COMPREHENSIVE PLAN
FOR THE
NORTH CENTRAL DISTRICT
OF
SKAGIT COUNTY
WASHINGTON

NOVEMBER 1973

SKAGIT COUNTY PLANNING DEPARTMENT
120 W. KINCAID ST.
MOUNT VERNON, WASHINGTON 98273

NOVEMBER 1973

C O M P R E N E N S I V E P L A N
F O R T H E
N O R T H C E N T R A L D I S T R I C T
O F
S K A G I T C O U N T Y
W A S H I N G T O N

SKAGIT COUNTY PLANNING DEPARTMENT

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Chapter 172, 1st Extraordinary Session, Laws of 1973 amended RCW36.70.320 (known as the Planning Enabling Act) to allow comprehensive planning on a District or less than entire county basis.

The Skagit County Planning Department has adopted the District approach to comprehensive planning to facilitate the preparation and adoption of current, viable plans specifically tailored to the needs and objectives of each of the several separate and distinct geographical areas of the county.

The six Planning Districts selected for Skagit County are generally identified as follows:

North Central District - including the area surrounding Sedro Woolley

Northwest District - including the area surrounding Burlington

Island District - including the area surrounding Anacortes

Southwest District - including the area surrounding LaConner

South Central District - including the area surrounding Mount Vernon

Upriver District - including the area surrounding Concrete

It is expected that after the North Central Plan is completed and adopted in late 1973, two additional Districts will be selected as Planning Areas for 1974, two for 1975, and the last scheduled for completion in 1976.

It should also be noted that Chapter 172, 1st Extraordinary Session, Laws of 1973, which amended the Planning Enabling Act as mentioned above, does not invalidate previous Comprehensive Plans or those portions of previous Comprehensive Plans covering areas other than the Planning District. Since there are a number of areas which can best be considered on the basis of a countywide plan, the District Plan should be considered.

to be a supplement to the Countywide Comprehensive Plan adopted in 1968. In areas wherein there is an apparent conflict, the District Plan takes precedence. When all six districts plans are completed, the new Comprehensive Plan will be considered complete and the 1968 Plan will then be superseded in its entirity.

0.4 FOREWORD

The North Central District Plan contained in this volume and illustrated in principle on the accompanying map, is the first in a series of six District Comprehensive Plans steming directly from the Comprehensive Land Use Planning Alternatives Program completed in 1973.

This series of six District Plans, when completed, will form an entirely new Comprehensive Plan for Skagit County.

0.5 SUMMARY - NORTH CENTRAL AREA COMPREHENSIVE PLAN

The North Central Comprehensive Plan described and evaluated in this document is an important milestone in Skagit County's planning program. This plan represents a culmination of several years effort to update and revise the Comprehensive Plan for Skagit County. This plan for the North Central area is the first in a series of revisions of Skagit County's Comprehensive Plan.

However, this plan for the North Central area does not represent a completion of the planning process for the North Central area. This plan will and should be in turn be amended and revised as community standards change. No comprehensive plan should be considered as the final answer to all land use problems and decisions, it can be a valuable and usable guideline through which decisions related to land use can be made. As with any guideline, this plan should be used regularly by decision makers in order to reap the best benefits a comprehensive plan can provide.

The recommendations contained in this plan can best be described by the following generalization:

1) The existing and future agricultural use of the floodplain should be provided with at least 20 year flood frequency protection.
2) The variety of lifestyle's available in the North Central area, both rural and urban, should be maintained or expanded in those areas where the physical environment and existing developments are compatible.
3) Development of the unprotected floodplain area should be stopped.
4) New development should be directed to floodsafe uplands of the North Central area.

5) Commercial goods and services should be provided by the traditional urban centers. Highway services only should be provided at key arterial intersections.
6) Industrial uses should be located near urban centers or in areas where the physical environment and existing or proposed land uses are conducive and compatible with the proposed industrial development.

This Comprehensive Plan will produce a pattern of development for the North Central area of Skagit County that will: 1) preserve the resource productive areas; 2) provide a variety of living environments, and 3) maintain control over the costs associated with community growth and improvement.

0.6 SUMMARY SHEET - NORTH CENTRAL E.I.S.

Nature of this report: Final Statement

Sponsor: Skagit County Commissioners
Howard Miller, Chairman
Skagit County Courthouse
Mount Vernon, WA 98273

Type of Proposed Action: Legislation

Official Title of Proposed Action and Summary of the Proposed Action:

North Central Skagit County Comprehensive Plan Amendment

The proposed legislative action will amend and revise a portion of the current and official Skagit County Comprehensive Plan. The portion for which the Comprehenisve Plan is being amended is approximated as the area between Interstate 5 and a north/south line drawn parallel to the westerly boundary of the Town of Hamilton, north of the Skagit River to the Whatcom-Skagit County borderline, excluding the area adjacent to and including the City of Burlington. This area contains approximately 175 square miles, all within Skagit County, Washington.

Summary of Environmental Impacts:

A Comprehenisve Plan, by its nature, is a permissive document in terms of potentially allowing a wide variety of land uses to occur. It is also restrictive in that adherence to the provisions, policies, and goals of a Comprehensive Plan will preclude a variety of land uses from occurring. Thus, there is a balance of the liabilities and benefits of a Comprehenisve Plan.

No comprehensive plan will have a direct environmental impact. A comprehensive plan does not develop projects, or prohibit, or promote, degradation of the environment directly. The various provisions,

policies, and goals of a comprehsnive plan will, upon implementation, affect the environment either beneficially or detrimentally. However, each specific development, or each consumption of land, at that project level, is the point in time or source at which environmental assessments and impact statements should be developed, issued, reviewed, and commented upon.

Comprehensive plans are not rigid, fixed documents, they are merely references of the various standards a neighborhood, community, or region has developed to guide the development of the areas, so as to provide an identifiable lifestyle and life quality, against which various forms of land development or use may be analyzed and evaluated. A comprehensive plan can and should change as community standards and goals change.

A list of environmental impacts of a comprehensive plan would include all of the aspects of that plan both in terms of all of the myriad types of activities it would condone for finite areas and all of the larger group of activities that would be precluded in finite areas.

The comprehensive plan will:

1. Allow substantial development of large land area for development of the following use activities:
   a. residential
   b. commercial
   c. industrial
   d. public
   e. agricultural
   f. forestry
2. Prevent many types of development and land use activities.
3. Provide minimum use standards for development and land use activites.
4. Allow habitat change for numerous indigenous species of flora and fauna.

Summary of Alternatives

1. Other Alternatives
   A. No Comprehensive Plan
      Comprehensive plans are required by the Revised Code of Washington, thus this alternative would require a change in state law which is

beyond the range of control of the Board of County Commissioners.

B. More Proscriptive Comprehensive Plan

A more proscriptive comprehensive plan could at an extreme preclude all forms of development and land use activities and could propose that as existing development and land use activities are amortized that the area they occupy be returned, or allowed to return, to its natural status.

C. More Liberal Comprehensive Plan

A more liberal comprehensive plan could allow any form of development to occur in any area, adjacent to any other developed or undeveloped area, in which any form of degradation or alteration of existing systems would be allowed.

2. Alternatives Within a Plan

A. For a discussion of the alternative for the North Central District refer to Maps O, P, Q, R, S, T, and Chapters 4 & 5 in this plan.

B. For additional information on planning alternatives, refer to Chapters VI & VII, pages 329-366 of the Comprehensive Land Use Planning Alternatives for the Skagit River Floodplain and Related Uplands.

3. Recommended Plan

A. For a discussion of the recommended plan refer to Chapter 6 of the North Central Area Comprehensive Plan.

B. For a graphic representation of the North Central Area Comprehensive Plan, see Map U.

Review Period: 15 days November 1 - November 15, 1973

Recipients of the Document:
1) Skagit County Planning Commission
2) Skagit Regional Planning Council
3) Skagit County Board of Commissioners

0.7 LIST OF DOCUMENTS

1) Comprehensive Plan - Skagit County, January 1968.

2) Comprehensive Land Use Planning Alternatives for the Skagit River Floodplain and Related Uplands, Skagit Regional Planning Council, April 1973.

3) Skagit County Water, Sewerage, and Drainage Facilities Plan, Skagit Regional Planning Council, June 1970.

4) Skagit County - A Strategy for Environmental Protection and Economic Development, The Urban Land Institute, November 1972.

5) Skagit County Agriculture: An Economic Mainstay, Department of Agriculture, Washington State University.

6) A Tourist and Recreation Strategy for Skagit County, Northwest American.

7) The North Cascades Highway, Its Impact on Local Community Economics, Community Development Services.

8) Comprehensive Plan for the Sedro Woolley School District, Johnston, Campanella, Murakami, Brummit, and Company, May 1972.

9) Puget Sound and Adjacent Waters Study, Pacific Northwest River Basins Commission, 1970.

10) Soil Survey - Skagit County Washington, U.S. Dept. of Agriculture, Soil Conservation Service, January 1960.

11) Solid Waste Management Plan, Skagit County Planning Department, 1971.

12) North Puget Sound Region for 1971, A New Plan for Law and Justice, Northwest Regional Council.

13) Overall Economic Development Plan (Skagit County Washington), Skagit County Development Association, 1972.

14) Skagit County Emergency Services Operations Plan, Skagit County Department of Emergency Services, October 1972.

15) Skagit County Comprehensive Park and Recreation Plan, Jongejan, Gerrard, Associates, 1973.

0.8 PREAMBLE FOR THE SKAGIT COUNTY COMPREHENSIVE PLAN

On September 10, 1968, the Skagit County Board of County Commissioners adopted a revision of its Comprehensive Plan which stated as follows:

> "This text together with the Comprehensive Plan-Map, the 'Analysis of Population in Skagit County', the 'Skagit County Economic Base', October, 1964, 'Parks and Recreation', A Plan for Skagit County, comprises the Comprehensive Plan for Skagit County."

Chapter II, entitled "Purpose and Intent" of the Comprehensive Plan at Page 9 explained the intent of Skagit County as follows:

> This Plan should be periodically reviewed by the Planning Commission and said Board. In addition to adding more detailed plans, it may be necessary from time to time to change basic features of the Plan, as economic, social or technological changes indicate a better basic pattern of land use or a need for re-evaluation of planning principles and objectives.

The Washington State Planning Enabling Act, RCW 36.70.340 provides that:

> When the Comprehensive Plan containing the mandatory subjects as set forth in RCW 36.70.330 shall have been approved by motion by the Board and certified, it may thereafter be progressively amplified and augmented in scope by expanding and increasing the general provisions and proposals for all or any one of the required elements set forth in RCW 36.70.330 and by adding provisions and proposals for the optional elements as set forth in RCW 36.70.350. The Comprehenisve Plan may also be amplified and augmented in scope by progressively including more completely planned areas consisting of natural homogeneous communities, distinctive geographic areas, or other types of districts having unified interests within the total area of the county...

Skagit County recognizes that its Comprehenisve Plan must be studied continually and revised whenever new technology, techniques and other data indicate that the best interests of the County, or any portion thereof, will be served thereby.

1 PHYSICAL ENVIRONMENT

An inventory of the physical characteristics of an area is the starting point for the development of a Comprehensive Planning effort; the planners must examine the physical environment before they can actually begin to develop planning alternatives.

The physical environment is a complex of many interrelated elements. Often times action upon one seemingly isolated element has subsequent impacts upon other elements. Thus, it is important to know these elements and their relationships with other elements, including man.

The physical characteristics portion is composed of the following sections:

1.1) Geology
1.2) Soils
1.3) Septic Suitability
1.4) Slope
1.5) Floodplain

The diverse physical environment can be mapped and discussed for specific areas, such as the North Central Planning area.

The value of an analysis of the Physical Environment is that those responsible for planning decisions can more clearly understand the relationship between the consumption of land areas and the effects of that consumption upon the other elements of the environment man resides in.

1.1 GEOLOGY

1.1.1 Geologic Forms

The geology of this area is composed of seven basic and distinct geologic forms. These are:

- Qa — Alluvium - an unconsolidated silt sand and gravel
- Qg — Undivided Glacial Drift - whole masses of glacial sand, gravel and till, and some recent alluvium
- Qg_1 — Younger Glacial Drift - an outwashed till, sorted and unsorted sands, gravel, silt and clay
- Qg_1o — Advance and Recessional Glacial Outwash - a glacial alluvial fan upon which are spread layers of sands and gravels
- TKc — Paleocene Cretaceous Non-Marine Rocks - a medium to coarse grained conglomerate and sandstone
- pT — Pre-Tertiary Sedimentary and Metasedimentary Rocks - an undivided depositional block, with some fault blocks of talc and schist
- pJph — Metamorphic Rock Low Grade Zone - are rocks of sedimentary or igneous derivation that have been altered by tremendous pressures and high temperature, accompanying mountain building

1.1.2 Geology Map

The geology map locates these geologic units in the planning area on a generalized basis. Refer to Map B.

1.1.3 Sub-area Analysis

The westerly portion of the North Central area consists mainly of younger glacial drift (Qg), that is undivided. This would include till, outwash, and associated deposits and sorted and unsorted sand, gravel, silt, and clay. It also includes some alluvium (Qa). Thus, the irregular topography,

rocky soils and varying percolation encountered on the westerly portion of the North Central area might be considered the products of glacial and related actions. The Samish River, swollen with glacial meltwater was able to cut into the sides of this hill forming strong meander scarps and a broader valley floor than would result from present flow volumes.

The Chuckanut Hill area, near Alger, is an arm of the Cascades that extends westward into the lowlands. It consists of pre-Tertiary sedimentary and metasedimentary rocks (pT), Paleocene-Cretaceous non-marine rocks (TKc), and Upper Jurassic-Lower Cretaceous sedimentary and volcanic rocks (JK). These include resistant ridge-forming sandstone, interbedded with erodible siltstones and shales.

The hills east of Alger are also a part of the Chuckanut extension, being composed of the same pre-Tertiary sedimentary and metasedimentary rocks (pT). The hills through which the Samish River meanders consist of younger glacial drift (Qg_1). The valley itself is an example of an abandoned outwash channel. It was made by a large meltwater stream in late Pleistocene time, probably during the Sumas Stade.

The portion of this area near the city of Sedro Woolley is mostly under the influence of the Skagit River. It has the characteristic flatness and alluvial substratum.

The Skagit River meanders through the Middle Skagit area constantly using its natural forces to change the form of the land. This is done by deposition, erosion, and flooding.

This area of the river has a multitude of bends, some of which are near towns. During enlargement of a bend, the river channel shifts toward the outer part of the bend, leaving a strip of relatively flat land, or floodplain, on the inner side of the bend. The floodplain is built of bars composed largely of sand and gravel brought as bed load scoured from the outsides of bends immediately upriver. Inundation of the floodplain from time to time allows finer silt and clay to settle out over the surface, adding to the floodplain height and covering the coarser alluvium beneath.

As lateral cutting by the river continues, the floodplain strips grow wider and presently join to form continuous belts along either side of the river. The cutting and filling proceeds to such an extent that the channel migrates here and there across the entire floodplain.

1.1.4 Planning Considerations

These geological considerations have a great effect on not only the density of development, but also the spatial array of that development to the land itself. Ground configuration and substratum determine how both the structures and their services (water, sewer, roads, etc.) are dispersed over the land. Historically, flat areas such as valley and river basins have been very susceptible to a grid pattern or development. This makes it easy to administer the land and to provide the necessary services, but all too often the resulting development has been regarded as monotonous, ugly, and depressing. The existence of a variety of landforms and resources in an area provide a natural base with which to plan a development pattern that enhances these attributes rather than ignoring them. The upland areas of Skagit County are well endowed with these attributes. Such things as a variety of hills and gullies, streams, lakes, trees, and spectacular views should be considered as design resources which are non-renewable if not used in a proper design context.

1.1.5 Supplemental Information

A broader evaluation of the planning implications of geologic consideration is presented in Comprehensive Land Use Planning Alternatives for the Skagit River Floodplain and Related Uplands, which is a supplement to this Comprehensive Plan for the North Central portion of Skagit County. The geologic topics covered in the above supplement are:

1) Climate and precipitation
2) Flora and fauna
3) Geologic factors affecting landforms
4) Mountain forming
5) Glaciation
6) Geology of specific areas
7) Planning implications
8) Mans relationship to the earth processes

Additional data is contained in the tables which deal with the following subject areas:

1) Movements of the land surface
2) Allowable bearing capacities of earth materials
3) Explanation of rocks of the study area
4) Divisions of geologic time
5) Pleistocene sequence in the Puget lowland

1.2 SLOPE

1.2.1 Element of Slope

Two main elements of slope that must be considered when examining the possibility of development are its steepness (slope %) and its aspect (the orientation of a sloping ground surface with respect to geographic north).

1.2.1.1 Slope Steepness

Slope steepness affects the rate at which precipitation is drained from the surface. On steep slopes surface runoff is rapid and water does not long remain available to plants. On gentle slopes, much of the precipitation can penetrate the soil and become available for prolonged plant use. The thickness of the soil may be lessened by the process of erosion. Thus, the characteristics of the soil itself may often be related to slope steepness.

The occurrence of certain geologic processes such as overland flow, earth flow, mud flow, landslides, rockfall, and soil creep are directly related to the steepness of the slope and thus effect the amount to which a certain piece of land can be developed. The eroding capacity of these processes increases directly with the angle of the slope.

1.2.1.2 Slope Aspect

The second element of slope which may have an effect on its use is slope aspect. As stated earlier, this concept is involved with the direction in which the slope is facing. It has direct influence upon plants by increasing or decreasing their exposure to sunlight and prevailing winds. Upon divides, peaks, and ridge crests the soil tends to be drier because of rapid drainage and because the surfaces are more exposed to sunlight and to drying winds. Generally speaking, slopes facing the sun have a warmer, drier environment than slopes facing away from the sun. Another example might be the location of a ski area. Some slopes have more snow, due in part to their slope aspect.

at a point lying between Sections 21 and 22, Range 6, Township 35, and continuing north to the County Line (generally between Lyman and Hamilton)

NOTE: The North Central Planning District does not include the city of Sedro Woolley or Lyman

2) Upriver:

North - Skagit County Line

South - Skagit County Line

West - A line running between county lines, parallel to a north/south line between Sections 21 and 22, Range 6, Township 35 (generally between Lyman & Hamilton)

East - Skagit County Line

3) South Central

North - Skagit River

South - Skagit County Line

West - South along the Skagit River from its intersection with I-5

East - A line running south from the Skagit River beginning at a point lying between Sections 21 and 22, Range 6, Township 35 (generally between Lyman and Hamilton)

4) Southwest:

North - A line running west beginning at a point between Sections 12 and 13, Range 3, Township 34, generally south of Avon

South - Skagit County Line

West - Western edge of Swinomish Channel

East - South along the Skagit River from its intersection with I-5

5) Northwest:

North - Skagit County Line

South - Skagit River, to a line running west beginning at a point between Sections 12 & 13, Range 3, Township 34

1.2.2 Slope Map

For discussion purposes, slope has been classified and mapped into five categories. These are:

0-3%	15-30%
3-8%	30+%
8-15%	

These categories are derived from the Soil Conservation Service, and the United States Coast and Geodetic Survey map of the planning area.

The slope map locates these categories of slope on a generalized basis in the North Central area. Refer to Map E.

1.2.3 Sub-area Analysis

The Bow/Alger/Samish Proper is an area typified by a mixture of slopes; the areas along the Samish River and its floodplain that are virtually flat. There are other areas, such as the Chuckanut Hills, the areas just north and east of Alger, Anderson Mountain, and in various places along the river that are steep, with slopes of 30% or more. There are, however, areas of moderate slope scattered throughout this region. The Alger vicinity and southward has a good variety of slope configuration.

Most of the city of Sedro Woolley and the area directly west of it are in the Skagit Floodplain and consequently in 0-3% slope category. The areas north and south of the city, however, show a variety of slopes suitable for urbanization that are above the floodplain. The northern most segment of this area, north of Prairie, is fairly steep, being mostly 30% or better.

The area in and around the Skagit River Valley from Sedro Wooley to Concrete is known as the Middle Skagit Area. East of Sedro Woolley the river valley forms a narrow swath of fairly level land with a slope range of approximately 0-3%. The slope of the hills on the south side of the river tends to be more abrupt than that on the north, generally being 30% or better. The hills on the north side of the river valley, especially near Sedro Woolley, have a fairly substantial amount of area with 3-15% slope.

1.2.4 Planning Implication

The numerous mountains, hills, and valleys of Skagit County are a product of many forces over a certain expanse of time. However, the general shapes and slopes that have been created were probably most influenced by the last glaciation, the constant flow of the Skagit River System and the movements of the earth's crust. By analyzing these slopes, one can understand both their potentials and their weaknesses and the connection in the proper functioning of our ecosystem.

1.2.5 Supplemental Information

For more detailed information of the aspect of the physical composition of the North Central planning area, Skagit Land Use Alternatives has a more extensive discussion of the planning implications of slope and of view characteristics associated with topographic features of this area.

View is also a factor of land use planning that is dealt with in the above mentioned section. The other areas of emphasis discussed are:

1) Slope steepness
2) Slope steepness and accelerated land erosion
3) Slope aspect
4) View characteristics
5) Slope analysis of the study area

2.4 HOUSING

2.4.1 Orientation

Housing, much like population, is a regional characteristic which can best be evaluated for an entire political subdivision. It is difficult to meaningfully evaluate housing supply and demand characteristics for a concise area because the housing market is fluid.

For this reason, the housing element for the North Central area must rely on an analysis of housing for the entire Skagit Regional Planning area. Complementing this housing element is the land use analysis preceding this chapter. The combination of land use patterns and housing characteristics provides a sound basis for projecting housing needs and hence, potential land use patterns.

2.4.2 Housing Types

Housing in the Skagit Regional Planning area is composed primarily of detached single family residential structures occupying separate and legally defined parcels of property with a sparse scattering of varying densities of multi-family residential structures. Housing in the planning area occupies larger lots than does housing in the State of Washington or the United States, as would be expected a semi-rural area.

Housing at the national and state level is undergoing a substantially more rapid change than is housing in the area.

The greatest areas of change appear to be in the rate of economic growth and the rate of change of the number of persons per household. This area is not experiencing the same rate of economic growth as the State of Washington or the United States; our economy is expanding at a slower rate of increase than the state or the nation. The number of persons per household for state and nation are decreasing more rapidly than average household size for this area. These two factors have a stablizing effect on the housing market of the planning area and on the lifestyle of the

residents of the area. This stability will allow for a steady and measured improvement in the housing inventory of the study area.

One of the more significant features of dissimilarity between this planning area and the State of Washington is the rate of change of the urban-rural, incorporated-unincorporated population trend. As can be seen in the following chart series, there has been a general expansion of population and housing in both incorporated and unincorporated urban areas in Washington State. However, in this planning area the rate of urban growth is limited. Statewide rural population has remained relatively stable for both incorporated and unincorporated areas, while the rural population in the Skagit area reflects a considerable decrease. The slight growth of urban incorporated areas of this area is due primarily to annexations by existing communities of the fringe area adjacent to communities and the building activity in these areas.

While the population in Skagit County has not expanded significantly in the last decade, the number of occupied housing units has expanded from 15,759 to 17,185, a change of 1,426 more occupied housing units. However, the total number of housing units has only changed by 215 units, from 19,360 in 1960 to 19,575 in 1970. This indicates: 1) a higher rate of occupancy and thus greater utilization of the housing resources; 2) a smaller average household size. It can also be assumed that a substantial number of deteriorated and/or delapidated structures have been demolished in the last decade, because approximately 1,100 building permits for new residences have been issued in that period and the total housing supply has increased only by 215 residential units.

2.4.4 Skagit Regional Housing Supply Data

To establish a consistent data base for the analysis of housing characteristics in the Skagit Planning area, information from the U.S. Department of Commerce, Bureau of Census, 1970 census data was used. Additional information on housing characteristics was provided from two sources: 1) the Skagit County Housing Study produced by the Skagit County Agriculture Extension Office, and 2) a questionnaire mailed to firms involved with building and selling residences in the Skagit area.

2.4.3 HOUSING CHARACTERISTICS IN THE NORTH CENTRAL AREA BY CENSUS DIVISION

	3	4	5	6	12	SW	TOTAL
1. Total Population	1,475	2,571	983	989	2,249	4,598	12,865
2. Total Housing Units	537	852	20	318	722	1,775	4,224
3. Total Occupied Units	488	793	14	291	691	1,670	3,947
4. Occupancy Rate	.909	.931	.700	.915	.957	.940	.934
5. Occupancy Status (Owner) %	403 82.5	681 85.9	-0- 00.0	232 79.8	579 83.8	1,215 72.8	3,110 78.7% O.U.
6. Occupancy Status (Renter) %	85 17.5	112 14.1	14 100.0	59 20.2	112 16.6	455 27.3	837 21.2% O.U.
7. Seasonal & Migrant (Vacant) % Total H. U.	-0-	1	-0-	1	2	-0-	4 .001%
8. Average Family Size	3.46	3.22	70.2	2.93	3.25	3.61	14.45
9. Average Value Unit Owner Occupied	10,630	16,760	-0-	15,800	20,190	14,460	12,973
10. Mobile Home - Trailer	35	62	-0-	43	60	35	235
11. Average Monthly Rent Renter Occupied	45	68	65	61	79	69	65
Occupied Unit by No. Persons/Unit 1	75	102	2	42	77	393	691
2	179	247	5	87	224	551	1,293
3	75	127	2	44	113	250	611
4	59	143	3	41	115	222	583
5 & Up	100	171	2	77	137	254	741

HOUSING CHARACTERISTICS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	MU	A	SW	B	TOTAL
1. TOTAL POPULATION	1018	1174	1475	2571	983	989	1938	284	636	1040	1725	2249	1337	2269	2025	1103	3238	613	1474	8804	7701	4598	3138	52,381
2. TOTAL HOUSING UNITS	479	465	537	852	20	318	774	266	240	358	564	722	445	1288	714	372	1109	301	684	3267	2860	1775	1159	19,575
3. TOTAL OCCUPIED UNITS	322	377	486	793	14	291	632	111	219	324	550	691	416	673	653	328	1032	195	528	3083	2653	1670	1106	17,185
4. OCCUPANCY RATE	.672	.810	.909	.931	.700	.915	.817	.417	.891	.905	.975	.957	.934	.523	.914	.881	.931	.647	.772	.944	.929	.940	.955	.878
5. OCCUPANCY STATUS % (OWNER)	218	283	403	681	-0-	232	488	72	142	273	433	579	313	528	510	241	814	166	412	2000	2022	1215	759	12,798
	67.7	75.2	82.5	85.9	00.0	79.8	77.3	64.9	64.9	84.2	78.7	83.8	75.2	78.4	78.1	73.4	79.6	85.1	78.0	64.8	76.2	72.8	68.6	74.4% O.U.
6. OCCUPANCY STATUS % (RENTER)	104	94	85	112	14	59	144	39	77	51	117	112	103	145	143	87	218	29	116	1083	631	455	347	4351
	32.2	24.9	17.5	14.1	100.0	20.2	22.7	35.1	35.1	15.7	21.2	16.6	24.7	21.5	21.9	26.6	21.1	14.8	21.9	33.6	23.7	27.3	31.4	25.5% O.U.
7. SEASONAL & MIGRANT (VACANT) % TOTAL H. U.	-0-	-0-	-0-	1	-0-	1	10	144 54.1%	-0-	-0-	-0-	2	2	457 35.4%	2	20	23	-0-	2	16	1	-0-	-0-	681 3.47%
8. AVERAGE FAMILY SIZE	3.16	3.25	3.46	3.22	702	2.93	3.51	3.26	3.27	3.12	3.37	3.25	3.15	2.22	3.44	2.10	3.61	3.11	3.58	3.44	3.44	3.61	2.83	3.28
9. AVERAGE VALUE UNIT OWNER OCCUPIED	10,710	9,590	10,630	16,760	-0-	15,800	17,660	26,440	16,620	24,820	18,300	20,190	16,430	19,120	21,520	18,420	19,630	21,060	26,920	19,490	17,160	14,460	15,190	17,775
10. MOBILE HOME - TRAILER	7	12	35	62	-0-	43	36	-0-	5	21	20	60	36	19	67	5	48	5	49	103	28	35	20	716
11. AVERAGE MONTHLY RENT RENTER OCCUPIED	53	50	45	68	65	61	72	60	81	85	91	79	71	74	84	75	76	78	90	90	76	69	89	76
OCCUPIED UNIT BY NO. PERSONS / UNIT. 1	55	47	75	102	2	42	77	30	37	36	80	77	68	87	109	41	165	35	69	740	502	393	256	3129
2	98	139	179	247	5	87	95	51	72	112	185	224	127	202	207	104	344	80	238	974	950	551	380	5581
3	42	61	75	127	2	44	226	12	40	46	75	113	63	78	100	51	168	19	84	504	421	250	160	2761
4	45	52	59	143	3	41	197	10	39	59	97	115	62	126	102	47	126	23	64	422	421	222	131	2606
5 & UP	78	78	100	171	2	77	114	8	31	71	113	187	96	180	135	85	229	48	73	443	433	254	179	4085
SOUND NUMBER	379	707		1,042			1,483				1,545			1,820			1245		599	3000	2576	1475	1092	17,124
SOUND % TOTAL	79	71		88			90				90			91			88		88	91	90	83	94	89
DETERIORATING NUMBER	90	245		101			110				110			126			95		59	206	204	218	66	1634
DETERIORATING % TOTAL	19	24		8			7				6.4			6			7		9	6	7	12	6	84
OCCUPIED DILAPIDATED NUMBER	7	20		30			25				36			42			42		18	24	36	52	1	342
OCCUPIED DILAPIDATED % TOTAL	*	2		2.5			1.5				2.1			2			3		2	.7	1.2	3	*	1.7
UNOCCUPIED DILAPIDATED NUMBER	3	30		16			46				17			14			28		8	37	44	26	-0-	276
UNOCCUPIED DILAPIDATED % TOTAL	*	3		1.3			2.8				1.0			1			2		1	1.1	1.5	1.4	*	1.4 (100.5)
REMODELS & REPAIRS NEEDED (ESTIMATED)	100	295		147			188				165			182			165		85	267	284	296	67	2257
NEW CONSTRUCTION NEEDED	48	108		112			182				179			209			74		73	430	334	185	115	2084

A table of housing characteristics by census division and municipality is presented on the preceding page.

