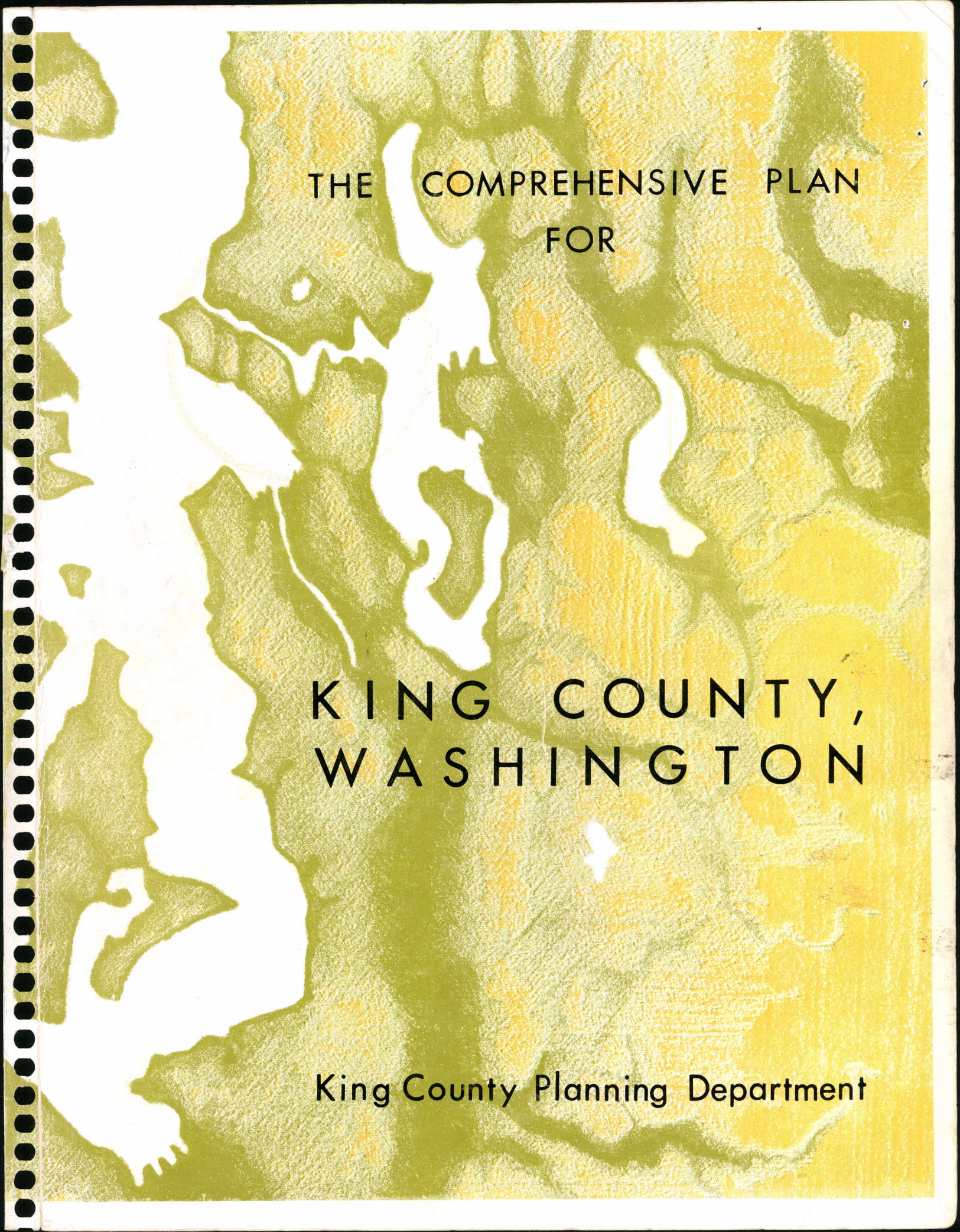
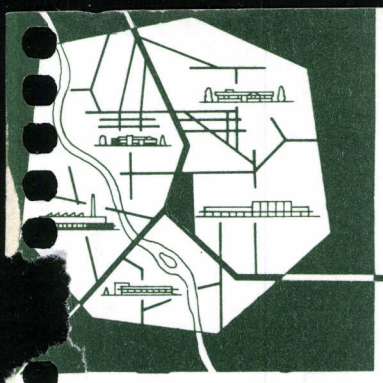


THE COMPREHENSIVE PLAN FOR KING COUNTY, WASHINGTON

King County Planning Department



KING COUNTY PLANNING DEPARTMENT

402L KING COUNTY COURT HOUSE SEATTLE, WASHINGTON 98104

EDWARD B. SAND
Director

MAin 2-5900
Extension 461

FRANK PERKINS
Commission Chairman

June 23, 1964

Board of County Commissioners
King County, Washington

Gentlemen:

Under the authority and mandate of the State Planning Law, studies and research essential to the preparation of a Comprehensive Plan have been undertaken during the past three years. It is with pleasure that we now submit herewith for your approval the results of this work, the proposed Comprehensive Plan for King County, Washington.

As you indicated in your directive of May 1, 1961, the Planning Department and Commission have the responsibility of providing the framework for the comprehensive plan and coordinating its various elements. Since this agency is not organized to do specialized plans which are the primary responsibility of other departments, it was your desire that best use be made of all technical knowledge and personnel and that the final plan represent a joint effort by all concerned. In accordance with this directive, the plans contained herein were developed with the contributions and cooperation of many agencies.

The Comprehensive Plan will serve as a guide for the continuing development of King County and provide the Board of King County Commissioners with the opportunity to act in the knowledge that they are working toward a defined goal.

Respectfully submitted,

KING COUNTY PLANNING COMMISSION

Vernon Gould
Chairman

KING COUNTY PLANNING DEPARTMENT

Edward B. Sand
Planning Director

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THE COMPREHENSIVE PLAN

FOR KING COUNTY, WASHINGTON

PART I - PLAN POLICIES

PART II - PLAN MAP

This report represents the official Comprehensive Plan of King County. If, in later publications of the plan, changes or improvements are made in format, illustrative material or text wording - provided that there is no change in intent or meaning - such publications shall also be considered as the official Comprehensive Plan of King County. The official Comprehensive Plan may also be presented in summary form in order that it may be readily available and usable by the public.

King County Planning Department

1964

PART I

PLAN POLICIES

Comprehensive Plan for King County

FOREWORD

County government has traditionally been geared to provide services for large geographic areas of rural character. King County for years functioned adequately in this capacity and still does insofar as the easterly three quarters of the County, which is still rural, is concerned. However, the western one-quarter is quite a different problem. Here we have ninety-five percent of the County population living under conditions traditionally associated with city life or urban living. The needs of people in urban areas are quite different from those in rural areas; and since county government did not offer all the necessary services, the residents of many areas sought other means of providing them. As a result, new cities, towns and numerous special districts for fire, water, sewers and schools now exist within King County. Each of these separate governmental units - some two hundred in all - function independently, often do not cooperate, and cannot solve area wide problems individually.

For several years community leaders have been investigating various methods to bring about solutions to problems arising out of fragmented local government in urban areas. Expanding county services, establishing separate specialized districts and the annexation of land by existing cities have all been suggested as solutions. None of the suggestions to date include area wide planning as a means for determining needs, identifying problems and guiding the selection of the best methods of solution.

Although limited in providing services and in carrying out projects within incorporated places, King County does have the authority to do general planning over the broad geographic county area and is not limited to the unincorporated areas.

Therefore, in developing the comprehensive plan, political boundaries were not considered a limiting factor and the plans and proposals presented cross political lines where necessary to obtain the proper balance and relationship of facilities essential to sound community development. It was assumed that needs for public parks, schools, utilities, highways, convenient shopping areas, work areas and pleasant living conditions do not change simply because of a change in the corporate status of the community. Specific policy statements apply to the unincorporated areas of the County and, in most cases, are applicable to the incorporated towns and cities. However, they shall not be considered binding upon any governmental jurisdiction with the authority to make its own policies.

PREFACE

This report in two parts (Plan Policies and Plan Map) represents the consolidation of public objectives, policies and standards regarding the use and development of land and its service facilities which, together with illustrative material, constitute the Comprehensive Plan for King County. The contents of this report have been designed and stated so as to represent what are considered to be reasonable and obtainable objectives for all public and private agencies or persons concerned with development within the County.

This report meets the requirements of the Planning Enabling Act of the State of Washington (R.C.W. 36.70) in regard to a comprehensive plan which states, in part,

> "The comprehensive plan shall consist of a map or maps, and descriptive text covering objectives, principles and standards used to develop it, and shall include each of the following elements:
>
> (1) A land use element which designates the proposed general distribution and general location and extent of the uses of land for agriculture, housing, commerce, industry, recreation, education, public buildings and land, and other categories of public and private use of land, including a statement of the standards of population density and building intensity recommended for the various areas in the jurisdiction and estimates of future population growth in the area covered by the comprehensive plan, all correlated with the land use element of the comprehensive plan;
>
> (2) A circulation element consisting of the general location, alignment and extent of major thoroughfares, major transportation routes, trunk utility lines, and major terminal facilities, all of which shall be correlated with the land use elements of the comprehensive plan;
>
> (3) Any supporting maps, diagrams, charts, descriptive material and reports necessary to explain and supplement the above elements."

additional elements which, in the judgment of the Commission, relates to the physical development of the County.

Many studies basic and preliminary to the development of the Comprehensive Plan have been prepared and are available for reference in the office of the King County Planning Department.

Such studies include, among others, land use surveys and analyses, population analyses and projections, and studies of soil types and topography. Some additional detailed studies concerned with individual elements of the plan have been prepared, and it is anticipated that others will follow. [1] Such studies provide working material in greater detail than that contained within this Comprehensive Plan and are utilized by those agencies or persons concerned with the specific subject treated. As such, they are supplementary to the plan itself and may be subject to revision as conditions warrant as long as such revision is in conformance with the statements contained herein. The seven study maps contained in Part I are for illustrative purposes and do not constitute portions of the Comprehensive Plan Map.

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[1] See Appendix B for listing of published and unpublished studies of the King County Planning Department as well as other sources utilized in the preparation of the Comprehensive Plan.

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purpose & need for comprehensive plan

PURPOSE AND NEED FOR COMPREHENSIVE PLAN

Recognizing the need for an effective means of guiding and coordinating the physical development of King County, the County Commissioners in June, 1959, initiated a reorganization of the County Planning Agency and provided the necessary budget to develop a modern planning program. During the past three years the Planning Commission and the Planning Department have been engaged in extensive research, analysis and legislative work necessary to prepare and carry out such a program.

The purpose of the Comprehensive Plan is to serve (1) as a foundation and beginning step in planning for the orderly physical development of the County; (2) as a means for coordinating County programs and services; (3) as a source of reference to aid in developing coordinated official plans and regulations for the County and municipalities within it; and (4) as a means of promoting a desirable environment for housing, commerce, industry, agriculture, and recreation.

Therefore, an objective of the Comprehensive Plan is to assure the highest degree of public health, safety, and general welfare. Yet, this must be done without unduly jeopardizing the rights of the individual. The designation of the location and extent of any land use should achieve a proper balance of these two objectives.

The initial plan is designed to serve a 1985 population of approximately 1,663,000 within the entire County.[1] During this growth period, not only must the County accommodate an additional 715,000 persons, but it must also adapt to changing growth patterns and new concepts of development. The plan, therefore, is not an inflexible blueprint of the future, but is intended to serve as a means for evaluating proposed programs in relation to the total County development and to incorporate those which represent desirable improvements, while discarding current practices which experience and research have indicated are not effective.

In order to avoid misunderstandings and unnecessary legal complications which could jeopardize the total planning program, it is extremely important to maintain a clear distinction between the comprehensive

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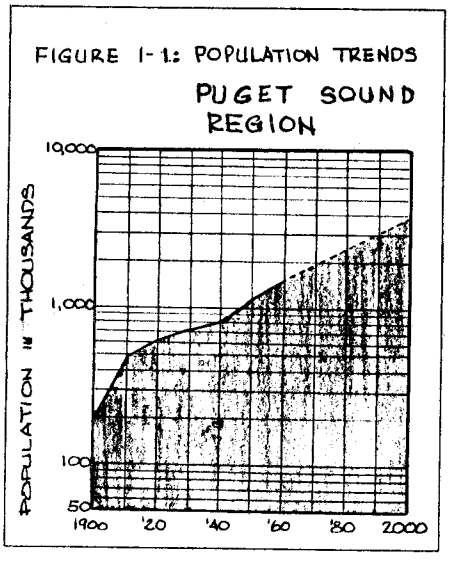
[1]The Puget Sound Region - Progress Report, 1957-1959 (Revised July, 1960 and May 20, 1963).

plan itself and the implementing measures. Implementing measures include such controls as a zoning code, subdivision code, official road program, public land acquisition, and construction projects. These controls are not the comprehensive plan but are tools designed to transform plan proposals and policies into physical development on the ground.

population & land use: trends & projections

POPULATION: TRENDS AND PROJECTIONS

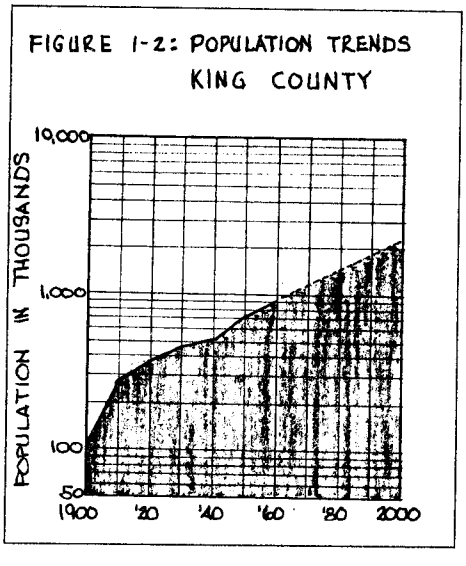
Puget Sound Region



The Puget Sound Region, consisting of King, Pierce, Snohomish, and Kitsap Counties, is one of the fastest growing areas of the State of Washington. Between 1930 and 1960, the population of this region increased from 737,000 to a little more than one and a half million. This meant that the Region's share of total State population increased from 47.5 per cent in 1930 to 53.0 per cent in 1960. Most of the growth in the Region occurred between 1940 and 1950 with the stepping up of defense production industries. Due to high birth rates and continued defense production, this growth continued throughout the 1950-1960 decade but at a reduced rate.

It is expected that the population of the Region will continue to increase, reaching more than two and three quarter million by 1985, see Figure 1-1. The 1985 population of the Region will account for nearly 60 per cent of total State population.

King County



King County, which is the focal point of the Puget Sound Region, shows an increase in population at a similar rate to that of the Region. Between 1930 and 1960, the population of King County increased from 464,000 to 935,000. Similar to the Region, most of this growth occurred between 1940 and 1950, with only a slight lessening in the rate of growth in the 1950-1960 decade.

The population of King County, in relation to the population of the Region, has remained fairly constant. Throughout the

1930-1960 period, the population of King County has accounted for nearly two-thirds of the Region's population. It is expected that the population of King County by 1985 will reach 1,663,000 and will account for about 60 percent of the total Regional population, see Figure 1-2.

Between 1960 and 1985, population growth within King County will occur mostly in the "Urban Area" outside the city of Seattle. Whereas Seattle will increase only slightly over its 1960 population of 557,100 persons, the County outside Seattle is expected to reach nearly a million persons or nearly triple its 1960 population. The rest of the County, outside the Urban Area, is expected to grow from a population of 28,700 in 1960 to 73,000 in 1985.

As the population of the County increases, the density of population within the County and its various parts will also increase. In King County as a whole, gross densities (persons per total acres) will increase from 0.68 to 1.21 persons per acre; in Seattle, from 9.84 to 10.33 persons per acre; in the King County Urban Area outside Seattle from 1.17 to 5.34 persons per acre, and in King County outside the Urban Area from 0.03 to 0.07 persons per acre.

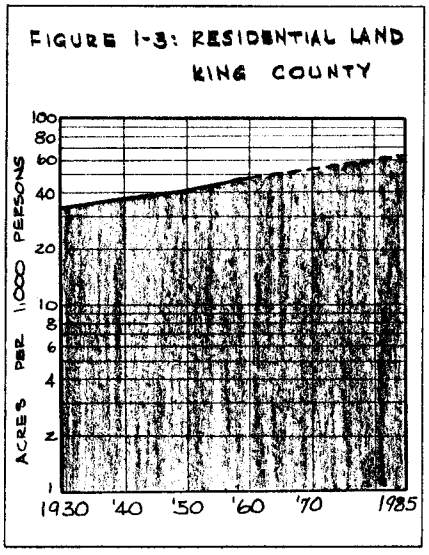
In any discussion of population growth in an area, it must be remembered that an area does not exist in a vacuum but is a part of a larger area. Hence the earlier discussion of the population of the Puget Sound Region.

There are certain areas within the Region which have strong linkages with King County. Such areas are Southwest Snohomish County, Bainbridge Island in Kitsap County and parts of Pierce County. Southwest Snohomish County, which grew largely after World War II, has a present population of 55,000. By 1985, it is expected to have a population of 155,000. For the most part, this growth will be due to employment opportunities that exist or will be available in King County. Conversely, certain areas in King County, such as Federal Way, will have a population boom partially due to the employment opportunities that exist or are contemplated in the Tacoma area. Consequently the planning for certain land uses and circulation patterns has to take into consideration not only the requirements of the County's residents but those also of the surrounding communities in other counties which are closely related to King County.

LAND USE: TRENDS AND PROJECTIONS

For planning, population trends and projections have little meaning until their effect is assessed on the past, present and future land uses. In this section, land use trends and projections and their relationships to population are presented. Though the primary concern of King County is the unincorporated portion of King County, it is impossible to discuss the land use trends and projections without including the incorporated areas also. Figures are presented in Appendix B by five different areas. These areas are total King County, City of Seattle, King County Urban Area, King County Urban Area excluding Seattle, and King County excluding Urban Area.

Residential Land Use



An increase in the amount of land used for residential purposes is directly related to increase in population. However, this increase in residential land is limited by the following factors: (1) availability of suitable land; (2) accessibility of available land to employment centers; (3) preference of people for type of living space; and (4) whether they can afford what they prefer. In any attempt at projecting land requirements, these four factors must be considered.

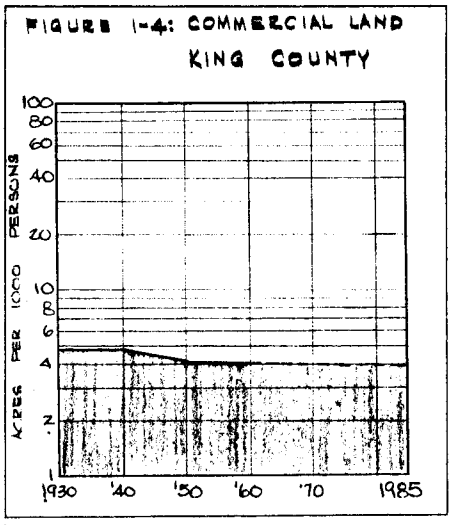
Over the years and especially after World War II, the continued construction and upgrading of highway facilities has consistently improved accessibility to major employment centers. Since there has been ample suitable residential land available in relation to the demand, the effect of improved accessibility has resulted in residential development being located farther and farther out from major centers of employment.

From the earliest times of the history of King County, a larger percentage of its residents have shown a preference to living in single family dwellings as opposed to multi-family structures. They could always afford this preference. Before World War II, lot sizes were considerably smaller than now. This trend toward larger lot sizes in King County is indicated by ratios of acres in residential land per 1,000 persons. For example, Seattle, which developed first, used in 1960, 35.90 acres per 1,000 persons as compared to 71.90 acres per 1,000 persons in the King County Urban Area outside Seattle.

In that the greatest growth in King County is expected to occur primarily in the Urban Area outside Seattle, it is valid to assume that the acres used per 1,000 persons will continue to increase until such time as suitable residential land is scarce.

Up to 1985, it is not expected that there will be a scarcity of suitable residential land in King County in relation to demand. If it is assumed that the population of King County will be prosperous enough to acquire living space as their tastes dictate, it then follows that the acres in residential land per 1,000 persons will continue to increase. By 1985, it is expected that 83 acres of residential land will be needed for every 1,000 persons living in the Urban Area outside of Seattle.

Commercial Land Use



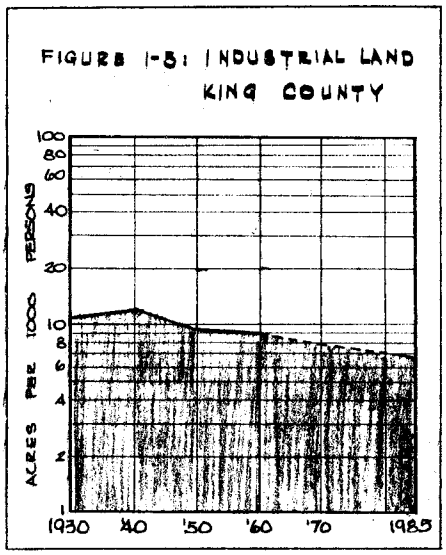
Change in commercial land area requirements is related, though not as strongly as in the case of residential land, to the change in population.

Any new growth in an area is viewed by the developers of commercial land very optimistically. As a result, in anticipation of continued growth of the area, there is a tendency to develop more land for commercial uses than needed. This results in a greater acreage per 1,000 persons in the early period of growth of an area than later as the population increases. This phenomenon is exhibited clearly in the figures for the King County Urban Area excluding Seattle. Actual measurements show that, whereas in 1930 commercial acreage was 16.21 acres per 1,000 persons, it has dropped to 4.03 acres per 1,000 persons by 1960. It is expected that a further slight decrease will take place so that by 1985, the King County Urban Area excluding Seattle will have 4.01 acres of developed commercial land per 1,000 persons.

This trend would also have been exhibited in the City of Seattle, but unfortunately, no figures are available for Seattle for the early period of its growth. Seattle shows a slight increase in the acres per 1,000 persons figure between 1930 and 1960. This is due largely to the earlier development of more compact pedestrian oriented shopping areas as compared to the later day development of motor car oriented shopping centers with greater parking space requirements. However, this trend toward increasing acreages per 1,000 persons in Seattle is

expected to be reversed after 1960 and by 1985 to reach a figure of 3.93 acres developed commercial land per 1,000 persons.

Industrial Land Use

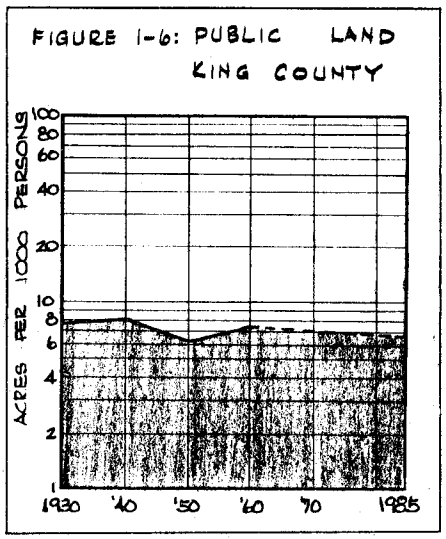


Industrial land use includes all manufacturing industries plus non-manufacturing industries such as railroad rights-of-way and terminal facilities, mining, quarrying and other extractive industries.

It is assumed that the amount of land used for railroad rights-of-way and terminal facilities will remain fairly constant throughout the projection period. Other manufacturing and non-manufacturing industries would show a slight increase in acreages because industries by their nature are prone to be pronouncedly sporadic in their development due to the difficulties of raising large amounts of capital. In relation to population they exhibit the same type of trend line as that of commercial land use, i.e., more acres per 1,000 persons in the earlier period of growth of an area than at a latter stage. Such is the pattern exhibited by King County Urban Area outside Seattle as well as in Seattle to a great extent, keeping in mind the earlier practices of building more compact structures to latter days spread out structures with landscaping and parking areas.

It is expected that there will be, by 1985, approximately 7 acres per one thousand persons in industrial use.

Public and Semi-Public Uses - Residentially Oriented



Residentially oriented public and semi-public uses change in direct relationship to changes in population. This is shown by the fact that every time a new residential development comes into existence, such uses as schools, churches, fire stations, libraries, and local parks also have to be provided for. However, they usually lag behind the growth of population. In the King County Urban Area outside Seattle the acreage per 1,000 persons dropped from 15.93 in 1940 to 9.29 in 1950. This drop was due to the rapid rate of population growth during and immediately following

World War II, a period during which manpower and materials were unavailable for public construction projects. The drop in this figure occurred not from building and acquisition inactivity but due to a rapid rate of population growth. The trend of building and acquisition of residentially oriented public and semi-public facilities progressed at a rapid rate in the 1950's but in as much as the growth of population was also at a rapid rate, the actual increase in acres per one thousand persons was slight.

By 1985 it is expected that there will be 7 acres residentially oriented public and semi-public land per 1,000 persons in the King County Urban Area outside Seattle. In Seattle it will be 6 acres per 1,000 persons.

Public and Semi-Public Use - Non-Residentially Oriented

Non-residentially oriented public and semi-public uses are not directly related to population change. Changes in this use, particularly large regional parks, are dependent largely on the availability of funds, as well as the thinking of the legislative body which makes decisions regarding the acquisition of such sites. Recently the purchase of regional parks has been more feasible due to funds that can be acquired from the Federal Government.

Other uses within this category, like cemeteries, colleges and universities, and golf courses are somewhat related to the growth of population; however, they constitute only a fraction of the total land in this category.

Streets, Highways and Rights-of-Way

Changes in acreages in local streets are directly related to residential use. In the past, the grid iron pattern resulted in more acreage in streets than recent development. Later on, especially in the 1950's, freeway and expressway construction and right-of-way acquisitions were accelerated by Federal highway policies. In the future, a large percentage of the streets and highway system acreages will consist of freeway type facilities rather than local streets.

It is expected that by 1985, 70 acres per 1,000 persons will be needed in King County Urban Area outside Seattle in this use whereas in Seattle only 28 acres per 1,000 persons will be required.

Other Public and Semi-Public Land

This category includes national forests and watershed areas and is expected to remain unchanged through 1985. National forests and watershed areas total 790 square miles and are located in the eastern half of King County.

Vacant and Non-Urban Land

This category includes vacant land, unbuildable land and such uses as agricultural lands. It is expected that due to the growth of King County, this land will accommodate uses in the developed category and will consequently diminish in acreage. Whereas in 1960, 78 per cent of the total land was vacant or in non-urban use in King County Urban Area outside Seattle, by 1985, such land will constitute only 40 per cent of the total. In Seattle, vacant and non-urban land will diminish from 16 per cent to 8 per cent of the total land area.

Use of Land Use Projections

Land use projection merely indicates how land is most likely to be used. It is not the same thing as a land use plan. For example, the trend toward integrated shopping centers with adequate number of parking stalls will continue and will have a spatial pattern quite similar to the pattern observed in 1960. The projection does not consider whether this is good or bad or ought to be encouraged. It is an attempt to state what the future will be like if the present trend continues. A projection does not eliminate the need for planning. A plan is necessary to insure the orderly development of land with particular reference to compatibility of adjacent land uses. A land use plan should suggest the reservation of lands for certain uses (such as schools and parks) which will be required by residents of an area. Where planning policies and projections are in sharp conflict, review is in order to decide whether to abandon the goals as unrealistic or take steps to avert the unwanted development.

development goals

DEVELOPMENT GOALS

One of the initial phases in the planning process is the formulation of development goals for urban growth. These development goals are not results of wishful thinking, but are formulated with an understanding of the existing and projected population and land use.

The following goal statements have been prepared for the entire Puget Sound Region by the Planning Directors Committee of the Puget Sound Regional Planning Council. Because of the general coverage, the development concept which follows this section is a necessary refinement and applies to the King County portion of the Region.

* * * * * * *

Every effort should be made to create a recognizable regional image embodying the natural and man-made characteristics which have become an integral part of our way of life in the Puget Sound Region. | 1

* * * * * * *

Urban growth must be logically planned. It should be related to and integrated with the natural environment - not superimposed over it. | 2

* * * * * * *

Urban areas should be developed in a manner which contributes to the most desirable living environment for all of our citizens. | 3

* * * * * * *

* * * * * * *

4 The magnificent natural beauty of our natural parks and national forests must be preserved not only for the benefit of the people living in the Puget Sound Region, but for the nation as a whole.

* * * * * * *

5 A more efficient and productive regional economy should be encouraged through effective inter-governmental coordination and strengthened comprehensive planning programs.

* * * * * * *

development concept for king county

DEVELOPMENT CONCEPT FOR KING COUNTY

The regional development goals stated and amplified in the previous section are broad statements which should be and can be applied equally throughout the Puget Sound region. But before specific development policies can be formulated and applied to the King County area, it is useful to describe some of the natural factors which influence the location of land uses and how they may be molded or influenced by public policy and action. Further, it is useful to examine extremes of development form prior to describing the one which is considered desirable and feasible within King County. The combination of natural factors affecting land use location and the public policies which will mold and influence these factors in a desirable and acceptable manner are recognized in the formulation of the URBAN CENTER DEVELOPMENT CONCEPT. The subsequent formulation of development policies are designed to implement the URBAN CENTER DEVELOPMENT CONCEPT.

Factors Influencing Locations of Land Uses

Basic to the locations of all land uses are the decisions of the land owner. The persons having control of ownership may exercise their right to develop or not develop their land. As such, this plan recognizes that there are physical, social and economic forces which influence the decisions of the property owner.

In King County much of the land is suitable for more than one type of use. Level land in the river valleys meets the criteria for industry and also has soil characteristics highly suitable for farming. If not subject to flooding, it may be equally suitable for residential or commercial uses. Upland plateaus and areas with gentle slope comprise the majority of the urban area and are equally usable for either commercial or residential purposes but may not have the soil characteristics necessary for good agricultural land. Mountainous areas may be suitable only for forestry or recreation purposes. Therefore, in order to determine the best use to which a particular site may be put, other factors which influence land use locations must be examined.

Accessibility of the site and the necessity for various modes of transportation are factors which govern land use locations. While an elementary school should be within walking distance of its pupils, a shopping center should be readily accessible by automo-

bile. Industry requires accessibility to the mode of transportation most suited to move its products as well as accessibility to a labor force.

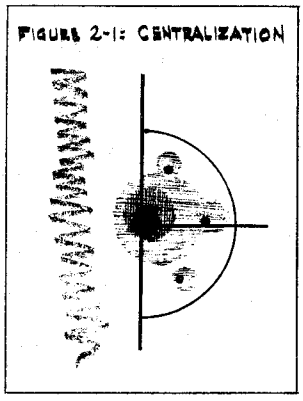
An adequate supporting population within a defined service area is another factor to be considered in the location of certain types of uses. Most land uses usually serve other uses and benefit by access and proximity to those uses. The optimum location of a land use is at a point where it can best serve those other uses, usually central within the particular service area in question. For instance, an elementary school is best located at the approximate center of the neighborhood which it serves, an area large enough to contain enough children to support the school. A shopping center should be economically sound if it serves an area not otherwise served and which contains an adequate supporting population.

View and/or proximity to attractive water areas are other factors which may affect the location of residential or recreation properties. Private development interests take advantage of these factors in the development of residential properties - it is the concern of public agencies to reserve enough of such land to meet the recreation requirements of the general public for such areas.

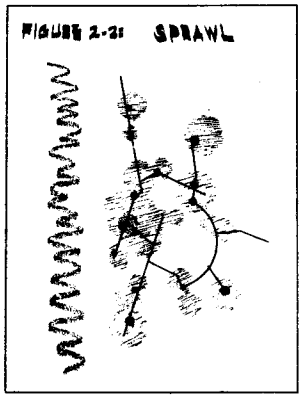
The social, economic and political makeup of a particular area may influence the location of certain types of land use, particularly if other factors are equal. For example, industry, in choosing between sites which otherwise may have similar characteristics may choose the political jurisdiction wherein there is a tax advantage or some other economic incentive. However, since such factors are subject to change and may not remain constant over time, they have been given less weight in the development of an urban form concept and development policies for the County.

Finally, there are community restrictions and goals which are controlled directly or indirectly by public bodies and which may bend, modify, or even completely change the normal factors affecting land use patterns. Such influences may include legal controls, such as zoning and subdivision regulations; cooperative agreements between public agencies or between public and private agencies; and capital-improvement programs of public agencies. It is in this area of community goals that the County may exert the greatest influence by coordinating the efforts of a variety of public and private interests. In the preparation of the comprehensive plan, there are set forth in a legal document the what, why and how of those community goals which are related to the physical development of the land.

ALTERNATIVE FORMS OF URBAN GROWTH



Before describing the URBAN CENTER DEVELOPMENT CONCEPT, it is useful to examine extremes of development forms, together with their effects, which could happen naturally or could be artificially applied to King County. Two extremes of development forms for such a metropolitan area are Centralization and Urban Sprawl (recognizing that there are innumerable modifications).



Centralization

The first, Centralization, assumes that a large part of the population will be contained within a relatively compact urban area, necessarily at increasing densities, and with a minimum amount of outward growth. When carried out in its purest form, it involves a single major center for business and culture at the core with functionally related suburban outlets of business. Radial developments of industry and commerce generally concentrate along transportation systems within the compact urban area. Large expanses of open space land outside the urban area are close at hand and accessible to the urban area. The contained European cities of the middle ages are excellent examples of the fairly successful functioning of this type of structure. This form of urban structure works well if the total population contained therein remains relatively small, or if the higher population densities can be healthfully accommodated on the land.

In King County, however, population has already increased and decentralized growth has occurred to the extent where the purest form of a centralized urban structure can no longer be achieved. To superimpose even a diluted centralized form on King County now would mean that all future outward growth would have to be discouraged completely and development allowed only within the existing urbanized area by filling up vacant land and redeveloping other land at increasing densities (see Figure 2-3).

