

COMPREHENSIVE PLAN
FOR THE
ISLANDS DISTRICT
OF
SKAGIT COUNTY
WASHINGTON

AUGUST 1975

SKAGIT COUNTY PLANNING DEPARTMENT
120 W. Kincaid Street
MOUNT VERNON, WASHINGTON 98273

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ISLANDS DISTRICT - SKAGIT COUNTY WASHINGTON
COMPREHENSIVE PLAN

Prepared by the Skagit County Planning Department

Robert C. Schafeld Director

CERTIFICATE OF ADOPTION

This is to certify that the Official Comprehensive Plan for the Islands Area of Skagit County is hereby adopted by:

The Skagit County Planning
Commission on January 12, 1976

John A. Garner
Chairman

Jim Sargent
Vice-Chairman

William W. Vay
Secretary

The Board of County Commissioners
on January 20, 1976

Howard Miller
Chairman

Bill Sullivan
Commissioners

Jack Wylie
Commissioner

This text together with the Comprehensive Plan Map, comprises the Comprehensive Plan for the Islands District of Skagit County.

AUGUST 1975

COMPREHENSIVE PLAN
FOR THE
ISLANDS DISTRICT
OF
SKAGIT COUNTY, WASHINGTON

SKAGIT COUNTY PLANNING DEPARTMENT

Robert C. Schofield - Director

David C. Hough - Zoning Administrator

Steve Harvey - Associate Planner

Otto Walberg - Associate Planner
(planner in charge)

Bill Shuler - Human Resource Planner

Delbert Heutink - Technical Advisor

Chris Allen - Assistant Planner

"The preparation of this report was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the United States Department of Commerce, and appropriated for section 305 of the Coastal Zone Management Act of 1972."

Contract No. 675 - 029D

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APPENDIX A

Terrestrial Wildlife of Western Skagit County

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APPENDIX A

Terrestrial Wildlife of Western Skagit County

APPENDIX B

Aquatic Biota of the Skagit Basin

0.2 MAP INDEX

Island Area Planning District
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0.3 PREFACE

Chapter 172, 1st Extraordinary Session, Laws of 1973 amended RCW 36.70.320 (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

The Islands Planning District is the third in a series of six areas that are under revision for a new Comprehensive Plan for Skagit County. The Comprehensive Plan for the County, combining the six different districts, is 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 entirety.

0.4 FOREWARD

The Islands District Plan contained in this volume and illustrated in principle on the accompanying map, is the third in a series of six District Comprehensive Plans stemming 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.

The Island 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 Island area is the third in a series of revisions of Skagit County's Comprehensive Plan.

However, this plan for the Islands area does not represent a completion of the planning process for this 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 Island 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 Island area.
5. Commercial goods and services should be provided by the traditional urban centers. Highway services only should be provided at key arterial intersections.

- C. 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 Island 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 - ISLANDS E.I.S.

Nature of this report: Draft Environmental Impact Statement

Sponsor: Skagit County Planning Department
Skagit County Courthouse Annex II
120 W. Kincaid Street
Mount Vernon, Wash. 98273

Type of Proposed Action: Legislation

Official Title of Proposed Action and Summary of the Proposed Action:
Islands District - 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 Comprehensive Plan is being amended is approximated as the area lying west of the center of the Swinomish Channel, and those outlying islands in the western portion of Skagit County bounded to the north, south, and west by the county line. This area contains approximately 52 square land miles, all within Skagit County, Washington.

Summary of Environmental Impacts:

A Comprehensive 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 Comprehensive 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 and policies of a comprehensive plan will, upon implementation, affect the environment either beneficially or detrimentally. However, each specific development, or each consumption of land, at the 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 varied 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 activities.
4. Allow habitat change for numerous indigenous species of flora and fauna.

Summary of 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.

- D. For discussion of the alternatives for the Island District refer to Chapter 4 in the plan.
3. Recommended Plan
- A. For a discussion of the recommended plan refer to Chapter 6 of the Island Area Comprehensive Plan.
 - B. For a graphic representation of the Island Area Comprehensive Plan, see Map .

