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Comprehensive Study of Water and Related Land Resources

Puget Sound and Adjacent Waters

State of Washington

Appendix I
Digest of Public Hearings
Volume I

Puget Sound Task Force—Pacific Northwest River Basins Commission

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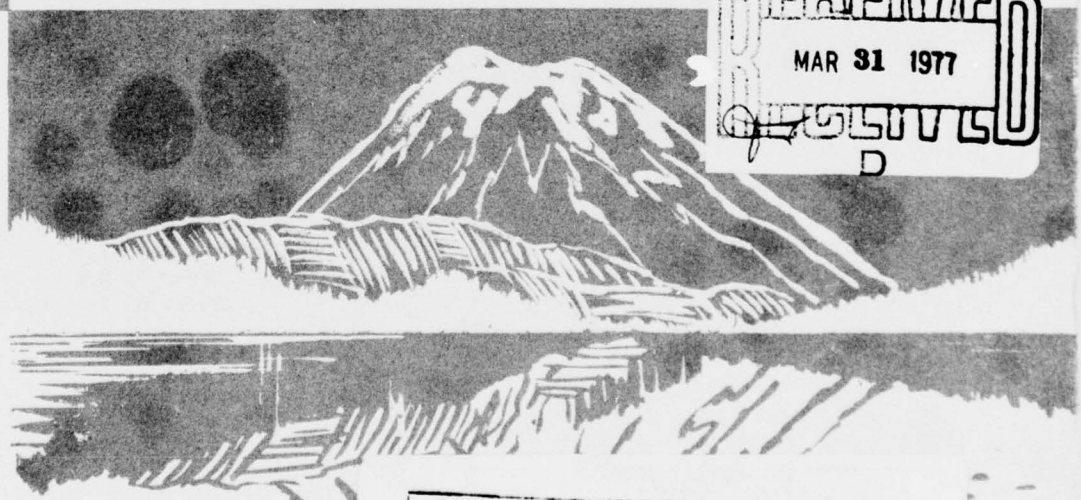

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Appendix I—Digest of Public Hearings Volume I

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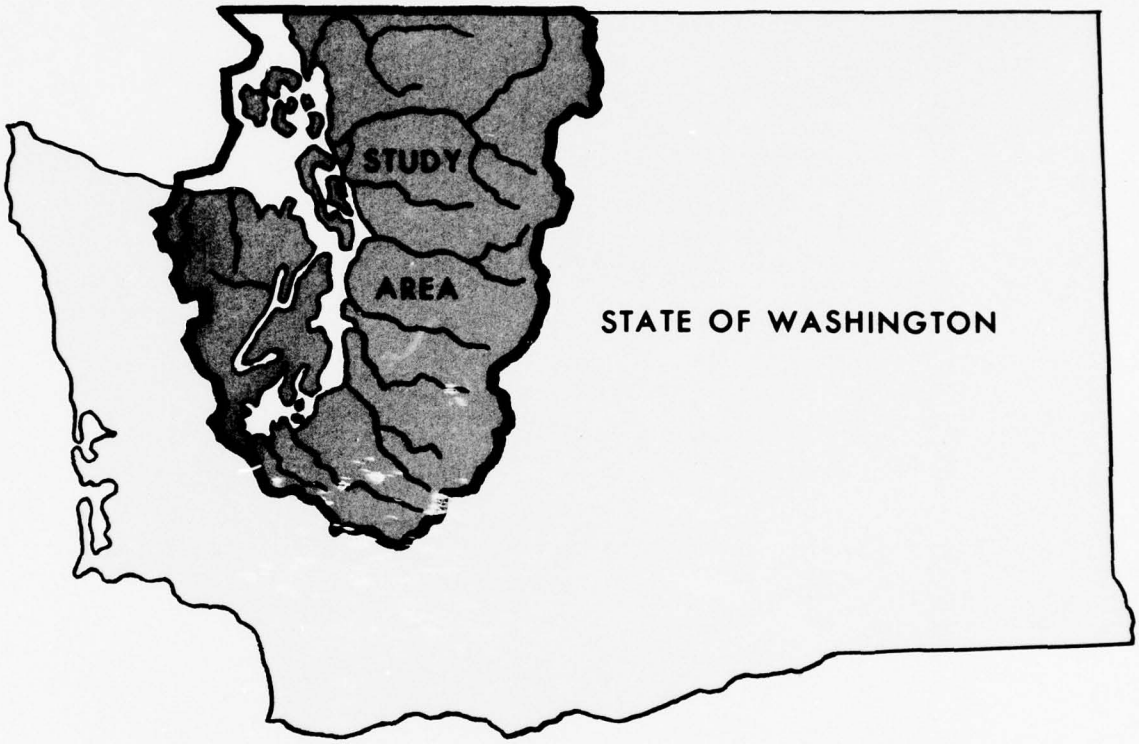

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APPENDIX I. DIGEST OF PUBLIC HEARINGS.

Volume I. Initial Hearings.

Alfred T. Neale, Sydney Steinborn,
Lewis F. Kehne, L. B. Day
Francis L. Nelson

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PUGET SOUND TASK FORCE of the PACIFIC NORTHWEST RIVER BASINS COMMISSION
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Earl L. Phillips	U.S. Department of Commerce
I. Paul Chavez	Federal Power Commission
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Warren Hastings	U.S. Department of the Interior
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Mark J. Pike	U.S. Department of the Interior
Ernest E. Allen	U.S. Department of the Interior
Robert E. Emerson	U.S. Department of Transportation

FOREWORD

Appendix I, Digest of Public Hearings, contains a record of oral and written testimony presented at initial public hearings held at the beginning of the Comprehensive Water and Related Land Resources Study of Puget Sound and Adjacent Waters and at public hearings held at the conclusion of the study. This appendix is composed of three volumes. Volume I, Initial Hearings, presents testimony received in 1964. Volume II, 1970 Hearings, presents testimony received in May and June of 1970. Volume III, Final Hearings and Workshops, presents testimony received in April 1971 and a summary of the twelve-county workshops held in late 1970 and early 1971.

The Summary Report is supplemented by 15 appendices. Appendices II through IV contain environmental studies. Appendices V through XIV each contain an inventory of present status, present and future needs, and the means to satisfy the needs, based upon a single use or control of water. Appendix XV contains comprehensive plans for the Puget Sound Area and its individual basins and describes the development of these multiple-purpose plans including the trade-offs of single-purpose solutions contained in Appendices V through XIV, to achieve multiple planning objectives.

River-basin planning in the Pacific Northwest was started under the guidance of the Columbia Basin Inter-Agency Committee (CBIAC) and completed under the aegis of the Pacific Northwest River Basins Commission. A Task Force for Puget Sound and Adjacent Waters was established in 1964 by the CBIAC for the purpose of making a water resource study of the Puget Sound based upon guidelines set forth in Senate Document 97, 87th Congress, Second Session.

The Puget Sound Task Force consists of ten members, each representing a major State or Federal agency. All State and Federal agencies having some authority over or interest in the use of water resources are included in the organized planning effort.

The published report is contained in the following volumes:

SUMMARY REPORT

APPENDICES

I. Digest of Public Hearings
II. Political and Legislative Environment
III. Hydrology and Natural Environment
IV. Economic Environment
V. Water-Related Land Resources
   a. Agriculture
   b. Forests
   c. Minerals
   d. Intensive Land Use
   e. Future Land Use
VI. Municipal and Industrial Water Supply
VII. Irrigation
VIII. Navigation
IX. Power
X. Recreation
XI. Fish and Wildlife
XII. Flood Control
XIII. Water Quality Control
XIV. Watershed Management
XV. Plan Formulation

APPENDIX I
DIGEST OF PUBLIC HEARINGS

VOLUME I
INITIAL HEARINGS

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EXHIBIT B–STATEMENT OF FEDERAL AND STATE AGENCIES
EXHIBIT C–PRESENTATIONS NOT INCLUDED IN OFFICIAL TRANSCRIPTS

INITIAL PUBLIC HEARINGS

SECTION ONE — INTRODUCTION

Initial Public Hearings is a composite of the three public hearings held by the Puget Sound Task Force at the beginning of the Comprehensive Water Resources Study of Puget Sound and Adjacent Waters.

The study was directed toward engineering and economic investigations to develop plans that would satisfy basin and regional requirements for water and related land resources. The objectives of the coordinated local, State and Federal programs are more fully stated in the Information Bulletin bound at the back of this record as Exhibit A, together with the announcement of the hearings.

The comprehensive study was begun by the Puget Sound Task Force of the Subcommittee for Coordinated Planning, Columbia Basin Interagency Committee. The CBIAC consisted of the governors of the seven states bordering the Columbia River Basin, six Federal departments and one Federal commission, all of which share responsibility for the development of water and related land resources. Agency responsibilities are explained in the "Statements of Federal and State Agencies Participating in the Comprehensive Study for Puget Sound and Adjacent Waters," also bound at the back of this record as Exhibit B.

Extensive efforts were made to inform the public about the study prior to the public hearings scheduled for October 1964 at Anacortes, Everett and Olympia, Washington. A conference to furnish information about State and Federal objectives was held 15 July 1964 with Governor Rosellini. The conference was attended by representatives of the participating Federal and State agencies and responsible bodies engaged in water resource planning and development from the 12 counties within the study area. Preceding the public hearings, separate meetings were held with the county commissioners of each of the 12 counties included in the study, other public officials, and the principal users and developers of water in the Puget Sound Area. The Notice of Public Hearings and the Information Bulletin were mailed 25 September to Federal, State, county and local officials, to newspapers, radio and television stations, and to individuals representing a large cross section of the general public. The pamphlet containing the statements of Federal and State agencies participating in the study was prepared to supplement the Information Bulletin, and was distributed to the public at the hearings.

John A. Richardson and Robert H. Gedney, Co-Chairmen of the Puget Sound Task Force, conducted the public hearings. Mr. Richardson presided at the Anacortes and Olympia hearings. Mr. Gedney presided at the Everett hearing. A reporter recorded the oral testimony given at each hearing.

All oral and written presentations received before, during and after the public hearings have been assembled in this record. Section 2 is a summary of all presentations. The official transcripts of the hearings have been reproduced under Section 3. The attendance registers for each hearing appear under Section 4. Presentations not included in the official transcripts have been reproduced in this record as exhibits, and are attached as Exhibit C.

A copy of the mailing list for the hearing announcements, documents read into the official transcripts, and voluminous maps, reports, brochures, etc., received during the course of the hearings have been placed in the unpublished appendix to this record. Contents of the unpublished appendix are shown in Section 5. The unpublished appendix is available for inspection from the Task Force Secretary, c/o Seattle District, Corps of Engineers, 1519 Alaskan Way South, Seattle, Washington.

SECTION TWO — SUMMARY OF TESTIMONY

Presentations by representatives of State and Federal agencies have overall application to, and are essentially the same for, all three public hearings. Therefore, they have been summarized only once in this report.

The highlights of presentations by county agencies, local organizations and individuals have been summarized by hearing and applicable county.

FEDERAL AGENCIES

Department of Agriculture

Mr. Lewis F. Kehne—Assistant State Conservationist, Soil Conservation Service, stated that the Department of Agriculture is responsible for the agricultural, forestry, national forest, rural and upstream aspects of river basin development. The Department's participation in the comprehensive study will include studies by the Soil Conservation Service, the Forest Service and the Economic Research Service, in coordination with other agencies. These studies will develop related economics, problems and needs, and their relationship to the total economy to facilitate the development, control, management and use of water and related land resources. Mr. Kehne presented a brochure entitled, "Washington Small Watershed Projects," which has been placed in the unpublished appendix.

Department of the Army

Colonel C.C. Holbrook—Seattle District Engineer, Corps of Engineers, said that the Corps recognizes the need for a comprehensive study of Puget Sound and its adjacent waters to develop long-range planning of all aspects of water resources. The study will give full consideration to State and local policies on water resource development, social and economic factors, and local needs and desires. The objective is to identify interim and long-range needs, and to provide the basis for early projects and the framework for projects which are conceived subsequently or result from emergencies. The Corps will actively participate in the Task Force program, and also continue to undertake studies which fall outside the scope of the comprehensive study.

Department of Commerce

Mr. Howard J. Marsden—Chief, Division of Ports, Office of Program Planning, advised that the Maritime Administration will participate in port planning so shipping activities may be matched to orderly, scheduled, optimum developments. The administration is responsible for devising and suggesting the most appropriate types of water terminals for the transfer of waterborne commerce, and for advising communities regarding appropriate locations and construction plans for port and transportation facilities. This program includes forecasts of future port needs to accommodate ocean-going vessels as industry and commerce develop along deepened channels in river basins.

Department of Health, Education and Welfare

Mr. Francis L. Nelson—Chief, Comprehensive Basin Operations Section of the Columbia Basin Project, U.S. Public Health Service, summarized the activities of the Service in connection with water resource planning. The Public Health Service is charged with planning responsibility for municipal and industrial water supply and water pollution control. In the latter activity, quality needs for the propagation of fish, aquatic life and wildlife, recreation, agriculture and other legitimate uses are considered. Water use projections, based on future population and economic conditions, assess the effect these uses have on water quality and the need for additional sources of municipal and industrial supply. The ultimate aim of the quality control plan is to present alternatives and consequences of various combinations of land management, water pollution control and flow regulation which are feasible in meeting water quality objectives.

Department of the Interior

Mr. Gilbert V. Schirk—Regional Office, Bureau of Reclamation, announced that agencies within the Department will play an active part in the comprehensive study. The Department of the Interior has broad responsibilities for planning and evaluating the functions of irrigation, recreation, fish and wildlife, municipal and industrial water supply, power, area redevelopment and sediment control. The Bureau of Reclamation has the principal responsibility in the Department for planning, constructing and operating multiple-purpose water resource projects. These projects may also include the functions of flood control, navigation and water quality control. The Bureau

administers the Small Reclamation Projects Act of 1956, which provides for loans to local organizations for water resource developments of limited size, primarily irrigation. Preliminary studies show there are about 480,000 acres of potentially arable land of the Puget Sound Area, which indicates the magnitude of this Area's resource potential.

Mr. Grant A. Woolley—Field Supervisor, Branch of River Basin Studies, Bureau of Sport Fisheries and Wildlife, U.S. Fish and Wildlife Service, explained that the Fish and Wildlife Coordination Act of 1958 specifies that fish and wildlife resources must receive equal consideration and be coordinated with other aspects of water resource development. Plans developed by the Fish and Wildlife Technical Committee of the Puget Sound Task Force will be in accord with recommendations by the Senate Select Committee on National Water Resources and the related water and land resources policies in Senate Document 97. Investigations will include the determination of fish and wildlife populations, distribution, habitat, commercial harvest, man-days of angling and hunting and basic resource needs in specific river basins. Water development agencies will be alerted regarding protective and enhancement measures required in project planning.

STATE AGENCIES

Department of Fisheries

Mr. R. Walter Williams—Biologist, Division of Research, designated the Puget Sound Area as the most important salmon producing area in the State and the fishery resources as having local, State and national significance. He stressed that the Area's extensive watersheds must be preserved and enhanced to provide more extensive production and to meet the need for multiple-purpose water uses. The Department of Fisheries is responsible for maintaining and perpetuating the fishery resources of the State, and has a program for artificial propagation, stream improvements, fishway engineering and management which is one of the most modern in fishery technology. The specific objectives of the fishery study will be to identify specific problems and seek solutions through coordinated planning with other agencies, establish fishery enhancement possibilities and incorporate them into the comprehensive plan, and propose ways and means for improving stream habitat to increase the recreational and commercial potentials of this resource. The comprehensive study will develop a long-range water management plan to sustain and enhance the fishery resources and to protect these resources from encroachment by other water users.

Department of Game

The statement submitted by the Department of Game stressed the importance of fish and wildlife to the economy of the State. Therefore, these resources must be given adequate consideration in the planning of various watershed development projects. As natural habitat of fish and wildlife is rapidly diminishing in the State, intensive management, development of remaining habitat and artificial propagation have been required to attempt to maintain these resources. Orderly and well planned development of the Puget Sound Area, giving adequate consideration to fish and wildlife, is necessary to minimize losses to these resources and to insure recreational development in the State.

Department of Health

Mr. Alwin C. Koch—Senior Public Health Engineer, pointed out that the Department of Health cooperates with municipalities, public utility districts, water districts and private utility companies to furnish adequate public water supplies which are sufficiently pure for consumption. As water must come from the best available source, the objective of this study should be to improve water resources, either by water storage projects or by changing water sources. Some watersheds require no treatment beyond chlorination, but others require water treatment such as coagulation, sedimentation, filtration, and disinfection.

Pollution Control Commission

Mr. Duane E. Blunt—District Engineer for King County, emphasized that the Commission is concerned mainly with water quality. The Commission will participate in the planning for and management of water to meet present and potential uses, needs and demands.

Department of Commerce and Economic Development

Mr. Paul T. Benson, Jr.—Planner, Local Affairs Division, drew attention to the importance of developing water resources for future industrial uses. Economic forecasts indicate extensive industrial ex-

pansion and a labor force of between 70,000 and 130,000 people by 1976. Suitable land areas must be reserved for industrial sites which can be served by required services and facilities. Among the basic requirements for industry are transportation, utilities and an adequate water supply. Multiple-purpose planning and the problems of competitive use require that industrial development needs be clearly identified and related to water resources management.