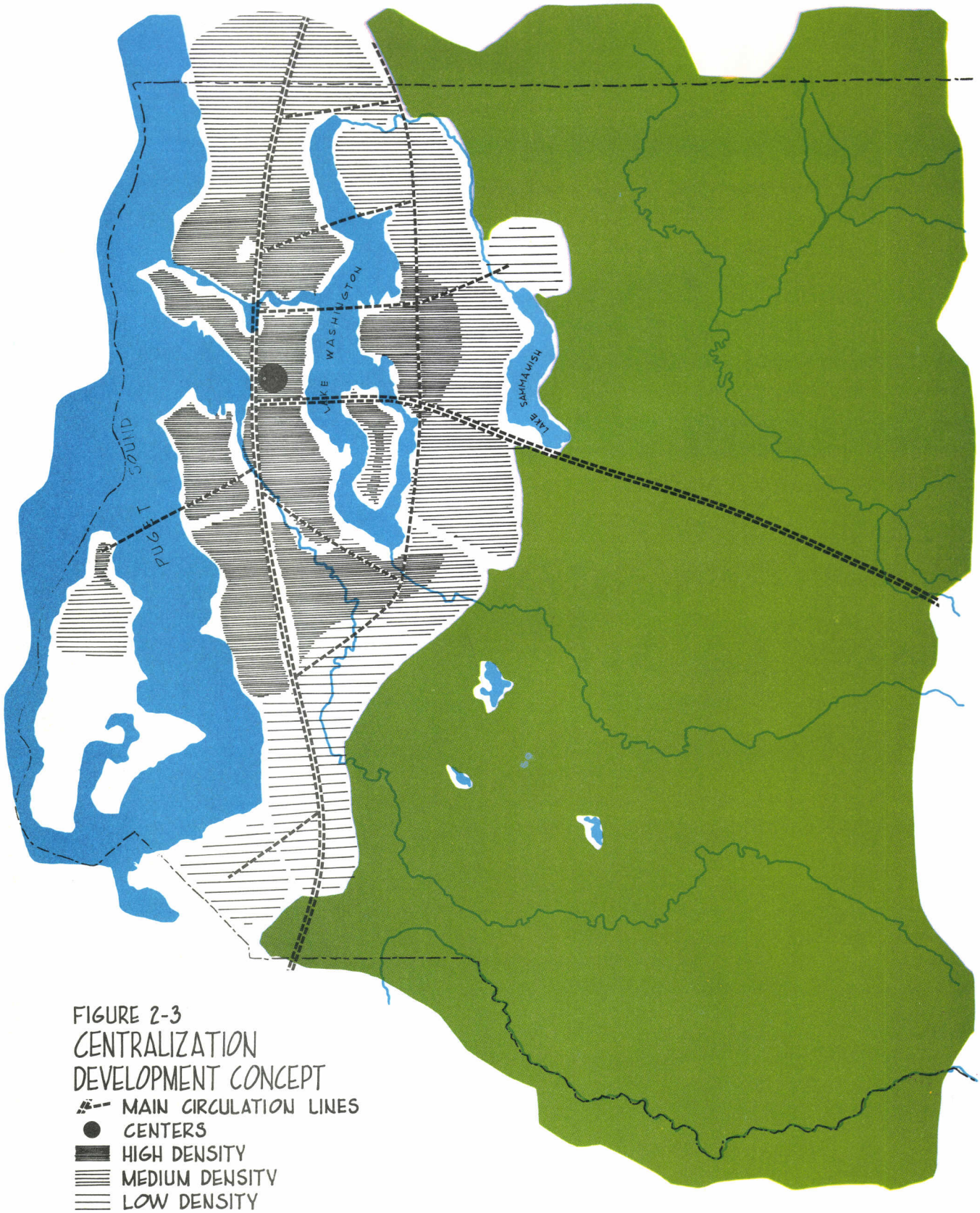


FIGURE 2-3
CENTRALIZATION
DEVELOPMENT CONCEPT

- MAIN CIRCULATION LINES
- CENTERS
- HIGH DENSITY
- MEDIUM DENSITY
- LOW DENSITY
- OPEN SPACE
- WATER BODIES

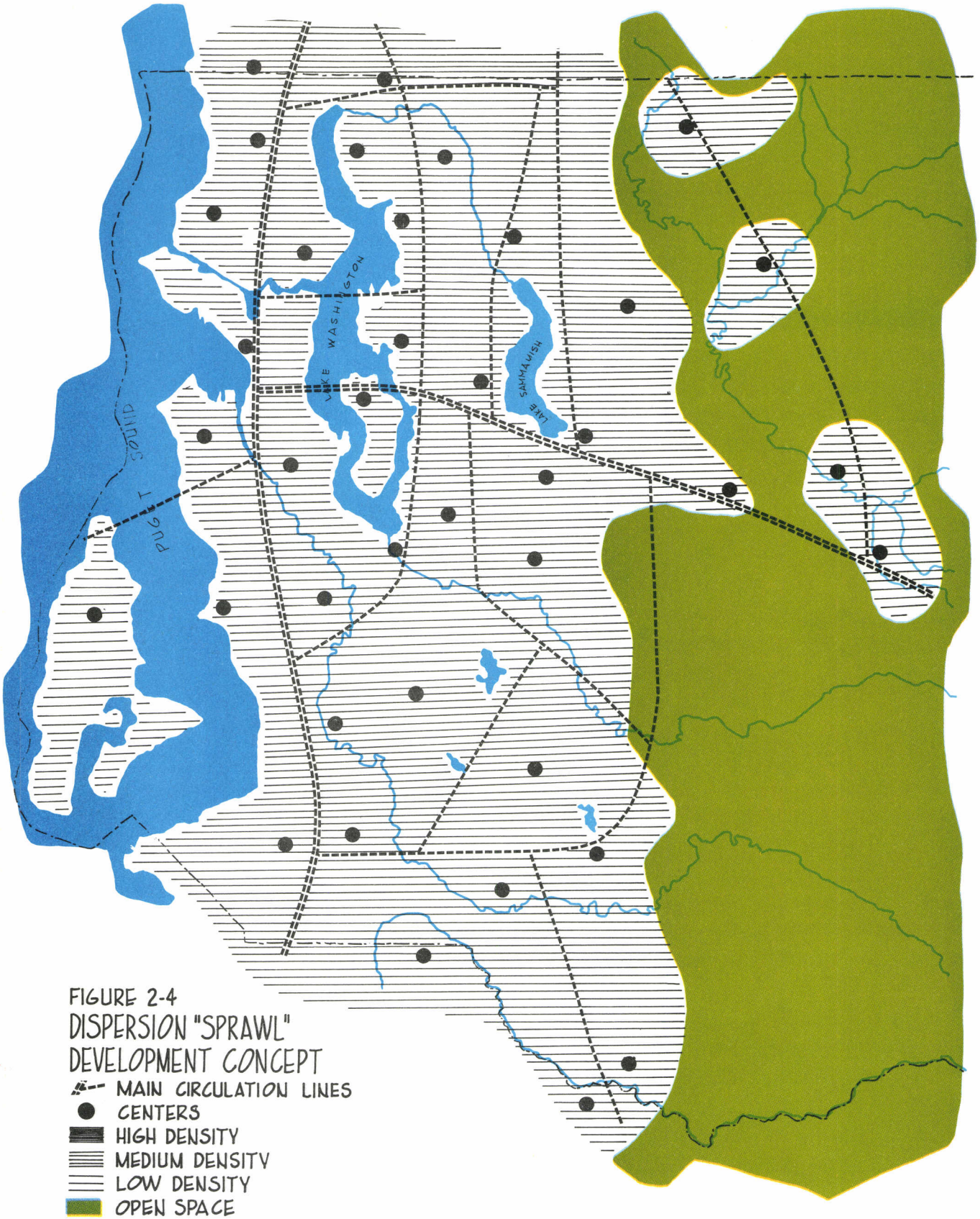


FIGURE 2-4
DISPERSION "SPRAWL"
DEVELOPMENT CONCEPT

- MAIN CIRCULATION LINES
- CENTERS
- HIGH DENSITY
- MEDIUM DENSITY
- LOW DENSITY
- OPEN SPACE
- WATER BODIES

Urban Sprawl

The term "urban sprawl" has been increasingly used in recent years to describe patterns of growth which are apparent in the suburban portions of most of our metropolitan areas. Suburban bedroom communities, largely consisting of single-family homes, are sprouting outwards in all directions from metropolitan centers. In some areas, these have developed into miles of monotonous housing with neither a complete range of necessary and desirable urban services nor the broad expanses of open space which help to provide beauty, form and identity within the urban area. In other areas, a spotty type of development has occurred. Large areas of developable land have been skipped over or else spoiled for future easy development by haphazard or premature platting procedures.

Some areas suitable for an urban range of residential density have been developed at extremely low densities for no other reason than temporary lack of suitable water or sewage disposal systems. When this is done without a plan for the future, an attempt to increase densities at a later date may prove costly or even infeasible. Areas that should have been reserved for permanent open space are depleted or lost for such use. The existence of some or all of these conditions results in an increasingly inefficient, uneconomical, and, in many cases, unsightly usage of our land resources. See Figure 2-4.

In King County, we are fortunate in having varied topography, wooded areas, and large water bodies which, in themselves, relieve monotony and encourage developers to take advantage of the amenity of view. We have also had the advantage of planning practices instituted both in the County and in many of the towns and cities of the County. However, as the population of the County increases, the pressures for urban sprawl also increase. In order to help prevent the formation of sprawl conditions, a desirable form of development for the County must be stated and implemented by means of specific policies designed for the purpose.

A Third Alternative

Recognizing that there are innumerable modifications of the above urban forms, it is pertinent to consider a third alternative for King County. The third development form should fall somewhere between Centralized and Dispersion forms and should combine the desirable features of both.

The third alternative should recognize the desire of King County

residents to have a choice of a variety of residential areas and to locate conveniently to major employment and service centers. Such a development form should preserve the natural beauty of the Puget Sound Region by proper conservation of land and water open space within the County in order to provide breathing spaces within the urban area; to provide separation and identification between major portions of the urban area; and to protect certain agricultural, flood-plain, forest, and mineral resource areas from urban type development. Moreover, it should recognize the concept that urban development can contribute to an attractive, safe, and orderly urban landscape; and that both public and private development should be encouraged in every manner possible to attain this goal.

Such a concept will hereafter be referred to as the URBAN CENTER DEVELOPMENT concept and is further amplified (see Figure 2-5).

Urban Center Development Concept

Applying the URBAN CENTER DEVELOPMENT concept to the County, the urban area would consist of the metropolitan center of Seattle as the major focal point for primary retail, service, wholesaling, and cultural functions. Because of the considerable investment in plant and operation, and because of the need for many activities to group at the confluence of major transportation arteries, the downtown area and industrial concentration within and adjoining Seattle would likely continue, as they do now, to serve as the principal employment centers of the County.

However, with increasing population growth in the urban area surrounding Seattle, these suburban areas can change from their traditional functions of being the bedrooms for Seattle and providing agricultural commodities for the region. Town centers, many of which traditionally have been politically independent, as well as new urban centers, can become focal points for employment, commerce, and cultural activities to serve their own area. Some may be able to supplement the metropolitan services of Seattle by providing specialized services or functions peculiarly adaptable to their own area or which may have space requirements which cannot be met in Seattle.

In order to relieve traffic congestion within the central city, reduce travel time, provide a more adequate tax base for various portions of the urban area, as well as utilize land which may be more suitable for industrial purposes than other uses, sub-centers of industrial activity would be encouraged in each major portion of the urban area. For

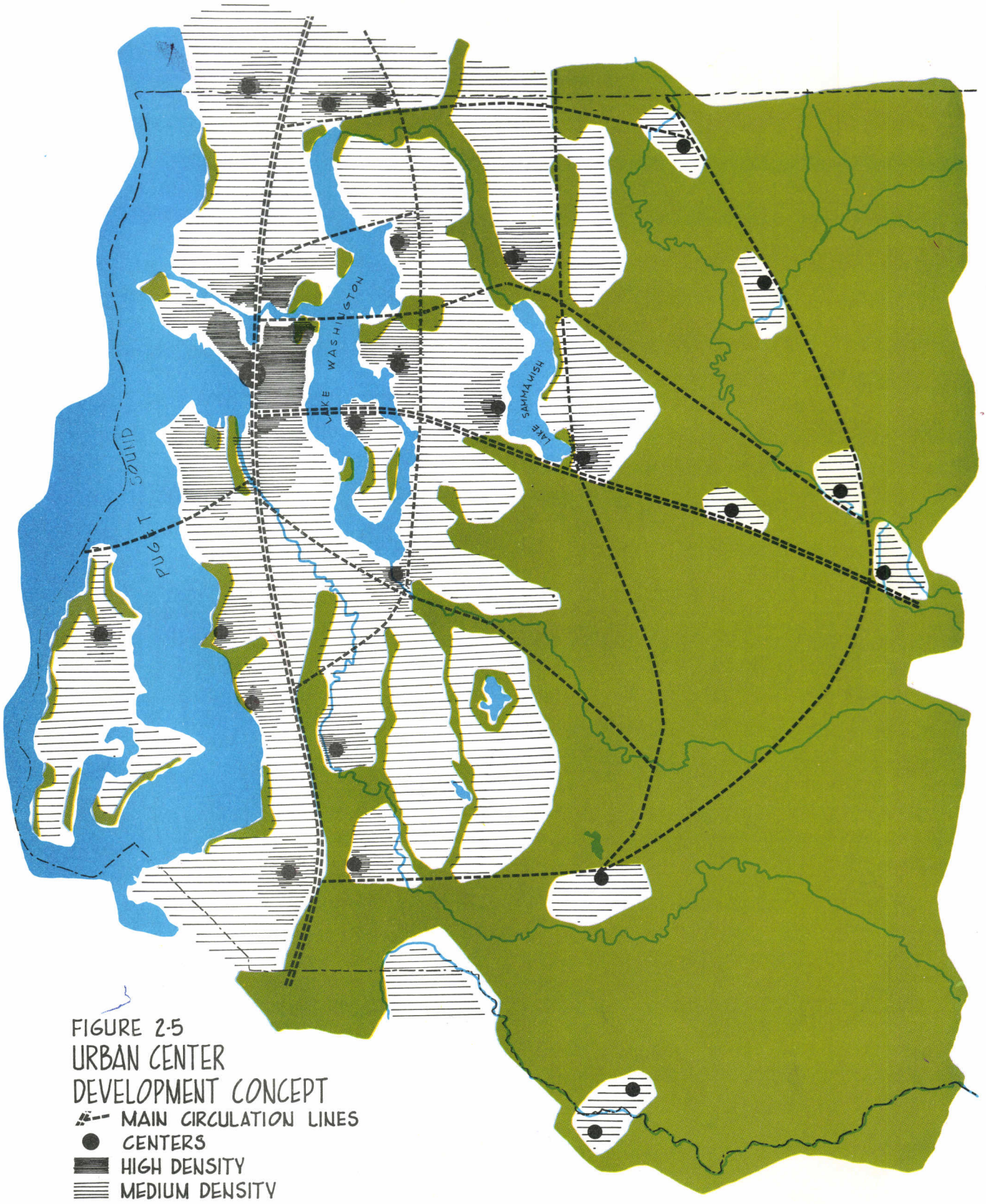


FIGURE 2-5
URBAN CENTER
DEVELOPMENT CONCEPT

- MAIN CIRCULATION LINES
- CENTERS
- HIGH DENSITY
- MEDIUM DENSITY
- LOW DENSITY
- OPEN SPACE
- WATER BODIES

the most part, such centers would take the form of commercial office buildings, industrial parks, wholesaling and distributive centers, or service type functions. Some might be able to accommodate a limited amount of general and heavy industry provided they could meet the location requirements for such industry and had community acceptance as well. All such land would be scaled to the future industrial land requirements of the County.

Most of the Urban Centers would be expansions of existing development. Existing centers which are adequately serving a particular function or can be encouraged to become more adequate would be recognized in the total plan for the County. Many would function as separate political entities with their own governmental services and local controls.

Supplementary to the Urban Centers, which would contain a variety of urban services as enumerated above, would be specialized centers each providing a particular kind of service and each more or less centrally located within its own population service area. Such centers would include community or neighborhood business centers, and the like. Each could be located according to the detailed criteria enumerated in the development policies contained in the following sections and would be scaled in size to its own service area population.[1] In order that persons residing in the County may have a choice of living area, a variety in residential areas would be encouraged within each major segment of the urban area. In general, high-density housing types would be encouraged to develop relatively close to Urban Centers and other community focal points in order that traffic volume generated by these densities would be adjacent to their service facilities. Overall population of the suburban communities would be greater than at present. This would be achieved - not necessarily by making lot sizes smaller - but by encouraging town house and apartment development as well as single family homes, and by encouraging

---

[1] It should be noted here that the term "community" may have a different connotation or refer to a different area or population dependent upon the particular function under consideration. For example, "community" used in connection with a recreation center is a different size and has different physical boundaries from that used in connection with a business center. On the other hand, the term "neighborhood" normally refers to a smaller segment of population which is comparable to an ideal elementary school service area. Specific policies related to the particular function in question should be referred to in the use of these terms.

the filling-in of vacant areas suitable for residential use. Lower residential densities would be encouraged to develop on those lands less suitable for high-density residential use, where the existing pattern of development warrants permanent protection, and in those areas located at a greater distance from the focal points of community activity, from major transportation routes, and from primary employment centers.

In order to relieve the monotony of continuous urban development and provide necessary recreation area, a system of open space could be developed which would have residentially related park and recreation service throughout the urban area. When possible, large segments of the urban area would be separated by elements of the open space system, such as the river valleys and steep slope areas.

In the non-urban area, which consists of the eastern two-thirds of the County and Vashon Island, the existing towns and cities would be recognized and fostered through encouragement of urban type residential growth concentric to existing development rather than separate from it. In order to discourage urban sprawl, the remainder of the non-urban area would be retained in its present form of agricultural, suburban farm, forest, or recreation area with measures taken for the expansion and conservation of public recreation area wherever possible. These communities of the non-urban area would be connected with each other and with the major focal points of the urban area by suitably scaled transportation routes.

The framework for the Urban Center Development concept would be provided by the major elements of the transportation system. Just as todays major highways, railroads, and water and airports have influenced existing development, the freeways would, perhaps, have the greatest influence on future development. The north-south route, and interstate highway route, would link the metropolitan centers of Seattle, Tacoma, and Everett. An east-west route links the Puget Sound Region with Eastern Washington.

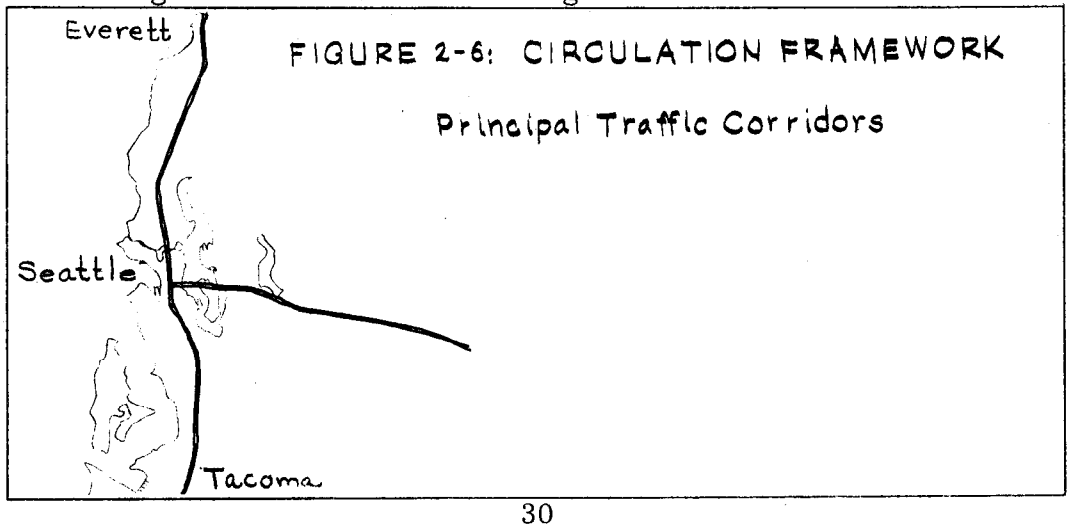


FIGURE 2-6: CIRCULATION FRAMEWORK

Principal Traffic Corridors

A number of radials would reach from Seattle into its hinterland, including two additional bridges across Lake Washington.

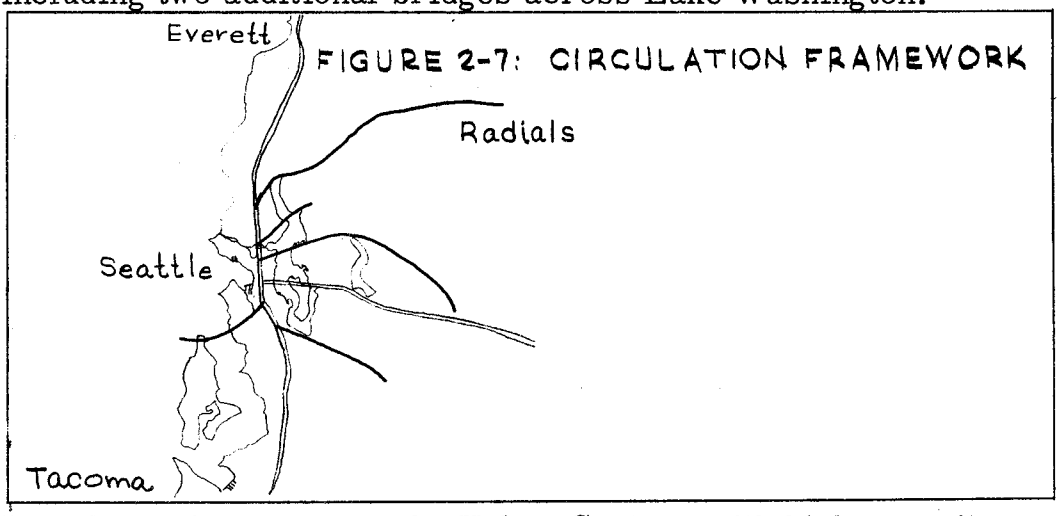


FIGURE 2-7: CIRCULATION FRAMEWORK

In order to interconnect the Urban Centers with high capacity transportation routes, circumferentials would ring Lake Washington and the outlying towns of the Snoqualmie River Valley.

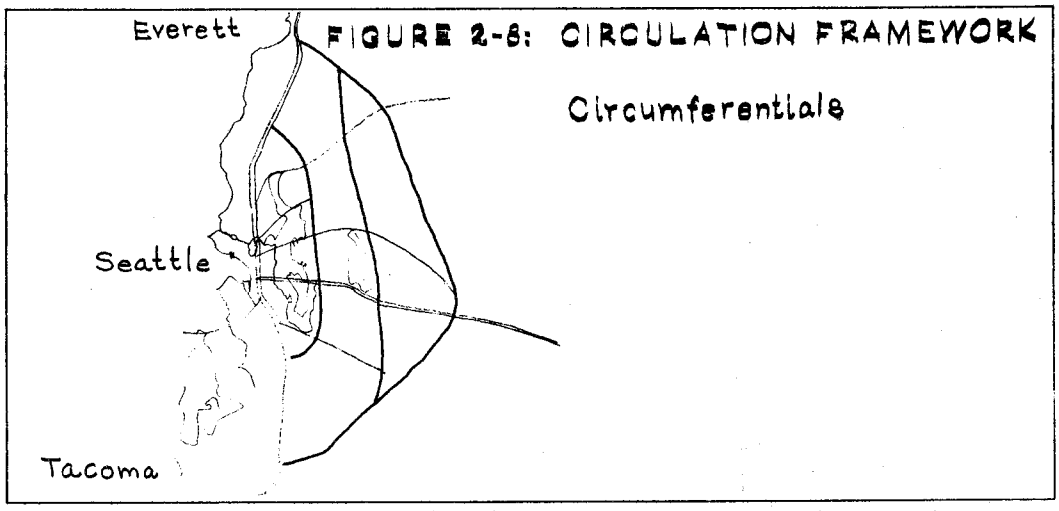


FIGURE 2-8: CIRCULATION FRAMEWORK

A portion of the latter would also serve as a radial reaching out from Tacoma. This transportation system, together with its major and secondary arterials, would serve the Urban Centers of the Region.

As the transportation system is presently oriented to the automobile, it is assumed that some future form of mass rapid transit for the urban area would be directly related to the freeway and major highway system. In the event of a radically different mass rapid transit concept, a re-evaluation of this Development Concept would be in order.

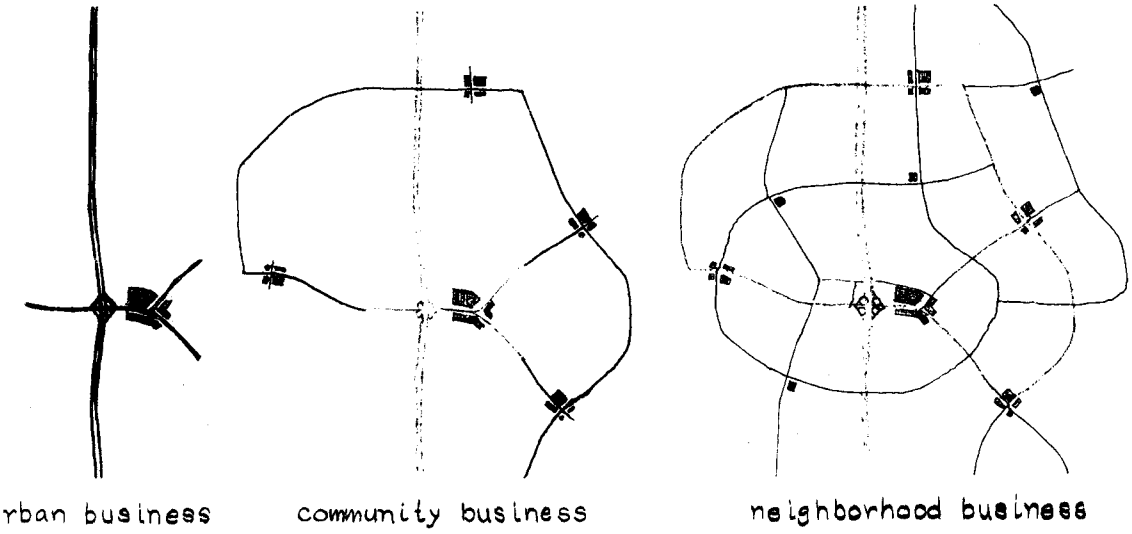
Interrelationship of Land Uses

The URBAN CENTER DEVELOPMENT concept is intended to provide a desirable living environment that can be achieved within our system of local government. To this end, the locational criteria for all the land uses have been interrelated into an arrangement of land uses which should achieve the stated goals.

Each type of land use may be classified in a hierarchy of function. For instance, the road system ranges from local access roads to freeways, commercial areas from neighborhood convenience shopping centers to the metropolitan central business district, public schools from elementary schools to community colleges, and residences from a single family dwelling on a large tract to a multi-story apartment building.

The accompanying sketches illustrate the hierarchy of principal types of functions as recognized in the Development Policies which follow and their interrelationship with one another.

FIGURE 2-9:
A HIERARCHY OF BUSINESS AREAS

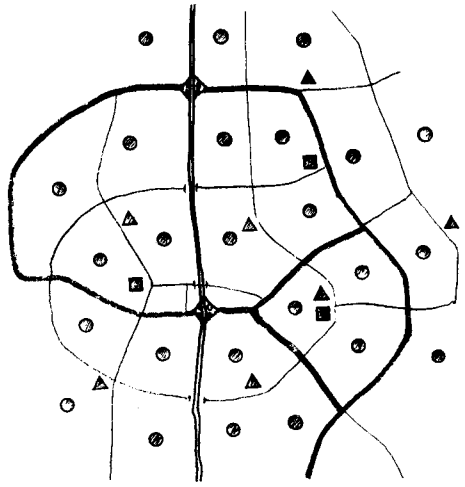


The hierarchy of business and circulation are compared in Figure 2-9. The transportation network consisting of freeways, expressways, and major arterials create points of focus which have advantages of access for the surrounding potential service area. With the metropolitan central business district as the focal point, a series of urban business centers are located at or convenient to the confluence of

major transportation arteries. The next level of arterials creates additional focal points where the somewhat smaller community business areas are located centrally within their service areas. Finally, the neighborhood and convenience centers serving the smallest areas of population are located at intersections of lesser traffic routes (e.g. secondary arterials).

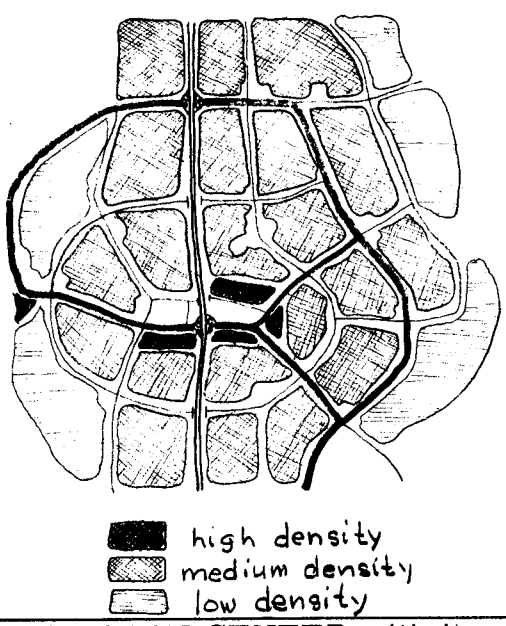
Figure 2-10 illustrates the hierarchy of public schools applied to the same circulation system. Because of their size and the scale of their activities, high schools are traffic generators and require a location convenient to major arterials. Elementary schools, on the other hand, serve the walking oriented younger school age group and require locations insulated from major traffic-bearing streets.

FIGURE 2-10:
A HIERARCHY OF SCHOOLS



Finally, Figure 2-11 illustrates the principle of reducing traffic movement and serving the volume generated by locating the highest density living areas in proximity to business areas, employment centers, and arterial streets.

FIGURE 2-11:
A HIERARCHY OF RESIDENTIAL DENSITIES



A similar hierarchy could be illustrated for other uses, and all land uses and circulation elements could be interrelated with one another. A composite for a portion of the urban area would illustrate a typical URBAN CENTER with its related specialized functions as shown in Figure 2-12.

Figure 2-12

A THEORETICAL URBAN CENTER

LEGEND

CIRCULATION
- Freeway
- Major Arterial
- Secondary Arterial

BUSINESS AREAS
- Urban Business
- Community Business
- Neighborhood Business

RESIDENTIAL AREAS
- High Density
- Medium Density
- Low Density

Employment Center

SCHOOLS
- Elementary School
- Junior High School
- Senior High School

OPEN SPACE
- Neighborhood Park
- Community Park
- Major Urban Park
- Buffers and Scenic Drive
- Agriculture and Forest Areas

development policy:

plan policies, criteria, & standards

DEVELOPMENT POLICY STATEMENTS

Because King County is now more than three-quarters undeveloped, and is rapidly converting its vacant land to urban uses, it is impossible to determine in advance the locations of all land uses. Therefore, the conventional method of attempting to show everything in detailed map form has been replaced by a "development policy" approach to the Comprehensive Plan. These development policies have been carefully determined and interrelated in order to translate the Regional Goals and the Urban Center Development Concept into generalized mapped proposals. They, furthermore, provide a guide for short-range decisions, specific recommendations, and detailed regulations.

The use of policy statements will encourage consistency in administrative actions and development control. Their use will promote efficiency in handling frequently encountered problems in that the groundwork for making the decisions will already have been laid. Each time the same or similar situation arises, the agency will not be required to start at the very beginning in its deliberations. Moreover, the policy statements provide a framework for the Comprehensive Plan, clarify the objectives of various implementing measures, and provide a source for public reference. The development policy statements contained in this Comprehensive Plan are not to be considered as legal controls in themselves, but as guides to be applied to local conditions.

Development policy statements are used in developing the Comprehensive Plan Map, as locational criteria for uses too detailed to place on a plan map, and as a guide in areas too undeveloped to logically express in detailed map form. Therefore, the development policy statements serve as the core of Part I of this Comprehensive Plan, with the Plan Map indicating the locations and extent of principal land uses to the degree that these uses can presently be determined.

A

transportation development policies

A complete transportation system includes routes and terminal facilities for all modes of travel. One of the most important elements is the street and highway system.

Freeways and Expressways

Provide a means for relatively unimpeded traffic flow between major population centers or other major traffic generators

Major and Secondary Arterial Streets

Collect and distribute traffic between residential neighborhoods and communities

Provide access to service facilities of one or more residential communities

Service Streets

Serve local area only

Scenic Route

A route for recreation travel through areas of scenic interest in addition to any other traffic function for which it is designed

A

DEFINITION

A complete transportation system includes both transportation lines (the routes and rights-of-way utilized by various modes of transportation) and terminal facilities (either end of a carrier line with its attendant freight and/or passenger stations, yards and offices). Transportation facilities may include all those connected with the following methods of transportation:

Vehicular
Rail
Waterborne
Aircraft

TRANSPORTATION DEVELOPMENT POLICIES

A

In recent years King County has shared with practically every other metropolitan county in the nation the experience of unprecedented expansion of population, business and industry. This growth has been accompanied by greater emphasis on mobility and greater demands on all transportation facilities.

At the local level, by far the most important element of these transportation facilities is the street and highway system. Recent developments, however, are causing an important change in these streets and highways. As land is more intensely developed, and as the quantity and variety of traffic service demands mount, it becomes increasingly important that these roads be considered as components of a system, rather than as individual routes.

Particularly since the advent of controlled access highways, there has been an increasing realization that all roads cannot perform all functions equally well. Freeways, for example, safely carry large volumes of high speed traffic, but provide no direct service to abutting land uses. At the other extreme, local streets provide direct access to each adjoining land parcel, but are completely incapable of accommodating high speed, high volume traffic. Between these extremities lies a wide range of street and highway types.

Another change is the growing recognition of the impact of highways and streets upon land uses. The position, shape and extent of various land uses are so closely related to the location and type of street and highway service available that it is impossible to consider one without the other.

A purpose of this plan is to guide transportation planning, route establishment, project programming, and selection of route design criteria so that each project will be able to fulfill its correct role in the overall system. If this can be accomplished, it will be a major step in the implementation of orderly development and expansion in King County. The following objectives are not necessarily listed in their order of importance, nor is it even possible to assign such an order. The system's validity depends upon the maximum realization of each of them.

> All parts of the transportation system should be coordinated with city, state, federal, and unincorporated areas within the County and adjoining counties.

A2 All parts of the transportation system should be scaled to the function they are to perform in conformance with the density and total population of an area and its related land use requirements.

3 Routes and facilities of the transportation system should be so located and designed as to meet the demands of both existing and proposed land uses with the most beneficial effect on such uses.

4 The transportation system should provide balanced and integrated facilities for all modes of travel.

5 Transportation routes should have adequate reserved right-of-way to accommodate expected, as well as existing, traffic volumes.

6 Major transportation routes and existing or proposed public transportation systems should be coordinated, even to the extent of adding rights-of-way for rapid transit systems in combination with other routes where such are deemed desirable and feasible.