Review Period: 35 days July 28 - August 31, 1975
(Comment Period deadline is August 31, 1975)

Recipients of the Document: 1) Skagit County Planning Council
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, 1972.
6. A Tourist and Recreation Strategy for Skagit County, Northwest American, 1972.
7. The North Cascades Highway, Its Impact on Local Community Economics, Community Development Services, 1972.
8. Puget Sound and Adjacent Waters Study, Pacific Northwest River Basins Commission, 1970.
9. Soil Survey - Skagit County Washington, U.S. Dept. of Agriculture, Soil Conservation Service, January 1960.
10. Solid Waste Management Plan, Skagit County Planning Department, 1971
11. North Puget Sound Region for 1971, A New Plan for Law and Justice, Northwest Regional Council.
12. Overall Economic Development Plan (Skagit County Washington), Skagit County Development Association, 1972.
13. Skagit County Emergency Services Operations Plan, Skagit County Department of Emergency Services, October 1972.
14. Skagit County Comprehensive Park and Recreation Plan, Jongejan, Gerrard, Associates, 1973.
15. Skagit County Industrial Site Survey, Latourell Associates, 1972.
16. Skagit County Water Quality Management Program, CH2M/HILL, 1974.
17. Swinomish Comprehensive Plan, Stevens, Thompson, Punyan, 1972.

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 on 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 Comprehensive 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 Comprehensive Plan must be studied continually and revised whenever new technology, techniques and other data indicate that the best interest of the County, or any portion thereof, will be served thereby.

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 approximate 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 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)

2) Upriver:

North - Skagit County Line

South - Skagit County Line

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

4) Southwest:

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

South - Skagit County Line

West - The center of the 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 North along the Pulver Road to a line running west beginning at a point between Sections 12 and 13, Range 3, Township 34 (generally south of Avon)

West - The center 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) Islands:

All of the islands of Skagit County lying west of the center of the Swinomish Channel.

NOTE: The Island Planning District does not include the city of Anacortes.

(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.

1. PHYSICAL ENVIRONMENT

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

The physical characteristics section is composed of the following sections:

- 1.1) Geology
- 1.2) Slope
- 1.3) Soils
- 1.4) Septic Suitability
- 1.5) Floodplain
- 1.6) Shoreline Characteristics and Processes

The diverse physical environment can be mapped and discussed for specific areas, such as the Islands 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.

1.1 GEOLOGY

1.1.1 Geologic Units

The geology of the area is composed of four generalized geologic units:

Quaternary alluvium and glacial deposits

Jurassic - Cretaceous sedimentary and volcanic rocks

Basement complex, pre-Middle Devonian

Serpentine and ultrabasic rocks

1.1.2 Geology Map

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

1.1.3 Sub-area Analysis

The scouring force of glaciers, especially during the Fraser Glaciation of the Pleistocene Ice Age, in combination with, other forces including the uplifting of the Cascades and the effects of the Skagit River system, produced the lowlands and influenced many of the land forms in the study area.

Guemes Island, Sinclair Island, March's Point area and the Swinomish area are primarily characterized by Quaternary alluvium and glacial deposits with small amounts of Jurassic - Cretaceous sedimentary and volcanic rocks scattered at the southern extremities of the islands. The Swinomish area also shows some areas of ultrabasic rocks near Hunot Point and Hope Island.

Cypress Island is primarily Serpentine and ultrabasic rocks on the southern two-thirds of the island, while Jurassic - Cretaceous units are found on the northern one-third.

The Fidalgo area is a conglomeration of the four geologic units. Jurassic-Cretaceous units predominate the eastern side, from Cap Sante south to Similk Bay and also at Deception Pass. Serpentine and ultrabasic rock protrude at Washington Park in Anacortes and also on Burrows and Allan Islands. Basement complex, pre-Middle Devonian units are situated in the middle portions of the Fidalgo area and also extend along almost the entire western side of the Fidalgo area. The Quaternary alluvium and glacial deposits are found on the northwest and southeast portions of the Fidalgo area.

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

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

The two main elements of slope that must be considered when examining the possibility of development are steepness (slope %) and 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 also 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.

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 Soil Conservation Service maps, 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 Islands area. Refer to Slope Map.

1.2.3 Sub-area Analysis

The outlying islands in this area are generally characterized primarily by somewhat steep slopes, 15%+ except for Guemes and Sinclair Islands who exhibit gradual slopes of 0-8% with some 15%+ slopes on the southeaster lip of Guemes.

