COMMERCIAL FACILITIES IN SUBDIVISIONS

by

MELVIN S. KRAUSE, JR.

B.S. in Arch., University of Virginia
(1956)

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER IN
CITY PLANNING

at the

MASSACHUSETTS INSTITUTE OF
TECHNOLOGY

June, 1958

Signature of Author

Department of City and Regional Planning

Certified by . . . Thesis Supervisor

Accepted by . . . Chairman, Departmental Committee
on Graduate Students
ABSTRACT OF THESIS
COMMERCIAL FACILITIES IN SUBDIVISIONS
by Melvin S. Krause, Jr.

Submitted to the Department of City and Regional Planning on May 26th, 1958, in partial fulfillment of the requirements for the degree of Master in City Planning

Residential subdivisions have grown up in suburban fringes of virtually every city in this country. They are absorbing a greater proportion of the population increase than the central areas, and their effect on the lives of the residents is an increasingly important problem. While these housing developments satisfy the most basic need of shelter, too often they do not provide for any of the other amenities considered by some to be important to the full social growth and development of both the individual and the family. In most cases, the activities of the residents, and even the satisfaction of their shopping needs, are entirely dependent upon the automobile.

As a possible solution to this problem, this thesis discusses the possibilities of including some commercial facility as an integral part of residential subdivisions and the advantages that might accrue. This concept is founded on the belief that the Neighborhood Unit Theory, while being a valid intellectual approach to the establishment of a more balanced residential environment, is not generally realized in practical terms today. One reason for this is that many of the subdivisions built today are not large enough to justify the inclusion of all the facilities demanded by the neighborhood theorists. At this smaller scale of development, a multi-purpose, social-service focus seems to be a reasonable solution. The criteria and limitations of development for such a facility are discussed and certain standards are offered as guides. In an attempt to suggest the practical appropriateness of this thesis, a design solution for a specific area is included, as are generally proposals for effectuation.

The appendices contain a summary of such qualitative and quantitative standards for the development of commercial facilities as could be found in the literature, and other background material for the specific design solution.

Thesis Supervisor: Burnham Kelly
Title: Associate Professor of City Planning
May 28th, 1958

Professor John T. Howard, Head
Department of City and Regional Planning
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Professor Howard:


Respectfully yours,

Melvin S. Krause, Jr.
TABLE OF CONTENTS

ABSTRACT i

TABLE OF CONTENTS ii

ACKNOWLEDGEMENTS iii

INTRODUCTION 1
  Background
  The Neighborhood Unit Theory
  Thesis Statement
  Basic Assumption

CRITERIA AND LIMITATIONS OF DEVELOPMENT 9
  In General
  Qualitative Development
  Quantitative Analysis
  The General Store Concept
  Relationship Between Commercial Facilities
  and other Community Facilities
  Summary

DESIGN APPLICATION 28
  A Typical Suburban Residential Subdivision
  Facilities to be Included
  Design Solution
  Evaluation of the Solution

IMPLEMENTATION 39
  Who Would Provide the Facilities?
  Existing Planning Tools
  Proposals

CONCLUSIONS 51

APPENDICES 54
  A. Existing Standards for Commercial Development
  B. Concord Citizens' Advisory Council Questionnaire
  C. Bibliography
ACKNOWLEDGEMENT

The author wishes to express his gratitude and sincere appreciation for the helpful guidance of Professor Burnham Kelly and Bernard Frieden throughout the duration of this investigation. Peter King, Marketing Professor in the School of Industrial Management, also contributed valuable criticism and suggestions, especially in those areas of his specialty.
INTRODUCTION

Background
The Neighborhood Unit Theory
Thesis Statement
Basic Assumption
INTRODUCTION

Background
One of the most outstanding and oft quoted facts of the post-World War II era in the United States has been the population trend, both in terms of absolute growth and displacement. In this era, we have seen a "population explosion" accompanied by a significant shift towards metropolitan areas. The latter phenomenon is the basis for the key population facts of today's metropolitan economy: both the central city and the suburban areas are growing; but the suburbs are growing at a faster rate.¹

To accommodate this growth, the land subdivider and/or speculative builder has answered the call. Thus, the landscape has become dotted, spotted and blotted with the "Merryland Dells" and "Rolling Knolls" immortalized in John Keats's Crack in the Picture Window. This is not to imply that all the housing developments built are of the same character as those mentioned. But the sad fact is that too many of them are. Neither is this to imply that residential subdivisions in themselves are bad. The important point is that, regardless of whether we like them or not, subdivisions have been built, are being built, and

¹Eugene J. Kelley, Shopping Centers, The Eno Foundation, Saugatuck, Conn., 1956, p. 44.
will be built. It is in the realm of this last fact that we should be concerned, since qualitatively, we have not become heirs to the most desirable form of residential offerings. Profiting from past experiences and errors, we can try to ensure that the same mistakes will not be made again. But what are these mistakes? Can we determine their nature and their effect? Both these questions have been the subject of much observation, analysis and myth. And the results certainly lead to a multiplicity of conclusions and criticisms.

In terms of sociological appeal, one significant criticism has been the lack of community facilities - both public and private - that would contribute to a more balanced residential environment. In other words, much as a house is not necessarily a home, a group of dwellings alone is not a balanced, or even partially balanced residential community. For those who agree with this line of argument, the "neighborhood unit theory" suggests certain possibilities for meeting the criticism.

The Neighborhood Unit Theory
This concept is founded on six basic principles: size, boundaries, open spaces, institution sites, local shops, and the local street system. In general terms, the size is a function of the service area for an elementary school
district. This is, of course, subject to variations due to the residential density of the area, and the capacity of the school in question; but the primary emphasis is on the optimum size as determined by a "walking-distance" for the school children.

Open spaces, institution sites, and local shops are determined on the basis of "the facilities and conditions required by an average family for its comfort and proper development within the vicinity of its dwelling." The internal street system is designed ideally to separate the pedestrian and automotive movements, and to discourage through traffic.

It should be noted that, "while this concept...depends essentially on matters of physical arrangement, it has social implications in it that aim at promoting the conscious participation of residents in community activities. Acceptance of the neighborhood concept implies that adequate housing conditions consist not merely of the individual homes, no matter how well planned or how well located; but that all residential and community facilities and services required for the shelter, health and convenience of the residents of a neighborhood must be included in the

---

1Clarence A. Perry, Housing For the Machine Age, N.Y.: Russell Sage Foundation, 1939, p. 50.
neighborhood - or must be made available to the residents.\textsuperscript{1}

In the past, there has been general agreement that in terms of physical design, the minimum planning unit should be this neighborhood unit. This intellectual conclusion never became a practical reality, however, in most instances. Today, with the intense residential "scatteration" we have taking place in the outlying suburban areas, the normal design unit is very often smaller than what "should be" the minimum planning unit. It is easy to accept the neighborhood theory in urban areas where the density is such that it is reasonable to expect the provision of the facilities and services advocated by the neighborhood theorists. But what of the vast number of subdivisions that are situated in the outlying suburban areas where it even becomes questionable whether or not the municipality should provide public water and sewerage services? In those large-scale developments that are communities in themselves, facilities are generally provided and with economic satisfaction. There are, however, too many of the smaller housing developments today that are unserved by any of the basic amenities considered by some to be important to "full social growth."

\textsuperscript{1}Planning the Neighborhood, American Public Health Association, Committee on the Hygiene of Housing, Chicago, 1948, p. 2.
Another departure from the conventional definition of a "neighborhood" results from the establishment of these housing developments in the relatively undeveloped suburban areas where the areas of service of the school district and the local shopping market do not coincide. It should be fairly obvious, then, that the neighborhood unit theory cannot be mechanically applied to meet the new situation. This does not invalidate the goals that it imparts, but it does require their consideration on another scale.

