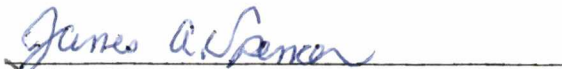


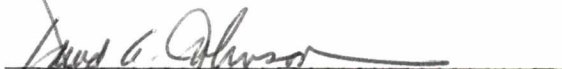
To the Graduate Council:

I am submitting herewith a thesis written by Jamie Diane Davidson entitled "Suitable Housing Locations for the Elderly: An Analysis of Elderly Attitudes and Activities." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science in Planning.

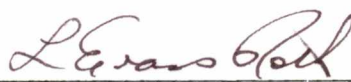

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We have read this thesis and
recommend its acceptance:





Accepted for the Council:


Vice Chancellor
Graduate Studies and Research

SUITABLE HOUSING LOCATIONS FOR THE ELDERLY;
AN ANALYSIS OF ELDERLY ATTITUDES AND ACTIVITIES

A Thesis

Presented for the
Master of Science in Planning
Degree

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Jamie Diane Davidson

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ABSTRACT

The purpose of this study was to evaluate the criteria for the selection of suitable housing locations for housing for the elderly. The study focused on how transportation, fear of crime, neighborhood quality and the availability of resources relate to site selections. Fifty elderly residents of a development located in a metropolitan area and 30 elderly residents of a small town development were randomly selected for study. The study had three research components -- a literature review, a household interview and field analyses.

The literature review revealed that neighborhood environments which offer a blend of support as well as challenge encourage elderly well-being. The study respondents also indicated a preference for protective elements, such as sidewalks and close location to medical and shopping services, as well as stimulation in the sense that they did not prefer totally residential, lesser traveled, low density neighborhoods. In addition, the urban residents had no preference for low noise environments.

Contrary to indications in the literature, crime was not perceived as a major neighborhood problem. In general, 80.0 percent of the respondents were satisfied with the quality of the neighborhood environment.

Favorite off-site activities included shopping, attending church, and walking. Less than one-third of the respondents favored going out to eat, to a senior citizen center, or to the movies. Elderly persons who lived close to a senior citizen center were much more likely to favor it as an activity (50.0 percent) than those who did not (8.0

percent). In general, proximity to a service increased the use of that service.

High preference levels for living in attractive neighborhoods close to shopping opportunities, and which provided pedestrian access are expressed. In addition, almost one-half of the respondents preferred to live in neighborhoods populated by people of their own age group. The respondents revealed a definite lack of preference for living in areas in which a large number of children and teenagers live.

Site selection recommendations concerning age grouping, land use, neighborhood identity, neighborhood image, neighborhood complexity, pedestrian access, the availability of support services, management and site design were presented as a result of the findings.

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CHAPTER ONE

INTRODUCTION TO THE STUDY

The neighborhood environment plays a major role in a large part of the daily lives of many older Americans. James Montgomery reports that persons 65 and older spend 80 to 90 percent of their lives in their immediate environment.¹ Therefore, the quality and the location of housing is especially significant in the lives of older people.

If housing is to be a viable support system for the elderly, then it should be located to maximize opportunities for independence, safety, community interaction, environmental mastery, and environmental stimulation. This study probes these locational aspects of the housing environment by evaluating the perceptions and attitudes of the elderly concerning their neighborhoods.

Independent Living Environments

As a result of longevity, low incomes, and the decline of the extended family, subsidized housing developments have become an important source of housing for many older Americans. The primary resident group of these developments are elderly who do not require specialized on-site nursing, nutrition, or housekeeping supports. Consequently, these developments, which promote the continued autonomy of the elderly individual, are known as independent living developments. Although independent living elderly are, for the most

¹James Montgomery, "The Housing Patterns of Older People", in Richard Kalish, ed. The Later Years, Social Applications of Gerontology. (Monterey, CA: Brooks/Cole Publishing, 1977) p. 253.

part, able to care for themselves, certain economic, physiological, and psychological limitations associated with aging cause the elderly to place great demands on their immediate neighborhood environment. This environment includes the availability of supportive services, community facilities, and retailing services.² In addition, due to the great amount of time spent in the home environment by the elderly, the social and physical aspects of the neighborhoods in which developments are located figure importantly in the perceived well-being of elderly residents.

Elderly residents of independent living developments have rarely had input into neighborhood location decisions, which generally are made by developers, sponsoring agencies, and management agents. Irving Roscow summed up the situation when he wrote, "...problems of old age are of two general kinds: those that older people actually have and those that experts think they have."³ One purpose of this thesis is to analyze reports by the experts and then to evaluate to the literature what a group of elderly residents of independent living developments actually want from their neighborhood environments.

Purpose of the Study

The primary purpose of the study is to evaluate from a locational perspective whether the neighborhood locations of two housing

²In this paper, the variety of supportive services, such as health clinics, community facilities such as senior citizen centers, and retailing services, such as grocery stores, are often referred to as "neighborhood resources".

³Irving Roscow, Social Intergration of the Aged. (New York: The Free Press, 1967) p. 2.

developments are meeting the various physical, social, and resource needs of the elderly residents based on actual needs, perceptions, and activities of the residents. The extent to which the elderly residents can live their lives as they want, go to the places they need, and engage in their preferred activities is evaluated. Each neighborhood location is analyzed according to the residents' perception of existing conditions versus what they consider to be an ideal neighborhood environment.

Background of the Study

The increasing number of elderly persons suggests a need for research on the development of housing for the elderly. Between 1970 and 1980, the total number of Americans over the age of 65 increased by 27 percent to a population of 25.5 million people.⁴ During the same time period, the general U.S. population increased by only 11.4 percent.⁵ In the state of Tennessee alone, there was a 34.8 percent increase in the number of people 65 years and older between 1970 and 1980, although the general population increased by only 16.9 percent.⁶ Demographers expect the increase in the elderly population to

⁴U.S. Bureau of the Census, Census of Population, 1970, General Social and Economic Characteristics, Final Report, DC(1)-C44, Washington, DC: U.S. Govt. Printing Office; "Population by Age: 1980", supplement to American Demographics, July, 1981.

⁵U.S. Bureau of the Census, Census of the Population, 1970; U.S. Bureau of the Census, Census of the Population, 1980, U.S. Summary, PHC80-V-1, April, 1981.

⁶U.S. Bureau of the Census, Census of the Population, 1970, General Social and Economic Characteristics, Final Report, PC (1)-44, Tennessee; Population by Age, 1980, prepared by the Center for Economic Growth, University of Tennessee, 1982.

continue.⁷ Clearly, the sheer number of existing elderly persons as well as the projected increase in their numbers creates a need for research about the housing needs of older Americans.

Furthermore, as people live healthy and productive lives well past retirement age, the housing needs of the elderly gain in importance. For example, at the age of 65, the average male can expect to live another 14 years while the average female can expect to live an additional 18 years.⁸ One effect of this longevity is that among the middle-old and old-old households, women outnumber men. Although in 1900 there were as many males who were 65 as there were females, during the 1930's the ratio began to shift so that as of 1976 there were only 68 males for every 100 females who were 65 years or older.⁹ The Bureau of the Census projects this trend to continue, so that by the year 2010 there will be only 66 males for every 100 females over 65 years of age.

Life expectancy projections, however, have historically been underestimated because medical breakthroughs are difficult to anticipate. Consequently, if the death rate produced by the five leading causes of death in the United States were reduced by only 37 percent, there would be an estimated 5 million more people in the year 2000 who would be 65 years or older, than is now expected. Subsidized housing programs for the elderly, which will be among the last major

⁷Cheryl Russel, "The Elderly: Myths and Facts", American Demographics, March, 1980, p. 30.

⁸U.S. Bureau of the Census, Social and Economic Characteristics of the Older Population: 1978, Current Population Reports, 1978, p. 23.

⁹U.S. Bureau of the Census, Current Population Reports, Special Studies Series, P-23, Number 59, May, 1976, p. 13

social services to feel the full effect of the Baby Boom when the first of the age group becomes 62 in 2009, would be tremendously pressured by such increases.¹⁰

Longevity, however, is often accompanied by low, fixed incomes. The low to moderate income eligibility limit for one and two person households in the Southern Region in 1980, as established by the Department of Housing and Urban Development (HUD), was \$9,218 or less per year.¹¹ One and two person elderly households in Tennessee with incomes qualifying them as low to moderate income households included 23 percent of the total elderly population of Tennessee in 1980.¹² Of these qualifying households, over half had very low incomes of less than \$4,650 per year.

Low income in the advancing years is often associated with an unmet need for adequate and affordable housing. According to the Report on the Need for Housing in Tennessee, 1981, the low and moderate income households in Tennessee made up 32.5 percent of all the inadequately housed low and moderate income households in Tennessee.¹³ In addition, when separating owners from renters and omitting moderate income households, the low income elderly households

¹⁰Elizabeth Mercer and Barbara Torrey. "Demographic Change and Retirement Age Policy" in Malcom A. Morrison, ed. Economics of Aging. (New York: Van Nostrand Reinhold Company, 1982, p. 65.

¹¹Tennessee Housing Development Agency, Report on the Need for Housing in Tennessee, 1980, Volume 1, p. 3.

¹²Rex Campbell, Household Income Data by Household Size, 1977, prepared for the Tennessee Housing Development Agency, updated to 1980 dollars.

¹³Tennessee Housing Development Agency, Report on the Need for Housing in Tennessee, 1981, p. 23-25.

who were renters accounted for a full 37 percent of the total low income households.

In response to this high unmet need for housing for the elderly in Tennessee, several state and federal subsidized programs for the construction of new rental units are sponsored by the Farmers Home Administration (FmHA), the Department of Housing and Urban Development (HUD), and the Tennessee Housing Development Agency (THDA), as well as local Public Housing Authorities (PHA). The developments surveyed in this study received permanent financing through the THDA Rental Loan Program.

Tennessee Housing Development Agency (THDA) was established in 1973 to help low and moderate income households obtain adequate housing at reasonable costs. Enabling legislation allows THDA to issue tax-exempt mortgage bonds as the financing mechanism for new multi-family housing construction. Bond proceeds provide construction and/or permanent financing to developers of low to moderate income housing developments. An important component of the Program is the availability of rental assistance (Section 8) payments assigned to THDA by HUD, which THDA makes available to low to moderate income persons. Section 8 payments amount to the difference between the actual fair market rent of a unit, which includes the cost of utilities, and the amount that the lower income household can afford to pay. Elderly developments, family developments, and congregate developments for mentally retarded adults are financed by THDA through this method. Between 1978 and 1982, almost one-half of the total THDA multi-family development activity occurred in the Elderly Development Program.

Households become eligible for Section 8 rental assistance for elderly units at the age of 62.

As studies in Chapter Two show, single households and transportation disadvantaged households require access to resource rich environments if they are to fulfill their daily needs. According to household data a sample of residents in THDA rental developments for the elderly, 72 percent were single women. Almost 85 percent had incomes of less than \$5,000 per year and over two-thirds were without an automobile.¹⁴ Therefore, the availability of services in the surrounding neighborhood becomes important in meeting the needs of the senior citizen residents.

Results of the Study

The results of the study will add to the knowledge about the selection of neighborhood locations for housing for the elderly and therefore should benefit both public and private sponsors of such housing. To the extent that the results of the study will aid in developing a reasonable set of neighborhood site criteria, three purposes should be served. First, the criteria can function as a tool in selecting housing sites that promote the well-being of elderly residents. In turn, elderly livability enhances the management of a housing development. And, finally, well defined criteria, which are based on objective data promote the selection of housing locations that are marketable.

¹⁴"Profile of Elderly Residents in Section 8 Units," Tennessee Housing Development Agency, unpublished report, 1979.

Overview of the Study

The impact of neighborhood factors on the social, physical, and resource activities of elderly residents is analyzed from the results of a household survey. Anticipated results concerning neighborhood factors such as fear of crime, transportation access, neighborhood quality, and the availability of neighborhood resources are developed as a result of a literature review. Chapter Two presents the results of the literature review and the anticipated findings. Chapter Three describes the choice of the study settings and the method of analysis. Chapter Four presents the data and Chapter Five discusses the significance of the findings. Chapter One has been as introduction to the study of locational considerations for the housing of the independent elderly.

CHAPTER TWO

THE LITERATURE REVIEW

Introduction

The purpose of this chapter is to focus on five areas that greatly influence an elderly person's use and perception of the environment. These areas are health, transportation needs, security from crime, neighborhood resource availability and neighborhood quality. Each section of this chapter presents a brief but thorough background for analyzing the original data presented in Chapter Four and Chapter Five. At the end of this chapter, anticipated results in each of the five areas are presented.

For the most part, the literature review emphasizes periodicals in the field of gerontology. Actual THDA and HUD neighborhood selection criteria are discussed under the neighborhood quality section. Insofar as certain site planning principles are common to all types of multi-family development, planning literature is also briefly consulted in the neighborhood quality section.

Prior to review of the five impact areas, however, it is important to consider various philosophical approaches towards the selection of neighborhoods in which to locate housing for the elderly. This philosophical base is provided by briefly reviewing several theories of aging.

Theories of Aging

The study of aging is the concern of gerontology, which literally means the logic of aging.¹⁵ Aging itself is a gradual biological process or phenomenon common to all people. For statistical purposes in the United States, the age of sixty-five most often designates the earliest age at which people are defined as older. Tavani (1979) makes a differentiation between the young-old (65-70), the middle-old (70-80), and the old-old (80+).¹⁶ The young-old are characterized by their freedom from traditional social responsibilities, good health, and physical activity. The middle-old and old-old are characterized by their increased dependency, poorer health, lowered economic status and frailty. For the most part, independent living elderly housing serves the young-old and the middle-old.

The scientific study of age emerged in the 1930's with an emphasis on the social adjustment of the elderly. By the 1960's social gerontologists had evolved a theory of disengagement to characterize and describe adaptation to aging.¹⁷ Cummings (1961) stated that growing old involved a mutual withdrawal or disengagement between an elderly person and others in the social system. Elderly status, however, is dependent on continued physical performance. According to Busse and Pheiffer (1977), disengagement is inevitable in terms of

¹⁵Robert C. Atchley, The Social Forces in Later Life (Belmont, Calif: Wadsworth Publishing Company, 1977) p. 5.

¹⁶Cleonic Tavani, "Meeting the Needs of the Oldest of the Old", Aging, January, 1979, p. 23.

¹⁷Atchley, p. 33-34.

social interaction while the degree of disengagement is proportional to physiological capacities.

Other gerontologists (Atchley, 1977) (Kutner, 1962) (Carp, 1968) challenged the disengagement theory as too narrow, not accounting for the impact of individual factors, such as health, role, marital status, and personality on the aging process. The activity theory of aging was developed which states that withdrawal is primarily associated with lack of opportunities for continued involvement and that the elderly will continue lifestyles similar to the pattern of their middle years as long as possible, despite their chronological age.¹⁸

The theories have great significance for establishing a philosophy of neighborhood selection for elderly housing developments. Assuming that the disengagement theory is correct, withdrawal is inevitable and the location of developments relative to the community may be insignificant. On the other hand, location in an isolated setting may hasten the onset of disengagement by prematurely weakening the bonds between the society and the individual. Activity theorists might say that a location which promotes accessibility to community resources permits an individual to continue customary activities and routines, thus holding off old age. Isolated sites could have negative social and psychological impacts on the elderly residents.

Health Limitations of the Elderly

Aging is an universal process which must be distinguished from

¹⁸Atchley, pp. 33, 34, 39, 211

disease. Each individual undergoes the aging process differently, with unique adjustments or resilience to physical and biological changes. Studies (Bowell, 1975) (Roscow, 1967) have shown that the physically healthy elderly are more active and have a more positive world view than their frailer counterparts. The physically healthy are able to use their neighborhood more effectively and satisfactorily. Good health has often been identified in gerontological literature as a major variable of life satisfaction (Culter, 1973) (Carp, 1972) (Berghorn, 1978) (Kutner, 1956) (Edwards and Klemmack, 1973). In this section, health limitations, in the form of sensory and physical changes, are explored to determine which factors might influence the dependency of older people on their environments. Physical competency is a prime factor in mastery over the external neighborhood.

Sensory Changes

Sensory changes may be the most crucial in terms of continued independence and autonomy. It is estimated that hearing and eyesight impairments effect 40 percent of the population over the age of sixty-five.¹⁹ Eyesight decreases with age, although the actual loss varies with the individual.²⁰ In general, there is a loss in the visual field, a decrease in the speed of adaptation to darkness, an elevation in the threshold of light perception, altered color perception, and a

¹⁹Department of Housing and Urban Development, Characteristics of the Elderly, (U.S. Govt. Printing Office, 1978) p. 47.

²⁰Mary Ann Matteson, "A Report of Sensory Assessment at a Senior Citizen Center", Journal of Gerontological Nursing. Volume 5, Number 1, February 1979, p. 39-40.

loss of vision in dim light situations. By the age of 85, only one-third of elderly persons' pupils respond to light.²¹

In addition to diminishing eyesight, most people over the age of 60 have lost some of their serviceable hearing. Of the 4.5 million Americans with a hearing loss, 55 percent are over the age of 65.²² Hair cells in the corti progressively degenerate, resulting in deafness for high pitch sounds, such as the ringing of a telephone. Wax accumulation, naturally absorbed in young adults, hardens and causes hearing loss in older adults. In general, the audiotory performance of elderly persons is poorer than than of younger adults.²³

Older people become more cautious and less able to organize and evaluate stimuli than younger adults. They also underestimate the passage of time. For example, they become less capable of judging the speed of a moving object than younger people. In addition, the ability to bring closure to a situation, or to come to a decision concerning the evaluation of a stimulus is less sharp.²⁴

Physical Changes

Several of the physical processes decline with age. On the average, a person of 75 years has only 92 percent of the brain-weight,

²¹Department of Health, Education, and Welfare, Working with Older People: A Guide to Practice, Volume I: The Knowledge Base, (Rockville, Maryland: Health Resource Adm., 1980), p. 53.

²²Matterson, p. 40.

²³Characteristics of the Elderly, p. 46.

²⁴Atchley, p. 46.

84 percent of the basal metabolism and 70 percent of the breathing capacity that he/she had at the age of 30.²⁵ The respiratory system, inspiratory reserve volume and maximum breathing capacity decreases progressively with age. The effects of environmental toxins can be greater due to the general overall decrease in inspiratory and expiratory lung recoil and pulmonary circulation.²⁶

Aging is also associated with poorer muscular dexterity.²⁷ Muscle cells are postmitotic, meaning that when they deteriorate there is no replacement. Muscle cells significantly decrease with age. In addition, joints begin to show deterioration, even as early as the thirties. As cartilage erodes, bone contacts bone, resulting in pain and limitation of mobility. Increased reaction time and balance problems increase mobility problems. Walking is more difficult due to reduced joint flexibility. Advanced joint degeneration (arthritis) affects almost all elderly people with the knees, hips, and the spine most affected.²⁸

Symptoms of cardiovascular disease affect the health of almost 30 percent of all elderly over the age of 65.²⁹ Heart related problems

²⁵Elizabeth Huttman, Housing and Social Services for the Elderly New York: Prager Publishers, 1977) p. 9.

²⁶Ann Tichy, "Physiological Parameters of Aging", in Journal of Gerontological Nursing, Volume 5, Number 1, Feb. 1979, p. 42.

²⁷Powell M. Lawton, Planning and Managing Housing for the Elderly. (New York: John Wiley and Sons, 1975), p. 9.

²⁸Department of Housing and Urban Development; Characteristics of the Elderly (U.S. Printing Office, 1980), p. 70.

²⁹Ibid, p. 47.

such as arteriosclerotic heart disease, cerebral hemorrhage, and hypertensive heart disease are the most frequent cause of death among older people.³⁰

Another major condition associated with aging is slowed reaction time due to changes in the central nervous system. Tests of reaction time show progressively slower response with the complexity of the task.³¹ Anxiety often accompanies the slowing of response and further reduces reaction.

In spite of limiting sensory, physical, and biological changes, older persons are less often affected by acute illness than younger people.³² However, when illness does occur, it results in more days of restricted activity.³³ Estes reports that respiratory ailments account for the majority of restricted activities followed by injuries.³⁴ A Canadian study of elderly persons living in congregate housing and independent living apartments revealed that one-third of the residents had physical limitations that caused them difficulty in mobility.³⁵

³⁰Harvey E. Estes, "Health Experience In the Elderly", Journal Gerontological Nursing, Volume 4, Number 5, December 1978. p. 102.

³¹Evelyn C. Grorella, "The Relationship Between Slowness of Response, State Anxiety, Social Isolation, and Self Esteem, and Preferred Personal Space in the Elderly", in Journal of Gerontological Nursing, Volume 4, Number 1, Jan. 1978, p. 40.

³²Estes, p. 99.