The three sub-areas of Fidalgo Island proper also exhibit different slope characteristics. The Swinomish Reservation area is primarily gradually sloped, 0-8% grade, for the eastern portion while the western part shows a considerable amount of area that are 8-15%, and greater in some instances. The March's Point area is primarily gently sloping with the majority of the slopes at 0-3% with some areas of 3-8% in the center of the point. The western half of Fidalgo is characterized by slopes over 15%, with some areas of 3-15% occurring primarily around the several lakes that dot the island. Areas of the 3-15% slope are near the western side of Heart Lake, east of the Rosario Road, and east of SR 20 near Gibraltar.

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 Islands 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

1.3 SOILS

1.3.1 Soil Types

Of the fifty-six (56) soils found in the Skagit County area, twenty-five (25) are represented in the Islands Portion of Skagit County. The soils found in this area are:

Aa-Alderwood	M-Made Land
B1-Bellingham	Mu-Mukilteo
Bo-Bow	Nr-Norma
Cg-Cagey	Rf-Rifle
Cw-Coastal Beach	Rb-Rough Broken Land
C12-Coveland	Rk-Rough Rocky Land
E-Everett	Se-Semiahmoo
Fa-Fidalgo	Sq-Squalicum
Gi-Giles	Sm-Sumas
Ie-Indianola	Ta-Tanwax
Kp-Kline	Td-Tidal Marsh
Lu-Lummi	Ts-Tisch
Ly-Lynden	

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 Soils Map.

1.3.3 Sub-area Analysis

Vendovi, Jack, Cypress, Burrows, Allan, Hope, Goat, Ika, Saddlebag, Hat, Huckelberry, Dot and other smaller islands are primarily characterized as Rough Rocky land with some scatterings of Fidalgo soils. The characteristics of these soils are; variable drainage, medium to rapid surface runoff, no high water table, steep, stony, droughty and best suited for forestry. These types of soils have severe limitations for filter fields in regards to septic suitability conditions.

Sinclair Island is primarily characterized by Bow and Indianola soils with Rough Rocky and Cagey soils in limited quantities. The Bow soils, predominantly on the northern portion of the island, have very slow runoff, variable drainage and also severe limitations for septic filter fields. The Indianola soils have excessive drainage characteristics no high water table, and are susceptible to droughty conditions.

Guemes Island is primarily Alderwood soils in the center regions of the island with a belt-like area around the periphery composed of Bow, Everett, and Rough Broken soil. The exception to this area is the southeast corner which is mostly Rough Rocky soil. Surrounding almost the entire island, with the exception of the southeast corner, is a coastal beach zone composed of gravelly coastal beach material. The predominant Alderwood soil displays characteristics of usually well drained soils where the soil and subsoil are permeable, runoff is slow, drainage is medium down to the hardpan layer, ground water is more susceptible to lateral movement, and the ground seems best suited to forestry and some pasture use. This type of soil has severe limitations also for septic filter fields.

Fidalgo Island can be examined in three different areas do to its soil configurations. The Swinomish Indian Reservation area is characterized by three main soil types. The eastern half is primarily Bow soils while the western half is mostly Alderwood. The northeast corner is mostly Lummi soil which has poor drainage, continual high water table and severe septic limitations. Along the edge of the Swinomish Channel there are several areas of man-made soils which are made up of a variety of materials.

The March's Point area is typified mainly by Bow soils interspersed with areas of Coveland, Giles and Bellingham soils in smaller numbers. All those soils have variable drainage characteristics depending on seasonal ground water tables and is good pasture land when adequately drained.

The western half of Fidalgo Island is characterized by two main soil areas. The area lying north of Lake Campbell to the city of Anacortes city limits is mostly classified as Rough Rocky land except for a strip along the Haykost Road which has a combination of Alderwood and Everett soils. The area lying south of Lake Campbell is also Rough Rocky land except for areas along the Rosario Road and the Gibraltar Road which has some areas of Alderwood, Bow and Samish soils.

The remaining soils, which are found in smaller quantities than the above, are not susceptible to generalizations about capabilities or characteristics because great variation can occur within relatively small areas. The best source of information on soil capabilities of Skagit County is a soil survey issued in 1960 by the United States Department of Agriculture, Soil Conservation Service.