**Thesis Statement**

To provide for a more balanced environment, particularly in the small-scale residential subdivisions, I propose the inclusion of some form of commercial facility that would act as a social-service focus. As an hypothesis, I claim that there are definite advantages to be gained from the introduction of this type of facility in areas not served by comparable units. This is not an altogether new concept. The first evidence of it was the "general store" in rural areas. The corner grocery or drug store in almost any existing residential area of pre-suburbia days are other examples. The facility that I am proposing would be designed to serve the same primary function as

---

1 Small-scale is intended to mean smaller than a "neighborhood" as previously defined.
those examples mentioned: a retail distribution outlet serving the day-to-day, convenience goods needs of nearby residents.

To demonstrate the possibilities of this thesis, three phases of discussion will follow: first, there will be a discussion of the criteria and limitations of development for such an endeavor; second, an illustration of the design aspects as applied to a specific subdivision in the Boston area; and, third, an evaluation of the appropriateness of the existing tools available to planners to effectuate this notion.

Basic Assumption

An assumption that is basic to this thesis is that a demand for these facilities exists. I would argue that this is not an unreasonable assumption. Today the trend is towards the development of a hierarchy of commercial facilities, beginning with the central business district, and going above to the regional shopping center, and below to the neighborhood or district center. The so-called "local" shopping facilities are not considered feasible from an economic point of view, and, in fact, are generally prohibited by zoning regulations, being considered "spot zoning." This hierarchy assumes that each family in the community is either served by public transit or private
conveyance to satisfy its needs as consumers. While this may be true in the more densely settled urban areas, and for the purchase of shopping goods and relatively large volumes of convenience goods, there still exists a day-to-day need for certain items of the convenience classification in any residential environment. Cigarettes, bread, milk, eggs, newspapers, and similar items that are either perishable or characterized by a high frequency of use are examples. A mundane illustration of this was revealed in a published study¹ of Park Forest, a "packaged community" in Illinois. Interviews with housewives there produced fairly common complaints about the lack of neighborhood shopping facilities. This was winsomely expressed by one housewife as a wish for some neighborhood place where she could take her child to buy an ice cream cone; in her case, this was only possible by driving to a large shopping center which was some distance away. From the point of view of both the mother and the child, this alternative did not seem nearly as attractive as a leisurely stroll to a neighborhood store. If this facility is within walking distance of residences, it should provide welcome opportunities for the mother and the child to vary the day's routine with a pleasant walk.

The situation is particularly aggravated in the suburban areas that are experiencing the greatest population growth, and whose existence is almost entirely dependent upon the auto. Few, if any, of these outlying subdivisions are served by public transit. While there has been a trend towards two-car ownership, not all families are so fortunate. Indeed, it has been stated that in the Boston metropolitan area, "...one-fourth of the populace just do not have cars at home for shopping during weekday working hours."¹ Thus, unless facilities are provided within a reasonable walking distance, these day-to-day convenience needs must be deferred until the family car is available. Even then, however, it can be demonstrated that the use of an automobile for this purpose is highly uneconomical for the consumer.

CRITERIA AND LIMITATIONS OF DEVELOPMENT

In General
Qualitative Development
Quantitative Analysis
The General Store Concept
Relationship Between Commercial Facilities and Other Community Facilities
Summary
In General

A condition precedent to the establishment of any commercial development should be the consideration of such standards as exist for both the qualitative and quantitative aspects of the enterprise anticipated. For the purposes of this thesis, the qualitative analysis is interpreted as a study of the nature of the goods to be sold, and this must obviously precede any quantitative study.

Accepting the "neighborhood unit theory" to be valid, I will assume that any residential development large enough to demand an elementary school will by definition be served by some form of commercial development, and therefore my primary concern will be with population groupings that are smaller than the 550 families (2,000 persons) recommended as minimum for a neighborhood by the authorities in Planning the Neighborhood.

Qualitative Development

In this instance, the nature of the goods to be sold is determined by the function that these facilities are to serve, i.e., their location in the hierarchy of the metropolitan retail economy. The lowest order of magnitude in this hierarchy, in terms of population served, is found in
10

the established residential areas of medium density, and are the small clusters and scattered individual stores that have been called "sub-neighborhood" shopping centers. These institutions of pre-suburbia days do not have a counterpart in most towns' penumbra of low density housing, and it is this void that I hope to fill.

The types of goods and services to be included in a shopping development would in most instances be determined by sophisticated "purchasing power" market analysis. This is true when the exact extent of the market and the competitive effects of other facilities must be appraised.

In this case, however, the market is always pre-determined (and, in fact, some might call it a "captive market"), and the facilities are to serve only day-to-day needs for a walk-in clientele. Thus, the limitations of development are inherent, being determined by their importance to the daily family life. Another criterion is that of frequency of use\(^1\) which, in terms of grocery goods, may be characterized by perishability and high frequency consumption. With respect to other goods that may be considered applicable, low unit cost and small bulk are general characteristics.

\(^1\)The frequency of use criterion is one suggested by Prof. Peter King, a Professor of Marketing in the School of Industrial Management at M.I.T. He argues that this is in fact the primary factor in determining the function of any "corner store" type of facility.
Assuming then that the consumer's needs for large volume purchases of convenience goods (e.g., the one-trip, week-long supply of staple groceries), and shopping goods are met by some facility within the retail structure, I come to the conclusion that only those convenience goods that are perishable and/or high frequency-use "notions and sundries" should be provided at any level below the neighborhood shopping center. The selection carried would be comparable to those found at the corner grocery and drug store in most communities. In the final analysis of any specific area, the nature of the goods marketed will have to be considered in light of both the size and the economic status of the housing group involved. Cultural backgrounds, age composition, climate and local custom will also have to be given their due consideration.

So far, I have been speaking primarily of retail goods and their distribution. There remains another predominant retail function to be considered, and that is the service-type operation, e.g., laundry, dry-cleaning, shoe repair, etc. Many of these service firms require a centralized operation with broad distribution points to function efficiently enough to enter the market. Some even extend the distribution process to the point of personalized delivery. The trend towards home delivery of goods purchased downtown has accentuated the importance of the
distributive aspects of merchandizing. And, at the same time, it increases the vehicular traffic in residential areas.

To avoid what could become a safety problem, to cut the costs of the complex distribution problem to the retailer (and perhaps, but not necessarily, the costs of the goods to the consumer), I propose to consolidate and centralize the distribution points in any given subdivision at the commercial facilities I am providing. This also has a precedent in some existing drug stores, for example, where dry-cleaning is picked up and left. It is true that this would result in a slight loss of absolute convenience to the consumers in the case of some services, but I feel that it would also result in promoting the social values of the commercial facilities, making them a positive focus of community intercourse. It is also a means of adding to the financial support of the commercial facilities which generally operate at a low profit margin.

Quantitative Analysis

In broad and very general terms, the number of units of commercial facilities that should be provided is a function of the number of households or persons to be served, i.e., the market area. It is also tempered by the income levels and expenditure patterns of those households, and
the competition to be expected from other units serving the same market. These factors then determine how many facilities an area can support.

Other guides to quantitative development might be derived empirically from a survey of the pertinent literature available. One finds that any number of inventories of existing commercial development\(^1\) have been made in various cities over the years, but, unfortunately, these are not very helpful for several reasons. The majority of these surveys are based on city-wide calculations, or nation-wide averages of contributing factors and do not take regional variations into account. Also, they do not distinguish in the results presented, between the functions of those facilities, i.e., whether or not they serve the entire urban area, the entire region, or only one neighborhood or district. Another disqualifying factor is that in almost every instance these figures represent significantly higher density patterns than I intend to serve. The quantitative conclusions of these inventories would not be applicable then to this thesis, even as the crudest sort of guides.