COUNTIES, AREA 1, ANACORTES HEARING

San Juan County

Mr. Robert W. Condon—San Juan County Commissioner, cited problems stemming from the increasing influx of recreationists. Professional help and funds are needed by this isolated community to solve transportation, domestic water supply, pollution control, harbor development, fishery and recreation problems. The county has been designated as a depressed area. Photographs of Friday Harbor in support of the recreational presentation have been placed in the unpublished appendix.

Mrs. Donna Kjargaard—A resident of Lopez Island, mentioned that Lopez has water problems. She also expressed concern that fertilizer runoff will be detrimental to the fishery, and favored establishing fish farms.

Mr. J.E. Ringler—Port of Friday Harbor, spoke about the attraction of the San Juan Islands for retired people and recreationists. The tremendous increase in small boat and tourist traffic has taxed resources beyond the ability of the county to provide needed facilities for moorage, water supply, pollution control, health and fisheries.

Mr. Russell Hawkins—Chairman, San Juan County Salt Water Conservation Association, pointed out that the county consists of 743 offshore islands and reefs at low tide and 428 at high tide, creating unique problems for this scattered community. The lack of water will become acute as the development of waterfront and view property continues. Corrective measures are needed for internal drainage, sewage, weed eradication, shore erosion, channel sedimentation, and active dunelands of San Juan and Lopez Islands. Recreational development is inadequate for seasonal demands. Technical assistance is needed by landowners to combat lowland capability and income.

Mr. Hawkins also represented the East Sound Water User's Association. He submitted a letter from the Association inclosing "Engineering Report, July 1963," which gives a comprehensive plan for future development of the water system. The report has been placed in the unpublished appendix.

Mr. Lawrence W. Getz—Councilman, City of Friday Harbor, discussed water and sewer problems. Four developments outside the city want water, but the water main from a lake is too small to supply them, the city mains are not large enough to tap and cedar pipes over 40 years old need replacing. The sewer line serves only two-thirds of the city and should be expanded. Sewage is disposed of in the bay. The city has property available and has applied for government assistance to build a sewage disposal plant, but funds are not available. The city would also like to beautify the waterfront of Friday Harbor.

Skagit County

Mr. Scott Richards—Skagit County Commissioner, pointed out that Skagit County has many important natural resources. He stated that fresh and salt water resources and related land resources affect many phases of the county's economy. With a population increase of 20,000 expected by 1975, he expressed the hope that the comprehensive study would help to solve current and future problems.

Mr. Lloyd H. Johnson—Skagit County Engineer, stressed that flood control of the Skagit River is vital to the future of the county. The assessed valuation of the county is almost $75 million, about half of which is subject to flood damage. A major flood would adversely affect the monetary valuation, cripple transportation and commerce, and severely damage municipal roads, streets and sewers. A comprehensive approach to water resources is necessary to allow future citizens to live and prosper, and to retain and expand recreational areas. Mr. Johnson also represented the Washington State Flood Control Council, and said this group believes some Federal responsibility in establishing Federal streams might be in order. He suggested that a study might develop suggestions for new legislation to improve lines of responsibility for stream control.

Mr. George Dynes, Skagit County Commissioner and Chairman of the Avon Bypass Committee, supported the flood control plan for the Skagit River, incorporating construction of the Bypass. He asked that the Task Force consider the contribution of the

Skagit River to water resources, power, fisheries and recreation.

Mr. Anton F. Harms, representing the Skagit County Soil and Water Conservation District, stated that the District is concerned about the adequacy and stability of salt water dikes protecting valuable Skagit County farmlands. These dikes are subject to attribution from tides and storms and from wave action generated by commercial and pleasure boats. As one major threat to farmlands stems from the condition of the dikes along the Swinomish Channel, he asked that the need for dike protection be recognized when future dredging and maintenance work is done along the navigation channel. Mr. Harms presented a report entitled, "Skagit Soil and Water Conservation District Program (Revised 1963)" which has been placed in the unpublished appendix.

Mr. Herbert V. Strandberg, Chief Engineer, Seattle City Light, stated that the increased height of Ross Dam has provided additional storage for power and substantial flood control on the Skagit River. Potential projects are expected to provide additional power and storage and some reregulation of the main stem, all of which would be beneficial to water resource developments downstream.

Mr. Fred J. Ovenell, Manager, Skagit County P.U.D. No. 1, regarded the flood threat as the number one hazard in the Skagit valley. He supported the continuation of studies to determine the most effective and economical means of providing protection against the recurrence of devastating floods and expressed the hope that benefits derived from fuller ultimate use of the Skagit River will contribute to sound economic growth. Mr. Ovenell favored the allocation of a small part of the watershed for a first-quality potable water supply, and presented a resolution establishing two permanent watersheds for this purpose. He also presented a township map and a report entitled, "Development of Cultus Mountain Watershed for Gravity Water Supply," both of which have been placed in the unpublished appendix.

Mr. Milo Moore, a private fisheries consultant, said that research revealed that three-fourths of the natural spawning grounds for salmon on the Pacific Coast has been inundated by the construction of hydroelectric dams, and, with other dams being planned, principal spawning areas will soon be exhausted. Mr. Moore favored large-scale fish farming to maintain the fisheries by transforming lowland lakes, brackish water tracts, fresh water sloughs and old river beds into protected nurseries, and by converting tidal areas to this use. Mr. Moore's detailed report has been placed in the unpublished appendix.

Mr. John N. Plancich, Past President, Puget Sound Salmon Canners Association, and Manager, Fishermen's Packing Corporation, favored the development of water, land and fishery resources and artificial spawning grounds.

Mr. William F. Gallagher, City Engineer of Anacortes, proposed that Fidalgo Bay be dredged at the site of a planned industrial park to permit the city's potential industrial expansion, and that new sources of water supply be found to meet the needs of areas served by the city system. He presented two reports, "Anacortes Comprehensive Plan" and "Anacortes Industrial Development," which have been placed in the unpublished appendix.

Mr. Mel Halgren, Port Commissioner, Port of Anacortes, submitted a report entitled, "Comprehensive Plan for Port of Anacortes, April 1964" for use in the comprehensive study. The report has been placed in the unpublished appendix.

Mr. Marvin G. Machey, Anacortes Chamber of Commerce, emphasized the impact of water resources on present and future industrial development, recreation and the fisheries, and encouraged early completion of comprehensive feasibility studies.

Mr. Robert Weller, General Superintendent of the Scott Paper Company's Anacortes plant, stated that the future of the Anacortes plant bears an intimate relationship to water. The mill will continue to operate so long as water, power transportation, timber and labor approximate the present quantity, form and quality. He urged that care be taken to consider and evaluate all elements of the comprehensive study.

Mr. Geran Dalenius, Traffic Manager, Anacortes Veneer Company, requested that the Fidalgo Bay channel be deepened to permit the company to bring raw materials, chips, fuel, etc., directly to the plant. He supported a study of Fidalgo Bay and offered to supply specific suggestions.

Mr. Fred T. Darvill, Jr., Chairman of the Skagit Alpine Club's Conservation Committee, opposed the construction of additional dams on the Skagit River or its Tributaries. The club believes such dams would adversely affect salmon and steelhead runs and opportunities for mountain and stream recreation. The club favors recreational development in Skagit, Island and San Juan Counties, and a national recreation area in the North Cascades.

Whatcom County

Mr. Conrad Hougen, Chairman of the Whatcom County Soil and Water Conservation District, expressed the need for careful control of water resources in Whatcom County and the development of a countywide plan for multiple water uses. He suggested that studies be made to determine the feasibility of (1) impounding waters of the Nooksack River system and the impact of dams on water quality, water supply and the fisheries, (2) providing dikes along the Nooksack to prevent overflowing into the Sumas River basin, and (3) returning the mouth of the Nooksack River to its former position in Lummi Bay and diking Lummi Bay to develop an extensive delta and improve the salmon fishery. Mr. Hougen also suggested that surveys be made of the surface and ground water resources and the extent and points of concentration of human contamination. He noted the need for a domestic water supply and sewage disposal at Point Roberts, the need for water on the three major islands in the county for potential domestic, agricultural and recreational use, and that the county's four major lakes are reservoirs and may have to be protected from, and new areas developed for, water-oriented recreation. Mr. Hougen emphasized that the anticipated increase in population and the parallel development of agriculture, industry and recreation would necessitate hydro-electric and flood control projects, and urged early execution of measures to provide for present and future needs.

Mr. Gerald F. Kraft, Institute of Fresh Water Studies, Western Washington State College, described a study of Lake Whatcom, source of the City of Bellingham's water supply. Contamination has been found in the lake's inlet, but is greatest in recreation areas. Dr. Kraft presented a report entitled, "Whatcom County Water Quality (Lake Whatcom)," which has been placed in the unpublished appendix.

Dr. Charles J. Flora, Biology Department, Western Washington State College, expressed hope that the College research program would be continued and amplified to include the evaluation of current-sedimentation patterns, oscillation and density, a number of biological studies outside Lake Whatcom, relationships between certain cyclic phenomena in the lake and community health, and effects of industrial expansion of fresh water habitats in the Nooksack delta.

Dr. Herbert G. Kariel, Department of Geography, Western Washington State College, represented recreational interests in Whatcom County. Dr. Kariel noted that the supply of available recreation areas is decreasing at the same time as the demand for them is increasing, and maintained that more water-oriented recreation sites should be established. He suggested that streams other than the Skagit River be administered in keeping with the Wild Rivers concept, and stressed the importance of leaving them in their natural state in selected areas. Dr. Kariel supported increased public land acquisition, the Bureau of Outdoor Recreation's study of the Skagit River, continued efforts to obtain unpolluted water, and surveys and studies for recreational needs. He questioned the need for a recreation reservoir on the Nooksack River.

Mr. Thomas J. Glenn, Manager of the Port of Bellingham, discussed siltation in Bellingham Bay and its three Federal waterways, caused by the Nooksack River, and requested the Task Force to examine this problem. The U.S. Public Health Service has notified the Port that if the level of pollution in the municipal water supply exceeds a certain level the Port may no longer service ocean-going vessels. This would put the Port out of business as a deep-sea port, and the Task Force was asked to undertake an immediate study of the Lake Whatcom watershed in an effort to preserve the municipal water supply.

Mr. Don J. Easterbrook, Assistant Professor Geology, Western Washington State College, presented a paper describing the characteristics of the Nooksack River and giving a brief history of the river and its effect on Bellingham Bay. He suggested diversion of the lower course of the river to its former channel emptying into Lummi Bay.

Mr. Harry R. Fulton, Planning Director, Whatcom County Planning Commission, recognized the need for an integrated approach to residential, industrial and agricultural development in the county and asked that the availability of waterfront industrial sites be studied to determine when industrial growth could be expected to be more rapid. Mr. Fulton expressed a need for Federal and State zoning policies to reduce flood damages, and suggested tax incentives to prevent building in the flood plain. He presented a resolution by the Town of Sumas requesting an extension of the Nooksack flood plain study to include the Sumas River. The Planning Commission endorsed a dam feasibility study for the Nooksack River, a comprehensive plan for channel improvements for the Nooksack, a study of pollution control measures for Lake Whatcom, a feasibility study relative to the creation of a harbor for fish farming,

and a study of ground water supplies as an adjunct for water distribution.

Mr. J. T. Lay, City Engineer of Bellingham, stressed the need for a comprehensive study and an overall plan of flood control for the Nooksack River to preserve farmlands, encourage new development, reduce hazards and costs, promote a stronger economy and benefit the fishery. Present protective works along the Nooksack River were built on a piecemeal basis, without any plan to determine the extent of the protection needed by carry flood flows.

Mr. Melvin W. Hollinger, Blaine Chamber of Commerce, emphasized that the economic future of Blaine is closely tied to water resources and developments. The Drayton Harbor Fish Farm has a high potential for development, with two rivers and an artesian well to aid the program. As waste products, pollution control, dams and power are not compatible, fish farms could solve many problems.

Mr. LeVern Freimann, Whatcom County Extension Agent, observed that the major industry of Whatcom County had changed from lumbering to agriculture. The county has an almost unlimited market and exclusive products for distribution in Western Washington, Western Oregon and British Columbia. Diversified farming will require five times as much water for irrigation than is now used for that purpose.

Mr. Glen F. Hallman, Whatcom County Health Department, dealt with domestic water quality and pollution control in the city of Bellingham and Whatcom County. A sewer system is needed for habitable areas around Lake Whatcom to protect Bellingham's water supply. Communities outside Bellingham consume water from deep drilled wells, shallow wells, springs, treated and untreated surface water, all of which are open to contamination and do not meet recommended standards for potable water. Everson and Sumas need sewage systems to control drainage into the Nooksack and Frazier Rivers. Ferndale needs a sewage treatment plant to replace a municipal septic tank. The Birch Bay and Point Roberts resort areas need sewage collection and treatment systems to keep the beaches safe for public use. State and Federal assistance are needed to study and develop comprehensive plans for potable water and multiple water uses, and to construct sewer lines and sewage treatment facilities.

Dr. Bernard J. Gilshannon, representing the Lake Whatcom Improvement Association, enumerated water and sewage problems encountered in the Lake Whatcom watershed. He requested that the watershed receive the earliest possible consideration as an integral part of the Nooksack Basin study to solve the sewage problem and to insure clean water for multiple uses.

Mr. Charles C. Gold, Superintendent, Bellingham Water Department, testified that the city of Bellingham procures its present water supply from two natural lakes, Lake Whatcom and Lake Padden. The city's current capability is 100 million gallons and current consumption is about 50 million gallons of water a day. Potential capability will include an additional 150 million gallons a day by means of diversion pipelines from the Middle Fork of the Nooksack River. A supplemental source is the South Fork of the Nooksack River where the city owns water rights. This capability will provide the city with a tremendous potential for expansion and the capacity to supply water anywhere in the county. The major need of the city distribution system is protection against human pollution in Lake Whatcom. As only a small portion of the lake is within the city limits, a sewer project must be coordinated with Whatcom County planners and residents. Government assistance in planning and constructing a sewer line will be a prerequisite to the realization of a domestic water supply which will meet Federal standards. Mr. Gold stated that the city of Bellingham supports the Task Force studies and is prepared to play a major role in the economic development of the city and the county.

Mr. Russell F. Martini, Director, Whatcom County Development Council, explained that the Council assists business and industry to locate in Whatcom County. He estimated that within 10 years industrial and domestic usage in the Mountain View area will require a minimum of 10 million gallons and may require as much as 70 million gallons of water a day. Mr. Martini suggested the North Fork of the Nooksack River as an additional source of supply, and requested that Lake Whatcom be closely scrutinized as part of the final Task Force study.

Mr. Richard J. Minor, Commissioner, Whatcom County Public Utility District No. 1, asserted that the P.U.D. is the only legally organized local agency with overall responsibility and financial capability for the management and control of fresh water resources in Whatcom County. He stated that more than 50 water districts and associations have been established, but are uncoordinated and unable to meet present needs. Mr. Minor cited the need for a single planning agency,

affirmed that the P.U.D. is in a favorable position to carry out this responsibility, and endorsed the comprehensive study.

Mr. Nicholas A. Lidstone, Manager, Bellingham Chamber of Commerce, urged that a comprehensive study of the Nooksack River system be made to resolve the problems of erosion to farmlands and siltation and sedimentation in Bellingham Bay. As the economy of the county is based on forest products and the fishing industry, proper maintenance of the Nooksack watershed is essential. Logging practices should continue to be carried on in a manner that will insure the conservation of fish spawning areas. The water supply is ample to meet immediate domestic, industrial and recreational needs, but future industrial demands may exceed the capacity of Lake Whatcom. However, the city of Bellingham has made provision for additional water supplies. Deposition by the Nooksack River will require careful planning to achieve the ultimate development of Bellingham harbor.

Mr. George Garmo, Whatcom County Engineering Department, discussed the methods used to alleviate bank erosion along the Nooksack River, and stated that erosion has been greatly reduced. He pointed out that a somewhat unified system of individually constructed dikes extends from the vicinity of Lynden to the mouth of the river, but were not designed to control or confine flood waters. Flood damages have reached disaster proportions at least 14 times in the last 25 years. Mr. Garmo suggested that signs be placed to mark previous flood levels and predicted limits for future floods, some sections of the Nooksack's channel be enlarged, reclamation measures be employed in devastated areas and a government subsidy provided for the growing of cottonwood, and regulations governing the removal of gravel from river bars be reviewed. As local interests are unable to finance and construct reservoirs and dams to impound flood waters, Mr. Garmo solicited Federal aid for long-range planning and construction of flood control works.

Dr. Ryle Radke, representing the Washington State Sportsmen's Council, said the Council believed that recreation needs had not received proper recognition in the comprehensive study program. As recreation is big business in this State, he urged that the perpetuation of fisheries be placed first on the list of objectives for the employment of rivers and that prime consideration be given to providing public access. Dr. Radke proposed that some rivers be preserved in their natural, free-flowing states for future citizens, and that the quality of streams be protected to prevent the decline of fish runs.

COUNTIES, AREA 2, EVERETT HEARING

Island County

Mr. Richard C. Hulseman, Office of the Island County Engineer, supported the comprehensive study. Whidbey and Camano Islands are isolated communities. Except for the pipeline serving the Whidbey Naval Air Station, water is drawn from deep wells. Much of the water is so high in mineral content it is not too palatable. The County needs a new and adequate source of domestic water, possibly from the adjacent Skagit, Stillaguamish and Snohomish Rivers on the mainland. In addition, a sewage disposal system to control land and beach contamination, land stabilization measures, navigation and recreation facilities are requisites. Mr. Hulseman requested that the Task Force consider the County's needs in its immediate, future and long-range planning.

