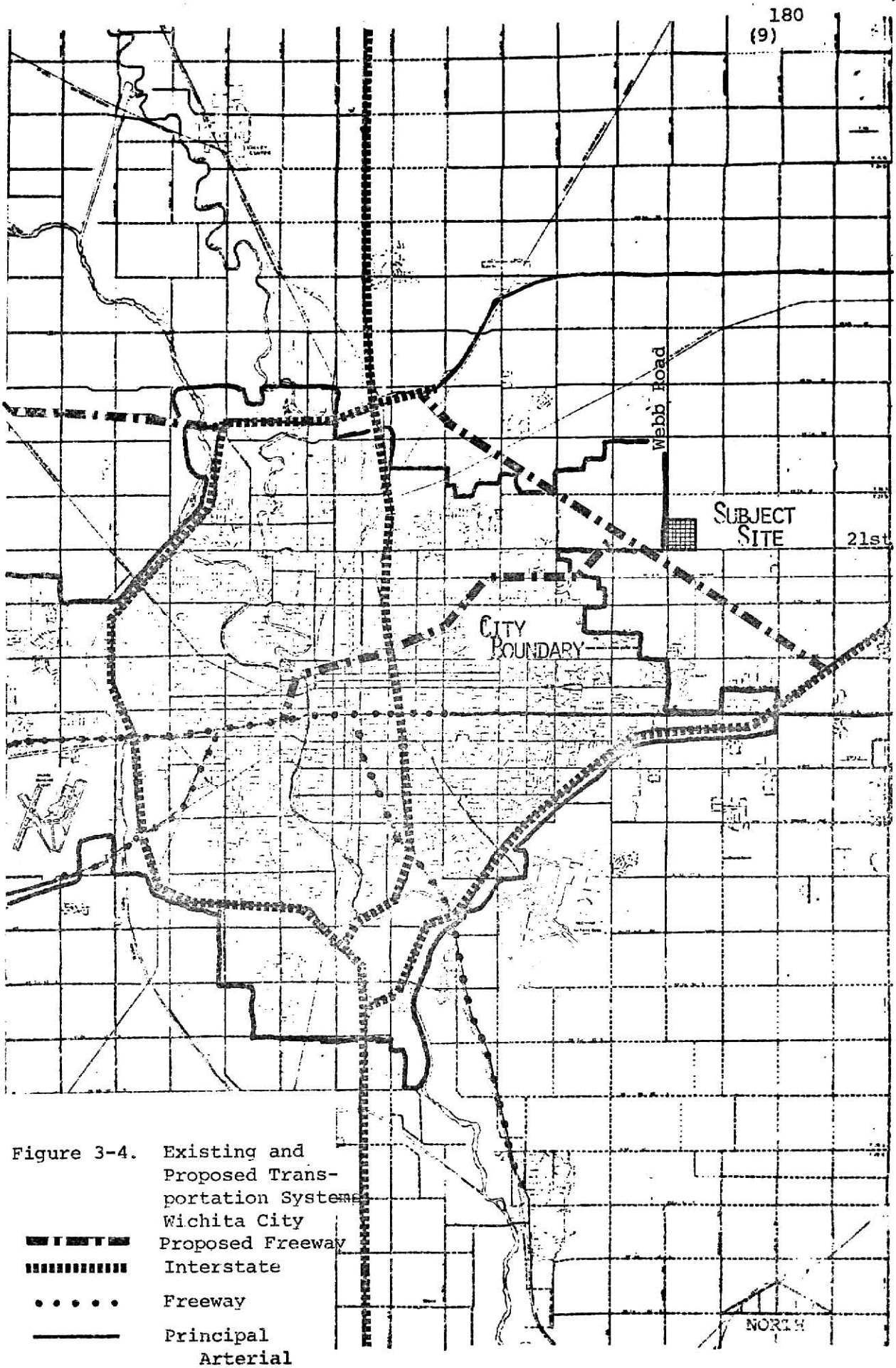

Figure 3-4. Existing and Proposed Transportation Systems, Wichita City

- Proposed Freeway
- Interstate
- Freeway
- Principal Arterial

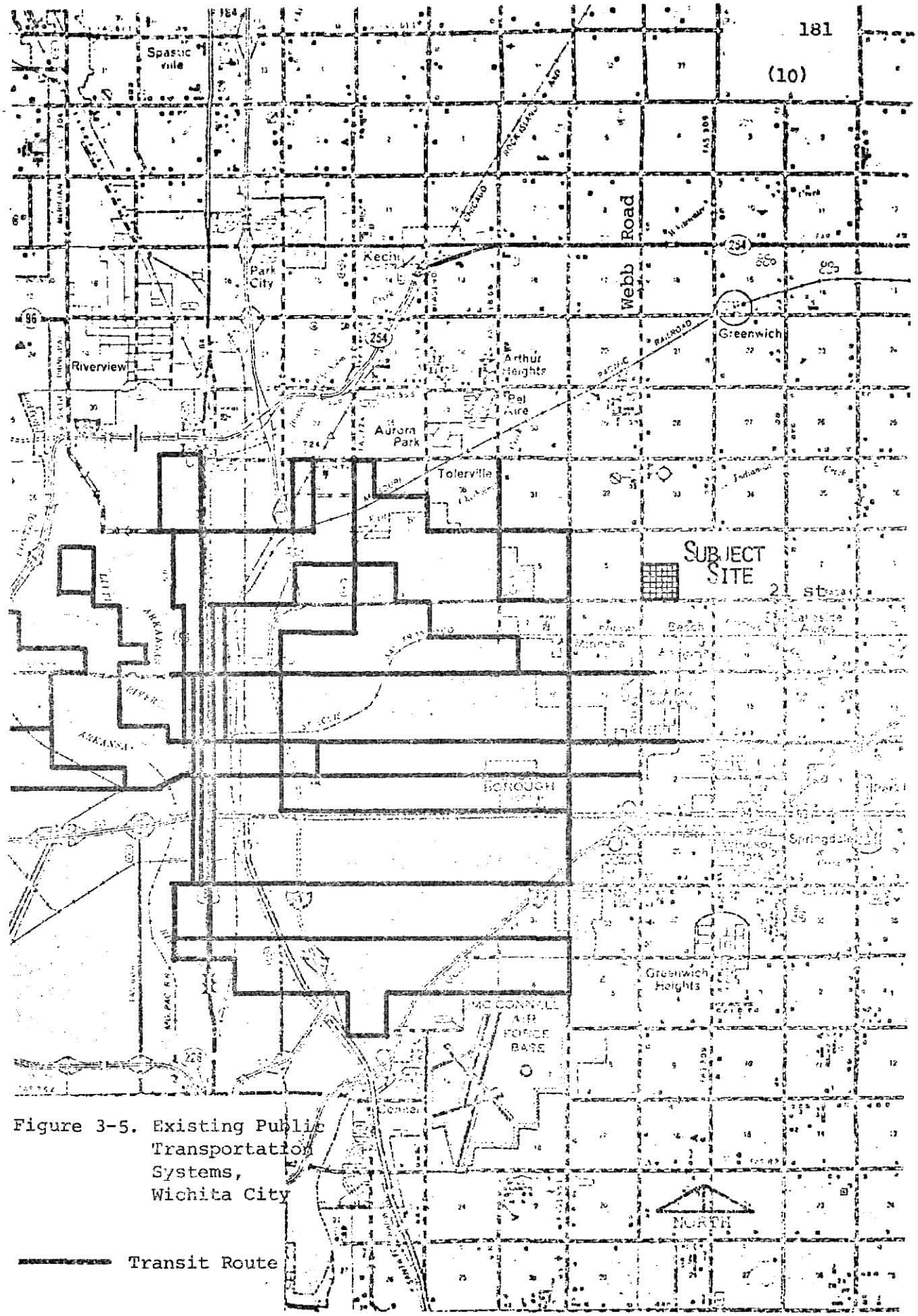

Figure 3-5. Existing Public Transportation Systems, Wichita City

Transit Route

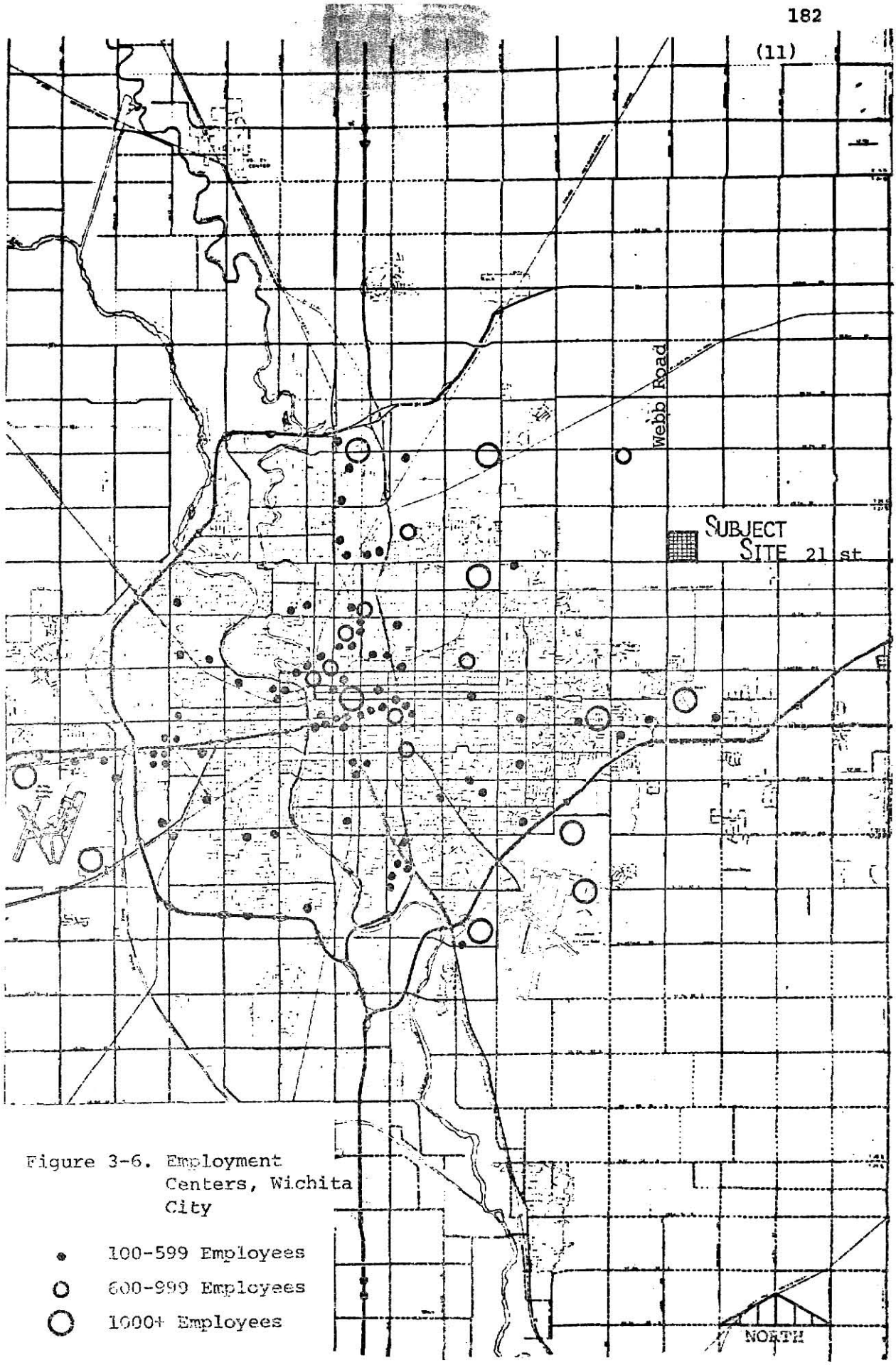

Figure 3-6. Employment Centers, Wichita City

- 100-599 Employees
- 600-999 Employees
- 1000+ Employees

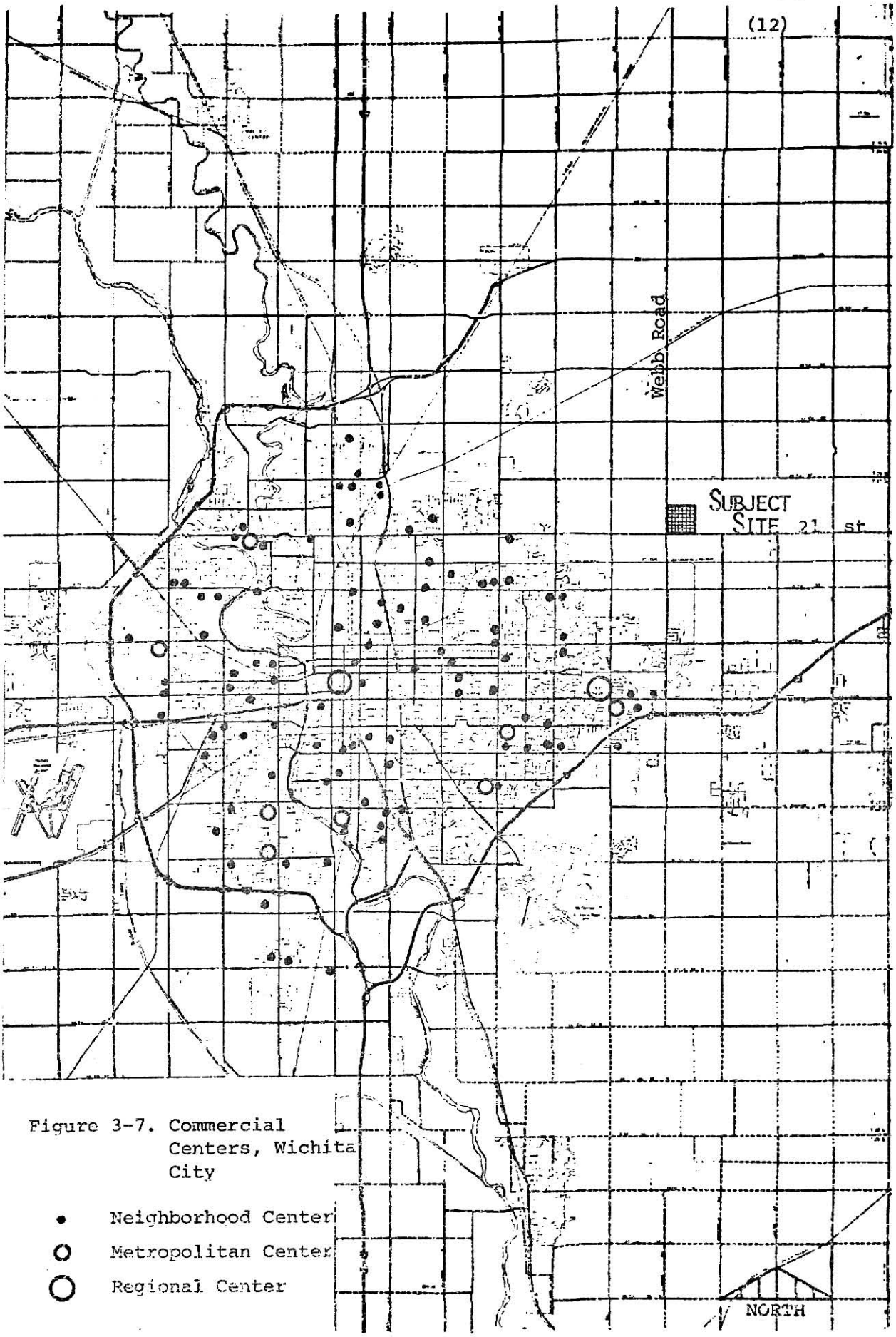

Figure 3-7. Commercial Centers, Wichita City

- Neighborhood Center
- Metropolitan Center
- Regional Center

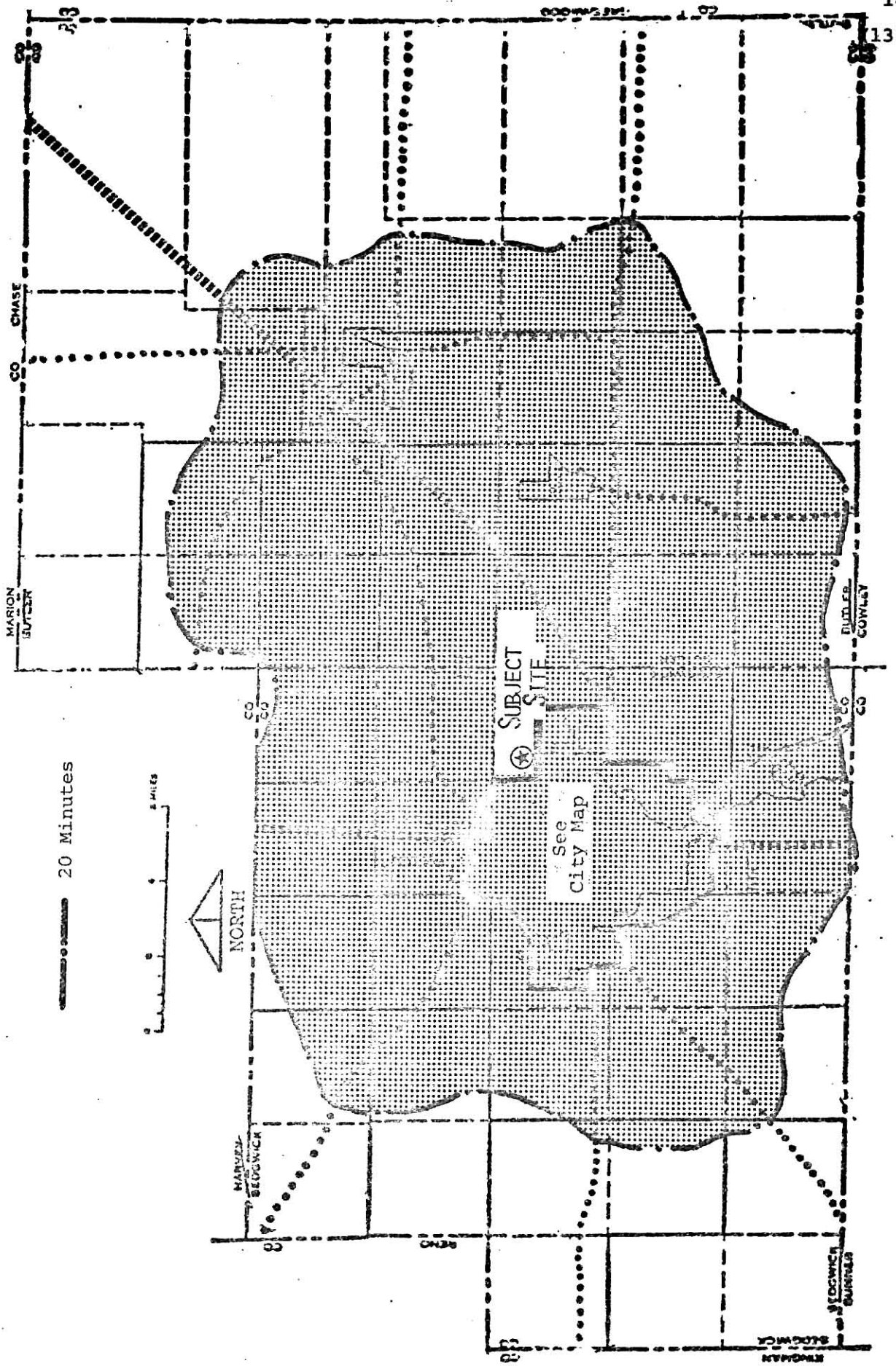

Figure 3-8. General Market Area

(13)

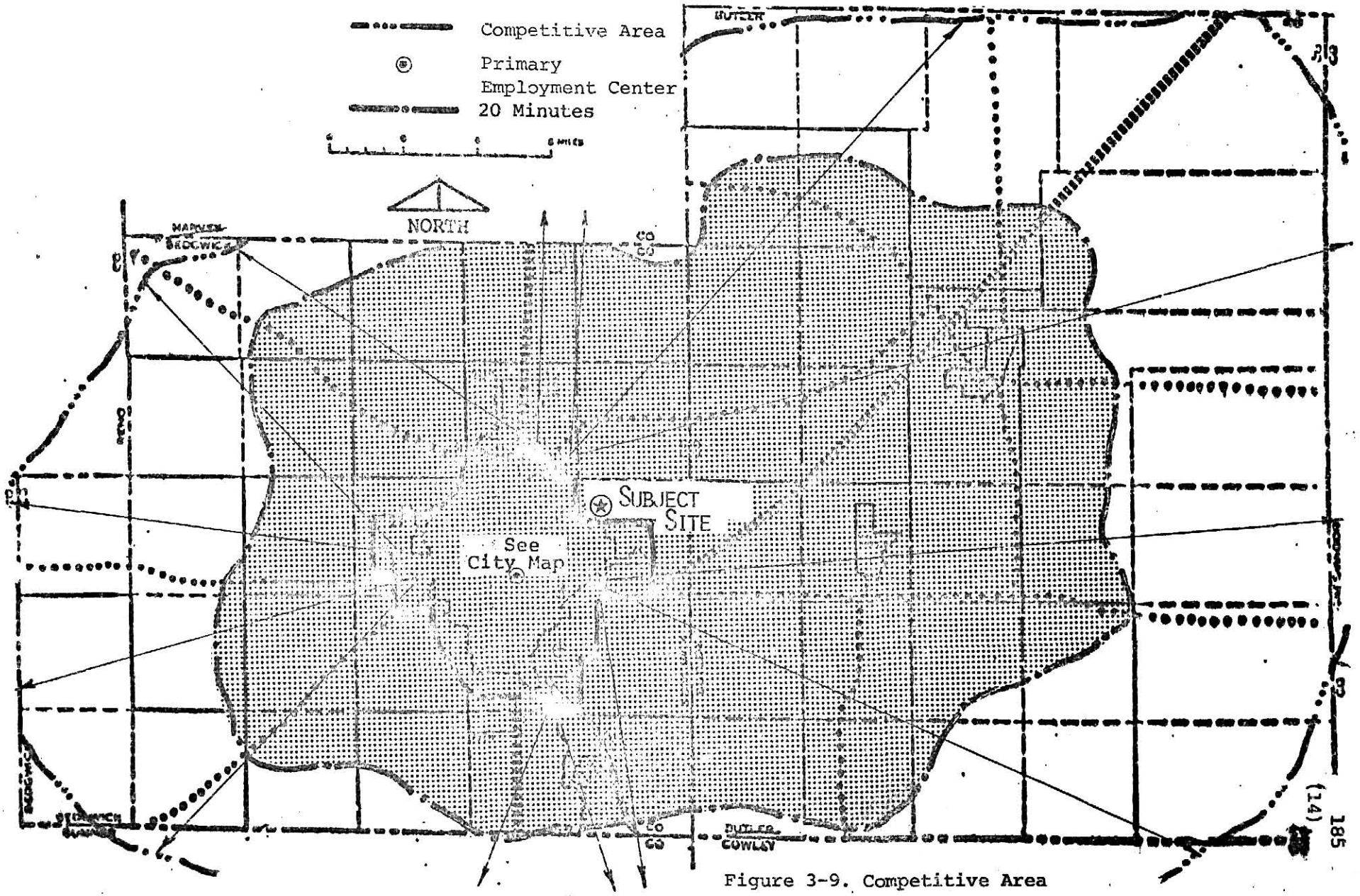

Figure 3-9. Competitive Area

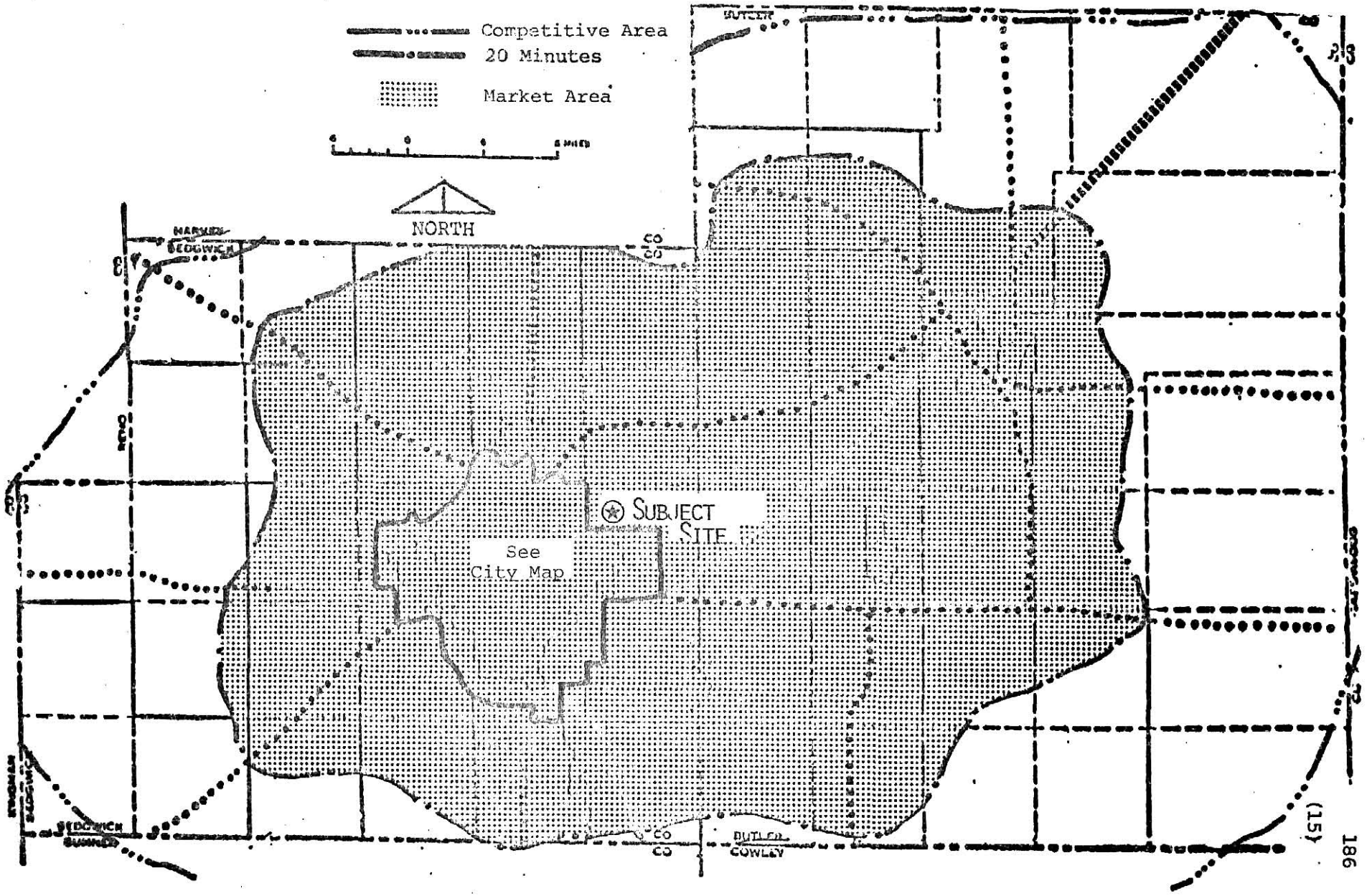

Figure 3-10. Competitive Area Related to Physical Boundaries
(See Figures 3-3 and 3-4 for Transportation Systems)

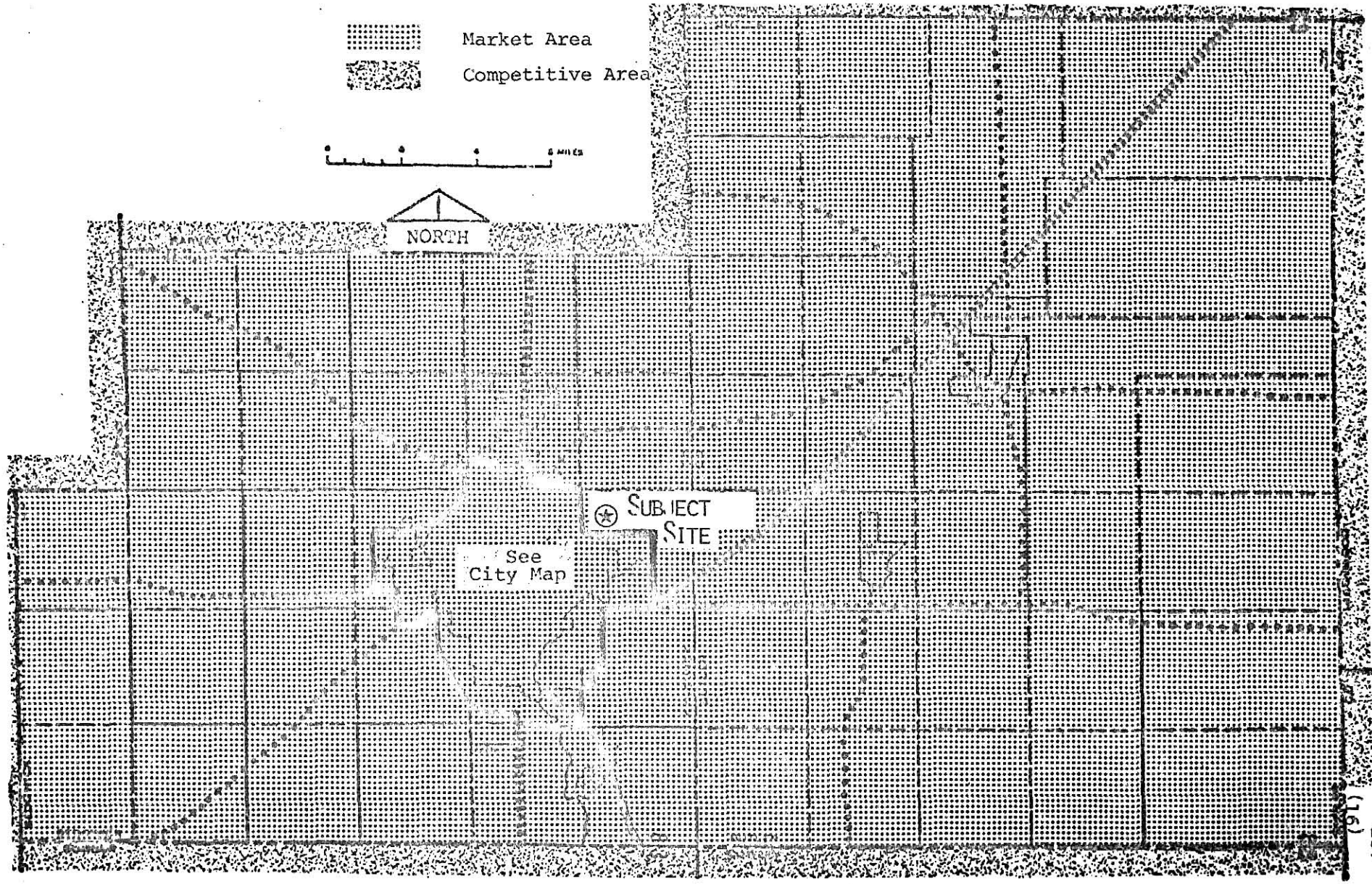

Figure 3-11. Specific Market and Competitive Area

(17)

D) Determine the specific market and competitive areas. The specific market will be the basis for the data collection; some flexibility must, however, be allowed for potential crossover from adjacent competitive areas (Figure 3-11).

CHAPTER 4

Area Economic Conditions Analysis