³³National Center for Health Statistics, Series No. 10 "Limitation of Activity due to Chronic Conditions, United States 1974, reprinted in Occasional Papers in Housing and Community Affairs, Volume 1, December, 1978, p. 25

³⁴Estes, p. 102

³⁵Huttman, p. 10.

Above all, the major event that most frequently leads to decline or hospitalization in elderly persons is a fall. A 1977 study by Exton Smith showed tripping to be the cause of falls 37 percent of the time for women age 65 to 74.³⁶ A three year study of falls by 42 elderly individuals aged 70 to 80, residing in a nursing home, showed a total of 440 falls, averaging 11.6 falls per month. What is significant is that 26 percent of the falls happened to well-oriented residents.³⁷ The following factors contribute most to making elderly persons accident prone: vertigo, attacks, muscle weakness, interference with the sense of balance, poor eyesight, unsteady gait due to pain, fatigue, arthritic conditions, and mental depression.

Self Assessment of Health Among the Elderly

The household questionnaire administered to the elderly living independently in THDA financed housing asked for subjective assessments of health status. Therefore, it was important to determine how accurately the elderly could assess their own health.

Several studies have found that most elderly subjects correctly assess their health (Maddox, 1972) (Tissue, 1972). In a study by Maddox, 65 percent of the time elderly self-health assessment and medical assessment were congruous. A correlation was found between medical good health, people over 70 years who had maintained a high level of activity, and a positive self-health assessment. Subjects who

³⁶Characteristics of the Elderly, HUD, p. 70

³⁷Ruth Feist, "A Survey of Accidental Falls in a Small Home for the Aged". Journal of Gerontological Nursing, Vol. 4, No. 5, December 1978, p. 15.

were preoccupied with health or who were poorly adjusted to their environment were found to be more likely than others to assess their health as poor.³⁸ Both Maddox (1972) and Tissue (1972) agreed that self-related health by the elderly is a good indicator of clinical health. Blazer and Houpt (1979) found the most common misconception during self-assessment to be the perception of health as poor when it really is good. Depression, poor adjustment to the environment, and low activity levels account for misconceptions of health.

Relationship of Health to Neighborhood Selection

In summary, elderly persons are subject to diminished sight and hearing senses, poorer muscular dexterity, slower speed of response, respiratory and cardiovascular conditions, and accidental falls. In the context of site planning needs, the sensory and mobility changes significantly reduce a person's ability to interact with the external environment. Inflexible joints may prohibit the climbing of stairs or negotiating of steep grades. Diminished eyesight may cause tripping, especially where physical barriers are present. Lack of balance may cause falls where sidewalks are in poor repair or non-existent. Respiratory conditions can be aggravated by exposure to environmental pollutants. Although elderly individuals are different and many may not experience several health problems, the gradual effects of age are inevitable. Sites and neighborhoods which reduce the likelihood of environmental danger, stress, and complexity facilitate resident well-being.

³⁸G. L. Maddox, "Some Correlations of Differences in Self-Assessment of Health Status Among the Elderly", Journal of Gerontology Vol. 17, No. 1, January 1972, p. 180.

The elderly are competent in making self-assessments of their clinical health status. This is significant because the eighty elderly persons living in THDA developments were responsible for rating their own limitations.

Transportation Needs of the Elderly

Recent research shows elderly social interaction and psychological well-being to be related to the availability of transportation. Cutler (1972) (1974) has found higher life satisfaction and greater involvement in voluntary associations to be associated with the availability of personal transportation. However, inadequate transportation is a problem for many older people. Lack of appropriate transportation has the potential of limiting the life space of an elderly person and reducing autonomy.

A 1975 study of the transportation needs of Tennesseans over 60 years of age revealed that approximately 30 percent did not make all the transportation trips they desired.³⁹ Major reasons for unmet trips include the unavailability of transportation, the prohibitive cost of transportation, and personal physical limitations. The remainder of this section addresses various modes of transportation available to the elderly.

Private Automobile

The ownership of a car and the capability to operate the car provides an elderly person with the greatest degree of transportation

³⁹Tennessee Bureau of Transportation, Statewide Study of Transportation for Tennessee's Elderly, 1975 p. 52.

independence. In a study by Cutler (1978) of life satisfaction, two-thirds of the elderly with cars had stable or increasing life satisfaction scores. Self-transportation had the effect of expanding the life space of the elderly in several studies (Berghorn, 1978) (Maddox, 1963).

However, automobile ownership has drawbacks for the elderly. Elderly on low incomes may have difficulty in buying, insuring, and maintaining a car. In 1970, only 45 percent of American households over the age of 65 and making less than \$5,000 owned a car. In comparison, 95 percent of all older households making more than \$15,000 per year owned a car.⁴⁰ Other limitations to mobility include the complexity of the driving environment, such as confusing traffic patterns and signals, and high speed traffic. In addition, sensory and motor changes limit vehicular mobility. A consequent loss of confidence further impacts the elderly person's ability to drive. As a result, according to Carp (1971) (1978), many older drivers restrict driving to familiar routes or abandon driving altogether.

Berghorn's study of urban elderly in Kansas City revealed that 47 percent in the survey owned an automotile and therefore had a high degree of self-transportation.⁴¹ However, car ownership was a source of expense and stress while also a symbol of continued self-reliance.

Survey data on a sample of residents living in THDA housing for the elderly reveals that 69 percent do not own automobiles. Most of

⁴⁰Frances Carp, "On Becoming an Ex-Driver", The Gerontologist, No. 11, 1971, p. 101.

⁴¹Forrest Berghorn, The Urban Elderly: A Study of Life Satisfaction (New York: Universal Books, 1978) p. 133.

these residents are the middle-old and are single women with low incomes.⁴² Becoming an ex-driver, according to Carp (1971) is often an unpleasant and ego-threatening experience for the elderly as it restricts access to the community. Therefore, carless elderly must seek some other means of regular and reliable transportation, such as walking, taking the bus, or relying on others for their transportation.

Mass Transit

Although public transportation provides an alternative for many urban elderly who lack private automobiles, it often does not exist for the aged living in smaller cities and rural areas. For instance, only seven of Tennessee's largest cities have a public transit system.

Even where public transportation is available, urban areas, and to a limited degree in some small towns, certain limitations restrict use by the elderly. In Cutler's study (1978) of transportation and elderly life satisfaction, respondents found mass transit to be expensive, inconveniently routed, and poorly designed. Barriers which discourage ridership include physical barriers causing difficulty in boarding and exiting, financial barriers prohibiting regular use, and psychological barriers.⁴³

The elderly often do not use available public transportation systems. A study of the frequency of public transit use by the elderly in Philadelphia assisted housing revealed that most people do not use

⁴²Section 8 Profile of Persons Over 62 Years of Age", Technical Services Division, Tennessee Housing Development Agency, July 1980.

⁴³Tennessee Department of Transportation, Statewide Study of Transportation for Tennessee's Elderly, 1975 p. 51.

the bus sytem.⁴⁴ The Berghorn study confirmed low use of public transportation. Only 12 percent of the Kansas study group rode the bus and these riders had negative comments regarding the frequency of service, location of the fixed-routes, and the physical difficulty in transferring buses.⁴⁵

Despite infrequent use by the elderly, Lawton suggests that if public transportation is available in a community, it should be one of the most crucial locational criteria in the development of new multi-family housing for the elderly. In the event that public transportation is available, he suggests that developments be located within two to four blocks from a bus stop.

Reliance Upon Others

Elderly people without cars in Cutler's study (1978), most often rode with others as their primary means of transportation. The Berghorn study (1978) indicated that 40 percent of the Kansas City elderly sample relied upon other people with cars for their transportation. Likewise, Carp's study (1977) of San Antonio elderly, revealed that one-third of the total trips were in private cars as passengers.

Indications are that the elderly ride with their adult children. The Carp study showed that the destination to which the elderly most often rode as a passenger was to the homes of their adult children, suggesting that the children drove them.

⁴⁴M. Powell Lawton, Planning and Managing for the Elderly. (New York: John Wiley and Sons 1975) p. 88.

⁴⁵Berghorn, 1978 p. 133.

Many elderly people live close enough to their children to rely on them for rides. A study by Shanas (1977) shows that while fewer than 30 percent of elderly persons live with an adult child, at least 60 percent live within a 30 minute driving distance to an adult child. Of this number, over one-half live within 10 minutes distance of a child.⁴⁶ In a national study, almost two-thirds of all the elderly had seen at least one of their adult children within the past twenty-four hour period.⁴⁷ According to Carp, however, outstanding problems associated with relying on others as a principal means of transportation include: the infrequency of opportunity, the sense of dependency, and the inconvenience of tailoring times and destinations to fit other's plans.⁴⁸

Walking

Lawton (1975) suggests that walking is the main form of transportation for the low income and female elderly. Berghorn (1978) found, however, that very few (10 percent) of the Kansas elderly option, the ability to walk and the distance that could be walked were dependent on a combination of factors such as health, the weather, the security of the area, and the inclination of the elderly person. (Carp, 1966) (Berghorn, 1978) (Lawton, 1975).

⁴⁶Ethel Shanas, "Living Arrangements and Housing of Older People", in Busse and Phiffer, p. 111.

⁴⁷Ethel Shanas, P. Townsend and D. Wedderbur, Old People In Three Industrial Societies. (New York: Atherton and Routhledge, Kagan, Paul, 1968) p. 196.

⁴⁸Frances Carp, "The Mobility of Retired People", in Kalish, p. 280.

A survey by Becker (1974) of elderly occupants of subsidized housing revealed that for most, walking more than one block to a bus stop was either unpleasant or difficult. However, a Lawton (1975) study reported that tenants of a Philadelphia housing development were willing to walk 4 to 8 blocks in a safe neighborhood. Kalish (1977) reports that the average daily walk of relatively independent older people is between fifteen and twenty minutes long. Two-thirds of the Kalish study experienced no difficulty in walking one-half mile.

Few criteria governing the ideal distances that housing developments should be placed from facilities have been developed. However, the most widely used "ideal criteria" was developed in 1965 by Philadelphia planner Paul Noll, based on interviews with managers of public housing for the elderly.⁴⁹ The criteria advised placement of housing adjacent to a bus stop, not more than one block from the drug store and grocery store, not more than 1/4 mile (4 blocks) from a bank and not more than 1/2 mile (8 blocks) from a church or a library.

Lawton (1975) also suggests the following criteria in order to facilitate pedestrian activity:

- There should be paved sidewalks leading to critical facilities.
- There should be designated pedestrian crosswalks at street intersections.
- The community should supply benches for rest stops at safe locations.
- The traffic lights should be timed somewhat slower than average, especially at wide intersections.

⁴⁹Lawton, 1975, p. 87.

- The grade of the slope in areas of pedestrian circulation should not be more than 5 percent.⁵⁰

Relationship Between Neighborhood and Transportation

In a neighborhood that is resource poor and where there are no support services within walking distance, access to transportation becomes a critical compensatory factor. Access to a car, a relative's assistance, or mass transit may solve the problem of gaining access to resources, thereby allowing the elderly to remain independent. In situations where walking is the main form of access, the condition of the neighborhood in terms of the adequacy of the sidewalks, crime, the topography, and the general quality becomes important.

Security Needs of the Elderly

Fear of crime can limit an elderly individual's activity in the neighborhood. Toseland and Rausch (1978) found the best predictor of community satisfaction was the perceived safety of the community. Kahana (1977) reported that neighborhood crime problems were the chief concern of the urban elderly. In a 1974 Louis Harris survey of the problems of the elderly, fear of crime was ranked first, above health and finances. As other Louis Harris polls (1964, 1966, 1964, 1970) show, this fear of crime increased as the size of the community increased. Clemente and Kleiman (1976) illustrated that residents of urban areas exhibited greater fear of crime than their rural counterparts.

⁵⁰Lawton in Kahana, The Later Years p. 266.

Miles (1980) evaluated the relationship of fear at night to community size for the elderly in a secondary analysis of a national survey of people 60 years and older. Elderly urban dwellers exhibited the highest percentage of fear, followed by suburban area elderly.⁵¹

Elderly fear of victimization by virtue of their vulnerability is supported by Malinchak and Wright's (1978) review of crime data. They found that the elderly are very susceptible to crimes of fraud, confidence games, and teenage harassment by virtue of their economic and health status. A 1976 Miami Beach study showed crime rates against persons over 60 years to be higher than the general population for robbery, aggravated assault, pickpocketing, and purse snatches.⁵² However, Clemente and Kleiman (1976) and Gubrium (1974) illustrate that older people are no more likely to be victims of crime than younger persons and may be less likely to be crime victims.

Regardless of the actual crimes against them, the elderly as a group tend to have fear of crime due to their increased vulnerability (Clement and Kleiman, 1977). Research by Broungart revealed that female elderly and elderly persons living alone have the greatest fear of crime. According to Lawton (1977) the elderly response to the fear of crime is to withdraw behind locked doors. This kind of adaptive behavior restricts activity in the neighborhood environment.

⁵¹Launie A. Miles Life Satisfaction of the Elderly: Urban-Rural and Racial Variables. Unpublished Masters Thesis, Arkansas State University, 1980. p. 13.

⁵²Alan Malinchak and Douglas Wright "Older Americans and Crime: The Scope of Elderly Victimization", Aging March-April 1978. pp. 13-14.

Crime Generators

Lawton (1975) states that certain aspects of housing locations may increase the opportunities for crime against elderly residents. Such locations include industrial areas, some commercial areas, and urban high schools. Gardiner (1978) presents an excellent critique of how physical environments provide opportunities for predatory crimes, to which elderly are especially vulnerable. According to Gardiner, the following four categories of crime generators create an environment where residents can no longer distinguish between strangers and neighbors:

1. Known crime generators -- places such as night clubs at which crimes are known to frequently occur.
2. Service crime generators -- public or private facilities which regularly attract potential victims as well as potential offenders, such as parks, post offices, commercial locations regional high schools, and bus stations.
3. Movement crime generators -- circulation systems which attract or channel potentially conflicting user traffic such as sidewalks, bus stops and parking lots.
4. Fear of crime generators -- elements which provoke fear of crime include certain alleys, urban streets and sidewalks, and large unpatrolled parking lots and garages.⁵³

Relationship Between Crime and Neighborhood Selection

The predominant user group of subsidized housing for the elderly are single, urban women. This group has been identified as having the greatest fear and vulnerability to predatory crimes against the aged. Berghorn (1978) found a relationship between negative evaluation of the

⁵³Richard Gardiner, Design for Safe Neighborhoods, The Environmental Security Planning and Design Process (Washington, D.C.: U.S. Government Printing Office, 1978) pp. 37-38.

conditon of their neighborhood by the elderly and their fear of crime. The careful evaluation of the image and impact of surrounding land uses, traffic patterns, accessibility by outsiders to the site, the degree of visibility of the development as an opportunity for crime, and the overlap between elderly activity areas and potential offender activity areas should aid in the selection of low-crime opportunity neighborhoods.

Activity and Service Needs of the Elderly

Several studies have shown a positive relationship between social activity and life satisfaction (Berghorn, 1978) (Kutner, 1956) (Culter, 1973) (Maddox, 1973) (Edwards and Klemmack, 1973). Not only is informal social participation central to life satisfaction, but the availability of certain resources in the community may be crucial for life support.

Activities

Kutner (1956) reports that community involvement offers an emotional outlet for elderly people. Continued community contact may be a factor inhibiting the onset of disengagement. The engaged elderly are generally the happiest and most satisfied. In a study of non-institutionalized persons over 65, Culter (1973) found a positive relationship between satisfaction and voluntary association participation. However, when health and financial status were controlled, the correlation decreased. However, Edward and Klemmack found that while formal participation in clubs was not a contributory factor to life satisfaction, informal activity such as shopping and visiting was significant.

Berghorn (1978) found the average urban elderly person to be moderately active in either formal or informal social activities. Palmore (1978) conducted a longitudinal study of elderly men and women between the ages of 70 and 93. The men experienced almost no reduction in activity and the women reported only a slight activity reduction.⁵⁴ Zborowski (1962) reported that aging had an insignificant influence on peoples established recreational patterns and preferences, although some strenuous physical activities were given up. A Louis Harris study (1975) showed, in contrast to the above cited studies, lower attendance by older people at activities such as shopping and visiting local parks. Berghorn (1978) suggests that there is an increase in social trips by the elderly and that at the least, life support activities such as shopping, remain on the same level as during mid-life.⁵⁵

The retired elderly usually have an abundance of free time in which to participate in activities. Youman's study (1963) of rural elderly in Mississippi revealed that 50 percent of the septuagenarians and 80 percent of the octogenarians had unfilled days. He found, however, that the rural elderly were not interested in any outside activities other than going to church. Studies by Taiezt (1956) support this finding. Youmans suggests that in more urbanized areas older people may continue active pasttimes, such as shopping or movie going, because more opportunities exist.

⁵⁴Erdman Palmore, "The Effects of Aging on Activities and Attitudes", In Brown, Mollie ed. Readings in Gerontology. (St. Louis: C. W. Mosley Company, 1978) p. 62.

⁵⁵Berghorn, p. 103.

None of the above cited works controlled for the frequency of resource or activity opportunities in the environments. It may be that studies which reported reduced activity took place in resource poor environments. Based on the majority of the cited studies, this study assumes that if housing developments are located in resource rich settings that a majority of the residents will participate in some activities. In addition, the availability of transportation and attitudes towards crime in the area would likely have an effect on the extent of social participation.

Services

In the area of neighborhood service for elderly occupants of independent housing, there are two primary considerations -- what kind of services the elderly require, and the extent to which elderly people actually utilize existing opportunities.

Due to the physical, biological, and sensory limitations, it is reasonable to expect elderly people to desire locations near medical facilities. In addition, due to declining health and lack of transportation opportunities, one would expect the elderly to prefer locations near their primary shopping needs (groceries and drugs). Several studies support these expectations.

Huttman (1977) reports that after affordable housing, low income elderly have a need for accessibility to services.⁵⁶ Her study of 303 Canadian elderly living in subsidized housing revealed their major

⁵⁶Elizabeth Huttman, Housing and Social Services for the Elderly: Social Policy Trends. (New York: Prager, 1977), p. 32.

factor of concern was location close to a grocery store and medical facilities. Factors that received much lower rating by the elderly as a major concern were the following: accessibility to a place of worship, a library, a park, a senior citizen center, or to relatives and friends.⁵⁷ A four year study of 1200 low income American elderly receiving Housing Assistance Payments revealed that the feature they most preferred was a neighborhood location convenient to shopping. A smaller group mentioned the need for medical facilities and a few cited a desire to be near church facilities.⁵⁸

Lawton (1977) says the following resources are critical for elderly persons: a grocery store, a bank, and mass transit.⁵⁹ Facilities for the elderly for which planner Paul Noll gave ideal accessibility distances, in ranked order of their ideal proximity to the housing development include: a bus stop, a grocery store, a drug store, a bank, a church, a library, and a clinic or hospital.⁶⁰

A 1975 study of transportation for elderly in Tennessee determined that 100 percent of all elderly grocery shopping and health care trips were critical to life support. In addition, about 10 percent of other shopping trips and 40 percent of personal business trips were considered critical needs.⁶¹

⁵⁷Huffman p.34. ⁵⁸Huttman, p. 214

⁵⁹Lawton and Kalish, 1977 p. 266.

⁶⁰Lawton, 1977 p. 96

⁶¹Tennessee Department of Transportation Statewide Study of Transportation for Tennessee's Elderly, 1975 p. 52.

Cottrell (1978) documented the outcome of free public transportation provided to transportation disadvantaged elderly people in a mid-west city of 6,000 people. Over the period of one year, a total of 5,644 trips were requested by elderly participants. In order of frequency, the most demanded trips were to the downtown shopping areas, to programs and excursions, and to shopping areas in the suburbs.⁶²

In addition to stores, churches and medical facilities, there is some evidence that proximity to parks and senior citizen centers may increase the elderly's well-being. For example, Lawton (1975) (1977) calls neighborhood parks important assets providing they have interesting activities for the elderly to watch, places to sit in safe locations, sidewalks, restrooms, and surveillance. Negative park features include the lack of the above cited elements plus the existence of heavy vegetation which could obscure possible assailants.⁶³

Senior citizen centers offer activities geared to the expectations of older adults. In this youth oriented society, they are places where elderly persons can be at ease. They provide opportunities for the elderly, who have more leisure time than any other group except the affluent, to share with others of similar age and expectation. Services offered by centers in Tennessee include legal counseling, income tax planning, nutrition, educational programs,

⁶²Fred Cottrell, "Transportation of Older People in a Rural Community", in Seltzer, ed. Social Problems of Aging, 1978, p. 237.

⁶³Lawton, 1975, p. 96.

preventive health care, crafts, and transportation.⁶⁴ Kent (1978) says that senior citizen centers can be a strong influence on helping older adults maintain active relationships.