Other observations, opinions and theories of quantitative

\(^{1}\text{See Appendix A for a summary of this survey.}\)
development for shopping facilities are easily found throughout the literature.¹ Some of these are grounded on empirical observations, some are scientifically constructed, and many are very sophisticated and probably valid for the level of development that they are designed to accommodate: with only one exception, 500-750 families is the minimum population group considered. This one exception is found in the discussion of "neighborhood shopping" in Planning the Neighborhood, where standards are suggested for 1,000 persons (275 families), or a group one-half as large as that defined as minimum by the elementary school criterion.² Even the standards suggested for this small a group lay: heavy emphasis on parking accommodations, however, and the figures are therefore out of focus with my facilities which are to serve primarily walk-in trade. If those allowances are subtracted out, the standard then becomes 9,000 square feet of floor area of buildings, or approximately 33 square feet per family. It should be noted that this figure is predicated on the inclusion of the following stores and services: food, drugs, barber and beauty shop, shoe repair, and laundry and dry cleaning pickup station. Also, the use of the terms "buildings" and "stores" implies that these are to be included in

¹See Appendix A.
²Planning the Neighborhood, op. cit., p. 52.
individually differentiated spaces.

While I intend to provide the same general range of goods and services, save the barber and beauty shop, I do not feel that they would necessarily require individual stores. In the type of facility that I am proposing, the goods to be offered are pretty well standardized as to price and quality, and it is assumed that the purchaser would therefore not have to "shop around" to make his selection. For this reason, the convenience goods merchant would not need to keep a large stock on hand, but can operate with only a few days' supply on his shelf, and thus the capital operating costs are minimized. Having less inventory on hand, it follows that he requires less space to operate within. On the basis of this reasoning, I would feel that only 10 square feet per family would be a standard more nearly consistent with the concept that I am proposing. The same 275 families mentioned above would thus require 2,750 square feet of commercial floor space, or a building approximately 40 feet by 70 feet. Even this would be an excessively large space if only food supplies were to be sold, but when the other service functions are added, more space is required, particularly for storage.

Another criterion and limitation for development that is particularly crucial to this thesis is a reasonable measure
of walking distance. The success or failure of any facility provided will be measured in terms of the daily use to satisfy the convenience needs of the residents. If it is not nearby, it will not meet this goal. In the past, it has been generally accepted that one-half mile is the maximum suitable walking distance, "for numerous studies have indicated that people tend to use vehicles if they must go further." Assuming this standard also allows a measure of the exclusive service area for any one facility, where the subdivision by the nature of its size might require more than one.

The validity of the walking distance criteria, and in fact, the validity of this concept of commercial facilities in outlying residential areas becomes questionable in areas of large lot zoning. The one-half mile standard would obviously not include a sufficient number of residences in areas of over two-acre lots to justify such a facility. At the other end of the spectrum, in areas of high density containing multi-family residential units, the square footage standard would obviously be excessive, and it would have to be reduced accordingly.

The General Store Concept

The idealized descriptions of the facility I am proposing

1Ibid., p. 43.
and the function it is to serve reminds one of the familiar "general store" type of operation, and indeed, this analogy seems appropriate to describe my concept: the centralized distribution of a variety of convenience goods and services within a limited amount of space, to serve entirely local residents. One characteristic that is peculiar to both, flexibility, deserves special attention. It is essential for a person engaged in this form of enterprise to keep a watchful eye on the changing consumer desires and demands, so that he may adapt his stock and the nature of his services to satisfy them. The failure to be alert to these changes has been one cause for the failure of many of the marginal corner stores. Other causes for these failures have been the misunderstanding by the retailer of exactly what his function is, and what his market capabilities and limitations are. Thus, the small neighborhood store tries to emulate the supermarket in merchandizing objectives and techniques, and he goes broke because of the capital costs involved. The marketing research experts have told me that the corner store does have a valid function, a niche, in the retail economy, but they are quick to point out that it is a limited function, and to be successful, it must be confined to it. The same might be said for the facility I am proposing.
The economic capabilities of the existing general stores also give a clue to the economic probabilities of my proposed facility. The U.S. Census of Business for 1954 indicated that in the New England States there were a total of 2,838 "general merchandise stores,\(^1\) with a total sales of $191,710,000. This is approximately $67,500 per establishment for that year. Of the merchandise line sales, items that are comparable to those that I propose to include constituted approximately 50 per cent of the total sales. These are: groceries, confectionery, beverages; drugs, medicine, cosmetics; cigars, cigarettes, tobacco; and other notions. Adjusting the sales figures to eliminate the other non-comparable items, I find that on the basis of the past experience, I should expect total annual sales to be approximately $33,750. As a check to these hasty calculations, the 1948 Census of Business shows that the average single-unit grocery store, not self-service and without a fresh meat counter, had sales

\(^1\)The General Merchandise Group, as defined by the Census Bureau, includes stores selling a combination of two or more of the following lines: Dry goods, apparel and accessories, furniture and home furnishings, small wares, hardware, and food. Among the kinds of businesses included in this group are those commonly known as department stores, variety (5-10, etc.) stores, and general stores. The general stores are usually located in rural communities and sell a line of merchandise of which food is the most important line. The "general merchandise stores" reported here are those general stores.
of close to $30,000 during that year. The same figure for 1954 was not available, but it is assumed that while the volume of business may have held steady from 1948 to 1954, the prices certainly rose, and thus my original calculations appear to be reasonable. In terms of the hypothetical subdivision of 275 families mentioned earlier, the average family would have to spend only $123 a year in the commercial facility for it to have the $33,750 volume of sales. Every family purchasing only one loaf of bread and one quart of milk a day would yield this.

It is not expected that the operator of a commercial facility of the nature that I suggest would necessarily derive his entire income from the sale of the grocery goods. The reasoning above indicates that, if he did, he might at least do so on a comparable basis with other firms. The addition of the dry-cleaning and laundry pickup service, as well as the other service functions, should provide a secondary source of income. The general store would in effect be a "branch office" for the centrally located service firms. These firms should certainly be willing to spend at least a nominal amount to simplify the delivery process. In this same respect, the inclusion of the postal service\(^1\) could provide a steady basic source of income.

\(^1\)See below, page 22.
for the operator of the general store, and at no greater cost to the Government than the current cost of home delivery. Equipment rental would be another small source that is obviously seasonal, but still over the period of a year it would help to raise the income characteristics to some point above the marginal that is expected in most small store operations.

**Relationship of Commercial Facilities to Other Community Facilities**

Under the existing Subdivision Regulations for the State of Massachusetts, the local planning agency can require the subdivider or developer to reserve "appropriate" spaces for parks or playgrounds, or to ensure light and air to the residents. This land may be held in reservation for a period of three years. This is generally true, in one form or another, in most states. Open space, then, is the only one of the community facilities considered essential by the neighborhood theorists that can be assured. Institutional and shopping sites are more often than not included in the larger developments solely because the developer has found that it is to his economic advantage: institutional sites because of their advertising value to his promotional campaign, and shopping sites because of their higher sale value, or because of their long-run financial returns if he maintains some interest in them. It
is difficult, economically, to justify the inclusion of public or private facilities for the smaller developments which are my main concern, and thus they are seldom, if ever, to be found there.

The population of these subdivisions is not great enough to require a separate elementary school, at least not under the present standards of school design. If there should be a movement towards an educational theory based on smaller, more dispersed schools, then perhaps a case could be made for them. Nursery schools present a different situation. It is generally known that the residents of the suburban residential areas are in the younger age groups - the so-called "child-bearing" years. And bear children they do, as the population figures testify. For the housewife and mother, who compose the day-time matriarchal society of the typical subdivision, the existence of some child-care facility, public or private, "within the community would provide the basis for either occasional or regular relief from the duties of child-rearing and family care."¹ From the number of articles written on the subject, this would seem to be an addition desired by suburbanites-at-large. If community space were provided, this

and other group home care functions might be jointly undertaken by the housewives to meet their domestic needs outside of the individual residence, where they might be seen less as chores.\(^1\)

Indoor social and cultural facilities, as well as the health services, are also generally considered to be desirable neighborhood facilities. The need for these in suburban subdivisions does not seem to be as critical as it does in the higher density urban environment, particularly when they are considered as public facilities and services. Families who are able to purchase dwellings in these areas are generally not in need of such benefits, particularly those of the health and welfare classifications.