The significant conclusions which can be drawn from this summary of housing characteristics are as follows:

1. There were 52,381 residents in Skagit County in 1970.
2. There were 19,575 dwelling units in Skagit County in 1970.
3. 17,185 of the 19,575 dwelling units were occupied.
4. The average household size was 3.28 persons per dwelling unit.
5. The occupancy rate was approximately 88%.
6. Of the occupied units, 12,798 (or approximately 74%) were owner occupied.
7. There were 4,351 rental occupied units, or approximately 26%.
8. The average value of the owner occupied units was $17,775.
9. The average monthly rental was $76.
10. 3,129 dwelling units were occupied by one person.
11. 5,651 dwelling units were occupied by two persons.
12. 2,761 dwelling units were occupied by three persons.
13. 2,606 dwelling units were occupied by four persons.
14. 4,085 dwelling units were occupied by five or more persons.
15. Of the 19,575 dwelling units, 17,124 (or approximately 89%) were classified as sound.
16. 1,634 dwelling units (or approximately 8%) were classified as deteriorating.
17. 618 dwelling units (or approximately 3%) were classified as dilapidated.
18. There are 716 mobile homes used as dwelling units.
19. It was estimated that 2,257 homes were in need of repairs or remodeling.
20. Within the next 20 years, approximately 2,084 new dwelling units will have to be constructed if:
    a. the average household size remains stable.
    b. the projected population rate of 1% annually is achieved.
    c. a significant economic event doesn't occur in the planning area, or in the adjacent counties.

21. During the last four years the following number and types of subsidized housing has been developed for low income families in Skagit County:

Low Rent Public Housing

May 1971	20 units	family
Jan. 1971	50 units	family
Dec. 1971	60 units	elderly
Jan. 1971	50 units	elderly

Owner Occupied Insured Cases

Dec. 1970	46* units	family	236
1968 - 71	228 units	family	235*

* All classifications of "235"
* Nine of which received rent supplement

Percent of the low income population served low rent public housing:

Families	15% or 79 units
Elderly	16% or 110 units

Owner Occupied:

All "235"-"236" programs = 95% of projected need

As can be seen in a survey of residential units, the single family dwelling unit is the primary residential structure for the planning area. It may be assumed that this trend will continue. However, several factors are likely to alter this trend during the planning period. These factors are: 1) increased use of mobile homes as permanent residential structures; 2) expanded development of multi-family residential structures, and 3) the increased use of planned unit development versus conventional subdivisions. As land prices escalate, it can be assumed that there will be increased use of high density developments. However, the offsetting factor in this area is the seeming abundance of vacant and hence potentially developable land.

The most likely occurance with regard to housing for this planning area will be a slow continuation of the diversification of housing types. There will probably be continuing demand for rural and ranchette developments, as well as townhouses and garden apartments, especially near urbanized

portions of the planning area and near natural resources areas, such as lakes and shorelines.

2.4.5 Housing Goals and Objectives

The following housing goals and objectives were developed and adopted by the Skagit Regional Planning Council:

1. All residents in the planning area should be housed in safe, sanitary and sound dwelling units.
2. Housing diversity of the broadest possible type should be available to residents of this planning area.
3. Residential land uses should not be mixed with incompatible land uses.
4. All urban services should be provided to the residents of the planning area living in middle and high density residential areas.
5. Services of a rural nature should be provided to the residents of the planning area residing in low density areas.
6. The building code should be revised to stimulate either the repairs or eventual demolition of deteriorating housing.
7. Land use policies should continue to be promulgated by local government.
8. Financing of residential development should continue to be controlled by the state and federal government, especially with regard to the amount of available capital and the interest rate at which capital can be expended.
9. Private enterprise should be encouraged to fulfill the demands of the housing market.
10. Land use regulations should be revised and amended as technology modifies development techniques, so the planning area will benefit from state and federal experiments in residential development.
11. Publically financed housing should continue to be provided for the elderly and for low income families in such a manner that efficiently allows for diversity in housing.

2.4.6 Housing - Demand

It is estimated that the various real estate firms in the Skagit Planning area sold approximately 600 residential dwelling units in 1971. They were

predominantly single family residential structures that sold for an average price of $20,700. The single family units average approximately 1,200 square feet in area. The median home sold in 1971 was approximately three to five years old and was financed with monthly payments of approximately $160 per month.

The average sales of area real estate sales firms were approximately 18-22 houses per year for the last five years. Whereas each builder constructs an average of 14-16 residences annually, which is approximately 255 residential structures in 1971. Approximately 60% of the new homes built in 1971 were financed through "235" or "502" Programs. The conventially financed construction accounted for approximately 102 new residences; this figure corresponds very well with the Building Department estimate of approximately 1,100 new residences constructed in the last decade.

The two primary problems encountered in producing and selling houses mentioned by builders and relators were land use controls and septic problems; the secondary problems are financial and the availability of suitable structures and/or lots. Firms involved with housing project that the area around the central and more urban portion of the planning area and the Fidalgo-Anacortes area will develop more rapidly than the rest of the planning area.

2.2 POPULATION ANALYSIS AND PROJECTION

2.2.1 Orientation

The analysis of population for an area and the projection of future population for that area are basic to the planning process. However, the smaller the area under investigation the more difficult it is to adequately and accurately project population. The variables of population size, land use patterns, population distribution, and acceptable densities have a large effect on regional areas the size of Skagit County and within sub-regional areas, these variables can create immeasurable impact.

For the above reason, it is necessary to view sub-regional areas within the context of a larger geographic unit especially with regard to population and its projection.

2.2.2 Elements of Population Analysis

The analysis of the population of an area and the subsequent projections derived from its are basic to the planning process. The gauging of growth potential must be expressed in terms of the population it can be expected to sustain; i.e., the size of the population, its composition, and characteristics, and its spacial distribution.

2.2.2.1 Size

Population size gives an indication of the overall dimensions of the physical environment, which can be used as a measure of the growth potential for various categories of land use. With the addition of the time element, future trends in population size are estimated, and these become a part of the basis for estimating the dimensions and space needs for various land uses in the future. The qualitative aspect of population analysis is the study of its composition and characteristics. This includes such considerations as household sizes, sex, races, and nationalities, and income composition. This information is important when estimating residential space requirements for various dwelling types

consistent with existing and anticipated family sizes, income levels, and needs. It also assists in determining the amount of emphasis, both physically and socially, needed for recreation areas, schools, and other community facilities for all segments of the population - young, old, in between, singles, families, rich, poor, black, or white.

2.2.2.2 Population Distribution

The final element is population distribution. With accurate information of this nature, combined with other data, it can be determined how various land uses and facilities can and should be located in an area. Thus, population analysis not only aids in determining the proper land uses within a given period of time, but also helps to determine how these total space needs should be allocated to different parts of the planning area at a particular time.

2.2.3 Births, Deaths, and Migration

Population change can be a rather complex phenomenon. It can involve such things as annexation and consolidation. But for the most part, population change occurs by death, births, and migration. All types of forecasts take these things into consideration, either explicitly or implicitly.

Deaths tend to be the most stable of the three elements. It is interesting to note, however, the impact of modern medicine on the mortality rate of a population. Since the greatest advances in medicine the first half of the century were in the control of infectious diseases, especially those to which babies are particularly susceptible, the sharpest drop was in mortality of infants and young children. This, combined with a rather stable life expectancy, has a tendency to lower the overall death rate. The lower death rate and a fluctuating birth rate have caused the expotential type of growth in world population.

The birth rate has a major role in population analysis and can cause many changes in a specific population. Due to the more complex factors involved in birth rates, they are more difficult to speculate upon than death rates. It seems far easier to judge what can be done in lowering death rates in the future, than to judge what people may want to do

regarding the size of their families. Values and attitudes can be of a very elusive nature. Ideas about such things as marriage, birth control, adoption, family size, divorce, and abortion tend to change and this in turn has an effect on the birth rate.

Migration has become an important factor in population analysis because of the increase of mobility within the present American society. Migration is also difficult to estimate with any degree of certainty. Some causes of migration are:

1) The desire for better economic opportunities.
2) The attraction of milder, more suitable climates.
3) Desire for better living or housing conditions.
4) Movements for reasons of health, education, or retirement.

Of these reasons, the first is usually considered to be responsible for the major percentage of migration in most communities. Also, such basic considerations as prosperity or depression, peace or war, and so on, can have a very marked influence on the volume of net migration. The elements of births, deaths, and migration are important components of population change.

2.2.4 Characteristics and Trends Effecting Population in Skagit County

The total population of Skagit County at the time of the 1970 census was 52,381. This was a 2% increase over the 1960 population of 51,350. Of this 1970 population, 24,241, or 46.3% people lived in an urban environment, while 28,140, or 53.7%, maintained a rural type of existence. This trend is less significant than in previous years, for there has been a marked deceleration in both migration to the city and migration from the country in Skagit County.

Ninety-eight and one-tenth percent of the total 1970 population in Skagit County are white, only 1.9% were non-white. The non-white total increased only slightly from the previous decade and has deviated only .4% since 1940. Out of the 1970 total of 1,011, 650 people were American Indian, 182 were Mexican-American, 134 were Oriental, and 45 were Black. Minorities are examined by enumeration district and contrasted with the total population composition.

The average age of the population of Skagit County has increased in the last decade, while the number of young children has decreased. The county exceeds the state in the percentage of people over 45. This has an effect on the rate of natural increase and may have had a part in the decrease in the rate of population growth in the county. The decrease in the younger age groups can probably be attributed to the decreasing number of births since 1960. These trends can have an effect on the extent and type of community facilities to be provided in an area.

There has been a slight increase in the number of deaths over the last 10 years. This is probably due to the fact that the increased number of older people also causes an increase in the number of deaths. The people that were part of the big population surge of 1900-1910 are now reaching the average maximum age and thus dying at an increasing rate. This trend could increase if the county becomes more widely accepted as a possible location for retirement. The number of deaths can be seen as an element of population changes.

2.2.4.1 Migration

When net migration is included with these other elements, it is further evidence of the overall decrease of population growth in Skagit County over the last 10 years. Between 1940 and 1950 the county experienced a "plus" net migration of 3,348 people. In the time period between 1950 and 1960 there was also a plus or "in" net migration of 2,269. However, between 1960 and 1970, net migration was minus or "out" of the county by 2,271 persons. The people born in the big post-war population surge were now becoming old enough to enter the labor market, as mentioned earlier a prime factor in relation to migration is the desire for better economic conditions. When these people could not find enough work in the county, they had to look elsewhere. Also, the desire for higher education lured people out of the county. The county's agricultural and extractive resources economic base cannot support great increases in employment or persons with masters and doctorate degrees. These people then generally find work in more urbanized areas where the demand for their talent and background is higher. This phenomenon of migration can be seen more clearly in the age/sex pyramid and the components of population change at the end of this section.

2.2.4.2 Distribution

Population distribution, past, present, and future, is shown at the end of this section. In 1970, the population of the county was 46.3% urban and 53.7% rural. The change over previous years is as follows:

	Urban		Rural	
1970	24,241	46.3%	28,140	53.7%
1960	23,008	44.8%	28,342	55.2%
1950	15,448	35.7%	27,825	64.3%

As can be seen, the county is becoming increasingly urban, but at a slower pace. It is felt that this is due to the overall decrease in the rate of population growth. Whether there is slow or fast population growth, the areas to be most affected would probably be the Mount Vernon area, particularly eastward, the Sedro Woolley area, and the Fidalgo Island area. Provided that such things as: 1) agricultural zoning; 2) 1.0 acre minimum lots; 3) flood zone restrictions, and other similar measures are in existence, major portions of areas such as the south Skagit Floodplain, the Samish Floodplain and the Middle Skagit River may become less important as extensive residential locations. However, portions of these areas out of the danger of flood and not conflicting with agricultural areas, could assume a higher proportion of people. These could include such areas as Bow Hill, Pleasant Ridge, Bayview, and east of Conway. If the restrictions mentioned earlier are not enforced, areas such as west Mount Vernon and west Burlington could grow, causing a split in the agricultural land and increasing the danger of flood damage to both life and property.

The Concrete, Rockport, and generally upriver areas are in a precarious position. They could grow in proportion to interest in the North Cascades Park. Much of this could be only seasonal growth, but still should be a planning consideration. This will be discussed more fully in the Parks and Recreation element of this plan.

The middle river area around Hamilton and Lyman, however, seems to be a little too far removed from the heart of the park and will probably continue to decrease in population. The "back to the country" movement of the young could have an effect here as well as other places upriver.

2.2.5 Population Trends and Forecast - Skagit County

Historically, it has been hard for demographers and planners to acquire the degree of accuracy in their predictions of population growth in less populated areas that they have attained in more densely populated areas. The larger numbers provide a higher degree of accuracy. For example, if a person owned four cars and one broke down, he would not feel the loss as much as a person who owned one car and lost the use of it.

There are a number of population forecasting methods, each being of different complexity and accuracy. For the more general purposes of this study, the migration and natural increase method was used. Age and sex groups were also considered. A range in the 2000 population estimate was derived using this method. The corresponding range is shown at the end of this section.

As can be seen at the end of this section, the percent increase of population for Skagit County has decreased over the last 10 years to approximately .2% per year. This fact, combined with the decrease in births and young children, shows that the county's population is leveling off, at least for a while. The fact that migration has been "out" instead of "into" the county recently is another important sign of a stabilizing period. Assuming that there are no major economic changes in the county or in adjacent areas, this trend should continue during this planning period. However, if major economic changes do occur, for instance south of the county, Skagit County could be in the path of possible expansion. This would be, in all probability, beyond the 27 year confines of this study.

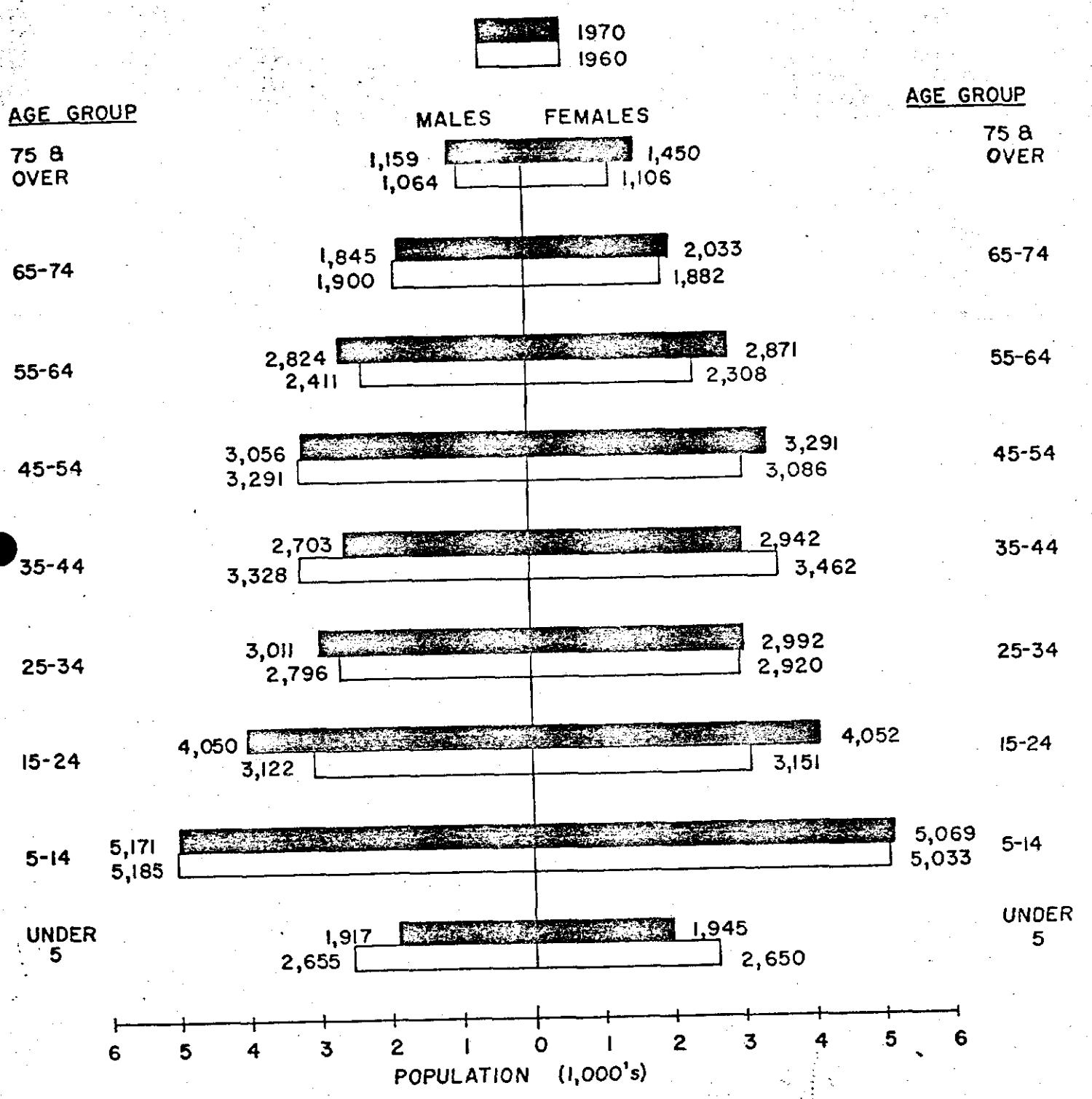
The North Cascades Park could have an effect on population in the county, but it can be reasonably assumed that this will take place in the form of temporary or second homes rather than permanent full-time residences. The initiation of an extensive rapid transit system would pose serious changes to this forecast, but again, this is highly unlikely during this planning period. Industrial and commercial activity within the county also has an effect on population and will be discussed in another section of this report.

The actual population range projected here consists of a high and a low estimate. The low end of the range is, in actuality, an extension of the present population trend of .2% increase per annum. Given the decrease in births, the increase in migration out of the county, and the firmly established economic base of the county, this was considered to be reasonable as a low figure. The effects of a major upturn in the economy of the Puget Sound Region as a whole could cause a number of situations in Skagit County. However, there would be a time lag, with the effects of such an occurrence not being felt soon, as it would over a period of time afterwards. Also, the Seattle-Everett metropolitan area would have ample room for such expansion if such an occurrence happened. However, at least the beginnings of such a phase were taken into account in the high figure of the projection range. It is based on the figures derived in the Comprehensive Plan for Skagit County, 1968.

Thus, although seeming very small, there is quite a degree of flexibility reflected in this range. The assumptions on which it is based were derived from U.S. Census Bureau data. As stated before, a great change could occur causing an upsurge of development within this county.

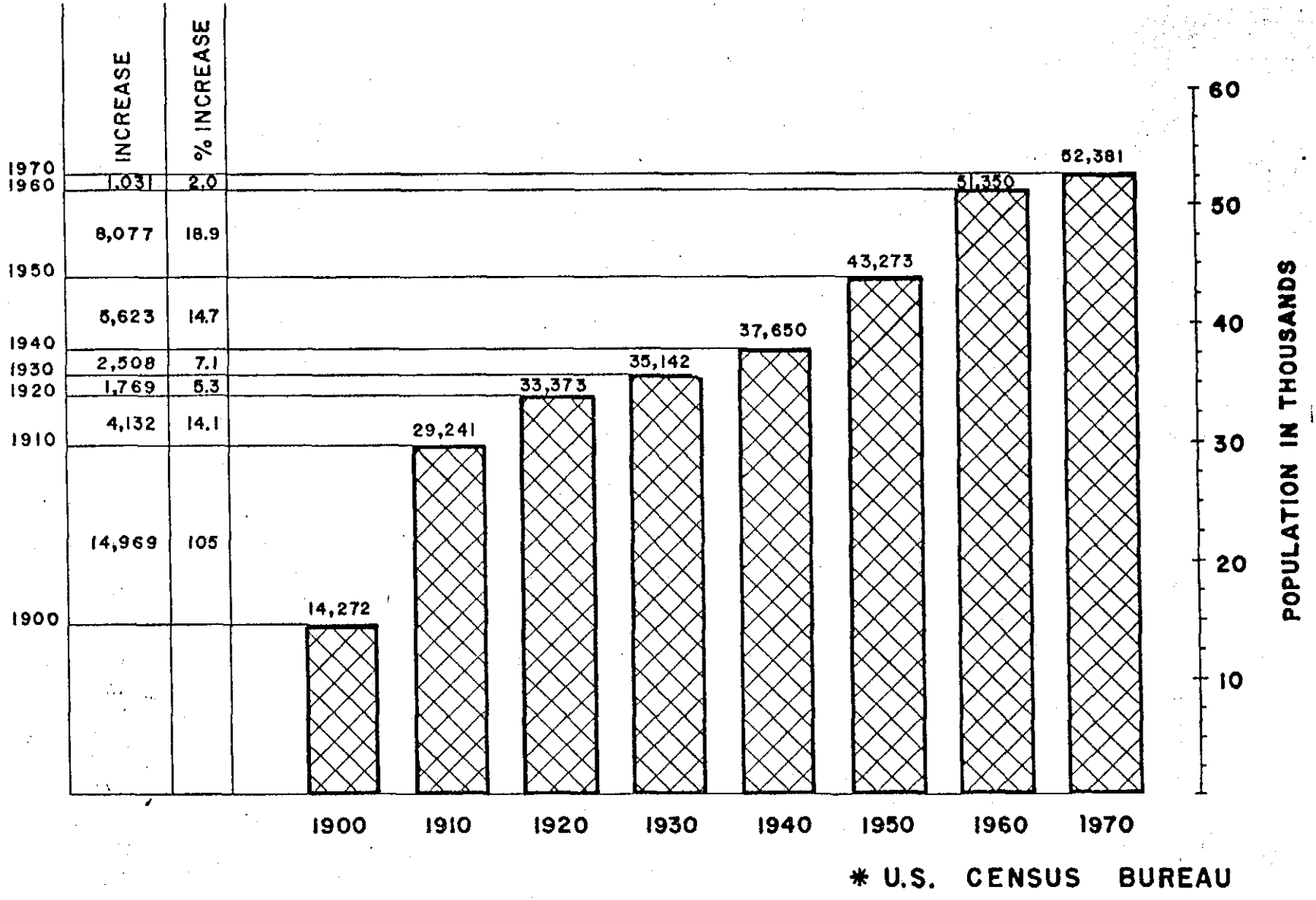
2.2.6 SKAGIT COUNTY

AGE & SEX DISTRIBUTION (PYRAMID), 1960-1970



* DERIVED FROM U.S. CENSUS BUREAU DATA

2.2.7 POPULATION GROWTH, SKAGIT COUNTY



* U.S. CENSUS BUREAU

2.2.8 COMPONENTS OF POPULATION CHANGE

1940 37,650 TOTAL POP.

NET CHANGE 5,623 = 8,248 + BIRTHS − 6,113 − DEATHS + 3,438 + NET MIGRATION

1950 43,273 TOTAL POP.

NET CHANGE 8,077 = 10,368 + BIRTHS − 4,560 − DEATHS + 2,269 + NET MIGRATION

1960 51,350 TOTAL POP.

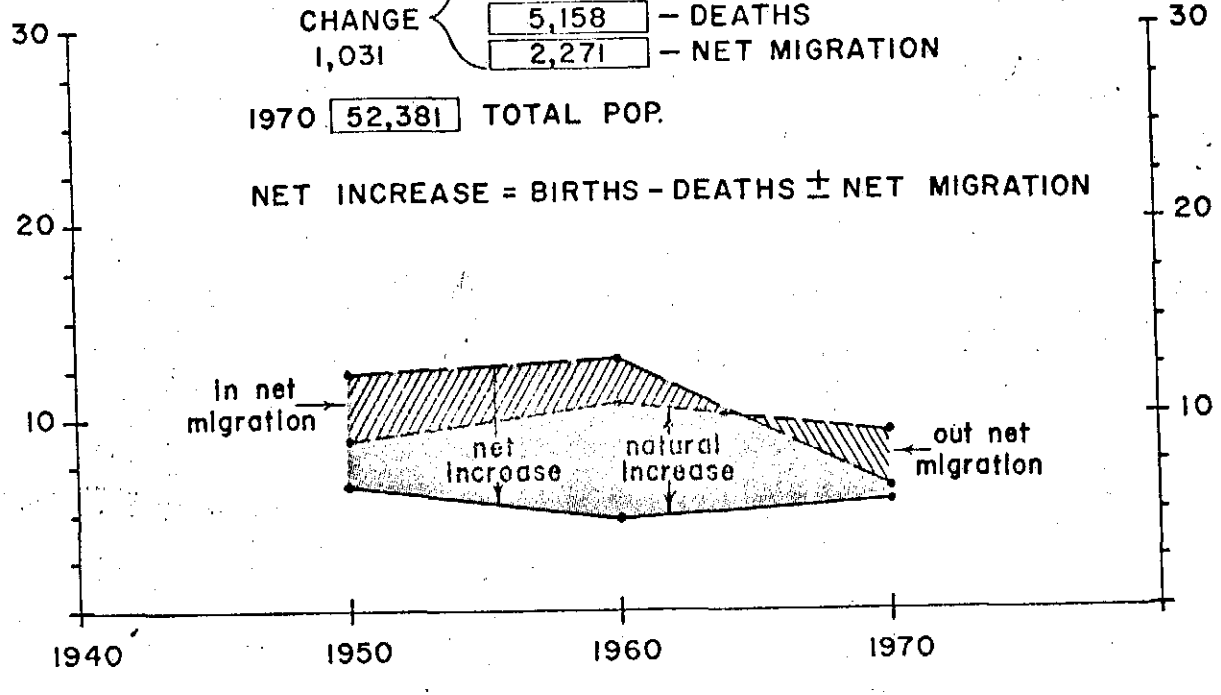
NET CHANGE 1,031 = 8,460 + BIRTHS − 5,158 − DEATHS − 2,271 − NET MIGRATION

1970 52,381 TOTAL POP.

NET INCREASE = BIRTHS − DEATHS ± NET MIGRATION

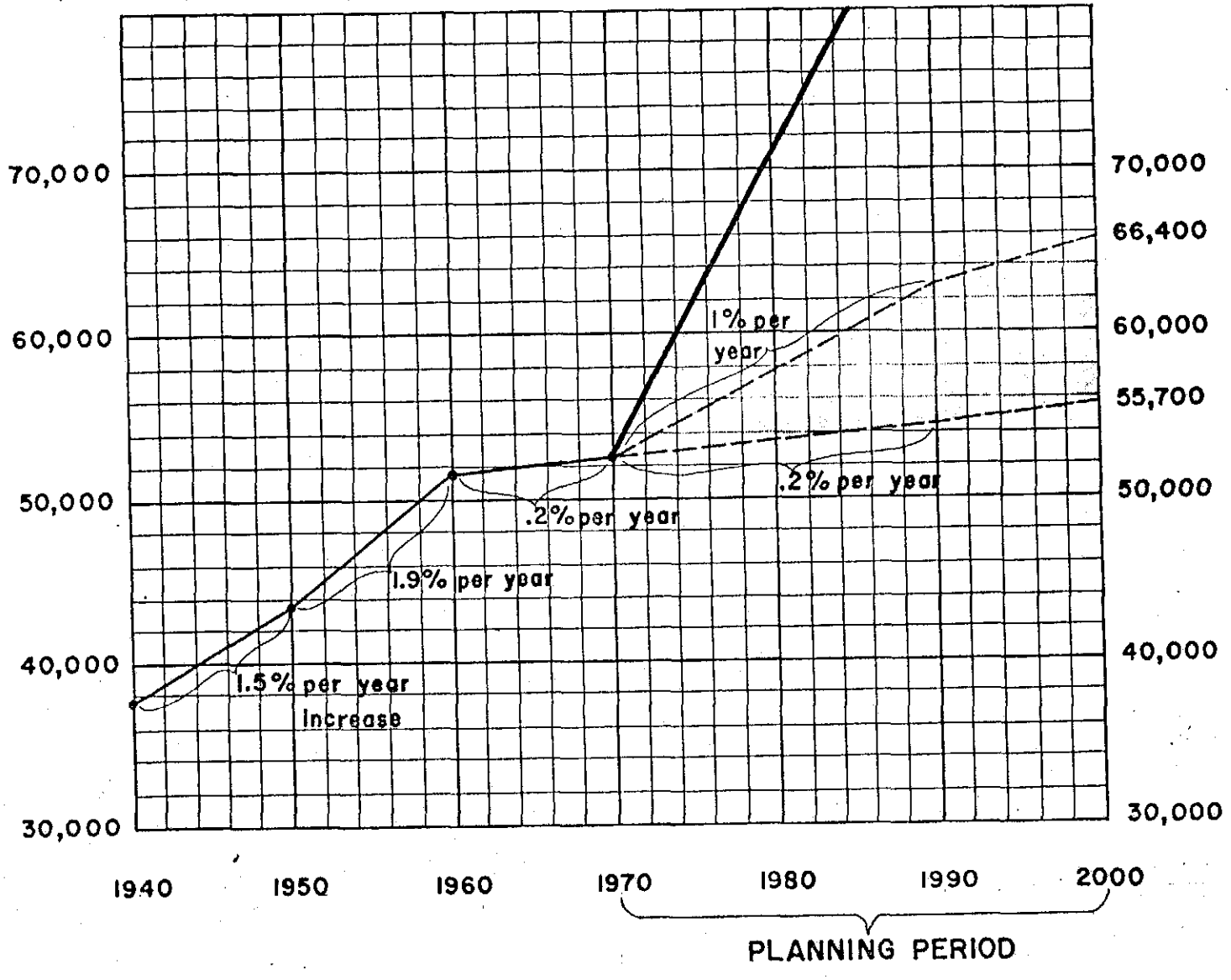
LEGEND

- BIRTHS
- DEATHS
- IN MIGRATION
- OUT MIGRATION
- NET POPULATION INCREASE



* DERIVED FROM U.S. CENSUS BUREAU FIGURES

2.2.9 SKAGIT COUNTY PROJECTED POPULATION GROWTH TO 2000



LEGEND

PROJECTED POP. RANGE

WATER, SEWER, DRAINAGE PLAN HIGH PROJECTION

PROJECTION RANGE —
LOW RANGE LEVEL BASED ON CONDITIONS EXISTING SIMILAR TO PREVIOUS TEN YEAR PERIOD (.2% per year)
HIGH RANGE LEVEL BASED ON 1% AVERAGE ANNUAL GROWTH RATE. AN INTER POLATION OF THE SKAGIT COUNTY COMPREHENSIVE PLAN 1968.

*DERIVED FROM U.S. CENSUS BUREAU FIGURES

2.2.10 INTERIM PROJECTED POPULATIONS STATE OF WASHINGTON 1970 - 2000

County	1970	1980	1990	2000
Skagit	52,381	52,950	53,500	54,000
Snohomish	265,236	290,130	324,250	363,700
Whatcom	81,950	90,110	104,400	118,500

Information from the Office of Program Planning & Fiscal Management, October, 1972.

2.3.7 Validity

The validity of the land use data was checked by comparing the number of single family residential units (not including accessory buildings) with the 1970 census data on single family dwelling units. The 1972 land-use survey indicates that there were 15,565 single family dwelling units in the project area. The 1970 census figures indicate that there were 15,215 single family dwelling units.

Comparison of Residential Dwelling Units	
1972 Land Use Survey	15,565
1970 Census Data	- 15,215
	350

Taking into account new construction between the 1970 census and the 1972 Land Use Survey, there appears to be a high level of correlation between the two data sets.

The other figures given by the Land Use Survey could not be checked for comparability because information was not available to make comparisons. Thus, the dwelling unit comparison indicates that the validity of the 1972 Land Use Survey is reasonable and satisfactory.