The Wichita, Kansas metropolitan area economy has had a varied history and, like most cities of its size, has had its share of ups and downs. Trade was the basis of the city's founding. In 1864, the Mead Trading Post was established at the junction of the Arkansas and Little Arkansas Rivers.[1] The geographic area was ideal as the rich soils, moderate climate and adequate rainfall encouraged agriculture and the raising of cattle. In 1870 the city was incorporated serving as a major cattle shipping station on the Chisholm Trail and, in subsequent years, as a major center for grain milling.[2]

The turn of the century brought about new growth within the city including the introduction of industrialization. The discovery of oil in 1895 provided a major stimulant and the economic boom created increasing population and employment. By 1910, oil and agriculture had caused the population to exceed 50,000 persons.[3] The development of the moderate scale aircraft industry near the end of World War I resulted in Wichita experiencing a doubling of population to 111,100 persons.[4] The 1920s and 1930s fostered the beginning of Wichita's nickname 'The Air Capital of the World,' with the introduction of Cessna

Aircraft Company, Beech Airplane Company and Boeing's Wichita division.[5]

The W.W. II period signaled a major boom for these industries with around the clock production of war planes and support materials. The population swelled with workers arriving from Oklahoma, Texas, Arkansas and rural parts of Kansas. A mild recession was experienced in the aircraft industry following W.W. II, however, the Korean conflict caused new expansion with a concurring increase in population.