Several studies report low elderly participation at senior citizen centers. Atchley (1975) proposes that only 1 to 5 percent of the elderly in a community will utilize an available senior citizen center. Even where intensive efforts were made to involve them in center activities, less than 15 percent of the community elderly participated. Similarly, a Louis Harris poll (1975) reported that in a two week period, only 6 percent of all older Americans attended a senior citizen center. Varady's (1981) study of 862 low income elderly urban residents (aged sixty and over) and their participation in various housing and social programs revealed that only 12 percent used a senior citizen center.⁶⁵ Carp's study (1977) showed that only 9 percent of a city wide sample of San Antonio elderly ever attended a senior center. However, 86 percent of these respondents revealed that they would attend more often if transportation were available.

The Huttman (1977) study reported slightly higher senior citizen center participation rates than the previously cited works but, although half of the Huttman interviewees knew the senior citizen center was available, only one-third of the surveyed participated in

⁶⁴Lynn Lewis, Housing Specialist, Tennessee Commission on Aging 2-3-82.

⁶⁵David P. Varady and Bill Sutton "The Utilization of Housing Cost Assistance and Social Service Program by the Community Resident Elderly", Journal of the American Planning Association Volume 47, Number 4, October 1981, pp. 422, 432.

any activities.⁶⁶

Atchley declared that while the elderly have a substantial amount of free time available, their reduced income, failing health, and physical incapacity may restrict the range of activities. Movies, concerts, and travel are often unaffordable luxuries. In addition, a lack of transportation may restrict the use of free urban facilities such as senior citizen centers, museums or parks. Lawton (1975) observes that few elderly tenants of housing developments actually use available facilities. Except for medical care, a small grocery and perhaps a church most urban elderly will be non-users of community resources. Youmans (1967) documents low social participation in church, and shopping activities among the rural aged.

Relationship Between Activities, Services, and Neighborhood Selection

A review of the literature showed that the neighborhood services most used by the elderly are a grocery store, a drug store, medical facilities, and area churches. In addition, although specialized resources, such as libraries, parks, and senior citizen centers can be valuable locational assets, only a minority of the elderly will utilize them.

In terms of locational considerations, the transportation section of Chapter Two has identified four to eight blocks as the distance most elderly people are able to walk. Therefore, for critically needed resources to be fully accessible to the transportation disadvantaged, a resource should be within walking distance from the development.

⁶⁶Huttman, p. 112.

Quality Of The Neighborhood

Neighborhood aspects to be considered in this section include: elderly satisfaction with neighborhood environments, the impact of neighborhood complexity on the elderly, and an evaluation of factors that comprise a suitable neighborhood for elderly person. First, however, it is important to briefly arrive at an understanding of what is meant by neighborhood.

Neighborhood Defined

The definition of neighborhood is a complex subject area within which there is considerable disagreement. The following summarizes various approaches which have attempted to define neighborhood. According to social area analysts (Bell, 1954) (Timms, 1976), cities can be divided into distinct neighborhood areas by physical boundaries with each area populated by similar ethnic or demographic groups. Physical boundaries include rivers, railroad tracks, major streets and expressways, and changes in land use, such as a change from residential to commercial. Other writers (Gans, 1962) have characterized the neighborhood in terms of a humanistic approach, as an urban village where a communal family life style prevails. Suzanne Keller (1968) and Gerald Suttles, (1972) have characterized neighborhoods by the functional role they perform. The neighborhood then, is a community of interests relating to common institutions such as schools, shopping, and parks, etc. Albrant and Brophy (1975) characterize neighborhoods as possessing a life cycle which is dependent upon the housing sub-markets' competitiveness, relative to the city housing market--for each

stage in the cycle. Physical features and changes in land use tend to delimit the boundaries which separate areas in which sub-market dynamics occur.

For purposes of this study, neighborhoods are considered to be areas defined by physical boundaries which provide a human scale of life, and perform a functional role in the community. In addition the influence of housing market dynamics is recognized. For elderly persons whose mobility has been restricted by lack of transportation, failing health, and low economic status have restricted mobility, the neighborhood plays a major role. In some cases, the world view has shrunk from a city wide perspective to a neighborhood scale. The functional aspects of the neighborhood that provide access to services and facilities become very important as does the overall quality of the environment and satisfaction of the elderly with the setting.

Neighborhood Satisfaction

This section discusses how elderly people perceive their neighborhoods or living environments.⁶⁷ There is a common perception that older people tend to evaluate conditions more favorably than the general population. This idea is supported by several studies such as Carp (1975) and Becker (1974). Lawton, Kleban, and Carlson (1973) conducted studies in which older elderly people living in inadequate environments evaluated their living situations more favorably than did

⁶⁷Living environment includes the general neighborhood surrounding a housing development but not the development itself.

observers or data collectors. Becker (1974) studied housing and neighborhood satisfactions of families and elderly living in the same development. In general the elderly were more satisfied. Lawton's (1978) analysis of unpublished 1974 Annual Housing survey data showed that elderly have a greater tendency to express satisfaction with their housing than the general population. Campbell, Converse and Rodgers (1976) observed that housing and environmental aspirations and expectations decrease with age. One explanation for favorable evaluations in inadequate situations is that the elderly make a positive adaptation to accommodate a bad situation they perceive as unchangeable. Denial of reality is an ego defense in situations where no options exist, according to Carp (1966) (1975). On the other hand, residents of assisted housing may rate their situation more favorably because they are afraid to alienate anyone and risk moving. Personal preferences or satisfactions also tend to reflect the individual's past experience as well as being dependent on the current situation. If the previous environment had been low in quality while the current environment is better, older persons may have an even greater tendency to respond positively to their existing setting.⁶⁸

Negative evaluation of the quality of the neighborhood environment was found to be a variable of elderly dissatisfaction. In Berghorn's study of urban elderly, negative neighborhood quality evaluations correlated with low morale scores as well as low capacity

⁶⁸Sandra C. Howell, "How the Elderly Live: What We Know and What We Need to Know", in Environmental Context of Aging, eds. Thomas Byerts, Sandra Howell and Leon Pastalan (New York: Garland Press, 1979) p. 19.

scores. In Berghorn's study, only 11 percent rated their neighborhood as being poor in quality, with 21 percent having reservations concerning the quality.⁶⁹ Women tended to rate neighborhood condition lower than the men. Due to the women's self-perceived decreased capacity to defend themselves, they had a greater fear of crime in the neighborhood.⁷⁰ Berghorn identified three overall key elements that figure importantly in evaluations of neighborhood quality: safety, neighborhood appearance, and low noise levels.

Cutler's study (1973) of elderly life satisfaction correlates found a strong environmental component represented by the condition of the neighborhood. In conformance with Berghorns' findings, Cutler discovered neighborhood attractiveness and physical security to be the primary factors of neighborhood condition. Becker (1974) reported high satisfaction levels among elderly who lived near public transportation and grocery stores. As the distance to these facilities from the site increased, dissatisfaction levels also increased. Lawton's analysis of 1975 Annual Housing Survey data on fourteen variables of neighborhood quality, as perceived by household head over 60 years of age, revealed independent associations between neighborhood crime, rundown houses, litter, abandoned structures, street noise, and the need for police protection.⁷¹ According to Lawton (1978) the elderly complain less about public transportation and schools and more about inadequate

⁶⁹Berghorn, p. 118.

⁷⁰Ibid, p. 82.

⁷¹Powell M. Lawton, "The Housing Problems of Community Resident Elderly", in Occasional Papers in Housing and Community Affairs, Volume 1, Department of Housing and Urban Development, U.S. Government Printing Office, December 1978, p. 39

shopping and health services than the nonelderly. David Varady (1980) looked at housing and neighborhood satisfaction as a part of a model of elderly moving plans in Cincinnati, Ohio. Factors effecting plans to move included fear of neighborhood crime and racial transition. In a study of non-metropolitan elderly couples and elderly single women, 60 years of age and older, (Montgomery, Stubbs and Day, 1980), while satisfaction with aspects of the physical unit were consistently high, only 46.8 percent of the study perceived their neighborhood location relative to shopping as adequate.

In general, the elderly residents of rural areas and small towns may be more satisfied than their urban counterparts. Lawton's (1978) analysis of 1973 Annual Housing Survey data showed that non-metropolitan area elderly persons perceive their neighborhood more positively than do urban elderly residents. White, relatively well-off elderly, living in small Southern communities were the most positive about their environments.

Neighborhood Complexity

This section discusses the impact that orderly, non-stressful environments have on the elderly compared to the impact that more challenging and complex environments may have on elderly well-being. An elderly person who lacks physical strength, financial resources and social resources is at a significant environmental disadvantage. However, according to Lawton (1975), a non-challenging environment may not automatically be assumed to be the most supportive situation. For instance, providing that basic elements, such as crime-free environment

and transportation are present, then certain moderate challenges may better serve elderly well-being. North and Vlatowsky (1981) interviewed independently living adults aged 65 to 87 years old to assess their level of competence based on their effectiveness in dealing with the problems and opportunities characteristic of external environments, such as engaging in activities or using transportation facilities. Higher levels of competence were associated with operating in more demanding environments.⁷² In their study of relocated nursing home elderly, Borup, Gallego and Hefferman (1980) concluded that the stimulation to explore the new environment made the difference between a high stamina and low stamina group.

However, other studies (Lawton and Kleban, 1971) (Lawton, 1970) indicate a fear of moving to new challenging environments. It is psychologically more difficult for an older (70 and over) person to make a change to a new territory. Lawton (1970) found forced relocation to a new environment to be so stressful that it was associated with higher death rates. The implication of this data is that orderly environments which minimize stress are the most supportive of elderly needs.

Research by Neugarten (1972) revealed that the elderly view the external environment as complex and dangerous. In order to accomodate the demands of complexity, they become passive, non-risk takers.⁷³

⁷²Alvin North and Hanna Vlatowsky "Competence in Independent Older Adults: Assessment and Correlates" "Journal of Gerontology" Vol. 36, No. 5 1981. p. 581.

⁷³Bernice Neugarten "Personality and the Aging Process" The Gerontologist Vol. 12 1972 p. 9-11.

Age Concentrated Neighborhoods

The predominance of one age group in a setting has been called several things, including age segregation, age homogeneity, and age concentration. These terms are used interchangeably in the literature. For the most part, elderly multi-family settings, such as retirement communities or subsidized housing, tend to be homogenous through social allocation and elderly selection. Studies on elderly satisfaction with age concentrated settings, naturally, have focused on these specialized housing situations and few studies have been conducted on elderly social interaction or age preferences across the geographical range of the general neighborhood. It is reasonable, however, to expect most of the preferences shown for living in age concentrated buildings to operate in the broader spatial context of the neighborhood.

The Wood and Bultena (1978) study of life satisfaction and morale of elderly residents in an age segregated retirement community showed significantly higher morale scores when compared with similar respondents in an age-integrated community. Sherman (1974) found greater morale and less conflict in age homogeneous retirement housing than in age heterogeneous housing. Lawton (1970) showed that after living in age segregated subsidized housing for one year, almost no tenants objected to the age concentration and very few preferred to have children or teenagers on the premises.

Stephen Cutler's (1973) study found elderly life satisfaction to be related to the concentration of other elderly persons in the neighborhood. A study by Irving Rostow (1970) of 1,200 older people living in Cleveland, Ohio showed that the greater the density of

elderly in the immediate neighborhood, the greater the number of neighborhood friends. Berghorn (1978) also found a positive result from age concentrated environments. By using the density of the elderly living within census tracts as a measure of age concentration, he revealed an association between the percent of elderly in a neighborhood and high elderly morale.⁷⁴

There are several reasons why the elderly might prefer environments concentrated with people their own age. According to Gubrium (1973) age integrated or heterogeneous settings impose a maximum of social expectations and relationships on the elderly. Age homogeneous settings however, impose few social expectations.⁷⁵ Age heterogeneous environments are more complex and, as pointed out in the previous section, generate feelings of stress, frustration, or inadequacy in elderly people.

In addition, Riley (1971) has shown that elderly people are fairly selective in who they will accept as friends. Therefore, they tend towards relationships with those of the same sex, age, and marital status.⁷⁶

Suitable Environments for Elderly Housing

Many diverse factors may go into comprising a suitable environment in which to locate a housing development for the elderly.

⁷⁴Berghorn, p. 104-106.

⁷⁵John F. Gubrium, Myth of the Golden Years (Springfield, Illinois: Charles C. Thomas, 1973), p. 59.

⁷⁶Matilda Riley, "Social Gerontology and the Age Stratification of Society," The Gerontologist Vol. 11, 1971, p. 80-82.

The previous sections have illustrated the impact of health, transportation, and crime on neighborhood adequacy. This section attempts to identify which factors may be most important in the selection of good neighborhoods.

Havighurst (1969) singled out three important aspects of the neighborhood environment: location with regard to commercial services and recreational opportunities, accessibility of transportation, and the perceived safety from crime. As a result of her research on Canadian, European, and American housing for the elderly, Huttman recommends siting elderly developments in active locations, close to shopping.⁷⁷ Berghorn (1978) found neighborhood safety, appearance, stability, and resources to be the most important elements.⁷⁸ Becker (1974) suggested that access to public transportation and grocery shopping were prime selection factors.⁷⁹

A suitable environment, according to a HUD paper, is one that does not include excessive street or airplane noise, heavy traffic, streets in poor repair, poor lighting, impassable roads, crime, litter, abandoned or deteriorating buildings, commercial or industrial business, and odors. Public transportation, shopping, police and fire protection and health facilities should be available.⁸⁰

⁷⁷Huttman, p. 208.

⁷⁸Berghorn, p. 129.

⁷⁹Becker, p. 60.

⁸⁰Department of Housing and Urban Development, HUD Occasional Papers in Housing and Community Affairs, Volume 3 (Washington, DC: U.S. Government Printing Office, 1980) p. 92.

Green (1975) devoted an entire chapter of his book to site selection criteria for elderly housing. He based his criteria on several "special concerns" which were cited from a 1965 government publication by well known gerontologist Frances Carp.⁸¹ Briefly, the seven concerns include: integration, autonomy, excess leisure time, restricted mobility, limited physical ability, and security needs.

The Green text mentions a concern for sidewalks, compatible adjacent land uses, safety, and physically accessible neighborhood topography. A table of location criteria for site proximity to resources, identical to that produced by the Philadelphia City Planning Commission and cited in Lawton (1975), was given.⁸²

The Michigan State Housing Development Agency published a processing manual (1974) for their construction program for the elderly which presented, among other things, criteria for site selection. The manual breaks specific criteria into categories for three levels of urban development. Under the community level, the following concerns were presented:⁸³

1. Major medical facilities should be within a 20 minute driving distance of the site with ambulance service available.
2. Opportunities for community involvement, such as churches, libraries, museums, park systems and elderly centers, should be available to the residents.

⁸¹Isaac Green, Bernard E. Fedeiva, Charles Johnston, William M. Jackson and Howard L. Deardorff. Housing for the Elderly: The Development and Design Process. (New York: Van Nostrand Reinhold Company, 1975) p. 29.

⁸²Green, p. 40.

⁸³Michigan State Housing Development Agency. MSHDA Housing for The Elderly Process, Lansing, Michigan, (1974) p. 49.

3. Neighborhoods in which many or all of the residents are elderly should be considered.
4. Planning elements which should be considered:
 - a. The site should satisfy local building or zoning codes.
 - b. There should be no transportation improvement scheduled which would negatively impact upon the site.
 - c. The site should not be located along an airport approach.
 - d. The site should not be physically isolated from the community by barriers such as railroads, expressways, thoroughfares, or large expanses of undeveloped land.
 - e. The site should provide access to commercial services but the site should be residential in nature.

The criteria also included concerns for security, crime, and pollution, the availability of public transit, adequate walkway systems, and compatible neighborhood topography (cumulative slopes between the proposed site and services should not exceed an average of 6 percent). Adjacent land use compatibility was required with the following land uses rendering a site unacceptable: heavy strip commercial or industrial uses, a sanitary landfill, noise generating uses, and automotive service facilities.

The Tennessee Housing Development Agency established a set of guidelines in 1977 for use by a development team in judging the acceptability of proposed elderly development sites.⁸⁴ In addition, sites were required to meet the general requirements of HUD's Site and Neighborhood Standards.⁸⁵ The developments selected for study in this thesis were accepted under these sets of criteria. In general, the HUD

⁸⁴Selecting a Housing Site, Tennessee Housing Development Agency, July 1977, p. 2.

⁸⁵Section 8 Regulation 7420.4, Site and Neighborhood Standards 883.209. Department of Housing and Urban Development. April, 1975 p. 18.

standards called for all sites to be accessible to services, free from adverse environmental conditions, free from flooding, accessible to utilities, free from areas impacted or concentrated with minority groups, low income or assisted housing, and located in areas of the community designated for new construction by the local Housing Assistance Plan (HAP) if the community had a HUD approved HAP. In addition, Tennessee Housing Development Agency general standards required proper residential zoning, energy siting, a self-advertising location, adequate police and fire protection, and safe site access.⁸⁶

The THDA criteria expressed special concerns that the site not be isolated from the community, that a full range of services be available, and that sites be located in low crime areas. Therefore, standards called for sidewalks in good condition, bus stops not more than 1/4 mile from sites, sites not separated from the community by barriers such as rail lines, highways, and industrial areas, avoidance of high crime areas, and location within 30 minutes distance to major medical facilities. In general, the criteria covered security, medical, accessibility, and transportation needs. Location near a grocery store and a drug store was mandatory, yet location near medical facilities was listed as only desirable.

Relationship of Neighborhood Quality to Neighborhood Selection

Elderly people spend a great amount of time in the neighborhood setting and tend to be satisfied with quality of their neighborhoods.

⁸⁶Selecting a Housing Site, p. 9.

Areas of neighborhood quality that are of special concern to the elderly, however, include crime, appearance, access to shopping, and access to medical services. In addition, age-homogeneous settings are preferred by many elderly persons.

Although the elderly may not emphasize a more extensive range of concerns, other areas of neighborhood quality should not be sacrificed in the neighborhood selection process. Proper land use, a full range of adequate services, and environmental adequacy are other important factors. However, special attention towards meeting the special, self-expressed needs of the elderly insures a more satisfied resident group according to established criteria.

Research also indicates that a blend of support and challenge best serve the needs of the elderly. Environments that lack elements of challenge may contribute to disengagement while more complex settings may frighten the elderly into more passive states.

Anticipated Study Results

The following observations have been developed as a result of the survey of gerontological literature. Data presented in Chapter Four tests the accuracy of these observations and a discussion of the significance of the findings is presented in Chapter Five.

Profile of the Residents

Environmental well-being is heavily influenced by individual characteristics of the elderly. The age, sex, and most importantly, the health of the elderly impact upon interaction with the neighborhood environment.

1. The majority of the residents will be young-old and the middle-old.
2. The majority of the residents will live alone.
3. The majority of the older residents will be female.
4. The majority of the residents will identify themselves as experiencing only few to moderate health limitations.
5. The older the residents, the more severe will be their health limitations.

Transportation

Environmental well-being is dependent on successful interaction with the physical world. Therefore, the availability of some regular and reliable means of transportation is a key to the maintenance of elderly independence.

1. Few of the elderly will own and drive their own cars.
2. Few of the urban elderly with access to mass transit will actually ride the bus system. However, more urban than small town elderly will identify location near a bus stop as being important to them.
3. Walking will be a primary source of self-transportation. Most respondents will rate themselves as capable of walking no more than one-half mile one way.
4. The most often cited barriers to walking in the neighborhood area will relate to the availability and condition of the sidewalks. In addition, sidewalks will be rated highly as an ideal location factor by most of the respondents.

5. If primary resources are available in the immediate area, walking will be a primary means of getting to them.

6. Reliance on friends and relatives for transportation will be another important source of transportation for elderly residents of both developments.

Crime

Environmental satisfaction is dependent on elderly feelings of safety within the neighborhood environment.

1. The elderly will have a moderately high fear of crime in their neighborhoods. Fear of crime will increase with the size of the community.

Services and Activities

Environmental well-being is subject to access to a variety of community services and medical opportunities.

1. Access to life support services, such as a grocery store and medical services, will be very important to the majority of the elderly.

2. If field observations identify an adequate representation of commercial opportunities in the area, particularly a grocery store, then few elderly will be dissatisfied with the availability of shopping in their neighborhoods.

3. Only a minority of the elderly will identify location near parks, libraries, or senior citizen centers as being important to them. However, elderly who live within walking distance to the above services will have higher activity levels than those who do not. For

instance, while fewer than 10 percent of the Radnor Towers residents are expected to use the area senior citizen center, at least one-third of the Walnut Village residents are expected to frequent the senior citizen center, which is located within forty feet of the development.