2.3.8 Land Use Map

The land use map of the North Central Planning area is generalized by 40 acre increments. The forty (40) acre generalization was developed by aggregating the land uses in each quarter of a quarter of a survey section (i.e., 640 acres (1 square mile) = 1 section) within each of the Townships and Ranges in the project area. The illustration on the next page demonstrates the quarter of a quarter of a section concept.

2.3.9 Availability of Land Use Data

The raw and bulk land use data is available at the Skagit County Planning Department office.

In addition to the section maps containing parcel and land use characteristic information, the land use data is cross-referenced with numerical land

1.3 SOILS

1.3.1 Soil Types

Of the fifty-six (56) soils found in the Skagit County area, twenty-eight (28) are represented in the North Central Portion of Skagit County. The soil found in this area are:

Aa	Alderwood	Pg	Puget
Bl	Bellingham	Py	Puyallup
Bo	Bow	Rv	Riverwash
Ct	Cathcart	Rb	Rough Broken Land
Ck	Cokedale	Rm	Rough Mountainous
Cv	Coveland	Rk	Rough Rocky Land
E	Everett	Sa	Samish
Gi	Giles	Sx	Saxon
Gg	Gilligan	Sk	Skyou
He	Heisler	Sq	Squalicum
Ie	Indianola	St	Sultan
Kp	Kline	Sm	Sumas
Ly	Lynden	Thw	Thornwood
Mu	Mukilteo	Wi	Wickersham

1.3.2 Soils Map

The soils map locates the above soil types in the planning area, on a generalized basis. Detailed information on the above soils types is contained in Tables 1, Soil Characteristics; Table 2, Soils Suitability, and Table 3, Agricultural, Pasture, Forestry and Soil Suitability, pages 29, 38, and 47, respectively, in Comprehensive Land Use Planning Alternatives for the Skagit River Floodplain and Related Uplands. Refer to Map C.

1.3.3 Sub-area Analysis

The Bow soils with their characteristics of high shrink-swell, moderate shear strength and poor septic suitability, predominates in the western portion of this area. Puyallup soils are found primarily in the southern portion of this area. These are the agricultural crop and pasture lands

situated on either boundary of the city of Sedro Woolley, extending from I-5 to east of Lyman. The northern portion of this planning area is primarily composed of Rough Mountain land with great variability as to soil characteristics.

The remaining soils which are found in smaller quanitites than the above, are not susceptible to generalization as to capabilities, or characteristics, as great variation can occur within relatively small areas. The best available reference as to soil capabilities is the United States Department of Agriculture, Soil Conservation Service.

1.3.4 Planning Implications

The capabilities and characteristics of soils has an important role in determining what, if any, type of development and at what level of intensity an activity should occur within an area.

1.3.5 Supplemental Information

The Comprehensive Land Use Planning Alternatives for the Skagit River Floodplain and Related Uplands report deals with soils through the following discussions:

1) Soils of study area - general overview
2) Soil forming processes
3) Soil characteristics
4) Properties of major soils groups
5) Soils suitability (planning implications)
6) Soil suitability table
7) Agriculture, pasture, forestry and soil suitability

1.4 SEPTIC SUITABILITY

1.4.1 Elements of Septic Suitability

Septic suitability is a term used to define the conditions pertaining to a certain area with respect to individual sewage disposal systems or septic tanks. The suitability of an area is usually thought of in terms of degree (i.e., good, moderate, poor, very poor, etc.). The information presented in this section is an attempt to give a generalized picture of the septic suitability of the study area. Every site proposed for development should be tested thoroughly.

The primary reason for strict regulations concerning the use of septic tanks is because of the potential health hazard involved if a system fails. For this reason, septic tanks are considered to be an interim solution to the problem of sewage disposal.

Land areas were classified in one of four categories: a) possessing only slight limitations with regard to septic suitability; b) possessing moderate limitations; c) being of a variable nature (primarily with regard to soil depth and slope), and d) possessing severe limitations.

1.4.2 Septic Suitability Map

The septic suitability map is a graphic display of the acceptibility of septic tanks of various areas in this planning area. It must be emphasized that this is a generalized map. It does, however, give an initial insight into the septic suitability of a general area. The only way to obtain accurate information as to the suitability of a specific area is to perform a series of tests at that site during the time of greatest precipitation. Refer to Map D.

1.4.3 Sub-area Analysis

Due to the extreme variability of septic suitability this plan will not generalize by sub-area. The need for percolation test prior to development is emphasized for all non-sewered developments.

(generally south of Avon)

West - The western edge of the Swinomish Channel

East - A line running north from the Skagit River along the District Line Road to the Cook Road, then west along the Cook Road to Highway I-5, then north along I-5 to the County Line

6) Island:

All of the islands of Skagit County lying west of the western edge of the Swinomish Channel.

(See "Scope", Page 8, 1968 Skagit County Plan)

The text portion of the Comprehensive Plan, including the illustrative materials, tables and charts, is designated as the "plan policies." It sets forth in narrative form the public objectives, policies and standards to be applied when guiding the future growth of Skagit County.

In addition to the plan policies there is also a map portion of the Comprehensive Plan, which is designed and intended to illustrate the application of the plan policies in a general way.

The Comprehensive Plan is an expression of public policy outlining the general guidelines for the future development of the county and is not designed or intended to establish precise land use boundaries in either the policies or the map portion of the plan.

Skagit County recognizes, as it moves forward from its long range generalized plan, adopted in 1965, and amended in 1968, to more precise plans for development, that because of the vast amounts of land within the boundaries of Skagit County, 1,735 square miles, and because of the great diversity of the kinds of land and needs of its citizenry, and in order to make the Comprehensive Plan more meaningful as a guide and a tool for the regulation of land, it is in the best interests of the people of Skagit County to supplement the plan by dividing the county into natural homogeneous communities and geographic areas in order that more precise development policies can be developed and adopted for the more natural homogeneous communities and geographic areas.

Therefore, Skagit County, for planning purposes, is divided into the following districts:

1) North Central
2) Upriver
3) South Central
4) Southwest
5) Northwest
6) Island

and, in conjunction with the revision and updating of the general provisions that apply to the county as a whole, more precise plans and guidelines that will apply more particularly to the specific areas will be developed for these areas or districts.

The following describes the boundaries of the six planning areas of Skagit County:

1) North Central:

North - Skagit County Line
South - Skagit River
West - A line running north from the Skagit River along the District Line Road to the Cook Road, then west along the Cook Road to Highway I-5, then north along I-5 to the County Line.
East - A line running north from the Skagit River beginning

1.4.4 Planning Implications

The suitability of soils for the use of septic tanks as a means of sewage disposal is an important locational factor in the planning process. Sewer systems cannot always be provided to a given area at a certain time, usually because of economic reasons. Distance is also an important economic factor in relation to sewer systems. There might be too great a distance between the outer extremities of existing facilities and a new development which delay the extension of these services.

1.4.5 Supplemental Information

The report, Comprehensive Land Use Planning Alternatives for the Skagit River Floodplain and Related Uplands, deals in greater depth with the whole question of septic suitability and provides a generalized table which analyzes the septic suitability of the various soils types found in the North Central Planning area:

1) Planning implications
2) Suitability criteria
3) Septic tank design
4) Suitability map analysis
5) General septic suitability of Skagit County soils

1.5 FLOODPLAIN

1.5.1 Floodplain and Its Management

Floodplain management does not create substantial land use planning problems in the North Central portion of Skagit County, as it does in other parts of the County. Only the southerly part of this planning area lies within the 100 year floodplain. It is also fortunate that the city of Sedro Woolley is, for the most part, out of the 100 year floodplain.

1.5.2 Floodplain Map

The Floodplain map displays the 100 year floodplain in the North Central portion of Skagit County.

1.5.3 Sub-area Analysis

The areas within the 100 year floodplain are primarily agriculturally oriented with a growing interspersement of residential activity adjacent to Sedro Woolley. The drainage problem, which is to some extent flood related, has been relieved by means of new drainage facilities in the Sedro Woolley area.

1.5.4 Planning Implications

The revised Comprehensive Plan for the North Central planning area reflects good floodplain management policy in that new development is proposed for the upland (and hence flood safe) part of this area. Some additional residential activity is expected to continue adjacent to Sedro Woolley. This should occur in areas that are out of the 100 year floodplain. Refer to Map H.

There are several ways by which a floodplain management program can be implemented. These are: 1) land use controls; 2) tax adjustment; 3) public policy directing the construction and location of public facilities and service out of flood prone area, and 4) flood proofing existing structures. All of these management approaches are or will be exercised to prevent loss of life and reduce property damage.

1.5.5 Supplemental Information

The Flood Characteristics section of the Comprehensive Land Use Planning Alternatives for the Skagit River Floodplain and Related Uplands report contains the following chapters:

1) General Flood Information
2) Historical Flooding
3) Economic Considerations of Flooding
4) Existing Flood Control Projects
5) Proposed Flood Control Projects
6) Federal Flood Insurance Program
7) The Federal and State Role in Floodplain Management
8) Floodplain Management

A thorough review of the above chapters will provide a basic understanding of the relationship between floodplain management and land use planning and can ably supplement this Comprehensive Plan for the North Central area.

2 DEVELOPMENTAL CHARACTERISTICS

This portion of the Comprehensive Plan for the North Central planning area is oriented around the impact man has had on land and land use in the North Central area. The boundaries of man's impact are less readily definable than the boundaries of the physical environment. Man is a mobile influence on his environments; population, land use, land ownership, etc., are not fixed and stable factors. For this reason some of the chapters of the Developmental Characteristics section, deals with a larger land area than the North Central planning area.

An inventory and analysis of the developmental characteristics, when combined with data on the physical environment, provide a set of perimeters within which the decision making functions of the planning process can occur. The interrelationship of the natural and man made developmental systems must be clearly reviewed to successfully develop meaningful land use decisions.

The Developmental Characteristics section of the Comprehensive Plan is composed of the following chapters:

2.1) History of Development
2.2) Population Analysis and Projections*
2.3) Land Use Patterns
2.4) Housing Analysis and Projections*
2.5) Land Ownership
2.6) Economic Base Analysis*
2.7) Transportation
2.8) Open Space - Recreation
2.9) Community Facilities

* These chapters are oriented to both the North Central area and to some extent to the Downriver area, due to the nature of the data.

2.1 HISTORY OF DEVELOPMENT

2.1.1 Orientation

This chapter of the Comprehensive Plan is a very brief synthesis of An Illustrated History of Skagit and Snohomish Counties, published by the Interstate Publishing Company. While the following summary is concerned with early European settlement of this area, this Plan recognizes the impact that earlier Indian culture exerted upon this area. The history of Indian culture in Skagit County is contained in a book by Chief Martin J. Sampson.

2.1.2 Early Settlement of the Delta Area

The European settlement of Skagit County began on Fidalgo and Guemes Island. The first settlers on the mainland were Samuel Calhoun and Michael Sullivan. No one is quite sure who came first, although Calhoun is said to have come to the Skagit Delta area in the Spring of 1863. These men were supposed to have built the first diking systems in the area to reclaim the tidelands for crops.

As the fertility of the land and the feasibility of building dikes and levees became more apparent, settlers increased as did the crop yields. The first trading post on the Swinomish Flats was established by Alonzo Low in May, 1867, upon the site of the present city of LaConner. This business failed after a brief period, but was soon replaced by an establishment owned by Thomas Hayes. It was his successor, J. S. Conner, who named the town of LaConner.

In 1870, Jasper Gates and Joseph F. Dwelley became the first settlers in the area now known as Mount Vernon. However, the old site of Skagit City was the hub of the river transportation system until the work of removing the great log jams from the vicinity of Mount Vernon was completed in 1876. This caused the territory above the delta area to open for settlement, but destroyed the prestige of Skagit City. However, the problem of log jams on the Skagit occurred intermittently for years to come.

The city of Mount Vernon was actually founded in 1877 after the log jams were cleared. In 1883 Skagit County came into existence after being separated from Whatcom County.

2.1.3 Logging

The development of Skagit Valley grew steadily, with farming and logging becoming increasingly popular and successful.

Actually, logging had to be done first, for the whole valley was at one time covered by dense stands of timber. As a business, logging seems to have come into existence on the lower river as early as 1871. By the year 1875, there were hundreds of men engaged in logging at various places in the Skagit and Samish regions. The lure of these industries, combined with the later development of the coal mines and mineral resources, caused immigrants to move into the county in increasing numbers. There was a lag in this prosperity in 1874 due to the financial crisis in the East. This caused the Northern Pacific Railroad to suspend construction of its line to the valley and slowed immigration into the county. Money became very scarce.

After the clearing of the big log jams made the Skagit River navigable above Mount Vernon, the logging industry began to prosper. It was not until Mr. Minkler built a sawmill at Birdsview in 1882, that Skagit County had an actual mill. Before that, all the logs were sent to large mills at Tacoma, Seattle, and Utsalady.

As this industry grew, so did the county. The various towns and cities upriver owe much of their existence to the logging industry, Sedro Woolley and Burlington being two good examples.

2.1.4 Mining

The mining industry in Skagit County got off to a slow start due to the giant log jams. It had a fairly short prosperous period and then evolved into a relatively unimportant industry. In 1874, Amasa Everett, Orlando Graham, and Lafayette Stevens discovered coal near Hamilton. The coal

found here was of good quality, but the quantity was a hindrance in its long-range importance to the county. Skagit County was not without its dose of "gold fever" in the late 1800's. This precious mineral, however, was also found in too scarce a quantity to amount to any substantial sums, but it did cause quite a bit of excitement.

The discovery of large amounts of rock suitable for construction purposes near Concrete was of significant importance for many years. This importance has been reduced significantly in recent years.

2.1.5 Fishing

The fishing industry got a late start in this county due to the limited accessibility to a market. However, an abundant supply of fish was secured for local needs and it was a well known fact that the region's water swarmed with salmon. The pioneer in the fishing business on the upper Skagit seems to have been James H. Moores. He was located on the west bank of the Skagit, just above Mount Vernon, near the great log jam. His success opened the way for others. The Skagit area has seen great booms in the fishing and canning industries over the years since. It has been the home of some of the largest salmon canneries in the world. In recent years, however, the competition from other fishing areas and the increasing emphasis on agriculture and logging have tended to lessen the overall impact of the fishing industry on Skagit County.

2.1.6 Agriculture

As the fame of the fertile Skagit Delta lands spread, so did the agricultural base of the county. The main crops of the early days consisted of oats, barley, and various vegetables. However, the prosperity that these farmers enjoyed was seriously hampered on many occasions by floods and high tides, which sometimes destroyed whole crops. As logging activities moved eastward, agriculture became the primary industry in the floodplain. As more land was cleared and reclaimed, the value and economy of the county grew. New and better crops have been introduced through the years, helping to affirm the strong agricultural base of the county.

2.1.7 County Growth

As the county became more accessible and its great wealth of resources became known, it saw much growth. The greatest growth actually came in these earlier years, between 1900 and 1910. During these years the county grew from 14,272 people to 29,241. This was an increase of 105%. The population began leveling off between 1910 and the 30's, but between the 30's and the 60's it rose steadily once more. However, between the 60's and the 70's, the population has again shown signs of leveling off. It is interesting to mention that the County saw more than half its growth in the ten years between 1900 and 1910.

	1900	1910	1920	1930
Population	14,272	29,241	33,142	35,142
% of Increase		104.9	14.1	5.3
	1940	1950	1960	1970
Population	37,650	43,273	51,350	52,000
% of Increase	7.1	14.7	18.9	0.2

2.1.8 Sub-area Analysis

The first settlers came to this area in 1878, carving homesites out of the dense wilderness. One of the first women pioneers of the area, Dr. Georgiana Batey, was also one of the first physicians in the county. The city of Sedro Woolley itself derives its double name from the fact that at one time it was two towns. The Sedro section was founded in 1884 by a businessman, Mortimer Cook. Cook at first wanted to name the town "Bug" but was persuaded by his wife and other ladies of the town to name it "Sedro", which means cedar in Spanish. The town of Sedro was the home of the first shingle mill in the county. It is said that it was the first in the Puget Sound area to ship shingles to the East. By 1889, the railroads reached Sedro. This event combined with Sedro's logging and lumber industry potential caused the town to grow at a very rapid pace. Because of this potential, one of the first things to be done was to plat land into streets, alleys, and lots. A prominent factor in the development of Sedro and Woolley during this era was the Sedro Land and Improvment Company, incorporated in the summer of 1890. The plat of old Sedro was filed for record October 17, 1889, by the Fairhaven Land Company. By 1892, Sedro had prospered

enough to make a vigorous attempt at the contest for county seat but placed third behind Mount Vernon and Anacortes. Sedro was also the site of St. Elizabeth's, the first hospital in Skagit County.

The Woolley section of the city was platted by Philip A. Woolley in June of 1890. Mr. Woolley had anticipated the location for the junction of the railroads and built a large saw and shingle mill in the unplatted portion of town. With the development of the Bennett Coal Mines six miles northeast, now known as Cokedale, combined with the development of various mills in this vicinity, Woolley prospered and the rivalry between it and Sedro became intense. The general depression from 1893 to 1896 checked the rapid growth of both towns and it soon became apparent that the best resolution to their problems would require the merging of the two towns to one. The two towns were incorporated by the county commissioners on December 19, 1898, under the name of Sedro Woolley. The town did some substantial building in the years immediately following this event. In recent years the town has shown its energetic nature and has been growing toward the north and northwest. A goodly share of the prosperity which flows from the county's lumber, agriculture, and tourist industires has always touched Sedro Woolley.

2.3 LAND USE PATTERNS

2.3.1 Orientation

The existing land use patterns for the North Central area were surveyed and mapped on a parcel by parcel basis in the summer of 1972. This parcel by parcel land use survey was also performed throughout the entire county. The information is recorded on section maps at a scale of 1"= 400'. Each land use is identified and located both in relation to property lines and in relation to change in land use characteristics within individual parcels of property.

2.3.2 Generalized Land Use

Section 2.3.2 below displays the major classifications of land use by activity and area for the various areas of Skagit County. The Sedro Woolley Proper, Bow/Alger/Samish, and Middle Skagit River areas are the portions of Skagit County which comprise the North Central Comprehensive Plan area.

2.3.2 GENERALIZED LAND USE*
(by activity)

Use	# of Units	% of All Units	Acres	% of Acres
Residential[1]	15,565[1]	89.68	9,488.25	1.71
Community	322	1.85	1,052.00	.18
Commercial[2]	1,249[2]	7.19	814.50	.44
Industrial	220	1.26	954.25	.17
Transportation	---	---	6,483.50	1.17
Forest	---	---	426,088.00	77.10
Agriculture	---	---	106,760.25	19.31
Parks	---	---	955.00	.17
TOTAL	17,356	100.00	552,595.75	100.00

* Skagit River Floodplain and Related Uplands (East of Swinomish Slough)

[1] Less accessory buildings

[2] Less parking lots

2.3.3 Land Use by Density

Section 2.3.3 displays land use by structures for activities and area within Skagit County.

2.3.3 LAND USE CLASSIFICATIONS BY DENSITY

Land Use Density	Structures/Acre	Acres Allocated Per Structure
Single Family	2.04	.49
Multi-Family	1.94	.52
Mobile Home	2.68	.37
Accessory Building	4.54	.22
Group Housing	1.32	.76
Vacant	.52	1.94
	Services/Acre	**Acres/Services**
Community Service	.28	3.35
Quasi-Public	.32	3.15
Vacant	.33	3.00
	Commercial/Acre	**Acres/Commercial**
Goods	2.11	.47
Services	1.48	.68
Parking	.76	1.25
Warehouse	1.88	.53
Vacant	1.62	.62
	Industry/Acre	**Acres/Industry**
Heavy	.20	4.90
Light	.29	3.49
Vacant	.18	5.62
	Barns/Acre	**Acres/Barns**
Barns & Out Buildings	1.98	.50
Vacant	.36	2.76

3.4 Generalized Land Use

The Generalized Land Use Table for Skagit County contains nine land use classifications and compares these classifications by: 1) the number of structures in each classification; 2) the percentage in each classification; 3) the acreage in each classification, and 4) the percentage of acres in each classification.

2.3.5 Sub-area Analysis

See the following tables entitled: Middle Skagit River Summary, Bow/Alger/Samish Proper, and Sedro Woolley Proper.

MIDDLE SKAGIT RIVER SUMMARY

2.3.5.1 LAND USE INVENTORY

Existing Land Use	Number	Acres	Acres-% of Total	Acres-% of Section
1. Single Family	1,252	925.50	.93	66.40
2. Multi-Family	6	2.50	---	.18
3. Mobile Home	158	108.00	.10	7.74
4. Accessory Bldg.	833	153.25	.15	10.99
5. Group Housing	1	0	---	---
6. Vacant	54	204.50	.20	14.67
1. Community Service	35	64.00	.06	65.80
2. Quasi-Public	15	31.25	.03	32.13
3. Vacant	1	2.00	---	2.05
1. Goods	17	6.00	---	12.50
2. Services	38	37.75	.03	78.64
3. Parking	2	1.00	---	2.08
4. Warehouse	6	2.75	---	5.72
5. Vacant	4	.50	---	1.04
1. Heavy	32	192.50	.19	83.51
2. Light	3	4.50	---	1.95
3. Tran./Util./Corridor	233	1,152.00	1.15	100.00
4. Vacant	4	33.50	.03	14.53
1. Standing		78,847.50	79.28	95.53
2. Harvested		3,667.00	3.68	4.44
3. Vacant		19.50	.02	.02
1. Crop Active		2,782.50	2.79	19.89
2. Crop Inactive		68.00	.06	.48
3. Pasture Active		8,842.00	8.89	63.22
4. Pasture Inactive		627.50	.63	4.48
5. Woodlot		1,199.50	1.20	8.57
6. Barns & Outbuildings	660	313.50	.31	2.24
7. Vacant	28	152.00	.15	1.08
1. Aquatic - Marine				
2. Aquatic - Fresh				
3. Park	5	8.50	---	100.00
4. Forestry Park				
5. Shoreline, Dikes, Levees				
6. View Spot - Turnoff				

2.3.5.2 LAND USE INVENTORY

Existing Land Use	Number	Acres	Acres-% of Total	Acres-% of Section
1. Single Family	1,037	561.00	1.18	63.80
2. Multi-Family	11	27.00	.06	3.07
3. Mobile Home	137	67.00	.14	7.62
4. Accessory Bldg.	799	211.75	.45	24.08
5. Group Housing	11	7.00	.01	.79
6. Vacant	15	5.50	.01	.62
1. Community Service	11	38.50	.08	64.70
2. Quasi-Public	7	21.00	.04	35.29
3. Vacant				
1. Goods	12	8.50	.02	19.42
2. Services	21	14.50	.03	33.14
3. Parking	5	15.50	.03	35.42
4. Warehouse	9	3.75	---	8.75
5. Vacant	3	1.50	.003	3.42
1. Heavy	3	17.50	.04	11.64
2. Light	33	133.25	.28	88.68
3. Tran./Util./Corridor	243	1,146.50	2.42	100.00
4. Vacant	1	.50	---	.33
1. Standing		23,905.50	50.48	99.47
2. Harvested		126.50	.27	.53
3. Vacant				
1. Crop Active		13,213.50	27.90	64.14
2. Crop Inactive		60.00	.12	.29
3. Pasture Active		6,024.25	12.72	29.24
4. Pasture Inactive		477.50	1.00	2.31
5. Woodlot		290.00	.61	1.40
6. Barns & Outbuildings	759	360.75	.76	1.75
7. Vacant	64	173.00	.36	.83
1. Aquatic - Marine				
2. Aquatic - Fresh	5	442.00	.93	100.00
3. Park				
4. Forestry Park				
5. Shoreline, Dikes, Levees				
6. View Spot - Turnoff				

SEDRO WOOLLEY PROPER SUMMARY

2.3.5.3 LAND USE INVENTORY

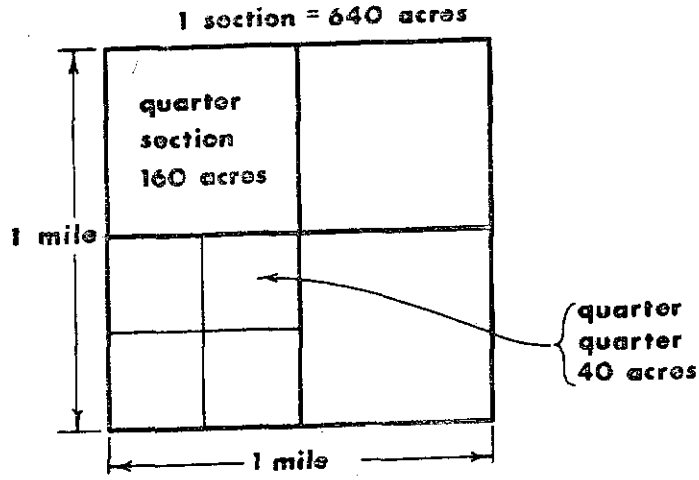
Existing Land Use	Number	Acres	Acres-% of Total	Acres-% of Section
1. Single Family	2,918	1,128.50	3.07	65.03
2. Multi-Family	83	32.00	.08	1.84
3. Mobile Home	238	81.75	.22	4.71
4. Accessory Bldg.	1,404	417.00	1.13	24.03
5. Group Housing	1	4.00	---	.23
6. Vacant - Other	80	72.00	.19	4.14
1. Community Service	31	147.50	.40	73.75
2. Quasi-Public	16	35.00	.09	17.50
3. Vacant	4	17.50	.04	8.75
1. Goods	75	30.50	.08	33.70
2. Services	69	35.50	.09	39.22
3. Parking	16	15.00	.04	16.57
4. Warehouse	22	7.50	---	8.28
5. Vacant - Other	3	2.00	---	2.20
1. Heavy	27	127.00	.34	65.12
2. Light	16	64.00	.17	32.82
3. Tran./Util./Corridor	124	682.50	1.85	100.00
4. Vacant - Other	1	4.00	---	2.05
1. Standing		20,003.50	54.48	97.41
2. Harvested		505.50	1.37	2.46
3. Vacant		25.00	.06	.12
1. Crop Active		5,360.00	14.59	40.41
2. Crop Inactive		173.50	.47	1.30
3. Pasture Active		6,233.75	16.97	47.00
4. Pasture Inactive		618.00	1.68	4.66
5. Woodlot		373.00	1.01	2.81
6. Barns & Outbuildings	680	325.00	.88	2.45
7. Vacant	102	178.50	.48	1.34
1. Aquatic - Marine				
2. Aquatic - Fresh	7	17.50	.04	100.00
3. Park				
4. Forestry Park				
5. Shoreline, Dikes, Levees				
6. View Spot - Turnoff				

2.3.6 LAND USE INVENTORY
NORTH CENTRAL AREA

Existing Land Use	Number	Acres	Acres-% of Total
Residential	3,757	1,918	1.87
Community	54	187	0.19
Commercial	204	115	0.11
Industrial	434	1,968	1.92
Forest	2,529	73,873	72.07
Agriculture	3,046	22,682	22.13
Other	385	1,754	1.71
TOTAL	10,409	102,497	100.00

use data logs. These land use data logs describe each 40 acre parcel of land, in terms of the 1) various land uses within that 40 acre parcel; 2) the number of each of the land uses, and 3) the acreage of each of the land use classifications which occur in that 40 acre parcel of property.

The land use data logs are also available for reference purposes in the Skagit County Planning Department. The information contained in the data logs is prepared by computerization and has been key punched onto cards for use in a computer. These keypunched cards are also available at the Skagit County Planning Department office.



2.2.11 POPULATION NORTH CENTRAL AREAS

Area		Population	Total Housing Units	Average Family Size	% Occupancy
Div. 3	Ed. 6	324	124	2.77	.94
	Ed. 7 (50%)	523	170	3.13	.89
Div. 4	Ed. 8	432	153	3.11	.91
	Ed. 9	1,122	287	3.06	.94
	Ed. 10	1,017	312	3.5	.94
Div. 5	Ed. 11	983	14*	7.02*	.70
Div. 6	Ed. 12 (75%)	758	212	2.9	.91
Div. 12	Ed. 34	379	123	3.2	.95
	Ed. 35	1,254	388	3.4	.96
	Ed. 36	402	137	3.1	.95
Sedro Woolley	Ed. 38	1,067	399	2.7	.97
	Ed. 39	1,249	519	2.6	.93
	Ed. 40	1,354	491	2.9	.94
	Ed. 41	727	290	2.7	.93
	Ed. 42	201	76	2.9	.91
TOTAL		11,792			.94

* *includes Northern State Hospital*

Using the land use data developed for the Comprehensive Land Use Planning Alternatives for the Skagit River Floodplain and Related Uplands, it is estimated that there are 3,757 residential dwelling units in the North Central area. If 3,757 dwelling units is multiplied by the occupancy rate for the North Central area (.94) and by the average family size for Skagit County (3.28), it can be estimated fairly accurately that 11,581 persons resided in this area at the time of the 1972 land use analysis.

2.2.12 POPULATION PROJECTIONS FOR THE NORTH CENTRAL AREA

Area	1960	1970	1985 Low	1985 High	2000 Low	2000 High	1995* High
Sedro Woolley	3,299	4,598	5,625	6,388	5,796	7,343	6,634
C.D. #3	1,643	955	649	737	669	847	2,064
C.D. #4	2,632	2,571	2,975	3,378	3,065	3,884	3,578
C.D. #5		983	-0-*[1]	-0-	-0-	-0-	
C.D. #6	789	989	919	1,044	947	1,200	1,111
C.D. #12	5,329*[2]	2,249	3,299	3,747	3,399	4,307	7,512
Population of Census Divisions	13,692	12,345	13,467	15,294	13,876	17,581	20,899
Estimated & Projected Population of North Central Planning Area		11,792	12,864	14,608	13,254	16,793	19,958

*[1] Closure of Northern State Hospital

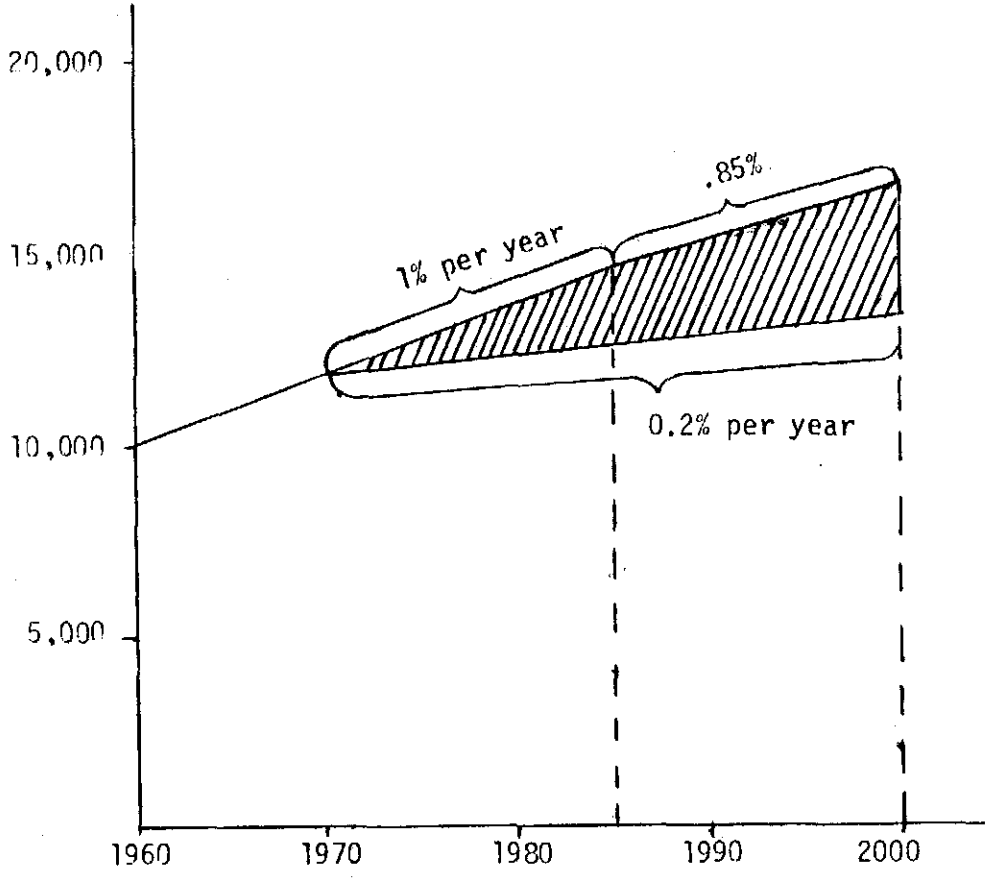
*[2] Northern State in 1960 census was in C.D. #12, in 1970 it was in C.D. #5.