The almost single industry reliance which Wichita experienced with aircraft manufacturing proved a major detriment to the economy in 1957. A large scale recession developed with large numbers of people leaving the city.[6] Fortunately, American and international companies began utilizing more light planes for business purposes in the early 1960s reviving the industry for the entire decade until another recession in the early 1970s caused layoffs, high unemployment and major economic chaos.

The economy of the Wichita, Kansas area has, then depended considerably on the aircraft industry. In 1957, nearly 34 percent of Wichita's wage and salary employment was directly attributable to the aircraft industry.[7] Strong sales efforts on the part of local bankers, civic leaders and businessmen have attracted new, diverse trade and service related businesses to the community thus reducing the total aircraft employment in 1979 to 20 percent of Wichita's total non-farm wage and salary employment. Table 4-1 provides a comparison of Wichita's total non-farm wage and

Table 4-1

Employment Comparisons
Annual Averages

Year	Nonfarm Wage & Salary	Manufacturing	Aircraft & Parts	Nonmanufacturing
1970	140000	39450 (28%)	20850 (15%)	100550 (72%)
1971	134400	34000 (25%)	15200 (11%)	100400 (75%)
1972	143900	41050 (29%)	20150 (14%)	102850 (69%)
1973	156350	48550 (31%)	24750 (16%)	107800 (69%)
1974	166050	51900 (31%)	27800 (17%)	114150 (69%)
1975	170100	52450 (31%)	30100 (18%)	117650 (69%)
1976	175200	51200 (29%)	27500 (16%)	124000 (71%)
1977	178400	51300 (29%)	26900 (15%)	127100 (71%)
1978	191200	59100 (31%)	33700 (18%)	132100 (69%)
1979	204800	67400 (33%)	40900 (20%)	137400 (67%)

Source: Kansas Department of Human Resources

salary manufacturing, aircraft and parts and trade and services employment for the years 1970 through 1979. The figures indicate fairly steady employment since 1970 with much less dependence upon the 'one industry' concept of the 1950s and 1960s.[8]

Area unemployment rates have also fluctuated in response to the area's economy. Table 4-2 provides a pattern of average annual unemployment rates.[9]

The local economic conditions may be analyzed by means of an economic base analysis. This process includes the following steps:

A) Local Employment Analysis,

B) Comparative Employment Analysis,

C) Location Quotient Development,

D) Employment Projection,

E) Population Projection, and

F) Income Analysis.

A) Local Employment Analysis.

The local employment analysis provides a comparative view of the various sectors of the local economy and reveals key growth areas within the community. Table 4-3 provides such an analysis for the Wichita SMSA area.[10]

The findings of the analysis area as follow:

1) Manufacturing, especially in durable goods (metal product fabrication, machinery and aircraft equipment), showed extremely high employment increases. The rapid rise in purchase of business planes and in defense spending during the latter parts of the 70s fueled this increase.

2) Construction employment yielded the highest percentage change of all the industry groups. As the aircraft

Table 4-2

Unemployment Rates
Wichita SMSA

Year	Unemployment Rate
1970	8.1%
1971	9.1%
1972	5.1%
1973	3.6%
1974	3.7%
1975	5.7%
1976	5.4%
1977	4.7%
1978	3.3%
1979	1.6%

Source: Kansas Department of Human Resources

Table 4-3

Local Employment Analysis
Wichita SMSA
1975-1979

Major Industry Group	1975 Average Employment	1975 Percentage Distribution	1979 Average Employment	1979 Percentage Distribution	Change: 1975-1979 Number	Change: 1975-1979 Percentage
Manufacturing	52450	30.83%	67400	32.91%	14950	28.50%
Durable Goods	41700	24.51	56200	27.44	14500	34.77
Nondurable Gds	10750	6.32	11200	5.47	450	4.19
Mining	1600	0.94	2200	1.07	600	37.50
Construction	9050	5.32	11700	5.71	2650	29.28
Transportation, Communications, Utilities	9000	5.29	10700	5.22	1700	18.89
Trade	37550	22.08	44200	21.58	11900	36.84
Wholesale	10050	5.91	11800	5.76	1750	17.41
Retail	27500	16.17	32400	15.82	4900	17.82
Finance	8250	4.85	9300	4.54	1050	12.73
Services	30500	17.93	37000	18.08	6500	21.31
Government	21700	12.76	22300	10.89	600	2.76
TOTAL	170100	100.00%	204800	100.00%	34700	20.40%

Source: Kansas Department of Human Resources

industry goes, so goes the housing and supply trades.

3) Trade and Service related business showed good employment increases, again, due to the improvement of the manufacturing sector.

B) Comparative Employment Analysis.

The purpose for the comparative employment analysis is to establish relationships between the local economy and the national economy. Such a comparision provides the analyst an opportunity to review the local economic strengths as well as weaknesses when compared to nationwide employment statistics. National employment statistics are illustrated in Table 4-4.[11] Table 4-5 provides the summary information comparing national and Wichita rate and percentage change in the various employment sectors.

C) Location Quotient Development.

The locational quotient represents a ratio for testing whether a certain industry can be considered as an export or basic economic activity to the community. Besides providing comparative employment analysis, Table 4-5 provides a summary of locational quotient (LQ) development. An LQ of less than one means an industry within the area meets less than the requirements and had to supplement its stock through imports. An LQ in excess of 1.00 indicates the region produces above its own needs thus providing export goods.

The key points from this Table are:

1) Manufacturing, especially of durable goods, is a strong basic industry within the City. Major growth in the aircraft sector in the late 1970s was the key factor for market strength.

Table 4-4

National Employment Analysis
1975-1979

Major Industry Group	1975 Average Employment	1975 Percentage Distribution	1979 Average Employment	1979 Percentage Distribution	Percentage Change 1975 - 1979
Manufacturing	20977484	25.23%	20900000	23.18%	-0.37%
Durable Goods	13477805	16.21	12636000	14.01	-6.24
Nondurable Gds	7499674	9.02	8264000	9.16	10.19
Mining	989426	1.19	987000	1.09	-0.24
Construction	3849614	4.63	4722000	5.24	-2.45
Transportation, Communications, Utilities	4656120	5.60	5223000	5.79	12.17
Trade	18175497	21.86	20282000	22.49	11.59
Wholesale	4930495	5.93	5229000	5.80	6.05
Retail	13244999	15.93	15053000	16.70	13.65
Finance	4040847	4.86	5043000	5.59	24.80
Services	15315309	18.42	17319000	19.21	13.08
Government	15140705	18.21	15697000	17.41	3.67
TOTAL (U.S.)	83145000	100.00%	90172000	100.00%	

Source: U.S. Department of Labor, Bureau of Labor Statistics

Table 4-5

Comparative Employment Analysis and Location Quotient Development

Major Industry Group	Rate of Employment Change: 1975-1979		Percent Employment Distribution: 1979		Locational Quotient
	Wichita	United States	Wichita	United States	
Manufacturing	28.50%	-0.37%	32.91%	23.18%	1.42
Durable Goods	34.77	-6.24	27.44	14.01	1.96
Nondurable Gds.	4.19	10.19	5.47	9.16	0.60
Mining	37.50	-0.24	1.07	1.09	0.98
Construction	29.28	-2.45	5.71	5.24	1.09
Transportation, Communications, Utilities	18.89	12.17	5.22	5.79	0.90
Trade	36.84	11.59	21.58	22.49	0.96
Wholesale	17.41	6.05	5.76	5.80	0.99
Retail	17.82	13.65	15.82	1.67	9.47
Finance	12.73	24.80	4.54	5.59	0.81
Services	21.31	13.08	18.08	19.21	0.94
Government	2.76	3.67	10.89	17.41	0.63

Sources: Tables 4-3 and 4-4

(26)

2) Retail trade is an extremely important basic industry. Wichita serves as the primary regional marketing center for most of southern and southwestern Kansas thus the importance of the trade.

3) Most of the employment sectors in the Wichita economy react similarly to the national economy.

D) Employment Projection.

The development of employment projections are essential for subsequent estimates of earning power within the economy (which may lead to home purchasing). The procedures for developing these projections are as follow:

1) Basic/Non-basic Analysis of Individual Industries. (Table 4-6). This Table provides a numerical breakdown of employment based upon the basic or non-basic strengths of the industrial group.

2) Determination of Urban Base Multiplier. (Table 4-7). The Urban Base Multiplier of 3.60 indicates that an anticipated level of basic employment in the future Wichita economy is multiplied 3.60 times to derive the future total employment for a specific year.

3) Determination of Base-Service Ratio. (Table 4-8). The base-service ratio indicates that increase in the basic sector employment will increase the non-basic employment by 2.60 times in a given year.

4) Determination of Employment Multiplier. (Table 4-9). The employment multiplier indicates that increases in the next four year period will add 2.00 times the initial increase to the non-basic employment.

5) Basic Employment Projections. (Table 4-10). Assuming the 1975-1979 economic growth continues for the 1979-1983 period, the basic sector growth would reach 69177.

6) Non-basic Employment Projections. (Table 4-11). Utilizing the projected basic employment figure times the 2.00 employment multiplier, the projected 1983 non-basic employment will be 170,738.

7) Total Employment Projections. (Table 4-12). The sum of the projected basic and non-basic figures provides a 1983 employment projection of 239,915. On an annual basis, the employment projection in the

Table 4-5

Basic/Non-basic Analysis of Individual Industries

Major Industry Group	Total Employment 1975	Total Employment 1979	LQ	Market Served: Non-basic 1975	Market Served: Non-basic 1979	Market Served: Basic 1975	Market Served: Basic 1979
Manufacturing	52450	67400	1.42	---	---	---	---
Durable Goods	41700	56200	1.96	21276	28673	20424	27527
Nondurable Gds	10750	11200	0.60	10750	11200	---	---
Mining	1600	2200	0.98	1600	2200	---	---
Construction	9050	11700	1.09	8303	10734	747	966
Transportation, Communications, Utilities	9000	10700	0.90	9000	10700	---	---
Trade	37550	44200	0.96	---	---	---	---
Wholesale	10050	11800	0.99	10050	11800	---	---
Retail	27500	32400	9.47	2904	3421	24596	28979
Finance	8250	9300	0.81	8250	9300	---	---
Services	30500	37000	0.94	30500	37000	---	---
Government	21700	22300	0.63	21700	22300	---	---
TOTAL	170100	204800		124333	147328	45767	57472

Source: Tables 4-3 and 4-5

(27)

(28)

Table 4-7

Determination of Urban Base Multipliers

Total Employment		Basic Employment		Urban Base Multipler		Future Estimate of Urban
1975	1979	1975	1979	1975	1979	Base Multiplier
170100	204800	45767	57472	3.89	3.56	3.60

Source: Tables 4-3 and 4-6

Table 4-8

Determination of Base-Service Ratio

Basic Employment		Non-basic Employment		Base-Service Ratio		Ratio Estimate
1975	1979	1975	1979	1975	1979	
45767	57472	124333	147328	2.71	2.56	2.60

Source: Table 4-6

Table 4-9

Determination of Employment Multiplier

Basic Employment			Non-basic Employment			Employment Multiplier	Ratio Estimate
1975	1979	Change	1975	1979	Change		
45767	57472	11705	124333	147328	22995	1.96	2.00

Source: Table 4-6

(29)

Table 4-10

Basic Employment Projections

1975 Basic Employment	1979 Basic Employment	Change 1975-1979	Projected Basic Employment 1983
45767	57472	11705	69177

Source: Table 4-6

Table 4-11

Non-basic Employment Projections

Basic Change: 1975-1979	Employment Multiplier	Projected Non-basic Change	1979 Non-basic Employment	Projected Non-basic 1983
11705	2.00	23410	147328	170738

Source: Tables 4-9 and 4-10

Table 4-12

Total Employment Projections

Projected Basic	Projected Non-basic	Projected Total: 1983
69177	170738	239915

Source: Tables 4-10 and 4-11

Wichita SMSA will be approximately 8778 (Table 4-13).

8) Projected Employment Distribution. (Table 4-14). Employment distribution percentages for 1983 have been developed from a 1975 and 1979 trend analysis for all major industrial groups. These percentage figures have been translated to an annual numerical increase as indicated in Table 4-15.

E) Population Projection.

Utilizing the average annual employment projection data and an average annual participation rate (the total employed divided by the total population, in this case, based upon past trends), an estimation of yearly projected population may be determined. Table 4-16 provides this analysis.[12]

Table 4-13

Annual Employment Projections
Wichita SMSA

Four Year Total Base Employment Projection	Annual Base Employ. Projection	Four Year Total Non-basic Employment Projection	Annual Non-basic Projection	Total Annual Employment Projection
11705	2926	23410	5852	8778

Source: Tables 4-10 and 4-11

Table 4-14

Projected Percentage Employment Distribution
Wichita SMSA
1975, 1979, 1983

Major Industry Group	1975 % Distribution	1979 % Distribution	1983 % Distribution
Manufacturing	30.83%	32.91%	31.37%
Durable Goods	24.51	27.44	26.37
Nondurable Gds	6.32	5.47	5.00
Mining	0.94	1.07	1.35
Construction	5.32	5.71	5.48
Transportation, Communications, Utilities	5.29	5.22	5.15
Trade	22.08	21.58	21.30
Wholesale	5.91	5.76	5.60
Retail	16.17	15.82	15.70
Finance	4.85	4.54	4.45
Services	17.93	18.08	20.10
Government	12.76	10.89	10.80
TOTAL	100.00%	100.00%	100.00%

Source: Table 4-3
Author

Table 4-15

Numerical Employment Distribution
Wichita SMSA
Annual Basis
1979-1983

Major Industry Group	Percent Distribution	Annual Numerical Increase	
Manufacturing	31.37%	2754	
Durable Goods	26.37		2315
Nondurable Gds	5.00		439
Mining	1.35	118	
Construction	5.48	481	
Transportation, Communications, Utilities	5.15	452	
Trade	21.30	1870	
Wholesale	5.60		492
Retail	15.70		1378
Finance	4.45	391	
Services	20.10	1764	
Government	10.80	948	
TOTAL	100.00%	8778	

Source: Tables 4-13 and 4-14

Table 4-16

Population Projections
Wichita SMSA

Participation Rate Development:

1970----	Total Employment	140000	
	Total Population	389352	
	Participation Rate		35.96%
1975----	Total Employment	170100	
	Total Population	378745	
	Participation Rate		44.91%
1979----	Total Employment	204800	
	Total Population	396400	
	Participation Rate		51.67%

Annual Population Projection:

Year	Projected Employment (8778/Yr)	Projected Participation (1.08/Yr)	Projected Population
1980	213578	52.75%	404887
1981	222356	53.84%	412994
1982	231134	54.92%	420856
1983	239912	56.00%	428414

Source: Kansas Department of Human Resources (Employment)
Sedgwick County Assessor's Office (Population)

F) Income Analysis.

Between 1975 and 1979, the median income per capita and per household increased from $6253 to $9400 and $14100 to $21770, respectively. (See Tables 4-17[13] and 4-18[14] for the statistics). This rapid growth is evident in the increasing number of households which have cash incomes of greater than $10000. In 1970, 37.5 percent of all families had cash incomes of $10000 or more; in 1979 the percentage had risen to 70.6 percent of the total households. (See Table 4-19).[15] This Table also illustrates the eligible sales price range for each income category; it may be noted that with the average sales price of new housing in excess of the sixty thousand dollar range, only about one in five of the population is eligible for purchase. Such a factor may be critical when developing final housing analyses.

G) General Economic Conditions.

An obvious signal of growth within the economy is the sales receipt data for the area. (See Table 4-20).[16] In the past ten years, gross sales receipts for the Sedgwick County portion of the Wichita SMSA have increased by over 170 percent or at a 17 percent basis per year.

Table 4-17

Per Capita Personal Income
Wichita SMSA

Area	Actual Per Capita Income 1975	1979	% Change 1975-1979 Actual	Annual Percentage Change	Projected Per Capita Income-1983
Wichita SMSA	$6253.	$9400.	50.33%	12.58%	$13630.

Source: Department of Commerce, Bureau of Economic Analysis

Table 4-18

Household Income
Wichita SMSA

Area	Actual Household Income 1975	1979	% Change 1975-1979 Actual	Annual 1979-1983 Estimated	Projected Household Income 1983
Wichita SMSA	$14100.	$21770.	54.40%	13.60%	$32220.