4. Favorite activities of the elderly will be relatively inexpensive. Therefore, while going to church, walking and to the library may be popular, going to the movies or out to eat will not. Shopping, an activity that is central to life support, will be considered as one of life's pleasures by most of the elderly.

5. The location of stores or services which are used on a frequent basis will generally be in the immediate neighborhood. The elderly base much of their resource activity on the proximity of the service to them.

Neighborhood Quality

Environmental well-being is closely related to the existing quality of the neighborhood as well as to the perceived quality of the neighborhood.

1. The elderly will cite a need to improve aspects of the neighborhood that relate to concerns for their safety and mobility. In addition, the attractiveness of the community and the availability of services will be important. Overall, the elderly will assess the quality of the existing neighborhood as good.

2. The elderly will perceive the general conditions of the neighborhood realistically although the elderly assessment may be more favorable than the evaluation resulting from field observation.

3. Preference for low noise levels, low traffic volumes, low density totally residential environments indicates a preference for environments which lack stimulation and complexity.

4. Ideal locational concerns most frequently preferred by the elderly are those that support critical needs. Therefore, the availability of medical services, access to shopping opportunities and access to sidewalks for self-transportation will be most important. In addition, attractive neighborhoods will be important.

5. The survey participants will express the greatest preferences for having other elderly people as neighbors, and the least preference for living near families with teenage children.

6. Small town elderly will express the greater overall satisfaction with aspects of their existing environmental than will the urban elderly.

CHAPTER THREE

METHODOLOGY OF THE STUDY

The study has three primary research components -- a literature review, a household interview administered to a random sample of elderly residents in two housing developments, and field analyses of the neighborhoods in which the developments are located.

Literature Review

The review of recent literature on the elderly and their needs concentrates on specific locational and service requirements as they relate to the site selection phase of the development process. Therefore, design, construction, and housing management considerations are not researched. Literature on housing and geriatrics is surveyed in five basic areas. Studies on elderly perception and actual vulnerability to crime, the type of transportation opportunities available to the elderly, off-site resources most needed by the elderly, and elderly satisfaction with neighborhood factors such as age segregated environments, were reviewed. In addition, the health status of elderly was researched to determine any particular physical requirements that relate to specific locational considerations. Attention is also given to theories of aging as they relate to the concept of independent living housing environments. However, very few comprehensive studies on these locational considerations were available for review. Gerontological periodicals provide the majority of the data available on elderly needs. Anticipated results concerning the

locational needs of independent living elderly are formed as a result of the literature review.

Selection of the Study Settings

Loans were closed on ten THDA financed elderly developments between 1978 and 1981.⁸⁷ In order to narrow this group of ten to a more manageable set, the following parameters were imposed:

1. The need to restrict the study to a maximum of two developments due to time and financial constraints.

2. The need for a distribution between a large metropolitan setting and a small city setting since factors, such as perceived crime, service needs, etc., can vary based on the scale of the community.

3. The need to select developments which had been occupied for at least six months preceding the study. This factor assured that the interviewees would be familiar with their environments.

4. The need to select developmenmts which were selected according to the THDA Elderly Site Selection Criteria.

Table 1 lists the ten elderly developments which were originally considered for inclusion in the study. Of the ten developments, only Park Meadows located in Halls, and Walnut Village located in Cookeville provided a small city setting. Park Meadows was eliminated because the site had not been selected by the THDA Site Criteria. Walnut Village met all the prerequisite factors.

⁸⁷Tennessee Housing Development Agency. "Agency Status Report; Rental Loan Program", 1982. Unpublished.

TABLE 1

THDA FINANCED DEVELOPMENTS FOR THE ELDERLY

Name of Development	Location	Total Number of Available Units	Selected by 1977 Site Criteria
Park Meadows	Halls	26	No
Eastwood Manor	Chattanooga	98	Yes
Highland Meadows	Memphis	200	Yes
Wesley Camilla	Memphis	430	Yes
Radnor Towers	Nashville	192	Yes
Harrison Village	Johnson City	60	Yes
Harrison Meadows	Paris	50	Yes
Graceland Gardens	Memphis	192	Yes
Villa Maria	Nashville	214	Yes
Walnut Village	Cookeville	81	Yes

Radnor Towers, located in Nashville, was chosen to represent a development located within a metropolitan setting. It met the four required parameters. In addition, because the development is located in the researcher's area, it was convenient in terms of time and expense. The other Nashville located development, Villa Maria, was selected for the pre-test phase of the study.

Sample Size

In selecting the sample size, there were two primary goals. One was to include a large enough random sample of residents in each development so that valid statistical analysis could be performed. The other goal was to select apartment units that were randomly distributed

throughout the development, in order to guard against bias from sampling only particular locations in each development.

A simple random sample employing a random numbers table was used to select residents to interview each of the two developments. Table 2 provides a summary of the sample size for each development.

TABLE 2
DEVELOPMENTS SELECTED TO RANDOMLY SAMPLE

Development	Total Number of Available Units	Total Number In Sample	Sample Percentage of Total Available Units
Walnut Village	81	30	37.0
Radnor Towers	192	50	26.0
Total	273	80	29.3

Structured Interview

A personal household interview constituted the primary data collection instrument. Indications are that a personal household interview enhances comprehension by the elderly of the survey and, therefore, the response rate. To minimize respondent fatigue, the instrument was designed so that it lasted on the average of thirty to forty minutes. Prior to the administration of the questionnaire, a pre-test was given to a random sample of 20 residents at Villa Maria, a 192 unit THDA elderly housing development located in Nashville. The pre-test was useful in refining the questionnaire and supported the

assumption that elderly residents would be willing and able to respond to the questionnaire.

To further maximize the response rate, as well as to simplify the preliminary explanations necessary at the start of each interview, written advance notice was given to the elderly residents. The research procedure, reasons for the research, and content of the questionnaire were explained by the researcher to each resident manager. Each manager, in turn, by memo alerted the residents approximately one week in advance to expect the researcher. The advance notice procedure helped to minimize any concerns the elderly might have had about visits from strangers. The 98 percent response rate can partially be attributed to the use of advance notice.

The Questionnaire

The interview questionnaire was developed as a result of the literature review. A copy of the questionnaire is located in the Appendix. The five-part questionnaire contains multiple choice questions. The following section discussed the specific areas of questioning.

Part one of the questionnaire elicits information on the sex, household size, age, length of residency and self-determined health status of each resident. This information develops a resident profile and also permits the framing of generalizations that could later be extended to studies of other existing or future elderly developments of similar type and tenure. Information on income was not solicited because it was assumed that since all the residents qualified for

Residents in both developments seem to be satisfied with the number and variety of stores in the area. In all, 78.7 percent perceive no need for additional shopping facilities. Because of the high priority of shopping, as was determined in the previous section as an ideal location factor, satisfaction with the existing opportunities is a significant factor of overall neighborhood satisfaction.

Favorite Elderly Activities

Research shows that the most active elderly persons are often the happiest and healthiest. Survey participants were asked whether shopping, movies, libraries, senior citizen centers, church, and going out to eat were among their favorite off-site activities.

Shopping

Over three-fourths of the study enjoyed shopping. A greater percentage of residents at Radnor Towers go shopping for fun (80.0 percent) than do the residents of Walnut Village (70.0 percent). Table 23 presents shopping activity data.

TABLE 23

SHOPPING AS A FAVORITE ACTIVITY, BY DEVELOPMENT

	<u>Shopping Not A Favorite Activity</u>		<u>Shopping A Favorite Activity</u>	
	No.	%	No.	%
Radnor Towers	10	20.0	40	80.0
Walnut Village	9	30.0	21	70.0
Total	19	23.7	61	76.3

Section 8 assistance, they were in the low to moderate income category.

Part two of the survey concerns satisfaction with the neighborhood. Respondents were asked to characterize the general quality of housing in their neighborhood based on their own perceptions. In addition, residents were given a list of 12 variables and were asked to rate how important or unimportant each variable is to them in terms of the ideal neighborhood. These indicators of the ideal neighborhood are listed below.

A clean, attractive neighborhood

A totally residential neighborhood

A low density residential neighborhood

Close to shopping

Close to sidewalks

Close to a bus stop

Close to a park

Close to a doctor or hospital

Close to relatives or friends

Close to a senior citizen center

Low traffic volumes in the area of the development

Low noise levels in the area of the development

Then, to assess the residents' perception of the adequacy of their existing neighborhood, they were asked, "what type improvements should be made in this neighborhood to make it a better place to live?" concerning the following variables:

Repair sidewalks

Install sidewalks

Repair houses

Clear substandard houses

Clean up yards

Install street lights

Widen streets

Control traffic

Reduce crime

Build more parks

Build more stores

Clean up air or noise pollution

Improve drainage problems

Control inconsistent land uses

Responses to the 14 item Environment/Neighborhood Assessment were compared to the Ideal Neighborhood Assessment to determine resident satisfaction with their existing neighborhood environment.

Next, residents were asked what type of neighbors they would most prefer living in the general neighborhood. They were given a choice of elderly neighbors, families with teenage children, families with small children, or an equal mix of elderly and families.

In part three the elderly were asked to give their perception of the crime rate and the safety of the general neighborhood surrounding their respective development.

Part four contains questions concerning the form of transportation most often used by the residents. Those residents who walked were probed concerning the distances they could walk one-way and about any physical barriers to walking that they had encountered in the neighborhood.

Part five concerns the elderly residents' use of resources in the neighborhood. They were asked if their favorite off-site activities include going walking, shopping, to the movies, to the library, to church socials, or to the senior citizen center. Then, they were asked specifically where they went for groceries, convenience food items, drug prescriptions, medical treatment, and hair cuts. For each of these five resources or facilities, the elderly were also asked how often they went (frequency), how they got there (mode), and why they went to that particular resource (reason).

Data Analysis

The data gathered during structured interviews is organized into five data sets which correspond to the areas surveyed in the literature. For each area, anticipated results are developed which are tested by statistical analysis. Frequency distributions and correlations are the applications which test the hypotheses.

Limitations to the Study

Previous studies on the effects of living environments on the elderly have generally been conducted within relatively new, age-segregated settings where concentrations of study participants can be found. These settings are either fairly affluent retirement communities, or low-cost publically assisted housing. This thesis shares with the above, the study of an age-segregated population in a relatively new setting. Consequently, one would not expect to find the very old living there.

The study group is a special population in the sense that the residents self-selected themselves for the housing and, in addition, were screened by THDA admission policies. Therefore, one could expect to find qualities developed in a greater degree in these persons, such as persistence, a capacity for independent living, and certain assertiveness, than in the general elderly population. These qualities also enhance adaptation to the neighborhood (Carp, 1968). Therefore, the data may not be wholly generalizable to nonself-selected elderly.

In addition, while not a major limitation, it is worth noting the regional nature of the study. While unable to assess the influence this might introduce, it seems likely that any study that is less than national in scope will reflect regional characteristics. The study is also solely concerned with the attitudes of the urban and small town elderly. Therefore, the findings are perhaps most generalizable in the context of southern small town and urban settings.

Summary

The study assesses the perceptions of 80 elderly tenants of subsidized housing regarding the adequacy of their neighborhoods. A set of anticipated results concerning locational needs of the elderly, in the areas of health, fear of crime, transportation, neighborhood quality and neighborhood resource use, were developed as a result of a literature review. Data, collected by means of a household questionnaire, is analyzed to test the anticipated results.

CHAPTER FOUR

DATA FINDINGS

Introduction

Chapter Four contains the results of the field observations and the nousehold interviews. Field observations concerning existing land use, neighborhood conditions, opportunities for self transportation, the availability of commercial and medical resources, and the safety of the area, are presented. Then, survey data organized into areas of a resident profile, transporation, crime, resource use, and neighborhood quality is presented. Comments on the significance of the data findings are presented in Chapter Five.

Field ObservationsWalnut Village

Walnut Village is an 81 unit, low rise development exclusively occupied by elderly persons. It is located in Cookeville, Tennessee , a community with a 1980 population of 20,535 persons.⁸⁸ The development is located on the west side of Walnut Avenue, a major east-west artery through the central business district. Figure 1 shows the location of the development. There are eighteen separate buildings in the development, which is managed by the Cookeville Housing Authority.

⁸⁸U.S. Bureau of the Census. Census of Population, 1980. Washington, DC.: Government Printing Office, 1982.

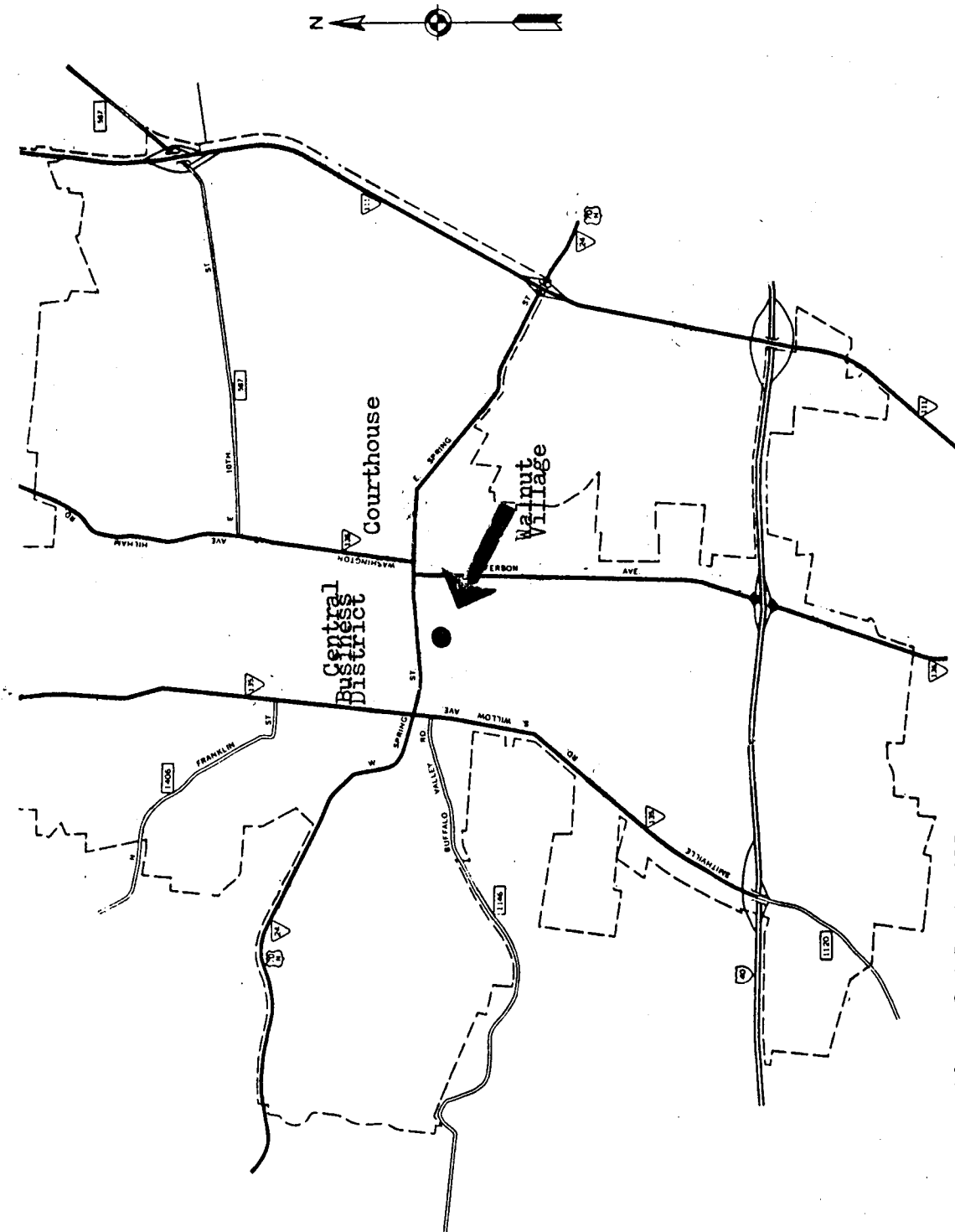


Figure 1. Location of Walnut Village.

Existing Land Use and Conditions

Existing land use in the area is mixed. Figure 2 identifies the various land uses. On the east boundary of the development is Walnut Avenue, a major arterial with an average daily traffic count of 2,790 cars.⁸⁹ Across Walnut Avenue from the development is the Cookeville Senior Citizen Center, which offers a wide variety of services. Three single family residences, in good condition, are also located east of the development. Streetlights, curbs, gutters, and sidewalks are provided along Walnut Avenue.

To the north of the development are several commercial buildings which include a laundramat and a glass supply store. Many of the commercial establishments have auxillary buildings which are primarily used for storage. These buildings present an unattractive view and there is no buffer between the unsightly area and the development.

To the west is located the Cookeville City Cemetery. Walnut Village is buffered from the cemetery by a row of mature hardwood trees. Although these trees do not fully obscure the cemetery, they present a symbolic visual barrier. The cemetery is regularly maintained and offers scenic values and open space. In terms of security however, it is unlit and is used as a "short cut" to a commercial area to the west by neighborhood youth. Therefore, it has the potential of a fear of crime generator.

To the south of Walnut Village is a mature residential neighborhood. Most of the structures are modest, single family

⁸⁹"Annual Cycle Count, Average Daily Traffic Count, Cookeville, Tennessee, 1981," Office of Mapping and Statistics, Tennessee Department of Transportation.

dwellings in good condition. Only a few scattered structures on the far southern end of the neighborhood appear to be in need of minor repairs. For the most part, the neighborhood is supportive of the elderly housing development.

At the extreme southwestern portion of the housing site is a wet weather spring which generates run off through the development. The run-off freezes during winter conditions and is a breeding ground for mosquitoes during the summer.

In general, the residential and service land uses are compatible with the development. Certain aesthetic and safety considerations are associated with the commercial use and the cemetery. Environmental hazards are generated by an on-site drainage problem.

Resources

Commercial, medical, and recreational opportunities are adequately represented in the neighborhood. The main street of the downtown shopping district is only .3 mile to the north of Walnut Village, while a small shopping center is located .3 mile to the west. A grocery store, a drug store, a variety store, and a bank are located in the shopping center, while a wide variety of commercial establishments are in the downtown area. A major grocery store and drug store are located 1 mile to the east.

The city hospital is also located in the downtown area, only .4 mile away. Several physicians have located offices in the general area of the hospital.

Recreational facilities are represented by the Senior Citizen Center and the public library. The Senior Citizen Center is located 40

feet from the development while the library is .4 mile away in the downtown area.

Self-Transportation

Self-transportation is the capacity to travel where one wants when one wants to. Driving one's own car, walking, and riding a bus are options which promote self-transportation.

Although there is no mass transit system in Cookeville, the existence of a sidewalk system through the general area encourages elderly self-transportation. An orderly system of streets facilitates driving a car. Adequate signals are provided for the control of traffic.

Sidewalks in excellent condition extend along both sides of Walnut Avenue and Spring Street. Therefore, walking access is provided to the shopping, medical, and recreational opportunities previously described.

Crime

According to the Cookeville Police Department, the crime rate in the general area of the development is low.⁹⁰ Burglaries were used as an indicator of the crime rate. Of the total city burglaries in Cookeville reported during May, 1981 (24) and during May, 1982 (22), none occurred in the general neighborhood surrounding Walnut Village. Since the opening of Walnut Village in early 1981, seven offences have been reported by residents at the development. These offenses include two burglaries, three larcencies, and two vandalisms.

⁹⁰ Cookeville Police Department, Cheryl Dyston, June 7, 1982.

Summary

Walnut Village is located in an area of mixed land use. In general, the surrounding residential neighborhood is in good condition. Commercial, medical, and recreational opportunities are well represented in the area. Most services are within walking distance to the development. A system of sidewalks in good conditions facilitates pedestrian activity. A relatively low crime rate should further encourage neighborhood activity.

Radnor Towers

Radnor Towers is a 192 unit high rise development, exclusively occupied by elderly persons. It is located in Nashville, Tennessee, a large metropolitan area. The development is located at the northwest corner of Thuss Avenue and McCombs Avenue, approximately 180 feet east of Nolensville Road. Figure 3 locates the site of the development. The development is managed by the Radnor Baptist Church. Included in the building are a community room, a library, and a game room.

Existing Land Use and Conditions

The development is located on the periphery of a stable residential neighborhood. Figure 4 identifies the existing land use in the area of Radnor Towers. Thuss and McComb Avenues are quiet residential collector streets. Only 180 feet away, however, is Nolensville Road, a major arterial street carrying an average of 34,000 cars per day.⁹¹ Radnor Baptist Church, to the immediate west

⁹¹Annual Cycle Count, Average Daily Traffic Count, Nashville, Tennessee, 1981", Office of Mapping and Statistics, Tennessee Department of Transportation.