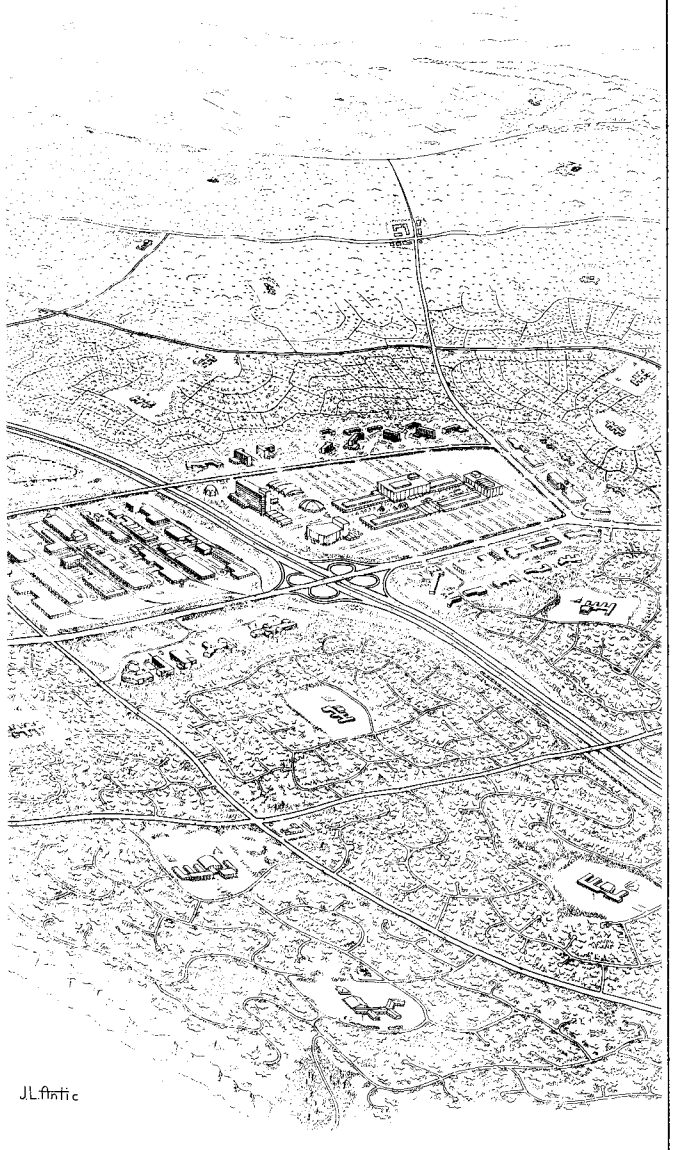
7 Rights-of-way for major transportation routes should be acquired or legally established in advance or at the time of development in accordance with the Comprehensive Plan. Lesser transportation routes, which directly serve and are dependent upon the design of adjoining land uses, should not be established until the time of land development.

It is unrealistic to attempt to apply precisely the same road system to all portions of the County. The distribution of highways, like the distribution of land uses, lends itself to a broad separation into urban and rural categories.

A considerably different type of service is required in highly developed urban areas, as compared to sparsely populated rural areas. The characteristics of urban traffic are vastly different from and more complex than those of rural traffic.

The obvious results of these differing characteristics are seen in the spacing and the number of major traffic facilities. For example, the needs in rural areas are met quite adequately by appropriately designed and constructed shoulders and open ditches. Similarly, traffic control is accomplished with signs, some pavement markings, and occasionally, a traffic signal. Obviously, these standards are very inadequate for urban or suburban areas. Here, drainage from the roadway must be carried away by storm drains. Additional width of paving is required, either to provide additional capacity for moving vehicles, for parking, or both. Curbs and gutters become necessities, street illumination is required, and traffic control requires an extensive network of complicated and costly devices.

FIGURE 3-1: FEATURES OF A MAJOR STREETS PLAN



Freeways and Expressways

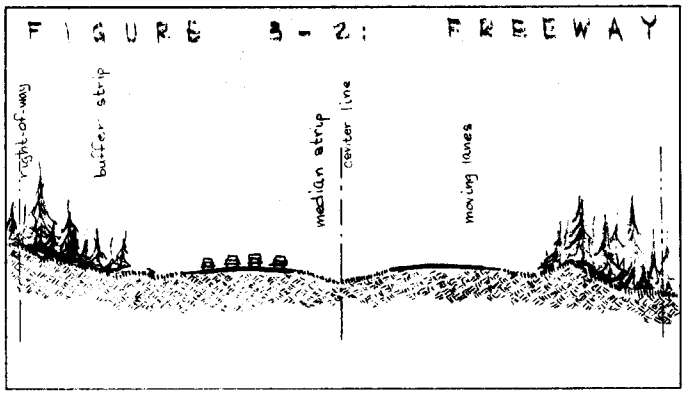


FIGURE 3-2: FREEWAY

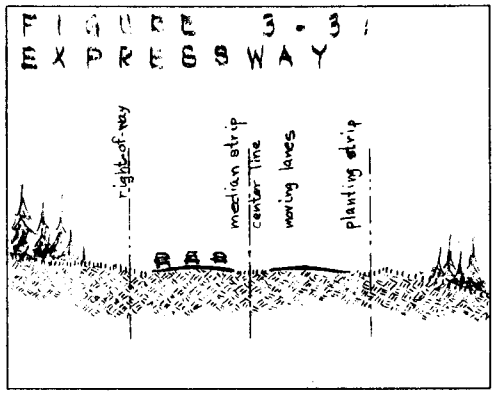


FIGURE 3-3: EXPRESSWAY

Those trafficways which perform the function of moving large volumes of people and goods at high speeds safely in continuous movement are:

Freeway - A high speed, high capacity roadway with full access control and separation of crossing movements exclusively for motor vehicle traffic (see Table 3-1 for design features).

Expressway - A divided arterial highway for through traffic, with partial access control and possible grade separations at major intersections (see Table 3-1 for design features).

The backbone structure of the planned street and highway system is the freeway system as existing or proposed within the County. Primarily, this is developed and carried out by the State Highway Department. The principal North-South element in this structure is the Seattle Freeway, a facility which will become a link in the rebuilding of U. S. Highway 99, or Interstate Highway 5, and which extends all the way from Mexico to Canada. The major East-West backbone is provided by U. S. Highway 10, the primary link connecting Seattle to eastern parts of the United States. In recent years, a portion of its length within the County has been developed to Federal freeway standards and further improvements are planned.

State freeway routes which have been constructed in recent years or are under construction at the present time include S.H. 1-RE or FAI-405, which provides a by-pass route for Seattle and a link between communities on the East side of Lake Washington; the Auburn Cutoff route, which will provide a connection for persons traveling from the south to Snoqualmie Pass by way of U. S. Highway 10; and the Stevens Pass Cutoff, east of Bothell, which provides a shorter route to S. H. 15 and Stevens Pass.

In addition to the Mercer Island floating bridge, the Evergreen Point floating bridge is a connecting link to S. H. 1-Re, and a third bridge location towards the northern end of Lake Washington will provide an additional route across the lake connecting the East Side with Seattle and the employment centers of the Seattle area.

Other routes do not have as imminent time schedules in terms of completion dates but will make the freeway system of the County more complete. Some freeway facilities are initially being constructed with only two traffic lanes, but all are planned with sufficient right-of-way to accommodate additional lanes as traffic demand warrants.

The freeway and expressway should be located so as to connect major population centers or other major traffic generators as well as provide for relatively unimpeded traffic flow through urban areas. They may serve as by-pass routes around communities. 8

The freeway and expressway should be located so as to not bisect a community, neighborhood, business area, park or any other homogeneous area. In cases where this is impractical, adequate provision should be made for pedestrian and vehicular access across the trafficway. 9

Major and Secondary Arterial System

FIGURE 3-4: MAJOR ARTERIAL

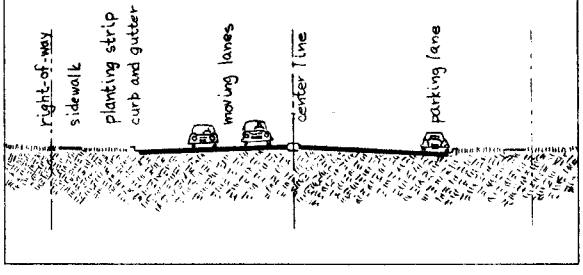
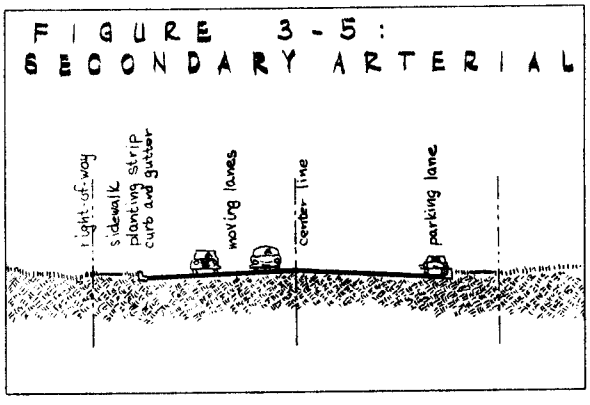


FIGURE 3-5: SECONDARY ARTERIAL



Those trafficways which perform the function of moving large volumes of people and goods as well as providing access to adjoining property either directly or at conveniently located on-grade intersections are:

A

Major Arterial - A highway connecting major activity centers and facilities with intersections at grade, direct access to abutting properties, with traffic control measures, and geometric design features used to expedite safe traffic movement (see Table 3-1 for design features).

Secondary Arterial - A highway connecting minor activity centers and facilities with intersections at grade and providing access to abutting properties (see Table 3-1 for design features).

Major arterials are located so as to connect major centers or facilities, to provide access to and from the freeway system, and to serve high-volume traffic needs. Because of these considerations, such facilities are necessarily more frequent in the more highly-urbanized portions of the County.

The capacity and design of major arterials varies within the County, depending upon expected traffic volume. Within the most heavily urbanized area, they generally need at least 100' of right-of-way and from 4 to 6 traffic lanes. On the other hand, those major arterials (usually a part of the State Highway System) which connect the towns and cities of the non-urban area may only need 2 traffic lanes, no sidewalks, and few, if any, automatic traffic controls. Yet, each type performs the function of a major arterial for the particular area and type of traffic it serves.

10 The major arterial should be located on community boundaries where possible, always on neighborhood boundaries.

11 The major arterial should serve as a connecting link to accommodate the principal traffic volumes generated between residential communities.

12 The major arterial should serve as a connecting link between residential areas and their major service facilities such as community business areas, community civic or cultural centers, and secondary schools at the senior high, college or technical school level.

The major arterial should be located where it can collect and distribute traffic from freeways or expressways to less important streets or directly to the larger trade centers, civic or cultural centers, industrial areas, or passenger or freight terminals. 13

A

The secondary arterial system provides the backbone structure for the individual community, and funnels traffic between local service streets and major arterials.

The secondary arterial should be located on neighborhood boundaries. 14

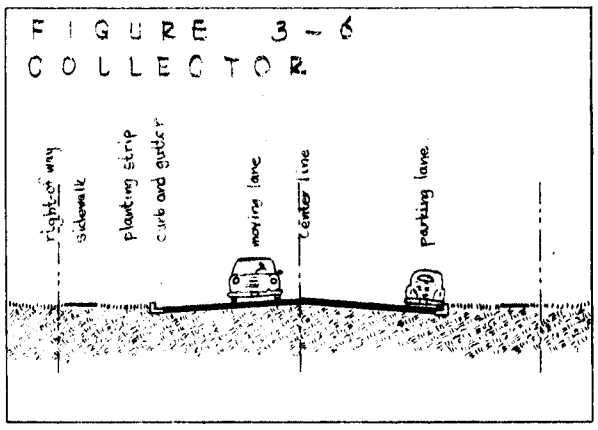
The secondary arterial should serve as a connecting link between residential neighborhoods as well as accommodating the lesser traffic volumes generated between residential communities. 15

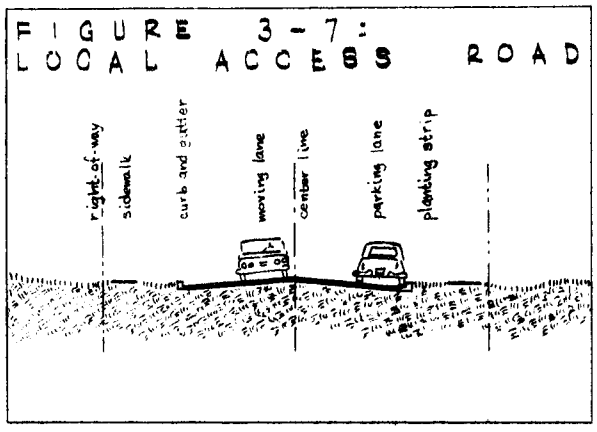
The secondary arterial should serve as a connecting link between residential areas and those facilities which serve primarily one community or parts of several neighborhoods, such as a neighborhood business area, junior high school, or community recreation center. 16

The secondary arterial should be located where it can collect and distribute traffic from major arterial streets to less important streets or directly to traffic destinations. 17

A

Service Streets or Roads





Service streets or roads which serve local traffic only and provide access to abutting properties include:

Collector - A street which serves an intermediate collection and distribution function between arterial streets and local access streets (see Table 3-1 for design standards).

Local access street or road - A street which serves only abutting properties and which provides direct access to all such properties (see Table 3-1 for design standards).

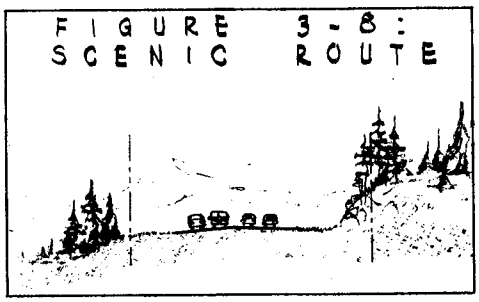
Collector streets should be designed so as to discourage through traffic between communities, and should be located as follows:

18 Collector streets should be located within neighborhoods where designed to collect and distribute neighborhood traffic only and serve those facilities located within the neighborhood such as the elementary school.

19 Collector streets should be located on neighborhood boundaries where designed to serve more than one neighborhood or larger facilities such as junior high schools, community park and recreation centers, and churches.

20 Local access streets or roads should be located in accordance with good design principles at the time of land subdivision. They should be designed to serve local traffic only.

Scenic Routes



A trafficway which performs the function of providing a route for recreation travel through corridors of scenic interest in addition to any other traffic function for which it is designed may be designated as a scenic route. Such routes include parkways, landscaped boulevards, and scenic drives.

TABLE 3-1: STREET DESIGN STANDARDS

Type of Facility	Design Standards - Normal Range			
	Right-of-way width	No. of lanes	Median strip width	Traffic Volume ADT[1]
Freeway	150'-400'	4-8	4'-80'	20,000 - 150,000
Expressway	100'-150'	4-6	4'-20'	15,000 - 40,000
Major arterial	80'-120'	2-6	0'-20'	5,000 - 25,000
Secondary arterial	60'- 84'	2-4	0'	1,000 - 10,000
Collector	60'	2	0'	300 - 1,500
Local road	48'- 60'	2	0'	- -

[1] Average daily traffic.

Note: A broad range in the scale of each type of facility is given in the above table in order to accommodate the differences between such facilities in urban versus suburban or rural situations.

Street Design Factors

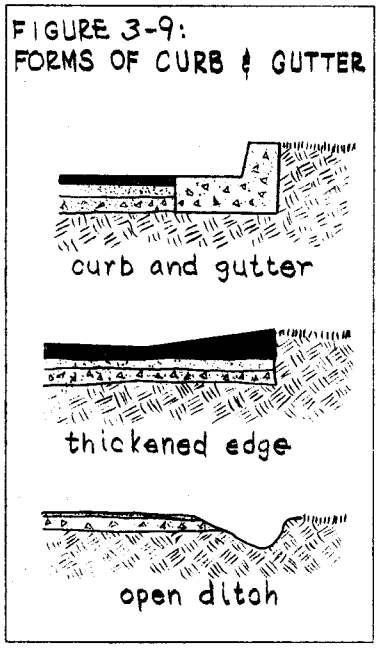
The size and characteristics of all streets should be scaled to the function they are to perform. Streets and the elements within its right-of-way should be designed to meet the demands of both existing

and proposed land use with the least possible adverse effect on such uses. The right-of-way is the total public strip of land within which there is public control and common right of passage. Its width depends on the features included within it, which may include:

a. The right-of-way generally contains at least two moving lanes for traffic which range from 9 to 10 feet on local streets to 12 feet on highways.

b. Parking lanes normally require 8 feet for parallel parking or 16 feet for angle or perpendicular parking.

c. Some form of curb and gutter, ranging from a concrete 6" curb and gutter to a thickened edge serves to channel drainage and protect paving edges from breaking down. In rural areas or areas having very low densities, a gravel shoulder with a shallow ditch may be employed.



d. The planting strip provides space for underground utilities, utility poles, and street trees, as well as providing a safety separation between the street and sidewalk.

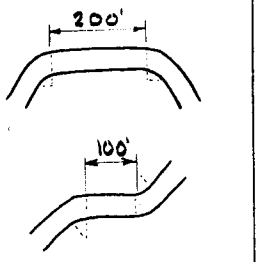
e. Sidewalks usually have a minimum width of 4 feet which is increased according to function. Even though sidewalks may be used less for walking in residential than in business areas, their hard surfaces provide children's play areas close to home.

Street Alignment

As heavy traffic necessitates additional street maintenance and increases the danger of accidents, the design of local access streets in terms of location, alignment, and width should discourage their use for short cuts between major thoroughfares. The minimum allowable radius of curves is determined by the design speed of the street.

In order to encourage driving safety, multiple changes in direction should be accomplished in separate and distinct operations. For instance, on residential streets two curves in the same direction should be separated by a tangent of more than 200 feet; and two sharp curves in opposite directions should be separated by a tangent of more than 100 feet.

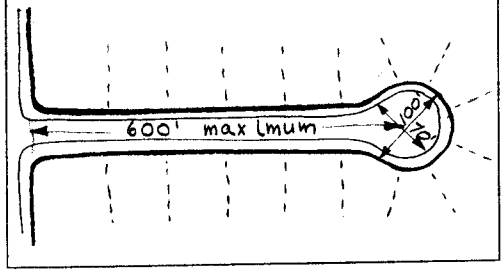
FIGURE 3-10: COMPOUND CURVES



The excessive use of curvilinear streets, while reducing the monotony of straight streets, may actually result in unsightly situations because of the additional structural elements (such as guy lines and poles) necessary to provide utilities above the ground on curved streets.

Lengths of loop streets and cul-de-sacs should be reasonable to maintain good circulation, shorten service deliveries, and make emergency vehicles less liable to misdirection. Dead-end streets should not be longer than 600 feet and shall have a turnaround with an outside roadway surface diameter of at least 70 feet.

FIGURE 3-11: CUL-DE-SAC

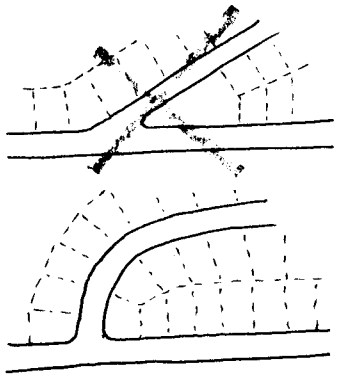


Street layout should be related to topography so as to provide convenient access to adjoining properties. Street grade should range from a minimum of 0.25% for drainage purposes, to a normal maximum of 10% for local access streets in order to reduce hazards under inclement weather conditions and permit ready access to abutting properties.

Intersections

In every case of intersections, due regard should be given to the topography of the area, sight distances in all directions, the use of the street for utility purposes, and its future use for rapid traffic purposes. A good street layout should have the following characteristics:

FIGURE 3-12: ANGLE OF INTERSECTION

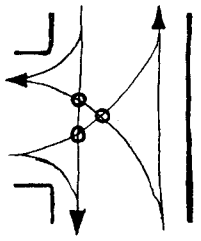


Streets should be laid out so as to intersect as nearly as possible at right angles. A sharp-angled intersection is dangerous because of lack of proper visibility. Also, it is wasteful of land, resulting in an excess of street area and poor lot layout.

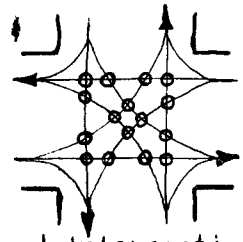
A

Comparing theoretical traffic conflict points, a three-legged intersection has three potential crossing conflict points whereas a four-legged intersection has sixteen such conflict points. Further, vehicles entering the T intersection from the discontinuous leg must slow down to turn left or right; they normally expect to yield to traffic on the continuous street, thus eliminating indecision as to which vehicles has the right-of-way.

FIGURE 3-13: COMPARISON OF POINTS OF CONFLICT



3 legged intersection



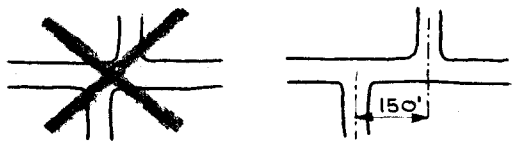
4 legged intersection

22 On local access streets the T intersection (three-legged), when sufficiently offset from the next junction, is preferable to the crossroad (four-legged) for reasons of traffic safety.

23 Street jogs with center line offsets of less than 150 feet shall be avoided in order to operate properly as separate T intersections.

24 Other intersection features that should be avoided for safe design include intersections with more than four legs; irregular, Y-type intersections where the legs meet at acute angles; and intersections adjacent to bridges, railroads, and other obstructions to clear visibility.

FIGURE 3-14: STREET JOGS



Parking

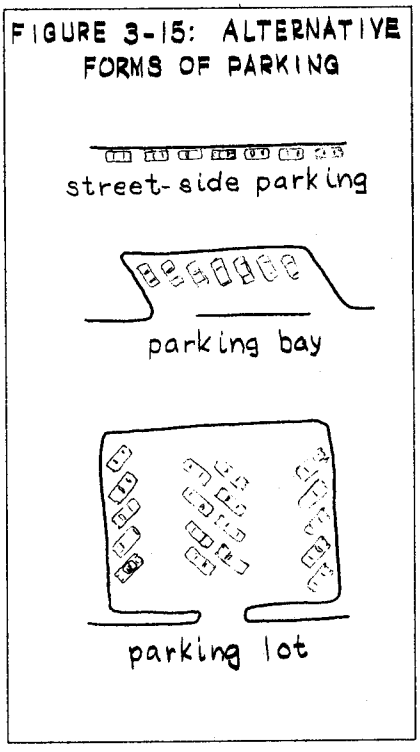


FIGURE 3-15: ALTERNATIVE FORMS OF PARKING

The provision of ample off-street parking is encouraged in order to permit the street to perform its principal function of moving traffic and providing access to abutting properties.

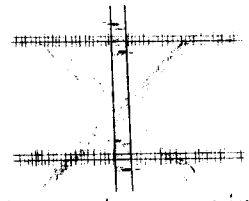
While parking in the street is the most common form and is convenient to users, street-side parking disrupts moving traffic. As an alternative, parking may be provided in small bays which are located in relation to the adjoining land use. When parking bays are properly designed into a street system, street parking area (and thus paving) may not be necessary. Parking lots may provide parking space for adjoining concentrated usage such as apartment houses or commercial establishments. Underground parking or parking as part of the structure it is serving is convenient, but is the most expensive form. It may be necessary, however, when space is at a premium. It also has the advantages of convenience and weather protection, and may result in a more aesthetically appealing facility than open parking lots.

RAILROADS

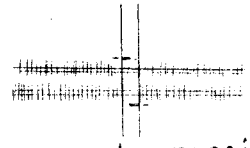
A

Railroads were instrumental in the historical growth of Seattle and continue to affect the form of urban change. Their routes, striving for level grades, often pass through prime waterfront land. Moreover, they have a direct influence on the locations of land uses requiring that particular mode of transportation. Although railroads traditionally have been less subject to change than many other types of land uses or circulation routes, the following policies should be considered in any further railroad development:

FIGURE 3-16:
RAILROADS PREFERRED IN SINGLE CORRIDOR



two grade crossings



one grade crossing

Because railroads are established land links between communities, full examination of proposed diversions of any rail rights-of-way to other uses should be made prior to such diversion in order to determine if the public might benefit from public acquisition thereof. 25

Parallel rail lines should be located in corridors wherever possible in order to reduce the number of grade crossings and reduce access and usability problems of the land otherwise located between such lines. 26

The location of proposed new rail lines, except for spurs feeding directly into adjoining industrial property, should be coordinated with the comprehensive plan in order that conflicts between such lines and adjoining land use and circulation patterns may be minimized. 27

On main line tracts, the elimination of grade crossings shall be encouraged in order to reduce losses due to traffic delays and accidents, increase the efficiency of railroad operation, and reduce inconvenience and annoyance to the public. The elimination of grade crossings shall be correlated with street and utility plans in the vicinity of such crossings. 28

AIRPORTS AND HELIPORTS

A

Air travel requires facilities ranging from international airports to small private-plane landing strips. A common characteristic of all airports is that landing approach zones are subject to hazardous conditions in addition to objectionable noise. The land within an airport approach zone should be free of intense development, both for safety and future expansion.

Airports should be so located as to avoid interference with the air space requirements of other airports. 31

Airports should be located where approach zones may be so oriented as to minimize hazard and nuisance to present and potential adjoining land uses. Desirably, the approach zones of airports and heliports should be over water, open space land or other land use of an extensive rather than intensive nature (such as agriculture, parks, greenbelts, plant nurseries and extensive industrial uses). 32

Uses normally accommodating or attracting large concentrations of people shall be discouraged from locating within the approach zones of existing airports. 33

Where the likelihood of expansion of an airport or heliport facility can be foreseen, land for such expansion should be acquired in advance of need. 34

The location of a facility should be related to its purpose and function. If the facility is a major terminal for a metropolitan area, it will be generating large volumes of traffic and, therefore, should be conveniently accessible to a freeway. A small landing strip, on the other hand, may be designed to serve suburban residential tracts and should create no significant street traffic demand.

TERMINAL FACILITIES

A

Terminal facilities involve the grouping of goods or people for a change in mode of travel. Passenger terminal facilities in this area include railroad, bus, airline, helicopter, ferry, and ship terminals. Because traffic demands are often heavy and concentrated, the location and relationship of terminals to the overall transportation system is critical.

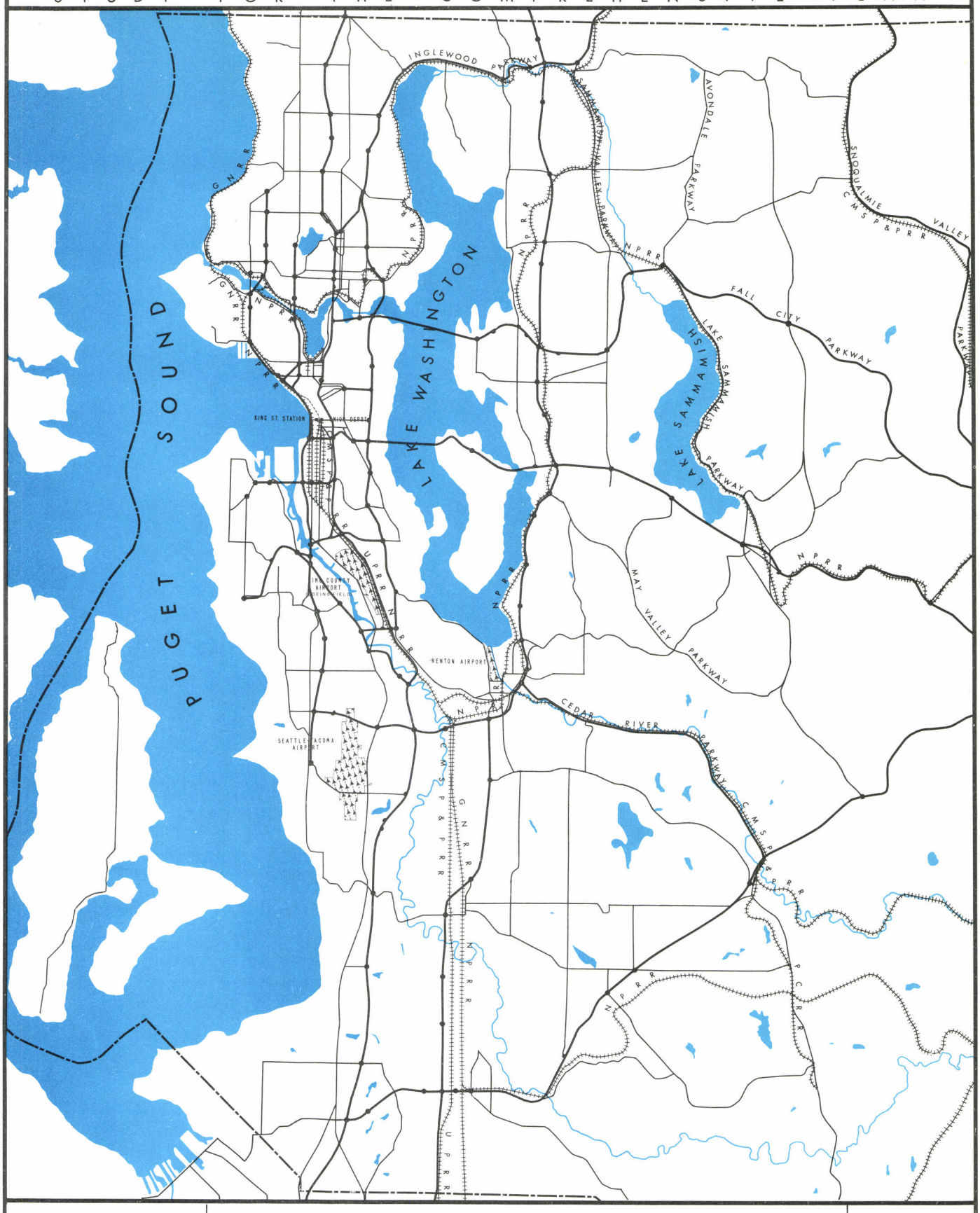
All passenger terminals should be convenient to a major arterial thoroughfare. Major passenger terminals shall be functionally connected to a major arterial and should be accessible to expressway or freeway interchanges. Desirably, major passenger terminals should also be served by existing transit lines or planned for service by proposed transit lines. 39

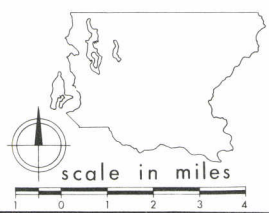
All passenger terminals should have adequate off-street parking facilities for passengers, visitors, employees and commercial passenger carriers. In addition, adequate, but functionally separate, space for tributary truck docking and loading functions should be provided. 40

Freight terminals, including railroad, truck, airline, helicopter and ship terminals, are usually serviced by heavy equipment of a different mode of transportation, such as a ship terminal served by a rail line. The requirements of the specific terminal in question dictate its relationship to the overall transportation system.

All freight terminals shall have sufficient space within their own site for the parking of employees and visitors and the maneuvering, loading, docking and storage of all carriers involved. 41

Freight terminals involving the transfer of goods between or to motor vehicles shall be on or functionally connected to a major truck service arterial and should be convenient to freeway or expressway interchanges. 42





TRANSPORTATION SYSTEM

FREEWAY AND EXPRESSWAY	C M S P & P R R	CHICAGO MILWAUKEE ST. PAUL & PACIFIC RAILROAD
MAJOR ARTERIAL	G N R R	GREAT NORTHERN RAILROAD
INTERCHANGE	N P R R	NORTHERN PACIFIC RAILROAD
RAILROAD	P C R R	PACIFIC COAST RAILROAD
AIRPORT	U P R R	UNION PACIFIC RAILROAD

Figure 3-17

KING COUNTY PLANNING DEPARTMENT 1964

business area development policies

B

Neighborhood Business

Consists of neighborhood shopping center or district only

Community Business

Consists of community shopping center or district, and related general commercial uses

Urban Business

Consists of urban shopping center or district, and related general commercial uses

General Commercial

Consists of groupings of related heavier commercial uses (either retail or wholesale)

B

DEFINITIONS

BUSINESS OR COMMERCE

Business or commerce means the purchase, sale, or other transactions involving the handling or disposition of any article or service.

BUSINESS AREA

A business area is taken to mean a combination of retail shopping, either in a center or district, together with other related general commercial uses, such as offices, clinics, theaters, and automotive sales and services.

SHOPPING AREA

A shopping area refers to a grouping of retail stores dealing in goods and services which range from convenience goods, such as foods, drugs, and personal services, to general merchandise, apparel, furniture, and home furnishings. These facilities generally are contained within an enclosed structure and appeal to the person as opposed to other businesses or industries.

A shopping area may take one of the following two forms:

A shopping center consists of a group of stores planned and designed for the site on which it is built, functioning as a unit, with off-street parking provided on the property as an integral part of the unit.

A shopping district refers to a group of stores which are situated on individually owned parcels, not planned as a unit, and may or may not have combined off-street parking.

GENERAL COMMERCIAL

Businesses which are not normally part of retail shopping are classified as general commercial. They include commercial uses such as intensive and extensive recreation, medical and dental clinics, business and professional offices, through and local highway business, automotive and allied sales and services, and a number of other specialized uses.

BUSINESS AREA DEVELOPMENT POLICIES

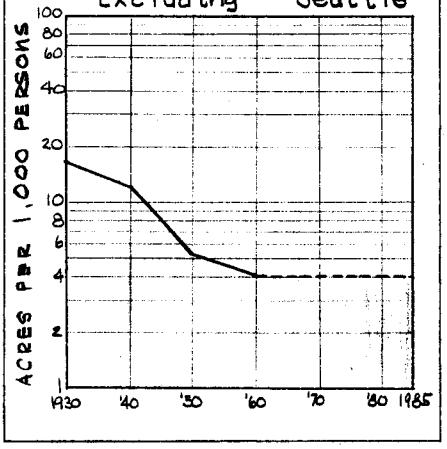
Conveniently located business areas of sufficient size to offer an adequate range of goods and services are as important to good community development as schools, parks, and utilities. A business area consists of a retail shopping core plus, in many cases, adjoining related general commercial uses. The business areas are located and scaled in size according to their functions, which vary with the type of goods sold and area served. They range from numerous small business areas (neighborhood) which provide convenience shopping goods to urban centers which provide a complete range of shopping goods and most general commercial items in addition to cultural and governmental services. Other general commercial concentrations performing special functions may be required in certain locations.

The characteristics of business and commercial use produce an environment undesirable for most residential purposes while, in turn, residential uses in a business area tend to decrease the capacity of business enterprises to render maximum services and decrease public convenience for utilizing those services. For these reasons, residential use is considered incompatible with business and commercial use except when proper design treatment is employed.