These population estimates are based upon assumption regarding the approximate proportion of overlapping boundary areas. Neither the Census Division boundary lines, nor the previously developed "Geographic Boundary" line are contiguous with the boundaries of the North Central Planning area, therefore, it has been necessary to estimate, based on land use data, the approximate population in the North Central Planning area.

2.2.13 Population Map

The population map displays the 1960 population, 1970 population, and year 2000 estimated population projections for the North Central Planning area.

2.2.14 POPULATION PROJECTIONS FOR THE NORTH CENTRAL AREA TO THE YEAR 2000



LEGEND

Projected Population Range

Low Range - based on previous 10 year growth rate of 0.2% per year

High Range - based on 1% average annual growth rate (Skagit County Comprehensive Plan, 1968 The .85% reflects projected decline in fertility ratio, after second generation post WW II baby boom

2.5 LAND OWNERSHIP PATTERNS

2.5.1 Orientation

Like the other chapters of this section on Developmental Characteristics, this chapter on land ownership patterns is to some extent related to the entire Region rather than the most specific North Central area. Accordingly, reference must be made to the Regional area, however, the specific analysis of areas overlapping the North Central portion of Skagit County have been included in this chapter.

Study of land ownership patterns results in a more precise picture of past, present, and future trends in land development for a study area. Trends in parcelization and ownership were the primary elements under consideration in this chapter on Land Ownership Patterns.

2.5.2 Parcelization and Subdivision

The dividing of a piece of land into separate salable parcels is a common practice in the field of land development. Although it was beyond the means of this study to amass the amount of data for a complete study of all county land parcels, a sample of 51 randomly selected sections (51 areas of 1 square mile each) throughout the county were taken and studied through the years 1941 - 1972. This statistical sample was more than adequate to establish trends in parcelization in the study area. It was found that between the years 1941 and 1959 there was an average increase of approximately 3.7 parcels per square mile section. Between 1959 and 1972 this increase was 4.3 parcels per square mile. This demonstrates a reasonably steady increase in the amount of parcelization over the past 20 years. These figures (the number of parcels per square mile section) were then placed on a graph (#1) and compared with population trends and number of housing units for the same time span, Graphs 3, 4, and 5. The corresponding results were then placed together on Graph 6 to show similarities and differences among the trends.

This series of graphs included in this section attempts to demonstrate further the correlations between population, parcelization, and housing

unit trends. As can be seen, Graph 1 plots the number of parcels per square mile section against the population figures for 1940, 1960, and 1970. When the results of this graph are compared with Graph 4, which plots the number of housing units against the same population figures, the trend of parcelization exceeding the number of housing units is more easily seen. Graph 5 compares the number of housing units directly with the amount of parcelization and shows a smaller increase in the amount of speculative subdividing of land.

These graphs show that in Skagit County there has been a steady increase in parcelization of land. Population and the total number of housing units, on the other hand, show signs of leveling off in later years. All of this seems to demonstrate that there is a trend toward more subdivision than is really needed. As slow as parcelization has been, it still has remained on a steadily increasing course.

This presents the people of the county with some problems. There is an increased burden on land-use management. A single piece of land is easier to manage in terms of water, sewer, drainage, roads, and other utilities, not to mention the added expense to assess the taxes on the extra parcels. In the case of platted subdivisions, the developer often initiates the utilities to stimulate the sale of the properties, but sells out before all the utilities are completed. Combined with this is the fact that people often buy land purely for speculative reasons, not intending to live on the land. However, the people that do buy and build a home on the land want to be serviced with the remaining utilities and services. The number of people having actually bought and lived on the land does not make extension of the full package of utilities and services economically feasible. The taxpayer thus absorbs this loss.

More parcelization or subdivision also makes land values rise becoming an economic burden to potential buyers, as well as a tax burden to adjacent land owners. Adjacent land is almost automatically forced into subdivision. Leap-frogging of subdivision farther out to take advantage of cheaper land expands cities beyond their economic limit.

Another aspect of over parcelization is the fact that it is substantially harder to acquire a number of parcels for the purpose of aggregating for a special use. This problem is characterized in the public sector by acquisition of land for parks, schools, community centers, and other similar facilities.

2.5.3 Other Elements of Land Ownership

Other elements studied included parcelization and land ownership trends in each geographical/planning area. The state and federal lands of the county are also an important element of this section. An inventory of all public lands in the area was conducted by the Planning Department and is on file.

The question of land values and uses for various areas is important with respect to locational analysis. However, due to budgetary and time restraints, it was not feasible to attempt a specific and precise consideration of this area of emphasis.

2.5.4 Sub-area Analysis

Bow/Alger/Samish

1941 - 1959

Sections of this area remained the same during this period. These include the agricultural land in the southern part containing Bow, Allen, and Edison, and of state land in the north.

The land along Chuckanut Drive had a tendancy to parcelize during this period. More extensive subdividing occurred around the Alger area and along Highway 99. In the Alger area, the county transferred its land to logging companies or to the state. The state was the primary purchaser of land in this area. During this period, the logging companies tended to subdivide their land extensively after it was logged and after development grew in the surrounding areas.

1959 - 1972

The agricultural land in the southern portion of this area remained the same, as did the majority of the area. Land owners retained large holdings

while some areas such as Alger and parts of Highway 99 experienced parcelization.

Bow and Edison remained small, experiencing little or no subdivision of property in or around them during this time span.

The state remained an extensive land owner through the years to the present, especially on Chuckanut Mountain.

Sedro Woolley Proper
1941 - 1959

Sedro Woolley's influence seems to have spread primarily northward during this period. Much of the land north of the city was subdivided during these years. Puget Mill Company owned a considerable amount of property in 1941, but by 1959 the majority of it had been parceled out and sold. The county also owned land in this area, which it transferred by 1959.

The area south of Sedro Woolley remained the same throughout this period, as did that area east of the city.

The area farther north around Thornwood and Prairie did not experience much subdivision. The state owned a sizeable amount of land in 1941 and expanded its interest to a certain extent during the next 18 years. A firm called Bloedel Timberlands Development, Incorporated, owned a major part of this area by 1959, acquiring the land from David Tozer. Their holdings, however, seemed to end rather abruptly on the east at the Samish River.

1959 - 1972

Land subdivision slowed down around Sedro Woolley during this period. However, there were more signs of this type of activity north and west of the city than occurred to the south or east.

The area around Thornwood experienced minimal parcelization. The large land owners such as the state, Bloedel Timber Company, and Simpson Log Company, remained as large, or even grew, during this period.

The county transferred more of its land during this period, while such big timber companies as Georgia Pacific and Scott Paper continued to buy.

Middle Skagit River

1941 - 1959

A minimal amount of subdividing occurred around the towns of Lyman, Hamilton, and Concrete during this period. The action seems to have taken place between the timber companies. By 1959, such companies as Lyman Timber Company, Highland Timber Company, Bradsberry Logging Company, and Brown Brothers Lumber Company, sold most of their holdings to such names as Soundview Pulp Company, Puget Sound Pulp & Timber Company, and Scott Paper Company. Soundview had large holdings in 1941 and had expanded its way westward by 1959.

The state remained to be a large land owner in the forested sections of this area, throughout this period.

1959 - 1972

Some sections between Sedro Woolley and Concrete experienced growth during these latter years. The increase in the number of camping subdivisions along the river may have some relation to this phenomenon. For example, a piece of land between Lyman and Hamilton on the Skagit owned by R. H. Cochrehan in 1941, is now subidvided into an area called "Heart of the Skagit." Other areas have experienced similar action, such as the Birdsview-Cape Horn area, where there are groups of tracts called "Skagit Wilde" and "Pressentin Creek." Near the town of Concrete, on the river, the subdivision called "Cedar Grove" has also come into existence during this last period. Some of these developments have sparked activity in areas adjacent to them.

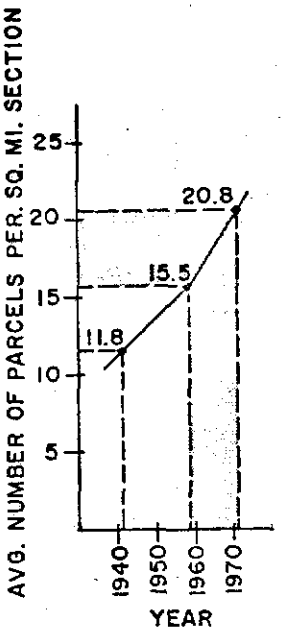
For the most part, the towns in the middle Skagit area did not grow during this period. There was some subdividing of land, however, along Highway 17 around these areas.

Scott Paper Company, as in other areas during this time, bought huge pieces of land, especially from Soundview Timber Company. Simpson Log Company

2.5.7 LAND OWNERSHIP PATTERNS

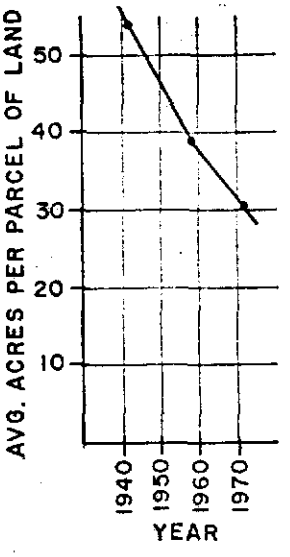
GRAPH 1

THIS GRAPH PLOTS PARCELIZATION OF LAND WITH YEARS. IT SHOWS PARCELIZATION TO BE GREATER IN THE LAST 13 YEAR PERIOD, THAN IT DID IN THE PREVIOUS 18 YEAR PERIOD. THIS WOULD ALSO MEAN THAT AVERAGE PARCEL OR LOT SIZE IS BECOMING SMALLER.



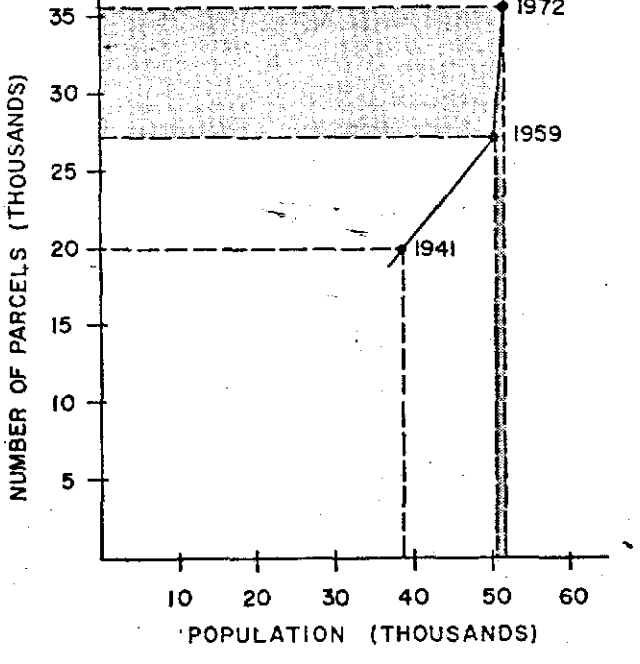
GRAPH 2

THIS GRAPH SHOWS THE DECREASING SIZE OF PARCELS OF LAND THROUGH THE YEARS.



GRAPH 3

THIS GRAPH PLOTS THE PARCELIZATION, OR NUMBER OF PARCELS IN UNINCORPORATED PORTIONS OF THE COUNTY, AGAINST POPULATION. IT SHOWS A SUBSTANTIAL INCREASE IN SUBDIVISION AND PARCELIZATION RELATIVE TO A RATHER SMALL INCREASE IN POPULATION.



remained a big land holder along the river, while Georgia Pacific continued to buy land from Puget Sound Pulp & Timber Company.

2.5.5 State and Federal Lands

Obviously, the large amount of state and federally owned land in Skagit County affects the area in that the government has control of the development of these lands. When one remembers that more than 50% of Skagit County's total land area is under state or federal jurisdiction, how the rest of the land is developed becomes a rather meaningful question. Furthermore, when one accepts the fact that agriculture is a permanent economic base in the planning period of this study and subtracts these agricultural lands and other previously developed or unsatisfactory areas, and subtracts the state and federal lands from the total area, the amount of land presently available and suitable for development is substantially reduced. In addition to the fact that the county exercises no control over federal lands, the county also receives little or no tax revenues from them. Of course, it can be said that as long as the land is in federal control, it will be protected and maintained. The benefits from the tourism stimulated by such wilderness areas will be a great boost to the county's economy when reasonably and properly developed. Also, the county receives monies from the state on County Trust Land. When this land produces income from logging, the county receives a percentage of the income earned. The remainder is retained by the state as a management fee. This County Trust Land is one of several types of state ownerships. However, this type seems to be the most widespread and beneficial in Skagit County.

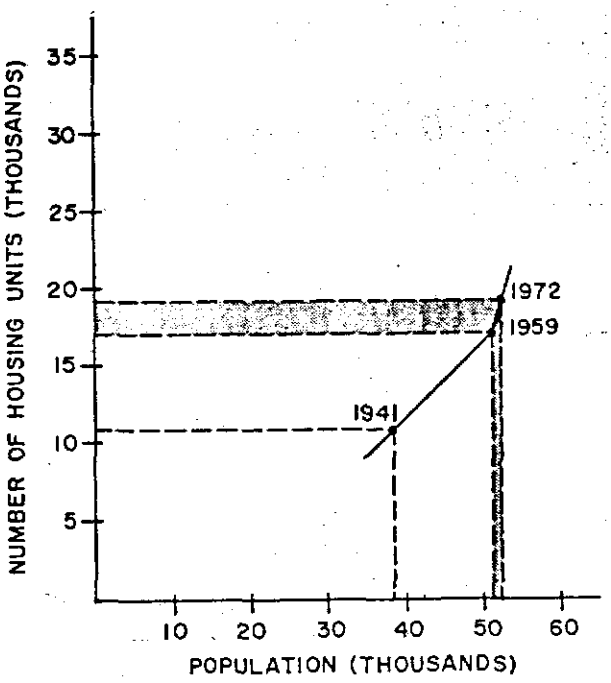
2.5.6 Land Ownership Map

A map depicting the amount and location of these state and federally owned lands has been prepared as a part of this plan.

2.5.8 LAND OWNERSHIP PATTERNS

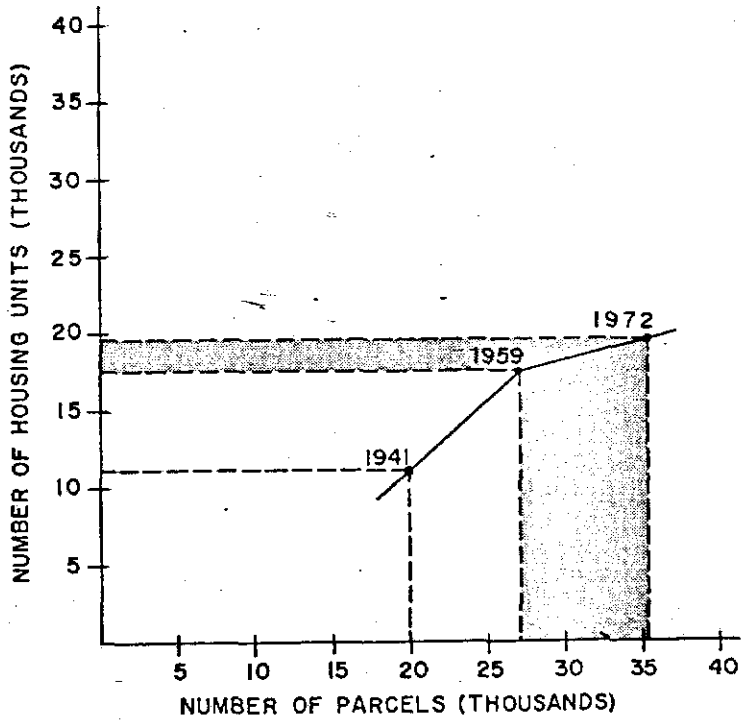
GRAPH 4

THIS GRAPH SHOWS THE NUMBER OF HOUSING UNITS IN THE COUNTY INCREASING AT A GREATER SCALE THAN POPULATION.



GRAPH 5

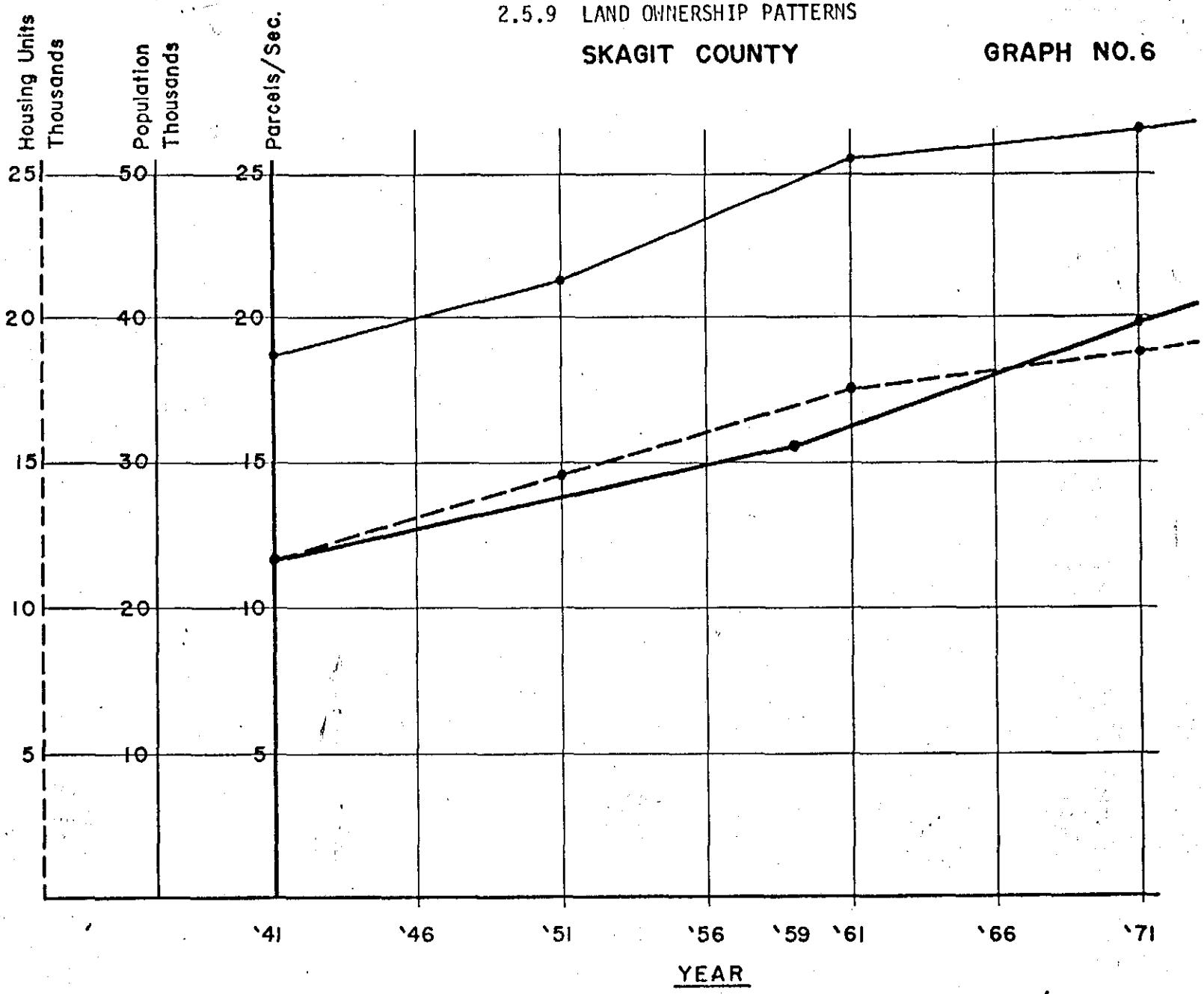
THIS GRAPH ILLUSTRATES THE SMALLER INCREASE IN HOUSING RELATIVE TO PARCELIZATION AND SUBDIVISION.



2.5.9 LAND OWNERSHIP PATTERNS

SKAGIT COUNTY

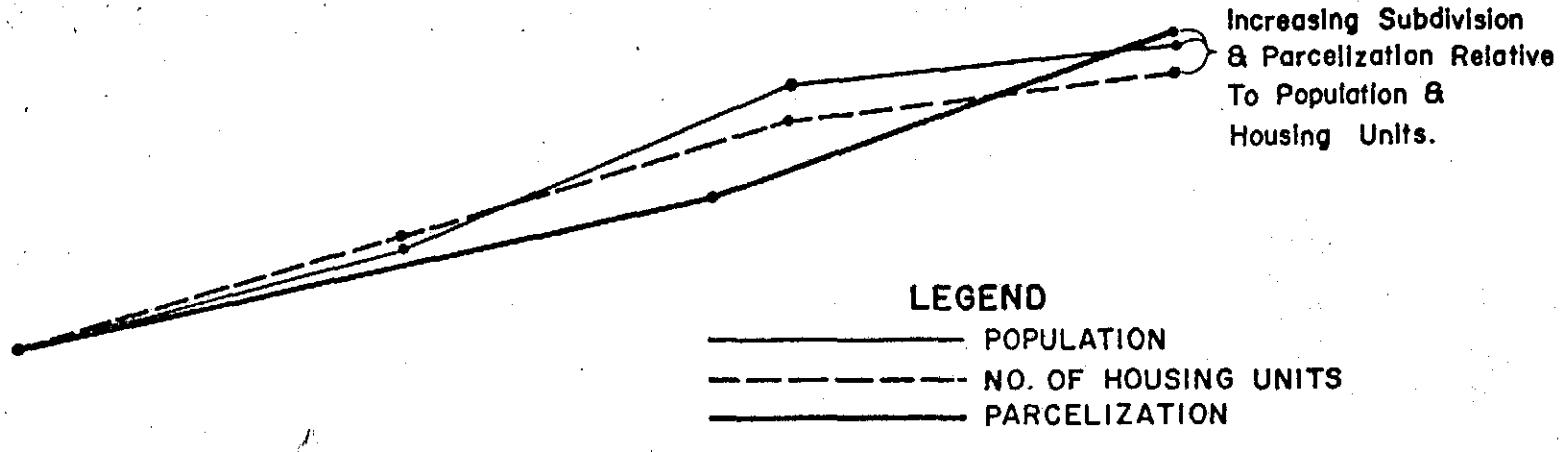
GRAPH NO.6



*COMPARISON OF HOUSING UNITS, POPULATION, AND NUMBER OF PARCELS OF LAND/SECTION

GRAPH NO. 7

POPULATION PARCELIZATION AND NUMBER OF HOUSING UNITS, SKAGIT COUNTY



2.6 ECONOMIC BASE ANALYSIS

2.6.1 Orientation

An analysis or evaluation of the economy of the North Central area must be done in relation to Skagit County area and to the surrounding Northwest Washington Region. To date, there has been no specific economic base analysis made for the North Central area. In that the economy of this area is tied closely to that of the region, many of the goals, objectives, and findings of regional studies are directly applicable to the North Central area. This plan adopts those findings, summaries of which are outlined in this section after a brief overview of the Skagit Regional Planning area.

The diverse elements which comprise the economic base of the Skagit Regional Planning area have been investigated and analyzed by a number of organizations and agencies. Some of the reports have dealt with specific aspects of the Skagit economy, while other reports have been oriented toward the general composition of the total regional economy.

2.6.2 Economic Base Analysis Information Sources

A list of these reports, studies, and analysis of Skagit's economy are available from the Skagit County Development Association at the Port of Skagit County office. Numerous other studies have been performed by private corporations and developers, and are not available for public consumption.

The latest economic studies relating to the Skagit Planning area are as follows:

I. Skagit County Agriculture: An Economic Mainstay
II. Skagit County Industrial Site Survey
III. A Tourist and Recreation Strategy for Skagit County with Recommendations for Implementation
IV. The Urban Land Institute Report on Skagit County
V. The North Cascades Highway: A Study of Its Impact on Local Community Economics
VI. Overall Economic Development Plan (Skagit County, Washington)

These reports and studies represent the most recent and detailed analysis of the Skagit Regional economic structure. All of these studies, except the Overall Economic Development Plan (Skagit County, Washington), were developed concurrently with the Skagit Regional Comprehensive Plans. The above listed reports deal with the three primary elements of Skagit's regional economic structure: 1) agriculture; 2) industry-commerce, and 3) tourism-recreation. To bring these economic elements together, the Skagit County Development Association, the Washington State Department of Commerce and Economic Development, and the Economic Development Agency of the Federal Government contracted for the services of the Urban Land Institute.

2.6.3 Economic Goals & Objectives

The goals and objectives of all of these reports can be summarized as follows:

A) Preserve the existing agricultural economic structure of the Skagit area.
B) Promote compatible diversified industrial development for the Skagit area.
C) Expand and promote tourism and the recreational attributes of the Skagit and North Central area.
D) Provide additional flood protection for existing urban areas.
E) Develop safe and adequate sewer, water, and drainage systems for the Skagit and North Central area.
F) Pursue area-wide planning and economic development.

The North Central area contains adequate land areas to accommodate diverse community and industrial development providing the economic goals and objectives outlined in this analysis are adopted and followed. In the same vain, these reports stress the need and the desirability of preserving the existing agricultural economic structure of the area. A balance must be reached between the various, diverse land uses. To date, our land areas have been adequate to absorb a variety of land uses without major conflict or incompatibility. However, the various agricultural, community, and industrial organizations and agencies must work together to insure that the wise use and allocation of this land is continued for the benefit of all citizens.

The adequacy of the land areas is an indication of the philosophy of the Skagit Regional Planning Council that diverse and compatible land uses which do not damage existing economic activities are encouraged to locate in the Skagit area.

To further benefit from and continue cooperation with development organizations and agencies, the reports listed are adopted as the economic element of this report. It is the intent of this plan to conform to the goals and objectives contained in those reports. These goals and objectives are summarized in tables at the end of this section.

2.6.4 SUMMARY OF ECONOMIC GOALS AND OBJECTIVES

From Skagit County Development Association Reports

Report No.

I. Skagit County Agriculture: An Economic Mainstay

II. Skagit County Industrial Site Survey

III. A Tourist and Recreation Strategy for Skagit County With Recommendations for Implementation

IV. ULI Report on Skagit County

V. The North Cascades Highway: A Study of Its Impact on Local Community Economics

VI. Overall Economic Development Plan (Skagit County, Washington)

The recommendations of these six reports are summarized on the following pages. This summary is indexed by the number of the report, as indicated above, and the page and paragraph on which the recommendations are more fully described.

2.6.4.1 SUMMARY OF ECONOMIC GOALS AND OBJECTIVES

From Skagit County Agriculture:
An Economic Mainstay

Report Number	Page Number	Paragraph Number	
I	x	1	-- retain agricultural land
I	x	2	-- use agricultural specialists
I	x	3	-- continue agricultural research
I	x	4	-- investigate use of irrigation
I	x	5	-- co-op or lease agricultural equipment
I	x	6	-- use time left to make land resource decisions
I	x	7	-- develop agricultural labor force
I	xi	1	-- work with and cooperate with environmental protection agencies
I	xi	3	-- expand hog and broiler chicken industries
I	xi	4	-- expand fresh market capabilities
I	xi	5	-- increase use of commodity commissions

2.6.4.2 SUMMARY OF ECONOMIC GOALS AND OBJECTIVES

From Skagit County
Industrial Site Survey

Report Number	Page Number	Paragraph Number		Cost per Acre	# of Acres
II	67	1	-- W. Sedro Woolley S. SR20	$4,486	35
II	71	1	-- E. Sedro Woolley	6,345	55
II	75	1	-- Far W. Sedro Woolley South SR20	4,935	160

2.6.4.3 SUMMARY OF ECONOMIC GOALS AND OBJECTIVES

From A Tourist and Recreation Strategy
For Skagit County With
Recommendations for Implementation

Report Number	Page Number	Paragraph Number	
III	13	2	-- identify or develop destination attractions
III	13	2	-- improve attractions, making them more convenient
III	13	2	-- provide tourist services
III	13	2	-- promote attractions and services
III	20	3	-- advertising & promotion program
III	25	4	-- steam railway excursion
III	27	1	-- resort development
III	62	4	-- control location of commercial development
III	62	5	-- prevent high-density recreational developments
III	62	6	-- support Wild & Scenic Rivers Act
III	62	7	-- establish park and open space systems
III	63	2	-- develop and lease vacation lots to general public
III	68	3	-- expand motel facilities (mid-river)
III	68	4	-- establish campground near I-5 - SR20
III	84	3	-- coordinate & develop public & private marinas

2.6.4.4 SUMMARY OF ECONOMIC GOALS AND OBJECTIVES

From Urban Land Institute Report
on Skagit County

Report Number	Page Number	Paragraph Number	
IV	57	5	-- flood control for urban areas
IV	57	5	-- sewer and water for development
IV	57	5	-- rebuild I-5/SR20 interchange
IV	57	5	-- area-wide planning and economic development
IV	58	1	-- protect area's environmental assets
IV	58	2	-- classify river
IV	58	2	-- promote recreation
IV	58	3	-- preserve agricultural land
IV	58	3	-- apply agricultural research
IV	58	4	-- Sedro Woolley industrial park

2.6.4.5 SUMMARY OF ECONOMIC GOALS AND OBJECTIVES

From the North Cascades Highway:
A Study of Its Impact on
Local Community Economics

Report Number	Page Number	Paragraph Number	
V	90	4	-- cluster commercial development
V	91	2	-- State of Washington assume leadership & coordination State Parks & Recreation
V	92	5	-- private developer should look long range
V	92	6	-- regulate signs
V	93	1	-- coordinate promotional activities
V	93	2	-- upgrade substandard sections of highway
V	94	2	-- U.S. Park & Forest & State Highway should protect ecology of wilderness area
V	94	3	-- in-park facilities must integrate and be secondary

2.6.4.6 SUMMARY OF ECONOMIC GOALS AND OBJECTIVES

From Overall Economic Development Plan
(Skagit County, Washington)

Report Number	Page Number	Paragraph Number	
VI	72	2	-- construct adequate sewer facilities
VI	73	4	-- develop solid waste management plan
VI	74	2	-- continue construction of & improve arterial network
VI	75	4	-- expand Manpower Training Program
VI	75	6	-- provide adequate housing in North Central area
VI	76	2	-- continue with development of new crops
VI	76	3	-- research in extending harvest season
VI	76	5	-- prepare comprehensive park, recreation & facilities plan
VI	77	2	-- identify resource & non-resource oriented industrial development (feasibility study)

2.7 TRANSPORTATION - ROADS & CIRCULATION

2.7.1 Orientation

Streets and roads provide the main means by which people move about, travel, and ship goods and services. They act to determine where people choose to live, shop, and pursue leisure activities. Certain land uses, whether they are farming or manufacturing, require roads that provide direct and efficient means of transportation. These uses largely influence where and how roads are built. Once established, other land uses such as residential, commercial enterprises and support industries are attracted to and become established along such roadways. Soon more arterials and connectors, as well as road improvements, are needed to meet the needs of the increased traffic. These in turn act as stimuli for further development and, thus, demand for increased public expenditures rises.