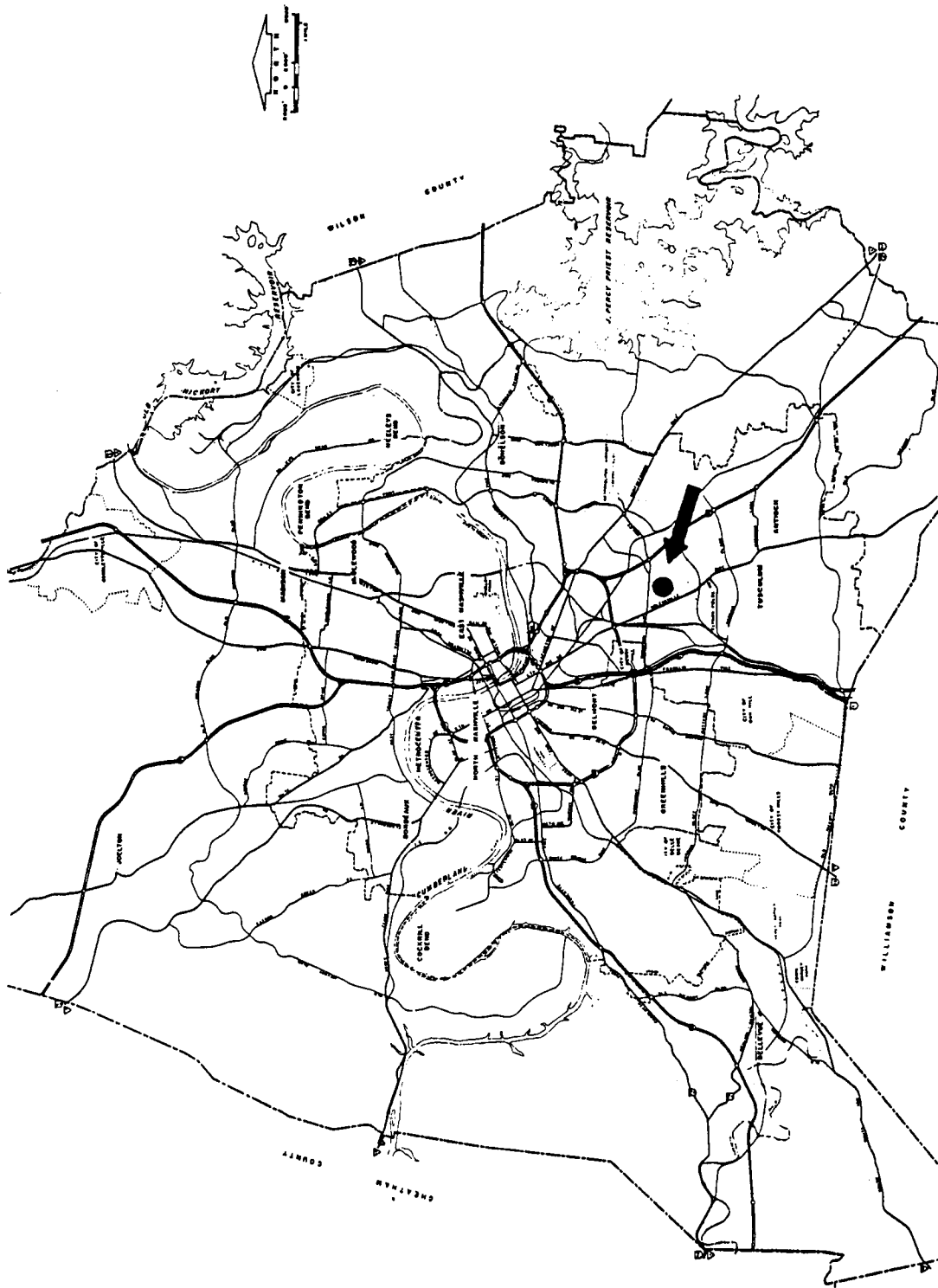


Figure 3. Location of Radnor Towers.

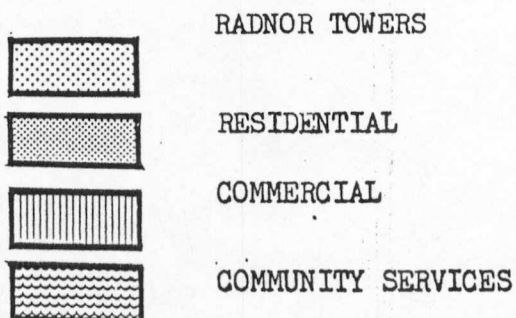
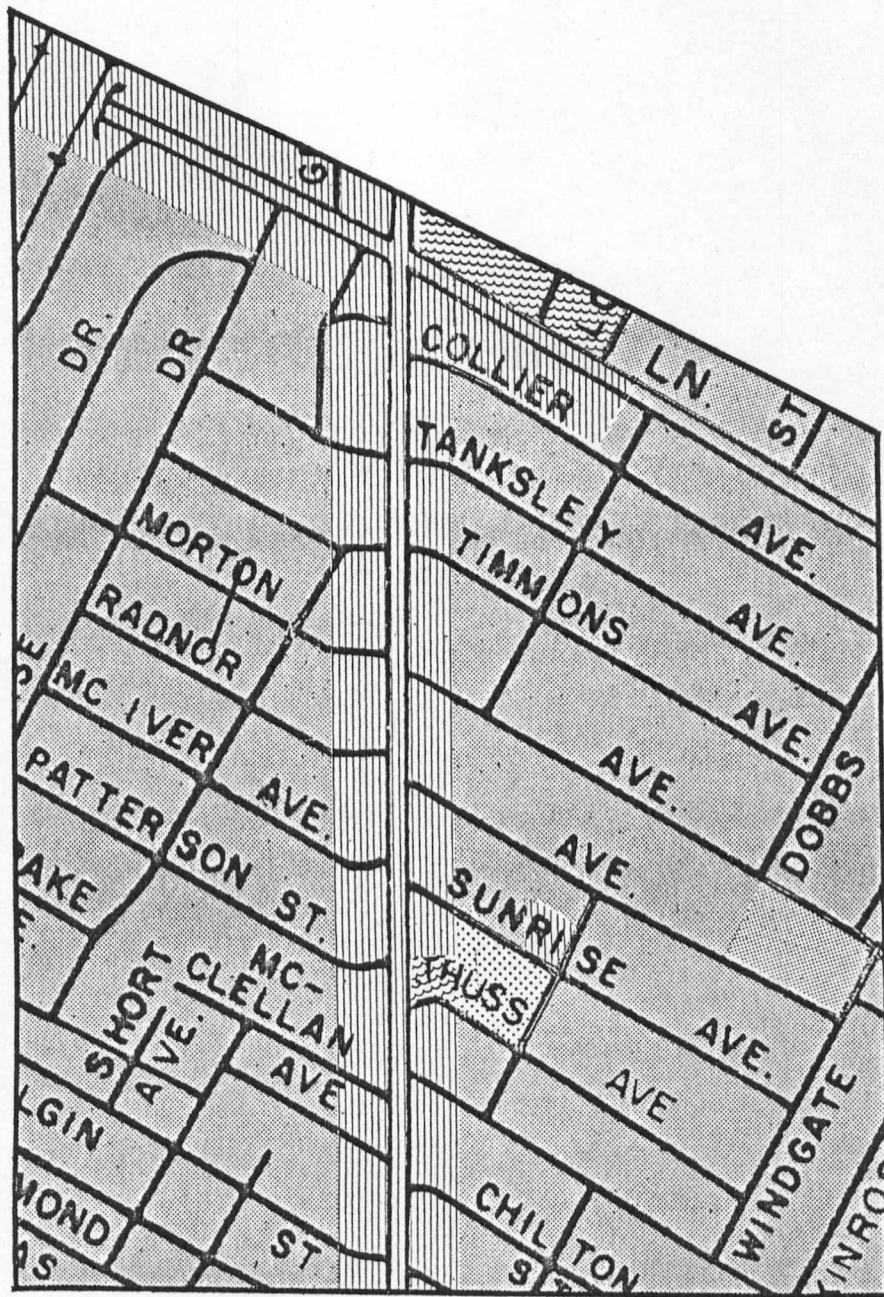


Figure 4. General Land Use, Radnor Towers Vicinity.

of the development, serves as a buffer to Nolensville Road. Highway commercial land uses, such as car lots, service stations, salvage stores, fast food establishments, and convenience food stores, are located along Nolensville Road. In general, the commercial uses are compatible with the nature of the elderly housing development. Salvage stores, for instance, provide alternative low cost shopping. However, approximately .4 mile to the south are located several pool halls and a tavern. Such uses have been identified in the literature as generators of crime.

To the east of Radnor Towers is a stable, mature residential neighborhood. The area is 100 percent developed with modest homes. The houses and yards appear to be well maintained.

This same residential neighborhood also extends to the north of the development. The houses appear to be in fairly good condition, although the yards are not as well kept. A small appliance store at the corner of McCombs and Sunrise, directly across from the development, is the only non-residential use east of Nolensville Road.

To the south of the development, the residential area continues for several blocks. It, too, is a moderately stable area composed of modest homes. Only one structure, located directly across Thuss Avenue from the development, stands out as being in poor to fair condition.

In general, the residential area provides a supportive and compatible environment for the elderly development. Proximity to a range of commercial services is an advantage. Several adverse land uses on Nolensville, bars and pool halls, may be potential generators of crime.

Resources

Radnor Towers is adequately served by commercial, medical, and recreational opportunities. In the immediate area, .2 miles from the development, a small grocery store, a drug store, and a variety store are located. In addition, another grocery store is located .5 mile to the north on Nolensville Road, and a large grocery store, a drug store, and a department store are 1.1 miles to the south. Additional shopping centers are located within two miles to the east and west.

A hospital and several doctors offices are located 2.2 miles away to the south off Nolensville Road. Doctor offices are located throughout the general area. In addition, four other major hospitals are within a thirty minute drive from Radnor Towers.

Recreational opportunities are available. A movie theatre is located in the shopping center 1.1 miles away. A park is located .6 miles to the north. The park is well-lighted, has interesting activities to watch, restrooms, a water fountain, and places to sit. Next to the park is a public library. The nearest senior citizen center is 5 miles away.

Self-Transportation

Excellent opportunities for self-transportation exist for Radnor Towers residents. The Metropolitan Transit Authority provides bus service in the Nolensville Road area. The nearest bus stop to the development is .1 mile from the development. A bench is provided at the bus stop. During the day, buses make scheduled stops every 15 to 20 minutes, thus providing a reliable and regular form of transportation. Heavy traffic on Nolensville Road may discourage

driving. A turn lane facilitates the movement from Nolensville Road onto Thuss Road.

There are sidewalks on Nolensville Road on both sides of the street. However, sidewalks only extend .5 to the south. Therefore, they do not extend all the way to the major shopping center. Sidewalks do lead to the park and library. Sidewalks are lacking along on the neighborhood collector streets, however. There are no sidewalks leading the 180 feet to Nolensville Road. Nor are there sidewalks in the vicinity residents would use to take recreational walks.

An alley between Thuss Avenue and Antioch Pike is used as a short cut to the drug store by development residents. The alley is in very poor condition, characterized by litter and holes.

Crime

Crime in the neighborhood is low compared to the city-wide average according to police reports.⁹² An excellent security system in the high rise building itself has prevented break-ins or burglaries in the high-rise development.

Summary

The Radnor Tower development is located between a stable residential neighborhood and highway commercial land uses. The development receives no noticeable negative impacts from its proximity to the commercial; on the contrary, location near stores, such as the

⁹²Mike Foster, Data Processing Division, Nashville-Davidson County Police Department.

grocery and the pharmacy, is a positive factor. Many resources are within walking distance of the development. In addition, the city wide serving mass transit system has a bus stop .1 mile from the development, so self-transportation opportunities for the elderly are maximized. The lack of sidewalks in the residential area, however, may limit pedestrian access within the neighborhood.

There are no adverse land uses nor any observable environmental hazards in the area . There is one house in poor condition across the street from the development. Crime in the area, according to technical reports, is low compared to the city crime rate.

Results of the Questionnaire

This section presents the data obtained as a result of the questionnaires administered to eighty elderly heads of households living in the two housing developments. The data is presented in tabular form, with a brief narrative accompanying each table. At the end of each major section is a discussion of the findings in relationship to the anticipated results.

Profile of the Residents

Sex, age, household size, tenure, and self assessed health limitations are addressed in this section. Racial composition was not analyzed. Less than a handful of black respondents participated in the study.

Tenure of Head of Household

A primary assumption in the selection of the study settings was that the longer a person has lived in a development, the more familiar

with the neighborhood that person will be. Table 3 shows that 80 percent of the household heads sampled at Radnor Towers have lived there two years or more, while 50.0 percent of the Walnut Village sample have lived there between one and two years.

TABLE 3
RESPONDENTS' LENGTH OF RESIDENCE, BY DEVELOPMENT

	6 months- 1 year		1 - 2 years		2 - 3 years		3 years or more	
	No.	%	No.	%	No.	%	No.	%
Radnor Towers	6	12.0	4	8.0	30	60.0	10	20.0
Walnut Village	15	50.0	15	50.0	0	0.0	0	0.0
Total	21	26.2	19	23.8	30	37.5	10	12.5

Household Size

Single person households predominate (82.5 percent). There is a slightly higher frequency of single households at Radnor Towers than Walnut Village. Table 4 presents household size data.

Sex of Head of Household

Female headed households are in the majority in both developments. As Table 5 shows, 80 percent of the total households are women. However, there is a slightly higher percentage of elderly women at Radnor Towers (84.0 percent) than at Walnut Village (73.3 percent).

TABLE 4

RESPONDENTS' HOUSEHOLD SIZE, BY DEVELOPMENT

	<u>1-Person Household</u>		<u>2-Person Household</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Radnor Towers	43	86.0	7	14.0
Walnut Village	23	76.7	7	23.3
Total	66	82.5	14	17.5

TABLE 5

AGE AND SEX OF RESPONDENTS, BY DEVELOPMENT

	<u>55-64</u>		<u>64-74</u>		<u>75-84</u>		<u>85 or More</u>		<u>Total</u>	
	<u>Years</u>		<u>Years</u>		<u>Years</u>		<u>Years</u>		<u>Years</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Radnor Towers										
Male	0	0.0	3	6.0	4	8.0	1	2.0	50	62.5
Female	7	14.0	18	36.0	17	34.0	0	0.0		
Walnut Village										
Male	0	0.0	4	13.3	4	13.3	0	0.0	30	37.5
Female	2	6.7	14	46.7	5	16.7	1	3.3		
Total	9	11.3	39	48.7	30	37.5	2	22.5		

Age of Head of Household

The largest age group in the study were persons between the ages of 65 and 74 years old (48.7 percent). These young-old to middle old elderly were more represented at Walnut Village (60.0 percent) than at Radnor Towers (42.0 percent). There were very few old-old persons in the entire sample (2.5 percent).

The majority of the older residents are women. Almost three-quarters of the elderly between 75 and 84 years old are women. Table 5 presented the data.

Health Limitations

The majority of the respondents (38.7 percent) had only moderate health limitations while another third experience only few limitations. A full 20.0 percent of the total study said they experienced no health limitations. A greater percentage of residents at Radnor Towers than Walnut Village experience only few to no limitations than at Walnut Village. Table 6 presents data on health limitations.

TABLE 6
RESPONDENTS' HEALTH LIMITATIONS, BY DEVELOPMENT

	<u>No Limitations</u>		<u>Few Limitations</u>		<u>Moderate Limitations</u>		<u>Severe Limitations</u>	
	No.	%	No.	%	No.	%	No.	%
Radnor								
Towers	12	24.0	17	34.0	18	36.0	3	6.0
Walnut								
Village	4	13.3	10	33.3	13	43.3	3	10.0
Total	16	20.0	27	33.8	31	38.7	6	7.5

Health status by age revealed no trend towards more severe limitations with increasing age. The younger cohort did not show greater tendencies towards no health limitations either. Most people

65 to 75 years old had no limitations (12.5 percent), few limitations (13.7 percent), or moderate limitations (19.9 percent). The 75 to 84 year old age group had fewer members with no limitations, moderate limitations, and severe limitations than the younger age group. Table 7 presents the data on age and health limitations.

TABLE 7
HEALTH BY AGE GROUP, BOTH DEVELOPMENTS

	<u>No</u> <u>Limita-</u> <u>tions</u> <u>No. %</u>		<u>Few</u> <u>Limita-</u> <u>tions</u> <u>No. %</u>		<u>Moderate</u> <u>Limita-</u> <u>tions</u> <u>No. %</u>		<u>Severe</u> <u>Limita-</u> <u>tions</u> <u>No. %</u>		<u>Total</u> <u>No. %</u>	
55-64	2	22.5	3	33.3	2	22.5	2	22.5	9	100.0
65-74	10	25.6	11	28.2	16	41.0	2	5.1	39	100.0
75-84	4	13.3	12	40.0	13	43.3	1	3.3	30	100.0
85 and over	0	0.0	1	50.0	0	0.0	1	50.0	2	100.0
Total	16	20.0	27	33.8	31	38.7	6	7.5	80	100.0

Relationship of Anticipated Results to Findings

The anticipated results concerning the tenure, age, sex, and household size were proven correct by the data. The majority of the residents were the young-old to middle-old, lived alone, and were elderly women.

The expectation concerning health status was only partially proven. Although 72.5 percent of the total respondents have only few to moderate health limitations, as predicted by the literature review, a fairly large number (20 percent) experienced no health limitations at

all. In addition, no conclusive trend associating severity of limitations with increasing age resulted from the analysis.

Transportation

Various modes of transportation used by the elderly participating in the study are discussed in this section. In-depth analysis of the walking mode is included.

Modes of Transportation

The primary mode of transportation most frequently used by the respondents is driving one's own car (41.3 percent) followed by riding with a friend (38.8 percent). A greater proportion of Walnut Village residents drive their own cars (46.7 percent) than do those at Radnor Towers (38.0 percent). Perhaps in compensation, a larger percentage of the elderly at Radnor Towers rely on friends and relatives for transportation (44.0 percent) than do residents of Walnut Village (30.0 percent). Use of a particular primary mode of transportation does not preclude the use of other types of transportation.

The third most frequently used primary form of transportation is walking (11.2 percent). A much greater percentage of the elderly at Walnut Village walk as their primary means of mobility (23.3 percent), when compared with the elderly who walk at Radnor Towers (4.0).

Very few residents at either development drive another's car, ride the bus, take taxis, or use senior citizen center vans as their primary means of transportation. Table 8 presents data on the seven modes of transportation.

TABLE 8

RESPONDENTS' PRIMARY MODE OF TRANSPORTATION, BY DEVELOPMENT

	Drive Own		Drive Another's		Walk		Bus		Taxi		Senior Citizen Van		Drive With Relatives or Friends	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor														
Towers	19	38.0	3	6.0	2	4.0	2	4.0	2	4.0	0	0.0	22	44.0
Walnut														
Village	14	46.7	0	0.0	7	23.3	0	0.0	0	0.0	0	0.0	9	30.0
Total	33	41.2	3	3.7	9	11.2	2	2.5	2	2.5	0	0.0	31	38.7

Walking

Walking was the third most frequently used primary mode of transportation, as revealed in Table 8. Table 9 presents the average one way distances that the elderly perceive themselves capable of walking.

TABLE 9

RESPONDENTS' AVERAGE ONE-WAY SELF ASSESSED WALKING DISTANCES,
BY DEVELOPMENT

	1-1/2		1-2		Over		Don't		Total	
	<u>Mile</u>		<u>Miles</u>		<u>Miles</u>		<u>Miles</u>		<u>Total</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor Tower	25	50.0	22	44.0	0	0.0	3	6.0	50	100.0
Walnut Village	11	36.7	14	46.7	0	0.0	5	16.6	30	100.0
Total	36	45.0	36	45.0	0	0.0	8	10.0	80	100.0

A large group of the total study (45.0 percent) feel they are capable of walking between one mile and two miles one way. The percentage of elderly at Radnor Towers (44.0 percent) and at Walnut Village (46.7 percent) who rate themselves capable of walking one mile or more are very similar. None of the respondents thought themselves capable of walking over two miles. Some 45.0 percent of the total study believe they could walk one-half of a mile or less.

Barriers to Walking

Although an elderly person may be capable of walking one mile, certain physical conditions in the area can limit safe pedestrian

access. Therefore, respondents were asked whether barriers to walking, such as steep hills, dangerous traffic, stairs, sidewalks, or undesirable land uses, existed in the area. Significantly, almost two-thirds of the respondents perceive no barriers to walking in their neighborhoods. However, the elderly at Walnut Village, who walk more often than those at Radnor Towers perceived more barriers (40 percent) than do the residents at Radnor Towers (28 percent).