Mr. Archie J. Ahlstrom, Island County Planning Association, summarized the assets and problems associated with development of Whidbey and Camano Islands. He emphasized the limitation, both in quantity and quality, of ground water sources on the islands and recommended that Task Force studies seek a means to supplement these supplies with high quality surface water from the Skagit, Stillaguamish and Snohomish Rivers.

Mr. Ernest G. Gallagher, President, Clinton District Business Association, reiterated the need for a supplemental domestic water supply for Whidbey Island. He estimated that within five years the southern part of the island will be without water. To permit orderly residential and recreational development of the area, an adequate water supply at an early date is essential. Mr. Gallagher suggested piping water from the Skagit River the full length of the island. He submitted a resolution adopted October 21, 1964 by the Association.

A statement received from the Port of Langley, Island County, summarized existing port facilities and proposed development. Future development will in-

clude a small boat haven, dredging, construction of a new pier and breakwaters, extension of the existing wharf, and additional floats. A drawing entitled, "Proposed Development–Small Boat Haven," prepared by Hammond, Collier and Isaac, dated June 26, 1965, is included in the unpublished appendix.

Mr. Lloyd S. Capp, Chairman, Board of Commissioners, Island County Fire Protection District No. 3, told of the rapid population, recreation and business growth on Whidbey and Camano Islands and the consequent requirement for abundant water for both human needs and fire protection. He submitted a resolution requesting that the Task Force take steps to insure that a plentiful supply of water from the Skagit River is made available to all of Island County, and that engineering studies and water line easements be secured to fulfill this need in the near future.

King County

Mr. Walter Winters, King County Engineer, emphasized the need for cooperation and coordination among the various agencies engaged in the Puget Sound Study. His department is concerned with flood control and associated activities, such as drainage, land stabilization, reduction of soil erosion and navigation, and with the development of multiple-purpose dams, water supply, hydroelectric power and navigation. From 1940 to 1960, flood losses totaled $51 million from 23 floods in King County. The Snoqualmie, Green, Cedar, Sammamish, Raging, Tolt and Skykomish Rivers each present special problems. For example, during heavy releases from Howard A. Hanson Dam, the Green River channel cannot carry the discharge and the upper valley is flooded. Heavy rainfall overtaxes the channel capacity below Howard A Hanson Dam.

Mr. Warren C. Gonnason, Assistant King County Engineer, indicated that a 78 percent increase in population is predicted for King County between 1960 and 1985. To serve this expanding population, development of a comprehensive multiple-use water resources program is essential. King County has assumed responsibility for the flood control aspects of this program in the Snoqualmie, Cedar, Green and Sammamish Rivers. The next phase is establishment of flood control zone districts to develop drainage and flood control plans in smaller water sheds, especially in rapidly developing urban areas. The Board of King County Commissioners has adopted policies for comprehensive development of the county as a whole, including all types of waterfront recreation. Two reports, "The Comprehensive Plan for King County, Washington, 1964," prepared by the King County Planning Department, and "King County, Washington, Comprehensive Plan for Flood Control," prepared by the Board of King County Commissioners, dated August 1964, have been placed in the unpublished appendix.

Mr. W. B. Gillespie, Chief, Flood Control Division, King County Engineer's Office, said that county citizens have indicated their interest in flood control by the recent passage of two $5 million bond issues for this specifid purpose. To assume proper utilization of these funds, a Citizen's Advisory Committee on Flood Control was appointed to counsel the County Commissioners and the County Engineer. This Committee, representing all areas of the county, has been very helpful in developing a major flood control program and in implementing the formation of flood control zone districts.

Mr. A. C. Mueller, member of the Citizen's Advisory Committee on Flood Control, summarized the flood control problems in the Green River basin. Major floods have been largely eliminated by completion of the Howard Hanson Dam and by channel and levee improvements. The biggest current problem is excess rain water which lies on the ground all winter, prevents the practical use of farmlands, and hampers industrial development. The Soil Conservation Service and the Corps of Engineers are studying this problem to develop an adequate drainage system.

Mr. C. Beadon Hall, Mayor of Snoqualmie and member of the Citizen's Advisory Committee, discussed flood control problems on the Snoqualmie River. A flood warning system has been established in the Snoqualmie Valley to alert downstream residents. Bond issues have made it possible to engage in a systematic construction program for flood control works.

Mr. John M. Maskrod, representing the Kimball Creek Flood Zone District, said this was the first such district organized under the enabling legislation passed in 1961. For many years Kimball Creek was clogged with debris to the point that runoff was impaired during high water periods. The creek drains only a few square miles, but the assessed property evaluation in this area is approximately $1 million. With assistance from the Corps of Engineers, an assessment of only about $4.69 per thousand was necessary to accomplish the work. The drainage project is now 85 percent complete.

Mr. L. E. Hall, Chairman, King County Flood Control Citizen's Advisory Committee, emphasized the need for coordinating the Puget Sound study with local planning. He pointed out the importance of developing King County water resources to meet the needs of the rapidly growing population, and requested early completion of studies presently underway by various agencies so urgently needed work will not be delayed to accommodate the Puget Sound study timeable.

Mr. Howard T. Harstad, Consulting Engineer, presented a letter from Mr. C. W. Duffy, President, Board of Water Commissioners, Water District No. 97 of King County, and briefly described developments planned for the North Fork of the Snoqualmie River. The area east of Lake Washington needs large quantities of high quality water for future municipal and industrial uses. To meet these needs, the District will work toward full development of the North Fork of the Snoqualmie for water supply, power, flood control, recreation and other uses, and will cooperate with the Task Force and local interests in this effort. Permits have been obtained from the Federal Power Commission and the State of Washington to conduct studies, and water and reservoir rights have been applied for. The project under study, consisting of a dam and reservoir with 90,000 acre-feet of active storage, would produce from 70,000 to 100,000 kilowatts of power and supply approximately 580 million gallons of water annually in normal years. The dam could be raised 25 feet and spillway gates added to provide 60,000 acre-feet of storage for flood control. In addition, low dams are planned for the outlets of Lakes Calligan and Hancock, which would provide active storage of 27,000 acre-feet of water.

Mr. Harold A. Hagestad, City Engineer of Auburn, reported on the city's planning program. As the peak demand for water is now about half the capability of present sources, additional surface and subsurface sources are being investigated to meet current and future requirements. A comprehensive study of sanitary and storm sewers is also underway, and will be developed in conjunction with King County plans. Siltation and the high ground water table in the flatlands in and adjacent to the city have prevented industrial development. A study of this problem to effect lowering of the water table is needed to permit the expansion and development of prime industrial sites.

Mr. James A. Magee, representing the Lake Sawyer Improvement Club, told of the problem property owners on Lake Sawyer, in southern King County, have had in controlling noxious weeds, particularly the Brazilian Water Weed. Heavy weed growths are hazardous in some areas, and are destroying the lake (fourth largest in King County) for recreational purposes. A consultant has indicated these growths can be controlled by weedicides. Property owners are hesitant to support the control program, however, because of possible legal action by others who use water from the lake for domestic purposes.

Mr. A. C. Mueller, representing the King County Soil Conservation District, outlined matters of concern to the District and referred them to the Task Force for inclusion in the comprehensive study. These include the suburban lakes, land and water management practices in housing developments and the closing of watersheds for recreational uses.

Mr. J. Eldon Opheim, General Manager of the Port of Seattle, urged that the Task Force study economic and physical requirements for navigation and water-oriented industrial sites.

Mr. J. Ray Heath, Water Superintendent, City of Seattle, submitted the views of his department regarding recreational use of municipal watersheds. He urged the Task Force to recommend that closed watersheds presently being used for domestic water supply remain closed to preclude contamination until there is need for additional recreational facilities. The increased cost of water necessitated by installation of water treatment facilities can more easily be absorbed at a later date with increased population and industrial development.

Mr. Robert F. Buck, Chairman, Seattle Area Industrial Council, outlined the interest of the Council in the comprehensive study. As further industrial expansion in the Seattle-Puget Sound region is the primary objective of the Council, major areas of concern are that the comprehensive study should not delay completion of other current studies, effective coordination between State and Federal agencies is essential, control of watersheds should be under local management, comments from interested organizations should be encouraged throughout the study, implementation of water resource development plans should continue to rest with local entities, navigation potentials should be maximized, and development plans should be based on the concept of full development for the benefit of all the people of the area.

Mr. Fred E. Lange, Acting Executive Director, Municipality of Metropolitan Seattle, described the comprehensive plan for sewerage in the Metro area. The plan, the first stage of which is under construction, calls for ultimate disposal of all treated wastes in Puget Sound and is consistent with the philosophy of making use of available receiving waters in ways most beneficial to the most people. Mr. Lange offered to make data on Metro's water quality monitoring program available to the Task Force for use in the comprehensive study. A map showing the extent and present boundaries of the Metro system has been placed in the unpublished appendix.

Mr. John F. Herman, Planning Director, city of Bellevue, communicated problems associated with Mercer Slough and its potential uses. Mercer Slough is essentially a peat bog of about 600 acres. A drainage canal constructed about 40 years ago is overgrown with brush and barely functions. Construction of adequate drainage facilities would permit this area to be developed for recreation, conservation and housing.

Mr. E. R. Opstad, Clerk-Treasurer, town of Snoqualmie, commented on the development proposed for the North Fork of the Snoqualmie River by water District No. 97 and the possible effect it might have on the town's source of water supply. Mr. Opstad asked that an assessment be made to determine any possible adverse affects a dam and reservoir might have on the springs currently used for the local public water supply.

Mr. Donald J. Benson, Executive Secretary, Northwest Pulp and Paper Association, pointed out that this is a research and information organization and offered the results of the Association's research to the Task Force. The State of Washington is the nation's largest producer of wood pulp, and about half the State's production is within the Puget Sound and Adjacent Waters study area. The 13 pulp and paper manufacturing firms in this area employ about 7,500 highly skilled people. As these plants require about 275 million gallons of fresh water daily, there is perhaps no basic industry in the region that has more at stake in a continuous supply of high quality water. He urged that adequate financing be sought to insure full participation by State agencies in the Task Force studies. Mr. Benson presented three reports, "Some Economic Aspects of the Pulp and Paper Industry," "Methodology for Evaluating Uses of Water in the Pacific Northwest," and "Economic Survey," which have been placed in the unpublished appendix.

Mr. Ford L. Bulloch, Manager, Fishermen's Cooperative Association of Seattle, spoke for the salmon trollers of the state. He requested that salmon spawning areas be preserved to permit continuation of the commercial fishing industry.

Mr. Edward V. Gruble, President, Citizens for Clean Waters, stressed the importance of State and Federal regulation of water purity. He asserted that sulfite pulp mills which discharge their wastes into Puget Sound waters, thereby contaminating the water and endangering public health, fish and wildlife, should be required to adopt the practice of similar mills which evaporate 80 percent of their wastes.

Mr. Wolf G. Bauer, Corresponding Secretary, Washington Foldboat Club, focused attention on kayak and canoe travel in the Puget Sound basin. As paddle touring is akin to hiking and foot-camping in primeval areas, the Club urged that consideration be given to future needs of manually propelled craft to accommodate the growing number of devotees, to attract paddle-sport tourism, and to preserve the esthetic and recreational values of western Washington. The Club opposed the damming of remaining sport-navigable, free-flowing streams for the purpose of hydropower developments, and requested that recreational-use parameters be determined and tentative primary-use classifications be established for rivers. The Club favored the purchase by the State of Washington of 35 islands in the San Juan group which are presently leased to the State for public recreational use, the protection of some islands with a minimum of man-made facilities, and the retention of others, which have typical marine and land characteristics, in their natural states to preserve esthetic and scientific values. Maps showing recreation-navigable rivers in western Washington and the islands leased by the State of Washington are included in the unpublished Appendix.

Mr. L. E. Hall, Director of Public Affairs, Puget Sound Power and Light Company, explained that the company serves a substantial part of the area included in the study. The company is interested in how economic development and growth of the region will affect the operation and expansion of present hydroelectric plants and the construction of new facilities.

Mr. Patrick D. Goldsworthy, President, North Cascades Conservation Council, requested that consideration be given to scenic and recreational re-

sources, that wild rivers be left in their natural state, and that future developments not impair the scenic beauty of the northern Cascade Mountains. Mr. Goldsworthy submitted three reports, entitled, "The Wild Cascades," "A North Cascade National Park," and "A Proposal for an Alpine Lakes Wilderness Area, Washington." These reports have been placed in the unpublished appendix.

Snohomish County

Honorable Jack Westland, House of Representatives, presented a resume of recent congressional action of interest in the field of water resources. The Wilderness Bill will permit development of water resources in wild areas upon Presidential approval. The Conservation Bill will help conserve the water resources of the United States. Another important bill provides for water research centers at institutions of higher learning. The Atomic Energy Committee has considered desalinization throughout the country. In the last two years, Congress has recognized more than ever before the tremendous importance of water resources. Mr. Westland expressed his belief that the comprehensive study will safeguard these resources and guide future development of the Puget Sound Basin.

Mr. Lewis A. Bell, Chairman of the Lands Committee, Washington State Sportsmen's Council, Inc., outlined the policies of the Council with regard to water resource development. Simply stated, this policy is, "... no development of water resources needs shall destroy the purity of those waters, their local indigenous character as free flowing rivers, free access thereto, nor their ability to produce and perpetuate anadromous runs of fish and nurture hinterlands and game thereupon." Western Washington's natural resources of timber, fish and recreation dictate the industrial climate. The Task Force was asked to plan the Puget Sound area as the nation's grower of trees for wood and paper products, as a provider of sustenance, and as a playground.

Mr. Russell J. Loveland, President, West Coast Telephone Company, stressed the need for balanced development of water resources to accommodate an expanding economy. He urged that comprehensive planning include residential and industrial development, transportation, agriculture, recreation and flood control.

Mr. Leif Eriksen, President, Northwest Fisheries Association, expressed concern about conservation of the fishery resources in Puget Sound and stated the Association will continue to work closely with the Washington State Department of Fisheries and the U.S. Bureau of Commercial Fisheries.

Mr. A. S. J. Steele, Manager, Snohomish County Public Utility District No. 1, outlines the main elements of the PUD's development program. The PUD has completed a contract with the Bonneville Power Administration for wholesale power through 1983, built a transmission system, almost completed first-stage development of the Sultan River Dam for water supply and hydropower, and is ready to supply low cost industrial power anywhere in the county. Mr. Steele expressed the hope that full recognition of the industrial potential of Snohomish County and plans for its development would emerge from the comprehensive study, and assured the Task Force of his cooperation.

Mr. Floyd E. Howell, Chairman, Snohomish County Soil and Water Conservation District, discussed problems and needs in the Snohomish River basin. Mr. Howell conveyed the recommendation of the District Board of Supervisors that basin waters be controlled at or near their sources, where potential reservoir sites may be found, for flood control; for domestic, industrial, recreational and agricultural uses; and for fisheries.

Mr. Paul C. Dickey, represented the Marshland and French Slough Flood Control Districts. He explained that these watersheds are adjacent to the river near the town of Snohomish, and that the projects authorized by Public Law 566 will include floodways to carry impounded waters through the dikes to the Snohomish River by means of a massive discharge structure. Dikes have been designed to protect against floods in the growing season and a high percentage of winter floods, and to withstand overbank flooding. Eleven floods over the past 13 years have inflicted severe floodwater and sediment damage to some of the State's most productive farmlands and crops, and to dikes, roads, bridges, industries, homes and other structures. Mr. Dickey imparted the recommendations of the directors of these districts that (1) a single-purpose dam be constructed upstream from the flood plain and immediate foothills to control floods so maximum benefits may be realized from these projects, and (2) that underground drainage facilities be provided for future highways and railroad beds to permit maximum utilization of lowlands.

Mr. Sid Staswick, Secretary, Snohomish County Drainage District No. 13, presented data on flood

losses in the District. To conserve limited valley farmlands and minimize future losses, he suggested improvement of the levee system and construction of flood control storage reservoirs on Snohomish River tributaries. Mr. Staswick urged that immediate attention be given to tying in future levees and those presently under construction with the district's existing levees.

Mr. Ralph K. Robinson, representing the Snohomish County Sportsmen's Association, called attention to the recreation and fishery resources of Snohomish County and their contribution to the economy of the northwest. He recognized that flood control measures are essential, but requested that rivers be conserved in as natural a state as possible.

Dr. Richard W. VanDriel, Chairman, Water Resources Committee, Snohomish County Sportsmen's Association, presented a proposal by the Everett Hunting and Fishing Club. The Club recommended that rivers without dams be left in their natural states insofar as possible to augment anadromous fisheries; the reach of the Snohomish River between the Avenue D bridge in Snohomish and the mouth of the Pilchuck River be widened to eliminate a flowage bottleneck which causes flooding between Snohomish and Monroe; maintenance dredging be continued in the lower Snohomish River; cooperation be extended to the Port of Everett in the development of Tract Q, and the jetty in the Port of Everett be raised to its original height in the interest of navigation.

Mr. William G. Hulbert, Jr., Director, Executive Committee, Snohomish County Economic Development Council, explained the organization and objectives of the Council. The Council is composed of some 30 public and private organizations throughout the county, and its main objectives are the development of jobs and markets for existing industry and attracting new industry to the area. As these aims have been developed in conjunction with recreational, agricultural and conservation needs, the Council wishes to coordinate its comprehensive program for industrial site development with the studies being undertaken by the Task Force. A map of Snohomish County showing major transportation facilities and several brochures describing industrial developments are included in the unpublished appendix.