There is another public service, however, that might be included in a centralized community facility grouping, and that is postal service. The elimination of door-to-door mail delivery, and in its place the installation of a postal sub-station for centralized pick-up and delivery services would be unique in the new suburbia, even though decades old in other areas. Based on observation in residential groupings where this has been the case, I feel that it would be desirable. In those cases, the post office

\(^1\)Ibid.
became the social focus for the entire area, even when an elaborate community house (complete with swimming pool) was located elsewhere. It became the meeting, greeting and bleeting place for everyone. Operated by the same person or persons who operate the "general store," the postal service would be still another step towards both his economic support, and the realization of the social benefits desired.

In terms of spatial relationships between the privately operated facilities and the publicly owned and/or operated community facilities, a nucleated arrangement would provide a more meaningful social, economic and aesthetic focus. In terms of social benefits, many writers agree that an integrated grouping would promote contact between the residents and cultivate social relationships. Economically, it is obviously cheaper to build several adjoining structures than separate ones. Also, the proximity of facilities would promote mutual patronage, and more efficiently serve the interests of convenience. The visual relief offered by the change in character and scale would enrich the aesthetic experience of the environment. The vast sea of "all-alike boxes" that constitutes the typical subdivisions has been a perpetual criticism.

Assuming that space is available, a central rather than a peripheral location for these facilities would be
desirable, both from the point of view of accessibility to the residents, and to discourage its patronage by non-residents. Locating them peripherally, especially where near a main route of through traffic, would tend to pervert their function and encourage growth, until they might become obnoxious to those living nearby. Ideally, it should be located adjacent to the public open space so as to provide as much a buffer to adjacent dwellings as possible, and dispell any fear of property devaluation. Above all, it must be located in terms of convenient walking distance of the residents. The necessity of vehicular transport for access to these facilities and services would inhibit their use, and thus invalidate their existence.

Summary

In terms of the commercial facilities that I am proposing for residential subdivisions, one structure serving a "general store" function would be sufficient. The size of the structure would vary according to the number of families served, with 10 square feet of building area per family as a general standard. The service area for any such facility would be determined by a maximum one-half mile, one-way walking distance.

This "general store" is intended to serve the day-to-day
convenience needs of the residents, and the following items might typically be included:

**Goods**
1. Perishable or high frequency-use grocery goods such as bread, milk, eggs, butter, coffee, some bakery products, cookies, candy, frozen meats and vegetables, etc.

2. Cigarettes, cigars, and tobacco.

3. High frequency-use drug store items such as aspirin, toothpaste, shaving creams, razor blades, medicinal supplies, etc.

4. A soda fountain dispensing ice cream, soft drinks, etc.

5. Stationery, magazines, and newspapers.

**Services**
6. Laundry, dry cleaning, and shoe repair pick-up and delivery point.

7. Postal sub-station services, including mail distribution from this point.

Other services, probably not typical but nevertheless worthy of consideration, might be offered. A catalogue, or order service, in conjunction with the downtown merchants for the purchase of some of the established "brand" line of goods is a conceivable inclusion. Also, according to the population characteristics and the economic status of the residents, a small-scale equipment rental service might be offered. For a young married couple, with or without children, the ability to rent lawnmowers, laundry-facilities and low frequency-use home maintenance items would help relieve the family's economic burdens.¹

¹White, *op. cit.*, p. 35
There are many other intangible functions that this facility might provide. It would be a place where the youngsters of the subdivision might go to buy candy, or be sent to purchase some of the convenience goods needed by their parents. It would thus be a means to develop the child's sense of responsibility for a task as well as for money - his own allowance or that which is given him to purchase the items for which he might be sent. It is impossible to charge a child with such responsibilities in most of the subdivisions today simply because there is no place nearby for him to go to do these things. Assuming that some of these facilities might be operated by older males, it would also tend to offer some chance for a wider acquaintance with other older persons, of other economic status (and possibly ethnic groups) than encountered in the normal matriarchal societies and segregated economic groups that characterize subdivisions today. If located near the open space that should also be inherent in these residential areas, it would be a place for refreshment after playing, or after a walk with the mother. As has already been suggested, this facility could also become the communications center of the subdivision. It could receive phone calls when the residents are away, and relay the messages if desired. It could also act as a clearing house for such services as babysitters and
equipment repair references. In short, it could, in its own limited way, be a social-service focus that is generally lacking in most subdivisions today.
DESIGN APPLICATION

A Typical Suburban Residential Subdivision
Facilities to be Included
Design Solution
Evaluation of the Solution
DESIGN APPLICATION

A Typical Outlying Residential Subdivision

To graphically illustrate the application of the design aspects of this thesis, I have selected what I consider a typical residential subdivision in an outlying area. The subdivision is known as Riverdale, and is located in the Town of Concord which is some 19 miles from Boston, but a part of the Boston Metropolitan area. (see illustrations A and A-1)

Riverdale is a relatively new housing development, dating from the early 1950's. It is composed of plots that average slightly less than one-half acre each, with single-family dwellings throughout. Close by, to the north, there is an older residential development that grew up near the "Depot" when rail transport was new and important. Several of the structures in this development were originally multi-family units, and some of the larger single-family houses have been remodeled as multi-family dwellings. The street pattern of this area has been extended and new single-family dwellings have been only recently completed, as well as several "garden apartments." Generally, however, the character of the two areas, Riverdale and what I shall call the "Depot area," is similar. Because of their close proximity and the similarity of the environment,
ILLUSTRATION A: LOCATION OF CONCORD

THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF COMMERCE
DIVISION OF PLANNING
OUTLINE MAP OF THE VARIOUS
BOSTON METROPOLITAN DISTRICTS
SCALE IN MILES

0 5 10 15 20

LEGEND
- METROPOLITAN PARKS DISTRICT
- METROPOLITAN WATER DISTRICT
- METROPOLITAN SEWERAGE DISTRICT
- BOSTON METROPOLITAN DISTRICT (TRANSPORTATION)
- METROPOLITAN PARKS DISTRICT (NANTASKET ONLY)

48 CITIES AND TOWNS ARE INCLUDED IN THE ABOVE DISTRICTS

BOSTON METROPOLITAN DISTRICT AS DEFINED BY THE UNITED STATES CENSUS (48 CITIES AND TOWNS)
1980
I shall consider them as one subdivision that was completed in stages, rather than as separate entities. While the presence of the multi-family units detracts somewhat from the "typical" definition above, according to most observers this is a blessing rather than a sin. Most sociologists agree that mixed housing types and population-age groups are desirable in any residential environment, and in point of fact, the lack of such heterogeneity is a prevalent criticism of the "typical" subdivision.

At this time, there are no community facilities of a public nature in the area, and, probably, there is no real need for them save some nursery or child-care facility as indicated before. Since the establishment of standards for such a facility is not within the scope of this thesis, I shall not attempt to provide it, but only mention that it would be desirable and that space is available for it. Public open space, in the form of either a park or a playground, has not been dedicated or developed either, but very desirable land for this function is also available. Nor are there any commercial facilities within a reasonable walking-distance. Any convenience goods that are necessary must be purchased by means of an auto trip to a distant shopping facility. (See Illustration B for a picture of the existing land use pattern.)
**Determination of the Facilities to be Provided**

The Citizens' Advisory Council of Concord recently conducted a survey\(^1\) of a 33\(\frac{1}{3}\) percent population sample, to determine in some degree the objectives and attitudes of the citizenry with respect to decisions that are going to be made about long-range planning for the community. This survey was tabulated according to predetermined districts, the Riverdale-Depot area being located in district E.\(^2\) Of those persons in district E to whom questionnaires were sent, approximately two-thirds replied to the questions pertinent to this thesis. In response to those questions, 80 percent felt that the present shopping facilities were not adequate for their needs, and 73 percent thought that more retail stores should be brought into Concord. It should be noted that most of these people (two-thirds) preferred either a community-wide or regional shopping center when given a complete range of choices. It seems to me, however, that the type of facility desired would depend a great deal on the kinds of goods that they wanted to be carried in those stores. In any case, it would appear that the respondents were thinking more in terms of shopping goods than convenience goods. When their motives for purchasing outside of Concord were

\(^1\)See Appendix B.