The most frequently cited barriers to walking by Walnut Village residents include the poor condition or non-existence of sidewalks (20.0 percent), while Radnor Towers residents find dangerous traffic (10 percent) and undesirable land uses (10 percent) to be the major barriers to pedestrian access. Table 10 presents the data on barriers to walking.

Importance of Sidewalks

Residents who primarily rely on driving, walking, and riding with others for their primary sources of transportation were asked to rate the importance of sidewalks. As expected, the 11.2 percent of the sample who walk as their main source of transportation rate sidewalks as being very important. In addition, 23.7 percent of the drivers, and 30 percent of the elderly who rely on others for rides, rate sidewalks as very important. Only 12.5 percent of the total sample identified sidewalks as not being important. Apparently, even elderly persons who rely on alternative forms of transportation either (a.) realize that others not as fortunate require good sidewalks, (b.) realize that someday they, too, may rely on walking as a principle form of transportation, or (c.) may presently walk as a secondary means of transportation. Table 11 presents the data.

TABLE 10

BARRIERS TO WALKING IN NEIGHBORHOOD, BY DEVELOPMENT

	Steep Dangerous Hills Traffic				Stairs				In Poor Repair				Side-walks				Unde-sirable Uses				No Barriers				Total			
	No.		%		No.		%		No.		%		No.		%		No.		%		No.		%		No.		%	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor																												
Towers	0	0.0	5	10.0	0	0.0	1	2.0	3	6.0	5	10.0	36	72.0	50	100.0												
Walnut																												
Village	2	6.7	2	6.7	1	3.3	4	13.3	2	6.7	1	3.3	18	60.0	30	100.0												
Total	2	2.5	7	8.7	1	1.2	5	6.2	5	6.2	6	7.5	54	67.5	80	100.0												

TABLE 11

RESPONDENTS' MOST OFTEN USED FORM OF TRANSPORTATION, BY THE IMPORTANCE
OF SIDEWALKS AND DEVELOPMENT

	Not Important		Moderately Important		Very Important		Total	
	No.	%	No.	%	No.	%	No.	%
Radnor								
Drivers	3	15.8	5	26.3	11	57.9	19	100.0
Walnut								
Drivers	4	28.6	2	14.2	8	57.1	14	100.0
Radnor								
Walkers	0	0.0	0	0.0	2	100.0	2	100.0
Walnut								
Walkers	0	0.0	0	0.0	7	100.0	7	100.0
Radnor								
Riders	3	13.6	3	13.6	16	72.7	22	100.0
Walnut								
Riders	0	0.0	1	11.1	8	88.9	9	100.0
Total	10	12.5	11	13.7	52	65.0	73	100.0

*8 Cases or 8.8 percent used some other primary means of transportation.

Modes of Transportation to Primary Resources

Residents were asked how they travel to the grocery store, the drug store, the doctor, the convenient food store, and the hairdresser. The first four items are identified in the literature as primary resources because of their importance to elderly well-being. The hairdresser, although a secondary resource, is important to maintenance of the ego. Transportation options presented to the elderly included walking, driving a personal car, riding with a friend, riding with a relative, or taking a bus, taxi, or senior citizen center van. Additional factors associated with travel mode, such as location of the resource, are discussed in the Resource section of this chapter. Tables 12 through 16 present data on modes of transportation by resource type. The accompanying narrative is organized by mode of transportation.

Drive Own Car

For each resource, except the convenience food store, driving one's own car was the most frequently used form of transportation. For all five resources, driving one's own car accounted for 38.0 percent of the travel. Of the various resources, residents most often drive to the grocery store (43.7 percent) and to the doctor (42.5 percent).

Walking

Walking is the second most frequently used mode of travel to the five resources (21.5 percent). In addition, it is the primary means of getting to the convenient store (42.5 percent). Two other resources to which the elderly tend to walk are the drug store (25.0 percent) and

TABLE 12

RESPONDENTS' TRAVEL MODE TO GROCERY STORES, BY DEVELOPMENT

	Drive Own Car		Walk		Ride With A Friend		Ride With A Relative		Bus Taxi Van		Don't Go		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor														
Towers	22	44.0	7	14.0	4	8.0	14	28.0	1	2.0	2	4.0	50	100.0
Walnut Vil-														
lage	13	43.3	5	16.7	2	6.7	7	23.3	0	0.0	3	10.0	30	100.0
Total	35	43.8	12	15.0	6	7.5	21	26.2	1	1.2	5	6.2	80	100.0

TABLE 13
RESPONDENTS' TRAVEL MODE TO DRUG STORES, BY DEVELOPMENT

	Drive Own Car		Walk		Ride With A Friend		Ride With A Relative		Bus Taxi Van		Don't Go		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor														
Towers	17	34.0	13	26.0	1	2.0	5	10.0	3	6.0	11	22.0	50	100.0
Walnut Village	12	40.0	5	16.7	1	3.3	8	26.7	0	0.0	4	3.3	30	100.0
Total	29	36.3	18	22.5	2	2.5	13	16.2	3	3.7	15	18.8	80	100.0

TABLE 14
RESPONDENTS' TRAVEL MODE TO CONVENIENT STORES, BY DEVELOPMENT

	Drive Own		Walk		Ride		Ride		Bus		Don't		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor														
Towers	15	30.0	25	50.0	0	0.0	4	8.0	1	2.0	5	10.0	50	100.0
Walnut Vil-														
lage	12	40.0	9	30.0	1	3.3	3	10.0	0	0.0	5	16.7	30	100.0
Total	27	33.7	34	42.5	1	1.2	7	8.7	1	1.2	10	12.5	80	100.0

TABLE 15

RESPONDENTS' TRAVEL MODE TO DOCTORS, BY DEVELOPMENT

	Drive Own Car		Walk		Ride With A Friend		Ride With A Relative		Bus Taxi Van		Don't Go		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor														
Towers	21	42.0	0	0.0	5	10.0	15	30.0	5	10.0	4	8.0	50	100.0
Walnut Village	13	43.3	2	6.7	2	6.7	12	40.0	0	0.0	1	3.3	30	100.0
Total	34	42.5	2	2.5	7	8.7	27	33.7	5	6.2	5	6.2	80	100.0

TABLE 16

RESPONDENTS' TRAVEL MODE TO HAIRDRESSERS, BY DEVELOPMENT

	Drive Own Car	Walk		Ride With A Friend		Ride With A Relative		Bus Taxi Van		Don't Go		Total	
	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %	No. %
Radnor													
Towers	17 34.0	16 32.0	5 10.0	4 8.0	2 4.0	6 12.0	50 100.0						
Walnut Vil-													
lage	10 33.3	4 13.3	4 13.3	5 16.7	0 0.0	7 23.3	30 100.0						
Total	27 33.8	20 25.0	9 11.2	9 11.2	2 2.5	13 16.3	80 100.0						

the hairdressers (22.5 percent). For these three resources, Radnor Tower residents are more likely than Walnut Village residents to walk.

Ride With Relatives

Riding with relatives is the third most used means of traveling to area resources (19.2 percent). The elderly were most likely to ride with a relative to the doctor (33.7 percent) and to the grocery store (26.2 percent). Both these activities may require some additional assistance than simple transportation, which may account for kin involvement. The elderly living at Walnut Village were twice as likely as those at Radnor Towers to ride with five resources. This reliance seems to contradict data on page 79 in which Walnut Village respondents were less likely to ride. The explanation is that although many did not identify riding with friends as the source of transportation they most rely on, in actual trip situations, they must call on others.

Ride With Friends

Riding with friends, in general, was not a significant form of transportation (6.2 percent). However, 11.2 percent did ride with a friend to the hairdresser and 8.7 percent were taken to the doctor by friends.

Bus, Van, and Taxi

The transportation options of the buses, senior citizen center vans, and taxis are seldom used by study respondents (2.9 percent). None of the Walnut Village residents used any of these three options. A handful of Radnor Towers residents used the bus system

Relationship of Findings to Anticipated Results

For the majority of the study, some form of regular transportation was available. Contrary to the expected results, the most frequently used means of transportation is driving one's own car. As predicted, riding with relatives and friends is also a major means of transportation. As anticipated, walking is a primary source of transportation. Contrary to expectations, almost half the study respondents could walk one-way between one and two miles. However, over 30.0 percent could only walk one-quarter mile or less. The most often cited barriers to walking in the neighborhood include the condition and availability of sidewalks, dangerous traffic, and undesirable land uses. Each of these barriers related to safety and security consideration on the part of the elderly. Significantly, almost two-thirds of the study perceived no barriers to walking.

There was some contradiction between the expressed primary mode of travel and the ways people actually traveled to the five primary resources. A much greater percentage of elderly at Walnut Village said that walking was their primary source of transportation (23.3 percent) than those at Radnor Towers (4.0 percent). In application, however, residents at Radnor Towers were twice as likely to walk (24.4 percent) to the five resources than residents at Walnut Village (12.7 percent). This data highlights the importance of walking as a source when primary options are unavailable. Indeed, the 38.8 percent of the total study who must rely on others for rides may often be in a position where walking is necessary.

The availability of resources within walking distance to the development is a major key to determining whether walking can be a

viable transportation alternative. In this study, proximity to commercial areas promotes walking. Services located one-half mile from the developments are accessible by at least half of the study respondents.

Very few of the elderly, as expected, used a bus, a taxi, or a senior citizen van. By relying on three major sources (driving, riding, and walking), most people in the study can go to most of the places they want.

Crime

To assess whether elderly well-being was impacted by a fear of crime, three questions were asked of the study participants. These questions were, "Do you perceive a need for the reduction of crime in this neighborhood?", "How safe do you feel the neighborhood (not the site) surrounding the development is at night?", and, "How do you think the crime rate in this neighborhood compares with that of the city?" Results of the first two questions are presented in Table 17.

In general, 48.8 percent of the study felt somewhat safe at night, with 40.0 percent perceiving themselves as very safe. A greater percentage of elderly at Walnut Village, the small town development, perceive themselves as being very safe (50.0 percent) compared with the 34.0 percent at Radnor who feel very safe.

Very few residents in either development feel unsafe. Only 7.5 percent felt somewhat unsafe and none of the residents feel very unsafe.

Correlating perceived need for crime reduction with neighborhood safety shows the feelings of security on the part of the elderly. Of

TABLE 17

PERCEIVED NEED FOR CRIME REDUCTION IN THE GENERAL NEIGHBORHOOD
BY PERCEIVED SAFETY OF NEIGHBORHOOD AT NIGHT, BY DEVELOPMENT

Crime Should Be Reduced	Safe at Night				Unsafe at Night				Do Not Know		Total	
	Very		Somewhat		Somewhat		Very					
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor												
Yes	3	6.0	3	6.0	0	0.0	0	0.0	1	2.0	7	14.0
Radnor												
No	14	28.0	24	48.0	4	8.0	0	0.0	1	2.0	43	86.0
Walnut												
Yes	2	6.7	3	10.0	0	0.0	0	0.0	1	3.3	6	20.0
Walnut												
No	13	43.3	9	30.0	2	6.7	0	0.0	0	0.0	24	80.0
Total	32	40.0	39	48.8	6	7.5	0	0.0	3	3.7	80	100.0

the 40.0 percent who feel very safe, 15.6 percent still feel that crime levels should be reduced and 15.4 percent of the people who feel somewhat safe believe crime should be reduced. Surprisingly, however, none of the 15.4 percent who feel somewhat unsafe perceive a need for crime reduction.

Low perceptions of neighborhood crime levels relative to city-wide crime further illustrates the feeling of security in the two neighborhoods. Over three-fourths of the total respondents perceive a lower crime rate in their neighborhood when compared to the city-wide crime rate. Only 3.7 percent feel neighborhood crime was higher. Data for all categories was fairly similar for both developments. Table 18 presents data on perceived crime rate.

TABLE 18

RESPONDENTS' PERCEIVED NEIGHBORHOOD CRIME RATE RELATIVE TO CITY CRIME
RATE, BY DEVELOPMENT

	<u>Lower</u>		<u>Same</u>		<u>Higher</u>		<u>Don't Know</u>	
	No.	%	No.	%	No.	%	No.	%
Radnor Towers	38	76.0	7	14.0	2	4.0	3	6.0
Walnut Village	23	76.7	4	13.3	1	3.3	2	6.6
Total	61	76.3	11	13.7	3	3.7	5	6.3

Relationship of Findings to Anticipated Results

Contrary to the anticipation that the elderly would express a moderate fear of crime, the elderly residents have very little fear of crime. The majority of the respondents consistently report feelings of safety and low crime rates.

The expectation section also stated that the urban elderly would express a greater fear of crime than their small town counterparts. This was borne out, but to a small degree. Only 2.0 percent more Radnor Towers than Walnut residents expressed concerns about the safety of the neighborhood. However, over half of the Radnor Towers respondents feel the area is only somewhat safe while only a third feel very safe. Exactly half of the Walnut Village respondents feel very safe, with 40.0 percent perceiving a somewhat safe neighborhood.

Neighborhood Resources

This section evaluates existing resources from an elderly

perspective and also presents information on which neighborhood resources are most desired by the elderly. In addition, specific use of information concerning five primary resources is presented.

Ideal Neighborhood Resources

Elderly survey participants were asked to evaluate how important the availability of shopping, medical facilities, a park, and a senior citizen center would be in their choice of an ideal neighborhood location. Table 19 presents data on the importance of these resources to residents of Radnor Towers and Table 20 does the same for Walnut Village residents.

TABLE 19

RADNOR TOWERS RESPONDENTS' RATING OF SERVICES TO THE IDEAL NEIGHBORHOOD

	<u>Not Important</u>		<u>Moderately Important</u>		<u>Very Important</u>	
	No.	%	No.	%	No.	%
Close to shopping	3	6.0	6	12.0	41	82.0
Close to park	30	60.0	14	28.0	6	12.0
Close to medical services	3	6.0	13	26.0	34	68.0
Close to a senior citizen center	22	44.0	17	34.0	11	22.0

Location close to shopping is very important for 82.0 percent of the residents at Radnor Towers. Two-thirds of the Radnor Towers residents rate location close to medical services as a key ideal locational factor.

TABLE 20

WALNUT VILLAGE RESPONDENTS' RATING OF SERVICES TO THE IDEAL NEIGHBORHOOD

	<u>Not</u> <u>Important</u>		<u>Moderately</u> <u>Important</u>		<u>Very</u> <u>Important</u>	
	No.	%	No.	%	No.	%
Close to shopping	1	3.3	7	23.3	22	73.3
Close to a park	18	60.0	7	23.3	5	16.7
Close to medical services	1	3.3	4	13.3	25	83.4
Close to a senior citizen center	12	40.0	2	6.7	16	53.3

Walnut Village residents rank proximity to medical services as very important (83.4 percent). Locations that are close to shopping are very important to 73.3 percent. Location near a park was rated as unimportant by 60.0 percent of the Walnut Village residents. On the other hand, location near a senior citizen center was perceived as very important by over half of the Walnut Village residents.

In comparing the results from the two developments, several consistencies appear. Location close to shopping and medical services were very important overall. Likewise, 60.0 percent of both resident groups perceived parks as unimportant locational factors. Walnut Village residents are twice as likely to rate senior centers as very important as those at Radnor Towers. However, the total percent in each development that perceive senior citizen centers as moderately or very important is very similar.

Existing Resources

The elderly participants were asked if they desired additional

parks or shopping facilities in their neighborhoods. Table 21 presents the data on the need for additional parks.

TABLE 21

RESPONDENTS' PERCEIVED NEED FOR ADDITIONAL PARKS, BY DEVELOPMENT

	Do Not Need More Parks		Need More Parks	
	No.	%	No.	%
Radnor Towers	38	76.0	12	24.0
Walnut Village	21	70.0	9	30.0
Total	59	73.8	21	26.2

Confirming previous data, 73.8 percent of the total study did not perceive a need for additional park facilities. Even at Walnut Village, where there are no parks, 70.0 percent of the respondents do not perceive a need for one. Table 22 presents data on the need for additional stores.

TABLE 22

RESPONDENTS' PERCEIVED NEED FOR ADDITIONAL STORES, BY DEVELOPMENT

	Do Not Need More Stores		Need More Stores	
	No.	%	No.	%
Radnor Towers	39	78.0	11	22.0
Walnut Village	24	80.0	6	20.0
Total	63	78.7	17	21.3

Movies

Almost three-fourths of the total study do not consider going to the movies a favorite activity. Several elderly respondents commented informally to the researcher that they prefer to watch television. Table 24 presents the data.

TABLE 24
MOVIE GOING AS A FAVORITE ACTIVITY, BY DEVELOPMENT

	Movie Going Not A		Movie Going A	
	Favorite Activity		Favorite Activity	
	No.	%	No.	%
Radnor Towers	36	72.0	14	28.0
Walnut Village	23	76.7	7	23.3
Total	59	73.7	21	26.3

Libraries

Going to the library was not considered a favorite activity by 85.0 percent of the survey. A slightly greater percentage at Walnut Village (20.0 percent) go to the library than do the residents of Radnor Towers (12.0 percent). The close proximity of the library may account for this. Table 25 contains data on library activities.

Walking

Walking for pleasure was a favorite activity for 61.2 percent of the total sample. Table 26 presents data on walking as a favorite activity.

TABLE 25

LIBRARY AS A FAVORITE ACTIVITY, BY DEVELOPMENT

	<u>Library Not A Favorite Activity</u>		<u>Library A Favorite Activity</u>	
	No.	%	No.	%
Radnor Towers	44	88.0	6	12.0
Walnut Village	24	80.0	6	20.0
Total	68	85.0	12	15.0

TABLE 26

WALKING AS A FAVORITE ACTIVITY, BY DEVELOPMENT

	<u>Walking Not A Favorite Activity</u>		<u>Walking A Favorite Activity</u>	
	No.	%	No.	%
Radnor Towers	19	38.0	31	62.0
Walnut Village	12	40.0	18	60.0
Total	31	38.7	49	61.2

Senior Citizen Center

One-quarter of the total respondents consider the senior citizen center to be a favorite activity. However, over one-half of the residents at Walnut Village who live very near the center attend activities, compared with only 8.0 percent of Radnor Towers residents. While the Radnor Towers participation rate more closely approximates participation levels reported in the literature, attendance by Walnut Village residents is very high. Among other reasons, the difference in

attendance rates is a variable of location within easy walking proximity. Table 27 presents the data by development on the senior citizen center as a favorite off-site activity.

TABLE 27

SENIOR CITIZEN CENTER AS A FAVORITE ACTIVITY, BY DEVELOPMENT

	Senior Citizen Center Not A		Senior Citizen Center A	
	<u>Favorite Activity</u>		<u>Favorite Activity</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Radnor Towers	46	92.0	4	8.0
Walnut Village	14	46.7	16	53.3
Total	60	75.0	20	25.0

Church

Attending church was a favorite activity for 56.3 percent of the total study as shown in Table 28.

TABLE 28

CHURCH AS A FAVORITE ACTIVITY, BY DEVELOPMENT

	Church Not A		Church A	
	<u>Favorite Activity</u>		<u>Favorite Activity</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Radnor Towers	20	40.0	30	60.0
Walnut Towers	15	50.0	15	50.0
Total	35	43.7	45	56.3

Going Out to Eat

Going out to eat was a favorite activity for less than one-third of the total study. A greater percentage of urban residents (42.0 percent) than small town residents (13.3 percent) enjoy this activity. Table 29 displays the data.

TABLE 29

GOING OUT TO EAT AS A FAVORITE ACTIVITY, BY DEVELOPMENT

	Going Out To Eat Not A		Going Out To Eat A	
	<u>Favorite Activity</u>		<u>Favorite Activity</u>	
	No.	%	No.	%
Radnor Towers	29	58.0	21	42.0
Walnut Village	26	86.7	4	13.3
Total	55	68.8	25	31.2

Primary Resources

The following three sections discuss the use of five resources primary to elderly well-being. The literature classifies grocery stores, drug stores, and medical services as primary needs because they are critical to life support. Convenient food stores function the same as grocery stores. Going to a hairdresser (which includes barber shops) is a social occasion, which not only helps to maintain the physical appearance, but also the strength of the ego. As data in Table 16 on page 88 indicated, the elderly are more likely to get a ride with a friend to go to the hairdresser than to any other place.

Location of Resources

Tables 30 through 34 detail respondent use of the five resources described above. A narrative describing respondent use by location of resource follows these tables.