Mr. Rollie D. Berry, Water Superintendent, City of Everett, presented a resume of city water system development and the aspects of the Task Force study which are of interest to the Water Department. The first stage of the Sultan River project, which is now 90 percent complete, will supply an additional firm yield of 70 million gallons of water a day to the city. Improvements are being made to transmission and distribution systems. These improvements are being made to serve not only the 50,000 users within the city of Everett, but an additional 70,000 users in Snohomish County. An important aspect of water resource development involves the establishment of multiple-use priorities. Examples of uses considered compatible in the Sultan River watershed are public water supply, flood control, power, logging, mining, and fish and wildlife enhancement. Mr. Berry requested an opportunity to review interim reports developed during the course of this study. A report entitled, "A Plan for Replacement and Expansion of Water Supply and Transmission Facilities for the City of Everett," dated December 1963, prepared by Gray and Osborne, Consulting Engineers, has been placed in the unpublished appendix.

Mr. George D. Bartch, Manager, Port of Everett, recounted activities of the Port and expressed keen interest in the Task Force study. Key points of interest to the Port are the need for log storage areas and facilities to permit water movement of logs in all weather, industrial and recreational development of Tract "Q," preservation of fresh water quality, development of deep water navigation to serve Tract "Q," and a deep water channel inside the Port jetty as far upstream as possible. A report entitled, "Development of Tract Q in Everett Harbor," dated May 1962, prepared by Tippetts-Abbett-McCarthy-Stratton, Engineers and Architects, has been placed in the unpublished appendix.

Mr. William E. Brooks, General Manager, Everett Area Chamber of Commerce, directed attention to problems relating to commerce in the Snohomish River and its waterways, and Everett Harbor, and expressed the hope that an arrangement might be developed that would be compatible with future development of both industrial and recreational facilities. Two problems that will affect future development are streamflow and deposition of silt by the Snohomish River, and the dependence of Tract "Q" on convenient bridge access. He pointed out that the number and design of fixed bridges to be built over delta waterways in the immediate future in conjunction with construction of the new freeway could be the deciding factor on development of delta lands east of the freeway and potential navigational use of Steamboat Slough. Mr. Brooks presented a resolution

adopted 19 October 1964 by the Board of Directors favoring the multiple-use concept of the comprehensive study, designating the Rivers and Harbor Committee as the Chamber's representative, and requesting additional hearings on any plan for water resources development which would affect the community.

Mr. Richard D. Headley, Manager, Everett Wood Products Division, Weyerhaeuser Company, stated that the company is primarily concerned with forest and land resources, but is almost equally reliant on water resources. Periodic flooding of the Snoqualmie River, one of the principal tributaries of the Snohomish River, causes serious damage in the valley. Substantial flood damage has been sustained by the company's Snoqualmie Falls mill. The company has participated in a number of research and water quality studies conducted by State and private agencies, and has spent several million dollars for installations to protect the waters adjacent to the mills in Everett. A current study involves the development of ground rules and practices in connection with logging in or near water courses. The company has established recreational facilities on several properties, and is interested in the development of additional recreation sites, deep water industrial sites, and water supplies for municipalities and industries. Mr. Headley recommended that State agencies be fully represented on the Task Force, and extended the Weyerhaeuser Company's cooperation in carrying on the comprehensive study.

Mr. Robert E. March, General Manager, West Coast Division, Scott Paper Company, summarized the company's facilities in Skagit, Snohomish and King Counties and discussed the company's interest in various aspects of the comprehensive study. Existing stands of timber and favorable growing conditions, abundant water and low cost power attracted wood products firms to the Puget Sound basin. However, population growth, urbanization, industrialization and recreation have resulted in a reduction of timberlands and placed heavy demands on water resources. Mr. March stressed that the continued availability of water and timber is vital to future operation of the wood products industry. He advised that the jetty on the west bank of the Snohomish River has deteriorated to the point where towing operations are hazardous during certain weather conditions. The condition of the jetty also has resulted in the loss of some log storage areas and endangered others. The company is presently working with the Port of Everett and others to remedy these difficulties. Mr. March said the Scott Paper Company would lend assistance to the comprehensive study in any way possible. He suggested that the Task Force hold public meetings periodically to report progress and receive additional presentations.

Mr. Victor A. Johnson, representing the Everett Yacht Club, made the following suggestions: dredging the channel in the Snohomish River to a minimum depth of 14 feet; dredging the rivermouth to direct streamflow past Priest Point toward Mission Beach, instead of into Everett Harbor; installation of sand traps on the bay side of Tract "Q" to raise the area above high water and allow full development of the last large industrial site available on Puget Sound for deep water transportation; restoration of the jetty at the mouth of the river to its original height, and westerly extension of the jetty to the vicinity of lighted buoy No. 2.

Mr. Wayne D. Williams, Business Manager, The Tulalip Tribes, told of the development of a Union Oil Company refinery and a Boeing Company test site on reservation lands and present efforts to reclaim 300 acres in the Snohomish River delta. He supported the comprehensive study and industrial development in the Tulalip-Marysville-Everett area. Mr. Williams expressed concern for the preservation and enhancement of the anadromous fisheries in the Stillaguamish and Snohomish Rivers, emphasizing that pollution and dams are serious obstacles to salmon and that development plans for rivers and streams should not sacrifice the fishery resources.

Mr. Ronald G. Triggs, Operator of Hermosa Point Resort, described the siltation problem in Tulalip Bay. (Co-Chairman Gedney stated that the Corps of Engineers, in cooperation with the Tulalip Tribes, is studying the feasibility of developing a small boat basin in the bay.) Pictures of the resort have been included in the unpublished appendix.

Mr. George C. Petrie, Manager, Snohomish County Airport, stated that an industrial park has been developed on the County Airport. The Airport Commission feels the most urgent need is for further deep water port facilities in the Edmonds-Everett-Tulalip area, particularly the Snohomish River delta.

Mr. J. H. Tompson, Secretary, Snohomish County Diking District No. 6, discussed flood damages in the District. The Diking District commissioners believe the only permanent solution to the problem is to control all rivers in the watershed by constructing flood control dams.

COUNTIES, AREA 3, OLYMPIA HEARING

Clallam County

Mr. Elmer Chritchfield, Clallam County Commissioner, urged that this study include the Lyre, Pysht, Clallam, Hoko and Sekiu Rivers. He explained that, although these rivers are outside the present study area, they will play an important part and should be given consideration in long-range planning for industrial and domestic water supplies, the development of fisheries and recreation, and flood control in Clallam County.

Mr. Jack Hoover, representing Clallam County Pomona Grange, said the salmon spawning area on the Elwha River is almost depleted because of dams constructed on the River. The Grange endorsed the Washington State Department of Fisheries program, which includes fish ponds or farms at the mouth of the Elwha River, and the proposed development of the Dungeness area, which would include a fish farm program, rearing ponds, boathaven facilities, picnic, and recreational facilities.

Mr. O. Charles Wheeler, Assistant Resident Manager of the Crown-Zellerbach Corporation's Port Angeles pulp and paper mill, discussed the mill's contribution to the area's economy. The mill provides regular employment for approximately 550 people and seasonal work for about 200, and has an annual payroll of about $5 million. About $10 million are expended for goods, services, and local taxes. The City of Port Angeles' pipeline from the Elwha River supplies about nineteen million gallons of water a day to the mill. Two Crown-Zellerbach hydropower plants on the Elwha River, which are part of the Bonneville grid, supply about half of the mill's large power demand. The balance is purchased. Mr. Wheeler pledged continued cooperation in the conservation of resources and water quality.

Mr. Thomas C. Neal, Manager of the Port of Port Angeles, stated that the Port is concerned with the industrial and recreational usage of water. Many physical improvements to the harbor are expected in the next ten years, and a protected, small-boat moorage probably will be required in the next two or three years. Mr. Neal stated that the study has the complete support of the Port of Port Angeles, and offered to make available any records or information desired by the Task Force.

Mr. Jack D. King, representing the Port Angeles Chamber of Commerce, expressed interest in the study, particularly in connection with water resources for industrial, tourist and recreational development. Mr. King extended the cooperation of the Chamber and placed its facilities at the disposal of the Task Force.

Mr. Donald D. Hermann, City Manager of Port Angeles, represented the City of Port Angeles, the Area Redevelopment Committee and the Port Angeles Chamber of Commerce. He announced that these bodies are in full agreement with the proposed study and recommended that it proceed as rapidly as possible. Primary needs are for information pertaining to the quantities of water that might be obtained from rivers and underground sources, development of data for flood plain zoning purposes, and the preservation of streams for salmon spawning grounds. Mr. Hermann recommended that the study be extended to include the western part of Clallam County, or at least as far west as Lake Crescent and the Lyre River.

Mr. Richard Ellison, Master, Dry Creek Grange No. 646, supported a study of the salmon spawning problem in the Elwha River. He cited the need for fish ladders at two dams to allow upstream migration of salmon and to insure the safe return of fingerlings to the sea.

Jefferson County

Mr. F. Leonard Ziel, Resident Manager of the Port Townsend Division, Crown-Zellerbach Corporation, concurred in Mr. Charles Wheeler's presentation. The Port Townsend mill provides employment for 650 people, and spends about $6.25 million locally each year. He stressed that water is vital to manufacturing processes and to the receipt and shipment of commodities. The mill consumes 14 million gallons of water a day, and will require additional water for anticipated expansion. Water is presently transported to the mill from the Quilcene River through a 30-mile pipeline which serves Port Townsend and four other communities. Mr. Ziel extended his full cooperation in efforts to obtain a larger water supply for Port Townsend and adjacent areas.

Mr. Gus Erickson, Chairman, Jefferson County Soil and Water Conservation District, discussed the need for a potable water supply. As the pipeline serving the Chimacum-Hadlock area is not large enough to permit further tapping, and ground water and springs cannot supply an adequate amount or safe source of water for future residential and industrial development, pipelines from the major

rivers are needed. Mr. Erickson favored integrated development of the boat haven under construction and the recreational aspects of the Kai Tai Lagoon at Port Townsend, expressed the need for further development of hydropower, industry and recreation in the county, and mentioned that future development of agricultural lands in the Chimacum valley is imperative.

Kitsap County

Mr. Henry A. Brown, Kitsap County Commissioner, emphasized the present shortage of water for industrial use and predicted a critical shortage for all uses within a few years. Mr. Brown expressed the willingness of the county commissioners to join in a cooperative effort toward seeking a solution to this problem.

Mr. Warren J. Montgomery, Kitsap County Public Utility District No. 1, disclosed that the PUD is making a comprehensive water study in the county and the results will be made available to the Task Force.

Mr. Fres S. Schoneman, Commissioner of Public Works and Utilities, city of Bremerton, advised there is every reason to believe that the city and surrounding areas will soon experience accelerated residential growth. The average demand for water is expected to reach 14 mgd by 1980, with peak demands as high as 30 mgd. The present system cannot meet such requirements. In anticipation of these developments, the city has filed applications for water rights on several Kitsap County streams and lakes. Exploratory test well drilling is underway. Mr. Schoneman recommended that watershed areas surrounding potable water sources be protected from the pollution dangers associated with trespass and multiple-use.

Mason County

Mr. Martin E. Auseth, Mason County Commissioner, presented a statement prepared jointly by the Board of County Commissioners and the Soil and Water Conservation District. He pointed out the need for watershed plans for the Skokomish, Union and Cloquallam Rivers and for Mill, Goldsborough and Coffee Creeks. Mr. Auseth asked that consideration be given to the utilization of part of Oakland Bay as a fresh water lake and the development of adjacent land for a park, ground and surface water sources be investigated in anticipation of projected agricultural needs, Skokomish Indian lands be studied to formulate plans for orderly development, sewage disposal needs for waterfront property be determined, and assistance be given to oyster growers on wave action, disease and siltation problems.

Mr. Herbert G. Nelson, expressed concern about the distribution of skin and shellfish as a result of polluted waters. He recommended that steps be taken to protect fresh water sources and salt water from pollution by industrial wastes, strong detergents, pesticides and insecticides.

Thurston County

State Representative Don Miles, 22nd District, requested full participation by the Washington State Departments of Fisheries and Game, and inclusion of the Grays Harbor-Puget Sound canal, in the study.

Mr. Charles W. O'Neill, representing a committee of landowners and the Thurston County Resource Council, requested consideration of all future water needs in the Deschutes River basin. Irrigation is essential. Water rights have been granted to irrigate 1400 acres from the Deschutes River, but about 440 acres are suitable for irrigation. Mr. O'Neill pointed out some of the problems caused by flood flows, and stressed the need for storage to control these flows, provide irrigation and domestic water supplies. Guidelines for orderly recreational and residential developments, pollution control and the best land usage were requested.

Mr. G. Noyes Talcott, representing the Port of Olympia, recommended that a feasibility study be made of navigational needs in connection with suggested development of the Nisqually River delta. He urged that consideration be given the Deschutes River as a potential source of industrial water supply, flood control, lockage water for the proposed Columbia River-Puget Sound Intracoastal Waterway, and for the propagation of fish and wildlife. Mr. Talcott also directed attention to the potential long-range development of commercial and pleasure boat facilities in Olympia Harbor, and proffered the resources and assistance of the Port of Olympia in the conduct of the comprehensive study.

Miss Amy Bell, Chairman, Conservation Committee, Olympia Branch of The Mountaineers, declared that recreational values cannot be measured in dollars and cents alone. She asked that the study take into consideration the needs of citizens by making provision for wild spaces in the North Cascades and the Olympic Peninsula for recreational use.

Pierce County

Mr. Vivian B. Jones, Power Manager, Tacoma Department of Public Utilities, announced that the City of Tacoma would cooperate in the study. Mr. Jones estimated that a hydroelectric plant planned for the future on the South Fork on the Skokomish River, in Mason county, would provide about 225,000 acre-feet of storage and generate about 250 million kilowatt hours of power annually. He indicated several small potential sites in Pierce and Lewis Counties may also warrant development by the city for additional power supplies.

Mr. John A. Roller, Supervisor of Sanitary Engineering, City of Tacoma, presented a letter from Mr. A. J. Benedetti, Superintendent of the city's Water Division, which inclosed a report prepared by the Tacoma Department of Public Utilities on the Green River water supply. Mr. Roller emphasized that insuring the public health is of prime importance, a high margin of safety in providing a potable water supply is essential, and the economic growth of the area is dependent upon a continuing supply of high-quality, low-cost water. A map of the Green River water supply for the City of Tacoma is included in the unpublished appendix.

Mr. John R. Keizer asked that water pollution problems arising from recreation in the watershed be investigated.

Mr. Ernest L. Perry, General Manager, Port of Tacoma, pointed out that the Seattle-Tacoma-Olympia metropolitan area is seriously handicapped by the lack of deep water navigation facilities adjacent to available industrial sites. He urged that the proposed Seattle-Tacoma Ship Canal Study and an investigation of the possibility of deep-draft navigation in the mouth of the Nisqually River be included in the comprehensive water resources study, and stated that the Port of Tacoma is prepared to sponsor these projects.

Mr. Elmer D. Larson, Chairman, Pierce County Soil and Water Conservation District, submitted data describing land use, drainage and flood control problems, and outlining remedial measures recommended for the Puyallup River and the Ohop, Wapato, South Prairie, Hylebos and Brighton-Horn Creeks.

SECTION THREE

OFFICIAL TRANSCRIPTS OF HEARINGS

ANACORTES HEARING

OFFICIAL TRANSCRIPT OF PROCEEDINGS

BEFORE THE

PUGET SOUND TASK FORCE, SUBCOMMITTEE ON COORDINATED PLANNING, COLUMBIA BASIN INTER-AGENCY COMMITTEE

In the Matter of

COMPREHENSIVE WATER RESOURCES STUDY PUGET SOUND AND ADJACENT WATERS

Anacortes, Washington

October 12, 1964

Cascade Reporting Company

BEFORE THE PUGET SOUND TASK FORCE,
SUBCOMMITTEE ON COORDINATED PLANNING,
COLUMBIA BASIN INTER-AGENCY COMMITTEE

In the Matter of:

COMPREHENSIVE WATER RESOURCES STUDY OF
PUGET SOUND AND ADJACENT WATERS

Elks Hall,
Anacortes, Washington,
Monday, October 12, 1964

Pursuant to notice, the above-entitled matter came on for hearing at 10 o'clock a.m.

BEFORE:

JOHN A. RICHARDSON, Co-Chairman, Puget Sound Task Force
ROBERT H. GEDNEY, Co-Chairman, Puget Sound Task Force

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AREA 1, ANACORTES, PROCEEDINGS

MR. RICHARDSON: Good morning. My name is John Richardson. I am Assistant Director of the Department of Conservation, State of Washington. I serve as Co-Chairman of this Puget Sound Basin Study Task Force with Mr. Robert H. Gedney, who is at the table. He is Chief of the Basin Planning for the Seattle District of the Army Corps of Engineers.

This is a Federal-State study. It is organized under the Columbia Basin Inter-Agency Committee, which is a group or an organization chartered by Congress, composed of the seven governors of the seven northwest states and the six principal Federal agencies and the Federal Power Commission which are interested in the power resources and related land resource development.

On the 15th of July this year we held a kick-off meeting for this study in the office of Governor Rosellini in Olympia, and a number of the folks that are here today attended that meeting. This is the first of three public hearings which we will hold. The next one will be in Everett on the 22nd of the month, and the third one will be in Olympia on the 28th of the month.

This Puget Sound Basin Study is part of an over-all national program developed originally through the work of the Senate Select Committee on Water Resources. Both of the senators from this State, Senators Magnuson and Jackson, served on it, and legislation and authorization for this study is developed from those very extensive nationwide water resource investigations and studies that were made a few years ago.