This plan recognizes the trend to larger, combined business sites designed to better serve the automobile trade of today. Although the policies in the following pages encourage the development of planned shopping centers, this does not rule out individual enterprise. Rather, it encourages the individual to develop his property in accordance with plan policies through cooperative action in order to apply some of the same principles inherent in planned developments.

Land Requirements for Business and Commercial Uses

FIGURE 4-1: COMMERCIAL LAND
King County Urban Area Excluding Seattle



The need for land devoted to business and commercial purposes is directly related to the population growth of an area, although different types of business areas and uses may increase at different rates of growth. In the total King County area outside of Seattle, the amount of land used for all types of commercial purposes in 1960 averaged 4.03 acres per thousand population. This figure is useful as a rough guide for determining future need when it is tempered by knowledge of local conditions. For example, existing commercial use that is of marginal quality or is poorly located may

need to be replaced. Furthermore, trends in commercial land use development which may require greater or lesser amounts of land must also be taken into account.

It should also be recognized that allocation of land for business or general commercial purposes too far in advance of development may remove that land from the market for other useful purposes or may create spotty development within the area which will be a deterrent to future desirable development.

B

1

The total amount of land planned for all business and commercial uses should be reasonably scaled to demonstrated demand and need, using population projected within a 10-20 year growth period as a guide in this determination.

The different types of business area have individual requirements for supporting trade area population and space needs to serve that population. These requirements are detailed under each type of business area.

Location of Business in Relation to Other Land Uses

Because of the impact business has on other land uses, its scale and location should be coordinated with the other uses. Business areas generate traffic, noise and, to a certain extent, depending on the size and composition of the area, other conditions which are considered incompatible with residential neighborhoods. The safety of pedestrians is impaired through conflict with the vehicular traffic generated. For these reasons, it is imperative that business areas be located at the edge of residential neighborhoods. Further, they should be so located that there will not be a tendency to take short cuts through residential neighborhoods in order to reach the business area from greater distances. Similar uses (e.g. retail shopping stores) should be grouped in order to provide greatest convenience to the customer and least conflict with adjoining uses. Business areas should be functionally separated or screened from uses where no interrelationship exists and where the safety of persons is involved.

2

Business areas should be located at the junction of residential neighborhoods, rather than within.

As retail and personal services are business uses dependent on walking traffic, they shall be encouraged to group together, preferably within planned centers to maximize sales and pedestrian movement within the concentration. 3

As the success and vitality of a shopping area is dependent in part on the maximum movement of pedestrians, the location of non-shopping establishments (such as offices and large general commercial uses) should be discouraged within the retail core. 4

B

Business areas should be functionally separated from an existing or planned school in order to aid in the control of students during school hours as well as provide for their safety. 5

Location and Design of Business Areas in Relation to the Circulation System

In the optimum location of business areas, access from potential customers is an essential requirement. Therefore, the relationship of such areas to the street system is of utmost importance, both in terms of the type of street serving the business area and the means by which access to the business area from the street is achieved. Well located retail centers are desirably developed at the intersections of arterials best serving their trade area. While good visibility from the main lines of travel is desirable, a position at a major intersection or close to a freeway ramp may make access complicated, and a position along a highway used primarily by fast through traffic may discourage patronage because of undue traffic congestion.

Business areas should be conveniently located on trafficways of adequate capacity centrally within or at a point best serving the trade area. 6

Since additional traffic is generated by a business area, congestion should be minimized and traffic safety assured by provision for proper entrances and exits, and by provision for internal traffic circulation and parking. 7

8

A business area should be at a location which is conducive to convenient access by numerous shoppers. To be avoided are intersections which have congestion problems, abrupt changes of grade, intersections formed by acute angled streets, and other situations where additional traffic generated would cause undue traffic congestion.

B

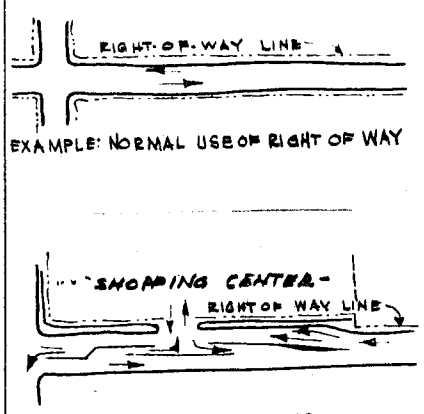
There are many old business districts throughout cities which demonstrate the effect of commercial frontage on traffic arterials. Business uses create concentrations of automobile traffic which obstruct the flow of through traffic on the arterial which it abuts.

9

In order to improve the traffic bearing capacity of streets designed for through traffic, the indiscriminate stripping of commercial uses along their frontage should not be allowed.

As business should locate on trafficways, generally major and secondary arterials, the streets should be adequate to serve through traffic, as well as traffic generated by the adjoining land uses. Special consideration must be given to the additional traffic load. For instance, where the arterial may have an 80' right-of-way, 100' may be necessary in the business area to accommodate turning lanes and other traffic control features. Congestion tends to defeat the purpose of the arterial and the considerable public investment in the arterial system is destroyed.

FIGURE 4-2:
USE OF RIGHT-OF-WAY



EXAMPLE: USE OF RIGHT-OF-WAY IN BUSINESS AREA

10

Business development should occur only after sufficient right-of-way, improvements, and special control of access points have been assured to accommodate the added traffic generated.

Uncontrolled access interferes with the flow of traffic on the arterial and creates a hazard to both pedestrians and vehicles. In general, access points should be limited in number and be maintained at safe distances from the intersection.

NEIGHBORHOOD BUSINESS AREA

As the primary purpose of a neighborhood business area is to serve the everyday needs of the local neighborhood, it characteristically is small, nearly always surrounded by residential neighborhoods, and has considerable walk-in trade. Compatibility with the surrounding residential area is of prime importance. One method of achieving compatibility is to limit the size, type and operation of uses within the neighborhood business area to those which are non-obnoxious in character and those which appeal to local needs only.

B

Neighborhood business areas shall consist of neighborhood shopping and services only. Intensive and heavier general commercial uses, large outdoor space users, and residential uses are not considered compatible within neighborhood business areas. 11

Size of Neighborhood Business Area

The neighborhood business area normally contains up to 15 stores including a supermarket as a core with other typical stores being drug, variety, hardware-appliance, apparel, barber-beauty shops, and laundry and dry cleaners pick-up. As a neighborhood shopping center or district is designed to serve a limited geographic area, its size should be related to the population it serves. Experience has shown that approximately 4 acres of developed business land adequately provides for the local shopping needs of 10,000 persons.

A neighborhood business area should be designed to serve an area with a potential population of 8,000 to 15,000 persons residing within approximately a 3/4 mile radius, although the size and shape of the trade area will vary depending upon its population density or physical features. 12

Neighborhood business area needs normally can be served adequately by 3 to 6 acres of developed business land. 13

Location

Because neighborhood business areas primarily serve everyday local needs, they should be located close to potential customers. The population required within the trade area is greater than that of a single elementary school neighborhood and, therefore, must draw from more than one such neighborhood. The spacing should provide business areas convenient to shoppers that are properly related to the population distribution and the circulation system.

B

Convenient access to a neighborhood business area is provided by streets which are designed to carry the additional traffic generated by the business facility, as well as, residential traffic between neighborhoods.

14 Neighborhood business areas should be located from 1 1/2 to 2 miles apart.

15 A neighborhood business area shall locate at the junction of two secondary arterials or a secondary and a major arterial, central within its trade area and at a point best serving two or more elementary school neighborhoods or parts thereof.

Convenience Business

Certain smaller residential areas may be isolated from other residential areas and accompanying urban services. This isolation often occurs along water bodies or in pockets of desirable residential land essentially surrounded by non-residential land uses. Such areas may require a minimum of business services.

16 As an exception to normal neighborhood business areas, limited retail or convenience centers or districts (containing up to 8 stores) may locate at the intersection of two secondary arterials, at the end of a secondary arterial, or at the intersection of a secondary arterial and a collector street, and may serve only isolated residential areas. The isolated residential areas should be outside the normal service area of the nearest existing or potential neighborhood business area and should contain a potential population of less than 8,000 persons, or should consist of concentrations of multi-family apartments not otherwise well served.

COMMUNITY BUSINESS AREA

Community business areas serve both the every day shopping needs of nearby residents and the more specialized shopping needs of a larger segment of the residential area. A full scale community business area usually contains a shopping district or center with supplementary and related general commercial uses. Adjoining or within the community business area there may be, in addition, community related governmental or semi-public services and cultural facilities such as libraries, parks, churches, public offices or civic buildings.

B

Size of Shopping Portion of Business Area

A community shopping center or district is composed of from 16 to 50 stores with a junior department store and other stores specializing in such items as hardware, appliances, men's and women's clothing, shoes, and furniture. Such stores are in addition to those found in neighborhood shopping areas.

Since the success of the community business area depends upon having an adequate supporting population easily accessible to it, the size of the shopping center or district should be related to its trade area population; generally, approximately 6 acres of developed business land for each 10,000 population are required.

A community business area should be designed to serve a potential population of 15,000 to 40,000 persons residing in an area within approximately a 1 1/2 mile radius, the size and shape of the trade area dependent on population density, physical features, and the circulation system. 17

A community shopping district or center should range in size from 9 to 24 acres of developed business land containing 100,000 to 200,000 square feet of gross rentable floor area. 18

General Commercial Portion of Business Area

In some community businesss areas (particularly the smaller ones), no general commercial uses may be feasible. In others, certain types of general commercial uses are logically located in conjunction with the shopping area to make up the total community business area. These generally include such uses as intensive recreation facilities, business and professional offices, limited automotive services and building material supplies. Each of these types are discussed in more detail beginning on page 76. (See Table 4-1 for space requirements of general commercial use groups in relation to population.)

B

Total Community Business Area Size Requirements

In general, the shopping portion of the total community business area ranges in size from slightly more than half of the total area in the larger centers to 100% of the area in others.

19 Total developed land area requirements for community business areas may range from 9 to 40 acres, depending upon the potential trade area population, the design of the business area, and the amount of land allocated for general commercial uses within the business area.

Location

Community business locations should be spaced so they are within convenient driving distance of a supporting trade area population and are properly related to the circulation system. The importance of adequate access to a community business area cannot be minimized. Such access should be by way of major arterials in order to have available to the business area streets with adequate traffic capacities.

20 Community business areas should be located from 2 to 3 miles apart. Such areas also serve the function of neighborhood business for the immediate area.

21 A community business area shall locate at the junction of a secondary and major arterial or at the intersection of two major arterials.

URBAN BUSINESS AREAS

Urban business areas include the larger town centers and multi-community shopping centers. The smaller urban business areas provide mainly shopping and general commercial services, while the larger ones provide a complete complement of cultural, governmental, shopping, and general commercial services.

The shopping portion of an urban business area is necessarily larger than that of a community facility since it serves a larger segment of the urban area and must offer a greater selection in shopping goods plus specializing in goods and services not found at the community level.

Size-Shopping Portion

A planned urban shopping center should be composed of approximately 50 to 100 stores with at least one major department store plus dry goods and many specialty stores in addition to store types contained in community shopping areas.[1] An urban shopping district may contain from 50 to 300 stores and shops including some general commercial uses. Such a district typically includes a greater number of smaller shops than the planned centers but contains no greater amount of gross rentable floor area.

The size of the urban shopping district or center portion of the business area should be related to the population of the trade area, generally requiring approximately 6 acres of developed business land for each 10,000 persons.

---

[1]Throughout the nation, a number of very large planned shopping centers, with gross rentable floor area ranging from 500,000 to 1,000,000 square feet, have been developed. These large planned centers, usually referred to as "regional shopping centers", are recognized as the largest form of an urban business area with the exception of the central business district of a metropolitan city. Such centers are typically developed in those metropolitan areas which have a high population density and few topographical barriers to movement thus allowing 500,000 or more persons within a trade area. The opportunity for development of such centers in King County is limited.

22 An urban shopping district or center should be designed to serve a potential population of 30,000 to 100,000 persons residing in an area within approximately a 2-mile radius, the size and shape of the area depending upon population density, physical characteristics, and the circulation system.

B

23 An urban shopping district or center should range in size from 20 to 60 acres of developed land area with 200,000 to 500,000 square feet of gross rentable floor area.

General Commercial Portion of Business Area

Most general commercial uses (with the exception of extensive outdoor commercial recreation facilities and commercial uses related to industrial areas) are logically a part of a complete urban business area. Principal types of these uses include commercial recreation facilities, business and professional offices and clinics, and automotive and allied sales and services. The larger urban business areas may also include wholesale and business services, light fabrication, and other heavy general commercial uses. Each general commercial use type is discussed in more detail beginning on page 76. (See Table 4-1 for space requirements of general commercial use groups in relation to population.)

Total Urban Business Area Size Requirements

In a complete urban business area, general commercial uses occupy a greater percentage of the total space than in community business areas. This may range from approximately one-half of the total area in the smaller centers up to two-thirds in the larger ones.

24 Total developed land requirements for urban business areas may range from 40 to over 100 acres, depending upon the potential trade area population, the design of the business area, and the amount of land allocated for general commercial uses within the business area.

Location

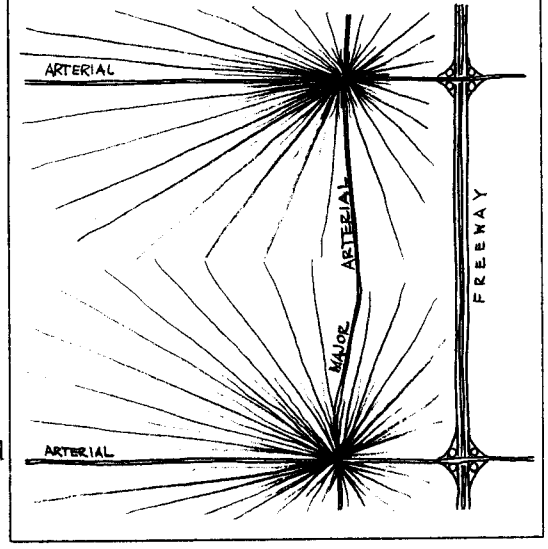
The historical development of urban business areas has often been as focal points of farm communities which subsequently have grown into individual cities. In King County, the urban business areas of Renton, Kent, and Auburn may be cited as examples. Where residential communities in the metropolitan area begin to blend into one another and densities and population increase, new urban business areas will develop without the cultural and political focus of the historic farm communities.

B

Urban business areas, in order to attract and be accessible to sufficient supporting population, must be conveniently located in respect to principal junction points in the circulation system. These junction points, in addition to an adequate supporting population within a reasonable driving distance of such areas, determine their spacing.

Accessibility becomes more important as a business area serves a greater trade area. Older town centers were accessible because they often located on the crossroads of highways which continued to pass through their business area. Today, however, the freeways purposely by-pass commercial activity. Yet, a new freeway system is not merely superimposed over the urban landscape. It is related to the use of land along its route as well as to the older highway system. The freeway essentially replaces an outmoded facility, the two become approximately parallel and are connected at strategic points along the old highway. Thus, access to the freeway creates points of focus on the old arterial system through which traffic from segments of the urban areas should pass, as illustrated in Figure 4-3.

FIGURE 4-3:
BUSINESS FOCAL POINTS



Urban business areas should be located approximately 4 miles apart. Such areas also serve the function of community business.

25

An urban business area shall locate at the intersection of two major arterials if the intersection is convenient to a freeway or expressway interchange.

26

GENERAL COMMERCIAL

More than half of the total land area devoted to all commercial uses is occupied by general commercial uses, businesses not normally found within retail shopping areas. Generally, these uses require more space per sales dollar than the purely retail stores and cannot afford the expensive locations. Frequently, their locational criteria are different in that their product or service may not appeal to a person at the same time he is strolling through a shopping center. In other cases, the market is not the same, such as for wholesale establishments.

Most of the general commercial uses should be located as part of business areas. Others may best be located adjoining an industrial area where the two types of uses are complementary, as in the case of wholesale establishments which serve or are served by an industrial area. Still, others may have specialized requirements which demand a particular location (e.g., marinas or amusement parks), and must be related to the arterial system and surrounding land uses in such a way as to minimize traffic and use conflict.

Commercial Recreation

Commercial recreation uses vary from the indoor type (e.g., bowling alleys and theaters) normally found in larger business areas, to the extensive outdoor commercial recreation facilities which have large space requirements. Indoor recreation uses provide a social focus for a community and have similar requirements for supporting population and for ease of access as do community business areas. Peak use hours may vary from those of the shopping area proper and, in some instances, joint use of available parking space may be possible. For these several reasons, uses of this type are logically related to community and urban business areas.

27

Intensive (normally indoor) commercial recreation facilities should be located in conjunction with urban or community business areas.

Some commercial recreation facilities, such as amusement parks and golf driving ranges, require more land than is normally available at a reasonable price in business areas. Others, including drive-in theaters and sports arenas, generate peak traffic loads. Compatibility

between uses of these types and the adjoining area must be assured by proper location and relation to the arterial system.

Extensive commercial recreation facilities which, when developed, consist of tracts of relatively open land may be compatible with other open space uses or areas of unstable soil conditions. They may be compatible with residential uses in instances where the physical characteristics of the land or the design of adjoining residential areas is such as to insure adequate protection from noise, traffic or other undesirable conditions. 28 B

Extensive commercial recreation facilities that generate peak traffic loads shall be functionally convenient to major trafficways. 29

Business and Professional Offices

Business and professional offices include medical and dental offices and related services; offices of persons or firms engaged in professional activities; financial and insurance offices; and private or public utility offices. Trips to such offices are often combined with shopping trips thus making a close relationship with retail center uses highly desirable. The larger business and professional offices and firms are often complementary and grouping allows maximum interaction of business between them.

Major business and professional offices shall be encouraged to develop in concentrations and locate in conjunction with urban and community business areas. 30

Professional offices and allied services often serve local residential areas, so shall be encouraged to locate in conjunction with any type of business area. 31

B

Highway-Oriented Business

Highway-oriented business consists of such uses as motels, restaurants, service stations and produce stands. They are dependent upon both a large flow of traffic and easy accessibility by that traffic. Since facilities of this type are designed to attract a large proportion of through traffic, they should be located so as to have the least possible conflict with local business traffic.

32 Highway-oriented business should be located functionally convenient to intersections of major arterials as part of other business areas. Preferably, the locations should be on the edge of the business area convenient to freeway or expressway interchanges.

33 The extension of highway-oriented businesses in strips along arterial trafficways shall be discouraged.

Automotive and Allied Sales and Services

Automotive and allied sales and services include such uses as sales lots and buildings for new and used cars, farm implements, and house or utility trailers, auto repair garages, auto parts, and other similar uses. These uses serve large segments of the urban area, frequently occupy fairly large sites, and tend to group together.

34 Automotive and allied sales and services shall be encouraged to locate together in fringes of central business districts of towns and as outlying portions of the larger urban business areas.

Uses related to watercraft, including boat and boat trailer sales, service, limited construction and repair (either in conjunction with a complete marina having moorage facilities or separately), frequently and sometimes necessarily group in waterfront locations. These locations in some instances are adjacent to waterfront recreation areas. Uses of this type may have no connection with a business area but still generate traffic and require access to an arterial trafficway.

Facilities and services related to watercraft may locate in fringes of business districts and in those waterfront locations which have convenient access to a major arterial street and adjoin an area of heavier use. 35

B

Distributive, Business Services and Light Fabrication

Certain uses, including offices or store supply, equipment and repair establishments, have a direct relationship with the business functions which they serve and should be located conveniently to them. Industrial areas, likewise, may have need for conveniently located distributive and repair services. Certain types of light fabrication (such as book binding or the limited manufacture of ceramic products), which are small in scale and relatively unobnoxious in character, are compatible with these uses. These types of uses should, because of their requirements for delivery of supplies and equipment, as well as, movement of service vehicles, be accessible to truck routes.

Distributive, business service and light fabrication types of uses should be located with access provided to expressways or major arterial truck routes so that traffic will not pass through residential areas. These uses should be located in the fringes of central business districts and the larger urban business areas or adjacent to industrial areas except where special circumstances dictate a separate location. 36

Table 4-1: GENERAL COMMERCIAL USE GROUP SPACE REQUIREMENTS

Use Group	Typical Uses	Existing sq. ft. per 1,000 population[1]
Commercial Recreation		
Intensive (indoor)	Bowling alleys, skating rinks, theaters, etc.	7,000
Extensive (outdoor)	Amusement parks, golf driving ranges, drive-in theaters	20,000
Business & Professional Offices	Medical, dental and related services, insurance, lawyer, realty	4,000
Highway-Oriented Business	Motels, restaurants, service stations, produce stands, drive-ins	20,000
Automotive and Allied Sales and Services	New and used car or other vehicle sales, auto repair garages, auto parts	18,000
Distributive and Business Services	Business distributors, office equipment, repair services, warehouses	2,500
Miscellaneous Heavy and Special Commercial	a. cabinet shops, feed stores, etc.	1,000
	b. nurseries	20,000
	c. animal hospitals & kennels	1,000
	d. lumber yards	12,000
	e. mortuaries	900
TOTAL GENERAL COMMERCIAL		106,400 or
	2.4 gross acres excluding streets per 1,000 population	

[1]The land areas shown were derived for King County excluding Seattle for 1960 and necessarily include all general commercial uses regardless of their location. Therefore, these standards cannot be used to determine general commercial space needed to serve a particular service area.

DESIGN FACTORS FOR BUSINESS AREAS

One of the fundamental requirements of a well-planned residential area is a consolidated shopping area, with adequate off-street parking space. A series of unrelated separate stores scattered along the major street, with no place to park except at the curb, is not an asset to a residential neighborhood, nor an efficient use of commercial land. This type of development often creates visual blight which may, in turn, have detrimental effects on the surrounding development.

Design Guides for Shopping Districts

King County contains a number of mature business areas and the start of many more developed through the actions of numerous individual owners. This type of business area normally develops on a lot by lot basis rather than as one site planned as a unit. Because of the lack of unified action, such a business area may be subject to problems which later will require remedial action if it is to survive amidst the competition from planned shopping centers offering orderly and attractive groupings of stores with an ample supply of free and convenient off-street parking.

Development of a shopping district in a manner that will achieve benefits similar to that of a planned shopping center cannot be guaranteed by regulation alone. The cooperation of all owner-developers involved is required in order to create a business area which embodies the principles inherent in planned centers. It is the lack of these principles and appropriate follow-through action which is causing rapid deterioration of many older business areas. Desirably, the result to be achieved in all business areas is a compact, attractive shopping area which is easily accessible, has adequate customer parking, and encourages safe pedestrian movement.

Store Arrangement and Appearance

A compact self-contained shopping area will function more economically, provide better shopping service, and be an asset to the community, in contrast to a strip or spottily developed area which may induce blight and undesirable growth. Compactness permits short walking distances within and between the functional areas of the business area. Thus, similar business functions should be grouped; e.g. the retail stores should not be divided by large general commercial space users.

37 Shopping areas growing from the center out, rather than by relocation, do not disturb existing shopping habits or traffic patterns to and from the retail stores.

B

Some larger tracts are necessary to accommodate certain stores for the proper functioning of the business area. For instance, a neighborhood shopping area needs a supermarket; a community shopping area needs a junior department store, and an urban shopping area should have at least one major or branch department store. Each of these special store types requires a large single tract for buildings and off-street parking.

The success of designed shopping centers has demonstrated that "amenity" - pleasant surroundings, including some landscaping - is profitable. These same principles should be applied to shopping districts. From the standpoint of appearance, there are many kinds of store-front, pavement and street clutter contributing to an unpleasant environment that tends to obscure rather than display the goods and services offered by the merchants. The effects of the design and location of physical features should be taken into account in the development or redevelopment of business areas.

Circulation

The necessity of good access and internal circulation for business cannot be over-emphasized. It must be possible for persons who desire to work or obtain services or merchandise in the business area to get to it conveniently, quickly and economically. There are four types of traffic which affect business areas: passenger vehicles, trucks, pedestrians, and transit. Two underlying principles lead to improved circulation.

38 Different types of traffic should be separated from each other to the greatest extent possible.

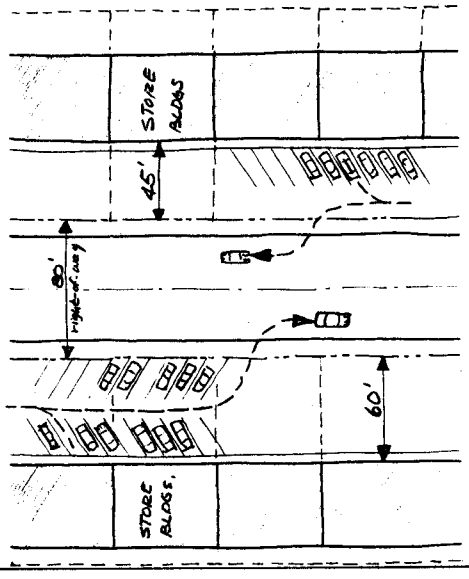
39 The circulation of all types of traffic should be improved within each system.

Passenger Vehicles

Through traffic should be excluded from the shopping core and peripheral routes established when potential through traffic is expected to be heavy. Where potential traffic will be sufficiently light, through traffic may be separated by means of traffic controls. In those cases, the shopping portion of the business area should not be bisected by the arterial. Once within the business area, private vehicles must not be bogged down in congestion. Access to the business area from the main thoroughfares should be convenient and safe.

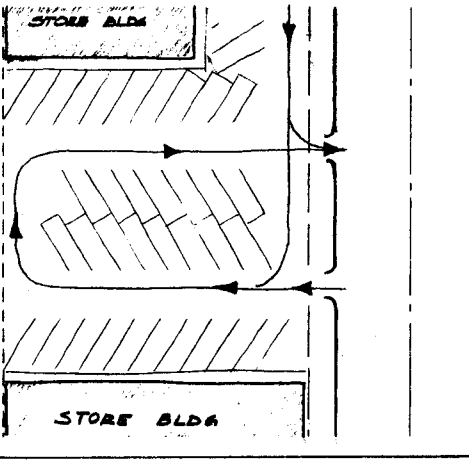
An internal circulation route in large business areas may be necessary to get shoppers near their various destinations quickly and conveniently. As with the planned shopping centers, this route should not cause a barrier for many pedestrians to cross. Areas provided for loading of passenger cars should be clearly marked and arranged so that they may be used without blocking or otherwise interfering with the internal circulation of the business area.

FIGURE 4-4: EXAMPLES OF 45' and 60' SETBACKS



Parking is an integral part of the circulation system; where parking capacity is inadequate, back-ups in the streets and excessive hunting for parking spaces may affect the street system. Everyday parking works best if placed within 300 feet of the selling area. The farthest parking spaces should be no more than 600 feet from the selling area, and these will be used only at peak sale periods. More distant parking areas could be reserved for employee and proprietor parking.

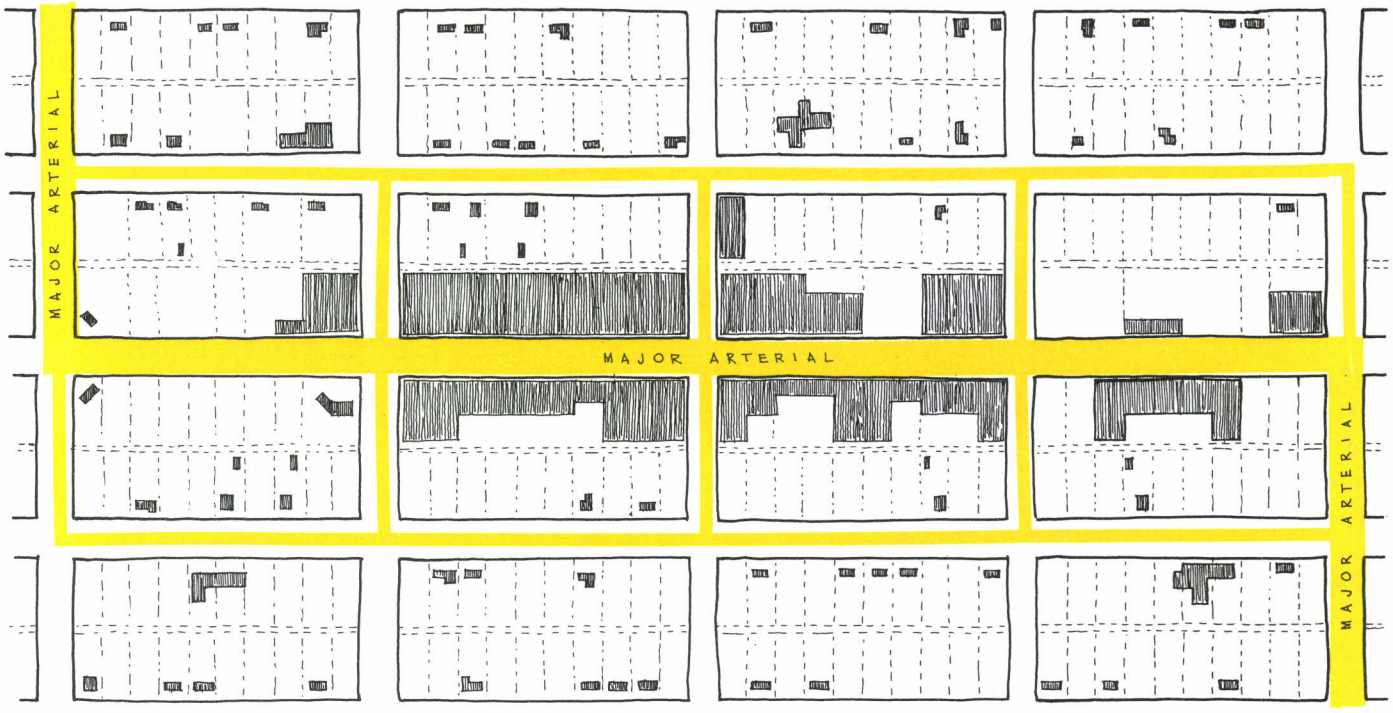
FIGURE 4-5: COMBINED PARKING LOTS



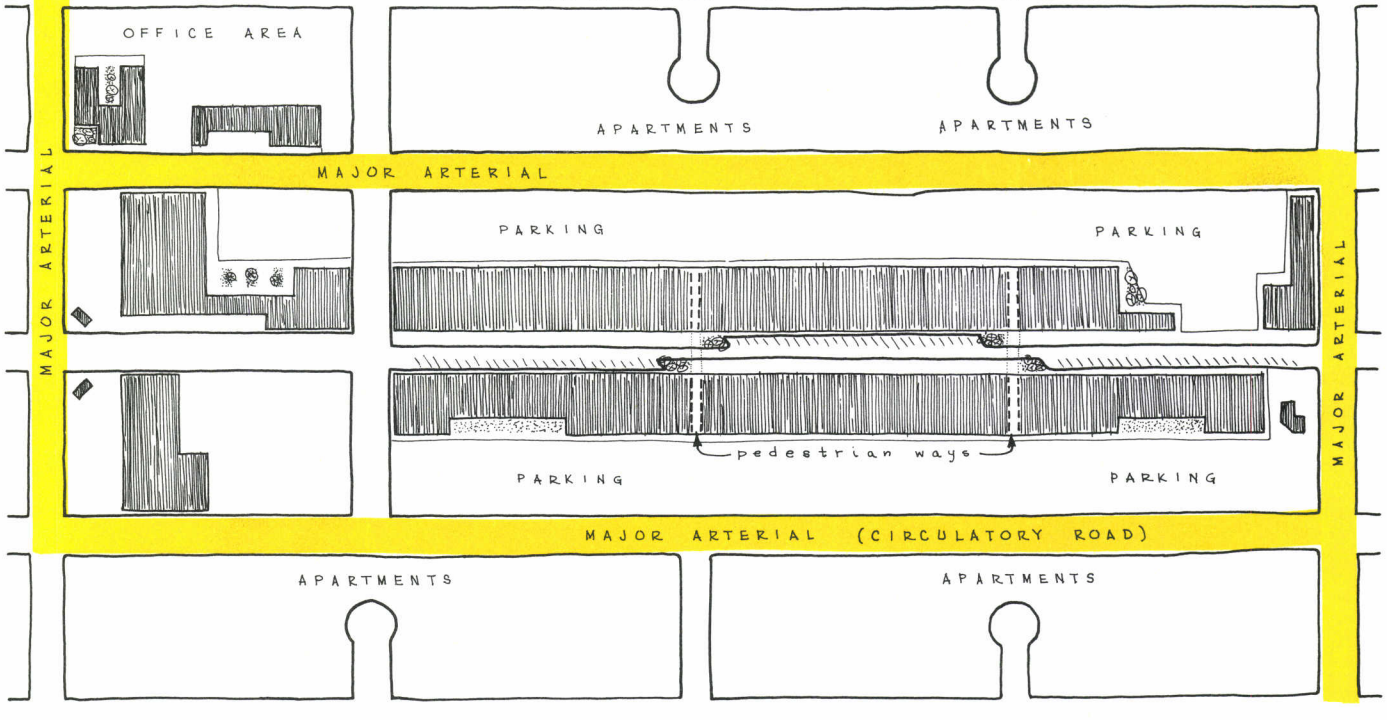
Curb parking only has been proven inadequate for retail shopping area; not only are capacities low, but it disrupts moving traffic. Therefore, some form of off-street parking is necessary. While each owner-developer may be required to provide his own off-street parking, the situation can be improved by combined parking

FIGURE 4-6: RE-DESIGNED BUSINESS AREA

EXISTING BUSINESS AREA:



FUTURE BUSINESS AREA: AREA EXPANDED WITH OFF-STREET PARKING, REAR ENTRANCES TO STORES & CIRCULATORY ROAD



areas through cooperative action. For instance, in addition to combined lots, single-row parking can be provided in front of the stores if all buildings are set back at least 45 feet from the street (see Figure 4-4). An additional 15 foot setback makes possible double-row parking.

In older, built-up business areas, larger, individual sites may have to be cleared for parking. Parking lots may be developed within the shopping core or on the periphery. Parking can be provided at the rear of the stores when rear entrances are also provided. Periphery parking is necessary, of course, if a controlled pedestrian mall is desired. See Figures 4-5 and 4-6 for additional examples.

Trucks

Desirably, through truck traffic should travel on the principal trafficways of the urban area and should not have to pass through a business area. Truck traffic to and from the business area should be separated from shopping traffic to the greatest extent possible. Truck traffic can be limited to separate service drives and loading facilities, or by entrance to the business area during non-shopping hours. A service drive should not be part of the circulation system used by shoppers' vehicles.

Space should be provided for off-street truck loading. The arrangement of truck loading and unloading facilities for each shop or business should be such that the service drives will not be blocked. To further improve internal business servicing, new methods of freight handling and distribution should be investigated and encouraged.