TABLE 30

PATRONIZED GROCERY STORE LOCATION, BY DEVELOPMENT

	<u>Within Neighborhood</u>		<u>In Adjacent Neighborhood</u>		<u>Downtown Area</u>		<u>In Former Neighborhood</u>		<u>Don't Go</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor										
Towers	22	44.0	25	50.0	0	0.0	1	2.0	2	4.0
Walnut										
Village	7	23.3	20	66.7	0	0.0	0	0.0	3	10.0
Total	29	36.2	45	56.3	0	0.0	1	1.2	5	6.3

TABLE 31

PATRONIZED DRUG STORE LOCATION, BY DEVELOPMENT

	<u>Within Neighborhood</u>		<u>In Adjacent Neighborhood</u>		<u>Downtown Area</u>		<u>In Former Neighborhood</u>		<u>Don't Go</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor										
Towers	21	42.0	17	34.0	1	2.0	0	0.0	8	22.0
Walnut										
Village	1	3.3	22	73.3	2	6.7	1	3.3	4	13.3
Total	22	27.5	39	48.7	3	3.7	1	1.2	15	18.7

TABLE 32

PATRONIZED DOCTOR LOCATION, BY DEVELOPMENT

	Within Neighborhood		In Adjacent Neighborhood		Downtown Area		In Former Neighborhood		Beyond City		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor												
Towers	1	2.0	37	74.0	3	6.0	2	4.0	3	6.0	4	8.0
Walnut												
Village	0	0.0	22	73.3	0	0.0	4	13.3	3	10.0	1	3.3
Total	1	1.2	59	73.7	3	3.7	6	7.5	6	7.5	5	6.2

TABLE 33

PATRONIZED HAIR DRESSER LOCATION, BY DEVELOPMENT

	Within Neighborhood		In Adjacent Neighborhood		Downtown Area		In Former Neighborhood		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor										
Towers	25	50.0	16	32.0	1	2.0	2	4.0	6	12.0
Walnut										
Village	5	16.3	13	43.3	0	0.0	5	16.7	7	23.3
Total	30	37.5	29	36.2	1	1.2	7	8.7	13	16.2

TABLE 34

PATRONIZED CONVENIENT FOOD STORE LOCATION, BY DEVELOPMENT

	Within Neighborhood		In Adjacent Neighborhood		Downtown Area		In Former Neighborhood		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor										
Tower	43	86.0	2	4.0	0	0.0	0	0.0	5	10.0
Walnut										
Village	5	16.7	20	66.7	0	0.0	0	0.0	5	16.7
Total	48	60.0	22	27.5	0	0.0	0	0.0	10	12.5

Almost one-half of the resources frequented by the elderly in the study are located in the adjacent neighborhood (48.5 percent). Resources most frequently patronized in the adjacent neighborhood include doctors (73.7 percent), and grocery stores (56.3 percent). Walnut Village residents travel most often to the adjacent neighborhood to fill their shopping and medical needs.

Nearly one-third of the resources are located within the immediate neighborhood. Most frequently used resources found in the immediate neighborhood include convenient food stores (60.0 percent). Radnor Towers residents frequently use all resources, except medical services, in the immediate neighborhood.

Frequency of Use of Resources

Frequency of use of a service is an indication of the importance of that resource to elderly well-being. Tables 35 through 39 present data on the frequency of use for each of the five primary resources.

TABLE 35

GROCERY STORE, FREQUENCY OF RESPONDENT USE, BY DEVELOPMENT

	Daily		Several Times Per Week		Weekly		Per Month		Quarterly		Less Often		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor														
Towers	1	2.0	9	18.0	26	52.0	7	14.0	5	10.0	0	0.0	2	4.0
Walnut														
Village	1	3.3	8	26.7	11	36.7	6	20.0	1	3.3	0	0.0	3	10.0
Total	2	2.5	17	21.2	37	46.2	13	16.2	6	7.5	0	0.0	5	6.2

TABLE 36
DRUG STORE, FREQUENCY OF RESPONDENT USE, BY DEVELOPMENT

	Daily		Several Times Per Week		2 - 3 Times Per Month		Monthly		Quarterly		Less Often		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor														
Towers	0	0.0	1	2.0			4	8.0	9	18.0	10	20.0	12	24.0
Walnut											3	6.0	11	22.0
Village	0	0.0	0	0.0			1	3.3	6	20.0	14	46.7	4	13.3
Total	0	0.0	1	1.2			5	6.2	15	18.7	24	30.0	16	20.0
											4	5.0	15	18.7

TABLE 37

DOCTOR, FREQUENCY OF RESPONDENT USE, BY DEVELOPMENT

	Daily		2 - 3 Times Per Week		Weekly		Several Times Per Month		Monthly		Quarterly		Less Often		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor																
Towers	0	0.0	0	0.0	2	4.0	2	4.0	7	14.0	21	42.0	14	28.0	4	8.0
Walnut																
Village	0	0.0	0	0.0	2	6.7	1	3.3	4	13.3	12	40.0	10	33.3	1	3.3
Total	0	0.0	0	0.0	4	5.0	3	3.7	11	13.7	33	41.2	24	30.0	5	6.2

TABLE 38

HAIRDRESSER, FREQUENCY OF RESPONDENT USE, BY DEVELOPMENT

	Daily		2 - 3 Times Per Week		Weekly		Several Times Per Month		Monthly		Quarterly		Less Often		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor																
Towers	0	0.0	0	0.0	13	26.0	11	22.0	12	24.0	4	8.0	4	8.0	6	12.0
Walnut																
Village	0	0.0	1	3.3	1	3.3	8	26.7	6	20.0	6	20.0	1	3.3	7	23.3
Total	0	0.0	1	1.25	14	17.5	19	23.7	18	22.5	10	12.5	5	6.2	13	16.2

TABLE 39

CONVENIENT FOOD STORE, FREQUENCY OF RESPONDENT USE, BY DEVELOPMENT

	Daily		2 - 3 Times Per Week		Weekly		Several Times Per Month		Monthly		Quarterly		Less Often		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor																
Towers	1	2.0	17	34.0	15	30.0	7	14.0	3	6.0	2	4.0	0	0.0	5	10.0
Walnut																
Village	0	0.0	6	20.0	13	43.3	2	6.7	3	10.0	0	0.0	1	3.3	5	16.6
Total	1	1.2	23	28.7	28	35.0	9	11.2	6	7.5	2	2.5	1	1.2	10	12.5

Few of the five resources are used on a daily basis. Of the total study, only 2 persons go to grocery stores daily and 1 person goes to the convenient food store daily. Although this accounts for only 3.7 percent of the study, it is significant that daily trips are made to obtain food supplies.

Food related trips also account for the majority of the resources used several times per week. More people go to convenient food stores several times a week (28.7 percent) than frequent grocery stores several times per week (21.2 percent).

All categories of resources are used, to some extent, on a weekly basis. Food related trips account for the majority of the weekly trips. In addition, 17.5 percent of the total respondents visit a hair dresser on a weekly basis.

Resources used two to three times each month include hairdressers (23.7 percent) and drug stores (18.7 percent). Monthly used resources include drug stores (30.0 percent) and hairdressers (22.5 percent).

Doctor visits are made by 41.2 percent of the total respondents on a quarterly basis. Drug store trips are made by 20.0 percent of the elderly each quarter. Few services, other than going to the doctor (30.0 percent) are visited quarterly or less often.

Of the total study, 16.2 percent do not go to hairdressers and 12.5 percent do not use convenient food stores. A significantly low percentage never go to the grocery store (6.2 percent) or to doctors (6.2 percent).

In summary, food related trips account for the majority of weekly, bi-weekly, and daily resource trips. Over half of the respondents indicated that they made trips to the drug store on a

monthly or quarterly basis. The majority of trips to hairdressers are made on a weekly, bi-monthly, and monthly basis. Most of the trips to the doctor (71.2 percent) occur quarterly or less often. However, 22.4 percent of the elderly utilize a doctor's services on a weekly to monthly basis.

Reason for Going to Resources

Respondents were asked whether their primary reason for using the particular facility included one of the following: location close to the site, lower prices than other stores, familiar location in a former neighborhood, or that the person who provide the transportation shops at the facility. Tables 40 through 44 present data on reasons for going to a particular grocery store, drug store, doctor, hairdresser, and convenient food store.

The single most frequently cited reason for patronizing resources is that they are located near the development. Considering total response for the five resource categories, 44.7 percent of all trips are made on the basis of proximity to the development. Close location to the development is especially important in the selections of convenient food stores (77.5 percent), grocery stores (45.0 percent), hairdressers (45.0 percent), and drug stores (40.0 percent).

The search for lower prices contributes more to the selection of grocery stores than any other facilities (18.7 percent). This may account for the amount of shopping done in an adjacent neighborhood. Only 6.7 percent of the total resource trips are made on the basis of cost savings, however.

TABLE 40

GROCERY STORE, REASON FOR GOING TO A PARTICULAR LOCATION, BY DEVELOPMENT

	Closest Facility To Site		Lower Prices		Familiarity In Former Neighborhood		Go With a Relative or Friend		Other Reason		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor												
Towers	20	40.0	11	22.0	3	6.0	8	16.0	6	12.0	2	4.0
Walnut												
Village	16	53.3	4	13.3	2	6.7	4	13.3	1	3.3	3	10.0
Total	36	45.0	15	18.7	5	6.2	12	15.0	7	8.7	5	6.2

TABLE 41

DRUG STORE, REASON FOR GOING TO A PARTICULAR LOCATION, BY DEVELOPMENT

	Closest Facility To Site		Lower Prices		Familiarity In Former Neighborhood		Go With A Relative or Friend		Other Reason		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor												
Towers	24	48.0	3	6.0	2	4.0	1	2.0	8	16.0	12	24.0
Walnut												
Village	8	26.7	2	6.7	7	23.3	2	6.7	7	23.3	4	13.3
Total	32	40.0	5	6.2	9	11.2	3	3.7	15	18.7	16	20.0

TABLE 42

HAIRDRESSER, REASON FOR GOING TO A PARTICULAR LOCATION, BY DEVELOPMENT

	Closest Facility To Site		Lower Prices		Familiarity In Former Neighborhood		Go With A Relative or Friend		Other Reason		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor												
Towers	25	50.0	1	2.0	8	16.0	1	2.0	8	16.0	7	14.0
Walnut												
Village	8	26.7	1	3.3	6	20.0	4	13.3	3	10.0	8	26.7
Total	33	41.2	2	2.5	14	17.5	5	6.2	11	13.7	15	18.7

TABLE 43

DOCTOR, REASON FOR GOING TO A PARTICULAR LOCATION, BY DEVELOPMENT

	Closest Facility To Site		Lower Prices		Familiarity In Former Neighborhood		Go With A Relative or Friend		Other Reason		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor												
Towers	6	12.0	1	2.0	10	20.0	0	0.0	29	58.0	4	8.0
Walnut												
Village	10	33.3	0	0.0	5	16.7	2	6.7	12	40.0	1	3.3
Total	16	20.0	1	1.2	15	18.7	2	2.5	41	51.2	6	6.2

TABLE 44
CONVENIENT FOOD STORE, REASON FOR GOING TO A PARTICULAR LOCATION, BY DEVELOPMENT

	Closest Facility To Site		Lower Prices		Familiarity In Former Neighborhood		Go With A Relative or Friend		Other Reason		Don't Go	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radnor												
Towers	40	80.0	3	6.0	0	0.0	0	0.0	0	0.0	7	14.0
Walnut												
Village	22	13.3	1	3.3	0	0.0	2	6.7	0	0.0	5	16.7
Total	62	77.5	4	5.0	2	2.5	2	2.5	0	0.0	12	15.0

Relationship of Findings to the Anticipated Results

The majority of the expectations regarding resource use by the elderly are supported by the data. As predicted, the elderly perceive location near shopping and medical service opportunities as highly important. In addition, the elderly in both settings feel that an adequate number of stores are represented in their existing neighborhood.

The anticipation that the elderly would not value location near parks was also proven. Sixty percent of the residents in each development did not perceive a park as an important locational consideration. When asked if they needed parks in the neighborhood, almost three-fourths of the total study answered no.

It was also anticipated that the favorite activities of the elderly would be relatively inexpensive in nature. Data revealed that, indeed, walking and going to church are popular activities, whereas going to the movies is not. However, in addition, the favorite activity of over three-fourths of the study is shopping. While relatively expensive, shopping is a function of life support and an activity that is regularly performed by the elderly. This data is also consistent with elderly identification of proximity to shopping as the most important ideal locational consideration. Going out to eat was only moderately popular.

Based on studies of elderly participation at senior citizen centers, the expectation was stated that fewer than 10.0 percent of the elderly living at Radnor Towers would use the senior citizen center. Only 8.0 percent of Radnor Towers residents used the senior citizen center. Higher participation rates were projected for Walnut Village

due to its proximity to the senior citizen center. Over half of the Walnut Village residents perceive the center as a favorite activity.

The research also concluded that frequent use of a resource by the elderly is often determined by its proximity to the development. Data shows that proximity to a senior citizen center substantially increases participation rates. Likewise, elderly at Walnut Village use the library more frequently than those at Radnor Village because it is near the development. Of the total five primary resource, 44.7 percent of all trips are made on the basis of proximity to the development. Close location is especially important in the selection of convenient food stores, grocery stores, hairdressers, and drug stores. Almost one-half of the five primary resources used by the elderly are located in the adjacent neighborhood and another third are in the immediate neighborhood.

Neighborhood Quality

The well being of elderly persons is closely related to the quality of the neighborhood. Elderly attitudes and perceptions concerning the quality of the existing neighborhood, including the condition of housing, availability of services, and environmental quality are presented in this section. Elderly perceptions and preferences concerning the ideal neighborhood environment are also presented.

Existing Neighborhood Improvements

The elderly's perceived need for improvements in their neighborhood is considered an indication of their perception of the

quality of the neighborhood. Therefore, the elderly were asked whether improvements in fourteen areas would make their neighborhood a better place to live.

Over eighty percent of the participants are satisfied with existing neighborhood conditons. Areas in which less than a third of the total respondents did indicate a need for improvement include drainage problems (31.2 percent), additional park facilities (26.3 percent), installation of sidewalks (23.7 percent), and upgrading of houses (23.7 percent).

Walnut Village residents are, in general, more dissatisfied with existing conditons (21.2 percent) than are the elderly at Radnor Towers (15.2 percent). Walnut Village residents frequently cited drainage problems (46.7 percent), need for a park (30.0 percent), need to clean up pollution (26.7 percent), and the need to control incompatible adjacent land use (26.7 percent). Few residents perceive problems associated with the housing stock or a lack of sidewalks. Radnor Towers residents frequently perceive the need for housing improvement (32.0 percent), installation of sidewalks (30.0 percent), and the installation of a park (24.0 percent).

Although the need for park facilities received a high rating relative to other improvements, parks as ideal locational factors receive very low ranking in the following section. Table 45 presents the need for neighborhood improvements by type of improvement.

Ideal Neighborhood Factors

Elderly respondents were given a list of twelve neighborhood variables and were asked to identify how important each variable would

TABLE 45
RESPONDENTS' PERCEIVED NEED FOR NEIGHBORHOOD IMPROVEMENTS, BY DEVELOPMENT

	Radnor Towers			Walnut Village			Total	
	No		Yes	No		Yes	Yes	
	No.	%	No.	No.	%	No.	No.	%
Repair Sidewalks	42	84.0	8	23	76.7	7	15	18.7
Install Sidewalks	35	70.0	15	26	86.7	4	19	23.7
Improve Houses	34	68.0	16	27	90.0	3	19	23.7
Clear Substandard Houses	44	88.0	6	19	96.7	1	7	8.7
Clean up Yards	41	82.0	9	26	86.7	4	13	16.2
Install Streetlights	46	92.0	4	23	76.7	7	11	13.7
Widen Streets	47	94.0	3	24	80.0	6	9	11.3
Control Traffic	47	94.0	3	23	76.7	7	10	12.5
Reduce Crime	43	86.0	7	24	80.0	6	15	18.7
Install Parks	38	76.0	12	21	70.0	9	21	26.3
Install More Stores	39	78.0	11	24	80.0	6	17	21.3
Clean up Pollution	49	48.0	1	22	73.3	8	9	11.3
Correct Drainage	39	78.0	11	16	53.3	14	25	31.2
Control Incompatible Land Use	50	100.0	0	22	73.3	8	8	10.0
Total		84.8			78.8			18.2

be in their selection of an ideal place to live. Table 46 presents the data results on indicators of ideal quality of the entire study.

TABLE 46
RESPONDENTS' RATINGS OF AN IDEAL NEIGHBORHOOD,
BOTH DEVELOPMENTS

	<u>Not</u> <u>Important</u>		<u>Moderately</u> <u>Important</u>		<u>Very</u> <u>Important</u>	
	No.	%	No.	%	No.	%
Totally						
Residential	51	63.7	17	21.3	12	15.0
Low Density	41	51.3	26	32.5	13	16.2
Close to Senior Citizen Center	34	42.5	19	23.7	27	33.8
Close to Shopping	4	5.0	13	16.3	63	78.7
Close to a Park	48	60.0	21	26.3	11	13.7
Close to a Bus Stop	31	38.7	15	18.8	34	42.5
Close to Medical Services	4	5.0	17	21.3	59	73.7
Close to Relatives and Friends	7	8.7	33	41.3	40	50.0
Sidewalks	10	12.5	12	15.0	58	72.5
Clean, Attractive Neighborhood	1	1.3	4	5.0	75	93.7
Low Traffic Volume	23	28.8	23	28.8	34	42.5
Low Noise Level	18	22.5	21	26.3	41	51.2
Total		28.4		23.0		48.6

According to Table 46, the following factors are most frequently listed as being very important: a clean neighborhood (93.3 percent), location close to shopping (78.7 percent), location close to medical services (73.7 percent), and access to sidewalks (72.5 percent). Factors of least importance include living in a totally residential

setting (63.7 percent), close to a park (60.0 percent), or in a low density area (51.3 percent).

Table 47 presents ideal locational factors for Radnor Towers.

TABLE 47
RADNOR TOWERS RESPONDENTS' RATINGS OF AN IDEAL
NEIGHBORHOOD

	<u>Not</u> <u>Important</u>		<u>Moderately</u> <u>Important</u>		<u>Very</u> <u>Important</u>	
	No.	%	No.	%	No.	%
Totally						
Residential	39	78.0	7	14.0	5	8.0
Low Density	31	62.0	14	28.0	5	10.0
Close to Senior						
Citizen Center	22	44.0	17	34.0	11	22.0
Close to Shopping	3	6.0	6	12.0	41	82.0
Close to a Park	30	60.0	14	28.0	6	12.0
Close to a Bus						
Stop	14	28.0	9	18.0	27	54.0
Close to Medical						
Services	3	6.0	13	26.0	34	68.0
Close to Relatives						
and Friends	2	4.0	25	50.0	23	46.0
Sidewalks	6	12.0	9	18.0	35	70.0
Clean, Attractive						
Neighborhood	0	0.0	3	6.0	47	94.0
Low Traffic						
Volume	17	34.0	16	32.0	17	34.0
Low Noise Level	13	26.0	17	34.0	20	40.0
Total		30.0		25.0		45.0

Table 48 presents ideal locational factors for Walnut Village.

TABLE 48

WALNUT VILLAGE RESPONDENTS' RATINGS OF AN IDEAL
NEIGHBORHOOD

	<u>Not</u> <u>Important</u>		<u>Moderately</u> <u>Important</u>		<u>Very</u> <u>Important</u>	
	No.	%	No.	%	No.	%
Totally						
Residential	12	40.0	10	33.3	8	26.7
Low Density	10	33.3	12	40.0	8	26.7
Close to Senior						
Citizen Center	12	40.0	2	6.7	16	53.3
Close to Shopping	1	3.3	7	23.3	22	73.3
Close to a Park	18	60.0	7	23.3	5	16.7
Close to a Bus						
Stop	17	56.7	6	20.0	7	23.3
Close to Medical						
Services	1	3.3	4	13.3	25	83.3
Close to Relatives						
and Friends	5	16.7	8	26.7	17	56.7
Sidewalks	4	13.3	3	10.0	23	76.7
Clean, Attractive						
Neighborhood	1	3.3	1	3.3	28	93.3
Low Traffic						
Volume	6	20.0	7	23.3	17	56.7
Low Noise Level	5	16.7	4	13.3	21	70.0
Total		25.6		19.7		54.7

Similarities between the two developments include a preference for clean neighborhoods, and access to shopping, and medical service opportunities. Residents of neither development prefer low density or totally residential neighborhoods with access to parks and senior citizen centers. Variations between the urban and the small town setting include a greater emphasis on quiet locations and low traffic volumes at the small town setting as opposed to the urban one. Urban residents, familiar with existing bus systems, are twice as likely as the small town elderly to rate access to a bus stop as an ideal locational factor.

Age-Homogenous Preferences

Literature indicates that elderly persons are better able to function in age-homogenous settings. The respondents were surveyed to determine if any ideal age preference for neighbors in the general area exists. They were given a choice of elderly neighbors, families with teenage children, families with small children, and an elderly and family mix. Table 49 presents age-preference information by the age of the elderly respondents at Radnor Tower and Table 50 contains similar data for Walnut Village respondents..