Source: Sales Management, 1975 and 1979 Survey of Buying Power

Table 4-19

Household Income Breakdown
Wichita SMSA

Income Range	Year 1970	1975	1979	Eligible Price Range (2.5 Times Income) Low	High
$0-2999	13.9%	8.5%	7.5%	$ --	$ 7498.
$3000-4999	11.0	6.9	7.2	7500.	12498.
$5000-7999	20.9	8.8	8.6	12500.	19998.
$8000-9999	16.7	7.6	6.1	20000.	22498.
$10000-15000	24.7	23.5	22.3	25000.	37500.
$15000-25000	9.9	31.5	27.1	37500.	62500.
$25000 plus	2.9	13.2	21.2	$62500 Plus	
TOTAL	100.0%	100.0%	100.0%		

Source: Sales Management, July issues for years cited
Author - 1979 Estimate

Table 4-20

Economic Viability of Wichita
Sedgwick County

Year	Retail Sales (Dollars)	Percentage Increase
1970	$ 753,550,158	+ 7.2
1971	842,116,656	11.7
1972	948,094,000	12.6
1973	1,130,367,411	19.2
1974	1,263,744,972	11.7
1975	1,401,000,000	10.8
1976	1,565,764,827	11.8
1977	1,668,865,000	6.6
1978	1,932,549,000	15.8
1979	2,036,213,800	5.4

Source: Kansas Department of Revenue, Planning and Research Bureau

Chapter 5

Demand Analysis

Population and household trends are essential indicators of the structure and performance of the region's housing markets. The prevailing economic conditions of the market area represent the primary stimulant to population growth and household development and, in turn, to overall demand for housing units. These factors have been viewed in depth to aid in the ultimate quantitative determination.

Population Analysis.

The population analysis will include the following steps: 1) Trend Analysis, 2) Age Analysis, and 3) Color and Race Analysis.

Trend Analysis. The Wichita SMSA has shown considerable population fluctuations based upon the overall conditions of the area economy. (See Table 5-1).[1,2] At the beginning of the 1970's, a major reduction in aircraft hiring caused a large population loss -- a loss that has just recently been recovered. The overall trend in the Wichita SMSA area has been toward slow and steady growth.

Age Analysis. The age structure is important in the determination of types of real estate demanded in the market place. Table 5-2 provides distribution patterns for the population in the study area.[3] Over the past nine years, the age of the population has increased with slightly more of the population falling in the 20-44 year category.

Table 5-1

Population Trends
1970, 1975, 1979

Area	1970*	1975**	1979**
Wichita SMSA	389352	378745	396400
Butler County	38658	39522	42342
Sedgwick County	350694	339223	354058
Wichita City	276554	264669	278578

Population Trends
Wichita SMSA

Year	Population	Numerical Increase	Percent Increase Per Year
1960*	381626		
		7726	2.02%
1970*	389352		
		-10607	-2.72
1975**	378745		
		4567	1.21
1976**	383312		
		488	0.13
1977**	383800		
		3000	0.78
1978**	386800		
		9600	2.48
1979**	396400		

Source: * U.S. Department of Commerce, Census of Population
** Kansas State Board of Agriculture

Table 5-2

Age Distributions
Wichita SMSA

Age Group	1970 Numbers	Percent Distribution	1979 Numbers	Percent Distribution
0-9	65489	16.82%	58826	14.84%
10-14	34769	8.93	32306	8.15
15-19	40648	10.44	38253	9.65
20-24	39402	10.12	41186	10.39
25-34	59883	15.38	66000	16.65
35-44	38156	9.80	42573	10.74
45-54	42829	11.00	43525	10.98
55-64	35237	9.05	37817	9.54
65 +	32939	8.46	35914	9.06
TOTAL	389352	100.00%	396400	100.00%

Source: Estimates, based on Wichita City Percentages

This indicates some increased need for both rental and sales housing with the final quantitative decision based upon the income levels for each group.

The school age population has also dropped drastically during the past nine years. Table 5-3 illustrates enrollment for the Wichita City school system, with such an analysis indicating trends toward fewer children and smaller family sizes.[4] This indicates the need for reduced housing size, greater emphasis on design for the couple and less dependence upon school proximity for marketing.

Color and Race Analysis. Table 5-4 illustrates sex and race characteristics of the area population.[5,6] The Wichita market area is composed primarily of whites with about 11 percent of the current population belonging to minority racial groups. Statistics as to the income breakdown of the racial classes is not readily available, however, general knowledge indicates larger numbers of lower income families among these minority populations. The effect of these racial classifications on the immediate market is limited, due to: 1) lower incomes available for new housing purchases or apartment rentals, and 2) few private developers are willing to build new structures for these groups at a reduced return on investment (not including FmHA 515 low income housing).

Population Projection.

Population in the primary market area increased from 378,745 persons in 1975 to 396,400 persons in 1979, a gain of 17,655 or 4.7 percent. This slow and steady growth has

Table 5-3

School Enrollment
Wichita City
1960, 1970, 1979

Year	Total School Enrollment
1960	55788
1970	63811
1971	59686
1972	56585
1973	55030
1974	52601
1975	50948
1976	49347
1977	47236
1978	45793
1979	44886

Source: Unified School District No. 259

Table 5-4

Sex and Race Characteristics
Wichita SMSA
1970-1979

Characteristic	Year 1970* Number	1970* Percent	1979** Number	1979** Percent
Total Population	389352	100.00%	396400	100.00%
SEX				
Male	189305	48.60%	194632	49.10%
Female	200047	51.40%	201768	50.9
RACE				
White	357836	91.90%	352400	88.90%
Black	28017	7.20%	36865	9.30%
Other	3499	0.90%	7135	1.80%

Source: * U.S. Department of Commerce, Census of Population, 1970
** Kansas State Board of Agriculture, 1979

been a common characteristic of the Wichita market area.

Population growth in the Wichita SMSA results from major factors which should provide a continual influence on population increases in the near future:

1) The military aircraft industry, especially at Boeing, should continue stable growth, and,

2) Employment has increased within the primary market area during the last seven years.

As depicted in Table 5-5, a total of 422,682 persons is projected for the Wichita SMSA primary housing market area by 1983. The anticipated average increase of 6570 persons annually during the 1980-1983 period is substantially greater than the increase of 4414 persons per year experienced in the 1975 to 1979 period. (See Table 5-6).

Household Analysis.

The household is the key unit of housing demand, therefore, some analysis of trends and the development of projections is required.

Household Trends. The total number of households in the Wichita SMSA increased from 125,051 in 1970 to 145,442 in 1979, a gain of 20,391 households or 2266 annually, over the nine year period. (See Table 5-7).[7,8] The amount of change was greatest in the Sedgwick County as a large number of people moved to homes built in county land surrounding the city limits. This also indicates a general movement from the city to suburban lifestyles.

Household Size. The average household sizes for the Wichita SMSA in 1960 and 1970 were 3.2 and 3.1 respectively (See Table 5-8).[9]

Table 5-5

Population Projection
Wichita SMSA

Method	Year 1980	1981	1982	1983
Extrapolation 1	400814	405228	409642	414056
Extrapolation 2	403694	410988	418282	425576
Labor Force	404887	412994	420856	428414
PROJECTED POPULATION	403132	409737	416260	422682

Source: Estimates by Author

Table 5-6

Population Growth
Wichita SMSA
1975, 1979 and estimated 1980-1983

Year	Population	Numerical Increase	Percent Increase Per Year
1975	378745		
		17655	1.17%
1979	396400		
		6732	1.70%
1980	403132		
		6605	1.64%
1981	409737		
		6523	1.59%
1982	416260		
		6422	1.54%
1983	422682		

Source: Estimates by Author

Table 5-7

Household Trends
1970, 1979

Area	Year 1970	1979	Total Numerical Change	Percent Change	Annual Numerical Change
Wichita SMSA	125051	145442	20391	16.3%	2266
Butler County	12625	14272	1647	13.0	183
Sedgwick County	112426	131170	18744	16.7	2083
Wichita City	92751	104922	12172	13.1	1352

Source: U.S. Department of Commerce, Census of Population, 1970
Wichita-Sedgwick County Annual Intergovernmental Enumeration

Table 5-8

Household Size
Wichita SMSA, Sedgwick and Butler County
1960, 1970, 1979

Area	1960*	1970*	1979**	1983**
Wichita SMSA	3.2	3.1	2.8	2.75
Sedgwick County	3.2	3.0	2.8	2.7
Butler County	3.2	3.0	2.8	2.7

Source: * U.S. Department of Commerce, Census of Housing, 1960, 1970
** Estimates by Author

By 1979, the size had dropped to an estimated 3.0 persons per household. Both the Butler and Sedgwick County areas also noted slight reductions in the household size.

Household Size and Numerical Projections. During the 1979-1983 period, the average household size is likely to decrease to about 2.8 persons per household. The reasons for this projection include:

1) The growing tendency to have small families (fewer children),

2) The increasing number of divorces and annulments (Table 5-9)[10] thus forming more single head households, and,

3) Fairly static marriage numbers creating a lesser proportion of the total population, thus more individual households.

In the same period, total households are projected to increase to about 157585 by 1983 in the Wichita SMSA. This figure represents an average annual addition of 3036 new households between 1979 and 1983. Larger numbers of divorces, fewer marriages and tendencies toward smaller families are supporting reasons for such a projection. (See Table 5-10).

Chapter 6

Supply Analysis

Supply Analysis is concerned primarily with the review of a number of factors including the existing housing inventory, residential construction activity, residential demolishments and property conversions.

Table 5-9

Marriage and Divorce Statistics
Sedgwick County
1960, 1970, 1979

Year	Marriages	Divorces
1979	4188	3322
1978	4261	3007
1977	4102	2869
1976	4184	3007
1975	4323	2865
1974	4324	2425
1973	4304	2192
1972	4001	2163
1971	3652	2019
1970	3651	2047
1960	2336	1033

Sources: Kansas Department of Health and Environment

Table 5-10

Household Projection
Wichita SMSA

Year	Households	Numerical Increase	Percent Increase Per Year
1970	125051		
		20391	1.81%
1979	145442		
		2763	1.90
1980	148205		
		3038	2.05
1981	151243		
		3176	2.10
1982	154419		
		3166	2.05
1983	157585		

Sources: Estimates by Author

The existing housing inventory must be assessed in terms of certain housing characteristics including tenure, types of structures available within the market area, rent and price ranges and conditions.

Tenure. The types of housing available on the market are reflected in Table 6-1.[1] As shown, owner occupied unit distribution has increased slightly from 1970 to 1979 while the vacancy rates have been stable for sale units (1.6 to 1.8 percent) and have decreased considerably for the rental units (12.4 to 1.2 percent). In addition, the median value of owner occupied units has increased by over 213 percent in the last nine years while price levels charged for rental units has increased by 75 percent. This major difference in housing costs may partially explain the rise in renter occupied units.

Table 6-2 illustrates the means by which the current estimate (1979) was determined utilizing 1970 Census data as the base year.[1]

Type of Structure. Table 6-3 provides a numerical and percentage breakdown, by tenure group, of the structure types utilized between 1970 and 1979.[3] Minor changes in all housing areas were evident.

Rent and Value. Distribution of the housing inventory by rent and value are used primarily in providing an understanding of housing quality and the general price ranges commanded on the free market. Table 6-4 indicates distribution characteristics for sale and rental housing for years 1970 and 1970.[4] Sale values

Table 6-1

Tenure Characteristics
Wichita SMSA
1970, 1979

Character	Year 1970	1979	Change: 1970-1979 Numerical	Percentage
All housing units	134490	147300	22950	17.1%
Vacant-Seasonal/ migratory	119	250	131	110.0%
All year round units	134371	147050	22819	16.9%
Owner occupied	80939	89489	8550	10.6%
Median Value	$13400	$42000	$32600	213.4%
Renter occupied	44112	58512	14400	32.6%
Median Rent	$80	$140	$60	75.0%
Vacant year round	6801	2313	-4488	-66.0%
For sale only	1338	1611	273	20.4%
Vacancy Rate	1.6%	1.8%		
For rent	5463	702	-4761	-87.1%
Vacancy Rate	12.4%	1.2%		
Owner occupied	64.7%	69.0%		

Source: U.S. Department of Commerce, General Housing Characteristics

Table 6-2

Estimates of Current Tenure
Wichita SMSA
1970, 1979

Characteristic	Numbers	
	Renter Occupied	Owner-occupied
1970 Census Estimate of Units	44112	80939
1970 Census Estimate of Unit Vacancies	5463	1338
Total Units Authorized 1970-1979	14400	8550
Total Units Demolished 1970-1979	-5161	-227
Total Units Converted 1970-1979	+400	+500
1979 Current Estimate of Vacancies	-702	-1611
Total 1979 Unit Estimate	58512	89489

Source: U.S. Department of Commerce, General Housing Characteristics

Table 6-3

Housing Units by Type of Structure
Wichita SMSA
1970, 1979

Characteristic	Number		Percentage	
	1970	1979	1970	1979
All year round units	134371	157440	100.0%	100.0%
1 unit detached	104495	114800	77.8	72.9
2 unit or more	25378	27164	18.9	17.3
Mobile home	4498	6037	3.3	3.8
Owner occupied	80939	89489	100.0%	100.0%
1 unit detached	74292	81400	91.8	91.0
2 unit or more	2697	3414	3.3	3.8
Mobile home	3950	4675	4.9	5.2
Renter occupied	44112	58512	100.0%	100.0%
1 unit detached	24955	33400	56.6	57.1
2 unit or more	18609	23750	42.2	40.6
Mobile home	548	1362	1.2	2.3

Source: U.S. Department of Commerce, General Housing Characteristics
Author

Table 6-4

Housing Units by Value and Rent Distribution
Wichita SMSA
1970, 1979

Characteristic	1970		1979	
	Units	Percentage	Units	Percentage
Value of Owner occupied units				
Total Units	70353	100.0%	86500	100.0%
$ 5000 or less	2884	4.1	952	1.1
5000 to 9999	15158	21.5	2768	3.2
10000 to 14499	24270	34.5	3546	4.1
15000 to 24999	19537	27.8	4066	4.7
25000 to 34999	5602	8.0	15916	18.4
35000 to 49999	1990	2.8	29151	33.7
50000 or more	912	1.3	30101	34.8
Median Value	$13400		$42000	
Contract Rent				
Total Units	42663	100.0%	57063	100.0%
$ 60 or less	7675	18.0	1427	2.5
60 to 99	21083	49.4	3424	6.0
100 to 149	8864	20.7	10271	18.0
150 to 199	2042	4.8	18260	32.0
200 to 249	581	1.4	14551	25.5
250 or more	382	0.9	7989	14.0
No rent	2036	4.8	1141	2.0
Median Rent	$ 80		$140	

Source: U.S. Department of Commerce, General Housing Characteristics

changed considerably during this time period. In 1970, over 87 percent of the houses were valued under $25000; in 1979, over 86 percent of all housing was valued over $25000 with the median value at $42000. (56)

Similar change in rental values occurred during the same period. The majority of rentals (88%) were valued under $150 in 1970; by 1979 the figure had changed to over 73 percent above the $150 rental value with median rent at $140.

In part, the increase in pricing was due to higher prices for land, construction supplies and financing. Table 6-5 provides a building cost index for the Wichita vicinity indicating nearly a tripling in overall construction cost components.[5] As is true with most consumer goods, price increases in the housing production cycle have been passed along to the final consumer.

Housing Supply Trend Analysis. The supply trend analysis provides some indication of strong and weak housing market years within the study area. Table 6-6 indicates that between 1970 and 1979, the housing inventory increased a total of 22950 (Average 2550 annual units or 1.90% annually).[6] The high of 3680 units per year in 1972-73 was at the height of the aircraft industry expansion followed by years of more average development. The large increase in 1978-79 was again due to growth within the air industry.