Pedestrians

Virtually everyone going to a business area ultimately becomes a pedestrian. Adequate provisions for safe, efficient, and comfortable pedestrian movement are a must.

Older shopping districts often have a built-in advantage for attracting walk-in trade since stores usually are not surrounded by huge parking areas as in many of the planned centers. If there is potential for considerable walk-in trade, provision can be made for safe, attractive, and well-lighted pedestrian ways connected to the adjoining residential neighborhoods. To the greatest extent possible, there should be freedom of pedestrian movement which is protected from the weather, unhindered by long blocks, and separated from vehicular traffic.

A pedestrian mall can provide free pedestrian circulation and at the same time improve appearances. However, it may not be the best solution if the merchants have too great an investment in their building facades designed to the scale of the passing motorist. Also, if non-shopping traffic can be removed and sufficient off-street parking provided, it may be possible for the street to once again function as a "shopping street".

B

Transit

Transit operates best in high-density residential development with areas of high concentration of business and employment. Therefore, most of the smaller business areas may not expect mass transportation service. When a system does exist, however, it is imperative that its vehicles are protected from undue congestion in order that they may meet their various time schedules. Loading and unloading points should be protected from the weather, be convenient to stores, and not require passengers to cross heavily traveled streets.

Design Guides for Planned Shopping Centers

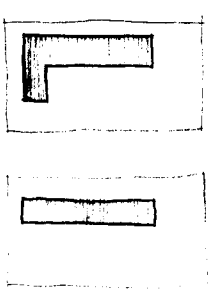
A shopping center site design should make the most productive use of the site in a manner constructively related to surrounding development. It should do this by properly placing entrances and exits, providing for the proper functioning of the center, and creating an attractive and congenial shopping environment. A successful design should go a long way toward assuring a stable community, free from commercial blight.

The discussion which follows is a comment on some of the current site layout practices, circulation principles, landscaping needs, and architectural treatment. It is intended as a guide to, rather than a limitation on, site planning.

Layout and Form

Centers typically take one of several general forms. The buildings may be in the form of a strip or bent into a "U" or "L", with parking between the street and structures, and with truck service at the rear. This is a common arrangement for smaller neighborhood centers and convenience centers. As the number of customers is not too great, parking areas are convenient to principal stores such as supermarkets, and entrances and circulation system are easily understood. Volume of merchandise handled does not justify

FIGURE 4-7:
"L" & STRIP FORM



complex methods of truck service or require more space than available with rear access.

In a second form the stores may face on a central square or mall for pedestrian movement, with parking and access surrounding on the outside. Total size of the center may vary considerably depending on its function, which usually ranges from the larger neighborhood shopping centers to urban business centers. With increase in center size and amount of merchandise handled, parking and service areas may become more defined. Service may be at portions of the parking area, in screened-off bays, or sometimes in basement tunnels.

FIGURE 4-8:
MALL FORM

In another arrangement stores may be clustered together with a web of pedestrian ways inside, on which the stores front. Service may be along the outside or basement tunnels. Especially for the larger centers, this form may be used to create a number of courts and walkways of varied sizes within the core.

FIGURE 4-9:
CLUSTER FORM

A basic principle in the location of types of stores within a center involves the use of certain stores which attract customers to the centers. These primary stores can be distributed so as to draw shoppers past other stores and distribute traffic evenly. Other establishments which are open at night, such as theaters, restaurants, and drug stores, are best grouped together to complement one another.

Accommodations for future growth should be planned without leaving gaps within the center. Primary stores may expand vertically, while other limited expansion may occur at the periphery.

Circulation

On-site circulation should be designed to minimize conflicts between automobiles, pedestrians, and truck service. Generally, a good site plan should meet the following conditions:

40 Service access is best separate from both parking and pedestrians, either within a screened area or in basement tunnels. Truck service access to the site desirably should be as far removed from automobile access as possible.

B

41 Customer parking should be provided as conveniently as possible to the stores with connecting walkways and with few obstacles. As a guide, parking should be within 300 feet and no more than 600 feet for peak shopping loads in the larger centers.

42 Circulatory roads may be at the outer edge or through the middle of the parking areas, but not at the inner edge where they would form a barrier for pedestrians to cross.

Landscaping

Landscaping the center makes it attractive to its users as well as making the center more harmonious with surrounding residential development. An essential element in this respect is a landscaped buffer strip between the shopping center and abutting uses. On-site landscaping can be used to aid the driver in moving through parking areas and at the same time encourage pedestrian-vehicular separation.

Architectural Design

There should be some features which identify the shopping center as a focal point of activity. Older towns achieved this by erecting tall buildings which could be viewed from a distance, but today the new centers are often built low and sprawling. This identification may be achieved through careful architectural treatment.

Competing signs and building facades which are used to attract passing motorists in older shopping districts are not necessary within a planned center, and may be replaced by identification signs and architectural features scaled to the pedestrian. Since one of the principal features of a planned shopping center is unified control, the entire center may be coordinated within an orderly architectural framework to provide a pleasant shopping environment.

Development at Intersections

As discussed earlier, there are Plan Policies which must be considered in determining the suitability of an intersection for business development. However, the problems of effectuating a business area plan are not solved merely by selecting the proper location. A given amount of business area must be distributed at an intersection without unduly jeopardizing the rights of individual property owners, yet maintaining a high degree of public health, safety and convenience. Since the relationship between business, adjoining land uses and arterials is of the utmost concern, the following discussion deals with the factors involved in determining the appropriate shape, geographic boundaries, and extent of business development.

Forms of Development. Although there are numerous variations, three basic forms of business areas are common and are illustrated in the following sketches:

(1) business equally divided on any number of quadrants,

(2) business on one quadrant only, and

(3) business predominantly on one quadrant with limited area and depth on any of the remaining quadrants.

FIGURE 4-10

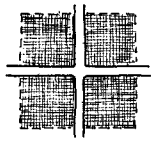


FIGURE 4-11

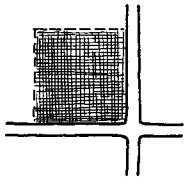
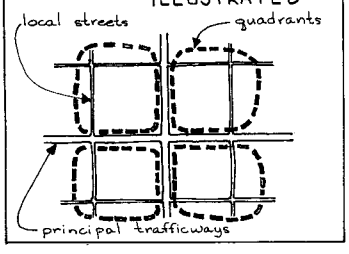


FIGURE 4-12

Quadrant Defined. A quadrant is defined as that area formed by the intersection of principal trafficways whether or not it is further split by local service streets, see Figure 4-13.

FIGURE 4-13: QUADRANTS ILLUSTRATED



Size and Function. The size and function of business areas affects the relative impact of business on surrounding property.

B

Physical Features. Not all intersections which qualify for business have quadrants with equal physical features. Level sites with good access may be suitable for business when such use would not interfere with surrounding residential uses or when the site is isolated from residential areas by natural or man-made features, see Figure 4-14. Sites which would require substantial modification of topographic features may not be suitable for business. Those features, on the other hand, may make this land desirable for residential sites when access can be provided from other than the intersecting arterials.

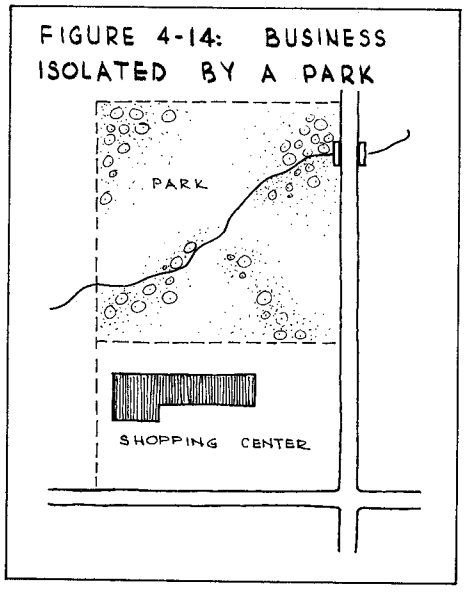


FIGURE 4-14: BUSINESS ISOLATED BY A PARK

Steep grades or sudden changes in alignment of the arterial cause dangerous access conditions at some sites. Such sites must have special traffic provisions or be occupied by a use generating much less traffic than retail uses.

Ownership Patterns. An essential criteria for a planned shopping center is a site with a single ownership or several ownerships under one control. When the ownerships encompass a large enough land area, as in large plats, adjoining land uses can be planned and developed simultaneously, with special design treatment to reduce land use and traffic conflicts.

Individually-owned small residential lots cannot be assembled easily for a planned shopping center. Business development of these is usually limited to independent small stores, as in older-style business districts with the form of the business area partially dependent upon lot orientation.

Traffic Conflicts. Business on one quadrant results in the fewest traffic conflicts. With controlled access points, the movement of traffic would be similar to a 3-legged intersection as compared to a 4-legged one, see Figure 4-15.

Further, pedestrian traffic crossing the street would be at a minimum.

FIGURE 4-15: TRAFFIC CONFLICTS & BUSINESS

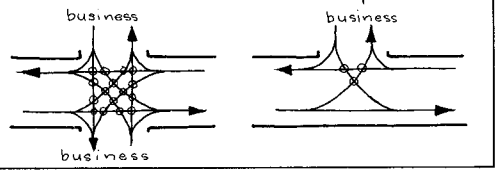
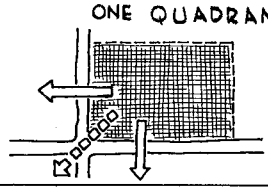
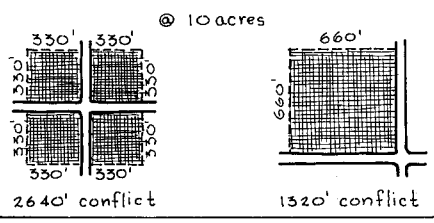


FIGURE 4-16: INFLUENCE FROM ONE QUADRANT



Land Use Conflicts. Conflicts between business and adjacent land uses occur with all forms of business development. When business develops on one quadrant, there is usually an adverse effect (noise, light, orientation) on properties directly across the street; the third quadrant may be less affected due to greater distance and difference in lines of sight, see Figure 4-16. Further, with business on one quadrant there is less common boundary with adjoining land uses and usually fewer abutting property owners or lots, see Figure 4-17.

FIGURE 4-17: CONFLICT WITH ADJOINING LAND



Local History. Many business intersections in the County are partially developed in a particular pattern due to past governmental policies and actions. Where a change in past policies is inferred because of the new Comprehensive Plan, the merits of past actions and commitments should be considered.

Public vs Private Interests. Business development on one quadrant causes an increase in land values on the remaining quadrants which, in turn, creates pressure for their development into high-value uses. When the occupants of all quadrants of an intersection have an equal opportunity to develop their land for business, high-value development pressures are minimized. In some cases, however, this may jeopardize

the public interest by creating congestion and dangerous traffic situations for both motorists and pedestrians. Also, if each quadrant owner is allowed enough land for a full scale center, there may be a substantial over-supply of business land which will tend to encourage marginal and spotty development. When regulating the use of land, the objective is to achieve a balance between private interests and public health, safety and general welfare.

B

A desirable goal to work towards is for shopping uses to be located in one quadrant. However, the circumstances at all intersections are not the same. There are differences in physical features, ownership patterns, existing development and past policies. The business contemplated may also range in size from a convenience neighborhood center to an urban business area. Furthermore, the many variables which must be considered make it impractical to consider one particular form or distribution of business as the solution to the development of all intersections.

43

A detailed and thoroughly coordinated intersection plan which combines good planning practices with local site characteristics should be made prior to permitting any quadrant of an intersection to be used for business.

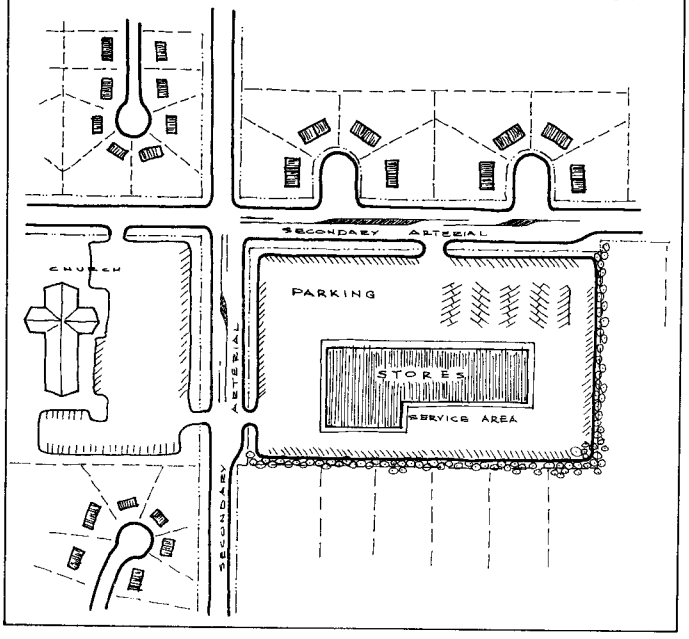
Neighborhood Business

Neighborhood business should appeal to local traffic, both walking and vehicular, and should include shopping with essentially no general commercial uses. Therefore, the traffic generated should not have too great an adverse influence on adjoining uses, and other quadrants may be occupied by residential and residentially related uses.

For instance, residential subdivisions normally should be backed up to arterial streets, preferably with a planting strip, which automatically achieves a fair degree of buffering from uses across the arterial. Also, residences can be located across the street if there

is some physical barrier, such as topographic conditions, which would place them above or below the arterial. Multiple residences have different characteristics than single family that make them, if properly oriented, compatible with both business and arterials.

FIGURE 4-18 NEIGHBORHOOD BUSINESS



Certain residentially related public and semi-public uses may be suitable adjoining uses. For instance, churches with their different peak hour parking requirements, would be compatible with neighborhood business areas.

As the desirable result is a planned retail center, one contiguous site is superior to four smaller sites, each one too small to effectively provide the service. When possible then, neighborhood business should be developed on one quadrant only, see Figure 4-18. This principle should be applied when any of the following conditions exist:

When all quadrants are under one ownership and the ownership is of such size so as to permit special design treatment, neighborhood business shall be restricted to one quadrant only. 44

When one or more of the quadrants have unsuitable topographic conditions or have been designed with access other than the intersecting streets, neighborhood business can properly be restricted to the remaining quadrants only. 45

In many instances, however, the above conditions do not exist. Older neighborhood business areas have already developed on more than one quadrant. In other cases, physical conditions or design features do not clearly distinguish one quadrant as better suited for business than others. In these cases, the business area may be on more than one

quadrant, provided that other Development Policies do not apply and that the zoning is based on a plan for the entire intersection area.

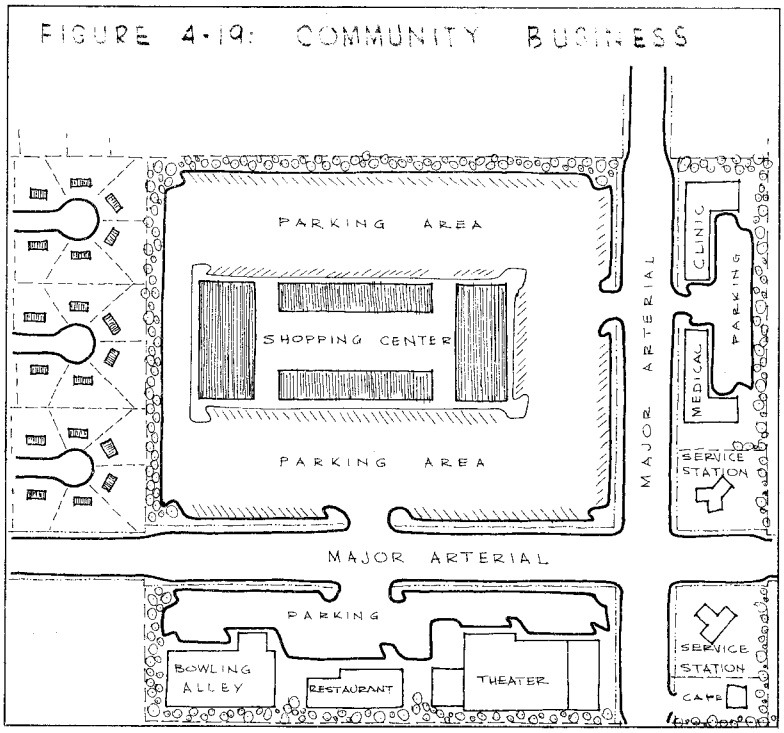
Community Business

Since the size of community business areas varies considerably, not all will have the same impact on the use of the quadrants of the intersection. When there is need for only a small community business area, a development on one quadrant is preferable. This principle should be applied when any of the following conditions exist:

46 When all quadrants are under one ownership and the ownership is of such size so as to permit special design treatment, community business should be restricted to one quadrant.

47 When one or more of the quadrants have unsuitable topographic conditions or have been designed with access other than the intersecting streets, community business can properly be restricted to the remaining quadrants.

FIGURE 4-19: COMMUNITY BUSINESS



When the above conditions do not exist, adjoining quadrants may be developed with supporting commercial uses. Of the total community business area, however, the retail portion desirably should be situated predominantly on one quadrant.

Certain commercial uses are especially compatible with community shopping centers. Such a center

may include commercial recreation, clinics, and business and professional offices. In addition, some public and semi-public uses, such as libraries, parks, churches, public offices or civic buildings may be compatible.

Where local features do not identify one quadrant as the most suitable, most of the business area should be on one, except when locational criteria specifically encourages a general commercial use to locate as part of a community business area. 48 B

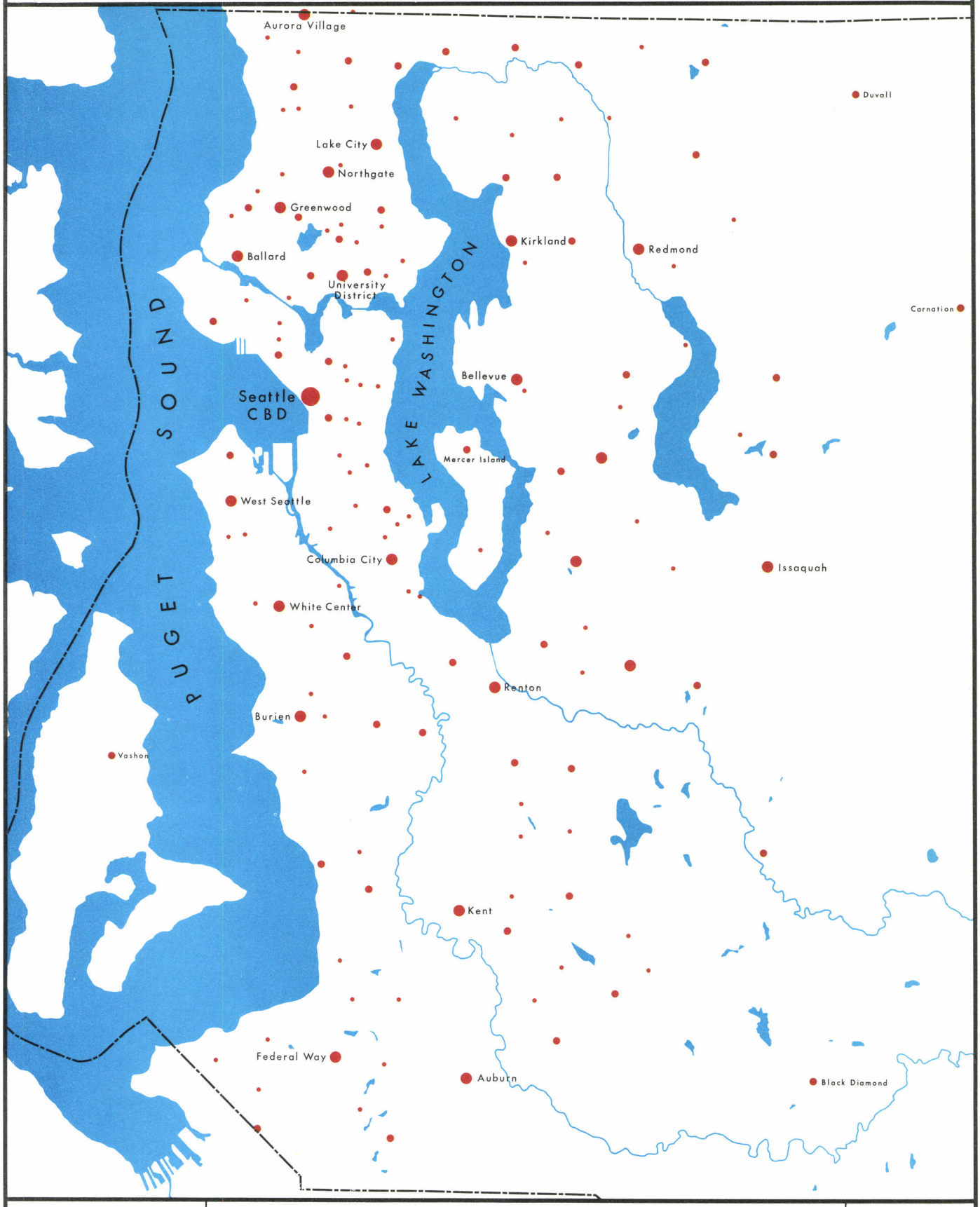
Urban Business

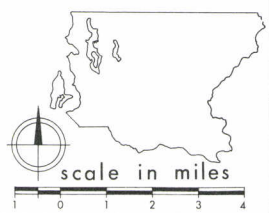
In older town centers, the retail core usually includes several blocks surrounded by a frame of general commercial uses. Consequently, there is less question of quadrant development than of stripping the development along the arterials leading to the central business district. Strip development of this type usually results in visual blight and hinders the safe and continuous flow of arterial traffic.

The separation of shopping traffic from through traffic is the desired objective, and the requirement of sufficient right-of-way and special control of access points is essential.

The shopping center or district portion of an urban business area desirably should be located in one contiguous area not split by a through traffic arterial. The remaining area should contain the other general commercial uses whose locational criteria specifically encourages their location as part of an urban business area. 49

STUDY FOR THE COMPREHENSIVE PLAN





BUSINESS AREAS

TYPE OF BUSINESS AREA

- NEIGHBORHOOD
- COMMUNITY
- URBAN
- SEATTLE CENTRAL BUSINESS DISTRICT

Figure 4-20

KING COUNTY PLANNING DEPARTMENT 1964

industrial development policies

C

Industries normally provide the principal economic base for an area and range from warehouse facilities for packaged products to heavy metal fabrication. Their value to the community is increased when they are properly located and protected.

Industrial Parks

Areas comprehensively planned and managed for a group of industrial establishments

Designed to insure compatibility between the industrial operations therein and the existing activities and character of the community in which the park is located

Extractive Industries

The mining of natural resource areas, such as gravel, coal and other minerals, the location being entirely dependent upon the availability of the mineral in question

C

DEFINITIONS

LIGHT INDUSTRY

Industrial activities and uses involving the processing, handling, and creating of products, and research and technological processes which are devoid of nuisance factors, hazard or exceptional demands upon public facilities and services.

HEAVY INDUSTRY

Industrial activities and uses involving manufacturing, assembling, fabrication and processing, bulk handling of products, large amounts of storage, warehousing, and heavy trucking.

INDUSTRIAL DEVELOPMENT POLICIES

Industrial activities may involve the processing, handling and creating of products, and research and technological processes. Heavier industries may include manufacturing, assembling, fabrication and processing, bulk handling of products, storage, warehousing, and heavy trucking. All should be interrelated in terms of intensity of use. They should be operated to minimize external effects of traffic congestion, noise, glare, air and water pollution, fire, and safety hazards.

Enough land, whether for an individual establishment or for a planned industrial park, should be provided with adequate space for industrial operations, future expansion, off-street parking for employees and visitors, loading and docking facilities, storage, landscaping, utilities, separation of buildings, and other requirements. Because of their considerable investment in specifically designed facilities, most industries want to be assured of having enough room for future growth, and purchase or reserve area larger than necessary for immediate needs.

Space for industries should be reasonably scaled to the demonstrated demand and need. In the King County urban area outside of Seattle in 1960, land in industrial use averaged 9.1 acres per 1,000 population.

1

Industries play a major role in the economy of a metropolitan area, and should be properly located to best fulfill that role. Industrial areas should be functionally related to the transportation system that handles the raw materials, finished products, and commuting workers. Industries should be grouped and located so that they may be adequately served by major utilities.

Industrial areas shall be encouraged to develop primarily on large level sites. Prime level agricultural land shall be subject to special analysis to determine proper timing of use change in order to avoid premature curtailment of agricultural production and loss of permanent open space.

2

3 In order that residential areas may be free from industrial traffic, industrial areas shall be located with access provided only to major transportation routes which include major arterial truck routes, expressways, freeways, major railroad lines, and navigable bodies of water.

4 Industrial areas should be located where they can be adequately served by necessary major utility lines, such as electric power stations and transmission lines, trunk sewer lines, trunk water lines, and trunk gas lines.

Characteristics of industrial uses produce an environment undesirable for residential and other non-industrially related uses while, in the opposite direction, the residential and other uses tend to decrease the capacity of industries to render maximum operation.

5 Land use types other than industrial or industrially related uses should be discouraged from industrial areas, with the exception of such convenience uses as banks, post offices, and restaurants.

It is not possible to adequately treat some industries so that they may adjoin such uses as residences. Those heavier industries should have uses adjoining them which may provide a transition.

6 Certain industrial uses generate heavy traffic, noise, smoke or other nuisances and should be located where it is feasible to provide an adequate transition, such as light industrial areas, commercial areas, or open space, to adjoining land use types.

INDUSTRIAL PARK

An industrial park is a comprehensively planned industrial district for a group of industrial establishments which is designed to insure compatibility between the industrial operations therein and the existing activities and character of the community in which the park is located. The plan should provide for streets designed to facilitate truck and other traffic, setbacks, land coverage maximums, land use ratio minimums, landscaping requirements, and specific use requirements, all for the purpose of promoting the degree of openness and parklike character which is appropriate to harmonious integration into the adjoining area. Further, the County will encourage industrial parks to have adequate architectural provisions in order to prevent visual blight.

C

Special requirements and standards should be required by the County with respect to street, curb, gutter, or sidewalk design and construction, design of off-street parking and design of loading and docking facilities. | 7

Special conditions should be required by the County with respect to the installation of necessary utilities, such as water, sewer, gas, electricity, and storm drainage. | 8

EXTRACTIVE INDUSTRIES

Certain areas of the County, both in and out of the urban areas, are rich in natural resources which, if not reserved, may be forever lost by prior development of the land for other purposes. Two principles should be applied; one, the natural resources should be allowed to be exploited, and two, the land should be reconditioned for other use after exploitation.

In order to insure continued development of natural resources prior to development of the land for other purposes, extractive industries should be allowed to locate in areas known to have deposits of minerals and materials. | 9

10 After the industry has depleted the raw material, the land should be reconditioned in such a fashion that it can be used by some other type of land use.

11 Because of the heavy equipment necessary to remove raw material from the site, extractive industries may operate only when the site is located on or has direct access to at least a secondary arterial in urban areas.

DESIGN FACTORS FOR INDUSTRIAL LAND

Because of their considerable investment and the need for enough room for future growth, there is a need for considerable flexibility in the size of sites for different types of industry. In newly developed industrial areas, therefore, it is not necessary that individual plots be marked off until sale or lease, however, blocks should be defined. The capacity of utilities should be adequate to handle the proposed load, and consideration should be given to the location and timing of their installation.

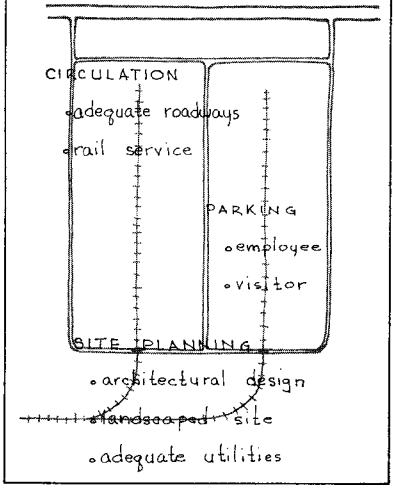
Circulation

As there is usually a combination of several modes of travel within an industrial area, such as rail, water, truck, and passenger automobile, internal circulation is a key problem.

Rail service is often a necessary form of transport and may be provided through mid-blocks with truck service in front of lots. Space and grades should be adequate for rail spur service.

The internal circulation system, together with entrances and exits, should be clear and easily understood to facilitate efficient traffic movement of visitors and truckers. In order to avoid conflicts between the two types of motor vehicles, it may be desirable to separate truck circulation from the general circulation of passenger cars.

FIGURE 5-1: FUNCTIONAL PARTS OF AN INDUSTRIAL PARK



The road system should have broad lanes and turnarounds large enough to accommodate large tractor-trailers. Curbs and gutters should be provided.

Provision may be necessary for other modes of travel, such as helicopters, and should be properly related to other uses within the industrial area.

Parking

Ample parking space should be provided; if there is more than one shift, it is almost necessary to have enough parking to accommodate two shifts at once. Parking should be provided for both employees and visitors. However, day-long parkers can be expected to walk longer distances than the short-term parkers.

As shift changes often occur at the same time, the capacity of exits and interchanges should be adequate to permit quick dispersion of a concentrated load.

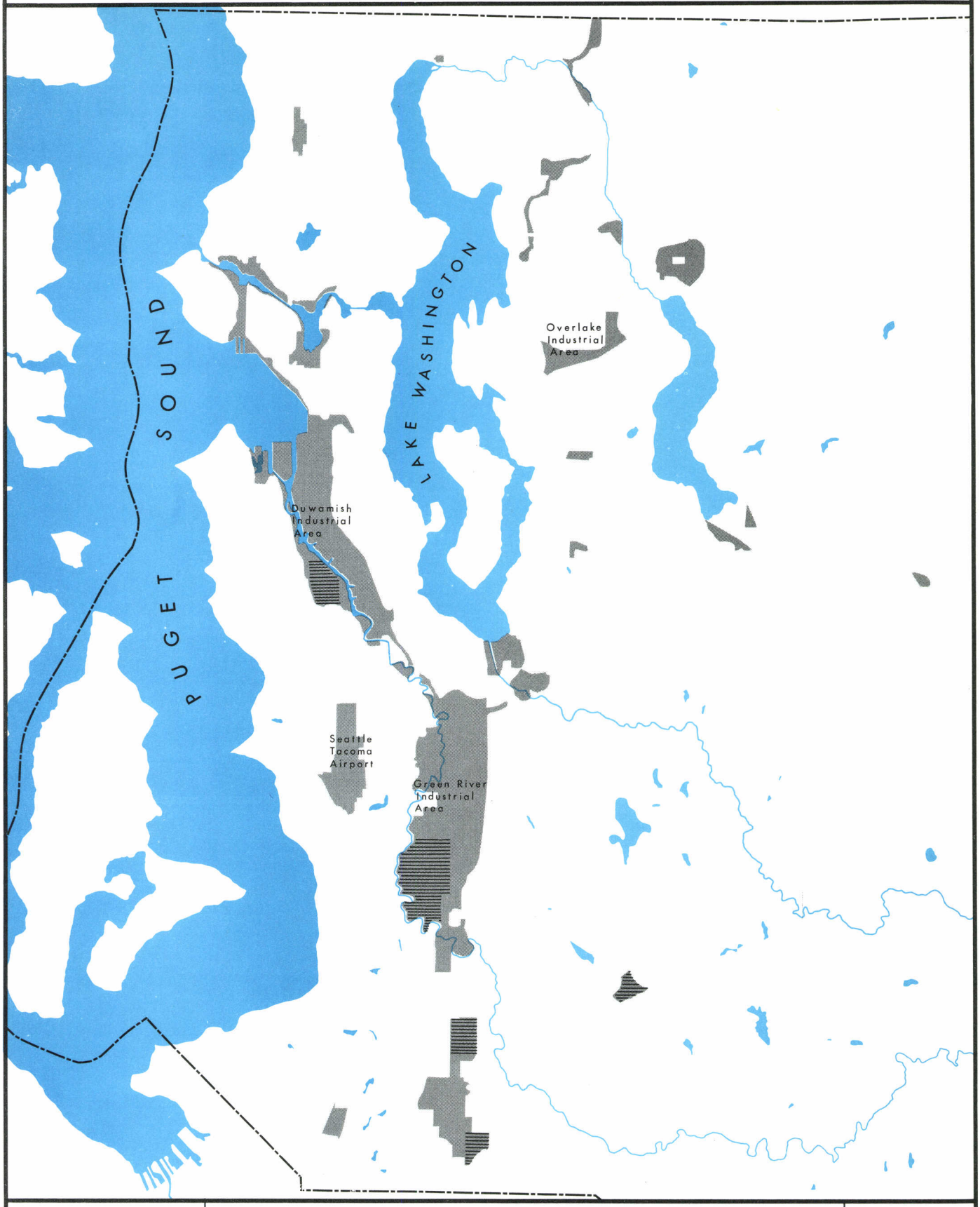
Landscaping and Open Space

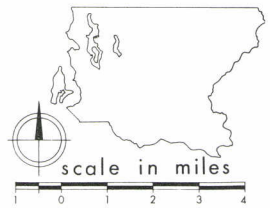
Open space and setbacks are needed to separate buildings for fire protection, noise control, light, air, and amenity. In particular, the extensive use of on-site landscaping is encouraged in order to provide a pleasant working environment. When the transition between land uses is abrupt, such as between industrial and residential land uses, landscaping should be especially intense in order to provide an adequate buffer.

Architectural Design

As industry is now recognized as requiring land best suited for its purpose and is not limited to sites "left-over" or sites not suitable for other uses, the appearance of industrial areas should be in harmony with the surrounding uses. Careful architectural treatment is necessary in order to avoid large expanses of visual blight. Planned industrial parks have the advantage of unified control so the entire park may be coordinated within an orderly architectural framework to provide a pleasant visual image.

STUDY FOR THE COMPREHENSIVE PLAN





INDUSTRIAL AREAS

INDUSTRIAL LAND AND PRINCIPAL AIRPORTS

INDUSTRIAL LAND RESERVE

Figure 5-2

KING COUNTY PLANNING DEPARTMENT 1964

residential development policies

D

Single-family Residential Areas

Areas developed primarily with detached houses (one family per unit) on individual lots. Type of development may vary from urban residential subdivisions to suburban tracts.

Multi-family Residential Areas

Includes two-family houses (duplexes), various types of apartment structures, or trailers. Higher densities allowed in qualified areas.

Residential Reserve Areas

Land suitable and planned for residential purposes, but beyond urban area need in foreseeable future.