Roadways and the resultant circulation system must be a critical part of a comprehensive planning effort. In this section, the existing road system will be examined and in other sections land use and development patterns are analyzed. From these analyses future road circulation needs and problems can be identified and means to meet and solve them determined.

2.7.2 Classification of Arterials

The existing road system in the North Central area as well as in the county was recently surveyed and classified by the engineering consulting firm, VTN Washington, Inc. In their study, available at the County Engineer's Office of the Planning Department, proposed road design standards and an arterial classification system are discussed and recommended for adoption. Also included is a priority array to be used as a guide for the development of a six year construction program.

The roads within the study area were extracted from the county priority array and are listed according to priority number with a high priority

rating number indicating importance of construction. It is not a rule for a road construction improvement program, but is a guide for scheduling road improvements.

Suggestions for improvements are included in the evaluation and are represented by the following letters:

R - Reconstruction
W - Widening
S - Resurfacing
SW - Shoulder Widening
CR - Complete reconstruction on new alignment
D - Drainage Improvement
SI - Spot Improvement

Existing roads are classified according to the following arterial designations and their functions:

Primary Arterial - To expedite the movement of through traffic from city or town to city or town with combined populations greater than 500 people. To expedite the movement of through traffic to major traffic generators such as major shopping areas, major commercial and industrial complexes, and major recreational areas. To collect and distribute traffic from freeways, expressways, and other major state highway routes to less important arterial roads, or directly to traffic destinations.

Secondary Arterial - To collect and distribute traffic from higher type arterial highways to less important roads or directly to traffic destinations. To serve secondary traffic generators such as commercial, industrial, and agricultural areas, outlying grouping of residence areas, an important grouping of churches, a recreation facility, a community center and a large hospital.

Collector Arterial - To collect and distribute traffic from higher type arterial highways to access streets, or directly to traffic destinations. To serve traffic within a community, a neighborhood, or commercial and industrial complex. To serve community traffic generators such as small group of stores, a club house, a grange hall, a small hospital and a residential area.

SKAGIT COUNTY ROAD PRIORITY

2.7.3 PRIORITY RATING SUMMARY

Road No.	Name	Section	Length	Termini	Rating	Suggested Improvement
2120	Bow Hill Road	1	0.80	Burlington-Alger Rd. to SR 5 0.00 to 0.80	75	R
6300	Cook Road	4	3.76	Old 99 to Sedro Woolley City Limits 1.86 to 5.62	43	SW
5000	Prairie Road	1	2.13	Burlington-Alger Hwy. to Gripp Road 0.00 to 2.13	35	SW
9350	Old Minkler Hwy.	1B	1.37	Fruitdale Rd. to SR 20 3.18 to 4.55	34	W
9402	Lyman-Hamilton Hwy.	3	1.52	Lyman City Limits to SR 20 5.39 to 6.91	32	W
6340	Kelleher Road	1A	2.06	Burlington-Alger Hwy. to District Line 0.00 to 2.06	28	--
5051	Burlington-Alger Hwy.	1	5.27	Burlington City Limits to Bow Hill Rd. 0.00 to 5.27	26	--
9350	Old Minkler Hwy.	1A	3.18	Fruitdale Rd. to SR 20 0.00 to 3.18	22	--
2120	Bow Hill Road	2	0.14	SR 5 Interchange Area 0.80 to 0.94	21	--
9402	Lyman-Hamilton Hwy.	2	2.64	Hamilton City Limits to Lyman City Limits 1.79 to 4.43	20	--
5354	Alger-Cain Lake	1	2.79	Burlington-Alger Hwy. to County Line 0.00 to 2.79	19	W-SW

Road No.	Name	Section	Length	Termini	Rating	Suggested Improvement
6340	Kelleher Road	1B	0.65	Burlington-Alger Rd. to District Line 2.06 to 2.71	19	--
6600	Gripp Road	1A	2.40	Prairie Rd. to Mosier Rd. 0.00 to 2.40	18	SI
6340	Kelleher Road	2	0.49	District Line Rd. to F & S Grade Road 2.71 to 3.20	16	--
5000	Prairie Road	3A	2.97	Parsons Creek Rd. to SR 9 4.39 to 7.36	16	--
5000	Prairie Road	2	2.26	Gripp Rd. to Parsons Creek Rd. 2.13 to 4.39	15	SW
5000	Prairie Road	3B	0.431	Parsons Cr. Rd. to SR 9 7.36 to 7.79	15	--
6250	F & S Grade Road	1	5.02	Prairie Rd. to Sedro Woolley City Limits 0.00 to 5.02	14	SI
6600	Gripp Road	1B	1.07	Prairie Rd. to Mosier Rd. 2.40 to 3.47	14	--
5051	Burlington-Alger Hwy.	2	6.50	Bow Hill Rd. to County Line 5.27 to 11.77	12	--
5200	Parsons Creek Rd.	1B	1.62	Prairie Rd. to Burlington-Alger Hwy. 0.33 to 1.95	12	--
5200	Parsons Creek Rd.	1A	0.33	Prairie Rd. to Burlington-Alger Hwy. 0.00 to 0.33	11	--

Road No.	Name	Section	Length	Termini	Rating	Suggested Improvement
6321	District Line Road	1	1.51	Kelleher Road to Cook Road 0.00 to 1.51	10	--
6500	Mosier Road	1	1.04	SR 4 to Gripp Road 0.35 to 1.39	9	--
9402	Lyman-Hamilton Hwy.	1A	0.12	SR 20 to Hamilton City Limits 0.00 to 0.12	9	--
9402	Lyman-Hamilton Hwy.	1B	0.86	SR 20 to Hamilton City Limits 0.12 to 0.98	7	--
6345	Bassett Road	1	1.26	SR 9 to Gripp Road 1.80 to 3.06	6	--
6600	Gripp Road	2	0.99	Mosier Road to Garden of Eden 3.47 to 4.46	6	--

2.7.4 Bridges

Bridges play an important role in determining circulation and traffic routing in that their existing condition directly effects the overall road's trafficability; i.e., the loads the bridge can bear without undue stress to its structure. The county is presently pursuing a six year construction program of replacing many of the wooden bridges with those of concrete materials for longer life and durability. Construction priority for those bridges in the North Central area is exhibited in Table 2.7.5, with cost estimates and projected year for construction.

2.7.5 SIX YEAR CONSTRUCTION PROGRAM -- 1974-1979

Road Name	Location	Functional Class[1]	Urban	Rural	Type of Work[2]	Cost Estimate 1974	1975	1976	1977-79	TOTAL
Prairie Road	Samish River	S		x	I - Concrete	10,000	57,000			67,000
Prairie Road	Samish River	S		x	I - Concrete	51,000				51,000
Prairie Road	Friday Creek	S		x	I - Concrete			42,000		42,000
Friday Creek Rd.	Friday Creek	A		x	I - Concrete				30,000	30,000
Gripp Road	Samish River	S		x	I - Concrete				54,000	54,000
Friday Creek Rd. (Second Bridge)	Friday Creek	A		x	I - Concrete				42,000	42,000
Friday Creek Rd. (Fifth Bridge)	Friday Creek	A		x	I - Concrete				42,000	42,000
Burlington-Alger Highway	Samish River	M		x					15,000	15,000
					TOTAL	61,000	57,000	42,000	183,000	343,000

[1]Functional Classification Code
M - Major Arterial
S - Secondary Arterial
C - Collector Arterial
A - Access

[2]Type of Work
I - Bridge Construction

Source: County Engineering Department, Skagit County

The following is a list of those roads in the North Central area that have been classified based upon the VTN study:

Primary Arterials:

-- Cook Road
-- Old Highway 99 (Burlington-Alger Highway) from Burlington north to I-5
-- State Route #20 (North Cascades Highway)

Secondary Arterials:

-- F & S Grade Road
-- Old Highway 99 from Cook Road north to county line
-- State Route #9

Collector Arterials:

-- Collins Road
-- Fruitdale Road
-- Gripp Road
-- Kelleher Road
-- Lyman-Hamilton Highway
-- Minkler Road
-- Parson's Creek Road
-- Prairie Road

The existing Federal Aid Secondary (FAS) System and the recommended FAS System for future development funding is depicted on a map in the County Commissioners office. Placing roads under the FAS system enables the county to receive federal aid for improvements and up-grading. In all cases county determines the allocation of such funding, using the monies for priority projects. The degree of intensity of development in certain parts of the county would cause the county to focus these funds on roadways in and around these developing areas. Thus, there is a need for a continuing planning process for road systems based on land use patterns.

2.8 OPEN SPACE - RECREATION

2.8.1 Orientation

Tables in the Land Use Analysis Section, indicate that the majority of the North Central Region's land area is either in agriculture (22%) or forest (72%), both of which can be categorized as open space. Much of the forest area is owned or managed by private forest products concerns and a lesser portion by public agencies. The southern boundary of the study area, the Skagit River, a portion of the South Fork of the Nooksack River, and the Samish River are the main bodies of flowing fresh water in the region.

2.8.2 Goals and Objectives of Open Space - Recreation

The North Central area cannot be isolated in any discussion of open space or recreational activities. The area's open space and recreational resources attract and are utilized by not only area citizens, but more so by vacationers and travellers from within and without the State. With the recent completion and opening of the North Cascades Highway, this user impact can only increase, especially in the demand for more traveller, stop-over oriented facilities and services.

Since there is a region wide impact upon the area's resources, this plan adopts those goals and objectives stated in the Comprehensive Land Use Planning Alternatives. They are:

1) Locate and define potential recreation areas and outdoor recreation activities.
2) Determine and evaluate the recreation needs of resident and non-resident populations.
3) Preserve and maintain the aesthetic qualities and interesting attractions of the Skagit area.
4) Examine potential outdoor recreation areas as to their:
   a. feasibility for acquisition and ownership.
   b. prior history of recreational and/or other activities.

2.8.5 Inventory of Existing Recreation Facilities

The Skagit River, and to a lesser extent the Samish River, are main attractions for the popular area recreation activities of fishing and boating. The forested, field, and marsh areas are generally used by the public for hunting, hiking, and nature activities, where allowed by private landowners.

There are no Federal or State parks within the North Central Planning area.

The County Park Board and the Cities of Sedro Woolley and Lyman own and maintain the following areas:

Agency	Parks	Location	Size	Function
Skagit County	Donovan Park	Friday Creek	3.0 acres	Day Picnic
Skagit County	Fish Hatchery	Friday Creek	16.0 acres	Undeveloped
Sedro Woolley	Memorial Park	City	3.0 acres	General Recreation
Sedro Woolley	Bingham Park	City	2.6 acres	General Recreation
Sedro Woolley	Ball Park	City	4.0 acres	Baseball
Sedro Woolley	Roadside Park	State Hwy. 20	---	Rest Stop
Lyman	City Park	City	---	General Recreation

2.8.6 Inventory of Potential Outdoor Recreation Areas

The following is a list of potential park sites found in the North Central area. These sites, listed by priority of acquisition and development, were gathered from the Skagit County Potential Park Inventory and the Skagit County Comprehensive Park and Recreation Plan, available for reference at the Skagit County Planning Department. The priority array is only a recommended outline for federal, state, and local agencies to follow in order to provide and maintain a well balanced, diversified recreational program. The priority numbers are a part of the total county priority array.

Priority	Site	Size	Activities
4	Powell Creek	10 acres	Roadside stop, picnics
5	Skagit River Dr.	2 miles	Picnics, driving, fishing, hiking
	Skiyou Island	15 acres	Canoeing, fishing
	Swede Creek		Natural areas, picnics, camping, hiking
10	Samish River (Old 99)	30 acres	Fishing, picnics, playfields, camping, scenic areas
	Skagit River Bridge Sedro Woolley		Fishing, picnics, roadside stop
12	Hansen Creek		Roadside stop
14	Lyman (on the Skagit)		Boat launch, picnics, playfields, fishing
15	Minkler Lake	25 acres	Fishing, camping, picnics, hiking, natural areas, swimming, boating
16	Prairie & F & S Grade Road	30 acres	Camping, hiking, observation point, picnics, fishing
19	Friday Creek (adjacent to Fish Hatchery)	16 acres	Hiking, natural areas, picnics

For an in-depth analysis of the countywide open space program, consult the 701 Program Report and other recreation and park plans available at the County Planning Department office. These reports present demand and supply data along with cost estimates and funding sources for acquisition and development of areas by the appropriate agencies. Demands and uses are countywide and any specific area open space program must coordinate with and be a part of a county or regional program.

2.8.7 Supplemental Information

The Skagit County Board of Commissioners have recently adopted a countywide Park Plan, entitled Skagit County Park & Recreation Comprehensive

Plan. This Comprehensive Plan supercedes the previous Open Space and Recreation Element of the Skagit County Comprehensive Plan.

2.9 COMMUNITY FACILITIES

2.9.1 Orientation

Previous portions of this plan have dealt with a variety of characteristics which together form the environment of the community. This portion deals with the capital outlays that have been made to make the overall characteristics of the community better suited to the needs of its residents.

Existing public utilities, services, and facilities are delineated here. An inventory of this type is necessary to determine what should be changed or expanded to serve the projected needs of the community.

The Community Facilities portion of this report is composed of the following:

2.9.2) Educational Facilities
2.9.3) Personal Services
2.9.4) Sewer, Water, Drainage Facilities

2.9.2 Educational Facilities

The maintenance of a sound school system is not only a benefit to the children of the area, but it is also an asset to the area as a whole. Besides the primary result of supplying a child with the best possible education, there are secondary and tertiary effects of a good school system. The schools tend to unite the community through P.T.A., sports events, school concerts, joint use of school and public facilities, and other activities. The community is also benefited by the increase in the overall education of its present and future members. In this way, the people can be better prepared to determine their own future.

2.9.2.1 Intermediate School District 108

Education in the study area is conducted under the general supervision of Intermediate School District 108 (ISD 108) headquartered in Bellingham. ISD 108 is a four-county organization of school districts, which

encompasses the school districts of Whatcom, Skagit, Island, and San Juan Counties. This District has a records keeping function as mandated by state law, acting primarily in the capacity of a coordinating and service agency for the public and private school districts in the four-county North Sound area. Serving the central area, the Sedro Woolley School District #101, a first class district, falls within the general supervision of ISD 108.

Finding ways of objectively and accurately examining existing educational facilities is a great problem. Any evaluation of educational facilities, unless conducted by an unbiased expert, will contain biases and weaknesses. It is for this reason that it is up to the people of the North Central area and the Sedro Woolley School District to join with their educators in evaluating their own goals and priorities. The following is a brief evaluation of the educational resources of this area.

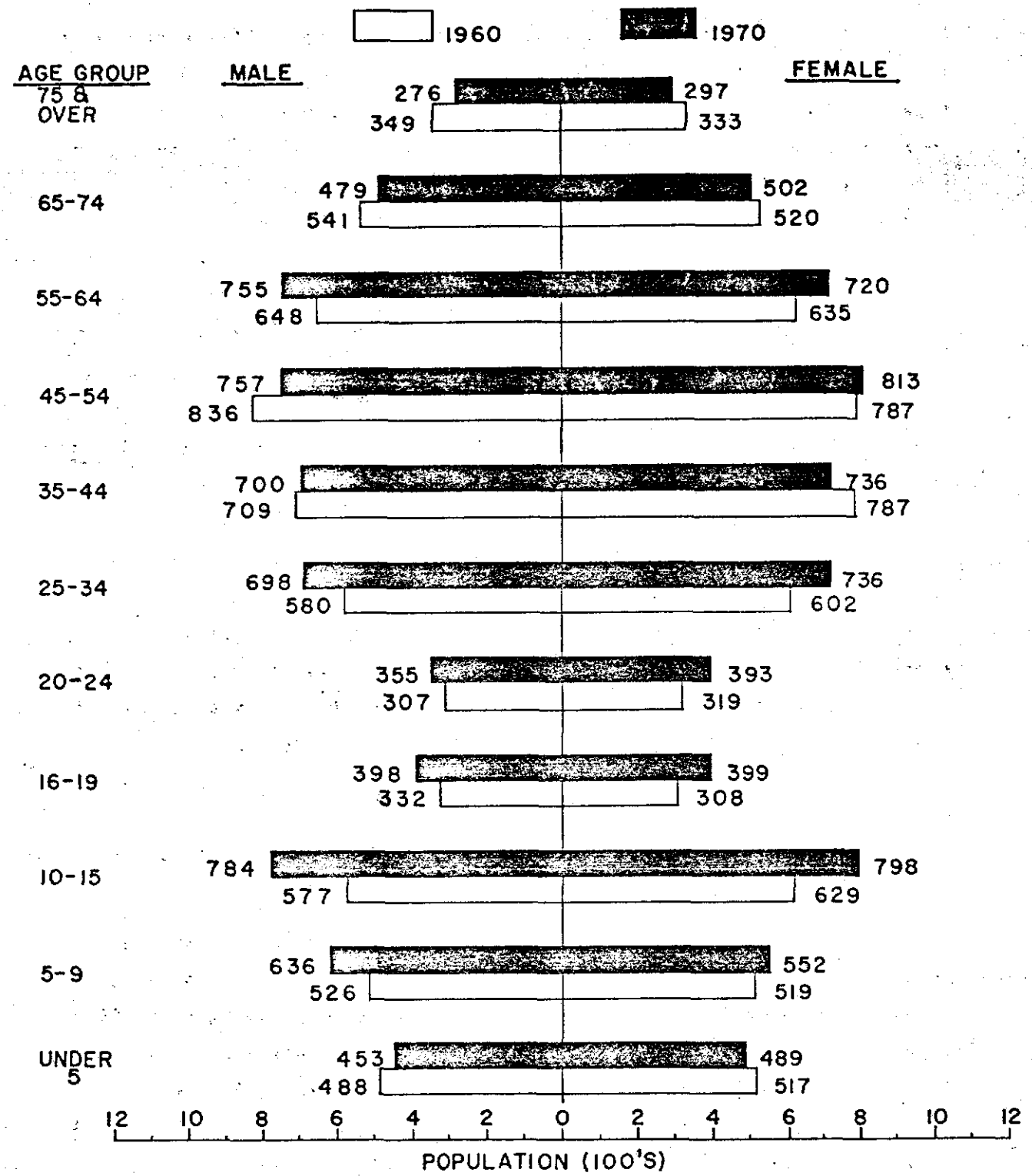
2.9.2.2 North Central Educational Facilities

As noted above, the North Central area is served by Sedro Woolley School District #101. The District also serves the Clear Lake and Big Lake areas, areas which do not fall within the scope of this planning effort.

The total number of students in 1972 was approximately 2,772 with a student/teacher ratio of approximately 18 to 1. There are seven schools within the area, including five elementary schools, one junior high school, and one high school.

School (Grades)	1972 Enrollment	Sq. Ft./Sq. Ft. Per Pupil	Acreage	Year Built/ Additions
Lyman (K-3)	91	12,865/141.3	7.0	1935
Mary Purcell (K-3)	594	35,504/59.7	4.7	1951
Samish (1-6)	114	10,211/89.5	4.3	1962
Central (4-6)	546	43,447/79.5	2.4	1925
Cascade J. H. (7-9)	783	75,277/96.1	12.8	1957
Senior High (10-12)	644	---	14.0	1915

2.9.2.2.1 SEDRO-WOOLLEY NO. 101 AGE & SEX DISTRIBUTION 1960-1970



TOTALS 1. 1960 = 11,849
2. 1970 = 12,727
3. NUMBER OF WOMEN OF CHILD-BEARING YEARS (16-45) - 1960 = 2,016, 1970 = 2,264.
4. NUMBER OF BIRTHS (PLUS NET MIGRATION AGES UNDER 10) - 1950-'60 = 2,050, 1960-'70 = 2,130

When examining the age/sex pyramid for the Sedro Woolley District, including Clear Lake and Big Lake (which are out of the North Central area), it is seen that the number of children under five years of age has fallen only slightly in the last ten years. The number of children in the age groups above five all show increases. These figures, combined with the rise in population within the district, the rise in the number of women in child-bearing years, and the rise in the number of births, points to the fact that Sedro Woolley is not typical of most of the other school districts in the county. The 7.4% district population increase is above the 2% figure felt by the county between 1960 and 1970.

This growth factor, combined with both the possibilities of future growth and of the older school buildings in the district points toward the importance of building and renovation programs. Recently, Sedro Woolley School District #101 retained the services of Johnston-Campanella-Murakami-Brummitt & Company to develop a master plan for the school district. This plan specifically concerns itself with the examination of district educational objectives, the existing facilities, the district's financial status and capacity, and alternative plans for development within the district. This plan is available for evaluation at the County Planning Office.

2.9.2.3 State Assistance Requirements

The state plays an important role in school district planning because of its assistance in financing projects. Financial capability and capital outlay expenditure is dependent upon bond monies. A ceiling amounting to 20% of the assessed valuation for school bond indebtedness has been established by state law. School districts must be bonded to at least 10% of their 20% capacity to qualify for state assistance in their construction programs. State funds are made available to school districts which qualify by placing them on a "priority of needs" list, which is referred to as the state "Gray Book." This book lists the school districts which are entitled to assistance and the corresponding percentage of state participation that they may expect.

The state standards for financial assistance are based upon a square footage allocation for each unhoused pupil in the school district. The

c. the need for urgency of acquisition.

d. relation to transportation corridors for public access.

5) Develop a trails plan as a subsection of the overall recreation plan.

6) Indicate the need for suitable indoor recreation areas.

7) Provide both urban and rural open space recreation areas.

8) Explore the functional inter-relationships between local, state, and federal recreational programs and coordinate programs whenever possible.

2.8.3 Demand-Supply and Need for Open Space

The following table summarizes the recreation activity needs for the Skagit area to the year 1990. The data included in the table is a refinement of detailed information developed by the Skagit County Planning Department for the Skagit County Parks and Recreation Commission. The detailed information is contained in two volumes: 1) Park Study - Demand, and 2) Park Study - Standards, Needs, Costs. These studies are available for review at the Skagit County Planning Department.

2.8.4 OPEN SPACE - RECREATION SUPPLY AND DEMAND TABLE

Activity	Standard	Supply	Demand			Need		
			1970	1980	1990	1970	1980	1990
Boating Moorage	.01 acres/unit	10.79 ac.	8.30 ac.	9.52 ac.	10.77 ac.	2.49 ac. (excess).	1.27 ac. (excess)	.02 ac. (excess)
Boating Trailered	.04 acres/unit	29.32 ac.	33.20 ac.	38.08 ac.	43.08 ac.	3.88 ac.	8.76 ac.	13.76 ac.
Boating Canoeing	.02 acres/unit	203.83 ac.	7.26 ac.	8.32 ac.	9.42 ac.	196.57 ac. (excess)	193.99 ac. (excess)	191.35 ac. (excess)
Camping	.14 acres/unit	117.46 ac.	625.80 ac.	861.00 ac.	1,101.66 ac.	508.30 ac.	734.54 ac.	984.20 ac.
Field Sports	1 field/6,000 pop.	32 flds.	8.6 flds.	9.0 ac.	10.6 ac.	23.4 ac. (excess)	23.0 ac. (excess)	21.4 ac. (excess)
General Recreation Playground/parks	1.25 acres/1,000 opo.	155 ac.	130 ac.	142 ac.	160 ac.	25 ac. (excess)	3 ac. (excess)	5 ac.
Golf	144 person/course	3-18 hole 1-9	10.4 ac.	12.0 ac.	13.0 ac.	6 ac.	8 ac.	9 ac.
Hiking	.05 miles/unit	600 mi.	11.10 mi.	17.10 mi.	23.25 mil.	588 mi. (excess)	582 mi. (excess)	576 mi. (excess)
Picnicking	.01 acres/unit	18.70 ac.	29.60 ac.	34.00 ac.	38.50 ac.	10.90 ac.	15.3 ac.	19.8 ac.

Activity	Standard	Supply	Demand			Need		
			1970	1980	1990	1970	1980	1990
Swimming	.02 acres beach/unit	15 ac.	46.20 ac.	60.00 ac.	74.84 ac.	31.20 ac.	45.00 ac.	59.84 ac.
Winter Sports	30 people/acre	none	27.2 ac.	31.3 ac.	35.4 ac.	27.2 ac.	31.3 ac.	35.4 ac.

There were four activities that had a high need for creating more facilities; whether to expand existing facilities or to create new ones. These activities were: camping, swimming, golf, and picnicking; with several other activities also having a need to a lesser extent.

For the county, camping, swimming, and picnicking areas should be high on a priority. These activities' need could be met with just a minimum of site expansion as these activities are linked to each other. Golfing should not be as great of concern because of the nature of the activity and the people it serves, plus a greater chance of the private sector to invest in golf courses.

allocation for elementary students is 70 sq. ft. per pupil and the allocation for junior high school students is 90 sq. ft. per pupil. In addition, the state also sets a ceiling for construction costs beyond which they will not participate. The state will participate with the school district in the percentage previously mentioned, up to a total cost per square foot of $27.11. Thus, any construction costs exceeding $27.11 per square foot would have to be assumed by the school district.

The formula for state assistance would be:

A percentage of the number of unhoused students	70 sq. ft./pupil or 90 sq. ft./pupil	x $27.11/sq. ft.

2.9.2.4 Summary

Nearly all public school districts in Skagit County are experiencing a diminishing rate of growth insofar as student population is concerned. This is primarily a reflection of two unrelated events: 1) birth control is overcoming the cyclic effect of the WW II baby boom, and 2) there are relatively few promotional opportunities for young adult families in the planning area. Thus, young career oriented county residents must migrate to urban centers where greater opportunities exist.

This diminished rate of growth is allowing school districts to reduce student per classroom ratios and this reduces the demand for additional classrooms. Nearly all school districts are at 100% of capacity and some of this capacity is housed in substandard facilities which reduce educational opportunities and substantially increase the maintenance cost per student. However, recent voter reluctance to approve levies and the existence of high interest rate of bonds for long range capital acquisition combine to create great difficulties in updating educational facilities.

2.9.3 Personal Services

2.9.3.1 Emergency Services

A revision of the Skagit County Emergency Services Operations Plan was completed in October 1972 by the Skagit County Department of Emergency Services.

Further details involving emergency services may be obtained by consulting the above cited document and the Emergency Services Department.

The emergency services operation plan is primarily used as a guidelines to develop a county civil defense network that is prepared for both military attack and natural disasters. Coordination of the activities of all the organizations and manpower that may be involved in an emergency is a major element of the plan. It would also provide for effective utilization of all resources available from sources outside Skagit County.

Although Federal and State levels of government have responsibilities and controls in an emergency, the Skagit County Department of Emergency Services is the coordinator of all county and city officers and employees, together with those volunteer forces enrolled to aid them during a disaster, and all groups, organizations, and persons who may by agreement or law be charged with the protection of life and property during such an emergency.

Direction and control during a disaster would channel from the governor's office to the County Board of Commissioners.

For the purposes of coordination with the land use plan for the North Central Region, this report adopts the Emergency Services Operations Plan for Skagit County by reference.

2.9.3.2 Law and Justice

The following recommendations are cited from An Improvement Plan for Law and Justice, 1971, developed by the Northwest Regional Council, which is adopted by reference in this report. The Northwest Regional Council is a four-county association composed of Skagit, San Juan, Island, and Whatcom Counties. The primary function of this council is to develop and adopt plans and recommendations to improve law and justice service throughout the region.

The expertise of this council in this detailed and critical area of public service has been utilized in the development of this planning program,

therefore, the following summary recommendations and conclusions are used as the basis for the Law and Justice Section of this report.

2.9.3.2.1 Planning Recommendations

1) Full governmental and law enforcement agency participation in the minimum recruitment and training standards of the Washington State Law Enforcement Training Commission will be encouraged. A regional goal will be that by 1973 all law enforcement personnel will have satisfactorily completed a basic training program prescribed by the Washington Law Enforcement Officers Training Commission.
2) County and local polic jurisdiction will devise "back up" programs to assist all agencies in participating in the *minimum* standards training program.
3) Recruitment programs in high schools, vocational schools, colleges and universities will be undertaken to interest highly motivated and qualified young men and women to pursue law enforcement careers.
4) This region strongly recommends that the Washington State Legislature, the Washington State Law and Justice Committee, and the Washington State Law Enforcement Training Commission expand the capacity of the State's basic law enforcement training program so that there are more basic training sessions available for local law enforcement agencies.

Note: The Skagit County Sheriff's Department is the largest law enforcement agency in the county (a staff of 30). It has assumed a great deal of responsibility within the county, including almost all of the criminal investigative work. The future development of the North Central Region will obviously put more demands on this department, although these demands will vary somewhat according to the pattern and form of development. A more nodal urbanized situation in the Sedro Woolley area would cause the municipal department to grow with the increased population and concentration of development. The Sheriff's Department would also have to increase its personnel to assist the city and to handle the spillover effects of an urbanized situation. A more rural dispersed pattern of development would obviously cause an increase in the demand for direct law enforcement services supplied by the Sheriff's Department.

It is difficult to predict the exact needs of area law enforcement agencies in the future for much of the level of service provided is determined by public sentiment and availability of qualified personnel. Standards pertaining to law enforcement levels for various densities of development also seems to be quite rare, if not non-existent.