\(^2\)See map attached to Appendix B.
tabulated the same three reasons appeared in over 60 percent of the replies: (in order most often stated) wider selection, prices lower, and items not available. These reasons would not seem appropriate to the goods and services that I propose, and so I will assume that while the general desire for shopping facilities expressed by the results of this survey does not necessarily substantiate my thesis, by the same token it does not invalidate it.

The Riverdale-Depot area contains 241 dwelling units, and when they are all occupied, they would presumably house 241 families. Applying the standard of 10 square feet of commercial floor space per family as developed in the preceding pages, a structure approximately 40 feet by 60 feet would be the maximum size allowable.

Due to the lack of detailed data, I can only speculate as to the income level of the residents. The houses they live in seem to be in the $12,000-15,000 class range, and a survey of the List of Persons ("Voting List") published for Concord in 1957 indicates that the majority of those persons in this area are employed as either skilled industrial workers, or other of the generally recognized low-medium income job classifications. I would infer from this that the average resident, who is 32 years old, is in the low-medium to medium income bracket. There is
nothing to indicate that his economic status, cultural background, or any local customs in this area differ substantially from those of any other similar area, or that any special consideration should be given to these factors. The goods and services offered will therefore be assumed to be those suggested in the summary of the "Criteria and Limitations of Development," on page 25.

Design Solution
Assuming a maximum level of development, I have proposed one structure, 40 feet by 60 feet, to be allowed to serve the convenience needs of the residents of this area. The detailed design of the structure itself will be left to the imagination of an architect, and I will assume only a generalized indication of the space required. (See Illustration C.) This facility would be located on a vacant plot which is as nearly centralized as possible and convenient to the residents. It will be established adjacent to and as part of the public park which I have assumed will be dedicated and developed as indicated. This arrangement requires only the minimum amount of land acquisition by the Town, at the same time affords what seems to be an ideally located public open space. The commercial facility is located within a quarter-mile of almost every home, and would not seem to be inaccessible
from any point. It is admittedly more difficult to reach by auto from the Riverdale area, but then this is not incongruous with its purpose. After all, once a person is in his automobile it does not seem to make much difference if he has to travel a little further, or on a more circuitous route. The pedestrian ways leading to the facility are at present dedicated as drainage easements, and could be designed to serve this dual purpose. The nursery school could be located on the remaining vacant plot indicated as part of the park.

Evaluation of the Solution

This solution seems to offer decided advantages from all points of view. In terms of aesthetics, this facility is located at a visual junction between the two areas, and depending upon the design of the building itself, it could be both a visual relief from the somewhat monotonous rows of single-family dwellings, and at the same time a visual focus uniting the two areas and climaxing in the already pleasant "dell" with the stream running through. The avenues of access to the area tend to focus here, and the interests of convenience seem to be satisfied. With ease of accessibility, and assuming a pleasing building design and satisfactory service, this solution has every potential of successfully serving my thesis, and providing the economic advantages and social benefits discussed before.
In any commercial development there are four basic interests involved: that of the developer or subdivider, the residents, the shopkeeper (assuming that he is not the developer), and the municipality. It remains to be seen how this solution meets the goals of those interests. First of all, the developer could expect to receive a higher value for the land taken for the commercial facility, or if he develops the land and leases it, he would receive the same value added in the form of commercial rental. The residents' interests are served since they are able to purchase those items which are invariably needed with a maximum of convenience, and they are assured that the retail activity will not intrude upon the peace and quiet of their homes since it is located so as to preclude this happening. The shopkeeper is assured of a market close to his clientele with virtually a monopoly in the range of goods he sells. For the municipality, the more nearly balanced and stable residential areas are an asset to the community at large in that they make it a more attractive place to live, and maintaining these areas keeps the tax receipts at a level more nearly compatible with the services that must be provided.
IMPLEMENTATION

Who Would Provide the Facilities?
Existing Planning Tools
Proposals
Who Would Provide the Facilities?

Assuming that the facilities should be provided, the question then becomes: who will build and operate them, public or private enterprise? If the public interests are convinced that they should be provided, then it is possible that they might build the structure and lease it to private individuals to operate. Or, of course, individual entrepreneurs might build and operate them. If he desires, the subdivider-developer might provide the space and rent it out to other individuals or firms to operate, and thus maintain some financial interest in the development. This is already true of many of the larger subdivisions.

It is conceivable that a chain-type organization might be interested in a venture of this sort. With a central warehouse or distribution point, they could assemble large enough quantities of stock to make large volume wholesale purchases of goods with the customary discounts, and stock the individual stores from there. This is analogous to the procurement process for small parts that the purchasing agents of such large corporations as General Motors use, where it is wholly uneconomical for them to write the orders for the multiplicity of small items that they require. I.G.A. and Consumer Cooperative already
have a similar program in the grocery lines. The argument is advanced that it would not be practicable to expect individuals to be interested in operating such facilities because of the marginal income characteristics. This argument is usually backed by statistics of the number of retail establishments that go broke each year. But this is only one side of the picture. There are equally impressive figures of the number of new businesses that are started each year, an indication at least of the propensity of individuals to undertake such enterprises. Thus, "roughly from 10 to 20 per cent of the retail stores in each locality customarily are closed each year, and about an equal number are opened."¹ In 1942, a Senate Committee found that "business deaths have varied from 250,000 to 450,000 establishments annually since 1900, while from 300,000 to 500,000 new business enterprises have been launched each year in the United States during the same period."² This general trend has continued since those figures were published, as is indicated by the following statistics:³

Retail Firms: New and Discontinued Businesses, 1940-1956
(In thousands)

<table>
<thead>
<tr>
<th>Year</th>
<th>New Businesses</th>
<th>Discontinued</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>117.9</td>
<td>137.6</td>
</tr>
<tr>
<td>1945</td>
<td>161.4</td>
<td>59.2</td>
</tr>
<tr>
<td>1950</td>
<td>133.0</td>
<td>115.0</td>
</tr>
<tr>
<td>1951</td>
<td>140.0</td>
<td>123.7</td>
</tr>
<tr>
<td>1952</td>
<td>141.4</td>
<td>125.7</td>
</tr>
<tr>
<td>1953</td>
<td>135.1</td>
<td>138.5</td>
</tr>
<tr>
<td>1954</td>
<td>135.2</td>
<td>139.0</td>
</tr>
<tr>
<td>1955 (first half)</td>
<td>81.6</td>
<td>70.6</td>
</tr>
<tr>
<td>1955 (second half)</td>
<td>69.4</td>
<td>59.0</td>
</tr>
<tr>
<td>1956 (first half)</td>
<td>86.8</td>
<td>65.0</td>
</tr>
<tr>
<td>1956 (second half)</td>
<td>65.4</td>
<td>60.0</td>
</tr>
</tbody>
</table>

On the basis of these facts, if nothing else, authorities in the marketing field have told me that it is perfectly reasonable to expect that there will be individuals interested in owning and/or operating such an enterprise as I suggest. This is, of course, assuming that they are aware of the possibilities of doing so.