1.3.4 Planning Implications

Soils of almost the entire area of the islands are classified as Capability Class, Class IV-Class VII. Class VI soils have very severe limitations that make them marginal for common field crops and require extra care. Most can be used for pasture, recreation, wildlife cover or forestry if the climate is favorable. Class VII soils also have severe limitations, such as steep slopes, rocky ground, and low water tables which are not suited to tilled crops but can be utilized for forest production in most cases.

The entire area has potential erosion or past erosion damage and is a source of sediment to the surrounding region.

The capabilities and characteristics of soils have an important role in determining what land use and intensity of land use that 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 subsurface drainfields. 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.

Strict regulations pertaining to the use of septic tanks are necessary 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 are 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 acceptability 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 *Septic Suitability Map*.

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.

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 Islands 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

Effective floodplain management is an alternative to flood control projects. Floodplain management is designed to provide an approach which will permit the use and development of floodplain lands for the optimum benefit of the region's population and its economic activities without having to provide structural measures of protection to prevent flood damages. The primary concern of floodplain management is to minimize the number of structures on the floodplain and/or to require that new structures be built to offer minimum resistance to floodwater in certain crucial areas. The floodplain management plan will reduce present and future flood damages by controlling and directing the amount of development on the floodplain by the use of floodplain zoning and regulations to restrict developments and thru the flood-proofing of buildings on the floodplain. Levees, in combination with existing upstream storage are capable of providing on 3-15 year protection to the floodplain areas.

Floodplain management does not create a substantial land use planning problem in the Islands portion of Skagit County, as it does in other parts of the county, with the ever increasing amount of encroachment by residential and commercial developments.

1.5.2 Floodplain Map

The floodplain map displays the 100 year floodplain in the Islands portion of Skagit County. Refer to Floodplain Map.

1.5.3 Sub-area Analysis

In the Islands district, the area within the 100 year floodplain is primarily agriculturally oriented and is located on the northeastern part of the Swinomish Indian Reservation.

1.5.4 Planning Implications

The revised Comprehensive Plan for the Islands Planning area reflects good floodplain management policy in that new development is proposed mainly for the uplands (and hence flood safe) parts of this area and agricultural use of the floodplain area is encouraged.

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; 4. flood proofing existing structures; and 5. structural flood control measures. 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 Islands area.

1.6 SHORELINE CHARACTERISTICS AND PROCESSES

1.6.1 General

The shorelines of Skagit County islands exhibit almost every conceivable form of marine shore environment found in Puget Sound. The major islands, Cypress, Sinclair, Guemes, and Fidalgo, though in close proximity to one another, are unique in their physiographic make-up and shoreline characteristics. Their shoreline geomorphology ranges from dune and marsh lowlands to cobbly and rocky beaches backed by gently rolling uplands, to terraced or benched uplands with or without definite beach zones, to more steeply sloping uplands in the form of cliffs and bluffs whose faces originate far below the water's surface. Each type owes its existence, its past and its future, to a multiplicity of interrelated processes and materials that have collectively created the uniqueness and diversity of these shore resources. The Skagit County Shoreline Inventory provides tabulated print-out maps exhibiting this great variety of beach and upland combinations and is available for review at the Planning Department.

The following is a brief discussion of two major beach types or shoreforms of concern to the developmental policies of this comprehensive plan: erosion beaches and accretion beaches. Although these types do not make up a majority of the island shorelines, they do present certain critical problems and opportunities that need to be addressed in this document. Recent investigations and reports are becoming available in this relatively new field of analysis and management that will foster and develop a greater understanding of our shoreline program. The following is by no means exhaustive and is subject to modification and addition as the field expands.

1.6.2 Erosion Shoreforms

These shoreforms are subject to the erosive power of waves, either on a daily basis at all tide levels or on an infrequent basis such as during high high tides or storms and periods of extraordinary wind influenced waves. Their physiographic profile is generally in the form of a bluff measuring several feet to several hundred feet high and may be composed of bedrock, glacial till or "boulder clay", glacial outwash material such as gravel, sand, and sediments, and clay-silt material deposited as former river deltas and lake bottoms. Each type of bluff material is subject to its own rate and

extent of erosion and possesses a wide degree of characteristics relative to suitability for recreation, residential development, and other uses.