The State and Federal agencies who see our counterparts, the fisheries agencies, both Federal and State, the economic development agencies, Federal and State, and the counterparts to the Corps of Engineers and the Bureau of Reclamation and other soil conservation services and water and related land resource agencies are working together in a number of technical subcommittees for the study.

I know that many of you have seen the Information Bulletin outlining the whole program. If you do not have a copy, we have one available here, so we will get right into the meeting.

First of all, I would like to call on Mr. Scott Richards of Skagit County who would like to give a few words about it. Mr. Richards.

Scott O. Richards was called as a witness:

(No prepared statement)

MR. RICHARDS: Mr. Richardson, Mr. Gedney and members of the Puget Sound Water Study Commission, I wish to welcome you on behalf of the Board of County Commissioners of this county and of the people of the county.

We have many, many important natural resources in this county. The county is ninety-five miles long, twenty-four miles wide, has about 53,000 people in it. In 1975, it is estimated this population will increase to 73,000. We have two hundred and seventy-three square miles of territory, about a hundred and sixty square miles of this territory is in low land and river valley. We have about a hundred and thirty-four miles of shoreline property in this county, salt water shoreline; so the Skagit River and the other rivers in this county and the salt water tributaries and the salt water areas are very important to our economy.

It affects many, many phases of our living, our farming, minerals, water, power, commercial fishing and sports fishing, recreation, and many other things that I could go on and on and mention many times over; but we welcome your committee to our county and to the City of Anacortes. We hope your stay here will be very fruitful and thoughtful and you will be able to help us in the many problems we have in Skagit County.

MR. RICHARDSON: We would like to start off with each of the agencies involved in the Task Force work. First of all, we would like to call on Mr. Earl T. Fulkerson, The Department of Agriculture Soil Conservation Service.

Earl T. Fulkerson was called as a witness:

(Prepared statement read verbatim)

MR. FULKERSON: This is a statement on behalf of the U.S. Department of Agriculture.

"The U. S. Department of Agriculture has responsibility in agricultural, forestry and National Forest, rural and upstream aspects of river basins. The objectives of its participation in coordinated comprehensive river basin planning are consistent with the principles and concepts which have been developed by the Interdepartmental Staff Committee of the President's ad hoc Water Resources Council.

The USDA participates nationwide in river basin surveys to facilitate the coordinated and orderly development, control, management and use of water and related land resources. Accordingly, the Department will use information developed in these studies to correlate its water and related land resource conservation and development programs with those of other Federal and State agencies. Thus, the USDA programs will contribute more effectively to the satisfaction of current and long-term needs for land and water resource development.

The Department of Agriculture studies agricultural, forestry and related economics, problems and needs and their relationship to the total economy of the basin. Studies include floodwater and sediment damage to rural lands, impaired drainage, drought problems and irrigation requirements, livestock and rural domestic use, recreation, fish and wildlife, and forest-based industries water requirements.

Potential water and related land resource development in upstream watersheds is inventoried and analyzed. This includes an analysis of water storage capacity, the effect of land use and management practices on water quality and flow characteristics, and the potential hydrologic effect of agricultural, rural, and upstream watershed developments. The impacts of potential water resource development projects on lands and programs administered by the United States Department of Agriculture are studied. The United States Department of Agriculture work is carried out through the Soil Conservation Service, Forest Service, and Economic Research Service in coordination with other agencies.

The Soil Conservation Service is responsible for (1) determining treatment needs for the non-forested lands in the basin; (2) physical phases of the appraisals of agricultural, rural and upstream needs; (3) determining the physical and economic feasibility of watershed projects and the development potentials of upstream areas; and (4) coordination of the physical and economic effects of upstream projects and nonproject type improvements with the proposals of other departments.

The Forest Service is responsible for (1) investigations and analyses pertinent to use, treatment, and development and management of National Forests to meet basinwide needs for water and related land resource development; (2) appraisal of the water needs of National Forests and forest-based industries; (3) determination of impacts of proposals by other agencies on National Forest lands; (4) determination of cover conditions, present and future and treatment needs, of all forest lands; (5) the forest resource sector of the economic base study.

The Economic Research Service is responsible for economic investigations relevant to the identification of beneficial patterns of water and related land use and development. Major investigational activities involved will be (1) analysis and projection of economic activity and land use in the agricultural, rural and related sectors of the economy; (2) analysis of the economic aspects of major agricultural and rural water problems including their relationship to production, employment, income, and other elements of economic activity; (3) economic appraisal of agricultural and rural needs for water and related land resource development; and (4) appraisal of the prospective economic impact of development proposals on the agricultural, rural and related economies and the economic relationship of such proposals to comprehensive basinwide programs of water development."

Thank you.

MR. RICHARDSON: The Department of Agriculture gets at the head of the list because they start with an A.

Now, we will put our ground rules into effect. We would like to hear everyone as fully as possible. Of course, it is going to run us quite a long time if we do this to a great extent, so I would appreciate it very much if those who have written statements would leave them with the reporter, and when appearing before the microphone, please brief the statements and summarize them so we can operate generally on the basis of about five minutes per speaker on the topic set forth. There are certain people who have asked for a little more time than that.

I would like now to introduce Colonel Charles Holbrook, Seattle District Engineer, Army Corps of Engineers, who is a newcomer to our area and just arrived on the job about forty-five days ago from assignments in Europe and the Office of the Chief of Engineers in Washington, D.C. We are pleased that he is now almost a resident of Washington. Colonel Holbrook.

Colonel Charles C. Holbrook was called as a witness:

(Prepared statement paraphrased. See Exhibit 1.)

COLONEL HOLBROOK: Mr. Richards, Mr. Richardson, Mr. Gedney, and ladies and gentlemen, I must confess, first of all, I realize it is very difficult to

pick a date for a hearing of such wide interests, but the thought foremost in my mind right now is that the Chairman called this meeting to order at substantially the same time as a fellow in New York was saying "Play Ball."

I am very pleased to be here and get acquainted with you and your project, or rather, our project.

As Mr. Richardson mentioned, I am new. I am not yet acquainted with all of the names involved in this project, the names of places, much less the pronounciation of them; and up here, I am pleased to find you have a couple of names I can handle, such as the Sauk and the Skagit.

I am intensely interested in the Corps' work out here, and I assure you that I am learning rapidly of your needs, as well as our project. I have flown over the entire area and have a good perspective of it. I have covered a fair amount of it on the ground in the limited time I have had, and I expect to stay up here another day or two in order to see more.

You here are familiar, I know, with the Corps of Engineers' work and our hearings. This hearing, however, is on a special study, being special in its organization and its scope and representation. In our opinion, it meets a very pressing need and we fully support it. The study provides a basis for long-range planning in regard to all aspects of water resources development, flood control and navigation, in which we share a major responsibility, and in regard to water supply, irrigation, power, conservation and recreation, all of which we are vitally interested in.

The Pacific Northwest undoubtedly has a tremendous future. I am new to the area, but this is readily apparent at the initiation of one's familiarization and entry to the area and its study, as it was in mine.

Puget Sound and its adjacent area undoubtedly shares a prominent place in the tremendous future of the Pacific Northwest, all of which, of course, adds to the significance of this Comprehensive Study. The comprehensive plan, we realize, must give full consideration to local needs and desires, and State and Federal policies of all sorts, including water quality, and to regional, social and economic factors.

The Comprehensive Study, in our view, aims at identifying both interim and long-range needs or projects. By these, I mean those that can be identified or justified for accomplishment in the ten-to-fifteen year period and in the fifteen-to-fifty year period.

The Comprehensive Study is now scheduled for completion in 1969, some five years from now, and should provide the framework for other projects, the need for which develops or is conceived later.

The Corps of Engineers has, and will continue to have, need to undertake studies and projects not affected by, or which, in turn, don't influence the broad concepts of, the study. We can't stand still, of course, for five years. I am speaking of studies which generally meet more localized or more urgent requirements. These always continue to arise and we have a number of them on the books now and in process.

In summary, let me say for the Corps of Engineers that the Corps recognizes the urgent need for comprehensive planning of Puget Sound and adjacent waterways, and fully supports the efforts fo the Task Force. At the same time, the Corps will continue to meet local and urgent needs in accordance with local desires and the dictates of the Congress.

Thank you very much.

MR. RICHARDSON: Thank you very much, Colonel.

We are now going to hear from Mr. Gilbert Schirk, from the U.S. Bureau of Reclamation Regional Office in Boise. The Bureau of Reclamation, as you know, is the Department of the Interior.

Gilbert V. Schirk was called as a witness:

(Prepared statement read verbatim)

MR. SCHIRK: Co-Chairman Richardson and Mr. Gedney, members of the Task Force, and ladies and gentlemen, I am speaking through cough drops this morning, if I get all glued up—I will give a few remarks which are not in my statement so we will know what we submitted for the record without having to wait until the record of the hearing is published.

I would like to observe that our studies in connection with this Puget Sound Comprehensive Study will be carried out by our Spokane office. We have an office in Spokane that handles all the work in the State of Washington. That office is under the direction of Mr. Rupert Spearman. He is assisted by Mr. Carl Huish, who is a member of the Task Force which is responsible for this comprehensive study,

"The Department of the Interior, because of its broad responsibility in the development of water and related land resources, will play an active part in the

Puget Sound Comprehensive Survey. Agencies within the Department have responsibility for planning and evaluating the functions of irrigation, recreation, fish and wildlife, municipal and industrial water supply and power. Many of the Interior agencies have responsibility for collection of basic data relating to water resource development, and some have important land management responsibilities in national parks, Indian reservation, wildlife refuges, and on public lands not within national forests.

Interior agencies participating in the Puget Sound Comprehensive Survey include the Bureau of Reclamation, Fish and Wildlife Service, Geological Survey, Bureau of Indian Affairs, Bureau of Land Management, Bureau of Mines, National Park Service, Bureau of Outdoor Recreation and Bonneville Power Administration.

The Bureau of Reclamation is the principal agency within the Interior Department having responsibility for the planning, construction and operation of multipurpose water resource projects. Although irrigation development has long been a major part of the Bureau's program, reclamation projects are multiple-purpose and in today's planning many other functions such as power, recreation, the preservation and propagation of fish and wildlife, municipal and industrial water supplies, flood control, navigation, water quality control, area redevelopment, and sedimentation control are included in development plans.

The Bureau of Reclamation operates in the seventeen western states and in Alaska and Hawaii. In addition to its regularly scheduled program, the Bureau of Reclamation also administers the Small Reclamation Projects Act of 1956, which provides for loans to local organizations for water resource development of limited size. Although such projects are primarily for irrigation, other water uses may be served.

In the Puget Sound Comprehensive Survey, Reclamation will be concerned primarily with the identification of irrigation needs and potentials and in the development and evaluation of plans for serving these needs. Many people ask, "Why plan for irrigation in the Puget Sound Area?" The facts are that although annual rainfall is high in this area, summer precipitation is not adequate for optimum growth of crops, and crop adaptability is limited because of a lack of summer precipitation. Rainfall from June through August is only about half the amount required for fall crop production. Through irrigation, a farmer gets much higher yields from crops which mature in early July or August and the farming operation is more profitable. There are about 60,000 acres now irrigated in the Puget Sound Area as compared to about 45,000 acres in 1959, a growth of 30 percent in five years.

A large increase in irrigation is expected in this area in the future as more people recognize the benefits to be gained. Much of the truck crop and high-value row cropland now in production is being lost to urban expension. With irrigation, other areas suited to the production of crops can be developed to meet the increasing demand and compensate for the areas being lost to urban development.

Our preliminary studies show the area covered by this hearing includes about 210,000 acres of potentially arable land. This doesn't mean that all of these lands should or could be irrigated. But, rather it does point out the general magnitude of the resource potential of this area.

You may have the question in mind as to what you should do if you feel there is need for irrigation in your area. First of all, let this be known either at this hearing or subsequent to it, if you prefer. I must emphasize that our planning activities are dependent to a great extent on a showing of interest by the local people. This applies not only to the degree of detail of the studies but also to the plan of development and eventually the construction of a project.

You might be interested to know that the costs allocated to irrigation in a mulitpurpose project are reimbursable over a 50-year period without interest. However, the capital cost must be repaid to the Federal treasury. This is accomplished by the irrigators up to their repayment ability. Present policy is such that costs beyond the irrigators' ability to repay are paid into the treasury through surplus power revenues or other similar means. In a multipurpose project, the costs of some functions such as flood control, water quality control, and some portions of recreation and fish and wildlife are nonreimbursable. Costs associated with power and municipal and industrial water supply are reimbursable with interest.

I would also like to point out several steps necessary to obtain an irrigation project. First of all, the studies must show the project would be economically justified before the Congress would consider it for authorization. It must also be shown that reimbursable costs will be repaid within a specified time period and the sources of repayment must be identified. The irrigators must be willing to form a

legal entity such as an irrigation district to contract with the government for repayment of the portion of the irrigation costs that lie within their repayment ability. Local groups must also be willing to support the project before the Congress and furnish satisfactory evidence that they are in favor of the plan."

It has been a pleasure to make this presentation and I would be pleased to answer any questions concerning the Bureau of Reclamation's role in the Puget Sound studies.

Thank you.

MR. RICHARDSON: I would like to now call on Mr. Francis Nelson of the Department of Health, Education and Welfare representing the U. S. Public Health Service.

Francis L. Nelson was called as a witness:

(Prepared statement read verbatim)

MR. NELSON: "The Public Health Service of the U.S. Department of Health, Education, and Welfare is the Federal agency charged with water resources planning responsibilities for municipal and industrial water supply and water pollution control. In the Pacific Northwest this activity is carried out by our Division of Water Supply and Pollution Control office in Portland, Oregon, and here, as elsewhere, we work very closely in these planning responsibilities with the State Health Department and the State Pollution Control Commission and the agencies concerned with water supply and quality control. The authority for our planning responsibilities are contained in the Public Health Service Act and the Federal Water Pollution Control Act. The latter states in part, and I quote, 'In the development of such comprehensive programs due regard shall be given to improvements which are necessary to conserve such waters for public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, and agricultural, industrial and other legitimate uses'.

In developing the water pollution control plan in accordance with this language, an examination is made by stream reach of all present legitimate water uses and those land management practices which influence water quality. Uses are projected to future levels of development and the effect of these uses on water quality are estimated. On the basis of quality objectives established for downstream uses, controls or management techniques are ascertained. In some instances, management and control of pollutants cannot by themselves maintain quality at suitable levels to permit full utilization by downstream users. In these cases storage in Federal reservoir projects may be necessary to increase low stream flows and thereby improve the assimilation capacity of the stream during critical periods. The ultimate aim of a quality control plan, therefore, is to present the alternatives and consequences of various combinations of land management, waste control and flow regulation that are feasible in meeting quality objectives.

The municipal and industrial water supply plan provides projections of water requirements expected to be exerted by future populations and future economic conditions. It outlines the various means available to meet these water demands. The potential sources of future water supply may include, but are not necessarily limited to, Federal reservoir projects. It should be emphasized that these water supply plans are developed on an area basis and are not intended to supplant the detailed plans and specifications required by the water purveyor through his consulting engineer.

The success and value of these aspects of the comprehensive water resources development planning study of the Puget Sound Region rests on how realistically they reflect the needs and desires of the local people. My purpose in being here today is to hear these needs and desires from you people in the Puget Sound Area."

Thank you.

MR. RICHARDSON: I don't know if it would save any time or not but I feel we need not applaud these gentlemen unless they are real whingding speakers. I think we can save time if we withhold the applause and we will have some afterwards for everyone.

Mr. Grant Woolley, and he represents the Department of Interior, Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife. Grant?

Grant A. Woolley was called as a witness:

(Prepared statement read verbatim)

MR. WOOLLEY: "My name is Grant A. Woolley, Bureau of Sport Fisheries and Wildlife, U.S. Fish and Wildlife Service, Portland Oregon.

Fish and wildlife, without question, rank among the major natural resources of the Pacific Northwest. The Fish and Wildlife Coordination Act

specifies that such resources receive equal consideration and be coordinated with other aspects of water resource development.

The Fisheries and Wildlife Technical Committee, as designated by the Puget Sound Task Force, is charged with the single responsibility of planning for fish and wildlife. The plan will be in accord with recommendations of the Senate Select Committee on National Water Resources and related water and land resource policies in Senate Document 97.

To achieve this aim, the Bureau of Sport Fisheries and Wildlife will work closely with the Federal, State, County and municipal agencies and groups having a direct and positive interest in the plan.

Investigations will include determination of fish and wildlife population, distribution, habitat, commercial harvest, and man-days of angling and hunting. An immediate task will be to ascertain basic fish and wildlife resource needs in specific river basins and to alert water development agencies concerning protective and enhancement measures required in project planning. It is entirely possible that the potential for fish and wildlife enhancement in certain river systems could justify projects spcifically for this purpose. Primary enphasis during coming months will be focussed on the Nooksack and Skagit River Basins.

Collection of much of the basic fish and wildlife data will be the responsibility of the Washington Department of Fisheries and the Washington Department of Game. The Bureau of Commercial Fisheries will be consulted whenever commercial fisheries are involved.

Analysis of data obtained and inclusion of pertinent recommendations in the overall plan will ensure that water requirements for fish, shellfish, and wildlife resources are considered on the same basis as other water use needs."

Thank you.

MR. RICHARDSON: I would like to call on Walter Williams of the State Department of Fisheries.

Will the other State agencies not represented here today give their principal statements in Olympia.