2.9.3.3 Health Service Delivery

The field of Health Services Delivery is addressed more fully in the documents developed by, and being developed by, the Comprehensive Health Planning Council of Whatcom, Skagit, Island, and San Juan Counties. This Council is a four-county organization of elected officials and interested citizens, as well as health delivery professionals. The Council is partially supported by a grant from the U.S. Public Health Services.

The Skagit Regional Planning Council has endorsed the ongoing activities of the Comprehensive Health Planning Council. For this reason, the Regional Planning Council defers all recommendations regarding Health Service Delivery to the Comprehensive Health Planning Council of Whatcom, Skagit, Island, and San Juan Counties.

2.9.4 Water, Sewage, and Drainage Facilities

The Skagit County Water, Sewerage, and Drainage Facilities Plan, was recently completed for the Skagit Regional Planning Council (June, 1970), by Stevens, Thompson & Runyan. This comprehensive planning report adopts the recommendations of that document, with the assumption that it will be revised as a part of the current River Basins Study.

As a result of the planning alternatives report done under the 701 Program, it is hoped that water, sewer, and drainage systems will orient toward the uplands areas of the North Central region in future utility development efforts. It should be noted here that prior to construction of any facility or segment of a facility, a detailed feasibility study for that particular feature must be made, encompassing not only engineering and financial aspects, but also needs and future physical and social ramifications of such a facility. The point here is that a long-range plan for initial ideas is not a substitute for a detailed analysis of each specific proposal.

There is a need for area and countywide coordination in community facilities including sewer, water, and drainage facilities. There is a great need to attain an optimum level of services for the greatest possible number of people in the most efficient and economically manner possible. Many times an organization will create an "economy of scale" that would not have been realized under a traditional fractionated district form, thereby effecting a savings of a certain amount of tax dollars.

The conclusions and recommendations of the Skagit County Water, Sewerage, and Drainage Facilities Plan conform with the goals and objectives of this comprehensive plan. This plan is available at the Planning Department office.

3 COMMUNITY GOALS AND OBJECTIVES

The two previous chapters of the Comprehensive Plan for the North Central area have dealt with the Physical Environment and the Developmental Characteristics of the North Central part of Skagit County. Together, these chapters form the background against which information about the desires and needs of the North Central area can be examined.

Citizen attitudes about potential land use patterns are addressed in this chapter. These citizen attitudes provide a tempering for the development of a comprehensive plan.

This chapter of the North Central area comprehensive plan, is composed of the following sections:

3.1) Land Use Simulation Exercise
3.2) Citizen Input Questionnaire
3.3) Technical Advisory Committees
3.4) Citizen Groups & Public Hearings
3.5) Planning Policy Objectives

3.1 Level of Analysis

After the information relevant to the physical, developmental, and community facilities characteristics has been gathered and analyzed, it becomes necessary to temper and use that information in accordance with the desires and needs of the community. This section attempts to provide that tempering.

Citizen attitudes were explored by several techniques: simulation exercises, surveys, public hearings, and technical advisory committees. The outcome of these attitude assimilation techniques are discussed in the chapter on Planning Policy Objectives.

3.2 Land-Use Simulation Exercise

3.2.1 Intent

The Land-Use Simulation Exercise is a land-use game which evolved from a need for alternative forms of citizen involvement. It performs a number of functions, helpful both to the planning program and to the general public. Benefits resulting from participation in the simulation exercise include:

3.2.1.1 Expression of public goals through direct involvement in decision making processes.

3.2.1.2 Public awareness of the planning process.

3.2.1.3 Determination of public sentiment toward various land use proposals.

3.2.1.4 Public exposure for planning activities.

3.2.2 Purpose

The purpose of the simulation exercise was to develop the "best" land use pattern for Skagit County based on a population projection of 75,000 people by the year 2000 (an approximate increase of 25,000 people).

The game was played during the development of the 701 Program Report (1972-73). A more thorough analysis of the rules, guidelines, and results can be found in the 701 Report, Comprehensive Land Use Planning

Alternatives for the Skagit River Floodplain and Related Uplands. This game is only one segment of the citizen participation element of the 701 Study and the Comprehensive Plan for the North Central Area.

3.2.3 Analysis of Results for the North Central Area

The game has been played enough times to make some generalizations about the results as they apply to the North Central portion of the county.

3.2.3.1 Two general developmental patterns are favored: the dispersed pattern were residential, commercial, and industrial uses are spread out over a larger land area; and, the more concentrated or nodal pattern where existing urban services are more highly valued with growth concentrated about these existing centers except for some dispersal of residential development to view property near urban areas.

3.2.3.2 All residential uses in both patterns were out of the floodplain.

3.2.3.3 A high regard for preserving the agricultural resources was demonstrated with additional development allowed only for agriculturally related, industrial and commercial activities.

3.2.3.4 Industrial development, were it to occur in the North Central area, should be located north of Sedro Woolley, out of the floodplain.

3.2.3.5 Parks and open space were most often oriented to the Skagit and Samish Rivers. In general, the rivers and hills were seen as particularly fine assets which the county should carefully develop or preserve.

3.2.3.6 Extension of various utilities in and around the Sedro Woolley area. A new alignment of SR 20 to Sedro Woolley was favored.

3.2.4 Conclusion

Probably more important than anything else is the dialogue that arises between the players of the game. They soon become aware of the importance of their decisions and the trade-offs that have to be made when determining land-use policies. Through the game they became familiar with various developmental decisions.

3.3 Citizen Input Survey

3.3.1 Purpose

This survey, in the form of a questionnaire printed in the Skagit Valley Herald, served to direct the development of the alternative land-use plans with regard to recommended lot sizes, distribution of development areas, and promoting development in the upland areas of the county.

3.3.2 Analysis of Results

Compilation and review of the 351 responses (0.6% of county population) by Planning Department staff allows some generalizations to be made as they apply to the planning area. It is believed that the countywide responses are also indicative of attitudes of the North Central area residents.

3.3.2.1 People like the rural lifestyle of the area.

3.3.2.2 People dislike the lack of career employment opportunities.

3.3.2.3 Sixty per cent (60%) of the respondents did not want a change in the general appearance of the area. Of those who wanted a change, a majority wanted a more rustic appearance. Physical aspects most often cited were the mountains, forested areas, and aquatic environments.

3.3.2.4 Poorly maintained residences and urban clutter rated as the two most unattractive aspects of the area.

3.3.2.5 People seemed satisfied with the type and variety of housing available. Low income housing was not favored, except for the elderly

3.3.2.6 Approximately sixty-three per cent (63%) felt that future residential development in the floodplain should be curtailed.

3.3.2.7 The people want a wide distribution of lot sizes throughout the county. The preferred size was a split between a 1/4 acre lot and a one or more acre size lot. Also, respondents favored a 30 acre minimum lot size in the agricultural zone.

3.3.2.8 73.5% did not feel floods represented a serious threat to them personally. However, 50% are in favor of increasing flood protection, but were not agreeable to sharing the expenses; 39% agreed that the costs should be borne by those benefitting from the protection.

3.3.2.9 Agriculture was very important to 83% of the respondents. A majority (57%) were in favor of policy and standards for preserving farm land and a greater number feared that this resource could be threatened by urban related speculation and development.

3.3.2.10 Outdoor recreation qualities rated high with the respondents with a majority favoring the development of a moderate recreation/tourism program.

3.3.2.11 Regarding industrial development, all answers exhibited a strong preference for industry that did not conflict with the beauty and lifestyle of the area. Sixty-four per cent (64%) were in favor of the development of a nuclear power plant.

3.3.3 Conclusion

The Comprehensive Plan for the North Central Area should strive to protect the rural atmosphere, protect the agricultural lands and expand indoor and outdoor recreation facilities, while allowing for reasonable, well-planned industrial and commercial growth.

3.4 Technical Advisory Committees

Technical Advisory Committees, involving various areas of expertise (natural resources, community development, regulatory and personal protection, transportation and utlities and cultural and personal services) were formed to aid and advise the planning staff. The members included experts in various fields, as well as interested local citizens.

The members of the Natural Resources Committee, the Transportation and Utilities Committee, and the Cultural and Personal Services Committee, were of particular value in examining such questions as the effects of certain developments upon fish, wildlife, and the environment in general, alternative means of flood protection, alternative road and highway alignments, and various future social and cultural needs.

Although the meetings held were quite fruitful, the overall success of the technical advisory committee approach was rather disappointing. Time allotted for this function was not sufficient to complete a thorough

investigation. However, the success of both the Land-Use Simulation Exercise and the opinion survey more than compensate for any deficiencies in the technical advisory approach to public involvement.

3.5 Citizens Groups and Public Hearings

Further citizen input and involvement has been enhanced by the formation of a Citizen Advisory Committee and by recording attitudes and concensus at public hearings.

The present Citizens Advisory Committee has been meeting bi-weekly to discuss planning goals and objectives and developmental models and patterns for the North Central area. Their input has been invaluable in aiding the Department staff on establishing policies and recommendations for the Comprehensive Plan.

All proceedings at public hearings including citizen comments and opinions are recorded and reviewed by the Planning Department staff. This input has been likewise correlated with findings of the Land-Use Simulation Exercise, the input questionnaire, the technical advisory committees, and the citizens committee to form the basis for policy making and planning recommendations for the North Central Comprehensive Plan.

3.6 Planning Policy Objectives

After tabulating and reviewing the citizen input from the preceding techniques, the staff developed the following planning policy objectives. These objectives have formed the basis and rationale for the alternative models and subsequent alternative plans discussed in the following sections.

3.6.1 These planning policy objectives are:

3.6.1.1 Provide and maintain lifestyles which best preserve the natural beauty of the area, minimize public investments, and which allows private investment the greatest possible latitude within the interests of community health, safety, and welfare.

3.6.1.2 Preserve the agricultural base of the area, so as to retain both the primary economic base and the rural atmosphere of this area.

3.6.1.3 Protect agricultural lands from flooding to a 20 year frequency.

3.6.1.4 Protect existing urban areas from flooding to a 50 year frequency.

3.6.1.5 Exclude further development in the agricultural lands for economic, safety, and aesthetic reasons; and conversely, to encourage the location of future development in suitable well-planned uplands areas.

3.6.1.6 The location and quantity of land designated for urabn related uses, i.e., residential, commercial, and industrial, should be based upon estimates of present and future needs, environmental impact, various private and public economic criteria, and the resulting social ramifications.

3.6.1.7 Provide the public services required to fulfill state and federal regulations in a manner campatible with the general attitudes of the people of the North Central area.

3.6.1.8 The coordination of urban services should be handled on a metropolitan level to insure efficiency and economy of operation, and to provide specialized regional facilities.

3.6.1.9 Municipal, public, quasi-public, and private standards, plans, regulations, and efforts should be coordinated with those of the area, the county and the region, realizing that successful integration of development cannot be accomplished without coordination of efforts.

3.6.1.10 Future municipal annexations by the City of Sedro Woolley should consider such elements as flood problems, drainage, topography, soils, septic suitability, population, the ability of the city to provide proper sewer and other utilities and services, regional land-use policies, and future land-use ramifications of the annexations.

4 ALTERNATIVE LAND USE MODELS

The previous sections of this plan have dealt with the various elements that comprise a comprehensive plan. This section is an attempt to deal with the major alternatives available for land use in the North Central area. This is a hypothetical discussion of these alternative forms of development.

The major comparison made is between the cost of developing in the flood-plain versus the cost of developing in naturally floodsafe areas.

The alternatives discussed in this section were developed to facilitate an analysis of the desirability of each form of development.

This section is composed of the following chapters:

4.1) Level of Analysis
4.2) No Comprehensive Plan
4.3) Uplands vs. Lowland Land Use Models

4.1 Level of Analysis

The evaluation of alternatives has been done at two levels of analysis. The broadest level is a comparison between uplands and lowlands land-use models. These models were developed for the downriver area and more urban of the Skagit Region. However, they are directly applicable to the North Central Planning area. The second and more specific level of analysis is of four alternative land use plans of the downriver area. The alternative plans have been directly applicable to the North Central Planning area.

4.2 No Comprehensive Plan

The alternative of not having a comprehensive plan is not applicable in this instance, as the Revised Code of Washington requires comprehensive plans. In the instance of Skagit County and the North Central area a Comprehensive Plan already exists for these areas.

4.3 Uplands vs. Lowlands Land Use Models

In the broad set of alternatives, the major comparison made is between the cost of developing in the floodplain versus the cost of developing in naturally flood proof areas.

The uplands and lowlands land use models were developed to facilitate an analysis of the desirability of each form of development.

Each of these land-use models is described below, while the main concentration is directed to the entire downriver area, emphasis has been placed on the North Central Planning area wherever practicable.

4.3.1 Uplands Land Use Model

4.3.1.1 Goals & Objectives

4.3.1.1.1 To maintain existing levels of flood protection for all areas in the floodplain.

4.3.1.1.2 To concentrate development in areas free from danger of flood and high water table. (i.e., uplands)

4.3.1.1.3 To protect the agricultural economic base of the county.

4.3.1.1.4 To allow for reasonable development in accord with population growth while maintaining the general rural atmosphere of the county.

4.3.1.1.5 To plan for existing cities to carry the major portion of population growth in areas away from the floodplain. (This is economically important due to the proximity of various utilities and services.)

4.3.1.2 Land Use Patterns

4.3.1.2.1 Floodplain Management

a. Provide and maintain the degree of flood protection attained to date.

4.3.1.2.2 Residential development patterns:

a. The main areas of growth would be centered in those parts of the larger cities which are out of flood danger. These would be areas of the denser "urban-type" growth (i.e., east Mount Vernon, north Sedro Woolley, Anacortes, etc.)

b. Other more "rural-type" development would be scattered throughout the upland areas in much the same manner or density as presently occurs.

c. Other areas of low density residential development include portions of the Clear Lake area, of the Samish River, Bow Hill, Samish Island, Bayview, and the Pleasant Ridge-Fish Town area.

4.3.1.2.3 Commercial development:

a. Some major commercial expansion would be necessary in north Sedro Woolley.

b. Smaller neighborhood commercial areas would be necessary according to certain patterns of growth. These were detailed as the land-use models reach a refined stage.

4.3.1.2.4 Industrial development:

a. The area east of Sedro Woolley and north of SR 20 would also be developed as industrial park.

4.3.1.2.5 Agriculture and pasture:

a. All land on the floodplain presently used for agriculture and pasture purposes should remain as such to assure the continuation of this economic activity and to deter the possibility of great losses of life and property due to flooding.

4.3.1.2.6 Transportation

a. I-5 should continue to be upgraded.

b. SR 20 should continue to be improved.

c. The development of adequate circulation systems in proportion to the intensity of future development in east Mount Vernon, north Sedro Woolley, and also the areas of less intense development should continue.

4.3.1.2.7 Community Facilities

a. Parks - besides the continued maintenance of existing parks, certain additional areas should be set aside as park or open space.

1. Little Mountain area should remain as active recreational open space, connected on the north by an Urban Trails System and Hillcrest Park.
2. The Devils Mountain area south of Little Mountain should remain undeveloped as a passive type of recreational open space.
3. Parts of Bow Hill north to Chuckanut should be used as open space park areas.
4. A narrow strip around Bayview Ridge (connected to Bayview State Park) should be developed for a trails park. This would serve as a buffer between the proposed industry and other incompatible existing uses, as well as provide a different type of recreational opportunity.

b. Schools

1. The proper educational facilities should be provided in proportion to the growth of certain areas. Maintenance and expansion of existing facilities is also important.

c. Utilities and other services (fire, police, hospitals, community facilities, etc.)

1. The higher densities around Mount Vernon and Sedro Woolley are predicated on the fact that the extension of urban utilities and services is desirable in these areas.
2. Likewise, the areas depicted for lower density were predicated on the limiting features of soils, slope, land value, and the lack of sewers and other urban-type facilities.
3. Some areas depicted for lower density actually lie in a state of transition, they could proceed to a higher density, given a

certain amount of growth and availability of urban services. The areas that most likely fit into this unstable transition stage are: Big Lake, Conway Hill, Butler Hill area, Bow Hill, and parts of Bayview.

4.3.1.3 Uplands Model Extension

4.3.1.3.1 Expansion of the Uplands Model far into the future depicts some of the ramifications of this type of development.

a. Most development has occurred out of the danger of flooding.
b. The most likely centers of concentrated economic growth would be Mount Vernon and Sedro Woolley.
c. Other areas most likely to evolve into higher density situations (given the expenditures of proper facilities to allow such development) would be the Big Lake area, the Conway Hill area, and possibly the Bow Hill/Alger area. The extension of commercial activities in these areas was seen both as a result of this evolution and as highway convenience commercial areas.
d. The lighter forms of residential use are seen as a result of the continuation of the rural lifestyle of the county as a whole.
e. Most of the industrial activity would also take place off of the floodplain; i.e., Bayview Airport, March's Point, Anacortes, north and east of Sedro Woolley, and the Butler Hill area.
f. Agriculture would remain the dominant activity on the floodplain due to its more resistant characteristics with regard to flooding.

4.3.2 Lowlands Land Use Model

4.3.2.1 Goals & Objectives

4.3.2.1.1 To give 100 year flood protection, thus allowing more diversified development of the low floodplain areas.

4.3.2.1.2 To use existing facilities such as roads, water lines, and sewer lines in determining the pattern of development.

4.3.2.1.3 To develop the lowlands according to market and other economic demands.

4.3.2.2 Land-Use Patterns

4.3.2.2.1 To attain the amount of flood protection needed for a lowland pattern of development:

a. Given the $200 million required to floodproof the river, all development would have to take place in the lowlands to approach a justification of the expenditure in the region.

b. As a result, the agriculture land in the floodplain will be infiltrated by strip residential development along the roads. This will gradually evolve into high intensity residential areas expending out from the cities.

c. The commercial areas of the cities will also expand outward due to the same economic pressures of full flood protection.

d. This situation leaves the development in the uplands in a state of "limbo". Economically speaking, expenditures on new residential, commercial, or industrial developments and the services needed for their proper expansion, would be highly unfeasible, given the need to justify the money spent on flood proofing.

e. This is very true of industry, specifically the Bayview Airport. The Airport, along with everything else, would have to be located in the areas for which the money was spent. This causes a great increase in industrial activity in and out from the existing cities.

4.3.3 Feasibility Statement - Lowlands Model

4.3.3.1 The high cost of flood protection greatly exceeds the potential value of developing the lowlands.

4.3.3.2 Population projections indicate insufficient growth to justify the expenditure for this type of protection.

4.3.3.3 Encroachment of development into agriculture land while allowing for some personal gain, is an overall liability to the general public:

a. Because it destroys the agricultural economic base by which this county prospers.

b. Because the high water table and poor septic suitability soils would still exist, causing extra dollars in utility provisions and maintenance.

c. Despite immense flood control spending, the possibility of flood damage still remains.

d. Increased development could cause disruption of ground water recharge, affecting water supplies for irrigation of remaining agriculture land.

a. The proposed route of Highway 20 (Alternative C) would act as a levee along the Skagit between Mount Vernon and Burlington.

b. Additional storage capacity provisions on all dams upriver should be added.

c. The proposed Sauk River Dam should be built.

4.3.2.2.2 Residential Development Patterns:

a. The existing road network should be used for single family residential development.

b. Subdivision type development should locate near existing cities or interconnecting roads.

c. The area north of SR 20 between Burlington and Sedro Woolley should be another area of considerable residential expansion.

d. The cities themselves will actually account for a major percentage (approximately 40%) of the residential growth.

4.3.2.2.3 Industrial Development

a. Additional industrial land should be provided east of Sedro Woolley and north of SR 20.

4.3.2.2.4 Transportation (Proposed)

a. SR 20 (Anacortes to Sedro Woolley Alternative C) should be limited access.

4.3.2.2.5 Community Facilities

a. Parks - the area along the proposed bypass should be developed as a park. The area east of Sedro Woolley along SR 20 should contain some park or open space.

b. Schools - additional schools must be provided in the areas of heaviest residential growth.

c. Utilities - proper adequate utilities must be provided to all areas of potential development. They may easily parallel existing roadways.

d. Fire, police, hospitals, community facilities, etc. - according to population locations and densities.

4.3.2.3 Lowlands Model Extension

4.3.2.3.1 Expansion of the lowlands model into the future depicts some of the ramifications of this alternative.

e. The pocketing and enclosure of agricultural would cause growers to fail to attain economies of scale. And vice versa the developers could only meet costs by filling in the strip type development, thus pushing out the agricultural land completely.

f. Because extensive development could cause pollution of the ground water.

4.3.3.4 The Padilla Bay Port Facility, a necessity for lowlands development, would be unlikely because of the number, location, and quality of other port facilities already existing in the Puget Sound region.

4.3.4 Summary Comparison of Alternative Land Use Models

The evaluation of the uplands versus the lowlands alternative land use plans is primarily an evaluation of the economic demands required to floodproof the river delta areas, as compared to the total potential for developing the lowlands area.

The analysis of the data and conclusions in the Physical Characteristics, Flood Characteristics, Developmental Characteristics and Community Facilities Sections of this report all point to an uplands development pattern.

The Land-Use Simulation Exercise, the citizens input questionnaire results, the citizens advisory committee, and the public hearing process all advocate the use of an uplands form of development.

Additionally, the existing Skagit County Comprehensive Plan adopted by the Skagit County Board of Commissioners in 1968, established a precedent for upland development trends.

The following section, discussing and evaluating alternative upland land use plans, describes in considerable detail the characteristics of four alternative uplands land use plans.

4.3.5 CAPITAL COST INFORMATION OF ALTERNATIVE LAND USE MODELS

4.3.5.1 Lowlands - Downriver Area

Water Lines and pumps	$ 5,093,500
Sewage Lines	4,777,400
Secondary Waste Treatment at: Mount Vernon, Burlington, Sedro Woolley, Bayview, and LaConner	18,137,800
Package Plants at: Bayview, Samish Island, Big Lake, Conway, Clear Lake	1,873,400
Drainage Lines	4,369,600
TOTAL	$ 34,251,700
Flood Control - Alternative "A" of Puget Sound and Adjacent Water Study for 100 year protection	
Levee - Improvements	$ 10,080,000
Sedro Woolley Levee	4,320,000
Hamilton Levee	4,032,000
Avon Bypass - 60,000 c.f.s.	41,616,000
Sauk Dam	184,000,000
	244,048,000
Plus water, sewage, and drainage	34,251,700
TOTAL	$278,299,700
Additional Flood Control Projects	
Avon Bypass - 100,000 c.f.s.	$ 52,272,000
Nookachamps Levee - 135,000 c.f.s.	3,600,000
Upper Baker Dam - Increase Storage	133,000*

* Annual power losses in 1968 dollars

Table 1

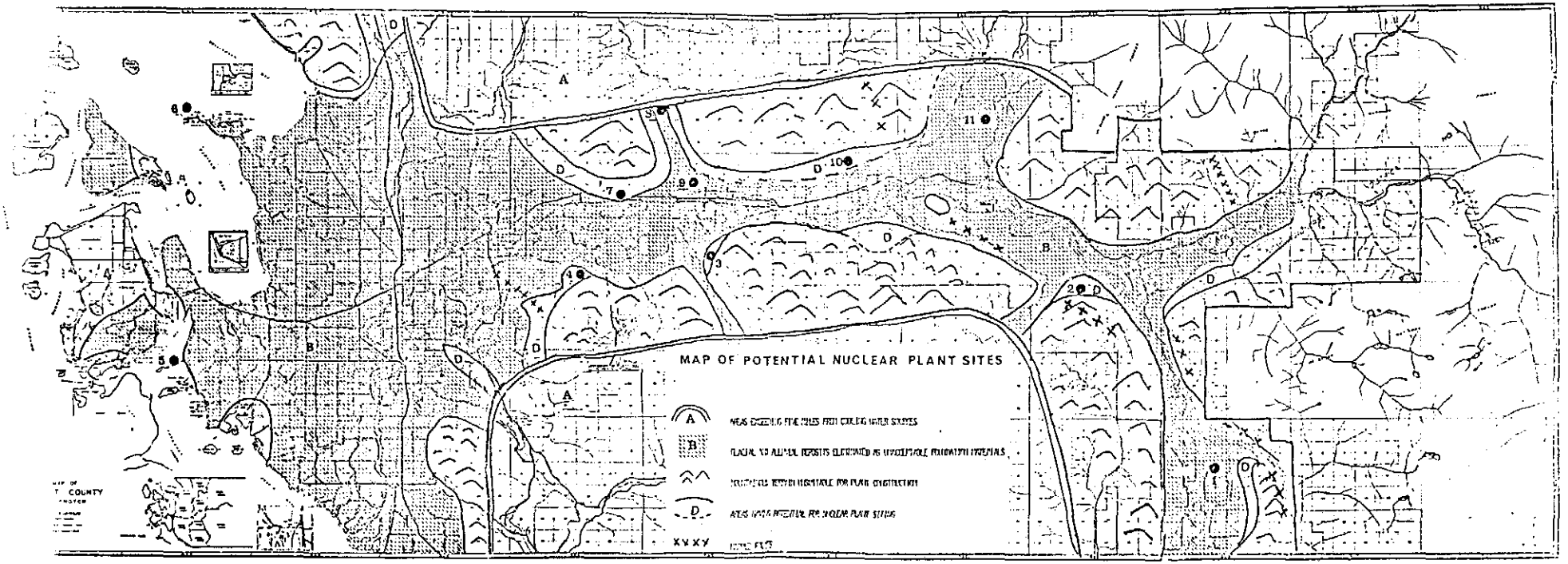
OPEN SPACE - RECREATION SUPPLY AND DEMAND TABLE

Activity	Standard	Supply	Demand			Need		
			1970	1980	1990	1970	1980	1990
Boating Moorage	.01 acres/unit	10.79 ac.	8.30 ac.	9.52 ac.	10.77 ac.	2.49 ac. (excess).	1.27 ac. (excess)	.02 ac. (excess)
Boating Trailered	.04 acres/unit	29.32 ac.	33.20 ac.	38.08 ac.	43.08 ac.	3.88 ac.	8.76 ac.	13.76 ac.
Boating Canoeing	.02 acres/unit	203.83 ac.	7.26 ac.	8.32 ac.	9.42 ac.	196.57 ac. (excess)	193.99 ac. (excess)	191.35 ac. (excess)
Camping	.14 acres/unit	117.46 ac.	625.80 ac.	861.00 ac.	1,101.66 ac.	508.30 ac.	734.54 ac.	984.20 ac.
Field Sports	1 field/6,000 pop.	32 flds.	8.6 flds.	9.0 ac.	10.6 ac.	23.4 ac. (excess)	23.0 ac. (excess)	21.4 ac. (excess)
General Recreation Playground/parks	1.25 acres/1,000 opo.	155 ac.	130 ac.	142 ac.	160 ac.	25 ac. (excess)	3 ac. (excess)	5 ac.
Golf	144 person/course	3-18 hole 1-9	10.4 ac.	12.0 ac.	13.0 ac.	6 ac.	8 ac.	9 ac.
Hiking	.05 miles/unit	600 mi.	11.10 mi.	17.10 mi.	23.25 mil.	588 mi. (excess)	582 mi. (excess)	576 mi. (excess)
Picnicking	.01 acres/unit	18.70 ac.	29.60 ac.	34.00 ac.	38.50 ac.	10.90 ac.	15.3 ac.	19.8 ac.

Activity	Standard	Supply	Demand			Need		
			1970	1980	1990	1970	1980	1990
Swimming	.02 acres beach/unit	15 ac.	46.20 ac.	60.00 ac.	74.84 ac.	31.20 ac.	45.00 ac.	59.84 ac.
Winter Sports	30 people/acre	none	27.2 ac.	31.3 ac.	35.4 ac.	27.2 ac.	31.3 ac.	35.4 ac.

There were four activities that had a high need for creating more facilities; whether to expand existing facilities or to create new ones. These activities were: camping, swimming, golf, and picnicking; with several other activities also having a need to a lesser extent.

For the county, camping, swimming, and picnicking areas should be high on a priority. These activities' need could be met with just a minimum of site expansion as these activities are linked to each other. Golfing should not be as great of concern because of the nature of the activity and the people it serves, plus a greater chance of the private sector to invest in golf courses.