The beach or foreshore is usually the wet intertidal zone, one which is under water during high tide periods. The width, height, and extent of the beach varies greatly, if it exists at all, being dependent upon the wave energy levels, exposure, bluff and beach material, the stability of the bluffs or cliffs, and the existence of longshore drift to carry and deposit beach material. Also common in this area are marginal dry beaches along the high tide line possessing a narrow, shallow berm of sand or gravel along with driftwood. Such beaches are usually wetted by breaker activity and higher high tides. The beach material is relatively unstable and is constantly involved in beach feeding and longshore drift activity.

Examples of these erosional shoreforms can be found along the west side of Fidalgo Island in Burrow's Bay, along Similk and Dewey Beaches, the west and east shores of Guemes Island, and along some shores of Sinclair Island. Also, numerous crescent shaped "pocket" beaches are found scattered around the island shorelines, owing their origin to bedrock erosion and/or bank and bluff erosion and deposition.

The suitability and desirability of erosional shoreforms for most types of development is generally poor. Unless public sewers are available, bedrock sea cliffs, though able to support structures if not fractured or extensively weathered, offer no capabilities for present sewage disposal standards. Bluffs and banks, from low, gently sloping types to high, steep varieties, possess highly variable qualities for developmental uses. Engineering properties such as shear strength shrink-swell, permeability, and bearing capacity will influence and place constraints on shoreline development.

Aside from the erosional effects of waves and surface water runoff, bluffs are also subject to material mass movements or sliding. The delicate, gravitational balance of bluff shorelines of this county can be disturbed by man, nature, or a combination thereof. These disturbances usually occur due to the following:

1. Undercutting of the toe from wave erosion alone, man-made excavations, or wave erosion accelerated by improperly located, placed or built bulkheads and shore protection devices.

2. Overloading the tops of bluffs with structures and landfills.
3. Saturating the bluff by septic tank drain field waste water, lawn watering, leaking water and sewer lines, or roadside drainage ditch runoff. Saturation can reduce the cohesion of bluff materials and increase the load.
4. Vibration from earthquakes, blasting, or heavy equipment operation.

Failure to recognize the relatively unstable features and geology of banks and bluffs and the damage potential of normal and storm wave systems has lead to loss of private as well as public property investments and structures. Poorly located, designed, constructed, and maintained structures placed for protecting shoreline property and buildings often intitiate and accelerate the deterioration of the very shoreline resource the owner wishes to save and utilize. Such activity also has the potential to damage adjacent and nearby beaches and properties, create use conflicts with other shoreline and water users, and endanger public life and safety.

1.6.3 Accretion Shoreforms

Accretion shoreforms or beaches are characterized by a relatively permanent backshore composed of a berm of sand, gravel, and driftwood that is wetted only under extreme wave and tide conditions. They owe their formation and existence to the material from erosional bluffs and banks, carried by longshore or littoral drift, and deposited where wave and current influence diminish. These deposits take the form of spits, points, hooks, bars, and barrier beaches which may accrete to enclose marshes, lagoons, fresh water streams and estuaries. Accretion beaches along our marine shorelines are, therefore, the end result of the above geo-hydraulic, or land and moving water, process. And, in Skagit County, such shoreforms are a limited recreational and aesthetic marine resource.

Although a majority of Skagit County shorelines are protected from direct Pacific Ocean storm systems, local storm conditions can create violent and sometimes destructive wave action on all beach and shoreforms of the islands area. Structural development on accretion shoreforms, therefore, may require substantial investment in protective devices that may lead to the deterioration of the very resource that attracted the development. Also, the desirability of sewage disposal systems in this environment is questionable.