R. Walter Williams was called as a witness:

(Prepared statement read verbatim)

MR. WILLIAMS: Mr. Richardson, Mr. Gedney, and fellow Task members and ladies and gentlemen, this is a statement of the position of the Washington Department of Fisheries concerning the Puget Sound Basin Comprehensive Study.

"The fisheries resources of Puget Sound and adjacent waters are of outstanding importance to local, state and national interests. Large populations of anadromous fish support extensive sport and commercial fisheries within the State of Washington and in offshore fisheries from California to Alaska. The Puget Sound Basin is the single, most important salmon producing area of the State of Washington, and as such its extensive watersheds must be preserved and enhanced to provide more extensive production and utilization in spite of ever increasing population pressure and the need for mutiple water uses.

Five species of salmon at present utilize the various watersheds encompassed by the Puget Sound Comprehensive Study Program. These are chinook, coho, pink, chum and sockeye salmon. The shellfish resource within Puget Sound is unique and extensive, providing abundant recreational and commercial value that is directly dependent on the quality of the fresh-water and estuarial basins.

The Washington State Department of Fisheries, being charged with the responsibility for maintaining and perpetuating the salmon and shellfish resources for the State of Washington, has through its long history endeavored to preserve and enhance the various watersheds of the State to produce a maximum sustained yield to the various fisheries both sport and commercial. The Department's present program in the fields of artificial propagation, stream improvement, fishway engineering and management are among the most modern in the fishery technology field.

This Department believes that the Puget Sound Basin Comprehensive Water Resource Study should lead to a comprehensive long-range plan of development for the streams of this region in which the fisheries resource will play a primary role. This Department will coordinate its present long-range plans for increasing the salmon and shellfish resources of the study area with all other users of water and related land resources. The specific objectives of the fishery study will be to, (1) review all available data with particular attention to specific problems and to seek solutions to these problems through coordinated planning with the other agencies, (2) to study available data with attention to fisheries enhancement possibilities and incorporate these into the overall comprehensive plan, and (3) to propose ways and

means for the improvement of the stream habitat for increasing the recreational and commercial potential of this resource.

This comprehensive water resource study poses a new concept in water management—that is, to develop a long-range water-management plan that will not only sustain the present fishery resource, but in addition enhance the resource in the face of growing population pressures throughout the Puget Sound Basin. We earnestly hope that these goals will be achieved and that the fisheries resource will be of prime importance in the over-all considerations of water use. The Fisheries Department is entering into this cooperative study with the understanding that the salmon and shellfish resources of this area will be given important consideration in any future planning for Basin projects. It has often been true in past years that the fishery interests were either, (1) disregarded, or (2) not adequately taken into consideration in the piecemeal water use planning that has occurred throughout the country. We sincerely hope that this type of shortsightedness may be averted in the future.

Our agency is responsible for management and conservation of the salmon and shellfish stocks in the State of Washington and will strive at all costs to protect these resources from encroachment by other water users. The Washington Fisheries Department is entering this Puget Sound Comprehensive Basin Study in a spirit of cooperation with other State and Federal agencies in the hope that the salmon and shellfish resources of this State may continue to play an important role in the over-all economy to the people of Washington."

Thank you.

MR. RICHARDSON: Thank you, Walter.

Mr. Alwin Koch of the State Health Department.

Alwin G. Koch was called as a witness:

(No prepared statement)

MR. KOCH: I wish to comment, Mr. Chairman, that I hope the rest of your planning is better than the planning of this meeting on a state holiday.

I only want to present very brief points on this pretty well constituted basis of the policy of the State Health Department and its cooperation with the various municipalities and public utility districts and water districts and private utilities throughout the State who have the obligation to the population of furnishing the public water supply that is adequate in quantity and pure enough for consumption.

The basic tenet is that water must come from the best available source of water. We have lots of streams in the State. A few of the streams are not suitable for public water supply because of the location they are unable to use them.

I might add, confining my comments strictly to surface water, what will prevail will be to improve what ever resources they have, either the water storage or by changing water sources; and they will be prevented from downgrading the supply by going to a lesser source or permitting anything that would occur to his water source that would tend to downgrade it for public consumption.

Certain watersheds will require no treatment beyond chlorination because of the manner of control the municipality exercises over that water or because of the location and lack of any source of contamination.

All of the water supply, depending on the degree of control, depending on the degree of potential actual contamination at any one time, will be required to engage in various degrees of water treatment, all the way up to and including coagulating, infiltration and settling and disinfection.

The variety of watersheds that are available to the people in this state are pretty much as you would see them if you simply went out and made a list of all the water supplies and on that list entered the type of water supply that it presently has. The reason that I say this is that there just aren't very many new communities coming up in this state. We are pretty well established, and the new communities that arise on the fringes of urban areas were already on an existing water system.

What it means is that our present water system, our major water systems are expanding and there are not many new water supplies occurring. Those that do occur are temporary systems on wells and very few of they draw from the major watersheds of the state.

What this adds up to is that as things presently stand in this State, the watersheds are presently so isolated and so controlled that simply chlorination is sufficient under this policy. The State Health Department will support them in maintaining that condition.

Other municipalities who have lesser systems who are not capable of financially or perhaps geographically of getting such a supply will face

installation of treatment facilities to upgrade the water system.

I think that's it. I was going to put another point in there earlier, but it wasn't germane to the subject. I thank you.

MR. RICHARDSON: That concludes statements from the Federal and State agencies.

I will now try to outline the way that we will attempt to proceed with the remainder of the day. First of all, we will hear from representatives of the San Juan County. They have ferry schedules to meet and they will proceed with statements of a general nature, not necessarily related to any one county; and then we will hear from a delegation from Whatcom County and the home folks will wind up the situation.

First, I would like to call on Robert Condon, representing Mr. Nash, the Chairman of The Board of County Commissioners of San Juan County.

Robert W. Condon was called as a witness:
(Prepared statement paraphrased. See Exhibit 2)

MR. CONDON: Mr. Chairman, ladies and gentlemen, we appreciate being called on first because we do have a transportation problem, and this is one of our—represents one of our problems, is that we are an isolated community. San Juan County is composed of about 172 islands, the largest of which two are about the same in size, San Juan and Orcas, of fifty-five and fifty-seven square miles each. We enjoy a very nice climate, about twenty inch rainfall. This also presents a problem insofar as our domestic water supplies are concerned, so our blessings are also our problems.

We have about three thousand people in the county, currently are classed by the Federal Government as a depressed community. This is a problem with us regarding our economic future and is the reason why we do not have the professional help available nor can we afford it duly do the job of studying our problems and finding solutions for them. This is the reason we need assistance, such as in this study will tend to give, we hope.

One of our major problems resolves not from our own population but from the anticipated recreational influx of people who come into the community from the mainland areas.

The figures that we are given as to the population trends and recreational trends in the low Puget Sound Area, the Puget Sound Governmental Conference in the four-county area of Snohomish, King, Pierce and Kitsap, and the figures that we are able to get on the movement of small boat traffic and passengers on the ferry systems, and so forth, indicate an annual growth rate in our area of about ten to fifteen percent. This varies some with the particular item, and as you interpolate these results into the future, the figures become rather astronomical to our small community and they frighten us a little bit as to just what we are going to be faced with as these people come into the area. Right now, it's not too much of a problem, but we do not have adequate harbor facilities for small boat marinas to handle the influx of small boat traffic early in the season. We are going to have problems with water supply and pollution. We will have a population growth, it may not be quite as rapid in developing as the population growth which you speak of here in this area.

So, just in summary, really our problems stem in the immediate future to very large extent from the population explosion that you speak of along the mainland area. Everybody seems to feel that the San Juan Islands are the recreational bank for the community. This is where people head for their relaxation, and to that extent, we feel we need a system to study these various problems; and as we find the solutions, we are certainly going to need help in developing the facilities.

I thank you.

MR. RICHARDSON: Thank you very much.

I would now like to vary this a little bit. I would like to call on Mrs. Donna Kjargaard of Lopez, Washington. Mrs. Kjargaard?

Donna Kjargaard was called as a witness:
(No prepared statement)

MRS. KJARGAARD: I was hoping I could get out of here without having to get up here. I am a little bit surprised there aren't more women here.

This is a study of water. Without water, we can't wash our clothes. That's a big problem in everybody's life. Mr. Condon mentioned being from San Juan and he mentioned Orcas. I am from Lopez. We are smaller but we have problems too, and I see our County Commissioner, Mr. Blake, here.

I am here to talk a little bit about something that is very dear to the hearts of many people, which involves water, land and fish. I went to Mount Vernon this morning and I purchased six tons of

fertilizer, commercial fertilizer, to put on the fields of our land, and I have been told, and it is true, that fertilizer is a detriment to fisheries, expecially over where you have rivers. It will run off in the sediment from the soil and gets into the rivers, which are the natural spawning grounds for fish.

We have people depleting the fisheries in the rivers. It seems a sensible thing to us to go into what we call fish farming in these salt water areas, in the bays, in the inlets and the sloughs. It's kind of an infant yet in this state but it isn't in other parts of the world.

I think through this study they have included the San Juan Islands on the map. It's kind of good to see. I sometimes wonder if we even belong to the State of Washington, but we'er out there. I think this would be a natural spot for fish farming. We have pretty clean water so far. The more people we get, though, it's not going to be so clean. But these are things we have to prepare for through whatever you call your organization over there. I know Mr. Condon is the head of it. They are trying to plat and do things for the future.

Milo Moore has done a great deal of work in this fish farming program, designating certain areas and spots, and I hope that his plans will also be included in this as part of the study.

Thank you.

MR. RICHARDSON: Thank you for your fine statement. I would like to call on Mr. J. Ringler from Port of Friday Harbor.

J. E. Ringler was called as a witness:

(Prepared statement included in Exhibit 2)

MR. RINGLER: Mr. Richardson and Mr. Gedney, ladies and gentlemen, there are just a few remarks to point up the formal presentation which we have made a part of the San Juan County presentation which Mr. Condon has submitted for the Board of County Commissioners of San Juan County.

As has been pointed out, we are a county of 172 islands with a population, according to the Census Bureau, of about 3,000 people and we are classed as a depressed area, much as we hate to admit it and much that it hurts our ego.

The very nature of our county makes us a natural for recreation and for retirement living, and a great deal of this recreation has to do with small boat traffic. Graphs have been included in our formal presentation which point up the tremendous increase in small boat traffic, tourist traffic through and into our islands. This very small community is faced with the problem of furnishing facilities for this great influx of traffic. Even at the present time it is taxing our resources almost beyond our ability.

We know that we are going to have to have some help. I like to use the little town of Vantage as an example. The state highway runs through Vantage. There is a bridge over there, and while it is within the confines of Vantage, Vantage is not required to furnish that bridge nor that highway for the use of the rest of the State of Washington. We are being required to furnish facilities for a great part of the state, and we feel that we are going to need help.

We are concerned not only with moorage facilities, which are going to have to be expended tremendously, we are concerned with pollution of our harbors. Some of them are almost landlocked, and they are prime subjects for pollution. If we get a great increase in boat traffic, that poses a problem, not only a health problem but also a problem to our fisheries.

Gentlemen, in the interest of saving time, I think that will be my remarks and I thank you very much. I just wanted to point up our needs in support of the formal presentation which is a part of this document which we are presenting.

Thank you.

MR. RICHARDSON: I would like to call on Mr. Russell Hawkins who is here representing the San Juan County Salt Water Conservation Association. Mr. Hawkins.

Russell Hawkins was called as a witness:

(Prepared statement paraphrased. See Exhibit 3)

MR. HAWKINS: Thank you, Mr. Richardson, Mr. Gedney, ladies and gentlemen, I would like to mention that San Juan County, as per Mr. Condon's figures, it consists of 743 islands and reefs at low tide. I am a little at a loss as to which to speak, during low tide or high tide.

I am very pleased to present the San Juan County Soil and Water Conservation District Program adopted by the Board of Supervisors, which contains information which we believe adequately states the problems of our county pertaining to water and other related land problems.

The importance of woodlands for erosion control, watershed areas, underground water sufficiency, recreation and wildlife, as well as a commercially

valuable asset to the County, is in need of renewed emphasis.

The lack of water, both surface and subsurface, will grow increasingly acute as further subdevelopment on waterfront and view property continues.

Brush control on existing open drains, land shaping to promote surface drainage and eliminate wet pockets, rolling benchlands and bottomlands require internal drainage.

Approximately 92 acres of active dune land exists on San Juan Island and 32 acres on Lopez Island.

Drainage sewage hazards, waterfront residences face special problems from existing and future subdivision of elevated view property.

Those, gentlemen, are quite briefly some of the many problems that we have in San Juan County.

Incidentally, it is one of the four counties in the United States completely made up of islands, so, as the other gentlemen have pointed out, we, indeed, have problems that are completely special for our own situation.

May I give one for the East Sound Water Users Association now?

MR. RICHARDSON: Yes.

MR. HAWKINS: The East Sound Water Users Association provides water for Orcas Island and other islands. Do I need to read this letter or may I merely turn it in as an exhibit: (See Exhibit 4)

MR. RICHARDSON: If you turn it in, it will be included in the record as an exhibit.

MR. HAWKINS: Thank you.

MR. RICHARDSON: The next gentleman is Mr. Lawrence Getz, Councilman from Friday Harbor. Mr. Getz.

Is there anyone else while Mr. Getz is coming up, from the San Juans who wants to make a statement?

(No response)

Lawrence W. Getz was called as a witness:

(Contents of prepared statement included in testimony)

MR. GETZ: I am also one of the Island boys or gentlemen, I should say, and we have a few problems in our city affairs which includes problems on water and sewage disposal. We have outside developments that would like water, and we haven't big enough mains to carry it.

Another problem is we still have some old cedar pipe that is forty years old that needs replacing, and we need a sewage disposal which we had made application for but the funds had run out.

They are also talking about beautifying the waterfront for the City of Friday Harbor.

Thank you.

MR. RICHARDSON: Thank you, Mr. Getz.

That concludes the witnesses from San Juan County. We will now hear statements of the general areawide basis. I would like to call first on Dr. Ryle Radke of Everett. Dr. Radke is a physician but he is here today representing the Washington State Sportsmen's Council. Dr. Radke.

Ryle Radke, M.D. was called as a witness:

(Prepared statement read verbatim)

DR. RADKE: Mr. Chairman, ladies and gentlemen, Washington State Sportsmen's Council represents 112 member clubs, and my custom is generally considered to be a spokesman for the hunting and fishing license holders in the State of Washington.

The Sportsmen's Council recognizes the need for over-all planning and adequate planning of our resources and also recognizes that the planning for the future employment of the water resources in the area is not properly accomplished on a regional basis. We think the Seattle P.I. editorial of a few days ago more adequately represents the problem that confronts us; as the San Juan people pointed out, we've got to be ready to take care of this vast influx of tourism.

Washington State Sportsmen's Council visualizes in the present Task Force a strong possibility of losing its recreational birthright to Washington, D.C. Washington State Sports Council believes that recreation is big business for the State of Washington, ranking No. 3 in dollar value and potentially capable of being first, and that the recreation needs of the state are not properly receiving recognition by this body which lists recreation fisheries as No. 9 on the list of nine objectives. Washington State Sports Council believes that the perpetuation of the fisheries of the state is of prime importance and should be listed first in our list of objectives for the employment of our rivers.

Washington State Sports Council believes that no recompense can take the place of a fishrun as described by illconsidered tampering with the stream ichthyology. The Washington State Sports Council believes that access to rivers and impoundments to the salt water should receive prime consideration by

your body; by that, we mean public access.

The Washington State Sports Council does not believe that the United States Army Engineers and other federal agencies understand our recreational needs. We are mindful of the Howard Hanson Dam matter where through connivance of various agencies recreation has been denied access to large land areas owned by them, citizens of our land.

The Washington State Sports Council has on occasion questions in its mind as to whether dams, such as those on the upper Skagit and Baker River are, indeed, employed in any real measure as flood control instrumentalities. We do realize that the Skagit system has had no real flood since the last ones were erected.

Washington State Sports Council vigorously opposes any tampering with the Skagit River such as envisioned in the plans to erect a bypass at Avon and dredging the river and erecting a dam on the side.

The Washington State Sports Council urges the Task Force to face directly its responsibility to save for future citizens some of our rivers in a free-flowing state with adequate protection of the stream, its quality, so that our fishruns will not decline as have the salmon runs in the eastern states.

Further, the Washington State Sports Council strongly believes in the right of the public to have access to the water. It must be safeguarded in their planning.

The people of the State of Washington, through its elective government, can control the recreation of the State of Washington.

Thank you.

MR. RICHARDSON: Mr. Marvin Mackey, representing the Anacortes Chamber of Commerce, has asked to appear at this time because he has to leave for a meeting shortly. We are pleased to see him here today because he is a banker.

Marvin G. Mackey was called as a witness:
(No prepared statement)

MR. MACKEY: Thank you, Mr. Richardson and Mr. Gedney. Belated as it is, we would like to welcome you to Anacortes. Having gone along this far, it seems rather late to welcome you but we are pleased that you chose our city to hold the hearing for the area.

We, being on an island such as we are, we can readily sympathize with the people from the San Juan County and the other islands out there, and I might say I am an Island boy also. We, likewise, are fully cognizant of the impact that water resources has on our community, whether it be for industrial development, future industrial development, sports, recreation or commercial fishing, it has tremendous impact.

The Anacortes Chamber of Commerce would like to greatly encourage the early completion of the feasibility studies that have been approved by Congress but for which there has been no appropriations made as yet.

Thank you very much.