DEFINITIONS

NEIGHBORHOOD UNIT

An area devoted to residential and residentially-oriented uses (churches, school), normally of sufficient size to support an elementary school, bounded by arterial streets, natural barriers, or non-living areas.

RESIDENTIAL DENSITY

The number of housing units per residential acre.

GROSS RESIDENTIAL ACRES

Total residential area including streets and other rights-of-way.

PLANNED UNIT DEVELOPMENT

A residential area planned as a unit within which a variety of lot sizes and residential structure types are allowed at the same overall density in exchange for adequate common open space.

RESIDENTIAL DEVELOPMENT POLICIES

King County has grown according to the pattern of most counties under the influence of a large city - from the city out. There are residential sections which vary in quality, but which have in common an instability that leads to eventual blight. Some newer residential districts are well planned and stable; others are poorly planned and already are showing characteristics of instability. Growth has occurred with additions here and there of subdivisions of various sizes, some are well designed - others are not. The result in many areas is a rather jumbled pattern of residential areas. Other areas have had the necessary elements and area to allow development into stable neighborhood units.

In keeping with the objectives of the URBAN CENTER DEVELOPMENT concept, by 1985 there should be a number of Urban Centers in the area surrounding Seattle, each with their focal points of commercial, cultural and governmental activities. In general, higher density housing types are encouraged to develop adjacent to those focal centers with densities decreasing concentric to the center. When possible, large segments of the urban area should be separated by major elements of the open space system, such as the river valleys and steep slope areas.

Stable residential areas should contain pleasant homes served by a circulation system, and be properly related to commercial areas, employment centers, and open space. Residential areas are generally best formed in elementary school neighborhood units which are bounded by prominent physical land features, major elements of the circulation system, and other more intensive land uses. Within the residential neighborhood there should be adequate provision for an elementary school, church sites, and recreation facilities for both children and adults.

Within the area subject to urban development, certain types of land are suitable for residential purposes. The plateaus and gentle slope areas are more suitable for residences than for industrial or agricultural use. Many of the higher areas have the additional amenity of view, and are less subject to flooding conditions and drainage problems. Much of the remainder of King County is outside the area which can be best provided with complete urban services in the next twenty years.

1 Residential areas should be encouraged to develop primarily in the plateau and gentle slope areas rather than in river valleys.

2 Land which is suitable for residential use in terms of physical characteristics, but which is beyond the foreseeable urban area, should be considered as a residential reserve and be subject to special analysis to determine proper timing of urban-type development.

The amount of residential development should be related to demand and need. Residential development is the major urban land use and occupied 72% of developed land in King County outside of Seattle in 1960. Of that total, apartments occupied only 1%. The amount of residential land varies with the growth of population and the densities at which they develop as shown in Figures 6-1 and 6-2.

FIGURE 6-1: POPULATION
King County less Seattle

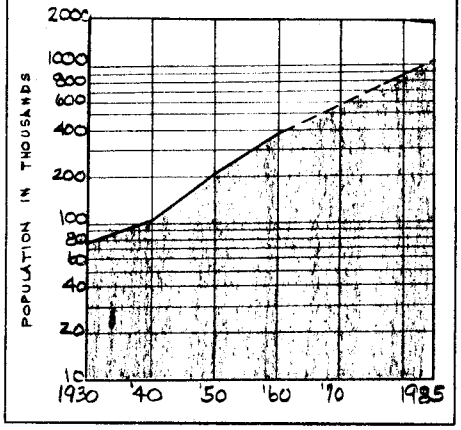
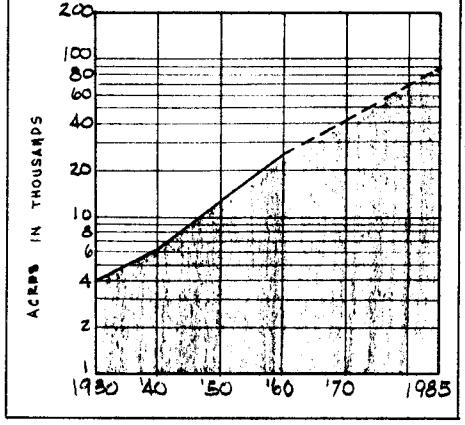


FIGURE 6-2: RESIDENTIAL LAND
King County less Seattle



The residences themselves should consist of a variety of housing types, ranging from single family homes to multi-family apartment buildings, in order that a choice of living area would be available to each resident of the County.

3 The development of a variety in residential areas shall be encouraged within each major segment of the urban area by:

a. fostering and retaining the natural variety inherent in the landscape by reason of topographic variation, views, water areas, etc.;

b. allowing for the use of housing types ranging from single family homes to multi-family apartments and providing for variation in the design of these areas and their related facilities; and

c. encouraging the use of new techniques in land development pattern, as long as they are consistent with stated goals.[1]

3

RESIDENTIAL DENSITY

D

While residential density is merely a measure of number of persons residing within a unit area of land, it also has implications of housing forms and considerable impact on surrounding land uses. Residential density affects the size and spacing of arterial streets, schools and parks, and commercial areas. It is a determinant of the size of water mains and other utilities. Residential density is a significant factor in the plan for King County.

Residential areas shall have varying densities dependent upon the type of development, location, and degree of improvements.

4

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[1] An example is the "planned unit development" concept wherein a variety of housing types is allowed for an area of specified size and design.

The range of housing types, single family to multi-family, is related to residential density in terms of the number of housing units per gross residential acre, as shown in the following table:

TABLE 6-1

RESIDENTIAL DENSITY AND LOT AREA BY TYPE OF RESIDENTIAL DEVELOPMENT

Type of Development	Number of units per gross residential acre	Average square feet of net lot area per unit
Single Family	1	35,000
	2	15,000
	3	9,600
	4 - 5	7,200
Multi-Family (includes two-family)	up to 36	900 - 3,600

Steep slope areas in King County, once by-passed as too costly to build on, are now prime residential view areas. Development of hillside areas at flat land densities and standards creates problems of unstable cuts and fills due to excessive grading; it creates problems in regard to erosion, street design, storm water drainage, sewerage disposal, water supply, access for fire fighting, protection of privacy, and disposition of unstable land. In order to reduce these problems, the over-development of slope areas should be avoided.

5

As slope increases, residential density should decrease in order to avoid, partially or completely, the problems of drainage, siltation, flood control, and accessibility, which frequently are attributable to over-development of slope areas.

LOCATION OF RESIDENTIAL AREAS

Residential development is classified into two types, single family and multi-family. The principal distinction is the disposition of the housing units; the single family residence is contained on one parcel of land with its own access and yard space, while a number of multi-family units may be contained in one structure. Although the lower densities are normally associated with single family and the higher densities with multi-family residences, there may be a blending together of housing types due to design techniques without altering the overall density.

Single Family Residential Areas

Because of the amount of land affected by residential development, the location of various densities is an important factor in the achievement of the URBAN CENTER DEVELOPMENT concept. As such, residential densities should decrease at greater distances from an urban center.

Certain rural and outlying areas are not particularly suited for agriculture, but also are not within proper range of urban development. These transition (reserve) areas should be maintained at rural densities until conditions allow their change.

Outlying areas susceptible to transition to urban residential use shall have an allowed density of up to five housing units per gross acre provided that the standards required for such density in urban areas can be met. Otherwise, the maximum allowed density shall be one housing unit per five gross acres. | 6

In those portions of the County now predominantly rural in character, residential densities of three or more housing units per acre shall be encouraged only adjoining existing town center development. | 7

Some areas of the County should be kept at a lower density even though close to an urban center. These areas include locations where a pattern of large lot sizes is already established or is desired and

where residents need the assurance that the character of their neighborhood will be stabilized. Areas which are less suited for intensive residential development, such as valley bottoms and steep slopes, should be reserved for low-density residential and open-space uses where not required for industrial or other non-residential purposes. These areas can provide interstices within the urban area where development is limited and which have the visual effect of open space. In areas of lowest density the property owners should be willing to sacrifice some of the urban amenities such as public sewerage disposal, sidewalks, curbs and gutters.

8

A maximum density of one housing unit per gross acre may be employed:

a. in those areas of the County where a neighborhood character of estate-type uses and interests is already established or is proposed,

b. where slopes exceed 30%, in areas subject to slide hazards, or in valley areas not suited for large-scale agricultural use and not required for industrial purposes.

D

9

A maximum density of two housing units per gross acre may be employed in the following types of areas:

a. where a substantial majority of lots are already developed to a density not greater than two housing units per gross acre and permanent protection in order to maintain community identity is desirable,

b. in areas proposed for development at this density where permanent protection of lot size is desired,

c. in areas where slope ranges from 25% to 30%.

There are natural resource areas outside the urban area, such as mountain streams, which may be a source of recreation but which are not within public parks. In order to discourage unwarranted exploitation of natural resources, a density should not exceed three housing units per gross acre.

> A maximum density of three housing units per gross acre shall be employed in rural tracts adjoining stream, lake, or salt-water frontage.

10

Remaining single family residential areas adjoining urban centers or clearly a part of the urban area should be developed at urban densities, provided that such areas be subject to proper design standards.

> Single family residential areas, except as otherwise designated, shall have a maximum allowed density of five housing units per gross acre.

11

D

Multi-Family Residential Areas

Multi-family residential development generally consists of a number of housing units contained within one structure. They may range from two units in a structure to any number depending on the size parcel of land, or they may range in densities up to a maximum of 36 housing units per gross acre.

Because their high densities create a concentrated demand within a given geographic area, their locations must be interrelated with the circulation system and other land uses. Multi-family residential areas may be allowed only in locations which meet the following criteria:

> Multi-family residential areas shall <u>always</u> be located functionally convenient to a major or secondary arterial highway. Adequate arterial and collector streets should exist prior to or be developed concurrently with the establishment of such uses.

12

13

Since multi-family residential areas are complementary to shopping areas and other primary service facilities, they may logically be developed adjacent to such uses.

14

In order that a maximum number of persons can take advantage of the amenities of view, water access, and permanent open space, multi-family residential use may be located in or adjacent to such areas, provided that multi-story structures are so located and designed as to not destroy such amenities for adjoining existing or potential residential areas.

D

While apartments may be compatible with certain commercial uses, multi-family residential development requires the same protection as single family development from obnoxious uses. A multi-family residential area, therefore, is not per se a proper buffer or transition between single family residential and manufacturing or other incompatible land use areas.

In addition to providing a variety of housing types, multi-family residences provide living areas for the maximum number of persons in proximity to and with convenient access to the services and facilities of trade, cultural and employment centers. Further, multiples located in proximity to these centers minimize traffic congestion created by the movement of large numbers of persons.

Applying these principles to the URBAN CENTER DEVELOPMENT concept, the higher densities of multi-family residences should be located near the larger trade or employment centers.

15

The high densities of multiple residential use shall be located adjoining or convenient to major highways with preference given to those routes which provide the most convenient and direct access (in terms of travel time) to the major trade and employment centers of the area.

The high densities of multiple residential use should be located adjoining either major shopping areas, cultural centers (at urban or multi-community level), or locations having special amenities of view, water access, or permanent open space. 16

The lower densities of multiple residential use shall be located adjoining or convenient to major or secondary arterial streets. 17

The lower densities of multiple residential use should be located adjoining either business areas, cultural or community centers, or locations having special amenities of view, water access, or permanent open space. 18

The lower densities of multiple residential use may be located as a transitional use between higher density multiples and single family residential densities. 19

D

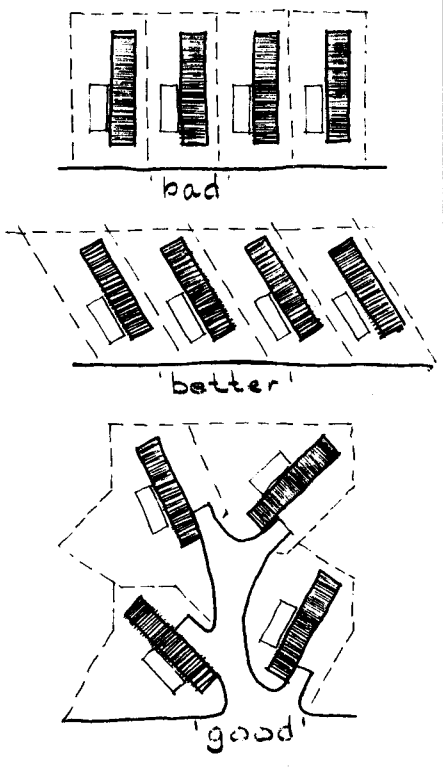
Mobile home parks, in terms of density, are predominantly a multi-family residential use and should be treated and located as such. However, mobile homes are a rather unique form of residential use. The home is designed to be moved, and as the size of the mobile home increases, so must the equipment used to move them. Although mobile home parks are similar in density to multi-family residences, especially in terms of space allotted to each trailer, the trailer park spreads out horizontally over the land and, thus, usually breaks the area into many small open spaces. Since such parks create certain specialized problems, recognition should be given the following:

Because of the heavy equipment required to move the larger mobile homes, because they are subject to and capable of being moved periodically, and because they should not be moved through adjacent residential neighborhoods, locations for such homes should be functionally convenient to a major arterial highway. 20

21 Adequate protection should be afforded the residents of mobile home parks from the adverse influence of adjoining streets and non-residential uses through proper landscaping, screening, or setbacks from such streets or uses.

22 Although some mobile home parks may be occupied by families without children, not all necessarily are. Therefore, such parks should be located so that they may be served adequately by such normal residential services as schools, playgrounds and business areas.

FIGURE 6-3: ALTERNATIVE FORMS OF MOBILE HOME PARK LAYOUT



The design of mobile home parks is subject to many of the same principles and standards as other forms of residential subdivisions. The street system within the park should be scaled to the function it is to perform. Generally, there should be collectors without residences facing on them serving the traffic movement needs, and local roads should provide access to the individual trailer homes. Blocks should be large enough to include substantial numbers of units, wide enough to provide desirable lot depths plus interior walkways, common open space, and easements for such utilities as are to be located within the block.

As the structure involved is mobile, it necessarily meets certain requirements of size and shape as well as being limited to materials having properties of both strength and lightness. It is portable to a degree, but its exact resting spot usually is dependent on placement of utilities. To this extent the arrangement of "stands" can spell the success or failure to achieve a pleasant mobile home park.

Since the area allocated to each stall is generally small, they should be arranged so as to encourage the grouping of open areas that are related

appropriately to functions in the mobile home. The usable outdoor space is most often on one side toward the front of the trailer, which results in inefficient use of open areas in rectangular spaces as illustrated. Trailer space shapes and orientation should be designed to provide maximum privacy and use of outdoor space. Orientation toward the interiors of blocks can place common play areas within the view of the homes.

In order that mobile home parks may blend with the urban landscape, particular care and attention should be given to proper site location and design. Attractive natural features should be utilized to full advantage. 23

RESIDENTIAL DEVELOPMENT CRITERIA

D

In urban and suburban areas, proper utilities, street improvements and design are essential elements in the creation and maintenance of stable and attractive residential areas. In order that residential areas will be an asset to the community, a safe place to live, guarantee the property owner a certain degree of stability in his investment, and yield to the developer a reasonable profit, the County shall work towards the development of the following standards of improvements related to allowed residential density:

Areas where the allowed average residential density is three housing units per gross acre or greater should include the following minimum improvements: 24

a. paved streets, curbs, and sidewalks;

b. street lighting;

c. underground drainage lines except where surface storm drainage facilities are deemed to be adequate;

d. publicly approved water supply (normally publicly owned); and

e. sanitary sewers or suitable alternatives on temporary basis only.

25 In areas where the allowed average residential density is not over two housing units per gross acre, development should include the following improvements:

a. paved streets and improved walkways (specifications may be different from higher density areas);

b. provision for adequate drainage (surface or underground dependent on need);

c. publicly approved water supply (owned by public or community group); and

d. sanitary sewers or suitable alternative.

D 26 In areas where the allowed average residential density is not over one housing unit per gross acre, development should include the following improvements:

a. type of street improvement dependent upon type of street and amount of potential traffic;

b. improved walkways desirable at least on one side of the street;

c. publicly approved water supply (may be privately owned);

d. provision for adequate drainage (primarily surface drainage except for problem areas); and

e. septic tanks (subject to health department approval and dependent on soil conditions).

27 In recreational tract areas, required subdivision improvements may be less than those required for urban-type development, but should meet the following minimum requirements:

a. publicly approved water supply;

b. provision for sewerage disposal shall be of such standard that adjoining streams or lakes are not adversely affected by pollution; and

c. provision for drainage ways shall be of such standard that adjoining streams or lakes are not adversely affected by pollution or siltation.

DESIGN FACTORS IN RESIDENTIAL AREAS

The design of residential areas is of unique importance in the making of urban patterns, for the design of a residential neighborhood must bear a relationship to the whole community. Its design and utility can either enhance or depreciate the character and potentialities of surrounding areas. Moreover, the security of the individual's investment in a home or business is to a great extent dependent upon the standards and principles applied to the layout of the area.

D

Residential development should contribute to an attractive, safe, and orderly urban landscape. Both public and private development should be encouraged in every manner possible to attain this goal.

28

There are areas in the County that are not fit for any development. Development should be restricted in those areas known to be dangerous by reason of geological conditions, unstable subsurface conditions, groundwater or seepage conditions, flood hazard, inundation or erosion, or any other dangerous condition. The practice of employing a development restriction line preventing development on and unwarranted removal of natural plant material from extreme slope areas, steep ravines and other specified areas should be investigated and utilized wherever feasible for purposes such as the protection of natural drainageways, permanent preservation of common open space, and protection of potential slide areas. Where land conditions are in doubt, it should be the responsibility of the developer to make any studies necessary to prove the feasibility of development upon the land.

Street Pattern

Within the residential neighborhood the street pattern should conveniently serve the area while discouraging through traffic. There should be a variety of street types, such as curvilinear streets, loop streets, and cul-de-sacs, related to the topography and designed for traffic safety and convenient access. In general, the design of residential subdivisions should be subject to the following policies:

29 The street system should be related to the topography of the site in order to avoid overly steep and inaccessible street grades. Where possible, street grades should not exceed 10% and be not less than 0.25% for drainage purposes.

D 30 The street system should be laid out with a minimum number of connections with major arterials. In general, intersections on the major arterials should not be closer than 1,000 feet.

31 Whenever existing streets provide reasonable and adequate access to a major arterial, the new streets in a subdivision should not open directly onto a major arterial.

32 Subdivisions should be laid out so that the individual lots or parcels do not require direct vehicular access to the major or secondary arterial.

Block Layout

Depending on topography or other natural features affecting street design, residential neighborhoods should be designed with long blocks in order to avoid excessive cross streets which are costly to construct and maintain. Generally, blocks should not exceed one-quarter mile in length because abnormally long blocks might prohibit traffic circulation, particularly for emergency vehicles. Pedestrian crosswalks should be required only where necessary such as through blocks over 900 feet in length or

where access to a school, park, or shopping area is essential.

The width of blocks should be sufficient to allow two tiers of lots, except where necessary to back-up lots to an arterial or because of some topographic feature. Irregular shaped blocks indented by cul-de-sacs and containing interior spaces should be properly fitted to the overall layout with adequate provision for maintenance. The necessity of providing an alley between rear lot lines disappears with adequate lot widths; moreover, the alley is costly to provide and maintain. Also, the space taken up by the alley is of much more benefit to the individual and to the neighborhood as a whole if used as part of the lots.

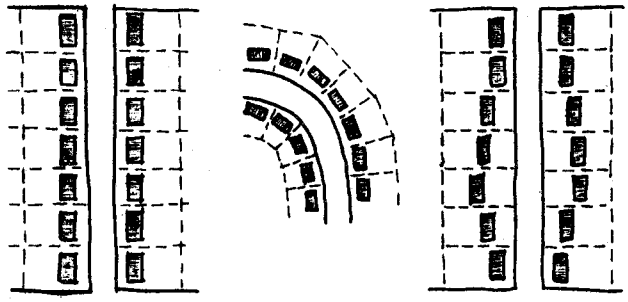
Existing features which add value to residential development, such as trees, water courses and falls, historical spots, and similar irreplaceable assets, should be preserved, insofar as possible, through the design of the subdivision.

D

Lot Layout

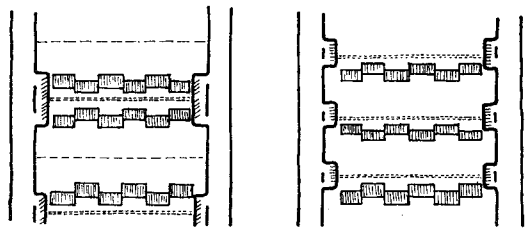
The layout of lots and houses should have the characteristics necessary to achieve a stable residential neighborhood. An infinite number of variations exist in the arrangement of lots and houses and can be used to take advantage of natural features of the landscape. These variations can be categorized into a number of types:

FIGURE 6-4: STRAIGHT AND CURVED STREETS



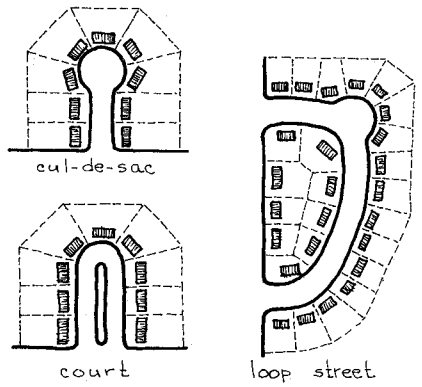
a. The grid development has buildings on both sides of a straight street, lined up and oriented to the streets on lots of equal size and frontage. Two variations of the straight street form include: (1) buildings and lots similarly oriented but with the street curved to conform to topographic features; and (2) the street curved or straight, but with the setback of buildings varied to break the monotony. The grid form of layout, while easy to design on the drawing board, can result in inharmonious relationships with the site. It can, however, add clarity to an otherwise confusing street pattern, but should be used judiciously to avoid monotonous rows of houses.

FIGURE 6-5: ROW HOUSES



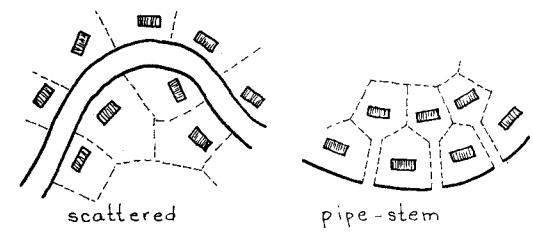
b. In a second type, the buildings are in rows (with common walls) separate from the street and served by common walkways. The lots may be similar and buildings either in rows facing a common walkway or oriented to take advantage of a view and having separate walkways. Although there is complete separation from the street with parking in off-street parking bays, lack of convenience to the automobile is the greatest disadvantage.

FIGURE 6-6



c. A third general form may be called a court, cul-de-sac, or cluster, and features a grouping of buildings which have service orientation at the street but privacy to the rear. This type of layout is particularly useful in order to take advantage of topographic features such as a hog-back, provide a backup to another use so as to limit the other use, or surrounding with common open space and thereby permit smaller lot sizes because of the additional privacy provided by the open space.

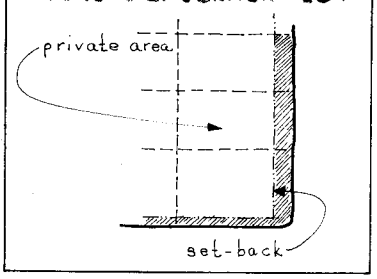
FIGURE 6-7



d. In a fourth variation, the lots and buildings are related to the land with the road meandering through, serving the dwellings. The lots may be scattered over the terrain, or grouped using "pipe stem" arrangements to take advantage of a view. This may work well with large lots, but becomes wasteful of streets and difficult to accomplish at high densities.

The various forms of lot layout should be used to best perform the necessary functions and solve particular site problems. Lot width should be adequate to provide light and air, and should vary according to the type of dwellings contemplated and the character of the site. Corner lots may require greater width than interior lots in order to provide opportunity for greater setback of the dwelling from the side street and provide additional usable yard space to make up for that effectively lost to the street.

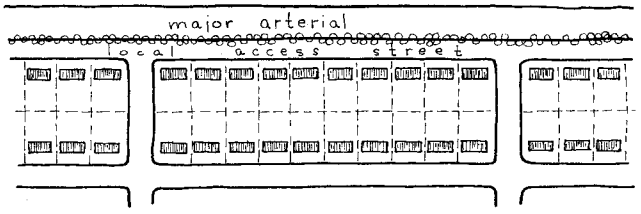
FIGURE 6-8: CORNER LOT



Side lot lines intersecting the street at sharp angles generally result in poorly shaped lots which are wasteful of land and constitute undesirable building sites. Exceptions should be made to solve other problems such as access to sloping lots.

Lots facing directly on a major or secondary arterial lose a certain value due to noise and dirt and due to the hazards of direct access from the private drive to the heavy traffic of the thoroughfare. This loss in value should be prevented in one of two ways:

FIGURE 6-9: LOCAL ACCESS STREET PARALLEL TO ARTERIAL



A local access street may be planned parallel to the major arterial separated from it by means of a planting strip which limits access to the major arterial to the principal traffic intersections.

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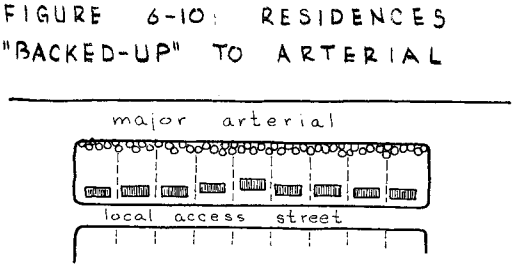
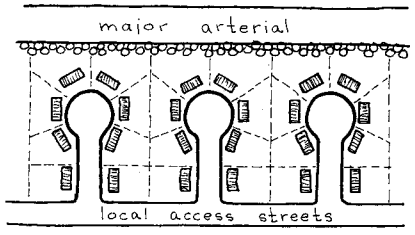
FIGURE 6-10: RESIDENCES "BACKED-UP" TO ARTERIAL





The residential lots with extra depth may be backed-up to the major arterial right-of-way and faced on a parallel local access street within the subdivision. As a variation, cul-de-sacs may be served by local access streets thereby limiting the number of lots that are in proximity to the arterial. In either case, part of the arterial right-of-way and rear of the lots would become a buffer strip.

34

Where new forms of residential development, such as the planned unit development concept, are applied and common open space land is a feature of the development, each house, insofar as possible, should directly adjoin the open space system. Open space in the form of parks, playgrounds, playfields, and landscaped areas surrounding various community facilities and walkways, should be linked into a continuous system, both to increase the utility of the open space and to heighten its contrast with the relatively compact housing groups. The common open space land that is provided shall have some utility, and not merely be unbuildable, unusable, inaccessible land left over within the development.

FIGURE 6-11:
CLUSTER DEVELOPMENT

If common open space land is provided within a development in order to cluster the homes, thereby reducing utility costs as well as lot sizes, there shall be arrangements to guarantee the integrity of the common land.

D

35 The common land shall not be used for a purpose which would ordinarily be otherwise provided elsewhere, such as a school or church.

36 Additional residential structures shall not be built on the common land.

37 Adequate guarantee shall be provided to insure permanent retention of common land either by private reservation for the use of the residents within the development, by dedication to the public, or a combination thereof. In general, the test of whether the common land should be in public or private ownership is whether the area is so located as to benefit more than the contiguous area and the property owners living therein.

Lot Size Related to Slope

As slope increases, residential density should decrease in order to avoid, partially or completely, the problems of drainage, siltation, flood control, and accessibility, which frequently are attributable to over-development of slope areas. 38

Larger lots, which are directly related to density, can help reduce the problems in hillside areas. With larger lots, it is easier to retain trees and other natural growth, thus reducing or eliminating the problems of erosion, siltation, etc., as well as reducing the requirements for storm water drainage disposal. As the size of individual lots is related to the natural slope of the land, then level areas within the hillside areas may be developed to normal densities. The resulting lower overall density may make it possible to change some of the usual requirements, such as width of streets and street grades. Further development costs are reduced as grading, streets, expensive retaining wall structures and soil compaction requirements may be reduced.

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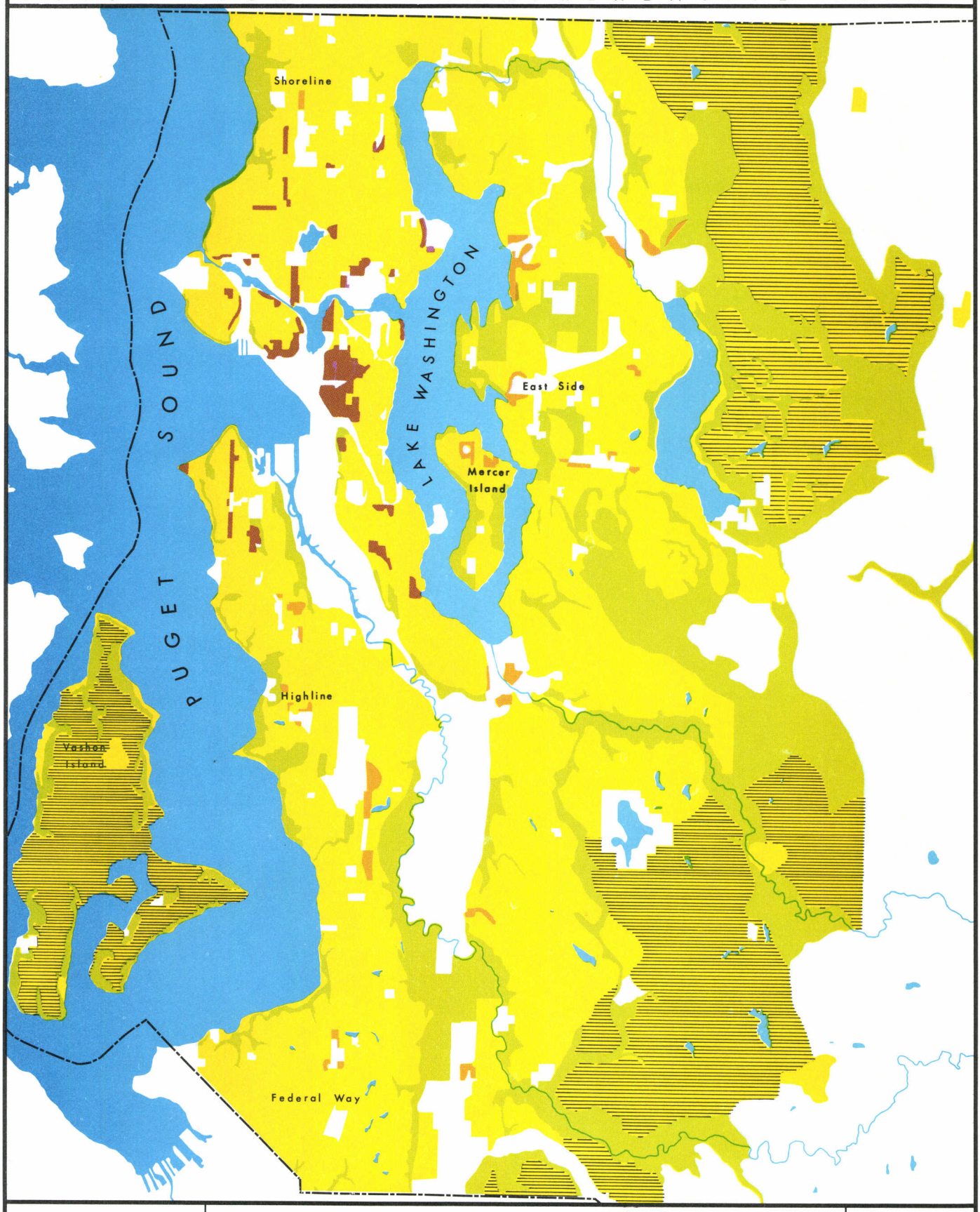
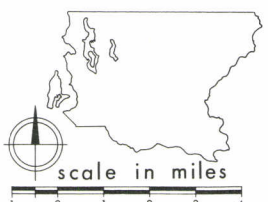
In single family and two-family (duplex) residential areas, required lot area and width shall increase with percent of natural ground slope. 39

STUDY FOR THE COMPREHENSIVE PLAN





RESIDENTIAL AREAS

RESIDENTIAL AREA DENSITY

- OVER 36 HOUSING UNITS PER GROSS ACRE
- UP TO 36 HOUSING UNITS PER GROSS ACRE
- UP TO 8 HOUSING UNITS PER GROSS ACRE
- 2 HOUSING UNITS PER GROSS ACRE OR LESS
- RESIDENTIAL RESERVE

Figure 6-12

KING COUNTY PLANNING DEPARTMENT 1964

open space development policies

A balanced open space program meets the recreational needs of all age groups and interests.

Active Recreation Areas

Playgrounds, playfields, athletic fields

Passive Recreation Areas

Parks, scenic routes, viewpoints, bands of open space uses (either public or private) which provide a visual relief from urban environment

Indoor Centers

Centers, frequently in conjunction with a school, for indoor social, cultural, educational, or recreational programs

The playground or playfield, park, and indoor center may be combined to form a complete neighborhood or community park and recreation facility.

E

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DEFINITION

"Open space" is area in public ownership or control which is open in character to permit visual or physical access. Open space includes, but is not limited to, parks, recreation areas, water bodies, historical sites, sites of unusual scenic quality, large institutional sites, scenic routes, flood plains, slide areas or areas too steep for safe construction, wildlife refuge, and land used for agriculture, forest, fisheries, watersheds, and extraction of mineral deposits.

OPEN SPACE DEVELOPMENT POLICIES

Open space may be intended for a specific purpose, or may just be "there". Open space may be miles of wilderness area or merely acres of truck farms. It may be a small landscaped open area among the narrow canyons of the Central Business District or in shopping centers. On the other hand, it may provide a view of the city, country side, waterfront, or any other thing as long as the outlook is a relief from the urban environment.

Open space should be distributed throughout the urban area to insure a relief within the urban environment, provide sufficient space for passive and active recreation, and help curb the spread of urban blight and deterioration. | 1

In the modern day metropolitan area, urban development is spreading rampant over the country side. Communities are formed, many having the population of full-fledged cities, and all blending into one. Large expanses of open space are necessary to separate these communities from one another, and to provide a stopping place for urban development.

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Where possible, open space elements should be combined to form a visual and sometimes physical separation between major sectors of the urbanized area in order to discourage continuous urban sprawl, and preserve many of the natural features of the land. | 2

Where feasible, areas or strips of open land such as slide or swampy areas, scenic routes, trunk utility lines, hiking or nature trails, and bridle trails, should be retained between residential neighborhoods or communities and between residential and adjacent non-living areas. | 3

The development of the open space system should be completed within the framework of the total Puget Sound region. The various open space elements should be related to the distribution of population, other land uses, and the transportation system.