Neighborhoods populated primarily by other elderly persons are preferred by 47.5 percent of the total respondents. Walnut Village residents overwhelmingly prefer elderly neighbors (63.3 percent) with another 23.3 percent preferring a mix between elderly and families. Radnor Towers residents most preferred a mix (44.0 percent) followed by 38.0 percent who ideally desire elderly only neighbors. Only 2 persons out of eighty (2.5 percent) preferred to live in a neighborhood dominated by families with teenagers. Families with small children were only slightly more desirable (5.0 percent). Although in a larger societal sense, it may be advantageous for the elderly to mix with the young, the two cases in this study indicate that they do not prefer to do so.

The data does not show a trend toward greater preference for age homogeneity with advancing years. On the contrary, 100.0 percent of the respondents at Walnut Village, between 55 and 64 years old, prefer homogeneity, but the percentage declines to 72.2 percent, and 44.4 percent, and 0.0 percent with each progressive age group. This was not the case at Radnor Towers.

TABLE 49
AGE PREFERENCE FOR NEIGHBORS BY AGE OF RADNOR TOWERS RESPONDENTS

Age of Respondents	Elderly		Families With Teenage Children		Families With Young Children		Elderly Family Mix		Don't Care		Don't Know		Total	
	No. %		No. %		No. %		No. %		No. %		No. %		No. %	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
55 - 65	2	28.6	0	0.0	0	0.0	3	42.8	2	28.6	0	0.0	7	14.0
65 - 74	5	23.8	1	4.7	0	0.0	12	57.1	2	9.5	1	4.7	21	42.0
75 - 84	11	52.4	0	0.0	2	9.5	7	33.3	1	4.7	0	0.0	21	42.0
85 +	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	2.0
Total	19	38.0	1	2.0	2	4.0	22	44.0	5	10.0	1	2.0	50	100.0

TABLE 50
AGE PREFERENCE FOR NEIGHBORS BY AGE OF WALNUT VILLAGE RESPONDENTS

Age of Respondents	Elderly No. %	Families With Teenage Children		Families With Young Children		Elderly Family Mix		Don't Care		Don't Know		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
55 - 65	2 100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	6.6
65 - 74	13 72.2	1	5.5	0	0.0	3	16.6	1	5.5	1	4.7	18	60.0
75 - 84	4 44.4	0	0.0	2	22.2	3	33.3	0	0.0	0	0.0	9	30.0
85 +	0 0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1	3.3
Total	19 63.3	1	3.3	2	6.7	7	23.3	1	3.3	0	0.0	30	100.0

Relationship of Findings to the Anticipated Results

The findings supported the six expectations concerning elderly preference for features of their neighborhoods. The elderly were expected to be most concerned with aspects of their neighborhoods that relate to their safety and mobility. In addition, attractiveness and availability of support services were predicted to be important locational concerns. The three most frequently cited existing problems by the respondents are drainage problems (mobility, safety, and attractiveness), the need for park facilities (services), and the need for sidewalks (mobility). Over eighty percent of the respondents are satisfied with the quality of their neighborhood. The assumption that a realistic relationship between the appraisal of neighborhood conditions by the elderly and the field observations was supported by the data. Whereas field observation identified a drainage problem at Walnut Village, residents cite poor drainage more frequently than any other problem. The researcher identified aesthetic and safety problems associated with adjacent incompatible land uses and elderly residents perceive incompatible land as the third most serious neighborhood problem. Factors infrequently cited as problems by the Walnut Village respondents, such as availability of sidewalks and good quality of the neighborhood houses, were factors identified as positive locational features by the researcher during field observation. Radnor Towers respondents were most concerned about the poor condition of housing near the development and the lack of sidewalks. Field analysis also identified these as negative neighborhood factors.

A relationship was predicted between a preference for low noise levels, low traffic volumes, low density residential development,

totally residential neighborhoods, and a preference for low stimulation in complicated environments. Data findings suggest a preference for environmental stimulation and environmental complexity on the part of the respondents because few respondents prefer low density, totally residential settings. In addition, the urban elderly exhibit a definite lack of preference for quiet and lesser traveled locations although the small town elderly do prefer such locations. The data suggests that some degree of challenge and complexity is preferred by all the respondents, but to a greater degree among urban residents.

As predicted also, the elderly clearly prefer attractive neighborhoods, access to shopping opportunities, access to medical services, and sidewalk conditions which promote mobility. These priorities infer a relationship between good locations and accessible, supportive facilities.

This study assumed that the elderly would prefer age-homogeneous neighborhoods. Almost one-half of the respondents prefer a neighborhood populated with people their own age. Another one-third prefer areas made up of equal numbers of elderly persons and families. A clear lack of preference for living in neighborhoods dominated by families with teenagers was exhibited by the elderly. Preference for age homogeneity did not increase with the age of the respondents.

Lastly, the literature suggests that elderly living in small towns are more satisfied with aspects of their neighborhoods than elderly living in urban areas. The two cases in this study do not support this generalization. Walnut Village residents were more dissatisfied (21.2 percent) with aspects of their existing small town neighborhood than were the urban elderly at Radnor Towers (15.2 percent).

Conclusion

The data reveals that the majority of the respondents are in relatively good health, have access to transportation, perceived low crime levels in their area, and are generally satisfied with the overall quality of their neighborhoods. Therefore, the locational needs of the elderly respondents appear to be met. The following is a clarification of certain aspects of the data as it relates to future selection of housing sites for the elderly.

Although the majority of the respondents are presently in good health, the two developments are fairly new and as the buildings age, so will the occupants. Elderly persons tend to remain in independent housing as long as possible, despite increasing health limitations, before moving to a progressive care facility. It is reasonable to assume that in the coming years that more and more of the respondents will encounter health problems which may impact their mobility. Consequently, the siting of a development should take into consideration both the maximum and minimum capacities of the residents.

The majority of the respondents have access to transportation. The 41.2 percent who drive their own cars may, however, someday become ex-drivers. In addition, although 38.8 percent said riding with another was their most often used form of transportation, only 25.4 percent ride with others to perform five primary personal business trips. In contrast, only 11.2 percent rated walking as their primary form of transportation but 22.5 percent actually walked to the five specific places. Walking, therefore, is a significant form of alternative transportation when other forms are unavailable or inconvenient.

The respondents' expressed preferences for living in areas concentrated with people their own age. No preference for living in areas saturated with teenage or young children was revealed although one-third of the respondents did prefer an equal mix between elderly persons and families. This data must be evaluated conservatively. It speaks more to avoiding child saturated locations near high schools, teen-age hang-outs, or entertainment complexes that attract large numbers of young people than it does to segregating the elderly from healthy interaction with other age groups.

In conclusion, based on the data, a suitable site will include elements of safety, convenience, access to a surrounding service area, and a blend of support and complexity. The following chapter offers several recommendations for the selection of suitable sites for housing for the elderly.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Introduction

To be a viable support for the elderly, housing should be located to maximize opportunities for independence, safety, community interaction, and environmental mastery. This study has evaluated the role that health limitations, self-transportation, fear of crime, perception of neighborhood quality, and preference for services and activities play in promoting or limiting the above opportunities.

Summary

The literature suggested that opportunities for continued community involvement and physical good health are the major variables which promote engagement and independence. Changes in health, which frequently limit mobility and interaction include muscle deterioration, slowed reaction time, poor balance, diminished sight and hearing, respiratory and cardiovascular conditions, and joint degeneration.

The availability of a reliable source of personal transportation is also a major determinant of social interaction according to gerontological literature. The ownership of a car provides an elderly person with independence but low incomes, complex driving environments, and health problems may limit driving. Although riding the bus can be a viable alternative in urban areas, studies indicate infrequent ridership by the elderly. Other studies indicate that walking and relying on friends and relatives for transportation

are important to elderly mobility. However, the condition of sidewalks, crime, topography, and adjacent land use influence elderly ability and desire to walk. Fear of crime is a primary factor in the way elderly people are willing to interact with the external environment. Studies suggest that fear of crime increases with the size of the community.

The literature was consulted to determine elderly activity preferences. Studies suggested that life support trips, such as grocery shopping and going to the doctor, remain on the same level as during mid-life. Church attendance was reported to be a favorite activity, especially among the rural elderly. Indications are that only a few elderly persons actually use parks and senior citizen centers.

Regarding neighborhood satisfaction, the literature revealed that the elderly have a general tendency to express satisfaction with their environments. Areas which are reportedly of greatest concern to the elderly are the availability of shopping and medical opportunities, attractive neighborhoods, physical security, and quiet settings. In addition, the literature indicates that age-homogeneous environments associate positively with high elderly satisfaction and morale. Higher levels of competence were also associated with operating in moderately demanding environments.

In summary, the literature revealed that environments which offer a blend of support and challenge encourage elderly independence, community interaction, and environmental mastery. To determine the applicability of the literature review to actual settings, personal

interviews were conducted with eighty randomly selected residents of two housing developments for the elderly. A small town setting and an urban setting were selected for study. Advance notice of the interview was used to maximize the elderly response rate. Data gathered during structured interviews was organized into five data sets. Field observations were also conducted in each of the study settings. A brief summary of the major findings follows.

Almost one-half of the study participants were between the ages of 64 years and 74 years old. Single, female households were in the majority. Of the respondents, 72.5 percent rated their health as presenting few or moderate limitations. Another 20.0 percent perceived themselves as having no health limitations.

Modes of transportation most frequently used by the study included driving a personal car (41.2 percent), riding with relatives or friends (38.7 percent), or walking (11.2 percent). Very few respondents ride buses, ride in taxis, or ride in senior citizen center vans.

Forty-five percent of the respondents perceived themselves capable of walking one way between one mile and two miles. However, another forty-five percent could only walk between one block and one-half of a mile. Most often identified barriers to walking included the condition of sidewalks, the availability of sidewalks, and dangerous traffic.

Crime was not perceived as a major neighborhood problem. On the contrary, 40.0 percent of the total respondents perceive their neighborhood as being very safe at night and another 48.8 percent felt somewhat safe at night. Over three-fourths of the elderly perceived

the crime rate in their neighborhood as being lower than the city-wide crime rate.

Favorite off-site activities of the elderly included shopping, attending church, and walking for pleasure. Less than one third of the total respondents favored going out to eat, going to the senior citizen center, to the library, and to the movies. Elderly persons who lived close to a senior citizen center were much more likely to favor it as an activity (50.0 percent) than those who did not (8.0 percent).

Proximity to services and facilities increased the use of services by the elderly. Almost 45.0 percent of all trips to the grocery store, drug store, hairdresser, doctor, and convenient food store were made on the basis of proximity to the development.

The three most frequently cited neighborhood problems in need of improvement were drainage problems, the lack of parks, and the lack of sidewalks. However, over 80 percent of the respondents were satisfied with the quality of their environment.

Elderly respondents expressed very little preference for living in totally residential, low density environments. The urban elderly, in addition, expressed very low preferences for low noise and low traffic volume locations. The data suggested that some degree of challenge and complexity is desired by the total respondents, but to a greater degree by urban elderly.

High levels of preference were stated for attractive neighborhoods, proximity to shopping and medical opportunities, and access to sidewalks in good condition. Therefore, a relationship

between good locations and accessible and supportive facilities was established.

In addition, almost one-half of the respondents preferred to live in neighborhoods populated with people in their own age group.

Recommendations

The following recommendations are designed to serve as a guide in the selection of appropriate neighborhoods in which to locate housing for the elderly. The underlying assumption common to these recommendations is that, to the fullest extent possible, a full range of services, the availability of transportation, satisfactory land use, and a desirable environment be present in every setting. The recommendations are based upon the attitudes and activities of the elderly study participants.

1. Neighborhood Image. The neighborhood should present an attractive image. It should be free from unaesthetic influences, such as unkept yards and dilapidated structures.
2. Land Use. The area enclosing the site should have no negative characteristics that could affect the health, welfare, or safety of the residents. Residential areas and mixed commercial/residential areas are compatible with housing for the elderly.
3. Neighborhood Identity. Housing for the elderly should be located in neighborhoods close to opportunities for community interaction. Isolated sites restrict interaction.
4. Age Grouping. The more age-homogeneous the neighborhood, the more satisfied will be residents of housing for the elderly. Sites surrounded by heavy concentrations of children and teenagers should be given low priority.

5. Pedestrian Access. The realistic boundary for the service neighborhood is a one-half mile radius from the housing site. To facilitate mobility, sidewalks in good condition should extend to and from primary support services. Appropriate traffic signals, crosswalks, relatively flat grades, resting places, and crime-free areas encourage pedestrian mobility.

6. Availability of Support Services. The following services should be mandatory.

a. Police protection. Police protection should be within a reasonably prompt response time to the development. This protection reassures the elderly, protects the housing investment, and deters criminal activity.

b. Medical facilities. Preventive and emergency health care should be available to the development. Because most medical trips are made by car, doctor offices or hospitals may be located in adjacent neighborhood.

c. Food stores. A grocery store should be located within walking distance from the development. However, if the major food store is located in an adjacent neighborhood, then a convenient food store should be located within easy walking distance from the site.

The following services should be considered as highly desirable:

a. General Commercial Services. A variety of general commercial services, such as drug stores, repair shops, beauty shops, barber shops, fast food restaurants, banks, and variety stores should be located in the general area to the site.

b. Churches. A variety of church denominations in the general area present opportunities for elderly interaction with the larger community.

c. Parks. Parks are assets only if they are free from crime, have benches and restrooms, offer interesting sights, and are located in the immediate neighborhood.

d. Senior Citizen Center. Location close to a senior citizen center provides service supports that can aid in the maintenance of elderly autonomy. However, only if the senior citizen center is located within walking distance to the development can it have an influence on the majority of the elderly residents.

7. Neighborhood Complexity. Although privacy and quiet are valued by the elderly, locations which have interesting sounds and people activity are desired by the elderly who are in good health. They prefer mixed land use locations which offer an array of commercial services. However, these complex locations should also contain protective elements such as ease of access and security from crime, if they are to support elderly needs.

8. Management. Careful screening of applicants by the management agency should anticipate the selection of occupants who have access to a regular means of transportation. Ex-drivers should be assessed on their capacity for self-transportation. Walking or relying on a relative are alternatives to driving. In the event that a development without access to mass transit is sited more than one-half mile from food stores, then residents with cars and access to rides should be selected.

The site planning process should begin with an understanding of the needs of the persons for whom the site is being planned. This study has provided an understanding of the limitations and behavior patterns of elderly persons; the results have been applied to a set of recommendations for the selection of suitable housing locations.

The site planning process also involves the representation of survey data on base maps as a tool in assessing site suitability. Caution must be exercised however because mapped data may not accurately represent the true relationship between the site and area services and landforms. For instance, although a shopping center may appear to be immediately adjacent and accessible to a site according to a land use map, in actuality a steep slope and the lack of stairs may limit access. On site obstacles may also limit pedestrian access from a site to area facilities. In order to accurately represent geographic barriers, base maps should, to the extent possible, show the contour of the terrain in addition to the surrounding land use, community facilities and transportation networks.

Future research to determine the impact of environmental factors on the elderly is necessary to further refine the development of site and neighborhood criteria for the elderly. For example, additional research on the effects of environmental complexity on elderly satisfaction could aid in determining the proper blend of challenge and support. Above all, housing research which continues to solicit the input of elderly consumer groups, creates a foundation for housing that nourishes elderly well-being and independence.

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APPENDIX

SURVEY OF ELDERLY PERCEPTIONS OF SITE AND NEIGHBORHOOD

"I am going to ask you some questions about your perceptions of the site this building is located on as well as the neighborhood beyond. I am not interested in design or management issues. This map shows the neighborhood area I will refer to. (Hand map and explain neighborhood boundaries).

The results of this survey will be strictly confidential, so please be as open as possible. The finding of the study will help housing agencies to make better decisions when planning the location of housing for the elderly."

Part 1 - Profile

- | | |
|---|--------------------|
| 1. Sex | 2. Household Size |
| 1. Male | 1. 1 person |
| 2. Female | 2. 2 persons |
| 3. How long have you lived in Radnor Towers/Walnut Village? | |
| 1. less than six months | 4. 2 - 3 years |
| 2. 6 months - 1 year | 5. 3 years or more |
| 3. 1 - 2 years | 6. N/A |
| 4. What is your age? | |
| 1. 55-59 | 6. 80-84 |
| 2. 60-64 | 7. 85-89 |
| 3. 65-69 | 8. over |
| 4. 70-74 | 9. DK |
| 5. 75-79 | |
| 5. How would you characterize your state of health? | |
| 1. no limitations | |
| 2. few limitations | |
| 3. moderate limitations | |
| 4. severe limitations | |

Part 2 - Neighborhood Satisfaction

1. If you were to choose another neighborhood to move to, how important or unimportant would the following items be in deciding where to live?

	<u>Important</u>	<u>Moderately Important</u>	<u>Not Important</u>
1. totally residential			
2. a low density residential neighborhood			
3. sidewalks			
4. close to shopping			
5. close to bus line			
6. close to park			
7. close to doctor/hospital			
8. close to relatives and friends			
9. clean & attractive neighborhood			
10. low traffic volume			
11. low noise levels			
12. close to senior citizen center			

2. What kind of neighbors would you prefer? (general neighborhood)

- | | |
|--|---------------|
| 1. lots of other elderly people? | 5. don't care |
| 2. families with teenagers in the majority? | 6. DK |
| 3. families with small children in the majority? | 7. N/A |
| 4. equal elderly/family mix? | |

3. What type improvements should be made in this neighborhood to make it a better place to live? (choose as many as apply)

- | | |
|---------------------------------|---|
| 1. repair sidewalks | 11. more stores |
| 2. install sidewalks | 12. clean-up air, noise pollution |
| 3. fix-up houses | 13. correct drainage problems |
| 4. clear out substandard houses | 14. control land uses inconsistent with elderly housing |
| 5. clean-up yards | 15. other _____ |
| 6. install street lights | 16. DK |
| 7. widen streets | 17. N/A |
| 8. control traffic | |
| 9. reduce crime | |
| 10. more parks | |

Part 3 - Security

1. How safe do you feel the neighborhood (not the site itself) surrounding Radnor Towers/Walnut Village is at night?

- | | |
|--------------------|----------------|
| 1. very safe | 4. very unsafe |
| 2. somewhat safe | 5. DK |
| 3. somewhat unsafe | 6. N/A |

2. How do you think the crime rate in this neighborhood compares with the city crime average?

- | | |
|-----------|--------|
| 1. lower | 4. DK |
| 2. same | 5. N/A |
| 3. higher | |

Part 4 - Activities & Transportation

1. What are your favorite off-site activities?

- | | |
|-----------------|--------------------------------|
| 1. shopping | 6. go to senior citizen center |
| 2. bowling | 7. church social |
| 3. go to movies | 8. other _____ |
| 4. walking | 9. N/A |
| 5. library | |

2. What is the form of transportation you most often use?

- | | |
|------------------------|---------------------------------|
| 1. drive own car | 6. senior citizen van |
| 2. drive another's car | 7. ride with friend or relative |
| 3. walk | 8. other _____ |
| 4. bus | 9. DK |
| 5. taxi | 10. N/A |

3. If you occasionally walk, what is the average distance you could walk round trip?

- | | |
|--------------|-----------------|
| 1. 1 block | 6. 2 miles |
| 2. 1/4 block | 7. over 2 miles |
| 3. 1/2 mile | 8. DK |
| 4. 1 mile | 9. N/A |
| 5. 1.5 miles | |

4. If there are physical barriers in this neighborhood that you try to avoid when walking, what are they?

1. steep hills
2. dangerous traffic
3. stairs
4. sidewalks in poor repair
5. no sidewalks
6. must walk past undesirable places
7. other _____
8. DK
9. N/A

Part 5 - Neighborhood Resource Use

Now I'm going to ask you some questions about the places you go and the things you do when you leave this building. For each activity I mention, I will ask the following sequence of questions:

- A. Where do you usually go to _____?
- B. How often do you go there?
- C. How do you get there? If you walk, what route do you take?
- D. Why do you use this particular facility?

A. LOCATION	B. FREQUENCY	C. MODE	D. REASON
1. next to site	1. daily	1. walk	1. nearest facility
2. within neigh- borhood	2. several times a week	2. drive own car	to development
3. in adjacent neighborhood	3. weekly	3. ride another's car-friend	2. lower prices
4. CBD area	4. 2-3 times month	4. ride another's car-relative	3. in old neighbor- hood familiarity
5. in former neighborhood	5. monthly	5. bus	4. friend who drives shops there
6. don't go	6. quarterly	6. taxi	5. other
	7. less often	7. senior van	6. don't go
	8. don't go		

TRIP PURPOSE-RESOURCE	A	B	C	D
1. Shop for major food items				
2. Have perscriptions filled				
3. Treated by a doctor				
4. Have hair cut/styled				
5. Shop for convenient food items				

VITA

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