MR. RICHARDSON: We also have a request for an opportunity to get on the program from Mr. Robert Weller, General Superintendent of Scott Paper Company, Anacortes.

Robert Weller was called as a witness:
(Prepared statement read verbatim)

MR. WELLER: Gentlemen, my name is Robert Weller and I am the General Superintendent of the Scott Paper Company.

The mill produces approximately 130 tons per day of bleached sulfite pulp which is manufactured primarily from the alder and cottonwood species of hardwood. Each day, the mill's 120 employees use 280 cords of wood and 6,000,000 gallons of fresh water in the production of this pulp. The mill operates under a waste discharge permit from the Washington Pollution Control Commission authorizing the discharge of 8,710,000 gallons per day of liquid effluents into the swiftly moving salt waters of Guemes Channel where it is quickly and harmlessly dispersed. In addition, our mill uses substantial blocks of power, most of which is generated through hydro-electric facilities on streams in the area or in the Columbia Basin.

Not only is fresh water a vital material in our production process, but it is one of the essential ingredients in the growth of the timber that is our chief raw material. I can also assure you that our employees share with all other residents of the area the advantages of high quality fresh water for domestic purposes and the joys of salt and fresh water recreation in all of its forms.

From the foregoing very brief recital, it is quite apparent that the future of Scott Paper Company in Anacortes and Skagit County bears an intimate relationship to that of water.

It is difficult for me to look far into the future

to visualize in any detail the changes that will come in this area and their effect on our company in general and its Anacortes mill in particular. It seems clear that we can expect further economic growth in Anacortes and Skagit County, and there seems bound to be a greater population here and more industrialization. This, we view as a healthy, normal development, one that we heartily applaud. We believe that these inevitable changes can be accomplished without any significantly adverse effects on the basic factors which have led Scott Paper Company to invest its funds in a pulp production facility at Anacortes. But, on the other side of the coin is the fact that the unwise or ill-advised development of our water and other resources could conceivably upset the balance of factors in such a way as to make our future here questionable.

It is true that the wood-supply aspects of our current operation may be effected in a different fashion than our pulp mill. Future developments could have an entirely different influence on the balance of factors that affect our raw material supply than those that affect our manufacturing processes. Our mill at Anacortes will continue to operate so long as water, timber, power, transportation and labor continue to be available to us in quantities, forms and qualities reasonably approximating those presently in existence and so long as we can operate the mill at a profit.

We don't have to tell your Committee of the complex inter-relationships of the many elements that concern Scott Paper Company and its operations in Anacortes and Skagit County. We do urge that you exercise extreme care to see that all elements are considered and then properly evaluated. Further, we want you to know that we stand ready to work with you, should you so desire, in the development of the more specific information that may be required in your study. We feel that there is a definite need for a comprehensive study of the sort on which you are embarking, and we will do what we can to help make this study a success. A realistic study of the comprehensive nature of yours should help Scott Paper Company and industry generally, and all other elements of our community, to better make future plans for their operation in Skagit County.

Thank you.

MR. RICHARDSON: I would like to now call on the former Director of Fisheries of the State of Washington, whose subject I think many of you have heard discussed before, that is, fish farming and multiple use of public waters, Mr. Milo Moore.

Milo Moore was called as a witness:

(No prepared statement)

MR. MOORE: Mr. Richardson, Mr. Gedney, Colonel Holbrook, ladies and gentlemen, I am very pleased to join this meeting and present what might be my personal views on a new concept of water use for this region.

I would like to state first that I do not represent any organization here. I represent myself and to some extent, my two associates who have worked with me in perfecting what I believe is a new concept of fish management and fish programming in the United States.

Senator Magnuson and Governor Rosellini, both were impressed by my views on fish farming, and about four months ago, I was employed by the State under contract to document these views; and I had a limited amount of money given for engineering, aerial photography and preparation of my report, which will be printed by the State printer in a limited number of copies at the end of this week, which I will submit to your Committee.

I would like first to tell you something about my background. This is my country here, I grew up in Skagit County, I was born in the State of Washington and I have been in the fish business, associating with the fisheries for forty years. I guess I am the only fisherman to have had an important position or part in the management of fisheries in the United States. I have been Director of Fisheries two four-year terms under two governors. I was appointed by two presidents to serve on international salmon commissions. I have been privileged to attend international conferences in Europe and Asia. I spent two and a half years in Europe with the E.C.A. program, stationed at Athens, Greece, and worked in Turkey, Italy and the Mediterranean countries.

I came back from there and I was two and a half years in Korea, working in Japan, Hong Kong, Okinawa and Korea. I am particularly interested in what happens in Japan and the island of Hokkaido. Colonel, you have been in Sapporo and that region of Hokkaido where they are farming fish, salmon, on a large scale.

In my work in Europe with fish farming and with fisheries, I met some of the world masters, men

who have produced large amounts of food from the cultivation of fish in water areas. In Italy, there are 250,000 surplus acres of water under environmental control, and they are producing around 25,000 tons of food a year in those areas.

I was privileged to work with Ruggero de Angles in Italy, an old man still now alive, who is the world's greatest fish farmer in actual production of fish. He was put to work by Mussolini to build the fish farms, and from him, I was inspired more than any other source. Mr. de Angles is a hydraulic engineer who took over the management of fish farms in Italy prior to World War II, built new dams and dikes and hydraulic control and improved the environment and tripled the production of these fish farms, many that have been in operation for five hundred years.

I have also studied similar works of world masters of fish culture and met with Dr. Meisich in Germany, head of the fisheries in western Germany, and Mr. Hardy in England and have gone through this country and Canada at the expense of our government, studying fisheries and with particular interest in production.

Now, at this moment, in the United States, there is no production role set by our management agencies for food fish in waters contiguous to the shorelands and in basins, inlets and rivers and streams of this country. I propose in my survey here to set those goals.

I have here some of the best aerial photography ever taken and probably the only aerial survey ever made solely for the interest of analyzing the water areas for production of fish, for environmental control of raising these fish. In addition, we have an engineering view of five different areas in the Puget Sound region, which has laid out something for the first time.

Mr. Davison, a designer and engineer of the studies, working with me, has also studied in Europe and has learned a lot about this possibility and he has projected these studies over aerial photographs made by Mr. Jim Wilson of Port Orchard, who is one of the best photographers that I have ever known. They are here today to say a few words on participation of their part of the program.

Now, I have listed in my report, which will be out next week, twenty-two areas of Puget Sound, evaluating the production possibilities in salmon, mainly, and other food fish in the Puget Sound areas.

My experience in meetings such as this with Army Engineers, with Reclamation, Fish and wildlife and government agencies in the past, leads me to wonder, Colonel, what the passport is. When I got in the Army, I got in in about three hours when they hit Tokyo back in about 1951 when the war was on in Korea and I didn't get the briefing you fellows have had, but a Task Force doesn't sound progressive enough to me for some reason, I like to see a combat force put into action, because at all of these meetings that I have attended, and there have been many across this country and I worked two and a half years, by the way, as a staff member for the United States Senate Committee in interstate and foreign commerce, now called Commerce Committee, John was back there with me, you remember that, you remember Senator Jackson, I was over on Senator Magnuson's staff, one of the greatest things that ever happened to me was to get a chance to see how our laws are made and how our government functions, but I still think there is something wrong with our fisheries in the management of our water resources and I am sure I speak for a lot of people, people are not happy with the government's handling of these resources, particularly where it involves fisheries. Fisheries, I have been told a number of times in meetings of this kind, have no water rights. Of course, our boys got in trouble and I became internationally known as a controversial subject because I disagreed with that concept. I think the fish have the first water right in these areas, in these waters because the Almighty put them there before the coming of the white man or the coming of man in the vast habitation of this land.

Now, I would like to get on briefly and tell about my program. It will be printed, copies circulated. We have five projections here. I would like to hold them up, if I may, and tell you something about them.

Here is Dungeness Spit, 1,200 acres of water and five miles of the most beautiful beach area on the Pacific Coast. The Dungeness River comes out right over here (indicates). There are five miles of water a little too rough for small boats to land, it's in the Strait area, right across from the San Juan area, but by putting a dam here with small boat locks, we can use this for navigation, fish farming, swimming recreation and for other purposes. This spit is one of nature's handiwork where if we put it into full production of reared fish, we can produce more salmon than a good-sized river.

Now, I claim that we need to go to these areas

because we are running out of rivers fast. Three-fourths of all the natural spawning areas of salmon on the pacific Coast has now been inundated by the construction of hydro-electric dams, and there are more dams in the planning so it won't be long before we have no water left in the principal spawning areas of streams on the Pacific Coast, at least from here south, for the maintenance of this resource.

Now, I would like to hold up briefly these other five projects. Here is one close to Anacortes, Fidalgo Bay, 700 acres of water. I have it projected with my assistants here into a fish farm with marine locks letting small boats go in and bridge here and the Great Northern Railroad, here is 700 acres of water that is now a mudflat, and the advantage that we have in the twelve-foot approximate tidal variation from extreme high to extreme low or average high to average low, we have ahead there that we can get tidal interchange to maintain an ideal situation for farming of salmon.

I have proved here that salmon without a river is entirely possible in the State of Washington and that large scale fish farming is the only possibility we have in maintaining this resource which has fallen to half its total production on the Pacific Coast in the last fifteen years.

This is proposed here to maintain a water level at or about average high tide with one to two foot tidal variation. It creates a salt-water lake, improving shoreland facilities which now part of the time is a mudflat.

Here is an area projected as a fish farm, those in the San Juan Islands, I am sure, would be interested in, Fishermen's Bay on Lopez Island, 450 acres, surface acres of water, where we again can rear large numbers of salmon, these salmon coming back to these areas of release from the sea, come back in sufficient numbers where we might take ten times or more the spawn that we originally started with, in spite of going through the gauntlet of 500,000 sport fishermen and a mass of trollers, purse seiners and gill netters throughout the Straits and Sound area and off the coast of Washington, along Vancouver Island to central Alaska.

We have to project here multi-purpose uses of water by bringing in these boat locks to support other uses to justify the impoundment and controls necessary and to satisfy other interests in the area. This is only two hundred feet across here to the entrance of Fishermen's Harbor in Lopez Island and it is solid rock formation. Here's a narrow split where we get circulation and can take water in or out, either way.

Here is another kind of fish farm. I don't know, Colonel, if you have been in Korea, you might have seen some of this. This idea originated in Hokkaido, Japan. There is three-fourths of this river diverted into an old channel in the fish farm, and the Japanese are producing salmon in that river. They have diverted a steady flow of water through that old river bed or branch of the river and it creates an ideal situation for farming young fish. Here we have the Old Stillaguamish River Channel taken off of Hat Slough. It runs down to the point of Stanwood five miles. We add five miles by putting in two small dams and diverting water into this area and we can farm more fish in the total output of all the salmon hatcheries in the State of Washington.

Now, that means something to the sports and commercial fishermen of this state and to Canada; and by the way, Canada catches about half of all the fish that we turn out of our rivers that mature along the coast controlled fisheries.

I believe that this is about the best place we have and the easiest to get into production for farming fish on a large scale. It also goes along with the Army Engineers' projection in the past to provide flood control for this downriver area. It goes hand in hand with farming fish in the old Stillaguamish Channel. Also, we can flush out more water in front of the town of Stanwood to maintain more sanitary conditions from industrial development of food processing in the city.

I have one more here, one more picture. Here is Drayton Harbor at Blaine 2,700 acres of salt water and about 300 acres in each of these areas, California Creek and Dakota Creek are fresh water. Here we have an ideal combination of hydraulic environment in a basin area that we can produce and make up for, to a large extent, losses to salmon incurred in streams that are now inundated by hydro-electric dams, and I think generally, particularly you folks of the Army Engineers, serious consideration should be given because you have spent $180,000,000 on fishways in the Columbia River and you build one more dam and they are all inundated, they are all useless, and there will be no spawning ground left in that area.

Here we have for the first time a projection that shows a way out, a way to save the fish that are now being destroyed or have now been lost through these other developments.

If there is some doubt in the minds of you people on the merits of artificial production of

salmon, I suggest you go the the Sammamish River Dam where they take the eggs with the sand and gravel operation above Burlington and see the fish that are coming there now and see the fish that are reared artificially coming back to the Green River Salmon Hatchery at Auburn and the Deschutes Basin at Capital Lake, entirely artificial, and the only places that we have any salmon left to any large extent in this state or in any state on the Pacific Coast this side of Alaska is those areas planted by artificial production, by the artificial rearing of fish.

Now, we have gone so far that we have simplified this operation and we could have portable incubation stations. We could take our eggs from Alaska, Canada or anyplace where there is an abundance in the run of salmon of some species, take four million eggs and stack incubation trays in a forty-foot van and ship them anyplace in the world then they can finish the incubation stage and a short time rearing and liberate them to streams and basin inlets to help build a new industry or maintain the salmon fishery.

Now, I have worked for forty years in fisheries and for twenty years I have given serious thought to the maintenance of this resource by every means possible, and because I have stayed with the fish and become a man who I felt loyal to the fish first, I have become an international controversial subject and I think I will remain so for as long as I live; but I have studied history a bit and I think history shows that anybody who has developed new ideas and projected something a little different for the benefit of man has been a controversial subject.

Now, I have two fine men who have worked with me.

MR. RICHARDSON: Mr. Reporter, will you accept for the record any additional statements these gentlemen will make now?

MR. MOORE: These are the most important days for the Puget Sound and I think there is going to be a congressional hearing one of these days on the matter of what is happening to our fisheries, and I think your Task Force may set the pace and turn the tide if we can get these water evaluations in the right coordination and save these important resources.

Mr. Jim Wilson, he is one of the best aerial photographers in the country and has given his time for three years to help me out without charge. Mr. Glen Davison, an engineer and designer who has made these projections has given a lot of his time, and, gentlemen, I think that's about the height of my presentation because I have a whole documented program. The State is not aware of all this yet because I just submitted to the printer and it will be out at the end of this week.

Thank you.

MR. RICHARDSON: Thank you very much, Milo Moore.

I would like to now call on the Chief Engineer for Seattle City Light, Mr. Herbert Strandberg.

Herbert V. Strandberg was called as a witness:

(Prepared statement of John M. Nelson submitted. See Exhibit 5)

MR. STRANDBERG: Mr. Chairman, as Chief Engineer for Seattle City Light, I would choose to make a short statement here. We have submitted a brief statement to the Committee or the Task Force in regard to the Skagit project, and I just returned from a very delightful fishing trip on the reservoir.

We have in connection with the Skagit project some future possible developments. Most of you probably know of the increase in height of the Ross Dam which will provide for additional storage for power and flood control. This has provided already a substantial amount of flood control.

The next thing downstream affecting diversion is diversion of streams into the Diablo Reservoir. On Thunder Creek, there is a potential project which has a capacity in the nieghborhood of a hundred to a hundred and fifty thousand kilowatts. With the building of a dam in the upper reaches of Thunder Creek, there is an ideal storage reservoir there that would provide a hundred thousand acres of storage, and the augmented plant down at Newhalem by the installation there and delivery of water to it through a nine-mile tunnel.

Then we have had in operation on the Skagit for two years a construction power plant which is in need of rebuilding and it is possible to utilize more fully the discharge of Newhalem Creek, small but still a source of energy, and just above the mouth of Bacon Creek is the Copper Creek project which we have had interest in for some time; and it would provide further development of an additional hundred and fifty feet ahead on the Skagit and some reregulation of the Skagit River in connection with the over-all operation of the power plants on this main stem of the Skagit. It would be beneficial and certainly have some effect on the water resource development downstream.

We have these plants on a preliminary study and we will still be ready to report on the Copper Creek project.

The recent developments in the power supply in the Puget Sound area search for power will take some years into the future, probably into 1980, and we feel that during this period, which is in the period of this water resource study, these projects will become feasible from a power supply standpoint and we hope that they will be fully considered in this study. Because the information we have already submitted is rather sketchy, we would like to have the opportunity of submitting information in greater detail so that the forthcoming report of the Corps will be complete in regard to these plans.

MR. RICHARDSON: Thank you sir.

We will conclude the morning session with the gentleman whom I will introduce in a moment, and immediately after lunch, we will reconvene at 1:15 here and hear from the folks from Whatcom County that have been here. The final one this morning will be Mr. Fred Ovenell of the Public Utility District.

Fred J. Ovenell was called as a witness:

(Prepared statement paraphrased. See Exhibit 6)

MR. OVENELL: Ladies and gentlemen, my name is Fred J. Ovenell, Manager of the Public Utility District No. 1 of Skagit County, Washington. We operate a water system serving close to 8,200 domestic, commercial and industrial customers residing in central and western Skagit County. Outside of the 250 customers on Fidalgo Island, about 5,000 customers are located within the cities of Mount Vernon, Burlington and Sedro Woolley. The balance of them (nearly 3,000) are spread over the area from Allen on the north to the south end of Fir Island, and from LaConner and Bayview on the west to nearly three miles east of Sedro Woolley on the east. This extensive distribution system involves around 275 miles of mains.

I am going to extract just a few statements from this statement which will be submitted so if the continuity is a little broken, you will understand.

As a water utility whose principal service area is within the flood plain of the Skagit River, and whose important supply mains must needs pass through this lowland area, we strongly support the continuation of studies designed to determine the most effective and economical methods of providing the maximum practical protection from the recurrence of the devastating floods which have wrought so much havoc in former years and which still threaten our county. With the continuous growth in population and property installations being experienced, the value of both of these in the exposed area becomes sizably greater each year. Until reasonably controlled, the flood threat in Skagit Valley remains our No. 1 hazard. It is to be hoped that a feasible plan, acceptable to the great majority of the affected citizenry, may be developed.