4 Adequate open space land should be readily available to all classes of users.

5 The function and size of open space areas and facilities should be related to the density and total population of the area to be served and to the transportation system.

6 Open space areas and facilities should be coordinated within the County and with adjoining counties.

7 Multiple uses of open space land should be encouraged, provided that the uses are compatible and adequate area is provided for each specific function.

E

8 Areas designated for open space purposes should be held inviolate against diversion to non-open space uses, and should not be considered as a reserve for such uses. If an overriding public purpose by another governmental agency requires the taking of open space land, compensation should be made for the area taken by the provision of an equal or better area and facilities.

9 Any publicly-owned lands should be examined for their potential open space use before their disposal.

The most common types of open space are park and recreation facilities. The facilities should be organized to serve all age groups with a complete range of facilities. Generally, the facilities should be provided by type, such as a playground, which, in turn, is related to the age group it serves. The types of park and recreation facilities should also be interrelated as well as coordinated with other public facilities. For instance, park land adjacent to a playfield provides a buffer between the active play area and adjoining residences. The active play areas may also serve an adjoining junior high school.

> All recreation facilities of a local nature should be planned, to the greatest extent possible, in conjunction with existing and planned school facilities so that they may complement each other in function, thus avoiding costly and wasteful duplication of facilities.

10

Public and private recreation facilities should complement each other in providing for the recreational needs of the public, provided that recognition is given to the following facts: (1) private facilities do not fulfill as wide a range of public need as comparable public facilities; and (2) they may be discontinued at any time.

E

Neighborhood Park and Recreation Facilities

Neighborhood park and recreation facilities consist of a playground, park, and an indoor center, which serve an elementary school neighborhood. The three may be at individual locations, but are better on one contiguous site in conjunction with an elementary school. Where existing natural features dictate, the neighborhood park may logically be located separate.

> Neighborhood park and recreation facilities should be as centrally located as possible within their service area, desirably in conjunction with the elementary school, within 1/4 to 1/2 mile walking distance of the population they serve. The size and function of neighborhood park and recreation facilities will vary according to the composition of population served and other indices of need.

11

Playgrounds are active play areas designed to serve the 5 to 15 age group and family groups primarily, and should range in size from 3 to 7 acres (based on 1 acre per 100 potential elementary school children).

Neighborhood parks are passive areas designed to serve the needs of pre-school and younger school-age children and their parents, and sitting-out areas for older persons. The size of a park is based on 1 acre per 800 population in areas where individual residential lots are less than one-quarter acre. Where park facilities cannot be provided, the needs may be satisfied in several ways and combinations thereof:

Where the park cannot be provided in conjunction with the playground, the playground should contain a small park-like area for use by all age groups.

Large parks or other public open space serving other functions may also serve park needs for the elementary school neighborhood or a portion thereof, depending on location.

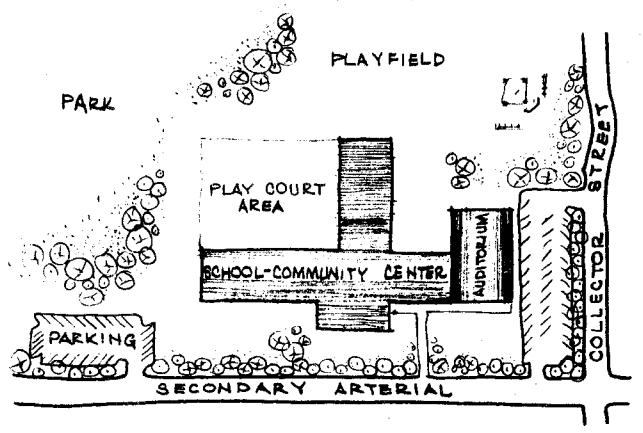
A portion of an elementary school neighborhood may be considered to be served if it has access to suitable common open space land such as that provided as part of a residential subdivision.

Indoor centers (normally in the elementary school) should be designed for use by all age groups and should consist of separate or combined gymnasium, auditorium and multi-purpose room.

Community Park and Recreation Center

The community center is a facility including an indoor facility, an outdoor active play area (playfield), and a park. The three are designed

FIGURE 7-1:
COMMUNITY PARK & RECREATION CENTER



to provide the people of the community with a place for conducting leisure-time activities of an educational, cultural, social and recreational nature. Since the neighborhood park and playground serve the primary recreation needs outside the home of pre-school and younger school age children, the emphasis on the indoor and playfield facilities of the community center should be for older youths and adults. However, limited facilities should be available for use by younger children, particularly in conjunction with the park area.

The community center is desirably located centrally within a homogeneous residential area which may be bounded by major topographical or manmade features.

Community center facilities should be located on or convenient to secondary arterials in order that traffic generated by the facility need not intrude into residential neighborhoods. Where such facilities are located on or near major thoroughfares, adequate provision should be made to insure the safety of pedestrians crossing the thoroughfares. 18

a. Indoor Center

The indoor facility should consist of the following minimum facilities: a gymnasium with adequate size playing floor and provision for spectator seating, an auditorium (may be combined with school cafeteria or multi-purpose room), several meeting rooms, and kitchen facilities. 19

An indoor center may be a separate facility or a part of or combined with a junior or senior high school. The junior high school usually is the preferable location because there is less conflict with school social and athletic functions than at the senior high level.

Indoor centers should be as centrally located as possible, within 1 to 2 miles distance of the population to be served.

There should be one center for each 15,000 to 30,000 population. A supplementary center may be necessary to serve isolated areas of less than 15,000 population.

b. Playfield

Playfield areas may be developed as part of a school site or as a separate facility where school sites do not fulfill the playfield need. There should be a playfield in conjunction with every community indoor center. The playfield normally includes space for both baseball and softball fields, football, and paved courts for volleyball, tennis, basketball, etc., but may be varied on the basis of specialized community needs.

A playfield should be within 1 mile walking distance of every home, except in instances where the natural service area is elongated due to natural or manmade barriers, or where the density of population is low, the walking distance may be increased to 1 1/2 miles.

The size of a community playfield should range from 12 to 25 acres (minimum of 10 acres) based on 1 acre per 800 population. One playfield should serve a population of 10,000 to 20,000 persons.

Supplementary playfields may be necessary to serve isolated areas and may be in conjunction with neighborhood playgrounds if adequate space is provided to serve both functions. 26

c. Park

Community parks should be large enough to provide an atmosphere of open space. Suitable provision for walking, sitting, family group activities such as picnicking, and enjoyment of attractive natural or landscaped areas should be made in such parks. 27

The location of community parks, when not in conjunction with the indoor center, is more dependent on the availability of land or the desirability of a particular site for park purposes than other locational criteria. 28

Major or other parks may fulfill a community park need provided that sufficient acreage is available to meet both local and area-wide requirements. 29

Community parks should be within 1 to 2 miles distance of all segments of the population. 30

Community parks should be 20 acres or more in size (based on 1 acre per 800 population), and approximately one park for each 16,000 population. 31

E

Athletic Fields

Athletic fields are specialized, large-scale playfields serving large segments of the population and should be designed primarily for league-type competitive sports requiring ample space for spectator seating and parking as well as space consuming outdoor hobbies or specialized recreation activities.

32 Athletic fields should be located functionally convenient to major arterials for ease of access and for handling of the traffic generated by the facility.

33 Athletic fields should be so distributed that each major section of the metropolitan area is served.

34 An athletic field may be combined with a senior high school provided that sufficient area is available for both school and athletic field requirements and that adjacent residential areas are protected by a landscaped buffer.

E

35 Fully developed athletic fields normally require from 40 to 50 acres of usable space.

Major Urban Parks

A major urban park consists of a large park area providing broad expanses of natural or manmade scenery, often including special features of area wide interest; and capable of accommodating large numbers of people. A major park should contain a variety of facilities, although it may specialize in the provision of one or more types. This variety may include such things as picnic facilities, a zoo, outdoor concert or theater facilities, trails, formal gardens, swimming, and pitch and putt golf courses. There must be ample provision for parking.

A major park should be on or convenient to major arterials and public transportation routes, in order that the volume of traffic generated can be adequately handled without intruding into residential neighborhoods. 36

Location is partially dependent on obtaining sites of particular scenic or natural beauty or with particular parklike characteristics which should be retained for the benefit and use of all. 37

There desirably should be a major urban park within 2 to 3 miles distance of all segments of the potential urban population, although some features may be of regional or statewide interest. 38

There should be a major urban park of at least 100 acres in size, for every 40,000 potential urban population, based on 1 acre per 400 population. 39

E

Water Areas

As the water areas of King County provide a natural asset, their value should not be allowed to be destroyed by public or private mis-use. Space should be made available throughout the County for all types of waterfront recreation - swimming, boating, water skiing, fishing, etc. - but areas for each type of use should be so located and designed as to not conflict with one another. Because of the limited amount of water frontage devoted to public recreation use in King County, any such accessible water frontage of reasonable size should be acquired and utilized for its appropriate recreation function.

Beach areas, which may also be a part of a major or regional park, should have sufficient area to accommodate necessary and related facilities, such as parking and picnic areas. 40

41 Suitable open space adjacent to streams and waterways should be reserved to partially meet the potential recreation demand while at the same time safeguarding the natural drainage areas within the County.

Because King County is endowed with large bodies of fresh and salt water, a long boating season, and an increasing public interest in boating, adequate boating facilities should be provided to meet this demand and need.

42 Boating facilities may take the form of small-boat docks, launching ramps, mooring sites, or the more complete marina which contains facilities for mooring and servicing all types of recreational craft, as well as providing adequate supply, storage, and fueling facilities.

43 Boating facilities which generate peak traffic loads of both passenger cars and boat-trailers should be functionally convenient to a major or secondary arterial. Because of the loads and grades involved, all connecting roads should be paved if possible.

E

44 Adequate parking and manuevering space should be provided for boating facilities commensurate with function and need. Additional space may be necessary for spectator parking.

Special Areas and Facilities

Although such facilities as golf courses, zoos, aquariums, arboretums, day camps, etc., may be provided by the central city or by private enterprise, additional special facilities in the metropolitan area should be provided on the basis of public need and demand or where special opportunities exist. In particular, historical sites should be preserved, and view points with particular scenic interest should be acquired and utilized.

Regional Facilities

Regional parks and reservations are large areas selected and developed primarily to provide outdoor recreation opportunities not feasible in urban areas. Areas containing a special recreational quality which cannot be easily duplicated (such as areas of particular scenic value, historical significance, preserves) should be reserved for public use and enjoyment, and be developed so as not to detract from their scenic or natural characteristics.

Regional parks should be several hundred acres in size, while reservations controlled by the state or national government may range in size up to many thousands of acres. 45

Although the location of regional parks and reservations is dependent on available areas of scenic and inspirational quality, such areas desirably should be within convenient travel time from all major portions of the urbanized area in order to provide necessary relief from urban living. 46

Preserves, which are areas of historical, ecological, archaelogical, or other scientific value or areas of outstanding scenic or wilderness character, must necessarily be acquired where they occur with no relationship to population or development. 47

Any reduction in amount of national forest or park lands, intermingling private forest, or state forest lands shall be discouraged, and any steps taken to preserve natural characteristics of natural park areas should be supported. 48

E

Scenic Routes

Some of the natural amenities in King County, including its lakes, Puget Sound, mountains, suburban and agricultural valleys, and forest areas, can best be viewed from scenic routes. A scenic route is a portion of the streets and highway system which traverses areas of outstanding scenic beauty, and is characterized by the special attention given to its location and design. Such routes for recreation travel may logically be limited to passenger vehicle traffic only.

In order to maintain a successful scenic route, both public and private action must be taken within the "scenic corridor", a continuous band of land along the route which is generally viewed by the passing motorist. Attention should be given to regulation of land use and the design and density of development. For instance, billboards should not be allowed along scenic routes except in designated business areas. Similarly, utility wiring should be placed underground or diverted to less obtrusive locations, especially where views may be impaired.

The scenic route itself can be enhanced by maintaining unity in design and appearance of all road structures such as bridges and retaining walls. Further, the route can be a useful adjunct to a total recreation system by serving as a connecting link between other types of recreation areas, such as major parks, golf courses, and regional waterfront facilities. In order to provide a continuous system for travel, however, non-scenic connecting links may occasionally be necessary.

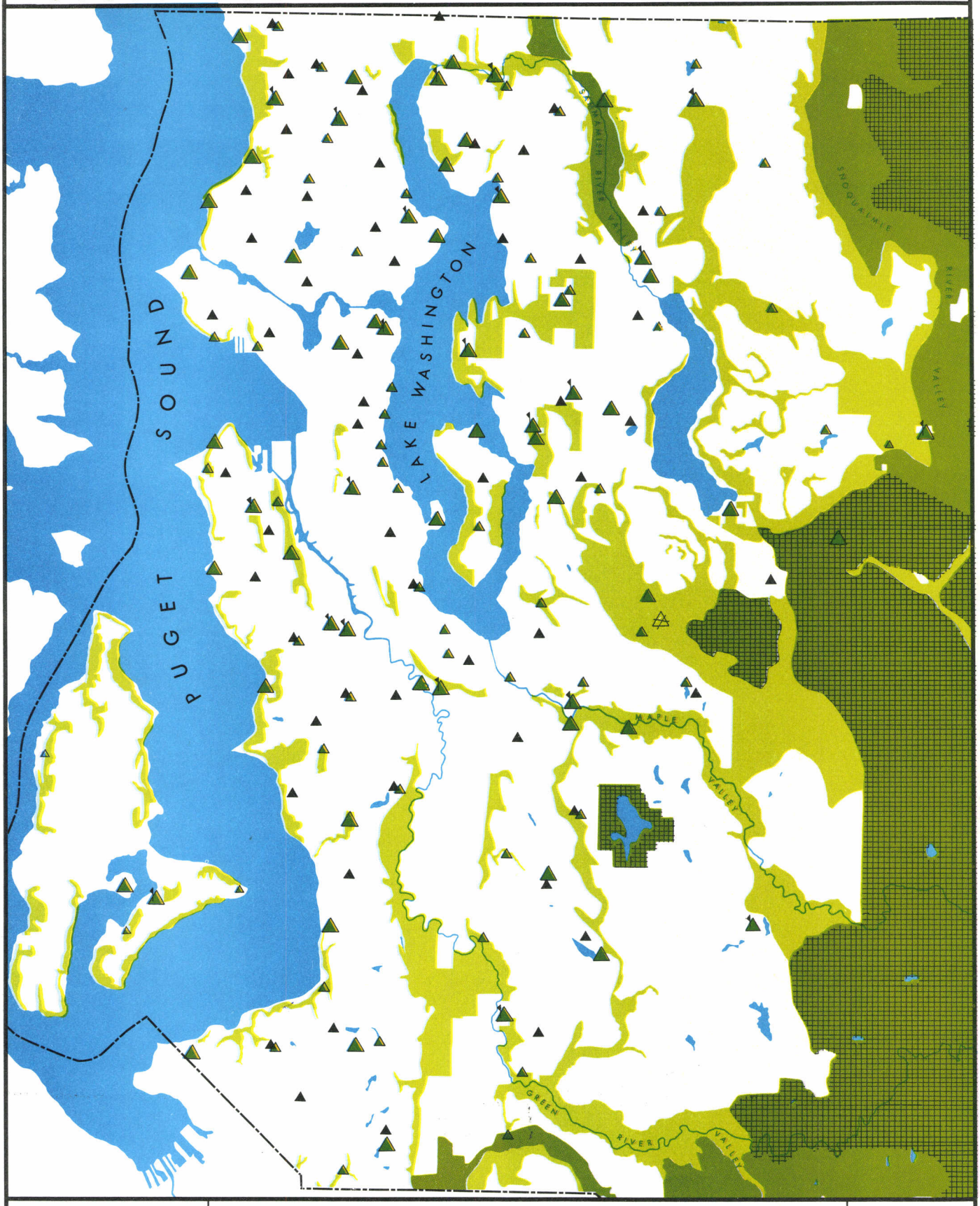
E

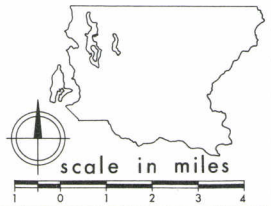
49 | The scenic route should be coordinated with the cities and towns through which it passes.

50 | The location of a scenic route, its alignment, design, and other related features should be in harmony with the setting.

51 | In planning scenic routes, sufficient area to provide view points, rest areas, or picnic areas in appropriate locations should be included to enhance their value.

STUDY FOR THE COMPREHENSIVE PLAN





OPEN SPACE

- LOW DENSITY RESIDENTIAL, STEEP SLOPE AREAS
- AGRICULTURE AND FLOOD PLAIN
- FOREST, WATERSHED AND WILDERNESS
- INLAND WATERWAYS AND LAKES
- PLAYGROUNDS - elementary school sites
- PLAYFIELDS - secondary school sites

} See Figure 8-4, Public Schools, for locations

- MAJOR URBAN PARKS
- COMMUNITY PARKS
- GOLF COURSES
- COMMUNITY INDOOR CENTERS

Figure 7-2

KING COUNTY PLANNING DEPARTMENT 1964

public & semi-public buildings development policies

Libraries, churches, fire stations, schools, civic center buildings and the like provide centralized locations for specific types of group activities or services.

Schools, because of their number, site sizes, and function, have the greatest impact on the community.

Elementary schools

serve grades kindergarten through six

Junior high schools

serve grades seven through nine

Senior high schools

serve grades ten through twelve

Community colleges

serve grades thirteen and fourteen as well as part-time and evening students

Schools also provide facilities for community, social, educational, cultural and recreational programs.

F

DEFINITION

Public buildings are those constructed by a public agency, normally with public funds, for such purposes as providing places for public assembly, operating services of benefit to the public, and for the administration of public affairs. Such buildings include, but are not limited to, schools, libraries, fire stations, police stations, and civic center buildings.

Semi-public buildings are those constructed and operated privately, normally for the purpose of housing the activities of, or service for, a specific group or organization of people. Such buildings include, but are not limited to, places of worship, community club buildings, lodge halls, and private or parochial educational facilities.

F

PUBLIC & SEMI-PUBLIC BUILDINGS DEVELOPMENT POLICIES

Public and semi-public buildings occupy only a small portion of total developed land in the urban area, but are of great importance to the community. Well located and designed public and semi-public buildings are a source of pride to the community. They help to create a desirable public image of an area, and add focal points, variety, and scale to the urban scene. Moreover, because of the essential services they house, they can be of considerable value in helping to maintain stable residential areas.

Because of these factors, facilities directly related to residential areas, such as schools, places of worship and fire stations should be designed so as to complement the residential areas within which they are located. They should be convenient to the population served while at the same time creating the least possible conflict with adjoining residential use. Particular importance is attached, therefore, to adequate site size. The building must be properly related to its parking and service areas, and the street must have adequate capacity to handle the circulation requirements of the facility.

1 Public and semi-public building sites should be adequate in size to accommodate future, as well as existing needs.

2 Public and semi-public buildings serving a local residential need shall be functionally convenient to a collector or arterial street. Such buildings serving larger segments of the urban area shall be functionally convenient to a secondary or major arterial street.

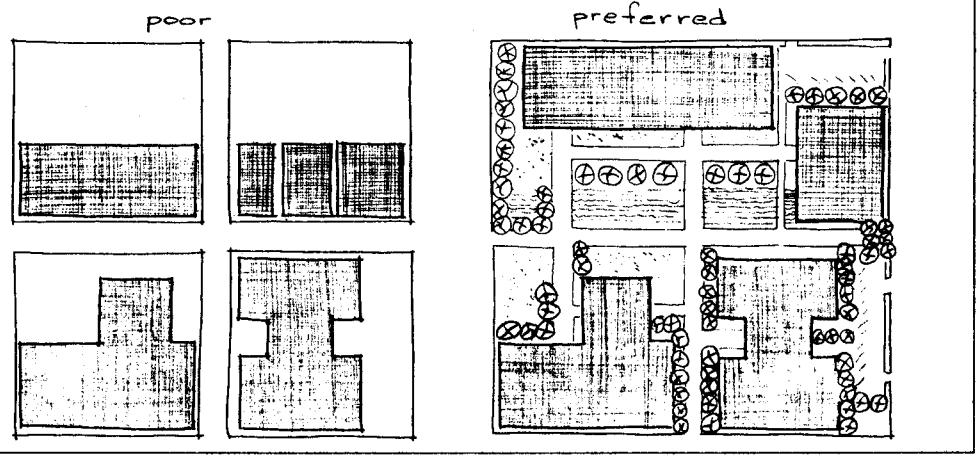
3 Parking areas preferably should open onto a collector or secondary arterial street rather than onto a local access street (which is not designed for other than local traffic) or onto a major arterial street (where access points should be limited to controlled intersections as much as possible).

In the case of public or semi-public buildings which serve more than one residential area or which may serve large segments of or the entire metropolitan area, locations which are easily accessible to all portions of the population served become of even greater significance. Such locations frequently correspond with those for larger trade centers with similar access requirements.

4

Those public and semi-public buildings which serve large segments of the population and which have similar location requirements, should be encouraged to be grouped in conjunction with community or urban shopping centers. Public or semi-public buildings may, in some cases, be appropriately located in conjunction with public open space areas.

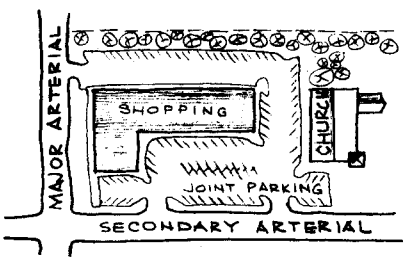
FIGURE 8-1: ARRANGEMENT OF PUBLIC BUILDINGS



Where public or semi-public buildings are grouped, particular attention should be given to the relationship of one building to another, or "setting", in order that fullest advantage can be taken of common visual open space and so that each building can command the dignity it deserves. The grouping of such buildings can create opportunities for development and use of joint parking or service areas thus achieving economies and reducing the visual blight of superfluous acres of asphalt.

F

FIGURE 8-2:
JOINT USE OF PARKING AREAS



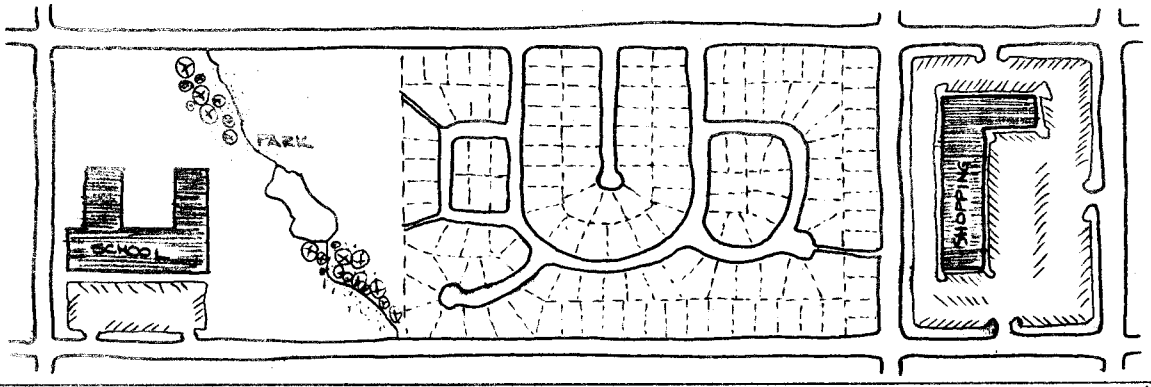
Adjoining public buildings should be located so as to complement each other, both in design and function. 5

Areas set aside for parking by the public should be functionally separate from areas required for servicing, employee parking, vehicle storage and the like. Parking areas should be located and designed for joint use wherever possible, particularly where peak parking loads occur at different times. 6

Requirements for school locations should take into consideration a number of factors: the type and size of school, the age group served, the traffic patterns of the area, the safety of walking students, suitability of site, and adequacy of site size. Other factors, such as site cost and school district or incorporated area boundaries, may also be present but should not be allowed to outweigh the primary locational factors.

Schools should be located to best serve the existing and potential needs of students irrespective of existing school district boundaries, incorporated area boundaries, or other political or district boundaries. 7

FIGURE 8-3: SCHOOL FUNCTIONALLY SEPARATE FROM COMMERCIAL AREA



Schools should be located within living areas, functionally separate from unrelated commercial and industrial areas. 8

F

9 Schools should be provided with means of safe access, either by reason of location or by instituted safety measures.

10 All school locations should be coordinated within the County and with adjoining counties.

11 It is desirable to coordinate future school locations with park and recreation facilities to permit multiple use of facilities.

In the public school districts of King County, the following school system is either in operation or being worked towards: a 6-3-3 grading system consisting of elementary schools serving grades 1 through 6 plus kindergarten, junior high schools serving grades 7 through 9, and senior high schools serving grades 10 through 12 plus post-graduate and adult education classes in some districts. In addition, a number of school districts operate special schools for the handicapped youngster, for vocational-technical classes, for adult education or for community colleges serving the 13th and 14th school years.

Criteria and standards for public elementary, junior high, senior high, and more recently, community colleges have been developed and utilized in the County and are recognized by both the County's school districts and the State Board of Education. However, plans for parochial and private schools are, at this stage of contact between the public planning agency and the private initiators, less susceptible to predictability in advance of development. Therefore, standards for such schools have been kept to a minimum.

F

PUBLIC SCHOOLS

Elementary (serving kindergarten through 6th grades)

In urban areas:

12 Each school should be as centrally located as possible within its service area (normally the same as a neighborhood unit) on or convenient to a collector street, and be within 1/2 mile desirable, or 3/4 mile maximum, walking distance of all students.

Each school should be planned to serve an enrollment of from 360 to 600 students. 13

Each school site should have a minimum size of 5 acres plus 1 additional acre for each 100 potential enrollment. 14

In rural areas:

Each school should be related to an outlying town as centrally as possible within its service area, within 1/2 hour bus travel time. It should be conveniently located for both walking and transported students. 15

Junior High (serving 7th through 9th grades)

In urban areas:

Each school should be as centrally located as possible within its service area (usually a combination of several neighborhoods) on or convenient to a collector or secondary street and be within 1 mile desirable, or 1 1/2 miles maximum, walking distance. 16

Each school should be planned to serve an enrollment of from 600 to 900 students. 17

Each school site should have a minimum size of 10 acres plus 1 additional acre for each 100 potential enrollment. 18

F

In rural areas:

19 Each school should be related to an outlying town as centrally as possible within its service area consistent with transportation routes servicing the area and be within 1 hour bus travel time of all students. Community use of the school facilities is a factor to be considered in site location.

20 Each school should serve a minimum enrollment of 300 students.

21 Each school site should have a minimum size of 10 acres plus 1 additional acre for each 100 potential enrollment.

Senior High (serving 10th through 12th grades and some extended secondary programs

In urban areas:

22 Each school should be located so as to be easily accessible to vehicular as well as pedestrian traffic because of the traffic generated by student drivers, as well as school personnel, and by inter-scholastic events at the school. A location on a secondary arterial is highly desirable. A central location within its service area is desirable but of less importance than in the case of elementary or junior high schools.

23 Each school should be planned to serve an enrollment of from 1,000 to 1,200 students with occasional schools designed to serve 1,500 or more students in certain more highly-urbanized areas or specialized cases.

Each school site should have a minimum size of 10 acres plus 1 additional acre for each 100 potential enrollment. 40 acres is considered a more desirable site size for a senior high school where vacant land is available and site cost not excessive. 24

In rural areas:

Each school should be located within 1 hour maximum bus travel time of all students each direction. Community use of school facilities will influence location. 25

Each school should serve a minimum enrollment of 300 - 400 students. 26

A 40-acre site size is desirable, although schools providing instruction in farming or forestry operation may require larger sites. Such schools have specialized site requirements to be considered. 27

Community Colleges (serving post-high school and sometimes adult educational programs for both day and evening students)

Each college should be located where it will be easily accessible to the community and population centers of the area by way of major transportation routes. It should be within 20 to 25 minutes commuting time of the students it is expected to serve. 28

Community colleges will vary in size depending upon their location and curriculum, but it is expected that an enrollment of 1500 to 2000 will be normal within the urban area. 29

Each college site should have a minimum area of 40 acres, with a more desirable site size being 100 acres. 30

F

Specialized Schools (vocational, handicapped, adult education, etc.)

31 Locational and size requirements will vary according to function. School districts initiating such facilities shall be encouraged to review their plans with the planning agency in order that the greatest possible degree of coordination of such schools with the comprehensive plan may be assured.

PAROCHIAL AND PRIVATE SCHOOLS

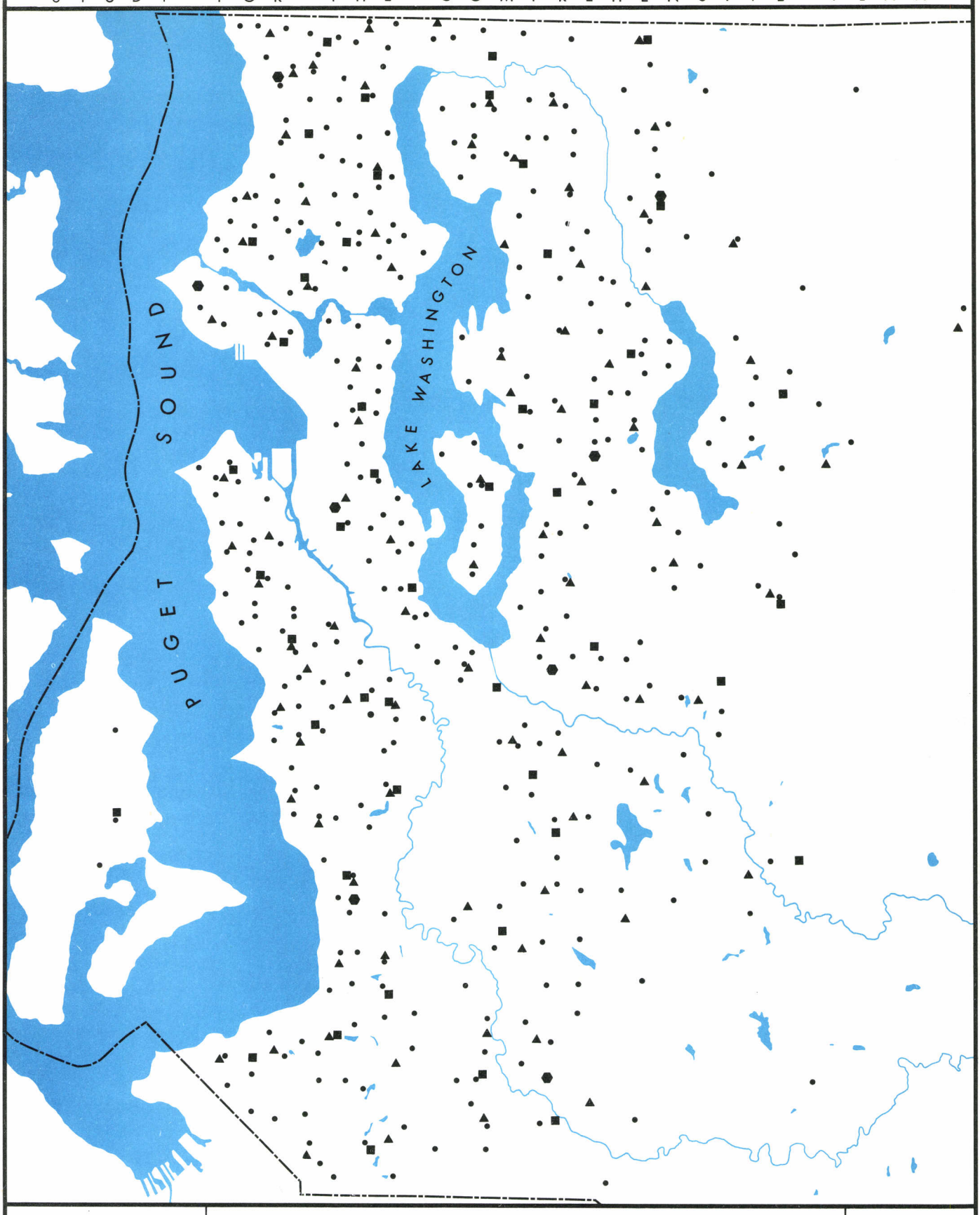
Site sizes should be at least:

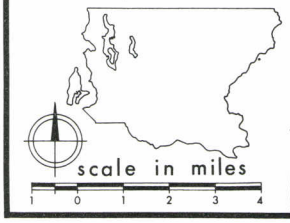
32
5 acres for elementary schools
10 acres for junior high schools
15 acres for senior high schools
20 acres for colleges

33 All schools should be located on a street of at least collector category, with those schools serving 1000 or more students on or convenient to a street of arterial status.

F

STUDY FOR THE COMPREHENSIVE PLAN





PUBLIC SCHOOLS

- ELEMENTARY
- JUNIOR HIGH
- SENIOR HIGH
- COMMUNITY COLLEGE OR VOCATIONAL-TECHNICAL SCHOOL

Figure 8-4

KING COUNTY PLANNING DEPARTMENT 1964

utilities

development policies

G

DEFINITION

Utilities include all lines and facilities related to the distribution, collection, transmission or disposal of water, storm and sanitary sewage, gas, power, garbage and refuse.

G

UTILITIES DEVELOPMENT POLICIES

The provision of all utilities is the sign of an urban development. They are all essential services for any urban use and should be provided in the proper scale and location to meet future needs. In order that the stability of developed areas may be assured, property values maintained, tax base preserved, and blight discouraged, the following policies should be applied:

In urban areas where full or adequate utilities are now lacking, plans and a priority system for improving or adding to the present utility system should be carried out by the appropriate public or private agency. Where local or private action is necessary to achieve those plans, such action should be encouraged by the appropriate public agency. 1

In newly developing areas, developers and/or public and private utility agencies or companies shall be encouraged to provide as complete a utility system as possible commensurate with the type of development. 2

The plans of private utility companies and public utility districts should be coordinated to the greatest extent possible in order that saving to the taxpayer and public can be effected. Savings may be realized by proper scaling of utility sizes and location to the expected future growth and distribution of the population and its related land use requirements, joint use of utility rights-of-way, and coordination of the timing of installation of facilities in order to avoid repeated ripping up and restoration of streets.

Trunk utility lines should be installed in advance or at the time of development in accordance with a general plan for the area. Local or service utility lines should be installed as needed. 3

G

4 The solution to specialized utility problems created by a particular type of use (such as abnormal or peak load power and water requirements or unusual sewage disposal problems of certain types of industries) should be worked out by the community and the parties responsible.