Operating a small facility of this nature would seem to be ideal for young widows or older persons who perhaps are retired from more active forms of business. The housewives of the subdivision might even operate the store on a cooperative basis, if they so desired. Mechanical advances in machine-vending are another possibility that should be considered. In the smallest of subdivisions where it is impractical to assume that even a part-time operator is feasible, then a mechanical means of distribution of the goods is certainly a solution. I feel that while this
would satisfy the service needs, the social benefits would certainly be diminished. But if this is the only solution, then perhaps half of the cake is better than no cake at all. Having assumed that the facilities should be provided, and having discussed several ways in which they might be operated, the possibilities of providing them within the framework of the existing tools available to planners must now be investigated.

Existing Planning Tools
First of all, if these facilities are recognized as being desirable, there must be a definite policy statement on the part of the municipal planning agency to this effect. This policy may take the form of a written statement of purpose in the zoning ordinance itself, or it may be graphically indicated on the comprehensive plan. Clear standards for their development and control must be outlined to ensure that only the appropriate amount of development takes place, and that it will be of a desirable character, compatible with the area served. If a new zoning ordinance is being adopted in an area heretofore unzoned, this should suffice.

In areas that are already zoned, the problem is a little more complex. Adopting a policy of providing these facilities might be construed as "spot zoning" which is cer-
tainly not desirable or upheld by the courts. There are precedents, however, that would seem to substantiate their provision. In the case of Marshall vs. Salt Lake City (1943), a small business district within a residential area, and within convenient walking distance of the inhabitants, was declared reasonable and for the public good. ¹ A recent, and even more appropriate, case, Bartram vs. Zoning Commission of Bridgeport (136 Conn. 89, 68 A. 2d 308, 1949), also substantiated this concept.

Also, "where an area is already zoned, a developer may also be required to contribute land to the city for parks, parking space and other public uses, as a condition for liberalizing an existing zoning regulation."² An example of this latter point is found in Levittown, N.Y., where residential areas were changed to commercial areas, contingent on the dedication (to public ownership) of sufficient land for public parking spaces. This is a prima facie example of the use of persuasion which has traditionally been an effective means of influencing action. But its effectiveness depends primarily upon the personalities

¹Marcel Villaneuva, Planning Neighborhood Shopping Centers, National Committee on Housing Inc., N.Y., 1945, p. 35.
and inclinations of the persons concerned, and upon the reasonableness of their respective demands. With such intangibles, one is never assured that it will be effective, and so I can only hopefully say that it is a tool, and stop there.

The special exception clause of the normal zoning ordinance seems most appropriate to accommodate my thesis. Under this clause, some uses which may or may not be appropriate to serve the community are listed, with discretion vested in the Planning Commission or Board of Appeals to permit or refuse, after public hearing, and according to the standards that are specified. The residents of a subdivision would therefore have ample opportunity to object to the inclusion of such a facility if they felt strongly that it was not appropriate to their needs or desires. It can be seen that in the event that the special exception is used, it is very important to provide very clear and definite standards for the same reasons as given before, and particularly to guard against administrative abuses.

Subdivision regulations could also be utilized to require the provision, or at least reservation of space for the provision of, these facilities if the enabling legislation provides for such an act. In some states, these subdivision regulations require that the subdivider must conform
to the provisions of the comprehensive plan of the community, and some even go so far as to prescribe the shape of the lots and the blocks.¹

Eminent domain is another tool that is actively used today to effectuate planning proposals, and public construction. These powers are available for use, and held valid, only when there is to be a public benefit. This raises this question of public versus private use, and the important distinction between them. The courts have held that, in controversies on this issue, the determining factor is that the application of eminent domain, or condemnation, must only benefit the public. Thus, "private property may be condemned for a use such as a public market, though sections or stalls are leased to private individuals."² This suggests, at least, that condemnation proceedings might be employed to provide these facilities that I suggest. If land is being condemned for another public use, such as a nursery or playground, excess condemnation might also be considered in this respect.³

This is particularly true in outlying areas not served by

¹Abrams, loc.cit.
³That is, assuming that the odd pieces of land affected were in a desirable location.
transit, or other facilities nearby, where the public interest and benefit aspects seem accentuated.

Proposals
The discussion of these tools for plan effectuation open to the planner leads me to the conclusion that several of them could be effectively employed to gain the ends that I seek. Assuming that the provision of these facilities is a desirable thing, the municipal planning agency must make a definite policy statement of its intentions to provide them. This statement might take the following form:

It is the policy of this planning board that in outlying residential subdivisions not served by commercial facilities within a reasonable walking distance, the development of retail stores will be allowed to serve the day-to-day needs of the residents of those subdivisions. The authority for the establishment of these facilities is to be found in the special exception provisions of this zoning ordinance, and the development must conform to the standards and limitations imposed therein. This policy is adopted on the grounds of providing for the health, safety and welfare of those residents, and to promote their full social growth.

The planning agency would then have to establish the standards to be used in the consideration of applications under the special exception provisions. On the basis of the material presented in this thesis, I would propose the following standards:

Special Exception: Commercial Facilities in Outlying Residential Subdivisions.
Commercial Facilities may be developed in outlying residential subdivisions that are not otherwise served by such facilities, subject to the following limitations:

1. Each facility is intended to serve the residents of the particular subdivision only, and must be within a maximum of one-half mile walking distance of those residents, except as otherwise impractical.

2. The goods and services offered in these establishments shall be of a convenience nature only, and shall be located in one structure whose size shall not exceed 10 square feet per family.

3. These facilities shall be located adjacent to the park or public open space, if one is provided, or sufficient open space shall be provided adjacent to them so as to provide a reasonable buffer to the contiguous residences.

4. The design of these facilities shall be appropriate and compatible to the area in which they are located.

5. Approval or disapproval of petitions under this provision may not be granted without a duly announced public hearing.

6. A 20 per cent protest petition may be filed by the residents of the area affected, thereby requiring a greater than majority vote to approve a commercial facility for that area.

This, then, is one way in which the special exception might be used.

Space for the commercial facility might also be provided by direct public action. In this case, the body-politic might build the commercial facility as an annex to another public community facility such as a nursery, and lease the space to individuals or firms to operate. In this manner
some form of positive control could be exercised over the growth of the commercial activity and the services it provides. The renewal of the operator's lease would be contingent on his having operated the facility in a satisfactory manner. The city's option to renew the lease, and the terms of lease itself would be means of assuring a high quality of personnel and maintenance. If privately owned, the same controls could be exercised through a licensing requirement. In this case, the residents of the area affected might protest some condition that they felt detrimental through the public hearing that may be required.

In either case there are other operative aspects of such a facility that demand control. Access and parking could easily become problems. By definition, I am trying to serve a walk-in clientele. For this reason, I would provide no off-street parking space for customers. This, I feel, would only encourage the use of vehicles, and actually such space is not required. I have already pointed out that most housewives do not have a car available to them in the day anyway. Theoretically, then, the only time parking spaces would be required is either in the morning or evening when the husband is going to or coming from work. In this case, there should be enough curb spaces to meet the demand, especially if the facility is
located adjacent to, or as part of, the park or public open space. This would allow parking on the park side of the street, and keep cars from in front of any nearby residences.

Truck service to the "general store" also deserves consideration. In most cases, it would seem better to limit the deliveries to the stores to once-a-day, probably in the mid-morning period around 10 a.m. This would coincide with the time that most of the children are in school, and therefore would be safer. The route that these trucks would take to the centrally located facility would also be restricted to only one road. In this manner, the residents would always know when and which way the trucks would be coming, and could instruct their children accordingly.