Current Residential Building Activity. Table 6-7 indicates the total residential building permits (by type) between 1970 and 1979 for the Wichita area.[7] Variances in the types of permits

Table 6-5

Building Cost Index
1965-1979
Wichita SMSA

Year	Cost Index (1963 = 100)
1965	115.0
1966	115.0
1967	115.0
1968	122.0
1969	129.0
1970	129.0
1971	145.0
1972	160.0
1973	160.0
1974	180.0
1975	240.0
1976	247.0
1977	260.0
1978	285.0
1979	315.0

Source: Wichita City Permit Department

(58)

Table 6-6

Housing Supply Trend Analysis
Wichita SMSA
1970-1979

Year	Housing Numbers	Numerical Change	Percentage Change
1970	134490		
		1181	0.88%
1971	135671		
		2380	1.75
1972	138051		
		3680	2.67
1973	141731		
		1575	1.11
1974	143306		
		2420	1.69
1975	145726		
		2700	1.85
1976	148426		
		2350	1.58
1977	150776		
		2375	1.58
1978	153151		
		4289	2.80
1979	157440		

Source: U.S. Department of Commerce, General Housing Characteristics
Author

Table 6-7

Residential Building
Permit Trends
Wichita SMSA
1970-1979

Year	Units				Percent			
	Single Family	Two Family	Multi Family	Total	Single Family	Two Family	Multi Family	Total
1970	494	238	253	985	50.2%	24.1%	25.7%	100.0%
1971	475	110	548	1133	41.9	9.7	48.4	100.0
1972	460	92	1738	2290	20.1	4.0	75.9	100.0
1973	495	112	2844	3451	14.3	3.2	82.4	100.0
1974	617	64	781	1462	42.2	4.4	53.4	100.0
1975	794	136	1352	2282	34.8	6.0	59.2	100.0
1976	788	264	1455	2507	31.4	10.5	58.1	100.0
1977	730	281	1295	2306	31.7	12.2	56.1	100.0
1978	820	268	1184	2272	36.1	11.8	52.1	100.0
1979	1080	366	1250	2696	40.1	13.6	46.3	100.0
TOTAL	6753	1931	12700	21384				

Source: Wichita City Permit Department

authorized indicate the general trend within the market place. The 1972-73 period showed a tremendous increase in the number of multifamily units provided. During this period, large numbers of people were laid off their jobs with more of these people occupying rental housing due to lower costs. The latter part of the 1970s showed a fairly steady growth in two-family attached housing with more people taking advantage of tax opportunities available with this type housing.

Total net additions to the housing stock include information pertaining to total new units (from Table 6-7), demolitions, and conversions. (See Table 6-8).[8] As indicated, building demolitions reduced considerably the net housing numbers added at year end.

Net additions to the housing market varied over the 1970-1979 decade. Generally the direction of variation was directly dependent upon the state of the economy in the Wichita area. This will obviously continue to be a major force upon future housing.

Chapter 7

Current Market Conditions

The current economic situation within the primary market place must be carefully weighed prior to the introduction of new housing construction. The introduction of an incorrect product at an incorrect time will prove to be extremely risky from the financial standpoint.

The key conditions which must be reviewed include the mortgage market, subdivision activity and the sales and rental markets.

Table 6-8

Net Additions
to Housing Inventory
Wichita SMSA
1970-1979

Item	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Total Residential Units	985	1133	2290	3451	1462	2282	2507	2306	2272	2696
Demolitions (-)	556	785	1152	1364	574	394	488	234	256	293
Conversions (+)	0	15	35	45	24	40	88	102	150	170
Net Addition to Housing Inventory	429	363	1173	2132	912	1928	2107	2408	2166	2233

Source: Wichita City Permit Department

Mortgage Market. The availability of mortgage funds to the prospective buyer plays a key role affecting new construction and the size of the vacancy inventory. Fund availability in the Wichita area was extremely good in the early 1970s with 5-6 percent interest and forty (40) year terms. The later parts of the 1970s have presented an entirely different picture. In May, 1979 mortgage rates in Kansas reached 11 percent, the maximum allowed by law and the highest interest charged in the state for home loans. Despite this high rate, the demand for mortgage money maintained a high level. These higher interest levels, due to limited mortgage money,have also curtailed the number of 90/10 and 95/5 loans, thus limiting the lower income families from entering the ownership category.

In March, 1980, the Kansas State legislature removed the 11 percent usury limit allowing home mortgage rates to fluctuate according to the readings of several consumer price indices. With this new stipulation, mortgage interest rates in April, 1980 have jumped to in excess of 17 percent further eliminating those families that had marginal chances of purchasing homes at the lower rates.

Most Wichita savings and loan associations have made loan qualifications much more stringent including requirements limiting total debt (car and personal loans and mortgage payments) to no more than 30 percent of the applicant's total income. In addition, only loan applications for owner-occupied homes are being accepted; no investment properties are currently being sponsored.

Most loan companies are limiting their exposure by reducing or eliminating their loan commitments altogether. Despite the high rates of interest charged customers, they are not accumulating high profits on mortgage loans due to higher rates paid on money market savings notes (the only way of reducing the outflow of available mortgage monies).

Some relief in the mortgage squeeze was provided in May of 1979 when over $25 million in money was made available through the revenue housing bond program. This money was to last for an eighteen month period and was to be available for mortgage and construction financing. The program was designed to provide loans for moderate income buyers (to $25000 income) to purchase new, $30000 to $50000 homes with an interest rate of 8.2 percent, nearly three percent lower than the conventional loan rate. This first bond program was initiated May 1, 1979. By May 30, 1979, nearly all of the $25 million in available funds was committed to over 600 homes.

This initial program provided some breathing room for lenders, however, the continued demand for housing has forced the City of Wichita to sponsor a second program amounting to over $60 million in mortgage funds. Pending final authorization the money would be provided at a 12.25 percent interest rate with mixed loan ratios (95/5, 90/10, 85/15, 80/20) and a thirty (30) year term.

The availability of this lower interest money provides considerable market stimulation in all sectors of the construction industry. There are problems with the programs:

1) The small amount of available funds is minor compared to the existing demand for housing. (In 1978, Wichita savings and loan associations made 12,733 mortgage loans worth over $476.5 million (See Table 7-1 for mortgage trends[1]), and, 2) Pending federal legislation would prohibit revenue bond programs due to their non-taxable status. It is feared that the spread of this program may cause a considerable loss in tax collection within the use area.

The overall mortgage money market may be summarized as being very tight with conventional loans hovering around 17 percent with 80/20 loan ratios for thirty (30) year terms. Some relief is available for lower income groups by utilizing the revenue bond programs at 12.25 percent. The availability of such money will, however, be quite limited (a maximum of 1000 homes may be affected by the $60 million bond issue).

Subdivision Activity. Construction continues at an active scale in the market area due to three factors: 1) A large number of committed, low interest construction loans are maintaining some activity, 2) Builders anticipate final approval on up to $60 million in low interest housing revenue bonds thus they build for the anticipatory market, and 3) Strong demand for housing even at higher rates is still prevalent.

Tables 7-2 and 7-3 illustrate recent subdivision recordings (single family and rental units) in the Wichita area.[2] Tighter money will most likely reduce overall construction activity, despite the high demand.

Table 7-1
Residential
Mortgage Money Trends
Wichita SMSA
1970-1979
(millions of dollars)

Year	Number	Dollar Amount	Percentage Change	
			Number	Dollar Amount
1970	4683	$ 53.5		
			48.4%	57.0%
1971	6950	84.0		
			22.0	36.9
1972	8480	115.0		
			2.9	5.2
1973	8726	121.0		
			-3.3	6.6
1974	8440	129.0		
			22.1	55.0
1975	10303	200.0		
			21.0	45.0
1976	12467	290,0		
			15.8	26.3
1977	14442	366.4		
			-11.8	30.0
1978	12733	476.5		
			3.7	49.1
1979	13200	525.6		

Source: Fidelity Title Company, Inc.
Author

Table 7-2

Recorded Plats
Single Family Housing

Name of Subdivision	Type*	Units	Date Recorded
Sierra Woods, 1st	SFD	31	1/78
Crestview Country Club Estates	SFD	330	4/78
Cottonwood Village	SFD	105	8/78
Sycamore Village	SFD	139	8/78
The Meadows	SFD	52	9/78
Westlink Village, 16	SFD	280	9/78
Westlink Village, 18	SFD	383	11/78
The Trees	SFD	31	12/78
Westlink Village, 17	SFD	269	1/79
Country Place Estates	SFD	63	3/79
Prairie Park, 2nd Addition	SFD	193	4/79
Cottonwood Village	SFD	50	5/79
Whispering Pines	SFD	89	5/79
Timber Lake Estates	SFD	77	6/79
Fantasea	SFD	95	6/79
Robbins Farms	SFD	240	7/79
The Park	SFD	85	2/79
Arbor Lakes	SFD	125	4/79

Source: Wichita--Sedgwick County Metropolitan Area Planning Commission

* SFD = Single Family Detached

Table 7-3

Recorded Plats
Rental Units

Name of Subdivision	Type*	Units	Date Recorded
Fox Run	TH	172	4/78
Cedarbrooke	TH	153	4/78
High Point East	TH	185	4/78
Lincoln Meadows	GH	140	6/78
Aragon	GH	153	7/78
Cherry Hills	TH	95	8/78
Sundance	TH	85	1/79
The Broadmoor	TH	185	4/79
MacArthur Point	GH	144	5/79
Stoneybrooke East	GH	148	7/79

Source: Wichita--Sedgwick County Metropolitan Area Planning Commission

* TH = Townhouse

GH = Garden Apartment

Major growth in the city appears to be concentrated in the northeast and northwest sections of the city. These areas also have the highest price and rent values in the city. Figures 7-1[3] and 7-2[4] illustrate the general pattern of sewer line and water line expansion within the city along with city/county fire services (Figure 7-3)[5] for the general area.

Current Sales Market. At the present time the sales market has been slowed due to high mortgage rates. New mortgage bond money should ease the situation considerably for up to a six month period. Figure 7-4 and Table 7-4 provide some indication of the subdivision activity in the Wichita area.[6] The key point to observe is the absorption rate; that is, the number of homes sold per month. As Table 7-4 indicates, new housing in the range of $40000 to $60000 has the greatest demand as judged by the absorption rates.

Site and unit amenities provide some marketing plus, however, units in greatest demand are those with limited extras (due to the extra cost). This may be a strong indicator of future demand patterns.

Current Rental Market. Rentals are in high demand in the Wichita area as indicated by Table 7-5.[7] This indicates that the vacancy rates are extremely low for all types of rental units. The absorption patterns within the market area indicate that new rental projects are absorbed into the market at a rate of 68 units per month. Future absorption will surely be greater due to the tight money situation.