5 Where pollution conditions now exist, all possible steps should be taken to correct such conditions.

An objective in the coordination of plans of private utility companies and public utility districts is the determination of the proper future locations. Such locations are directly related to all other land uses and their locations. In general, coordinated plans should be developed within the following framework of policies:

6 Where possible underground utilities should be grouped and located where accessible.

7 All utility buildings and structures such as telephone exchange buildings, transformer stations, sewage disposal plants, pumping stations, water towers, and reservoirs should be located adjoining non-residential uses wherever possible.

8 Functions related to utility operation, which are not directly related to the delivery of a service to a residential area (such as office management, collection of service charges, storage of materials or vehicles, maintenance and repair), shall be located in commercial or industrial areas.

G

Both public and private utility installations should be planned and designed with the greatest possible consideration for aesthetics commensurate with their cost and location.

With the exception of major power transmission lines, underground installation is recommended under the following conditions: 9

a. where views would be impaired by overhead installation;

b. in areas subject to extensive public view (such as along or near freeways, adjacent to or within public areas as parks, civic centers, school-recreation centers);

c. wherever financially feasible in residential areas either at the time of their initial development or as an improvement project in developed areas; and

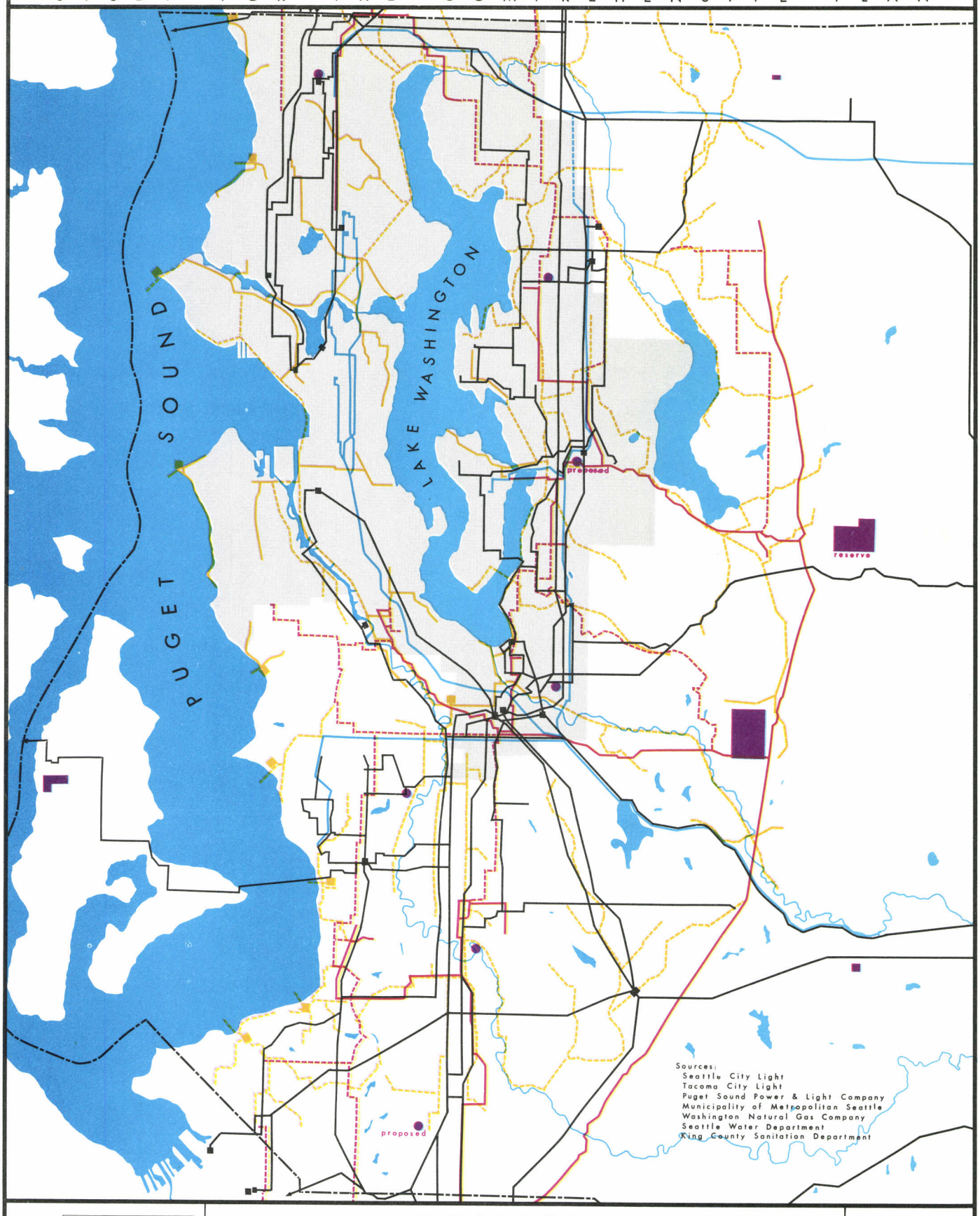
d. in areas with high population density or extreme intensity of land use such as multiple residence districts and business areas.

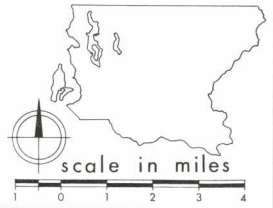
In areas where underground installation of wires may be infeasible or too costly, overhead installation is recommended to be in locations deemed the least unsightly as far as the general area is concerned. 10

For above-ground utility systems, improvement in system appearance and reduction of the number of overhead lines shall be encouraged to the greatest extent possible. 11

Public or private utility buildings, transformer stations, sewage disposal plants, pumping stations, water towers, reservoirs, etc., shall be designed, landscaped and maintained in such a manner so as to minimize the adverse effects on adjoining uses. This is of particular importance in residential areas. 12G

STUDY FOR THE COMPREHENSIVE PLAN





UTILITIES

WATER SUPPLY
EXISTING
PROPOSED
GAS SUPPLY--not shown for Seattle
EXISTING
PROPOSED

SEWERAGE FACILITIES
EXISTING
PROPOSED
TREATMENT PLANT
POWER TRANSMISSION LINE
POWER STATION

METRO AREA
GARBAGE FACILITIES
SANITARY FILL SITES
TRANSFER STATIONS

Figure 9-1

KING COUNTY PLANNING DEPARTMENT 1964

implementing measures
development policies

H

DEFINITION

Implementing measures are the tools, such as legal controls, capital improvement programs, and cooperative agreements, which may be employed in the effectuation of the Comprehensive Plan.

H

IMPLEMENTING MEASURES

No plan is or ever can become effective without a plan for its implementation. The controls and measures which can be instituted to accomplish the objectives outlined by the Comprehensive Plan are varied - they range from such legal controls as zoning and subdivision codes to cooperative agreements between operating departments, such as joint provision and use of school recreation facilities. Some are immediate and complete in their effect, such as the construction of various public works projects (schools, roads, etc.). Others may move gradually over a period of years towards the accomplishment of plan objectives. Implementing measures are subject to the pressures of day-to-day problems and decisions, but should be used to promote the implementation of the adopted Comprehensive Plan.

In the following section there are presented certain policies concerning each type of implementing measure and its use. The extent to which King County is utilizing these measures at the present time is noted. It should also be noted that the measures discussed are the principal ones which are used. Others may be adopted or utilized from time to time, or new ones may be developed in the future which will prove to be useful.

LEGAL CONTROLS

The County and/or State exercise, or have the power to exercise, certain legal controls over the use of land and construction upon that land which are directly or indirectly influential in the implementation of the Comprehensive Plan. The following include, but are not limited to:

Zoning

Zoning is an official land use control established to serve the public health, safety and general welfare and to provide the economic, social, and aesthetic advantages resulting from an orderly planned use of land resources. It represents one means of carrying out the general purposes set forth and defined in the Comprehensive Plan of King County.

Zoning regulations shall be applied commensurate with the principles and policies of this Comprehensive Plan and in accordance with the following:

H

1 The amount of land in each zoning category desirably should not be in excess of foreseeable need plus a reasonable margin for individual choice.

2 All zoning should be coordinated with the zoning of incorporated places within the County and bordering counties and cities.

3 It may be made the responsibility of the developer to provide any studies necessary to prove the feasibility of a proposed development.

Subdivision Control

The subdivision regulation is an official control pertaining to the subdivision of land and establishing standards for lot arrangement, street width and design, provision of public utilities, correlation with adjacent existing or possible future subdivisions, and correlation with other elements of the Comprehensive Plan where pertinent.

King County exercises control over the platting, subdivision and dedication of land under the authority of the Laws of 1937, Chapter 186, Section 15, as amended, and the Planning Enabling Act (R.C.W. 36.70). The County has established certain standards and requirements for subdivisions and has established a definite procedure for the filing and processing of such subdivisions. The subdivision regulations shall be applied in accordance with the following policies:

4 All subdivisions should be correlated with adjoining cities and unincorporated areas within the County and adjoining counties.

5 All proposed subdivisions should be correlated with the Comprehensive Plan.

H 6 All proposed subdivisions should take into consideration the physical characteristics of the area.

All lot sizes within proposed subdivisions shall conform to the existing zoning for the area. 7

All proposed non-residential uses within proposed subdivisions should conform to the development policies of the Comprehensive Plan. 8

Official Map

The official map provides a means of preventing the construction of expensive buildings or other facilities within future rights-of-way while still permitting a reasonable use of the land. By adoption of an official map, right-of-way costs can be considerably reduced with significant benefit to the public.

The authority for King County to prepare an official map ordinance is contained in the Planning Enabling Act (R.C.W. 36.70) which states in part:

"Sec. 56 ---- FORMS OF CONTROLS. Official control may include: ---- (2) Maps for streets showing the exact alignment, gradients, dimensions and other pertinent features, and including specific controls with reference to protecting such accurately defined future rights-of-way against encroachment by buildings, other physical structures or facilities;"

The official map should be prepared in accordance with the following policies:

Designated rights-of-way should, in general, conform with the locations and policies prescribed in this Comprehensive Plan. 9

Adoption of an official map desirably should precede specific capital improvement programs for streets and highways. 10

H

In order that property owners do not suffer undue hardship, a definite time limitation for acquisition of affected properties should be established in the official map ordinance.

Sanitary Codes

Sanitary codes are official controls established by the State and/or County to assure the adequate and safe provision of water and the proper disposal of sewage in residential subdivisions and for other areas where the public requires such service.

Public water supplies currently must be approved by the State Health Department. The State Pollution Control Commission has certain regulations regarding the disposal of sewage which must be met. The Seattle-King County Public Health Department has established certain requirements for water supply and sewage disposal systems (both public and private) which must be met.

PUBLIC CONSTRUCTION PROJECTS

Public works projects, such as the construction of schools, branch libraries, roads, parks, utility lines, etc., are direct and immediate methods of implementing the plan. Such projects may be the responsibility of the State, the County, individual utility or school districts, or other public or semi-public agencies. Several means for encouraging and insuring the development of such projects in an orderly and integrated manner are available.

Capital Improvement Program

A County capital improvement program is an official short-term program (usually for a 6-year period) for the construction of certain public capital improvements on the basis of a system of priorities. This program is normally coordinated by the Planning Agency with the cooperation of the operating departments for the purpose of (1) establishing a coordinated program for all County public construction projects, and (2) establishing a method for review of all contemplated projects in order to determine whether or not they conform to the Comprehensive Plan. The capital improvement program is brought up to date on a yearly basis at which time it is extended for one more year.

King County at the present time has no comprehensive capital improvement program, although the County Engineering Department has established such a program for its own construction projects, and the Park Department is in the process of instituting one. The establishment of a Comprehensive program is highly desirable and should be instituted as soon as feasible.

Where projects are related to each other in final use, their construction desirably should be timed so as to be mutually beneficial. 12

Building construction priorities should be established, to the greatest extent possible, on the basis of greatest existing need. 13

Sites for future projects should be acquired in advance of need while vacant land is still available. 14

Public funds should be allocated on the basis of the official capital improvement program. 15

Cooperative Agreements Between Operating Agencies

Cooperative agreements include any agreement between two or more agencies, whether public, semi-public, or private, wherein any projects related to the Comprehensive Plan may be jointly or cooperatively planned, financed, constructed, administered, or any combination of these in a manner which is beneficial to the public.

The principal example of cooperative agreements between operating agencies or departments in King County is in the case of school and recreation facilities. The use of school facilities by recreation and other community groups is allowed by school districts throughout the County. The County Park and Recreation Department cooperates with local school districts to the greatest extent possible by purchasing park or active play areas adjacent to school sites and by allowing school use of these areas during school hours.

H

16 Any cooperative arrangement should be encouraged where it is in accordance with the Comprehensive Plan and where there are recognizable benefits to be derived.

District Reorganization

For the purpose of this plan, the term "district reorganization" is intended to mean any consolidation or reorganization of the various types of operating districts (such as school, water, or sewer) in King County which would result in benefits to the public.

Historically, the school districts of King County perhaps supply the best example of district reorganization. In 1910, there were 176 school districts in the County. Because it was recognized that reducing this number would provide improved educational service to youngsters, this number was reduced to 21 by January 1, 1964. The King County School District Reorganization Committee is currently studying a plan for further reorganization.

Under the 1959 State act which allowed the formation of metropolitan districts, the Municipality of Metropolitan Seattle (commonly known as Metro) was established in a portion of the Seattle-King County metropolitan area to provide sewage disposal facilities and trunk line sewer connections to those facilities.

17 Any type of district reorganization desirably should be based on a comprehensive plan encompassing the entire problem area and piecemeal changes of district boundary lines should be discouraged.

18 District boundary lines should be related to logical service units.

H

appendices

APPENDIX A: DISTRIBUTION OF LAND USE

Definition and Explanation of Terms

Land Use

Land use refers to the kind of activity taking place on a given parcel of land.

Residential Land Use

Residential land use includes area in single family and multiple family housing units.

Commercial Land Use

Commercial land use includes areas in retail and service establishments, offices, wholesale establishments.

Industrial Land Use

Industrial land use includes areas in manufacturing establishments and non-manufacturing establishments.

Public and Semi-Public Use - Residentially Oriented

Public and semi-public use - residentially oriented includes areas in uses such as schools, junior colleges, public libraries, churches, fire stations, local parks.

Public and Semi-Public Use - Non-Residentially Oriented

Public and semi-public use - non-residentially oriented includes areas in uses such as military installations, regional parks, golf courses and country clubs, cemeteries, botanical gardens, arboreta.

Other Public and Semi-Public

Other public and semi-public includes areas in uses such as national forests and watersheds.

Streets and Rights-of-Way

Streets and rights-of-way include those in public ownership only.

Vacant and Non-Urban

Vacant and non-urban includes areas which are vacant and areas in such uses as agriculture.

Developed Land

Developed land includes areas in residential, commercial, industrial, residentially and non-residentially oriented public and semi-public and streets and rights-of-way.

TABLE 1: DISTRIBUTION OF LAND USE AREA PER 1,000 PERSONS, BY TYPE OF USE, KING COUNTY: 1930, 1940, 1950, 1960 AND 1985

Acres per 1,000 persons

Type of Use by Year	King County	King County Urban Area	Rest of King County	KCUA Excluding Seattle	Seattle
Residential					
1930	34.52	33.94	46.51	51.72	31.25
1940	38.02	37.41	50.21	61.27	32.54
1950	42.70	42.38	51.59	65.61	34.29
1960	49.73	49.73	49.67	71.90	35.90
1985	65.70	66.35	50.37	83.21	37.61
Commercial					
1930	4.75	4.84	2.79	16.21	3.13
1940	4.75	4.84	2.93	12.25	3.33
1950	4.23	4.27	3.17	5.58	3.81
1960	4.06	4.09	3.31	4.03	4.13
1985	3.97	3.98	3.70	4.01	3.93
Industrial					
1930	11.65	11.31	18.60	37.93	7.29
1940	12.48	12.26	16.74	35.54	7.51
1950	9.41	9.04	19.84	17.50	6.10
1960	9.09	8.84	16.56	12.94	6.28
1985	6.97	6.95	7.41	7.02	6.83
Public & Semi-Public Residential					
1930	7.98	7.69	13.95	17.24	6.25
1940	8.22	7.90	14.64	15.93	6.26
1950	6.41	6.08	15.87	9.29	4.95
1960	7.49	7.18	16.56	10.07	5.39
1985	6.67	6.45	11.85	6.72	5.96
Public & Semi-Public Non-Residential					
1930	10.17	10.63	-	34.48	7.03
1940	10.50	11.02	-	30.64	7.01
1950	8.19	8.48	-	16.40	5.72
1960	7.49	7.74	-	10.07	6.28
1985	5.15	5.37	-	5.01	5.98
Streets & Rights-of-Way					
1930	30.20	29.41	46.51	51.72	26.04
1940	29.70	29.10	41.84	49.02	25.03
1950	34.11	33.91	39.68	54.67	26.67
1960	41.18	40.89	49.67	63.27	26.93
1985	54.24	54.66	44.44	70.18	28.21
Total Developed					
1930	99.24	97.82	128.36	209.31	80.99
1940	103.67	102.53	126.36	204.65	81.68
1950	105.05	104.16	130.15	169.05	81.54
1960	119.04	118.47	135.77	172.27	84.81
1985	142.70	143.76	117.77	176.15	88.54

TABLE 2: ESTIMATED DISTRIBUTION OF LAND USE AREA, BY TYPE OF USE, KING COUNTY: 1930, 1940, 1950, 1960 AND 1985

Area in Acres

Type of Use by Year	King County	King County Urban Area	Rest of King County	KCUA Excluding Seattle	Seattle
Residential					
1930	16,000	15,000	1,000	3,000	12,000
1940	19,200	18,000	1,200	5,000	13,000
1950	31,300	30,000	1,300	12,000	18,000
1960	46,500	45,000	1,500	25,000	20,000
1985	108,400	105,000	3,400	83,000	22,000
Commercial					
1930	2,200	2,140	60	940	1,200
1940	2,400	2,330	70	1,000	1,330
1950	3,100	3,020	80	1,020	2,000
1960	3,800	3,700	100	1,400	2,300
1985	6,550	6,300	250	4,000	2,300
Industrial					
1930	5,400	5,000	400	2,200	2,800
1940	6,300	5,900	400	2,900	3,000
1950	6,900	6,400	500	3,200	3,200
1960	8,500	8,000	500	4,500	3,500
1985	11,500	11,000	500	7,000	4,000
Public & Semi-Public Residential Oriented					
1930	3,700	3,400	300	1,000	2,400
1940	4,150	3,800	350	1,300	2,500
1950	4,700	4,300	400	1,700	2,600
1960	7,000	6,500	500	3,500	3,000
1985	11,000	10,200	800	6,700	3,500
Public & Semi-Public Non-Residential Oriented					
1930	4,700	4,700	-	2,000	2,700
1940	5,300	5,300	-	2,500	2,800
1950	6,000	6,000	-	3,000	3,000
1960	7,000	7,000	-	3,500	3,500
1985	8,500	8,500	-	5,000	3,500
Streets & Rights-of-Way					
1930	14,000	13,000	1,000	3,000	10,000
1940	15,000	14,000	1,000	4,000	10,000
1950	25,000	24,000	1,000	10,000	14,000
1960	38,500	37,000	1,500	22,000	15,000
1985	89,500	86,500	3,000	70,000	16,500
Total Developed					
1930	46,000	43,240	2,760	12,140	31,100
1940	52,350	49,330	3,020	16,700	32,630
1950	77,000	73,720	3,280	30,920	42,800
1960	111,300	107,200	4,100	59,900	47,300
1985	235,450	227,500	7,950	175,700	51,800
Other Public & Semi-Public					
1930	505,000	5,000	500,000	5,000	-
1940	505,000	5,000	500,000	5,000	-
1950	505,000	5,000	500,000	5,000	-
1960	505,000	5,000	500,000	5,000	-
1985	505,000	5,000	500,000	5,000	-
Non-Urban & Vacant					
1930	814,760	304,460	510,300	278,920	25,540
1940	808,410	298,370	510,040	274,360	24,010
1950	783,760	273,980	509,780	260,140	13,840
1960	749,460	240,500	508,960	231,160	9,340
1985	625,310	120,200	505,110	115,360	4,840
Total Area	1,365,760	352,700	1,013,060	296,060	56,640

TABLE 3: PERCENTAGE DISTRIBUTION OF LAND USE AREA, BY TYPE OF USE, KING COUNTY: 1930, 1940, 1950, 1960 AND 1985

	Percent of Land Area									
	King County		King County Urban Area		Rest of King County		KCUA Excluding Seattle		Seattle	
Year	% of Total	% of Developed	% of Total	% of Developed	% of Total	% of Developed	% of Total	% of Developed	% of Total	% of Developed
Residential										
1930	1.17	34.78	4.25	34.69	.10	36.24	1.01	24.71	21.19	38.59
1940	1.40	36.68	5.10	36.49	.12	39.74	1.69	29.94	22.95	39.85
1950	2.29	40.65	8.51	40.69	.12	39.63	4.05	38.81	31.78	42.06
1960	3.40	41.78	12.76	41.98	.15	36.59	8.44	41.74	35.31	42.29
1985	7.94	46.04	29.77	46.15	.34	42.77	28.04	47.24	38.84	42.47
Commercial										
1930	.16	4.78	.61	4.95	.01	2.17	.32	7.74	2.12	3.86
1940	.18	4.58	.66	4.72	.01	2.32	.34	5.99	2.35	4.07
1950	.23	4.02	.86	4.10	.01	2.44	.34	3.30	3.53	4.67
1960	.28	3.41	1.05	3.45	.01	2.44	.47	2.34	4.06	4.86
1985	.48	2.78	1.79	2.77	.02	3.14	1.35	2.28	4.06	4.44
Industrial										
1930	.40	11.74	1.42	11.56	.04	14.49	.74	18.12	4.94	9.00
1940	.46	12.03	1.67	11.96	.04	13.24	.98	17.37	5.30	9.19
1950	.51	8.96	1.81	8.68	.05	15.24	1.08	10.35	5.65	7.48
1960	.62	7.64	2.27	7.46	.05	12.19	1.52	7.51	6.18	7.40
1985	.84	4.88	3.12	4.83	.05	6.29	2.36	3.98	7.06	7.72
Public & Semi-Public Residential Oriented										
1930	.27	8.04	.96	7.86	.03	10.87	.34	8.24	4.24	7.72
1940	.30	7.93	1.08	7.70	.03	11.59	.44	7.78	4.41	7.66
1950	.34	6.10	1.22	5.83	.04	12.20	.57	5.50	4.59	6.07
1960	.51	6.29	1.84	6.06	.05	12.20	1.18	5.84	5.30	6.34
1985	.81	4.67	2.89	4.48	.08	10.06	2.26	3.81	6.18	6.76
Public & Semi-Public Non-Residential Oriented										
1930	.34	10.23	1.33	10.87	-	-	.67	16.47	4.78	8.68
1940	.39	10.12	1.50	10.74	-	-	.84	14.97	4.94	8.58
1950	.44	7.79	1.70	8.14	-	-	1.01	9.70	5.30	7.01
1960	.51	6.29	1.98	6.53	-	-	1.18	5.84	6.18	7.40
1985	.62	3.61	2.41	3.74	-	-	1.69	2.85	6.18	6.76
Streets & Rights-of-Way										
1930	1.03	30.43	3.69	30.07	.10	36.23	1.01	24.72	17.66	32.15
1940	1.10	28.66	3.96	28.39	.10	33.11	1.35	23.95	17.66	30.65
1950	1.83	32.48	6.80	32.56	.10	30.49	3.38	32.34	24.72	32.71
1960	2.83	34.59	0.49	34.52	.15	36.58	7.43	36.73	26.48	31.71
1985	6.55	38.02	24.52	38.03	.30	37.74	23.65	39.84	29.13	31.85
Total Developed										
1930	3.37	100.00	12.26	100.00	.28	100.00	4.09	100.00	54.93	100.00
1940	3.83	100.00	13.99	100.00	.30	100.00	5.64	100.00	57.61	100.00
1950	5.64	100.00	20.90	100.00	.32	100.00	10.43	100.00	75.57	100.00
1960	8.15	100.00	30.39	100.00	.41	100.00	20.22	100.00	83.51	100.00
1985	17.24	100.00	64.50	100.00	.79	100.00	59.35	100.00	91.45	100.00
Other Public & Semi-Public										
1930	36.98	-	1.42	-	49.36	-	1.69	-	-	-
1940	36.98	-	1.42	-	49.36	-	1.69	-	-	-
1950	36.98	-	1.42	-	49.36	-	1.69	-	-	-
1960	36.98	-	1.42	-	49.36	-	1.69	-	-	-
1985	36.98	-	1.42	-	49.36	-	1.69	-	-	-
Non-Urban & Vacant										
1930	59.65	-	86.32	-	50.36	-	94.22	-	45.07	-
1940	59.19	-	84.59	-	50.34	-	92.67	-	42.39	-
1950	57.38	-	77.68	-	50.32	-	87.88	-	24.43	-
1960	54.87	-	68.19	-	50.23	-	78.09	-	16.49	-
1985	45.78	-	34.08	-	49.85	-	38.96	-	8.55	-
Total Area	100.00	-	100.00	-	100.00	-	100.00	-	100.00	-

TABLE 4: RATE OF INCREASE: POPULATION AND TOTAL DEVELOPED LAND, KING COUNTY BY DECADES, 1930-1960, AND 1960-1985

	Percent Increase									
	King County		KCUA		Rest of King County		KCUA Excluding Seattle		Seattle	
Decade	Population	Land	Population	Land	Population	Land	Population	Land	Population	Land
1930 - 1940	8.95	13.80	8.84	14.08	11.16	9.42	40.68	37.56	4.03	4.91
1940 - 1950	45.14	47.08	47.12	49.44	5.43	8.60	124.14	85.14	31.38	31.16
1950 - 1960	27.55	44.54	27.83	45.41	19.84	25.00	90.15	93.72	6.13	10.51
1960 - 1985	76.47	111.54	74.90	112.22	123.50	93.90	186.88	193.32	5.00	9.51

APPENDIX B: SELECTED REFERENCES

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File No.

10.00 Meetings on Comprehensive Plan with Planning Commission

10.10 List of Base Maps and Basic Data Maps in Planning Department Map Files

10.11 Land Development Plan for King County (schematic approach - Puget Sound Region)

10.12 Development Goals for County - Examination of Existing Problems

10.13 A Method of Delineating Planning and Statistical Areas for King County

10.20 Land Use, Measurement of Existing, King County, 1960

10.21 Land Use Projections, by Planning Areas, by Type of Use, 1985 and Foreseeable Capacity

10.22 Business Areas, Existing Mapped Distribution and Number of Uses, King County, 1962

10.23 Shopping Center Studies, Existing Centers, King County, 1963

10.24 General Commercial Uses, Existing Mapped Distribution and Amount of Land Occupied, King County, 1962

10.25 Residential Use; Amount, Location, and Criteria for, 1962

10.26 Residential Land, Lot Area; Studies of Recent Subdivision Activity

10.27 Lot Slope Control Policy

10.28 Multiple Residential Structures, Trend and Distribution of, King County, 1962

10.29 Industrial Land Use, Distribution of and Area Occupied by, King County, 1963

10.30 Age Distribution of Population, by Planning Areas, King County; 1930, 1940, 1950, 1960

10.31 Distribution of School Age Children, King County, by 5-Year Intervals; 1960 - 1985

10.32 Number of Housing Units by Half-Section, Census Tract, and Statistical Areas, Yearly from April 1, 1960

10.50 Bibliography: Community-Junior College Study, prepared May, 1961

10.51 School District Organization and Consolidation, King County

10.52 School Data Sheets, by School District, King County

10.60 Vacant and Non-urban Land Survey, King County

10.61 Inventory of Publicly Owned Land, King County

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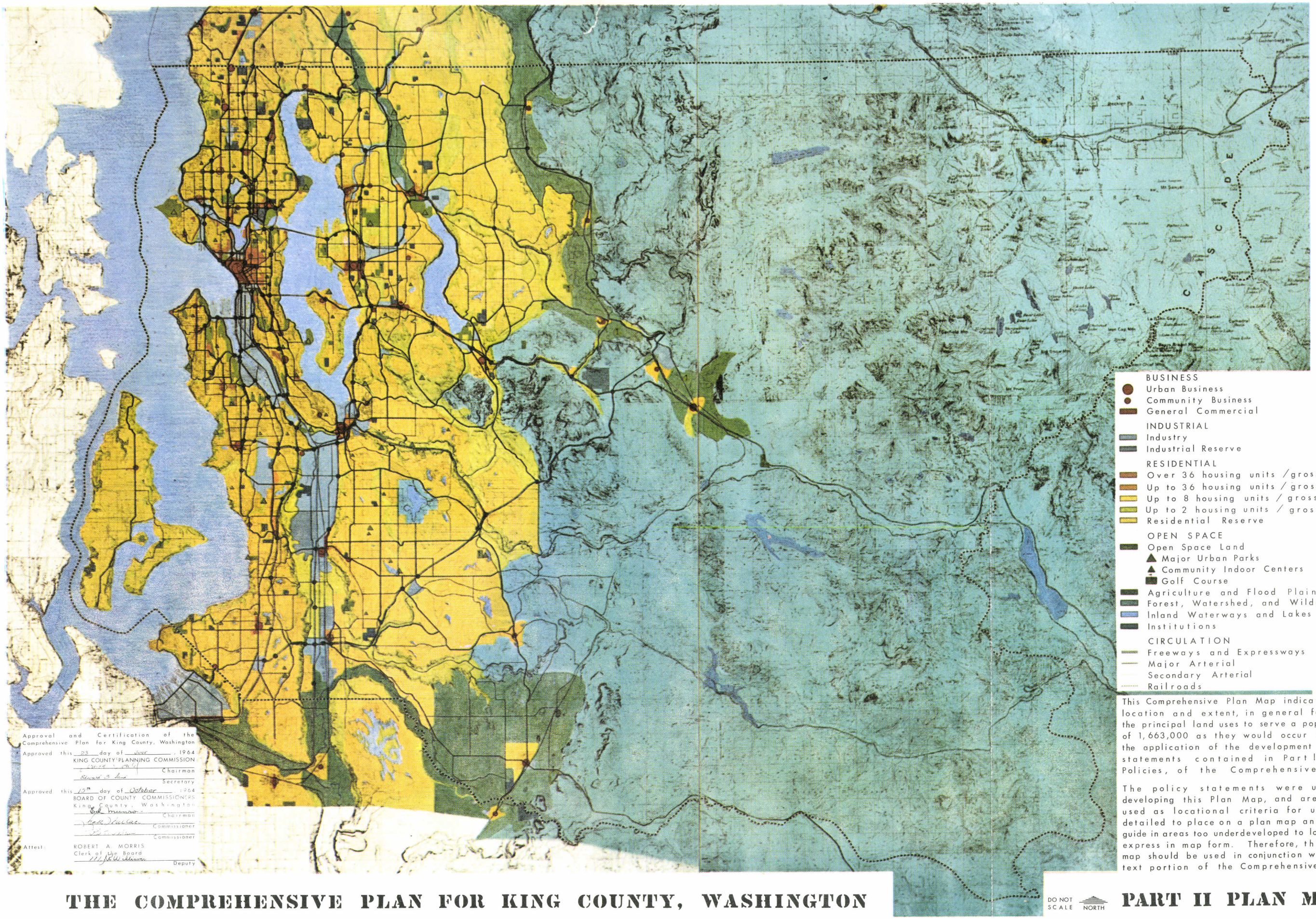
PART II

PLAN MAP

Comprehensive Plan for King County



BUSINESS
- Urban Business
- Community Business
- General Commercial

INDUSTRIAL
- Industry
- Industrial Reserve

RESIDENTIAL
- Over 36 housing units / gross acre
- Up to 36 housing units / gross acre
- Up to 8 housing units / gross acre
- Up to 2 housing units / gross acre
- Residential Reserve

OPEN SPACE
- Open Space Land
- Major Urban Parks
- Community Indoor Centers
- Golf Course
- Agriculture and Flood Plain
- Forest, Watershed, and Wilderness
- Inland Waterways and Lakes
- Institutions

CIRCULATION
- Freeways and Expressways
- Major Arterial
- Secondary Arterial
- Railroads

This Comprehensive Plan Map indicates the location and extent, in general form, of the principal land uses to serve a population of 1,663,000 as they would occur through the application of the development policy statements contained in Part I, Plan Policies, of the Comprehensive Plan.

The policy statements were used in developing this Plan Map, and are to be used as locational criteria for uses too detailed to place on a plan map and as a guide in areas too underdeveloped to logically express in map form. Therefore, this plan map should be used in conjunction with the text portion of the Comprehensive Plan.

Approval and Certification of the Comprehensive Plan for King County, Washington

Approved this 23 day of June, 1964
KING COUNTY PLANNING COMMISSION
Chairman
Secretary

Approved this 19th day of October, 1964
BOARD OF COUNTY COMMISSIONERS
King County, Washington
Chairman
Commissioner
Commissioner

Attest: ROBERT A. MORRIS
Clerk of the Board
Deputy

THE COMPREHENSIVE PLAN FOR KING COUNTY, WASHINGTON

DO NOT SCALE — NORTH

PART II PLAN MAP

RESOLUTION NO. 28742

APPROVAL AND CERTIFICATION OF THE COMPREHENSIVE PLAN FOR KING COUNTY, WASHINGTON

Approved this 23 day of JUNE, 1964

KING COUNTY PLANNING COMMISSION

Chairman

Edward B. Sand
Secretary

Approved this 13th day of October, 1964

BOARD OF COUNTY COMMISSIONERS
King County, Washington

Chairman

Commissioner

Commissioner

ATTEST: ROBERT A. MORRIS
Clerk of the Board

By: M. R. Williams
Deputy

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Edward B. Sand, Planning Director

Jerry R. Etzel	Principal Planner
Marion E. Langstaff	Senior Planner
Irving Berteig	Associate Planner
Paul Gregory	Associate Planner
Rajanikant Joshi	Associate Planner (resigned)
William H. Foott	Junior Planner
Gerald D. Probst	Junior Planner
Ralph Colby	Junior Planner
Ted Larson	Planning Aid
Stan Unger	Planning Aid
Joseph L. Antic	Cartographer
Gary Carlos	Lithographer
Gerald W. Marbett	Zoning Administrator
Richard H. Lake	Zoning Examiner
H. A. Thomas	Zoning Technician
William E. Lemieux	Zoning Technician
Derrill T. Bastian	Legal Advisor
Jean M. Butkovich	Administrative Assistant
Florence Winship	Secretary-Stenographer
Joanne Parsons	Stenographer
Nancy Mathews	Stenographer
Melinda Eng	Stenographer (resigned)