Signs advertising the store or its goods and services should also be controlled. There should be no advertising allowed in either the windows of the store, or on any of the outside walls, except for one sign, that would be a maximum of 4 feet by 4 feet, stating only the name of the store and/or its proprietors. This sign would be allowed at any location below the eaves or parapet of the building, either attached to the building or detached from it on an independent support.
All these proposals of effectuation and control discussed are generally existing tools, and would require no constitutional changes. In some states where the enabling legislation does not provide for excess condemnation (Massachusetts), or where the hearing and protest petition will vary with the State Laws, legislative approval would have to be secured. Otherwise, the proposals submitted herein are practicable within the existing framework of tools available, and their effectuation is only as difficult as is the application of those tools.
CONCLUSIONS
CONCLUSIONS

1. The "general-store" concept is applicable to outlying residential subdivisions that are smaller than the minimum size required to support a neighborhood shopping center.

2. A commercial facility of this nature should, and does, have primary function in the retail structure of the metropolitan economy that is limited to the distribution of goods and services of a convenience classification.

3. Commercial facilities provided as an integral part of suburban residential subdivisions would act as a social-service focus that is generally lacking in the developments we see today, where no other community facilities, public or private, are provided.

4. The social advantages to be gained by the inclusion of these facilities are significant enough to demand their consideration even when an economic analysis indicates that the operation may not be more than marginal.

5. They serve a valid function in providing a convenient source of day-to-day necessities that are inherent in any residential environment.

6. The aesthetic experience in such an environment would
be enriched by the provision of another kind of scale and variety in structure and space.

7. A reasonable demand for these facilities exists, provided that the residents of such an area are assured education and good design that their property values will not be decreased.

8. The elimination of some of the alien traffic in residential areas, a perpetual goal of neighborhood planning, is fostered by the consolidation of pick-up and delivery services in a central location, thereby adding to the safety of the environment.

9. The location and design of these facilities should encourage convenient access through walking, rather than driving.

10. These facilities can be made attractive enough from an economic point of view to expect that private enterprise would be interested in providing or operating them.

11. These facilities may be provided by either: the subdivider or developer, or private interests (independent or chain-type operation) in privately developed spaces or in spaces held in public ownership and leased to the tenants.
12. The special exception provisions of zoning ordinances are the most satisfactory means of insuring that these facilities may be included in subdivisions, assuming that reasonable standards for their development are derived.

13. Control over the location, design, and quantitative development of this type of facility is essential to insure that only an appropriate amount will be included, and that it will be of a desirable character, compatible with the surroundings.
APPENDICES
APPENDIX A: EXISTING STANDARDS FOR COMMERCIAL DEVELOPMENT

This Appendix is a summary of such qualitative and quantitative standards for commercial development as I found in the current literature. Some of the tables are abridged so as to include only those figures pertinent to this thesis.


7 stores/1000 stores
25 F.FT/100 population

A study based on the purchasing power theory, recognizing that the existing distribution of stores in urban areas is not a valid criterion. Conclusion was that 10,000 people would require 70 stores distributed among some 30 lines of businesses.

(2) Land Subdivision, American Society of Engineers, N.Y., 1939.

35 lin. ft./100 persons

"An average of several American cities shows that outside of the central business district, approximately 35 ft. of commercial frontage are required per 100 persons." (p. 24)

(3) Gardner S. Rogers, "How Many Retail Stores of Different Types Does a City Need?" in American City, April 1930, p. 131.

Study based on average figures from 11 large cities located in various parts of the United States, from the 1928 study by the U.S. Bureau of the Census.

(Abridged table)

<table>
<thead>
<tr>
<th>Kind of business</th>
<th>no.inhabitants per store</th>
<th>no.stores per 10,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>bakery</td>
<td>2,548</td>
<td>3.92</td>
</tr>
<tr>
<td>boot &amp; shoe</td>
<td>3,346</td>
<td>2.99</td>
</tr>
<tr>
<td>cigar &amp; tobacco</td>
<td>2,071</td>
<td>4.83</td>
</tr>
<tr>
<td>confectionery</td>
<td>1,017</td>
<td>9.83</td>
</tr>
<tr>
<td>Kind of business</td>
<td>no.inhabitants per store</td>
<td>no.stores per 10,000</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>dairy &amp; poultry products</td>
<td>11,772</td>
<td>0.85</td>
</tr>
<tr>
<td>drug</td>
<td>1,545</td>
<td>6.47</td>
</tr>
<tr>
<td>florist</td>
<td>6,686</td>
<td>1.50</td>
</tr>
<tr>
<td>fruit &amp; vegetable</td>
<td>2,510</td>
<td>3.98</td>
</tr>
<tr>
<td>grocery, delicatessen</td>
<td>325</td>
<td>30.98</td>
</tr>
<tr>
<td>hardware</td>
<td>2,748</td>
<td>3.64</td>
</tr>
<tr>
<td>meat, poultry, fish</td>
<td>1,189</td>
<td>8.41</td>
</tr>
<tr>
<td>restaurants</td>
<td>613</td>
<td>12.30</td>
</tr>
<tr>
<td>stationery, book, paper</td>
<td>6,042</td>
<td>1.56</td>
</tr>
</tbody>
</table>

3.98 stores/1,000 persons


Major neighborhoods designed for 20,000 persons each (3200 families) with 50 shops. "Neighbourly units" breaking down into housing units of 5000 persons and having 4-5 "round-the-corner" shops.


Example given of the total space requirements for combined community and neighborhood type facility on the basis of empirically derived general standards. In second phase of analysis would be broken down into two components on the basis of observed local trends in existing distribution of local retail space.

<table>
<thead>
<tr>
<th>Selected neighborhood population size in residential communities of 30,000-50,000</th>
<th>Acres of combined community &amp; neighborhood shopping area/1,000 pop.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,000</td>
<td>2:1* 3:1* 4:1*</td>
</tr>
<tr>
<td>2,500</td>
<td>0.7   0.9  1.1</td>
</tr>
<tr>
<td>1,000</td>
<td>0.8   1.0  1.3</td>
</tr>
</tbody>
</table>

*Parking ratio: sq.ft. parking space equals sq.ft. bldg area.
50 ft./1000 persons


"Most communities find 50 ft. of business frontage more than ample for 100 persons, or roughly two 25 ft. business lots for 25 ordinary residential lots."

10-12 shops/
500 families

(7) Architectural Record, December, 1947, p. 123: "Neighborhood Shopping Centers" (from the Community Builders Handbook of the Urban Land Institute)

This study states that 500 families are the minimum necessary to support from 10-12 shops. One possible store group to serve 250-300 families is illustrated and includes:

(a) grocery store
(b) drugs
(c) beauty and barber shop
(d) cleaning, laundry, and shoe repair
(e) service building, heating, etc.

7-15 stores/
750 families
(3000 persons)

(8) Eugene J. Kelley: Shopping Centers, the Eno Foundation, 1956, Saugatuck, Conn., p. 5.

A neighborhood shopping center is defined as "consisting of 7-15 retail outlets, selling primarily convenience goods and having a supermarket as its core. Such a center is considered to need a minimum of 750 families or 3,000 persons to support it." Later in this study he emphasizes the need for a sophisticated market (purchasing power) analysis to determine the exact facilities for any given location.


Categorized a neighborhood shopping center as having a core of food, drug and
other shops depending mostly on convenience goods and serving a trading population of 10,000-20,000. Also advocates the market analysis method.


Neighborhood shopping center defined as "a center serving a minimum of 750 families, always containing a small supermarket and drug store. In addition there will be several service stores such as dry cleaner, beauty shop, shoe repair, laundry, barber, and possibly a variety store..."

(11) Marcel Villaneuva, Planning Neighborhood Shopping Centers, National Committee on Housing Incorp., N.Y., 1945.

"This study uses purchasing power as a basis for measuring the size and types of outlets needed... basic per capita sales indicate the total business to be expected in a shopping center." He uses the national per capita average of food expenditures as "perhaps the most uniform of those found in the retail group and the largest sales item in the neighborhood shopping center." Note: "The actual and the need for other classifications were not readily determinable." For a hypothetical population group he determined that one food store would be sufficient.