1.6.3.1

ACCRETION BEACH SYSTEMS
ISLANDS DISTRICT

LOCATION	TYPE	EXTENT	MATERIAL ORIGIN
Guemes Island SW corner	Bay barrier	2,100 feet	Feeder bluff to NW Feed action: active Drift is south and east
Cypress Island NW shore, Tide Point	Point	100 feet	Adjacent feeder bluffs Drift is north and south
Sinclair Island			
a. NW corner near Urban	Point	1,200 feet	Adjacent feeder bluffs Drift is south and west
b. North Point	Point (closed)	2,000 feet	Adjacent feeder bluffs Drift is north and east
Samish Island (NW Area Planning District)			
a. Camp Kirby	Point-spit	1,500 feet on each side	Adjacent feeder bluffs Net drift to south
b. Scotts Point	Point (closed)	150 feet on each side	Adjacent feeder bluffs Net drift to east
Padilla Bay - mouth of Joe Leary Slough (NW Area Comprehensive Plan)	Spit	800 feet	+ 1 mile to the south Drift is to the north

Source: Wolf Bauer
Shore Resource Consultant, 1974.

2. DEVELOPMENTAL CHARACTERISTICS

This portion of the Comprehensive Plan District is oriented toward the impact man has had on land and land use in the Islands 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 Islands Planning area.

An inventory and analysis of the developmental characteristics, when combined with data on the physical environment, provide a set of parameters 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 Islands area and to some extent to the entire County, 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 Islands Area

The European settlement of Skagit County began on Fidalgo and Guemes Islands about the year 1859. March's Point attracted the first settlers on Fidalgo Island primarily because it was an existing prairie. William Munks, who has been claimed to be the first permanent settler on Fidalgo Island, bought an existing homestead late in 1859. Development of a permanent settlement on Guemes Island occurred about 1866 and was further enhanced by certain mining operations on the island (primarily copper) that put focus on this location.

Progress on Fidalgo Island was quite rapid in the 1870's. Mr. Munks established the first store which served many of the early settlers whose primary occupation was farming on a small scale. The large-scale farming operations were being established on the Samish and Skagit Flats.

The part of Fidalgo Island across the Swinomish Slough from the city of La Conner had been an Indian village long before any white settlement began and almost the entire southeast section of Fidalgo Island was set aside by executive order of the President for the establishment of the Swinomish Indian Reservation in September of 1873.

Around the 1890's there was a tremendous upsurge in the division of property (platting). The price of land rose to new heights and the number of real estate transactions was greater than ever before. The land was surveyed in 1891 giving the old pioneers, who held their property through squatters rights, a chance to secure a more satisfactory title and encouraging other individuals to come to the area. It was at this same time that the commercial fishing industry got its initial beginnings in the Fidalgo area with the construction of fish-processing plants. During this same

period, the necessity to dredge the Swinomish Channel was realized so as to aid navigation and commerce and thus positively impacted the commercial importance of the Fidalgo area and Skagit County.

2.1.3 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.

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

2.1.4 Sub-area Analysis

The geographical location of the City of Anacortes is conducive to its growth potential. It sits as an outlet to the Skagit River Basin, is near the entrance to Puget Sound, and possesses a relatively deep harbor for ocean-going ships. Anacortes, originally called Ship Harbor, was settled about 1860. 1876 saw the appearance of Amos Bowman who many feel is the person responsible for the development of Anacortes. His family operated a wharf, store, post office and newspaper and also printed a map of Puget Sound and the Anacortes area that was the cause of much immigration, as was the concept of Anacortes being the terminus for a trans-continental railroad.

The boom of the 1890's saw an incredible number of lands platted in the city, primarily for speculation. Speculation was rampant and within a few months in early 1890, the City of Anacortes grew from a few dozen to several thousand. However, the expectations for development subsided, the bubble burst, and

many people were ruined. During this time, though, the city had become incorporated into a 3^d class city and had established a city government.

In the late 1890's, several fish canneries were commenced which were later followed by saw and shingle mills which stimulated further growth but not at the same previous scale.

Until the land development boom in 1889, Dewey was small settlement with a post office. When every available townsite on Fidalgo Island was being purchased and platted, it too was platted as Fidalgo City (with 341 square blocks) while nearly the same platting procedure was occurring at Gibraltar.

In 1891 an electric motor line was built from Anacortes to Fidalgo City and cars made two trips over the tracks. It was compelled primarily to secure a large land bonus promised the company who developed the line.

William Munks also recorded his plat for Fidalgo during the 1890 boom. He received a post office, the second in Skagit County, but the boom collapsed and so did the development of Fidalgo as most of the land reverted back to farming.

Many other communities have come and some are now gone. Although they have left interesting histories, to trace each is a task beyond the scope of this document.

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 special 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. 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 exponential 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