MAP OF POTENTIAL NUCLEAR PLANT SITES
A
B
D
XXXX

SKAGIT COUNTY ROAD PRIORITY

2.7.3 PRIORITY RATING SUMMARY

Road No.	Name	Section	Length	Termini	Rating	Suggested Improvement
2120	Bow Hill Road	1	0.80	Burlington-Alger Rd. to SR 5 0.00 to 0.80	75	R
6300	Cook Road	4	3.76	Old 99 to Sedro Woolley City Limits 1.86 to 5.62	43	SW
5000	Prairie Road	1	2.13	Burlington-Alger Hwy. to Gripp Road 0.00 to 2.13	35	SW
9350	Old Minkler Hwy.	1B	1.37	Fruitdale Rd. to SR 20 3.18 to 4.55	34	W
9402	Lyman-Hamilton Hwy.	3	1.52	Lyman City Limits to SR 20 5.39 to 6.91	32	W
6340	Kelleher Road	1A	2.06	Burlington-Alger Hwy. to District Line 0.00 to 2.06	28	--
5051	Burlington-Alger Hwy.	1	5.27	Burlington City Limits to Bow Hill Rd. 0.00 to 5.27	26	--
9350	Old Minkler Hwy.	1A	3.18	Fruitdale Rd. to SR 20 0.00 to 3.18	22	--
2120	Bow Hill Road	2	0.14	SR 5 Interchange Area 0.80 to 0.94	21	--
9402	Lyman-Hamilton Hwy.	2	2.64	Hamilton City Limits to Lyman City Limits 1.79 to 4.43	20	--
5354	Alger-Cain Lake	1	2.79	Burlington-Alger Hwy. to County Line 0.00 to 2.79	19	W-SW

Road No.	Name	Section	Length	Termini	Rating	Suggested Improvement
6340	Kelleher Road	1B	0.65	Burlington-Alger Rd. to District Line 2.06 to 2.71	19	--
6600	Gripp Road	1A	2.40	Prairie Rd. to Mosier Rd. 0.00 to 2.40	18	SI
6340	Kelleher Road	2	0.49	District Line Rd. to F & S Grade Road 2.71 to 3.20	16	--
5000	Prairie Road	3A	2.97	Parsons Creek Rd. to SR 9 4.39 to 7.36	16	--
5000	Prairie Road	2	2.26	Gripp Rd. to Parsons Creek Rd. 2.13 to 4.39	15	SW
5000	Prairie Road	3B	0.431	Parsons Cr. Rd. to SR 9 7.36 to 7.79	15	--
6250	F & S Grade Road	1	5.02	Prairie Rd. to Sedro Woolley City Limits 0.00 to 5.02	14	SI
6600	Gripp Road	1B	1.07	Prairie Rd. to Mosier Rd. 2.40 to 3.47	14	--
5051	Burlington-Alger Hwy.	2	6.50	Bow Hill Rd. to County Line 5.27 to 11.77	12	--
5200	Parsons Creek Rd.	1B	1.62	Prairie Rd. to Burlington-Alger Hwy. 0.33 to 1.95	12	--
5200	Parsons Creek Rd.	1A	0.33	Prairie Rd. to Burlington-Alger Hwy. 0.00 to 0.33	11	--

›ad ›.	Name	Section	Length	Termini	Rating	Suggested Improvement
‡21	District Line Road	1	1.51	Kelleher Road to Cook Road 0.00 to 1.51	10	--
500	Mosier Road	1	1.04	SR 4 to Gripp Road 0.35 to 1.39	9	--
9402	Lyman-Hamilton Hwy.	1A	0.12	SR 20 to Hamilton City Limits 0.00 to 0.12	9	--
9402	Lyman-Hamilton Hwy.	1B	0.86	SR 20 to Hamilton City Limits 0.12 to 0.98	7	--
6345	Bassett Road	1	1.26	SR 9 to Gripp Road 1.80 to 3.06	6	--
6600	Gripp Road	2	0.99	Mosier Road to Garden of Eden 3.47 to 4.46	6	--

2.7.5 SIX YEAR CONSTRUCTION PROGRAM -- 1974-1979

	Location	Functional Class[1]	Urban	Rural	Type of Work[2]	Cost Estimate 1974	1975	1976	1977-79	TOTAL
	Samish River	S		x	I - Concrete	10,000	57,000			67,000
	Samish River	S		x	I - Concrete	51,000				51,000
	Friday Creek	S		x	I - Concrete			42,000		42,000
Rd.	Friday Creek	A		x	I - Concrete				30,000	30,000
	Samish River	S		x	I - Concrete				54,000	54,000
Rd. dge)	Friday Creek	A		x	I - Concrete				42,000	42,000
Rd. ge)	Friday Creek	A		x	I - Concrete				42,000	42,000
ger	Samish River	M		x					15,000	15,000
					TOTAL	61,000	57,000	42,000	183,000	343,000

ification Code
rial
Arterial
Arterial

[2]Type of Work
I - Bridge Construction

ngineering Department, Skagit County

TABLE II

SUMMARY OF EXAMPLE SITE COMPARISONS

ttle	2. Upper Finney Cr.	3. Day Creek	4. Clear Lake	5. Kiket Island	6. Samish Island	7. Bacus Hill	8. Lyman Pass	9. Lower Jones Creek	10. Alder Creek	11. Shannon Lake
iattle <1 360	Skagit 1/2 3,900	Skagit <1 4,300	Skagit <1 4,300	Salt water Adjacent	Salt water Adjacent	Skagit <2 4,300	Skagit 6 4,300	Skagit 3 4,300	Skagit 3 3,900	Lake Shannon <1
solidated al morrain, cent to r fault	Limestone outcrop & glacial deposit 1/2 mile from fault	Unconsolidated sediments over metamorphics	Unconsolidated sediments over metamorphics. PUD Reservoir area.	Consolidated sediments and volcanics	Metamorphic	Consolidated sediments over metamorphics	Unconsolidated sediments over metamorphics. Lyman watershed	Unconsolidated sediments over metamorphics. Lyman watershed	Unconsolidated sediments over metamorphics. Faulting indicated	Thick unconsolidated sediments
le slope above r	1 1/2 miles long pass, 700' above Skagit	Flat terrace 100' above Skagit	Flat terrace 100' above Skagit	Rounded knoll 100' elev.	Low profile point on Island 160' elevation	Flat pass between hill and ridge. 350' above Skagit	Flat valley floor, steep slopes adjacent 800' elevation	Flat terrace 450' above Skagit	Sloping pass 500' above Skagit	Flat terrace 600' above Lake Shannon
ington 7	Rockport 5	Lyman 2	Sedro Woolley 1	LaConner 7	Samish <1 Bow 6	Lyman 2	Lyman 4	Lyman 1	Hamilton 3	Concrete 2
7	1 Requires Skagit Bridge	3.5 Requires Skagit Bridge	2	3	6	2	6	2	1	2
cent	5	Adjacent	2	<1	1	Adjacent	6	2	2	2
	5	7, RPA 4, PSPL	1	17	14	3	5	Adjacent	1	1
from n ay	Tower and plume visible in Rockport, Concrete	Unobstructed view from Sedro Woolley to Hamilton	Hill blocks view from Skagit Floodplain	6 miles view frontage overlook site	No close overview	Tower visible from Sedro Woolley, ridge behind softens profile	None in developed areas	None to full view from Lyman	None to partial from Lyman	None from developed areas but variable from recreation areas on Lake Shannon

ade or other considerations could increase these distances.

8640 RESOLUTION 8640

ADOPTING AMENDMENT TO THE NORTH CENTRAL DISTRICT COMPREHENSIVE PLANNING MAP

WHEREAS, the Skagit County Board of Commissioners received the Recorded Motion with no recommendation from the Skagit County Planning Commission on October 27, 1980 concerning a proposed amendment to the North Central District Comprehensive Plan Map,

WHEREAS, the Skagit County Board of Commissioners set a public hearing for November 17, 1980 to consider appropriate action on the recommendation of the Skagit County Planning Department to amend a portion of the North Central District Comprehensive Plan, changing the land use designation for approximately 2,120 acres of land from Residential and Forestry to Rural Open Space for the following described area:

Section 1, Township 35, Range 4 E.W.M.
Section 6, Township 35, Range 5 E.W.M.
Section 36, Township 36, Range 4 E.W.M.
Section 31, Township 36, Range 5 E.W.M.

WHEREAS, the Board of County Commissioners held a public hearing on November 17, 1980 and received the attached report, findings, recommendations, and exhibit list from the Skagit County Planning Department and received comments from all interested parties concerning appropriate action by this Board,

WHEREAS, in public hearing on November 17, 1980 the Skagit County Board of Commissioners voted unanimously to accept the recommendation of the Planning Department and approved the proposed revision to the North Central District Comprehensive Plan Map,

NOW THEREFORE BE IT RESOLVED AND IT IS HEREBY ORDERED That the Skagit County Board of Commissioners adopt the revised proposed Comprehensive Plan Map for the North Central District as recommended by the Skagit County Planning Department.

BE IT FURTHER RESOLVED This Resolution adopting the revised North Central District Comprehensive Plan Map shall be effective immediately upon adoption and signing by the Board of County Commissioners.

WITNESS OUR HANDS AND THE OFFICIAL SEAL OF OUR OFFICE This 17th day of November, 1980.

APPROVED: BOARD OF COUNTY COMMISSIONERS
Skagit County, Washington

Chairman

Commissioner

Commissioner

ATTEST:

LUELLA HENRY, Skagit County
Auditor and Ex-Officio Clerk
of the Board of County Commissioners

9145

RESOLUTION
APPROVING COUNTY-INITIATED REZONE R-81-023 AND
NORTH CENTRAL DISTRICT COMPREHENSIVE PLAN AMENDMENT #3

WHEREAS, the Planning Commission held public hearings on November 9, and December 14, 1981 to review the staff findings and recommendations, to receive public testimony and to consider the application of the Skagit County Planning Department to rezone 100 acres of land from Rural Intermediate and Residential to Agricultural and to amend the North Central District Comprehensive Plan Map from Residential to Agricultural on the following described property:

> Located northwest of Sedro Woolley, lying in general northerly of the F & S Grade Road, southerly of the drainage ditch and approximately 660 feet west of the Garden of Eden Road.
>
> That portion of the SW 1/4 of the SE 1/4 lying northerly of the F & S Grade Road and westerly of the Garden of Eden Road described as follows: That portion of the SW 1/4 of the SE 1/4, lying northerly of F & S Grade Road; that portion of the West 1/2 of the NW 1/4 of the SE 1/4 lying southerly of the drainage ditch; the East 1/2 of the NW 1/4 of the SW 1/4 except the North 1/2 of the North 1/2 thereof; that portion of the NE 1/4 of the SW 1/4 lying southerly of the drainage ditch, except the west 200 feet thereof; that portion of the SE 1/4 of the SW 1/4 lying northerly of the F & S Grade Road; all in Section 14 Township 35 North, Range 4 East, W.M.

WHEREAS, the Planning Commission on November 9 recommended approval of the request based on the Planning Department report and recommendation on a motion duly made and seconded by a 6-0 vote,

WHEREAS, due to a technical malfunction in the taping system, no record of the public hearing was established and the matter was remanded by the Board of County Commissioners to the Planning Commission to establish a public record on November 30, 1981 by Resolution 9094,

WHEREAS, the Planning Commission held a new public hearing on December 14, 1981 and all persons present at the public hearing were given an opportunity to present testimony and all correspondence received was made a part of the record,

WHEREAS, the Planning Commission, not hearing new evidence which would alter the previous decision, recommended approval of the rezone request R-81-023 and the North Central District Comprehensive Plan Amendment #3 based on the findings of facts, as evidenced by the attached Recorded Motion,

WHEREAS, the Board of County Commissioners, at a public meeting on December 21, 1981 has reviewed the application, findings, and recommendations of the Planning Commission and has discussed and deliberated the action to be taken in open session,

NOW THEREFORE BE IT RESOLVED That the Skagit County Board of Commissioners accepts the recommendation of the Planning Commission and hereby approves the application.

IN TESTIMONY WHEREOF, we hereunto set our hands and affix the official seal of our office this 21st day of December, 1981. Signed 1/12/1982.

APPROVED: BOARD OF COUNTY COMMISSIONERS
Skagit County, Washington

Chairman

Commissioner

Commissioner

ATTEST:

LORETTA HENRY, Skagit County Auditor and Ex-Officio Clerk of the Board of County Commissioners

APPROVED AS TO CONTENT Planning Director, Robert Schofield

APPROVED AS TO FORM Prosecutor

Attachments to become a part of this Resolution:
Staff Findings
Recorded Motion with conditions or contract of the Planning Commission

RESOLUTION 9573

RESOLUTION AMENDING RESOLUTION 8736

WHEREAS, the Skagit County Board of Commissioners approved Resolution 8736 on February 10, 1981 pertaining to certain revisions to the Comprehensive Plan Maps for the Bow Hill Study Area in the Northwest and North Central Planning Districts, and

WHEREAS it has come to the Board's attention within the past few days that the attachments to Resolution 8736 contain a scrivener's error which resulted in a legal description and map which incorrectly identified action taken by the Skagit County Board of Commissioners in reclassification of the subject property; and,

WHEREAS, the Board of Commissioners finds that this error was detected by legal counsel for the Board and that no citizen, property owner or staff employee of the county has detected this scrivener's error since February 10, 1981; and,

WHEREAS, this matter has been the subject of intense litigation in Superior Court and no party or judge has in any way alluded to the scrivener's error; and,

WHEREAS, the Board of County Commissioners finds that this scrivener's error has resulted in absolutely no prejudice to any citizen, property owner or interested party to any litigation, either directly or indirectly, as a result of this error; and,

WHEREAS, the Board believes that it is in keeping with laws and policies of the State of Washington and Skagit County to identify this scrivener's error at the earliest possible date to avoid future confusion or instability in the Skagit County Comprehensive Plans identified herein.

NOW THEREFORE BE IT RESOLVED by the Skagit County Board of Commissioners that "Amended Attachment A" and "Amended Attachment B" which accurately reflect the decision made by the Skagit County Board of Commissioners on February 10, 1981, are hereby adopted as attached to this Resolution.

BE IT FURTHER RESOLVED that a copy of "Amended Attachment A" and Amended Attachment B" be attached to the original Resolution 8736; and,

BE IT FURTHER RESOLVED that this Resolution shall become effective immediately upon adoption and signing by the Board of County Commissioners.

IN TESTIMONY WHEREOF, we hereunto set our hands and affix the official seal of our office this of February, 1983.

BOARD OF COUNTY COMMISSIONERS
Skagit County, Washington

Chairman

Commissioner

Approved as to Form:

John Moffat, Chief Civil Deputy

Approved as to Content:

Robert Schofield, Planning Director

ATTEST:

Jerry McIlturff, Skagit County Auditor and Ex-Officio Clerk of the Board of County Commissioners

AMENDED ATTACHMENT A TO RESOLUTION 8736

The following amendments are made to the North Central and the Northwest Comprehensive Plan Maps (adopted December 12, 1973 and January 7, 1975 respectively), encompassing the Bow Hill Study Area; specific changes are designated on Attachment B which is further made part of this Resolution.

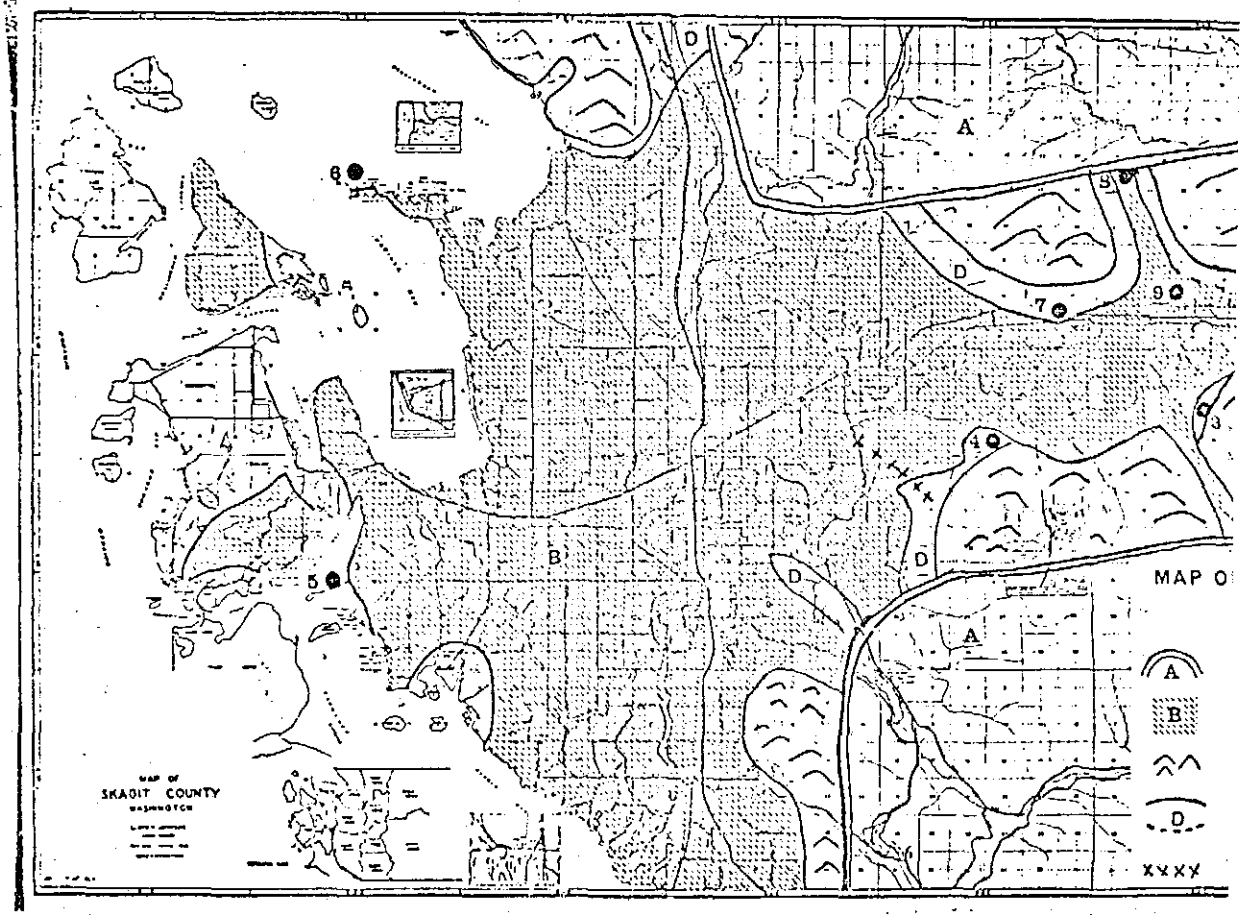
The entire Bow Hill Study Area is designated Rural Open Space (5 Acre) with the following exceptions:

1. The community of Alger shall be designated as Residential (portion of the SE¼ of Section 7, Township 36 North, Range 4 East, W.M.).

2. The area west of Interstate 5 at Nulle Road shall be designated as Residential (portion of the North ½ of Section 1, Township 36 North, Range 3 East, W.M.).

3. Kesselring Gun Shop shall be designated as Commercial (Portion of the NE¼ of the NE¼ of Section 29, Township 36 North, Range 4 East, W.M.).

4. The State of Washington, Department of Transportation Bow Hill Rest Stop Area on Interstate 5 shall be designated as Public Use (portion of the North ½ of Section 30, Township 36 North, Range 4 East, W.M.).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WASHINGTON

5.1 Level of Analysis

This set of alternative land use plans are more specific than the comparison of uplands versus lowlands form of development in the preceding section. The four land use plans presented in this section are portions of possible alternatives for the downriver area of Skagit County. As in the preceding section, emphasis has been placed upon the North Central Planning area.

The analysis of these alternative land use plans was used to determine the recommended "North Central Comprehensive Land Use Plan."

5.2 Policies Used to Develop Alternatives

The four alternatives project various land use patterns which the North Central area could assume in planning to the year 2000 and beyond. The amount of land shown in each land use classification is greater than the actual projected need in all cases. This was done to prevent the resulting North Central Comprehensive Plan from becoming overly restrictive and hence possibly artifically inflating land values.

It is also recognized, however, that overemphasizing the projected need for any one land use category produces a false sense of higher valuation for many landowners. This situation might also tend to spread investment resources too thin. This demonstrates the necessity for scaling land-use patterns when developing alternative plans.

5.2.1 Method for Determining Densities

In computing the areas required for residential use and the subsequent population loads of each plan the following general factors were used:

	High Density	Low Density
Lot Size	.25 - 1.00 Acre	1 - 5 Acres
Average Lot Size	.50 Acre	2.5 Acres
Average Family Size	3.2	3.20
Housing Units Per Acre	2.0	.44
Persons Per Acre*	6.4	1.40

* Average Family Size x Units/Acre = Persons/Acre

5.3 Planning Policy Constants

The following land-use planning recommendations are felt to be of great significance to Regional planning regardless of which alternative land-use plan is chosen. Any of the strategies leading to a Comprehensive Plan for the Skagit Region should adopt these conclusions and recommendations.

5.3.1 General Recommendations and Conclusions

5.3.1.1 Existing agriculture and pasture lands in the floodplain should be protected from encroachment by other land uses.

5.3.1.2 The Open Spaces Taxation Law of 1970 is a viable and popular land-use control method within Skagit County and should be reatined.

5.3.1.3 Existing urban areas should be protected from flooding to a 50 year frequency, either by means of dikes, or by additional upriver storage.

5.3.1.4 Future commercial and industrial developments should concentrate in the uplands areas, away from the prime agricultural/pastoral lands and out of the danger of flooding and the seasonal high ground water table.

5.3.1.5 Future urban expansion, especially residential, should focus on adjacent upland areas.

5.3.1.6 Expansion of city limits within flood hazard areas should not be proposed unless protected from floods to a 50 year flood frequency level.

5.3.1.7 The unincorporated upland areas with good physical characteristics are suitable for light residential use. The degree to which these areas are utilized varies with each alternative plan.

5.3.1.8 Some unincorporated areas within the floodplain are shown in a particular use category because they presently exist as such. Expansion in some of these areas is not recommended.

5.3.1.9 The areas shown as high intensity residential should have all the urban services including sewer systems. The light residential areas should have septic tanks or package plants.

5.3.1.10 The county, as well as the various municipalities, should adopt specific design standards for industrial parks.

5.3.1.11 New commercial development, especially along major arterials and highways should not be of the 'strip' type. Highway commercial uses should be located in 'cluster' form at strategic interchanges.

5.3.1.12 The county and various municipalities should adopt specific design criteria for commercial districts.

5.3.1.13 Five years after the adoption of a Regional Comprehensive Plan, the land zoned for industrial use on the floodplain that has not been utilized for industrial purposes, should be backzoned to its existing use.

5.3.1.14 The Shoreline Master Plan and River Basins Plan will be integrated into this plan at the time of their completion.

5.3.1.15 Planned unit developments could be used to create cluster neighborhoods in new residential areas, if possible.

5.3.1.16 The steam excursion railroad proposed by the Skagit County Development Association with terminals located in Sedro Woolley and Concrete would facilitate the expansion of the tourism industry in the Skagit Region.

5.3.2 Land-Use Recommendations

5.3.2.1 The City of Sedro Woolley

a. Sedro Woolley's major growth potential lies northward in the uplands areas. The city should encourage growth in this area.
b. The city should first 'fill-in' to its present boundaries, with the possibility of a redevelopment program south of the central business district, to include more multi-family units.
c. Sedro Woolley should study the future potential of its central business district and adhere to the plan adopted.
d. Sedro Woolley should follow a policy of non-growth in the east and west agricultural areas.
e. Only some industrial expansion should be considered south of the present southern boundary near SR 9.
f. The wooded areas to the north should be used to their best advantage through a planned development approach.
g. The area along the existing SR 20 should not become strip commercial.
h. Any commercial areas, especially those related to the proposed SR 20 realignment, should be in cluster form having specific design.

specifications. A logical place for this type of development could be at the interchange of the proposed SR 20 and SR 9.

i. Industrial expansion near the central business district and east of the Skagit Corporation should be of the industrial park type, with the city having adopted specific design criteria for such uses.

j. The area just south of the existing SR 20 and just west of SR 9 should be seen as an industrial reserve area, to be used only as other land set aside for industrial activity reaches saturation.

k. The SR 20 realignment should be located south of Sedro Woolley joining the existing route east of the city. This would provide flood protection, use less prime agricultural land, and not have the effect of severing Sedro Woolley from its major area of northerly expansion at some future point in time.

5.3.2.2 Bow/Alger/Samish Proper

a. The prime agricultural lands should be protected from encroachment by higher uses.

b. Regardless of the alternative plan adopted the small communities existing on the agricultural floodplain should not expand further into those lands.

5.3.2.3 Sedro Woolley Area Excluding the City

a. The prime agricultural lands should be protected from encroachment by higher uses.

b. The areas north and east of Sedro Woolley which are out of the floodplain and have good physical characteristics should be developed for light density residential uses. Part of the area east of Sedro Woolley and north of SR 20 should be reserved for industrial use.

5.3.3 Community Facilities Planning Constants

a. Plans for new utilities (sewer, water, solid waste) should be coordinated on a regional basis to attain more efficient, equitable, and cheaper levels of service throughout the community.

b. The use of package plant sewage systems should be utilized where possible in the rural areas of the county. Efficient systems at a reasonable price would greatly facilitate residential development in the outlying areas.

c. The Urban Arterial Plans and proposals of the county and the various municipalities are recommended for adoption by reference, where they conform to the provisions of the alternative land-use plans. The Urban Arterial networks combined with the existing arterial system provides an excellent circulation pattern for the area.

d. Library service within the county should become coordinated at the regional level to assure a more equitable, cheaper, efficient system throughout the county. This could also be accomplished through the proposed statewide library system (H.B. 170 and SB 2166). Once these are accomplished, a more comprehensive service plan can be developed.

e. The various school districts which have not already prepared a comprehensive plan should do so. These plans, when completed, will be adopted by reference in the Comprehensive Regional Plan for Skagit County.

f. This plan adopts by reference the Comprehensive Plan for the Sedro Woolley School District prepared by Johnston, Campanella, Murakami, Brummit, and Company in May, 1972.

g. The Planning Department will continue to give assistance to the various school districts to aid them in their planning efforts.

5.4 Composite Plan

5.4.1 Orientation of Composite Plan

This land-use plan assumes some portions of each of the other alternatives to produce the widest range of lifestyles for the people of the area. It allows an ample opportunity for urban type growth, but still has a substantial degree of dispersed rural type development.

5.4.2 Population Projection - Downriver Area

The population pattern is also more evenly dispersed between urban and rural with 44,600 people living within the higher density perimeters of the cities and 18,400 people in the various outlying areas. This creates a population level of approximately 63,000 people, which falls somewhere in between those of the other alternative plans.

5.4.3 Composite Plan Costs - Downriver Area

Water	$ 8,345,100
Sewer	8,412,923
Roads	12,380,260
Schools (See Educational Facilities and School Cost Estimates of the 701 Study)	669,981
Libraries	986,316
Police Protection	
Parks (See Parks and Open Space Element of the 701 Study)	
TOTAL	$30,794,580

For further details see chapter on Developmental Costs in the 701 Study.

5.4.4 General Conclusions and Recommendations

a. The planning policy constants outlined earlier are basic to this alternative land-use plan.

b. Future development would be directed into the uplands areas of the existing municipalities.

c. There would be a significant degree of low density development in areas where the physical characteristics and the desirability facilitate development.

d. This alternative land-use plan combines some of the features of each of the other three alternative plans in terms of dispersal of some residences and the maintenance of the vitality of existing commercial centers.

5.4.5 Urban Areas Recommendations

5.4.5.1 Sedro Woolley

a. Sedro Woolley would continue to provide commercial and industrial activities.

b. Residential growth would occur in the Dukes Hill area, but would be limited to medium densities.

c. Low density residential development would occur in the areas with good physical characteristics in the Hoogdal area.

d. Small neighborhood commercial facilities would provide services to the neighborhoods that develop north of the city.

e. A tourist oriented highway service commercial area would develop near the intersection of SR 20 and SR 9 in the eastern end of Sedro Woolley.

5.4.6 Sub-Area Recommendations

5.4.6.1 The physically desirable areas on Bow Hill would be well suited for light residential activity.

5.4.6.2 Portions of the Alger area would be used for light residential purposes.

5.4.7 Community Facilities

a. Community facilities would be developed on a regional basis. Each existing community would provide the variety and type of serivce required by the population within their respective service areas.
b. The recommended goals and objectives in the preceding section on community facilities would apply to this alternative land-use plan.
c. The cities would expand their present service levels as the population grows.
d. Police and fire protection would increase their respective service capabilities to serve both urban high density areas and rural low density areas.
e. The schools, parks, and health services would be provided as specified in the Community Facilities Section of the Nodal Plan.

5.5 Nodal Plan

5.5.1 Orientation of Nodal Plan

This alternative development strategy focuses upon a nodal form of growth pattern for the future in which a major portion of the development would take place around the existing urban areas or nodes, with relatively little growth in various outlying areas. It is an urban type development pattern, with a majority of the people receiving the related level of services that accompanies an urban situation.

5.5.2 Population Projections - Downriver Area

The population level of this plan is the highest (74,500) of the four alternatives, due to its more urban nature. An urban situation would attract more business and industry causing a greater influx of population. Of the 74,500 persons proposed by the alternative land-use plans, approximately 64,900 persons would reside in urban areas and an additional 9,600 persons would live in the upland low density areas.

5.5.3 Nodal Plan Costs - Downriver Area

Water	$13,027,440
Sewer	14,486,480
Roads	10,397,260
Schools (See Educational Facilities and School Cost Estimates in the 701 Study)	
Libraries	1,045,824
Police Protection	1,294,754
Parks (See Parks and Open Space Element of the 701 Study)	
TOTAL	$40,251,758

For further details see Chapter on Developmental Costs in the 701 Study.

5.5.4 General Conclusions and Recommendations

a. The policy constants outlined earlier also would apply to this plan.
b. Future development should center around the existing cities, allowing more people to receive urban level services.
c. Very little development would occur in the outlying areas away from the existing cities.

5.5.5 Urban Areas Recommendations

5.5.5.1 Sedro Woolley

a. Sedro Woolley would be a hub for development within this nodal plan.
b. As in the other cities, Sedro Woolley's growth area would be larger with respect to this plan than in the other forms of development.
c. The city would also provide more urban type services.
d. The commercial area would experience growth due to a higher concentration of population in the existing developed area.
e. Small neighborhood commercial facilities north of the existing city limits would be in conformance with this nodal strategy. However, these should not develop in strips along the roadways but should be clustered to facilitate the development of desirable residential neighborhoods.

5.5.6 Sub-Area Recommendations

5.5.6.1 The amount of development in the outlying areas should be minimal, thus producing little change from the present existing situation.

5.5.7 Community Facilities Recommendations

5.5.7.1 Regional

a. Community facilities on a regional basis would remain at about the present level and extent due to the concentration of population in the nodal urban areas. Although the various utility plans for the future were cited earlier, there would be obvious differences in types and levels of services according to each plan. These differences are reflected on the maps and in the general cost information for each of the alternative land-use plans.

5.5.7.2 Urban Areas

a. The cities would increase their level of services in accordance with the population projections for this alternative plan. They should expect to receive higher concentrations of population if this plan was adopted. Thus, water, sewer, and drainage extensions would be a primary concern, especially east of the city and above Barney Lake.
b. Police and fire protection would be another service that could be expected to increase with the adoption of this plan of development.
c. Schools would be affected most at the elementary level where there is a certain level of locational dispersion at the present. This situation would be altered under a nodal pattern of development, giving rise to more urban related neighborhood schools.
d. The requirement for parks would increase with this plan. However, this need would be greatly relieved, as previously stated, by preserving some existing wooded areas through the use of a planned development approach to residential areas.
e. Health services would be altered according to a nodal development pattern. However, the number of hospitals in the area at present seems to be sufficient to provide a proper level of services for the projected population.

5.6 Satellite Plan

5.6.1 Orientation of Satellite Plan

This alternative development model assumes moderate growth in existing urban areas, coupled with the generation of smaller satellite communities in various outlying areas. Growth would occur primarily in these two

forms. The level of services would be approximately the same in the satellite communities as in the existing urban areas.

5.6.2 Population Projections - Downriver Area

This plan would approach the population level of the nodal plan, with an anticipated capacity of 68,500 people. There are some areas throughout the county which would be well suited to a new community situation.

Of the projected 68,500 persons in the satellite plan, 52,500 would reside in an urban environment, while 16,000 would be accommodated in rural low density areas.

5,6.3 Satellite Plan Costs - Downriver Area

Water	$10,584,300
Sewer	10,776,524
Roads	16,560,400
Schools (See Education Facilities and School Cost Estimates in the 701 Study)	
Libraries	849,732
Police Protection	1,114,730
Parks (See Parks and Open Space Element in the 701 Study)	
TOTAL	$39,885,686

For further details see Chapter on Developmental Costs in the 701 Study.

5.6.4 General Conclusions and Recommendations

a. The policy constants outlined earlier pertain to this alternative plan.
b. Future development would be concentrated in the various upland satellite communities shown on the satellite plan contained in the map section of this report.
c. These satellite communities could be created by planned development of both residential and commercial neighborhoods.
d. Minimal development should take place in the existing cities and the outlying areas.

5.6.5 Urban Areas Recommendations

5.6.5.1 Sedro Woolley

a. The City of Sedro Woolley should concern itself primarily with 'filling-in' of its existing boundaries, and renewing some of its areas.

b. Sedro Woolley would essentially have the same amount of industrial and commercial activity in this plan as in the other alternatives. This is because the satellite communities would be more of a residential center than an independent urban center.