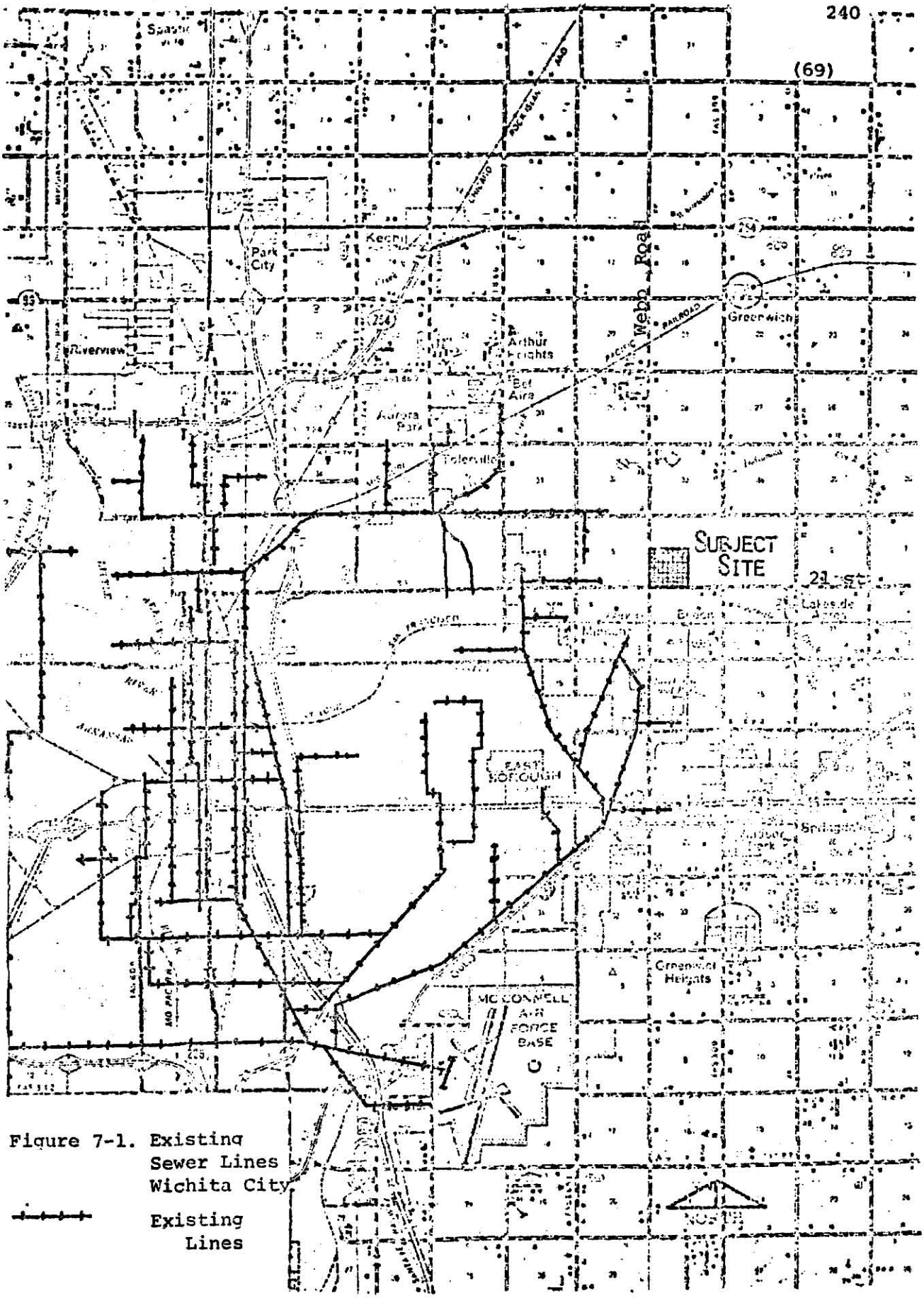

Figure 7-1. Existing Sewer Lines Wichita City

Existing Lines

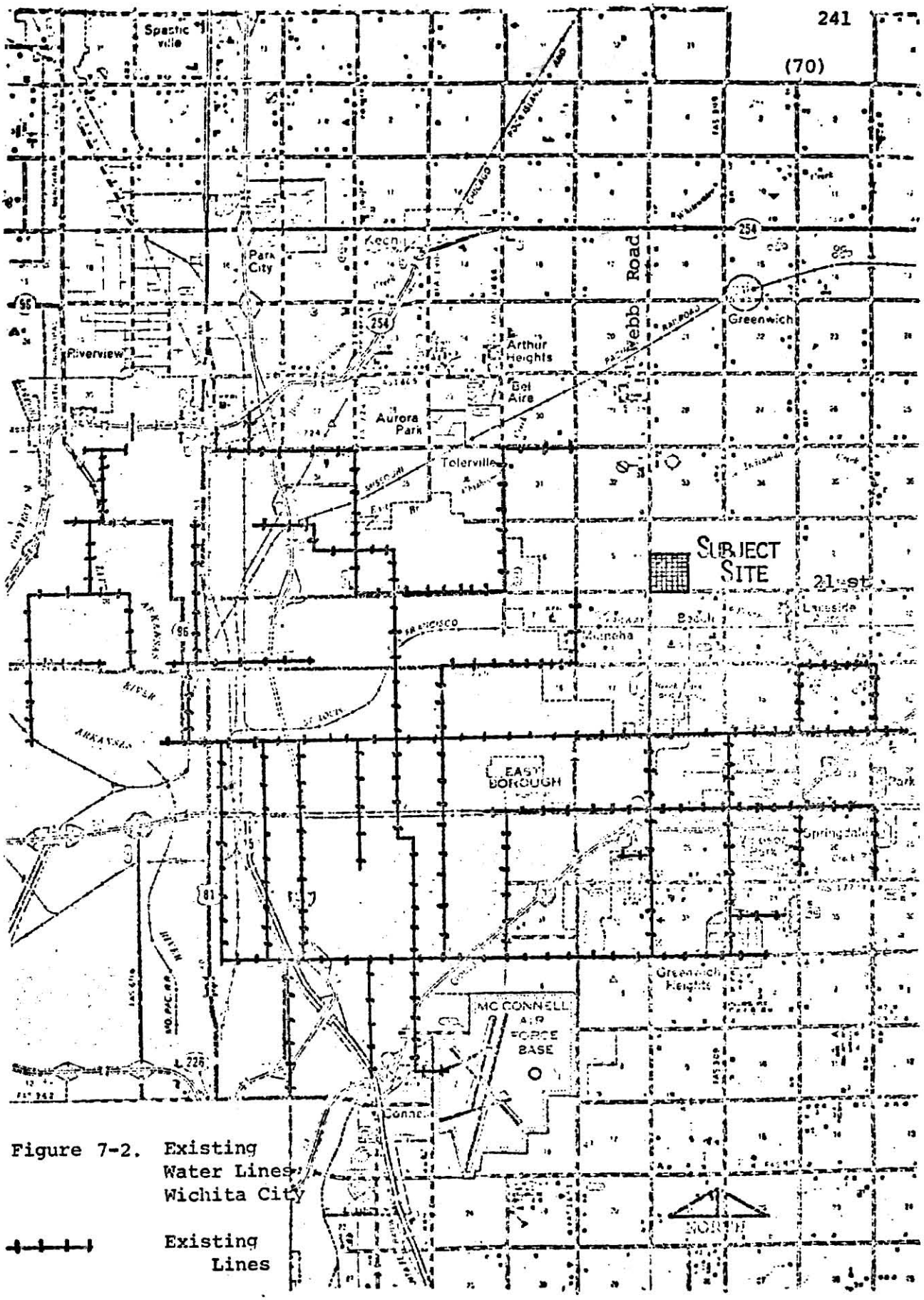

Figure 7-2. Existing Water Lines Wichita City

Existing Lines

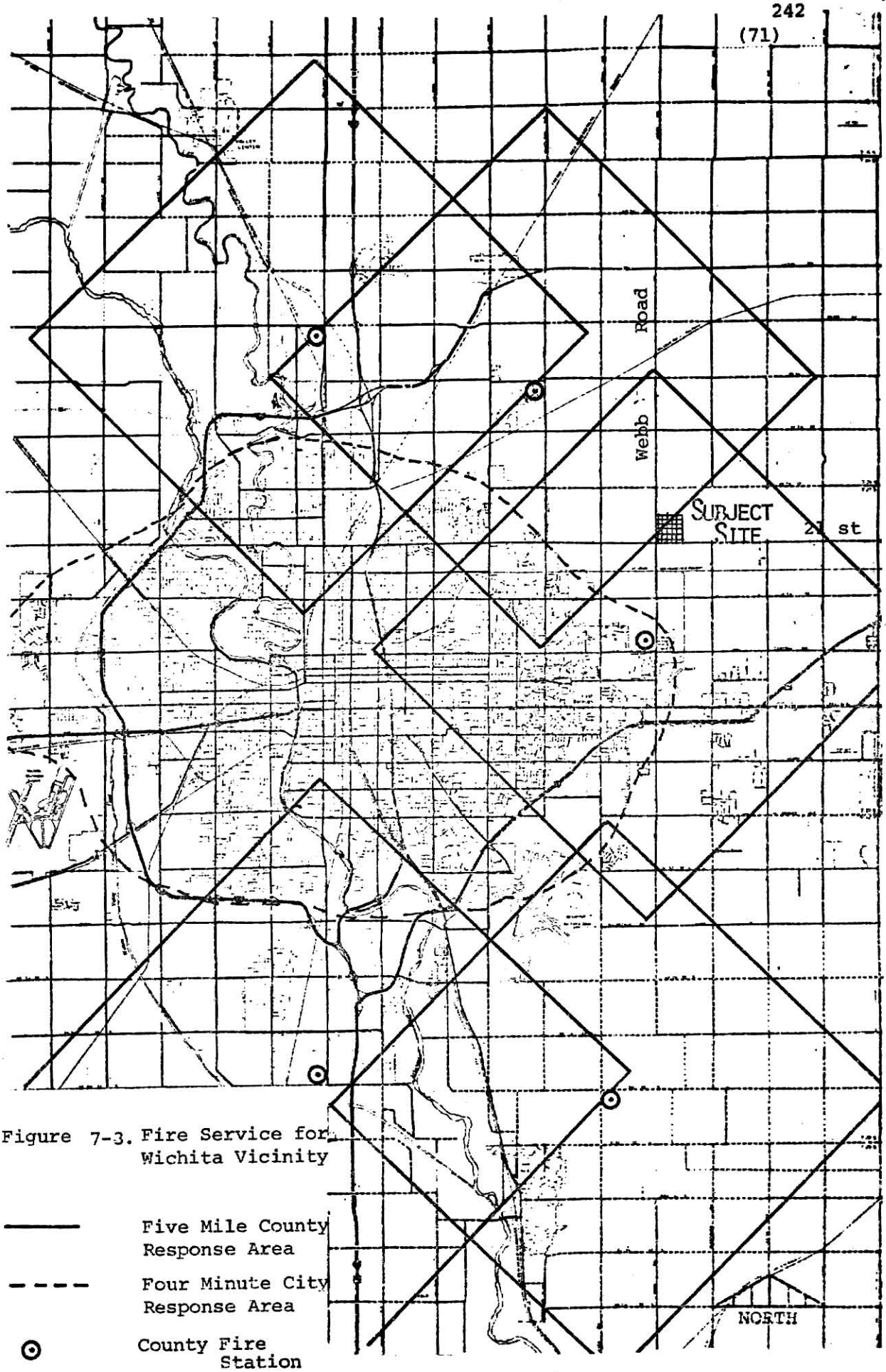

Figure 7-3. Fire Service for Wichita Vicinity

——— Five Mile County Response Area

– – – – Four Minute City Response Area

⊙ County Fire Station

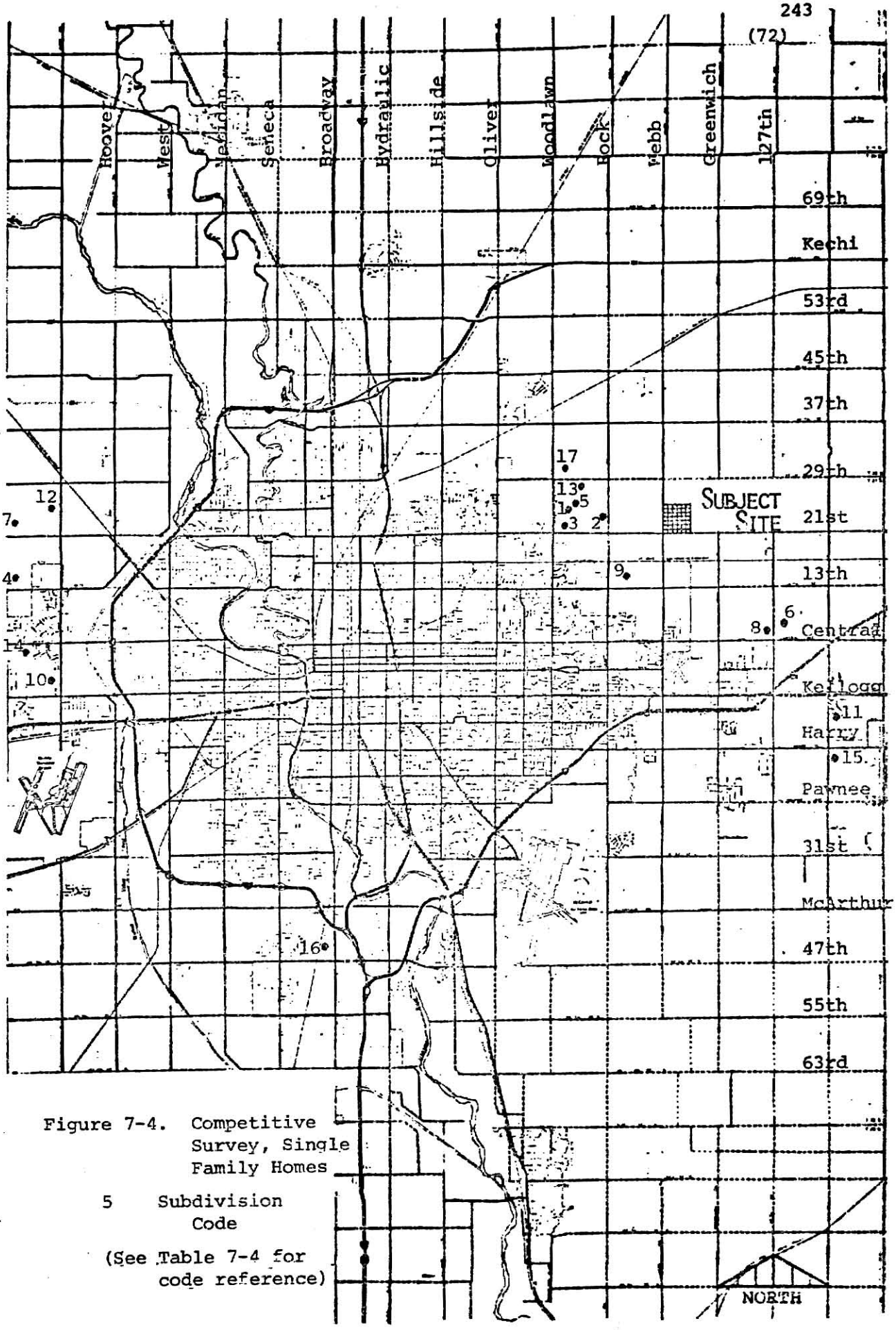

Figure 7-4. Competitive Survey, Single Family Homes

5 Subdivision Code

(See Table 7-4 for code reference)

Table 7-4

Competitive Survey, Single Family Housing

Project	Plan	Type of Unit	Unit Value			Sales Absorption				Features	
			Size	Price	$/Ft^2	Planned	Built	Sold	Absorption*	Unit	Project
1. Cottonwood Village Open 11/78	A	2bdr/1ba	1500	$55650	$37.10	60	40	38	2.3	Crpt, AC,DW	None
	B	3bdr/2ba	1750	66850	38.20	45	30	28	1.6		
						105	70	66	3.9		
2. Sycamore Village Open 12/78	A	2bdr/1ba	1600	62720	39.20	69	40	34	2.1	Crpt, AC,DW	Tn. ct, Rec. rm, Pool
	B	3bdr/1½ba	1900	76190	40.10	70	45	37	2.3		
						169	85	71	4.4		
3. The Meadows Open 1/79	A	2bdr/1ba	1850	76220	41.20	30	18	14	0.9	Crpt, AC, DW	Tn. ct, Pool
	B	3bdr/1½ba	2100	89670	42.70	22	14	12	0.8		
						52	32	26	1.7		
4. Westlink Village,18 Open 2/79	A	2bdr/1ba	1700	64260	37.80	153	100	85	6.1	Crpt, AC,DW	None
	B	3bdr/1½ba	1850	70855	38.80	110	60	40	2.9		
	C	3bdr/2ba	2050	80770	39.40	120	60	35	2.5		
						383	220	160	11.5		
5. Sierra Woods Open 2/79	A	3bdr/1ba	1950	77025	39.50	31	18	15	1.1	Crpt, AC,DW	Tn. ct, Pool
6. The Trees Open 3/79	A	2bdr/1ba	1600	60960	38.10	20	15	14	1.1	Crpt, AC.DW	Tn. ct, Pool
	B	3bdr/1½ba	1850	72520	39.20	11	8	6	0.5		
						31	23	20	1.6		

Table 7-4, con't.

Competitive Survey, Single Family Housing

Project	Plan	Type of Unit	Unit Value			Sales Absorption				Features	
			Size	Price	$/Ft^2	Planned	Built	Sold	Absorption*	Unit	Project
7. Westlink Village 17 Open 4/79	A	2bdr/1ba	1570	$59032	$37.60	90	70	60	5.0	Crpt, AC	None
	B	3bdr/1½ba	1750	66675	38.10	104	80	68	5.7		
	C	4bdr/3ba	1975	78012	39.50	75	35	27	2.3		
						269	185	155	13.0		
8. Crestview Country Club Est. Open 4/79	A	2bdr/1ba	1800	71640	39.80	110	60	45	3.8	Crpt, AC,DW, Sauna	Golf,Tn.ct, Rec. rm, pool
	B	3bdr/2ba	2050	83025	40.50	140	80	50	4.2		
	C	4bdr/3ba	2150	90515	42.10	80	40	24	2.0		
						330	180	119	10.0		
9. Country Place Estates Open 6/79	A	2bdr/1ba	1875	77812	41.50	40	34	21	2.1	Crpt, AC,DW	Pool,Tn. ct, Rec. Rm.
	B	3bdr/2ba	2000	85600	42.80	23	18	13	1.3		
						63	52	34	3.4		
10. The Park Open 6/79	A	2bdr/1ba	1600	55200	34.50	25	15	12	1.1	Crpt, AC,DW	Hiking, Wooded Areas
	B	3bdr/1½ba	1650	57255	34.70	40	25	21	1.9		
	C	3bdr/2ba	1700	59415	34.95	20	15	10	1.0		
						85	55	43	4.0		
11. Arbor Lakes Open 7/79	A	2bdr/1ba	1900	73150	38.50	55	45	30	3.0	Crpt, AC,DW	Hiking, Wooded Areas, Pool
	B	3bdr/2ba	2150	84710	39.40	70	50	40	4.0		
						125	95	70	7.0		
12. Prairie Park Open 7/79	A	2bdr/1ba	1750	65625	37.50	193	160	110	12.2	Crpt, AC,DW	Tn. ct.

Table 7-4, con't.

Competitive Survey, Single Family Housing

Project	Plan	Type of Unit	Unit Value			Sales Absorption				Features	
			Size	Price	$/Ft^2	Planned	Built	Sold	Absorption*	Unit	Project
13. Cottonwood Village	A	2bdr/1ba	1700	$65620	$38.60	25	10	7	0.8	Crpt,	None
Open 8/79	B	3bdr/2ba	1800	69300	38.50	15	5	2	0.3	AC	
	C	4bdr/3ba	1950	75758	38.85	10	7	4	0.5		
						50	22	15	1.6		
14. Whispering Pines	A	3bdr/2ba	1950	76830	39.40	89	30	15	1.9	Crpt,	Tn. ct.
Open 8/79										DW,AC	
15. Timber Lakes Estates	A	3bdr/2ba	1800	74160	41.20	47	25	12	1.7	Crpt,	Tn. ct,
Open 9/79	B	4bdr/3ba	2200	93060	42.30	30	15	8	1.1	Sauna,	Rec. rm,
						77	40	20	2.8	AC,DW	Pool
16. Robbins Farm	A	2bdr/1ba	1200	35700	29.75	160	150	145	18.1	Crpt,	None
Open 9/79	B	3bdr/2ba	1350	44280	32.80	80	75	69	8.6	AC	
						240	225	214	26.7		
17. Fantasea	A	2bdr/1ba	1400	47980	34.20	30	30	28	4.0	Crpt,	Tn. ct,
Open 10/79	B	3bdr/1½ba	1500	52350	34.90	45	32	29	4.1	AC,DW	Pool
	C	3bdr/2ba	1650	59070	35.80	20	10	8	1.1		
						95	72	65	9.2		

Source: Wichita Eagle and Beacon
Author

* Monthly Absorption Rate

Table 7-5

Apartment Survey
Wichita Vicinity

City Vacancies by Quadrants:

Southeast Quadrant -- Vacancy Rate: 1.0%
No. of Vacancies = 36
No. of Units = 3674

Northeast Quadrant -- Vacancy Rate: 2.1%
No. of Vacancies = 41
No. of Units = 1911

Northwest Quadrant -- Vacancy Rate: 1.0%
No. of Vacancies = 28
No. of Units = 2809

Southwest Quadrant -- Vacancy Rate: 1.0%
No. of Vacancies = 11
No. of Units = 1071

Market Absorption:

May, 1976	7472 units	- 588 vacant	= 6884 occupied	
May, 1977	8550 units	- 658 vacant	= 7892 occupied,	1008 absorbed
May, 1978	9201 units	- 293 vacant	= 8908 occupied,	1016 absorbed
May, 1979	9465 units	- 116 vacant	= 9349 occupied,	441 absorbed

Average Annual Absorption:

822 units per year = 68 units per month

Source: Fidelity Investment Company, Wichita Garden Apartment Survey, May 9, 1979

Figure 7-5 and Table 7-6 indicate competitive survey data for rental housing in the Wichita area.[8] As shown, recent additions to the inventory have been absorbed at extremely fast rates indicative of the strong demand in the rental market.

Chapter 8

Effective Market Demand

Evaluation of the future housing market demand for an area requires examination of the characteristics of the existing housing supply, the vacancy rates, the rate of new construction, competitive development, and prospective increase in households, as well as anticipated trends in the social and economic composition of the market. The review of these items will provide a statistical base for analysis and interpretation.

Summary of Pertinent Conditions.

1) Population. The Wichita SMSA has experienced slow population growth between 1970 and 1979 with an increase of about 7000 people to the primary market area. This growth is expected to maintain a slow pattern with the projected 1983 population to be 422682.