<table>
<thead>
<tr>
<th>2 + stores/750 families</th>
<th>1 food store/2500 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bldgs &amp; adjuncts</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2500 pop. 5000 pop.</td>
</tr>
<tr>
<td>0.073 acres/100 0.086 acres/100</td>
<td></td>
</tr>
<tr>
<td><strong>Parking</strong></td>
<td></td>
</tr>
<tr>
<td>0.145 &quot;</td>
<td>0.172 &quot;</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
</tr>
<tr>
<td>0.218 &quot;</td>
<td>0.258 &quot;</td>
</tr>
</tbody>
</table>

"In England an investigation showed that excluding major shopping centres, local shops amounted to an average of about 15 per 1,000 population." This figure was admittedly excessive of economic requirements.

(13) Planning the Neighborhood, American Public Health Association Committee on the Hygiene of Housing, Chicago, 1948, p. 52.

They assumed different sizes of neighborhood shopping centers for different population ranges. "These sizes are based on the normal merchandizing practices for the types of stores indicated."

(Table abridged)

<table>
<thead>
<tr>
<th>Neighborhood Population</th>
<th>1,000 pers.</th>
<th>2,000 pers.</th>
<th>3,000 pers.</th>
</tr>
</thead>
<tbody>
<tr>
<td>sq.ft. area</td>
<td>275 fams.</td>
<td>550 fams.</td>
<td>825 fams.</td>
</tr>
<tr>
<td>area bldgs</td>
<td>9,000</td>
<td>14,000</td>
<td>18,000</td>
</tr>
<tr>
<td>parking</td>
<td>18,000</td>
<td>28,000</td>
<td>36,000</td>
</tr>
<tr>
<td>gas station</td>
<td>--</td>
<td>--</td>
<td>24,000</td>
</tr>
<tr>
<td>circulation etc.</td>
<td>6,800</td>
<td>10,500</td>
<td>19,500</td>
</tr>
<tr>
<td>total area</td>
<td>33,800</td>
<td>52,500</td>
<td>97,500</td>
</tr>
<tr>
<td>sq.ft.</td>
<td>0.80</td>
<td>1.2</td>
<td>2.2</td>
</tr>
<tr>
<td>acres</td>
<td>0.80</td>
<td>0.60</td>
<td>0.75</td>
</tr>
<tr>
<td>acres/1,000 sq.ft.</td>
<td>125</td>
<td>95</td>
<td>120</td>
</tr>
</tbody>
</table>

Parking ratio assumed 2:1 based on fl. area of bldgs. Stores and services included:

(a) food
(b) drug
(c) barber and beauty shop
(d) shoe repair
(e) laundry and dry cleaning pick-up

50 lin. ft./ 100 persons

Method of calculation: number of people per kind of store in an average urban environment. Surveyed 7 cities of 100,-000 to 3,000,000 population range,
including 31 types of businesses, and assumed a basic store width of 25 ft. It was computed that a population of 6,000 would require 3,000 ft. of store frontage or 50 ft. (2 stores)/100 persons.


A survey covering the business districts in the 40 cities of the Chicago Metropolitan region, substantially corroborated the conclusions of the N.Y. Regional Plan Study.


The results of "recent surveys" of existing stores in 12 large cities showed an average of 1.47 stores/100 persons.


Results of land use surveys in U.S. cities of different population ranges. Only the "satellite cities" of less than 5,000 persons are reported here.

Ratio to total developed area: 3.03%
Ratio of area to population: 0.82 acres/100 persons

(18) Lillibridge (in Land Economics, May 1948)

Estimates of shopping requirements in urban redevelopment (intown residential
areas. For "neighborhood" center serving 10,000 persons:

<table>
<thead>
<tr>
<th>No.</th>
<th>Floor Space</th>
<th>Sales (000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,000 Av.Fam.Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supermarket</td>
<td>2</td>
<td>12,000</td>
</tr>
<tr>
<td>Grocery</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Drug &amp; Pkge St.</td>
<td>1</td>
<td>3,000</td>
</tr>
<tr>
<td>Gen'l or Variety</td>
<td>1</td>
<td>3,500</td>
</tr>
<tr>
<td>Laundry</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tailor, Dry Clnr</td>
<td>1</td>
<td>2,500</td>
</tr>
<tr>
<td>Shoe Repair</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Service Station</td>
<td>1</td>
<td>4,000</td>
</tr>
<tr>
<td>Barber</td>
<td>2</td>
<td>1,800</td>
</tr>
<tr>
<td>Beauty Shop</td>
<td>1</td>
<td>900</td>
</tr>
<tr>
<td>Doctor</td>
<td>2</td>
<td>900</td>
</tr>
<tr>
<td>Dentist</td>
<td>1</td>
<td>450</td>
</tr>
<tr>
<td>Total</td>
<td>29,050</td>
<td>$1,547</td>
</tr>
</tbody>
</table>

If 1:1 Parking ratio .01 acres/100 pop.

<p>| $3,000 Av.Fam.Income |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Floor Space</th>
<th>Sales (000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supermarket</td>
<td>2</td>
<td>12,000</td>
</tr>
<tr>
<td>Grocery</td>
<td>1</td>
<td>3,500</td>
</tr>
<tr>
<td>Drug &amp; Pkge St.</td>
<td>1</td>
<td>3,000</td>
</tr>
<tr>
<td>Gen'l or Variety</td>
<td>1</td>
<td>5,000</td>
</tr>
<tr>
<td>Laundry</td>
<td>1</td>
<td>2,500</td>
</tr>
<tr>
<td>Tailor, Dry Clnr</td>
<td>1</td>
<td>700</td>
</tr>
<tr>
<td>Shoe Repair</td>
<td>1</td>
<td>500</td>
</tr>
<tr>
<td>Service Station</td>
<td>1</td>
<td>4,000</td>
</tr>
<tr>
<td>Barber</td>
<td>2</td>
<td>1,800</td>
</tr>
<tr>
<td>Beauty Shop</td>
<td>2</td>
<td>1,200</td>
</tr>
<tr>
<td>Doctor</td>
<td>2</td>
<td>900</td>
</tr>
<tr>
<td>Dentist</td>
<td>2</td>
<td>900</td>
</tr>
<tr>
<td>Total</td>
<td>36,000</td>
<td>$2,030</td>
</tr>
</tbody>
</table>

If 1:1 Parking ratio .017 acres/100 pop.
APPENDIX B: CITIZENS ADVISORY COUNCIL QUESTIONNAIRE

The following is an edited summary of questions from the Citizens' Advisory Council Questionnaire of April 21, 1958. Only those questions pertinent to this thesis are included.

3. Does your family derive its principal income from employment in Concord?  
   yes  no  n.a.  12  51  0

11. Are present shopping facilities adequate for your needs?  12  49
    Would facilities be adequate if modernized?  10  28

12. To meet your own local shopping needs, should more retail stores be brought into Concord?  44  16

13. If Concord shopping facilities were to be expanded, which one or more of the following would you prefer?
    A few specialty shops?  4
    A few neighborhood stores?  3
    One or more department stores?  9
    A community shopping center?  34
    A large regional shopping center?  16
    Other  9
Instructions: Please locate your residence on this map. Determine the lettered territory (A, B, C, D, E, F, G, H, or I) in which your residence is located. Encircle this letter under Question 4 on your questionnaire form. This map should not be returned with your questionnaire.
APPENDIX C: BIBLIOGRAPHY


American Public Health Association, Committee on the Hygiene of Housing, Planning the Neighborhood, Chicago, 1948.

American Society of Civil Engineers, Land Subdivision, N.Y., 1939.


"It Still Can Happen," ASPO Newsletter, vol. 6, no. 10 (October 1940), p. 80.


--------, Shopping Centers, Saugatuck, Conn.: The Eno Foundation, 1956.


Villaneuva, Marcel, Planning Neighborhood Shopping Centers, N.Y.: National Committee on Housing Incorporated, 1945.