5.6.6 Sub-Area Recommendations

5.6.6.1 The Bow Hill area would be a satellite, with most of the high intensity development at the top of the hill near Bow Hill Road, and lighter residential along the hillside as the physical characteristics permit. A commercial node would be located at the interchange of Bow Hill Road and Interstate 5, to serve both the community and highway travelers.

5.6.7 Community Facilities

5.6.7.1 Regional

a. Community facilities would be comprised of a regional net of urban services within the existing cities and the various satellite communities.

5.6.7.2 Cities and Satellite Communities

a. Each city and satellite community should attain a level of services which provide adequate sewer, water, drainage, police, fire protection, schools, parks, libraries, etc.

b. The recommended community facilities discussed earlier in the section pertaining to community facilities constants would apply directly to the satellite plan.

5.7 Dispersed Plan

5.7.1 Orientation of Dispersed Plan

A dispersed development plan would minimize growth in the urban areas, allowing for a more scattered rural type lifestyle. There would be fewer people receiving urban services than in any other alternative plans with larger scatterings of light residential throughout the uplands areas.

5.7.2 Population Projections - Downriver Area

This plan would contain the smallest number of people (56,700) due to its scattered, less urbanized character. It would tend to minimize the dynamic urban situation, causing a slower degree of population influx. This plan would project 25,000 persons in the urban areas, and 31,700 persons in the rural low density residential areas throughout the planning area.

5.7.3 Dispersed Plan Costs - Downriver Area

Water	$ 5,780,300
Sewer	2,548,799
Roads	16,006,760
Schools (See Educational Facilities and School Cost Estimates in the 701 Study)	
Libraries	464,084
Police Protection	727,806
Parks (See Parks and Open Space Element in the 701 Study)	
TOTAL	$25,527,749

For further details see Chapter on Developmental Costs in the 701 Study.

5.7.4 General Conclusions and Recommendations

a. The policy constants recommended earlier would apply to this alternative plan.

b. Future development would be scattered throughout the uplands area on larger lots (1-5 acres, 2.5 acre average).

c. The existing urban areas would expect minimal growth, with 'filling-in' to existing boundaries and improving existing areas being the primary concerns.

d. The recommended areas were developed by an analysis of the various physical characteristics such as soils, slope, septic suitability, flood safety, and high desirability as expressed by the land-use simulation exercise.

5.7.5 Urban Areas Recommendations

5.7.5.1 Sedro Woolley

a. Minimal growth in this area emphasizes the importance of improving existing areas.

5.7.6 Sub-Area Recommendations

5.7.6.1 The dispersed plan depicts areas suitable for a dispersed form of development.

5.7.6.2 Bow Hill would be another area whose physical characteristics make it attractive for residential uses.

5.7.6.3 The area approximately 2 or 3 miles north of Sedro Woolley would also be considered as having good potential for light residential uses.

5.7.6.4 Other areas of lesser size considered good for light residential use would be the Alger area and parts of Butler Hill.

5.7.7 Community Facilities Recommendations

5.7.7.1 Regional

a. Where possible, regional service and utility cooperatives would be formed to give the residents higher and more equal levels of service. This is especially important with respect to sewer, water, drainage, libraries, hospital, police, fire protection, and schools.

5.7.7.2 Community facilities for the dispersed plan would not be greatly expanded, except in areas which presently have deficiencies in existing levels of community facilities.

6 NORTH CENTRAL AREA COMPREHENSIVE PLAN

This section contains the Comprehensive Plan for the North Central area of Skagit County.

All of the information in the previous sections has been evaluated in the development of this Comprehensive Plan.

This section is composed of the following chapters:

6.1) Derivation and Orientation of Plan
6.2) Areas Designated for Development
6.3) Density & Intensity of Development
6.4) Population Projections
6.5) Estimated Costs of Plan
6.6) Plan Policies

6.1 Derivation & Orientation of Plan

6.1.1 Derivation

This land use plan is derived basically from the Composite Land Use Alternative (Section 5.4.1). The primary characteristics of the Composite Plan have been retained, however, additional areas designated for residential, commercial, and industrial land uses have been added. These additional land use areas were developed to accommodate a general public demand for substantial growth areas within an uplands development plan. This public demand has been expressed in numerous public hearings on land use control matters.

The plan attempts to use to advantage the beneficial aspects of the physical environment; areas have been designated for development where slope, soils, geology, and septic suitability are favorable for various forms of development, and where those areas occur out of the floodplain.

This plan is an amendment to earlier comprehensive planning efforts. The plan has refined earlier land use development trends, and by means of this refinement, has substantially reduced and redistributed the amount of land area designated for various forms of development. This was done to reflect the expressed desires of the community and because projections do not demonstrate a need for a superabundance of development designated areas.

6.1.2 Orientation

The primary orientation of this plan is to preserve and, where possible, expand resource productive areas; i.e., forestry, fisheries, and agriculture. The secondary level of orientation is to preserve the lifestyle currently enjoyed in Skagit County while leaving sufficient areas available for intense developments that are buffered from the resource productive and rural living areas. The third significant orientation of the plan is to provide a pattern of development in which the public costs associated with community growth can be controlled.

The reduction in land area available for development will produce continued use of resource productive areas, rather than a non-productive holding for development of those areas not suitable or needed for the continued growth of the North Central area.

The redistribution of land area designated for development is a reflection of current community standards and provides an opportunity for development in the newly designated areas that has not occurred in areas designated by earlier comprehensive planning efforts.

6.2 Areas Designated for Development

6.2.1 High Density Residential

This plan provides an extremely wide range of land uses for the current and projected population of the North Central area. Within and immediately adjacent to the major urban area, Sedro Woolley, this plan recommends high density single family residential densities and multi-family residential densities.

6.2.2 Low Density Residential

The lower density rural residential areas are located north of the urban area and would use the public and commercial services of the urban area. This rural residential area is proposed in the form of a rough triangle, oriented with a broad base on the northern periphery of the urban area of Sedro Woolley and extending generally north-south to approximately 4 miles north to an area in the vicinity of State Route 9.

Additional low density areas are designated in the southerly portion of Butler Hill in the Alger area, on the east side of Sedro Woolley west of the Fruitdale Road, and immediately northwest of Sedro Woolley.

The industrial development not located in the urban areas are designated for the gravel extraction areas along the west side of Butler Hill. The Bacus Hill area, lying mainly north of SR 20 and east of Sedro Woolley, is also designated for industrial development.

6.2.3 Commercial & Industrial

The urban area of Sedro Woolley should continue to supply the vast majority of commercial services for the North Central area and most of the industrially oriented activity.

Highway service commercial is designated at major intersections of the interstate and of the state route system.

6.2.4 Agricultural, Forestry, & Fisheries

The agricultural areas are located east and west of Sedro Woolley and up the Samish River Valley. The forestry areas occupy the remaining land areas. The Skagit River is designated to retain its existing qualitative and quantitative levels, so as to preserve the excellent fisheries provided in the Skagit River Basin.

6.2.5 Period of Plans Effect

The plan projects land use patterns to the year 2000 and beyond. The amount of land shown for each land use classification is greater than the projected demand. However, the land projected is scaled so as to not spread investment resources to thin, and hence lower the overall quality of development for the North Central area.

This plan provides an ample opportunity for urban type growth, but still has large areas available for dispersed rural residential development. The areas projected for higher densities of development are also projected to receive the level of service that accompanies an urban situation, while the rural residential areas would not receive a high level of public services.

6.3 Densities and Intensity of Development

6.3.1 Residential

In computing the areas for required residential, commercial, industrial, and public land uses, the following general densities are projected. Urban densities are approximately three dwelling units per acre for single family and ten dwelling units per acre for multi-family. In

rural residential areas the densities are one dwelling unit per acre, either single family or townhouse. The rural open space density is one dwelling unit per five acres. The residential density for agricultural areas is one dwelling unit per 30 acres. In forestry areas the residential density is one dwelling unit per 40 acres.

6.3.2 Commercial

The intensity in commercial areas is related to the areas of service and nature of the operation. Shopping centers and neighborhood commercial activities are located near arterial and secondary roads of sufficient capacity to accommodate the additional generated traffic, turning movements, ingress and egress, as well as through traffic.

Indiscriminate strip commercial development along thoroughfares is discouraged in this Comprehensive Plan for the North Central area.

6.3.3 Industrial

The land areas allocated for industrial development is proportionate to the demand. Over allocation of industrially designated land has been avoided as being wasteful of valuable land.

Areas shown to contain commercial quantities of mineral or material deposits have been reserved for industrial use.

While not designated for any specific area, it is the strong recommendation that industrial parks, which can use the physical environment to advantage, and can mold compatibily with the existing and proposed forms of development, should be encouraged for the industrial designated areas.

6.4 Population Projections

This Comprehensive Plan projects that population in the North Central area will increase from the existing population of 11,581 to between 13,250 and 16,800 persons by the year 2000. The population will be distributed relatively evenly between those residing in urban and rural areas. The land areas designated for residential development in the

North Central area would house a saturation population of 31,800. This represents an abundance of 200+% over the projected need.

6.5 Estimated Plan Costs

A precise estimate of developmental costs was not possible due to the limited time and resources allocated for this Comprehensive Plan amendment procedure. However, the costs associated with this plan would be very similar to those of the Composite Land Use Alternative, as the recommended plan is basically a modification of the Composite Land Use Alternative.

The cost of development, therefore, would be similar to that estimated for the Composite Land Use Alternative with the following general exceptions:

Water and road cost would be somewhat to moderately greater, while sewer cost should be slightly lower. The cost of the Composite Land Use Alternative was:

Water	$ 8,345,100
Sewer	8,412,923
Roads	12,380,260
Libraries	669,981
Police Protection	986,316
Parks	
TOTAL	$30,794,580

These costs were developed for the entire downriver area and have not been refined specifically for the North Central area.

6.6 Plan Policies

The following planning policies are adopted to augment the other provisions of this Comprehensive Plan for the North Central Area.

6.6.1 Land Use Recommendations

6.6.1.1 Existing agricultural pasture and forestry lands, especially those in the floodplain, are to be protected from other forms of development.

6.6.1.2 Agricultural area should be provided with at least 20 year flood frequency protection.

6.6.1.3 The Open Space Taxation Law of 1970 should be retained as a viable and useful method of land use control.

6.6.1.4 Future development should be directed into the uplands areas adjacent to existing municipalities for the more intense levels of development.

6.6.1.5 Low density development of a significant degree should occur in upland areas where the physical environment is compatible and the resource production and extraction activities do not occur.

6.6.1.6 Commercial and industrial development are designated for upland areas, away from the prime agricultural and pastoral lands and out of the danger of flooding and the seasonally high ground water table.

6.6.1.7 The existing developed areas within the floodplain should not be expanded.

6.6.1.8 The area designated for high density residential development should only be fully developed when all urban services are available.

6.6.1.9 The land use control ordinance of Skagit County should be regularly amended to accommodate changes in community standards and needs.

6.6.1.10 If within five years of the date of adoption of this Comprehensive Plan, land areas currently zoned for a use not designated by this Comprehensive Plan and not developed for that zoned use, should be back zoned to its designated use in this Comprehensive Plan.

6.6.1.11 The elements and policies of the Shoreline Master Plan Program and the River Basin - Water Pollution Abatement Program should be integrated into this plan upon their adoption by the Skagit County Board of Commissioners.

6.6.1.12 Where possible, planned unit residential development should be used to cluster neighborhoods and to create open space areas within residential areas.

6.6.1.13 The tourist industry and recreational activities should be pursued to add to this significant aspect of the North Central area economy.

6.6.1.14 The urban area should take advantage of the existing vacant land area and fill in these areas at approximately the same level as the adjacent neighborhoods.

6.6.1.15 It is recommended that the urban areas follow a policy of non-growth into the agriculture areas either east, west, or south.

6.6.2 Community Facilities

6.6.2.1 Plans for new utilities (sewer, water, solid waste) should be coordinated on a regional basis to attain more efficient, equitable, and cheaper levels of service throughout the community.

6.6.2.2 The use of package plant sewage systems should be utilized where possible in the rural areas of the county. Efficient systems at a reasonable price would greatly facilitate residential development in the outlying areas.

6.6.2.3 The Urban Arterial Plans and proposals of the county and the various municipalities are recommended for adoption by reference, where they conform to the provisions of the alternative land-use plans. The Urban Arterial networks, combined with the existing arterial system, provides an excellent circulation pattern for the area.

6.6.2.4 Library service within the county should become coordinated at the regional level to assure a more equitable, cheaper, efficient system throughout the county. Once accomplished, a more comprehensive service would develop.

6.6.2.5 The various school districts which have not already prepared a comprehensive plan should do so. These plans, when completed, will be adopted by reference in the Comprehensive Regional Plans for Skagit County.

6.6.2.6 This plan adopts by reference the Comprehensive Plan for the Sedro Woolley School District prepared by Johnston, Campanella, Murakami, Brummit, and Company in May, 1972.

6.6.2.7 The Planning Department will continue to give assistance to the various school districts to aid them in their planning efforts.

6.6.2.8 This Comprehensive Plan defers recommendations regarding Health Service Delivery to the Comprehensive Health Planning Council of Whatcom, Skagit, Island, and San Juan Counties.

6.6.2.8 Full governmental and law enforcement agency participation in the minimum recruitment and training standards of the Washington State Law Enforcement

APPENDIX A

POTENTIAL NUCLEAR SITES IN SKAGIT COUNTY

POTENTIAL NUCLEAR SITES IN SKAGIT COUNTY

INTRODUCTION

This study examines the potential for nuclear power plant siting in Skagit County using criteria the utilities, consulting firms, and governmental agencies have developed for site selection and evaluation procedures. The intent here is to provide information of use to the planning department in developing a comprehensive plan by identifying those areas which may come under consideration in the future, and to establish a basis for comparing sites currently under consideration with possible alternatives.

Before concentrating on Skagit County, it is perhaps well to gain perspective by addressing a question that is often asked: "Why here and not somewhere else?" A combination of several factors makes this area more attractive to siting engineers than other parts of Puget Sound. These include cooling water, foundation conditions, and seismicity.

Locating adequate cooling capacity, either fresh or salt water, is one of the first considerations in any site search. Relatively deep offshore areas coupled with strong tide currents exist near Skagit marine shorelines where solid rock outcrops also provide excellent foundation conditions. Most other Puget Sound shorelines consist of unconsolidated glacial deposits which would not provide an acceptable foundation because Puget Sound is classed as a Zone 3 earthquake zone (an area where destructive earthquakes have occurred in the past). Site evaluators all agree that within this zone unconsolidated materials capable of amplifying ground waves are unacceptable for nuclear plant foundations. An old mountain belt extending west from the Cascade range makes the Skagit area

unique. It extends through the county and San Juan Islands and is composed largely of well cemented sedimentary rocks with occasional volcanic and intrusive igneous components. Although completely covered by Pleistocene ice advances, the knobs and peaks at the western edge of Skagit County still stand as defiant monuments to their durability.

The Skagit River offers an attractive source for freshwater cooling. With a runoff larger than any other river basin in Puget Sound and seasonal low flows moderated by storage reservoirs, snow fields and glaciers, it obviously ranks high when compared with other freshwater sources in the region. In the past, the Skagit River might have been considered for once-through cooling, but with increases in cooling requirements for modern plants and increased concern for the impact of thermal discharges in river sytems, it is unlikely that once-through cooling on the Skagit River would now be found acceptable. It follows that only systems using supplemental cooling in which heat is transferred to air will ever be proposed for siting on the Skagit River.

Seismicity in northern Puget Sound including Skagit County also compares favorably with southern Puget Sound. Maps of epicenter distribution show the highest concentration of epicenters begins near Everett and extends south to Olympia. Known faults mapped in Skagit County occur either in the mountainous eastern part of the county considered too rugged for siting, or east of Mount Vernon in an area that offers few other incentives for siting.

These factors combined with existing major transmission corridors extending across the county account for the interest in nuclear sites that has already been expressed and will probably continue.

SITING CRITERIA

The primary criteria applied here in identifying potential nuclear sites were:

A. Proximity to an adequate source of cooling water

B. Geological conditions

C. Topography.

Applying these criteria first in Skagit County has the advantage of automatically simplifying the analysis of conflicts with population centers, agriculture, transportation networks and other established cultural features. Since most of these are located on either floodplain alluvium or unconsolidated glacial deposits, they are eliminated from further consideration in the category of unfavorable geology, i.e. foundations unacceptable in the Puget Lowland earthquake zone.

Other criteria were adopted for comparing the relative merits of different areas in the county and used here in a qualitative sense to merely indicate advantages or disadvantages. In the intensive analysis a utility might perform in selecting a site, these and other factors would be evaluated in terms of cost, environmental impact, plant design options, and public acceptance before drawing conclusions. Because of the limited scope of this study, we should expect that within the site areas identified, many additional areas would be eliminated by further analysis.

The criteria applied here are described in TABLE I.

TABLE I

CRITERIA FOR IDENTIFYING POTENTIAL NUCLEAR SITES

CRITERION	MAP SYMBOL (IF APPLICABLE)	DEFINITION AND BASIS OF APPLICATION
A. Proximity to Cooling Water Source	A	A five mile setback from either saltwater shorelines, the Skagit River and the Sauk River was adopted. This is an arbitrary value which would in a specific case be subject to cost and impact analyses relating to terrain, excavation cost, easement availability and social and environmental impacts. Areas (A) excluded from consideration by this criterion are along the north central and south central borders of the county.
B. Geology	B XXX	Includes areas identified on the Geologic Map of Washington (Marshall Hunting, Division of Mines and Geology, 1961) as alluvium or any of several glacial drift deposits. Such deposits are considered unacceptable for nuclear plant sites because they might amplify earthquake ground waves. Dashed lines suggest areas where the depth of these deposits may be shallow enough to obtain footing on underlying rock formations. "XXX" indicates the location of major mapped faults. Areas eliminated in this category include the Skagit floodplain, glacial deposits on bordering lowlands, and remnants left along the sides of upriver canyons. Includes areas where solid rock outcrops occur on the floor of upriver canyons but are subject to rejection in an analysis of maximum flooding caused by dam rupture.
C. Topography	C	Mountainous terrain where flat areas ½ mile or more in diameter do not exist. Includes most of the upriver uplands leaving available sites concentrated along the transition between terrace deposits and steep canyon slopes.
D. Population-Distance Requirements		No fixed standard is applicable because each plant proposal is evaluated individually by the AEC, considering various engineered safeguards systems incorporated in the design. A study by Battelle Northwest(1) gives an idea of the range of zoning dimensions that might apply for 1000 MW_e plants:

	Standard Compliment of engineered safeguards	Safeguards added for siting near urban center	Requirements relaxed in the event AEC experimental evidence justifys less pessimistic approach
Exclusion area radius (zero population)	3020 ft.	1450 ft.	1000 ft.

(1) Summary Report on Nuclear Plant Siting in the Pacific Northwest for Bonneville Power Administration, Battelle Northwest, Richland, Washington, July 1, 1967.

TABLE I

CRITERIA FOR IDENTIFYING POTENTIAL NUCLEAR SITES (CONTINUED)

CRITERION	MAP SYMBOL (IF APPLICABLE)	DEFINITION AND BASIS OF APPLICATION
D. Population-Distance Requirements		

	Standard Compliment of engineered safeguards	Safeguards added for siting near urban center	Requirements relaxed in the event AEC experimental evidence justifies less pessimistic approach
Low population zone radius (less than 50 per square mile)	8.6 mi.	3 mi.	1 mi.
Population center distance (25,000 or more population	11.5 mi.	4 mi.	1.34 mi.

Since there are no population centers of 25,000 in Skagit County, and other criteria have eliminated areas adjacent to existing communities, there appears to be no conflict with population densities per se.

E. Proximity to Railroad		This criterion and those following are used in an evaluation exercise on a number of sites throughout the area. It would influence the cost of site development and, depending on routing, the overall project impact on surrounding areas.
F. Proximity to Highways		Indicates degree of impact in developing a site.
G. Transmission Corridor Distance		Indicates distance new transmission corridors would be extended to connect with existing corridors. Existing corridors include BPA's high voltage lines running north-south just east of Sedro Woolley, Puget Power's east-west Baker River line, and Seattle City Light's north-south line following the Sauk River valley.
H. View Impact		General comments regarding visibility of the sight from surrounding areas.

MAP INTERPRETATION

The attached map was prepared using criteria A, Proximity to Cooling Water Source; B, Geology; and C, Topography. As noted earlier, these categories eliminate most of the area where population and agriculture are concentrated, namely the Skagit-Samish floodplains and the upriver valley floor. Areas adjacent to salt water are scattered among several locations on Bellingham Bay, Similk Bay, at LaConner and on Fidalgo Island. Any of these areas would probably experience difficulty with environmental impacts, proximity to populated areas, established recreation areas, and overall public acceptance--more difficulty at least, than areas in the upper Skagit valley. Since two salt water sites (Samish Island and Kiket Island) are currently being considered and use of any of the saltwater areas will depend largely on the outcome of studies related to those sites, no further evaluation has been made here. It should be noted, however, that criteria used here do identify those areas as having siting potential.

SELECTED UPRIVER SITE COMPARISONS -- FIELD OBSERVATIONS

A number of sites in the upriver area were selected for comparison using the criteria presented here and additional observations made in the field. Brief discussions of each area follow and a summary is given in Table II. The areas for study were picked originally on the basis of topography alone to illustrate how interaction with some of the other criteria results in acceptance or rejection.

Area 1--Mouth of Suiattle River. This area consists of a bench trending north-south between the Sauk and Suiattle Rivers. It is composed of sands, gravels and cobbles of varying degrees of sorting and on the eastern flank extensive clay deposits appear in road cuts. The topographic configuration suggests either a terminal moraine associated with a Suiattle glacier or a

lateral moraine associated with the Sauk valley. In any event the Suiattle River was apparently impounded at one time allowing the accumulation of extensive clay deposits.

East of the Suiattle, outcrops of well cemented conglomerate and a shear zone with numerous slickensides occur. The Shuksan thrust fault is mapped just east and north of this area. The unconsolidated material on most of the existing flat areas and proximity to a major fault eliminate this area from further consideration.

Area 2--Finney Creek. This area is topographically attractive because Sutter Mountain is separated from Rinker Ridge by a shallow and fairly flat pass about 1½ miles in length. Limestone outcrops in road cuts at the northwest end of Sutter Mountain enhance the attraction by indicating suitable foundation may exist. The relatively flat areas are at an elevation of about 800' or 60 ' above the Skagit River that at this point is one mile to the northeast.

To the west, Finney Creek makes a sharp turn from northeast to northwest in a valley that was also impounded in the past and accumulated clay deposits. A mapped fault roughly coincides with the change in course of Finney Creek (one-half mile from the site). The setting here is attractive from the standpoint of isolation from Skagit Valley by Sutter Mountain and may warrant further study to determine how seriously the nearby fault and clay deposits might jeopardize siting.

Area 3--Day Creek. A flat, clear cut terrace parallels the east side of Day Creek for a distance of about one mile before it is pinched off between the creek steep canyon wall. Its maximum width is about one-half mile. The interface between terrace and steeper slopes may offer foundation possibilities. Rock exposures here are dark metamorphic phyllites which become

almost entirely graphite in places along a logging road one mile south of the terrace. Test cores and geophysical studies would be required to calrify the suitability of this site.

Area 4--Clear Lake. This area is a flat terrace northeast of Clear Lake used for PUD water storage impoundments. Conflict with a higher use eliminates further consideration here.

Area 7--Bacus Hill. Topographically this site is similar to the situation at the Finney Creek site except the elevation of the protected valley behind Bacus Hill is only about 350' above the Skagit River. Detailed site studies are being conducted by Puget Sound Power and Light and many of the results will be incorporated in published impact statements. It is worth noting here for comparison with other sites that the formation underlying Bacus Hill and serving as foundation for a nuclear plant at this site is perhaps the best this observer encountered in all of the locations discussed here. It is a bedded sandstone, shale, conglomerate series (Chuckanut Formation) with several thin coal seams near its base. The sandstone is very well cemented and forms the bulk of exposed outcrops. These sediments were deposited on older metamorphics which form the ridge rising to 4000' north of the site and extend east underlying several of the remaining areas discussed. Unfortunately the more desirable sandstone outcrops are either found farther from the river to the northwest, in steep terrain south of the river, or in even more unacceptable places like the cliffs above Bellingham Bay or near the top of Mount Erie on Fidalgo Island.

Area 3--Lyman Pass. This area is a flat terrace at the head of Jones Creek. It lies immediately above the South Fork of the Nooksack River and probably represents deposition at a time when the Nooksack was damned by ice to the north and west and its flow was diverted south through the valley

that now dwarfs Jones Creek. Siting in this area would require location at the interface of unconsolidated fill and the metamorphics to the west or east. Pumping distance from the Skagit is greater than for any of the sites considered and could only be justified if desirability of remoteness was paramount. Since Jones Creek serves as a water supply area for the city of Lyman, utilizing this site would probably require transferring Lyman to water pumped from the Skagit.

Area 9--Lower Jones Creek. A broad fan at the mouth of Jones Creek forms a terrace at an elevation of about 500'. As in the Lyman Pass area, siting here would require crowding close to the steeper metamorphic slopes bordering Jones Creek. The same conflict with Lyman water supply exists; however, distances for transportation, transmission, and pumping are less.

Area 10-Alder Creek. A pass above Grandy Creek and a mile east of Alder Creek offers relatively flat terrain at an elevation of about 600'. This area is about a mile northwest of Birdsview Siding. A hill composed of highly distorted schist rises to 1000' and shields this area from the Skagit Valley. The higher ridge to the north is typically phyllite with a zone of intense shearing suggesting a fault a mile north of the site. Relatively shallow glacial fill is suggested in this area; however the integrity of rock formations and proximity of fault zones would need clarification.

Area 11-Shannon Lake. This area consists of a flat terrace overlooking Shannon Lake at an elevation of 1000'. The top of Baker Dam spillway is at 436'. This location suggests utilization of Shannon Lake as a cooling pond, or perhaps recovery of some pumping costs by discharging through generators at the dam with supplemental cooling installed at the site. No evidence of rock outcrops could be found in this area and it appears that thick unconsolidated deposits in the vicinity may persist in this area making siting possibilities unlikely.

CONCLUSIONS

Using the site comparisons in Table II and field observations discussed in the previous section, the following conclusions may be made:

1. More potential siting area exists on the north side of the river.
2. Sites on the south side require construction of railroad bridges across the Skagit River.
3. Sites at the eastern locations are more apt to encounter certification difficulties because of proximity to faults.
4. The best foundation conditions occur along sandstone outcrops at the western extremity of site areas north of the Skagit River.
5. In general, site areas have unconsolidated sediments overlapping older rock. Although the loose material must be removed to expose solid footing, the presence of this cover can be used to obtain significant information relating to recent fault activity. Disturbance in this overburden would indicate activity during the last 10 to 50 thousand years.
6. Saltwater sites require considerably longer transmission corridors than the river based sites.

TABLE II

SUMMARY OF EXAMPLE SITE COMPARISONS

Criteria	1. Suiattle	2. Upper Finney Cr.	3. Day Creek	4. Clear Lake	5. Kiket Island	6. Samish Island	7. Bacus Hill	8. Lyman Pass	9. Lower Jones Creek	10. Alder Creek	11. Shannon Lake
A. Cooling Water Source: Distance, mi.: Flow, cfs: (7 day minimum 30 yr interval)	Sauk Suiattle 1 <1 660 360	Skagit 1/2 3,900	Skagit <1 4,300	Skagit <1 4,300	Salt water Adjacent	Salt water Adjacent	Skagit <2 4,300	Skagit 6 4,300	Skagit 3 4,300	Skagit 3 3,900	Lake Shannon <1
B. Geology	Unconsolidated glacial morrain, adjacent to major fault	Limestone outcrop & glacial deposit 1/2 mile from fault	Unconsolidated sediments over metamorphics	Unconsolidated sediments over metamorphics. PUD Reservoir area.	Consolidated sediments and volcanics	Metamorphic	Consolidated sediments over metamorphics	Unconsolidated sediments over metamorphics. Lyman watershed	Unconsolidated sediments over metamorphics. Lyman watershed	Unconsolidated sediments over metamorphics. Faulting indicated	Thick unconsolidated sediments
C. Topography	Gentle slope 100' above river	1 1/2 miles long pass, 700' above Skagit	Flat terrace 100' above Skagit	Flat terrace 100' above Skagit	Rounded knoll 100' elev.	Low profile point on Island 160' elevation	Flat pass between hill and ridge. 350' above Skagit	Flat valley floor, steep slopes adjacent 800' elevation	Flat terrace 450' above Skagit	Sloping pass 500' above Skagit	Flat terrace 600' above Lake Shannon
D. Nearest Town: Mile:	Darrington 7	Rockport 5	Lyman 2	Sedro Woolley 1	LaConner 7	Samish Bow <1 6	Lyman 2	Lyman 4	Lyman 1	Hamilton 3	Concrete 2
*E. Distance to railroad, mile:	7	1 Requires Skagit Bridge	3.5 Requires Skagit Bridge	2	3	6	2	6	2	1	2
*F. Distance to Highway, mile:	Adjacent	5	Adjacent	2	<1	1	Adjacent	6	2	2	2
*G. Distance to transmission corridor	1	5	7, BPA 4, PSPL	1	17	14	3	5	Adjacent	1	1
H. View Impact	Visible from Darrington and Highway 530	Tower and plume visible in Rockport, Concrete	Unobstructed view from Sedro Woolley to Hamilton	Hill blocks view from Skagit Floodplain	6 miles view frontage overlook site	No close overview	Tower visible from Sedro Woolley, ridge behind softens profile	None in developed areas	None to full view from Lyman	None to partial from Lyman	None from developed areas but variable from recreation areas on Lake Shannon

* Airline distance, routing for grade or other considerations could increase these distances.

4.3.5 CAPITAL COST INFORMATION OF ALTERNATIVE LAND USE MODELS

4.3.5.2 Uplands - Downriver Area

Water Lines and pumps	$ 5,640,500
Sewage Lines	4,755,700
Secondary Waste Treatment at: Mount Vernon, Burlington, Sedro Woolley, Bayview, Bow/Alger, LaConner, Big Lake	18,308,200
Package Plants at: Bayview, Clear Lake, Samish Island, Conway Pleasant Ridge	2,209,800
Drainage Lines	3,641,900
TOTAL	$34,556,100

Additional Costs to be Considered

(Information was not available in time for the computing of costs for the two alternative models)

1) Hospitals
2) Schools
3) Libraries
4) Police Protection
5) Fire Protection
6) Community Centers

5 ALTERNATIVE LAND USE PLANS

This section develops four upland land use plans for the North Central area. These plans are more detailed in allocating land use patterns than the plans in the previous section.

These alternative land use plans have been developed to reflect the various aspects of the physical environment, the development characteristics, and citizen attitudes.

From this set of alternatives, a Comprehensive Plan for the North Central Area has been developed.

This section contains the follwoing chapters:

COMP PLAN
SW+S CENTRAL DISTRICT