2) Households. This population growth will result in a net addition of over 12000 households during the 1980-1983 period. It should be noted that, historically, the average household size of the Wichita SMSA is shrinking. In 1960, the area had an average household size of 3.2. By 1979, the

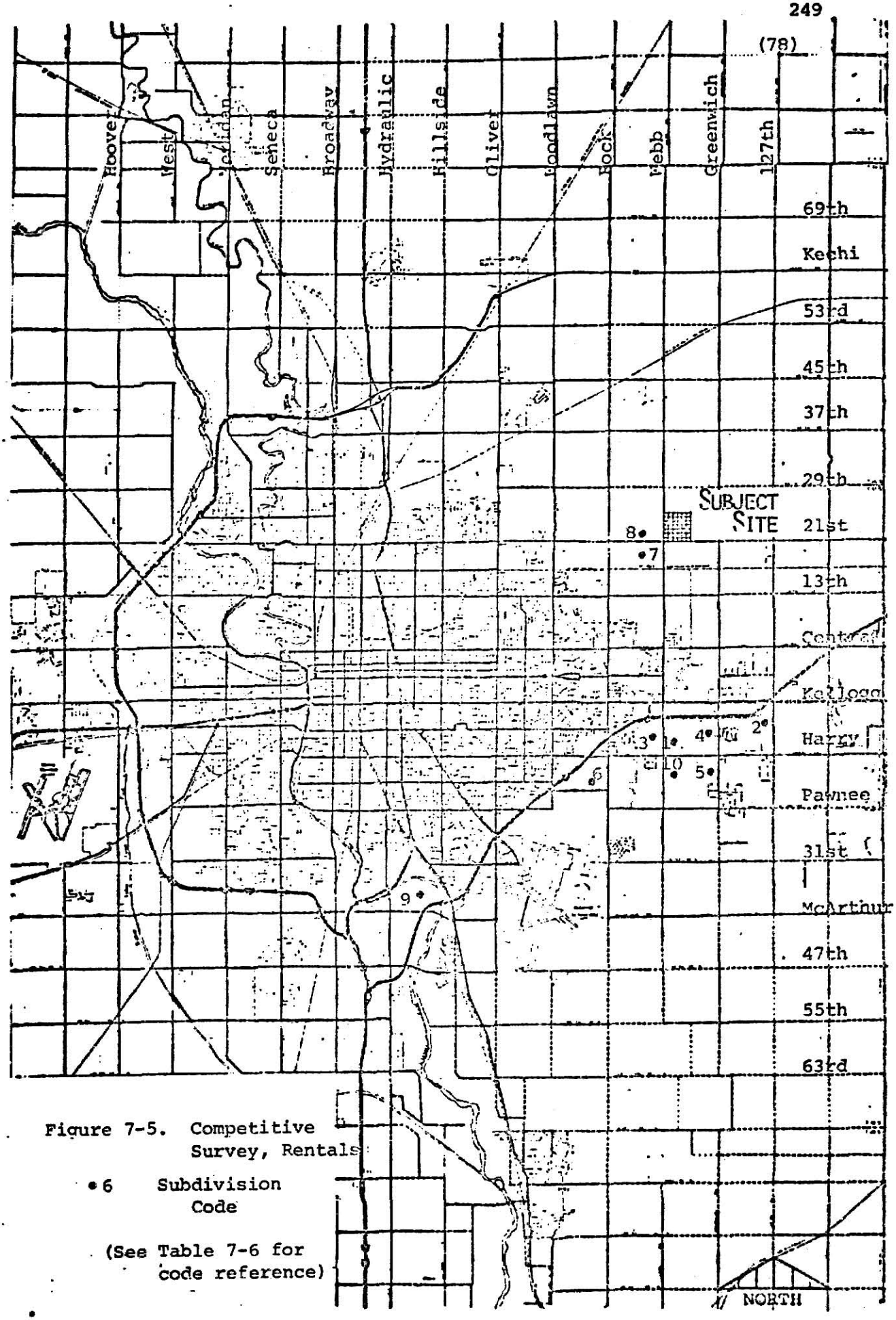

Figure 7-5. Competitive Survey, Rentals

• 6 Subdivision Code

(See Table 7-6 for code reference)

Table 7-6

Competitive Survey, Rental Units
Wichita Vicinity

Project	Plan	Type Unit	Contract Rent	Rent Absorption				Features	
				Planned	Built	Rented	Absorption*	Unit	Project
1. Fox Run	A	1bdr/1ba	$209.50	90	85	84	4.9	Crpt,	Pool, tn.ct,
Open 11/78	B	2bdr/2ba	280.60	82	70	69	4.1	AC	Clubhouse
				172	155	153	9.0		
2. Cedarbrooke	A	1bdr/1ba	190.50	100	100	94	5.5	Crpt,	Pool, tn.ct,
Open 11/78	B	2bdr/2ba	250.20	53	53	52	3.1	AC,Fire,	Garages
				153	153	146	8.6	Dw	
3. High Point East	A	1bdr/1ba	170.00	70	65	60	3.5	Crpt,	Pool, tn.ct.
Open 11/78	B	2bdr/1½ba	210.50	70	60	55	3.2	AC,Fire	Carports
	C	3bdr/2ba	290.10	45	40	40	2.4		
				185	165	155	9.1		
4. Lincoln Meadows	A	1bdr/1ba	189.00	80	80	78	5.2	Crpt,	24 hr. Security
Open 1/79	B	2bdr/1½ba	220.10	60	60	58	3.9	AC,Fire	tn. ct., pool
				140	140	136	9.1		
5. Aragon	A	1bdr/1ba	195.00	93	85	78	3.6	Fire,	Clubhouse,
Open 2/79	B	2bdr/1ba	230.00	60	50	49	3.5	Crpt,AC	Pool, tn.ct.,
				153	135	127	7.1	DW	Garages
6. Cherry Hills	A	1bdr/1ba	205.00	50	50	48	3.7	Crpt,	Pool, tn. ct.,
Open 3/79	B	2bdr/1½ba	240.10	45	45	44	3.4	DW	Garages
				95	95	92	7.1		
7. Sundance	A	1bdr/1ba	199.50	60	50	50	5.0	Crpt,	Pool,
Open 8/79	B	2bdr/1½ba	240.00	25	25	25	2.5	AC,DW	Clubhouse
				85	75	75	7.5		

(79)

Table 7-6, con't.

Competitive Survey, Rental Housing

Project	Plan	Type Unit	Contract Rent	Rent Absorption				Features	
				Planned	Built	Rented	Absorption*	Unit	Project
8. Broadmoor	A	2bdr/1ba	$220.10	105	105	102	17.0	Crpt,	Pool, tn. ct.,
Open 11/79	B	3bdr/2ba	270.20	80	80	78	13.0	DW,AC	Clubhouse
				185	185	180	30.0	Fire	
9. MacArthur Point	A	1bdr/1ba	230.00	82	70	68	13.6	Crpt,	Lake, tn.
Open 12/79	B	2bdr/1½ba	280.00	62	50	48	9.6	AC,Fire	ct., Clubhouse
				144	120	116	23.2		
10. Stoneybrooke	A	1bdr/1ba	195.00	50	50	50	12.5	Crpt,	Garages,
Open 2/80	B	2bdr/1½ba	220.00	74	74	72	18.0	AC, DW	pool, tn.ct.
	C	3bdr/2ba	280.00	24	24	23	5.8	Fire	
				148	148	145	36.3		

Source: Wichita Eagle and Beacon
Estimates by Author

* Monthly Rate of Absorption

average size household in the primary market area had dropped to 3.0 with a projected 1983 size of 2.8. This continuing reduction will intensify the demand for smaller two- and three-bedroom housing units by young families and empty nesters.

3) Employment. Between 1975 and 1979, the civilian work force increased at a faster rate than did the population in the Wichita SMSA. Manufacturing noted large increases (due to the aircraft upswing) as did the trade industry. Efforts to maintain diversity within the economy have established a much stronger employment base. Continued employment opportunities are noted, however, some downturn may be expected in aircraft production due to the cyclical nature of the industry.

4) Income. The primary housing market has exhibited a marked change in the income structure of the population. In 1970, 37.5 percent of all families had cash income of $10000 or more; by 1979, the figure had risen to over 70.6 percent. The rise in income coupled with the smaller household size indicate the possibility of more available funds for housing purchase.

5) Existing Housing Supply. The past tenure trends have been toward ownership with 69 percent of the 1979 households owning their housing unit. The future may see a stabilization or a reduction in this rate due to higher mortgage rates.

For sale housing vacancy rates have been fairly stable for the 1970-1979 period; this rate may be expected to rise to 3-4 percent during the projection period. The rental housing vacancy rate has reduced considerably (12.4% to 1.2%) for the same period. The future outlook is for a continued low rate,

possibly 2 percent of the total. Demand is especially high for units located with good access, site amenities, two-bedrooms and moderate design features.

6) Housing Costs. In 1970, over 87 percent of the market inventory were valued under $25000; by 1979, over 86 percent were priced over $25000. Rental housing also carried considerably higher contract rents. Very few housing units can be built for less than $40000 at the present rates of inflation, and return an adequate profit to the builder. Housing costs may be expected to stabilize during the early 1980s due to lower demand for housing materials, however, the costs will surely, increase by the mid 1980s.

7) Financing. One of the greatest problems is the availability and cost of mortgage money. This factor will surely cause a decline in the ownership pattern with more people searching out rental housing or apartments.

8) Site. The subject site enjoys easy access to all parts of the Wichita SMSA area via fairly good highway systems. The planned northeast bypass will provide an additional transportation plus. The immediate development environment is primarily new residential with close proximity to urban features including: shopping centers, employment centers, schools, and recreational features. Figure 8-1 provides a general vicinity map indicating the development pattern to the west and to the south of the subject site. Figure 8-2 illustrates surrounding uses (within one and one-half miles) and the general topographical characteristics of the subject site.[1]

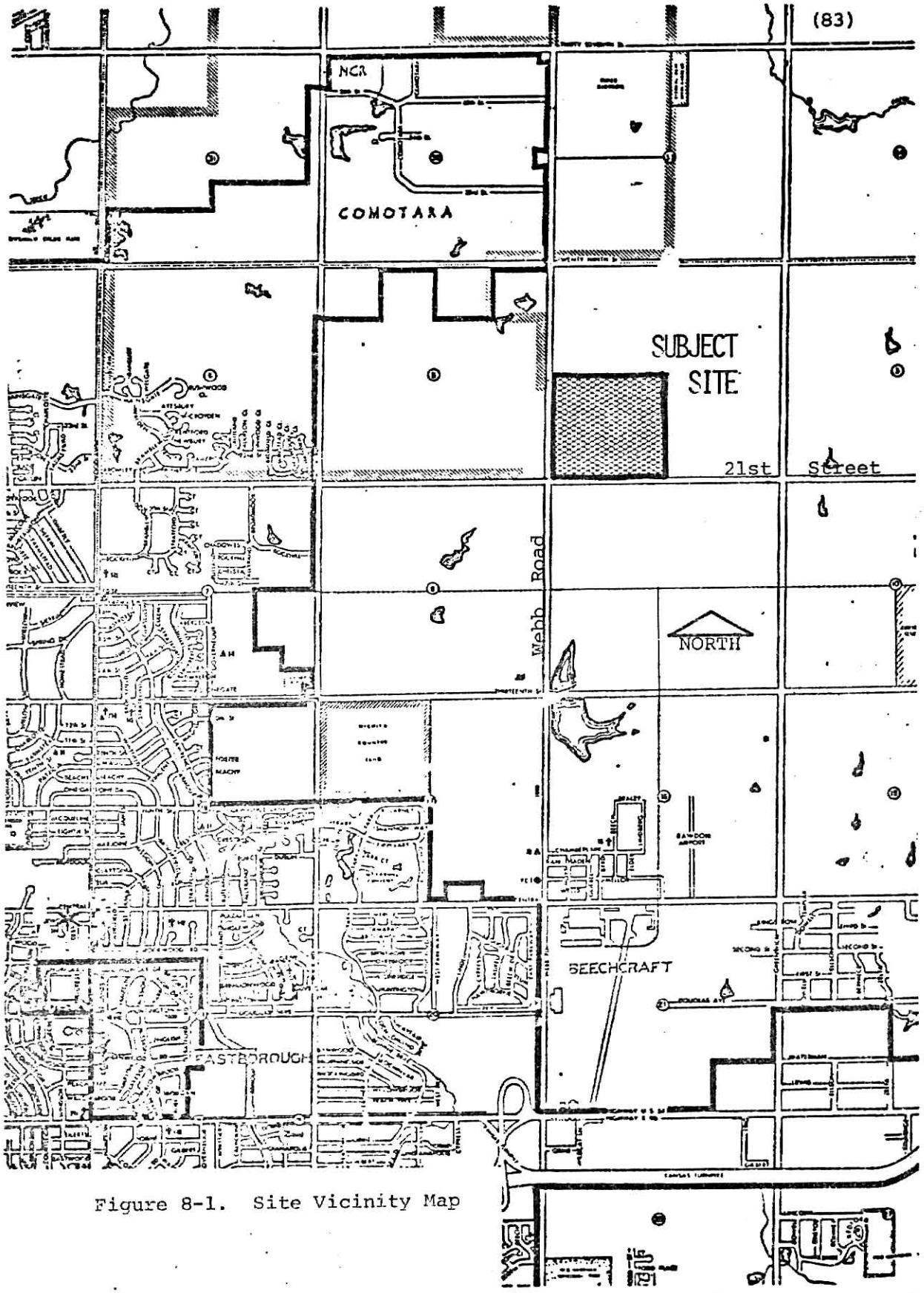

Figure 8-1. Site Vicinity Map

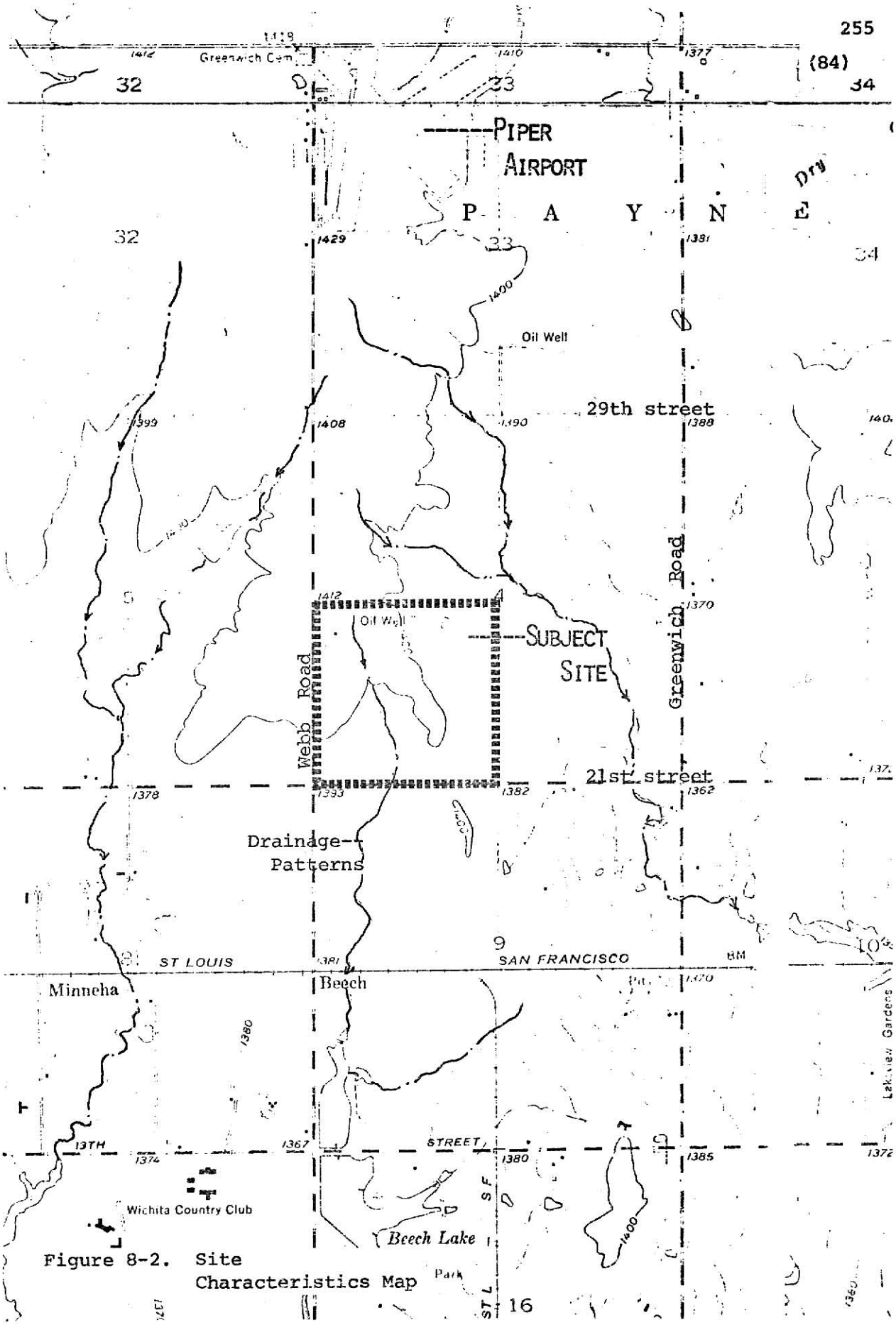

Figure 8-2. Site Characteristics Map

Projected Housing Units. Utilizing established population and household data, and general vacancy rate information, housing unit projections may be developed. Table 8-1 illustrates this process. This Table assumes the average household size will continue to decrease and the overall vacancy rate for all units will gradually decrease due to 1) Continued demand for housing units, and 2) Limited construction activity due to the high cost of construction money.

Changes in Housing Inventory. To determine the amount of new construction that will be required in the future, reductions in the present inventory as a result of demolitions must be forecast along with any conversions which may create new housing units. See Table 8-2. This Table indicates 1) Slowly decreasing demolitions (due to decreasing public works and highway construction), 2) New construction will average out to about 2500 units per year, and 3) Residential conversions will increase.

Type of Unit. The type of unit required is a function of income levels, family size, age, land prices and other factors. Past trends along with current market conditions provide considerable information pertaining to the future unit mix for the total market area. See Table 8-3. It is projected that there will be a slight increase in multifamily units during the 1980-81 period (due to continued tight money conditions). This trend will gradually stabilize at mid-1981 with a slight downward movement in the multifamily numbers as mortgage money becomes more readily available.

Table 8-1

Projected Housing Units*
Wichita SMSA

Component	Actual		Projected			
	1970	1979	1980	1981	1982	1983
Total Population	389352	396400	403132	409737	416260	422682
Average Household Size	3.1	2.8	2.8	2.8	2.75	2.75
Total Households	125600	141600	144000	146300	151400	153700
Vacancy Factor	7.0%	4.0%	4.0%	4.0%	3.0%	2.5%
Total Housing Units	134490	147300	149700	152152	155942	157500

Source: Author

* Some differences may exist between Table 8-1 statistics and earlier trends and projections due to rounding and approximations.

Table 8-2

Changes in Housing Inventory
Wichita SMSA

Component	Actual 1970-1979	Projected 1980	1981	1982	1983
Inventory--Beginning of Period	134490	147300	149800	152500	155350
Less: Demolitions	-5388	-400	-400	-350	-300
Add: New Construction	+17898	+2500	+2500	+2500	+2500
Add: Conversions	+300	+400	+600	+700	+800
Inventory--End of Period	147300	149300	152500	155350	158350
Average Annual New Construction	2000	2500	2500	2500	2500

Source: Author

Table 8-3

Type of Housing Required
Wichita SMSA

Component	Actual 1970-1979	Projected 1980	1981	1982	1983
Percentage of New Construction					
Single Family	34.6%	32.0%	28.0%	29.0%	31.0%
Multifamily	65.4	68.0	72.0	71.0	69.0
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%
New Construction by Type of Unit					
Single Family	6193	800	700	725	775
Multifamily	11705	1700	1800	1775	1725
TOTAL	17898	2500	2500	2500	2500

Source: Author

Competitive Survey. Tables 7-4 and 7-6 provide a survey of competitive projects in the area. Upon reviewing the competition, the following points must be mentioned:

1) Single Family Housing:

   A. Greatest absorption was evident in the $35000 to $45000 housing range indicative of the built-up demand in these lower income groups.

   B. In general terms, site amenities did not play a major part in the marketing of the most successful subdivisions.

   C. Considerable numbers of new houses are vacant due to tight money conditions.

   D. Highest absorption rates are among 2 bedroom, 1 bath homes illustrating the smaller household concept.

2) Multifamily (Rental) Housing:

   A. Vacancy rates are extremely low for all types of apartment housing.

   B. Site amenities are a requirement for marketing.

   C. Smaller rental units appeared to be in greatest demand, especially 1 or 2 bedroom units.

   D. Recent apartment completions have extremely high absorption into the market.

Unit Price/Contract Rent. The approximate price/rent range for incremental dwelling units can be established by analyzing income data for the housing market area. In addition, data collected through the competitive survey can indicate general patterns for pricing of both sale and rental units.

The most difficult to project is single family housing. Table 8-4 provides a breakdown of household income for the 1970 and 1979 periods and projected annual income distributions for the 1980-1983 period. This Table also illustrates the eligible price ranges for home purchase. Based upon the review of market conditions (considerable demand in the $40000 to $55000 range), the target income groups will be the $10000 to $25000 level (eligible home purchase: $25000 to $62500).

Table 8-5 provides projected annual housing demand by price range. Again the $37500 to $62500 category holds the greatest pent-up demand for housing.

The rental market is less dependent upon the income analysis. In most cases, the rent levels, design concepts, and amenity requirements may be established by reviewing competitive survey data.

Market Capture. The final step in analyzing a primary market is to establish the extent of market capture that can be anticipated on the subject site.

Market indicators point to two primary housing units which are in greatest demand within the market area. These include:

1) Multifamily Units - 2 bedroom, 1 bath units with strong site amenities
2) Single Family Units - Homes in the $37500 to $62500 price range emphasizing smaller homes for smaller households.

Table 8-6 indicates the projected demand for single family housing on the subject site. The first year, 1980, would be

Table 8-4

Household Income Breakdown
Wichita SMSA

Income Range	Actual		Projected				Eligible Range	
	1970	1979	1980	1981	1982	1983	Low	High
$ 0-2999	13.9%	7.5%	7.1%	6.5%	6.2%	6.0%	-	$ 7498
3000-4999	11.0	7.2	7.0	6.9	6.7	6.6	$ 7500	12498
5000-7999	20.9	8.6	8.5	8.3	8.2	8.1	12500	19998
8000-9999	16.7	6.1	5.9	5.7	5.5	5.5	20000	24498
10000-15000	24.7	22.3	21.8	21.7	21.7	21.6	25000	37500
15000-25000	9.9	27.1	27.9	22.8	28.0	28.2	37500	62500
25000 plus	2.9	21.2	22.0	23.1	23.7	24.0	$62500 plus	
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		

Source: Table 4-19
Estimates by Author

Table 8-5

Projected Single Family Demand by Price Range
Wichita SMSA

Housing Price Range	Actual 1970 - 1979		Projected 1980		1981		1982		1983	
	%	Units	%	Units	%	Units	%	Units	%	Units
Over $62500	32.0%	2736	42.0%	336	44.0%	308	48.0%	348	51.0%	395
$37500-62500	39.0	3334	39.0	312	39.0	273	39.0	283	39.0%	302
25000-37500	27.0	2308	16.0	128	14.0	98	11.0	80	8.0	62
20000-22498	1.0	86	2.0	16	2.0	14	2.0	14	2.0	16
12500-19998	0.5	43	1.0	8	1.0	7	---	---	---	---
7500-12498	0.5	43	---	---	---	---	---	---	---	---
7500 less	---	---	---	---	---	---	---	---	---	---
TOTAL	100.0%	8550	100.0%	800	100.0%	700	100.0%	725	100.0%	775

Source: Table 4-19
Estimates by Author

Table 8-6

Projected Demand on Subject Site
Single Family Housing

Item	Year				Total
	1980	1981	1982	1983	
Single Family Demand, $37500 to 62500 range Total Market Area	312	273	283	302	1170
Market Capture by Subject Site	---	10-15%	15-20%	15-20%	
Market Demand on Subject Site	---	27-41	42-57	45-60	
Average Monthly Absorption	---	2.3-3.4	3.5-4.8	3.8-5.0	

Source: Author

a planning year with actual sales beginning in 1981. The site, due to its excellent location, could be expected to capture approximately 10-15 percent of the single family demand in 1981, 15-20 percent in 1982 and 15-20 percent in 1983. Average monthly absorption could be expected to range from 2.3 to 3.4 units at the outset to 3.8 to 5.0 units by 1983.

Estimated capture rates are based upon a review of recently produced housing subdivisions. Subdivisions were reviewed for: 1) monthly absorption, 2) design/amenities included, 3) price/rent ranges, and 4) size of units. Those subdivisions with the highest absorption rate captured a larger proportion of the total market. It is assumed the subject site will compete as well as or better than these subdivisions due to the improved data base generated through this study.

Table 8-7 illustrates the potential demand for multifamily housing on the subject site. Due to extremely high demand, apartments introduced during these years should command high absorption ranging from 4.5 to 7.5 units to 11.5 to 14.3 units per month in 1983.

Table 8-8 provides summary data of the annual projected demand for the subject site along with total monthly absorption rates.

Table 8-7

Projected Demand on Subject Site
Multifamily Housing

Item	Year				Total
	1980	1981	1982	1983	
Multifamily Demand, Total Market Area	1700	1800	1775	1725	7000
Market Capture by Subject Site	----	3.0-5.0%	6.0-8.0%	8.0-10.0%	
Market Demand on Subject Site	-----	54-90	106-142	138-172	
Average Monthly Absorption	----	4.5-7.5	8.8-11.8	11.5-14.3	

Source: Author

Table 8-8

Projected Demand on Subject Site
Summary Chart

Item	Year				Total
	1980	1981	1982	1983	
Single Family Demand, $37500-62500		30	50	53	133
Monthly Absorp-Absorption	----	2.5	4.2	4.4	
Multifamily Demand		75	130	160	365
Monthly Absorption	----	6.25	10.8	13.3	
Total Units per per Year	----	105	180	213	498
Monthly Absorption-All Units	----	8.75	15.0	17.7	

Source: Author

Chapter 7

Statistical Abstract

The following charts provide detailed population, labor, unemployment, school enrollment charts and other data to supplement previous Tables incorporated within the body of the market study.

Population and Work Force Data

Wichita SMSA
1970-1979

Component	Year									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Population	389350	369629	371689	373403	374359	378795	383312	383800	386092	391900
Civilian Work Force	165000	160750	163800	174250	184500	192750	197550	201300	209700	222300
% of Popu.	42.4	43.5	44.1	46.7	49.3	51.0	51.5	52.4	54.3	56.7
Unemployment.	13350	14650	8400	6250	6850	11050	10650	9500	7000	6100
% of Popu.	8.1	9.1	5.1	3.6	3.7	5.7	5.4	4.7	3.3	1.6
Employment	151650	146100	155400	168000	177650	181700	186900	191800	202700	216200

Source: Kansas Department of Human Resources, Division of Employment (Labor data)
Sedgwick County Assessor's Office, Annual Enumeration (Population data)

Economic Viability

Sedgwick County
1970-1979
(millions of dollars)

Business Group	Year						Total % Change	Annual % Change
	1970	1975	1976	1977	1978	1979		
Automotive	$137.4	$253.6	$298.0	$359.7	$516.4	$502.1	265.4%	29.5%
Apparel	33.4	52.2	58.9	51.7	65.0	76.3	129.1	14.3
Food	136.4	214.2	236.5	259.1	329.0	406.4	197.9	22.0
Furniture	42.9	53.7	65.4	80.3	104.8	115.4	169.0	18.8
General Merchandise	58.6	80.1	85.2	100.9	130.8	197.8	237.5	26.4
Lumber & Building	42.7	100.5	117.2	136.1	162.7	193.0	352.0	39.0
Professional & Personnel Services	21.7	52.5	56.7	75.8	110.3	100.8	364.5	40.5
Public Utility	133.3	133.3	133.3	133.3	133.3	133.3	-----	----
Unclassified Retail	39.9	79.3	88.7	101.7	156.8	212.0	431.3	47.9
Farm & Garden	0.35	0.75	0.74	0.80	1.0	1.3	271.4	30.2
Manufacturing & Trading	45.9	108.8	109.9	128.7	165.1	202.8	341.8	38.0
Miscellaneous	1.8	3.3	3.4	5.4	32.8	28.1	1461.1	162.3
TOTAL	$561.1	$998.8	$1120.7	$1300.3	$1774.9	$2036.2	262.9%	29.2%

Source: Kansas Department of Revenue

(99)

Wichita Public School Enrollment
1970-1979

Class	Year									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Kindergarten	5035	4433	4237	4154	4313	4226	4066	3791	3441	3468
First	4576	4355	4017	3944	3848	4033	3908	3670	3551	3314
Second	4644	4158	4045	3766	3719	3630	3656	3549	3367	3276
Third	4707	4213	3840	3907	3549	3503	3353	3413	3325	3216
Fourth	4604	4262	3879	3682	3642	3325	3217	3060	3198	3191
Fifth	4910	4276	4064	3799	3554	3569	3200	3037	2907	3105
Sixth	4914	4642	4070	3966	3686	3476	3394	3066	3001	2905
Spec. Ed.	1030	932	901	967	1000	1043	1353	1593	1819	1890
Junior High										
Seventh	4970	4862	4531	4102	3998	3769	3476	3270	3018	3006
Eighth	5046	4716	4673	4511	4011	3920	3685	3354	3222	2948
Ninth	5003	4851	4599	4594	4357	3957	3817	3523	3281	3191
Senior High										
Tenth	4915	4942	4820	4683	4560	4326	3866	3727	3532	3301
Eleventh	4750	4543	4487	4495	4124	4187	3935	3553	3492	3236
Twelfth	4169	4114	3875	3861	3611	3499	3504	3408	3170	3146
Adult Spec. Ed.	343	342	405	326	345	319	559	761	955	1065
TOTAL	63811	59686	56585	55030	52601	50948	49347	47236	45793	44886

Source: Unified School District No. 259

(100)

Footnotes

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[9]Ibid, p. 9.

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Chapter 5:

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[3]Sedgwick County Assessor's Office, Annual Enumeration Report, 1970, 1979.

[4]Unified School District No. 259, Enrollment Statistics, 1960, 1970-1979.

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A MARKET ANALYSIS PROCESS FOR LAND DEVELOPMENT

by

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B. S., Kansas State University, 1976

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF LANDSCAPE ARCHITECTURE

Department of Landscape Architecture

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1980

Today's housing developer can rarely afford to make guesses pertaining to housing demand within a market area. The rising cost of land and construction financing money and inflation reduced consumer spending abilities create a very complicated housing market situation.

The market analysis process has been established to aid landscape architects, architects, real estate developers and planners in the evaluation of housing demand and supply determinants so as to provide some knowledge of market forces and, ultimately, a more objective base for the decision-making process. The analysis is concerned with the existing economic health of a specified market area, its future and the potential for new rehabilitated or converted housing units within the area.

The market analysis is composed of five key parts: area economic conditions analysis, demand and supply analyses, current market conditions and the final determination of effective market demand. The area economic conditions analysis provides a review of the area economic factors with an objective observation of the primary employment industries within the market area. This is important as a direct relationship exists between economic activity and the housing market itself.

The demand analysis is concerned primarily with the population and households within the study area. Growth in the area population as a result of improving economic conditions has a considerable impact upon the requirements for housing. Characteristics of the population including household size and makeup,

age and race, all influence the type and quantity of housing.

Supply analysis is concerned with the review of factors such such as residential construction activity, housing inventory, housing demolitions and property conversions. The analysis attempts to determine what commitments there are toward immediate and future development and what the current market situation is. Characteristics of the existing supply must be assessed including tenure, types of structures, rent and price ranges and general conditions of housing.

The study and analysis of current market conditions is a key step in the prognosis of prospective housing demand. Mortgage market conditions are most critical to the home buyer while the home builder is most concerned with construction and land costs (and their availability) and the existing sales and rental markets within the study area. In addition, current and planned subdivision activity which may affect the overall supply is an extremely critical review factor.

The most critical component of the market analysis study is the final step, the determination of effective market demand. Established market data along with projections generated through the supply and demand subsections, provide an estimate of housing need during the future study time period. The market researcher may be required to make adjustments to this total due to prevailing market conditions.

The market analysis process requires the acceptance of judgment in the final decision. Factual data pertaining to the current market must be analyzed on the basis of past trends and

and current economic activity and, with this established base, somewhat educated projections of the future market may be synthesized.