Certainly a study of the Skagit River Basin on a comprehensive basis is a desirable step forward. As a resource with great potential as a valuable asset to our county, the compilation of data is essential to its intelligent and efficient use in the public interest. while the economy of the county is considered relatively sound, the addition of desirable types of industry to widen the tax base and provide greater year-around payrolls would greatly improve the business climate by supplying increased opportunities for its citizens. It is hoped that the benefits to be derived from the fuller ultimate use of the Skagit River will become a resource which will contribute to the sound economic growth of this county and such benefits not be siphoned off to other areas already having a more balanced economy.

The Skagit district, formed by vote of the people here in 1936, sensed the greatest need of our county to be in the field of an adequate water supply and distribution system.

During the 25 years of operation the approximately 270% growth in customers represents an increase in population served from 10,000 to 25,000. If the same rate of growth occurs during the next 25 years the population will reach 70,000. Gallonage needed to meet maximum summer usage has increased from about three million gallons per day to over ten million gallons per day during this period.

The Utility District has placed emphasis upon long-range planning for many years.

Basically, these studies make it apparent that the best water and the most economical source of supply in the long run can be obtained by a gravity system using surface supplies from the nearby mountain streams. This situation has been reaffirmed by other communities such as Vancouver, B.C., Bellingham, Everett, Seattle, Tacoma, Portland and many others.

While notable advances have been made in the science of water purification, our public health authorities are not at all sure that modern treatment

facilities are efficacious in the removal of certain viruses. In fact, the evidence is substantial that the infectious hepatitis virus will survive for weeks under conditions normally considered unfavorable for survival and require much heavier applications of chlorine than do the bacteria for which water is normally treated. This is the principal reason why water purveyors as well as public health authorities who carry a high responsibility for such matters take a dim view of treating polluted waters for public supplies when relatively uncontaminated sources are available. In addition to the safeguards involved there are obvious aesthetic and phychological considerations favoring the use of water which has been protected at its source. Even where treatment is resorted to there are the possibilities of mechanical failure of the apparatus which haunts the water industry wherever it is dependent upon the process.

For these reasons, we believe the public interest requires the allocation of a very small fraction of the watershed for the purpose of supplying a first quality potable water to the people of the county.

It is to be hoped that your study will give full and favorable consideration to the future requirements of our county with respect to its water supply and that not only the quantitative but also the qualitative needs be provided in your much needed evaluation of this resource. We appreciate the opportunity to present this information to you.

MR. RICHARDSON: Thank you very much.

The last card here is my own and I don't intend to say anything.

We will reconvene at 1:15. In the event there is anyone who has not yet turned in a card and desires to speak this afternoon, we would appreciate it very much if you would do that at the beginning of the 1:15 period this afternoon. Thank you.

(Whereupon a recess was taken until 1:15 o'clock, p.m.)

After recess (whereupon, the hearing was resumed, pursuant to the taking of the recess, at 1:15 o'clock p.m.)

MR. RICHARDSON: Good afternoon.

In advance of the presentation by the folks from Whatcom County, we are going to have one more general statement, this by Mr. John N. Plancich, Past President of the Puget Sound Salmon Canners Association, Manager of the Fishermen's Packing Corporation. Mr. Plancich.

John N. Plancich was called as a witness:

(No prepared statement)

MR PLANCICH: Mr. Chairman and gentlemen, I happen to be the fortunate one to go on the stand and talk today for our organization, as I am the Past President. Our President, Mr. Norberg of the Pacific American Fisheries is also present at this meeting. I would like to expand on his introduction.

The Puget Sound Salmon Canners Association is an association of salmon canners of the whole Puget Sound area which represents ninety-five percent of all the canned salmon in this area, in the State of Washington, that is produced actually from these waters that these studies is being made from.

Interest in this study of the development of water and land related resources, our interest in this is the added effect of salmon fisheries resource. This is from the economic standpoint which has produced a large return to the people of the State of Washington over the period of years.

In regard to the various angles and uses of this water, we are not in a position to prepare a written brief today as notice of this meeting was only given to us last week, and I was only advised of it, as far as that is concerned, as of last Friday; however, we do want to be of record of any further hearings that our association be directly advised of any meetings in this because we have had experience, especially with the Army Engineers who are also part of this, in calling meetings over the past twenty years on the dams on the Columbia River which we also took an interest in the fishlife; and therefore, any meetings that are held by the Army Engineers, we always want to be present.

We think that the project of the study of water in the Northwest here, we know it's essential, the use of water. We know that California wants to get our water and everybody wants to get our water, that we should utilize this to the full extent and to the full economic value that we can have for our area directly.

Instead of going further in regard to the use of water here, to summarize the thing up, there is one statement we will make and this is that our organization concurs with the statement made by Mr. Williams from the State Department of Fisheries because all it would be would be repetitious for me to follow all the statements that he has made because I

think the State Department of Fisheries has done a wonderful job in the State of Washington and have been the watch dog for the fisheries, and when I say the fisheries, for all the fisheries and the commercial fisheries for the economic values they produce for the State of Washington.

However, I do want to inject this, which has been mentioned by one of the speakers, Mr. Milo Moore, in regard—well, I'm not talking about his whole program but one phase of his program which encompasses the fresh flow of water of the rivers, the rivers themselves and adjacent lands to the rivers, and I think that this is one that the study should make. This is a proven thing, this is not an experimental deal, this is something that has been going on now through international fisheries in the Fraser River Basin. This is the matter of artificial spawning grounds. This is taking and using the river and adjacent lands in the river proper, not on tidewater, I am talking about the river proper, and making diverting water over artificial spawning grounds. This has proven itself a great success in Canada, not by experiments but it is practical in furthering their program. This program in here should be considered very seriously. Hatchery programs cannot supplement natural propagation, and I think with that, that's all I have to say and give somebody else a chance so they won't all fall asleep after dinner. Thank you.

MR. RICHARDSON: Thank you, sir.

We have a delegation from Whatcom County, and Mr. Conrad Hougen, Chairman of the Whatcom County Soil and Water Conservation District will come to the front here and call on the members of his group for their testimony.

Conrad L. Hougen was called as a witness:
(No prepared statement)

MR. HOUGEN: Mr. Chairman, ladies and gentlemen, I am Conrad Hougen, Chairman of the Whatcom County Soil and Water Conservation District. The policy of our District is to encourage the prudent use as well as conservation of fresh water resources. The District program embraces all the problems and benefits involved in developing and using fresh water for industrial, domestic and agricultural purposes.

The Whatcom County Soil and Water Conservation District is not in itself a technical agency, but at the request of the Whatcom County Commissioners are acting as a coordinating agency for the county in the fresh water management program. Our District heartily endorses the river basin studies for the multiple use of water resources and are pleased to help in the studies being made in our area.

There are a number of speakers here from Whatcom County, each covering a separate phase of fresh water management and control. The first one that I am going to call on, and it's a little away from our agenda for you gentlemen, they have to get back to the Western Washington College where they came from the first one will be Dr. Gerald Kraft.

Dr. Gerald F. Kraft was called as a witness:
(Gave excerpts from published report)

DR. KRAFT: Mr. Chairman, I am Gerald Kraft. I represent the Institute of Fresh Water Studies at Western Washington State College. I have two copies of the report to present. It is a somewhat lengthy report prepared for this occasion. I would draw your attention to the first fifteen pages of this report which contains the substance of that which I wish to say right now.

In 1962, early in the year, the City of Bellingham first diverted the waters of the Nooksack River into Lake Whatcom. At this time, the lake effectively became a part of the Nooksack drainage area of the Nooksack system. At this same time, we, that is Dr. Flora and I, decided to undertake a study of the lake and solicit support from the Water Board of the City of Bellingham, which they were very quick to give us. They contributed enough money to undertake a study, a rather detailed study of Lake Whatcom with one of the prime functions to see what happens when water from glacial melt enters this lake which had previously been fed only be a small watershed area of forty-five square miles.

At this point, I am sorry I have no pictures to show you of Lake Whatcom. If you don't know what the lake is like, it's a rather large lake, 5,000 surface acres, approximately 700 acres of water and lies just within the city of Bellingham. It's a big bathtub more or less, very conveniently located as a water source for the city.

We undertook, then, this detailed study, as detailed as we could make it with our limited funds and limited energies as well. I will draw attention only to two aspects of our study, the measurement of the concentrations of coliform organisms and the concentration of oxygen in various parts of the lake.

Here, also, I will just summarize what is given in

numerical facts in the text of our report. Coliform organisms, as we see them, are indicators of potential contamination by human fecal material and pathogenic organisms, that is, organisms dangerous to man. They are also indicators of other kinds of pollution which may be entering through the same sources.

We found, briefly, two or three things. There is a source of contamination in the inlet waters, that is, the waters coming into the lake, probably, and I here emphasize only probably, not of human origin, a rather high concentration of coliform organisms enters the lake at the southeast end and flows generally northwestwardly, this is the general flow of the lake, flows into the northern area, but as the water moves northwesterly, the concentration of coliform organisms drops either by dissolution or destruction by sunlight or whatnot, then the concentrations builds up at the north end of the lake near where the water supply for the city is taken out.

We can really not draw any conclusions from this statement. It appears that the incident of coliform organisms is highest in the areas where the greatest recreation use takes place and areas where the heaviest residential concentrations are found. These are only guesses, however. They are facts but we cannot say this is a cause and effect relationship.

The concentrations of oxygen is high throughout all parts of the surface of the lake. It's high, of course, as it comes through the inlet. As the water moves northwesterly into the area where it is taken out for industrial and domestic use, the concentration of oxygen drops in the bottom water, that is, the water near the bottom of the lake where the sources are actually taken out.

I think at this time I will say nothing more. I would like to have Dr. Flora introduced next. He will add to my comments and has some of his own.

MR. HOUGEN: Thank you, Dr. Kraft. Dr. Flora.

Dr. Charles J. Flora was called as a witness:
(No prepared statement)

DR. FLORA: You can always tell me from Kraft because I have more hair on my face.

We hope to continue our research program for many years to come, and in general, we expect to amplify to basic areas of research.

I will draw your attention to page 15, which you received, gentlemen, first of all, we hope to continue research in Lake Whatcom proper. We want to continue the present sampling program which is consisting of the oxygen analysis, the coliform analysis, also analysis of depth of light penetration, plankton abundance, et cetera. We hope to continue this for many years. We hope to expand the coliform study so we can point the finger at certain sources of coliform, that is, we hope human fecal contamination.

We want to evaluate current, we want to evaluate sedimentation patterns throughout the lake. We want to evaluate the oscillation of density in the layers, and we hope to institute a number of biological studies, as, for example, productivity of silver trout in Lake Whatcom, the distribution of aquatic insects, et cetera.

We do not plan, however, to devote all of our research efforts to Lake Whatcom proper. We hope to expand into many areas outside of that lake. We hope to develop research projects that will be generally useful to people all over the world.

For example, one of the most vexing problems in this whole business is do fishermen and other recreators actually contribute to the contamination of the lake. Many communities say automatically they do without backing this up. People are restricted from ever using the water reservoir for recreational activities. Other communities, such as Bellingham, there is no regulation whatsoever. We feel that it would be important to explore this vexing problem, perhaps to find a small lake , perhaps five or ten or a hundred acres, and then study this lake in detail for a year with the lake closed for recreation. Then open the lake, study it in detail and close it again and see if, in fact, the recreators have contributed to pollution and contamination of that lake. I think we have too long speculated over this problem. We have gathered far too little data on this very important problem.

We hope that we can some day get financial assistance for this sort of a research and much more. We hope to study the relationship between certain cyclic phenomena in the lake and the health of the community. For example, it has been speculated in the City of Bellingham there is a disease sometimes referred to as the "Bellingham Crud", which is a type of gastro-enteritis, we wonder sometimes if the incidence of this, the percentage of occurrence of it in the population might not be because of certain cyclic patterns in Lake Whatcom. We hope to be able to explore this and perhaps answer this vexing problem.

We would hope to study the effects of industrial expansion of fresh water habitats in the Nooksack delta area. You know there is a new plant coming in to Whatcom County community. We hope to study the effect of the impoundment of the Nooksack River if this should come to pass because then we would have a basis of water two miles distant from Lake Whatcom which could serve as a companion study to the Lake Whatcom study.

Thank you.

MR. HOUGEN: Thank you, Dr. Flora.

The next speaker we have for us will be Dr. Herberg Kariel, Department of Geography, Western Washington State College, who will speak on the recreational aspects of the water planning.

Dr. Herbert G. Kariel was called as a witness:
(Prepared statement paraphrased. See Exhibit 7)

DR. KARIEL: Thank you. Members of the Task Force for the Comprehensive Resource Study, Puget Sound and Adjacent Waters, ladies and gentlemen, I shall read a few excerpts from a recently completed statement which I will hand to you later on.

I have been asked to represent the recreational interests in Whatcom County, and I take this opportunity to thank you for permitting me to present some of these wishes and points of view.

It is gratifying to note that the importance of including recreation has been explicitly stated in the guidelines established for this study. It appears to be realized that, since major benefits accrue to the population from outdoor water-oriented recreation, major consideration should be given to it in planning for the water resources of this area.

That most outdoor recreation is water oriented has been established by many studies, of which the report of the ORRRC is perhaps the best known. These studies have documented the fact that the supply of areas available for outdoor recreation are decreasing at the same time that the demand for such recreation is increasing. In Whatcom County, for example, Coedel–Donovan City Park and Larabee State Park show an increase in use.

It is significant to note that specific mention is made in the guidelines for the study of water resources of this area of three objectives: (a) development, (b) preservation, and (c) well-being of people. It seems to me that most of us are in agreement with these three broad objectives. In speaking on behalf of recreation at a hearing for development I should like to take the opportunity to point out that although recreation interests are indeed often served by development, that they are also frequently served, sometimes more completely, both quantitatively and qualitatively, by preservation.

In Whatcom County, outdoor water-oriented recreation presently includes fishing of various sorts, that is, stream, lake, ocean and beach fishing; water skiing; boating in both fresh and salt water; skin diving; river running; swimming; clamming; relaxing; hiking and camping along streams and beaches; and skiing and mountain climbing on another form of water.

This means that places where these recreational activities can be engaged in by the people of this area are needed and should be made available. Locations satisfying these needs should possess certain site as well as certain water quality characteristics.

First, we need streams, some of these should be left in their wild state without developments along their banks.

Secondly, lakes and reservoirs are important recreation sites. Fluctuating reservoirs are far from optimum for several of the water-oriented recreational uses listed. Suitable swimming, camping and boat launching sites should be developed according to need.

Thirdly, many salt water locations are desirable for recreation. As many shorelines as possible should be retained in their wild state. Public access to wild shorelines is almost totally lacking and is needed.

In summary, the importance of leaving the natural scene in its pristine state is stressed, not to the exclusion of development, but as an alternative to it in certain selected areas. It is far easier to develop an area later than to reverse the process of development once it is begun.

Let us next turn to the dual problem of "How much to plan for whom?" We will need to know how many people will be using the resources for outdoor water-oriented recreation. In planning, it is necessary not only to recognize the total number of people constituting the recreational demand, but also to distinguish between occupational, age and sex groups, for example, so as to permit estimates of the total demand for different kinds of recreational facilities.

More recreation facilities are needed near large population centers than near small ones. People will travel farther to "desirable" ones than to "less desirable" ones. Recognition must therefore be given

to the population centers of Washington, especially the Seattle metropolitan area and to those of British Columbia, especially the Vancouver metropolitan area.

For the reasons stated above, it is maintained that more water-oriented recreation sites should be established. It is felt that although a complete inventory of specific proposals of particular sites for development cannot be made at this time, some guidelenes can be set forth and a few areas or sites which should be developed can be specified.

The concepts of zones of use intensity and zones of site intensity are suggested as useful guidelines. For this area, the location of both Seattle and Vancouver, B.C., as well as other cities needs to be recognized as relevant. By combining these two concepts, the zone-of-use intensity and the zone-of-site intensity, one can arrive at the notions that areas removed from population centers should be less developed than areas near such centers and some areas of less development are to be found even near population centers.

Secondly, the policy of increased public land acquisition is supported. It is suggested that all of Point Francis be acquired and developed as a boat harbor with marina and related facilities. Additional frontage on Lake Whatcom and Lake Samish should be obtained for high intensity water-oriented recreation. Additional comments on this are made in the complete report.

The Bureau of Outdoor Recreation study of the Skagit River is supported. It is suggested that segments of streams other than the Skagit River should also be left undeveloped and, although perhaps not qualifying completely as a Wild River under the Wild River concept, be administered in keeping with this concept by local, state or federal agencies.

Although no final recommendations for reservoirs in this area are made at this time, the whole notion of the need for a reservoir for water-oriented recreation in this area of the state is seriously questioned. While it is possible that a dam on the Nooksack River would result in benefits for water-oriented recreation, it is essential to consider detrimental side effects or costs which might result from the presence of a dam and a fluctuating reservoir.

Five, continued effort to obtain unpolluted water is supported. The question of the effect of poisonous waste disposal from the Intalco plant near Ferndale on the Strait of Georgia waters and adjacent beaches has not yet been settled satisfactorily. Although 80-90% of the air-borne poisons are supposedly to be removed, the process by which this is to be accomplished used fresh water which will be disposed of in the Strait of Georgia.

Six, consultation of nongovernmental studies for water development is supported. Specific mention is made of one such report and is appended in the footnote in this report.

Seven, and last, surveys and studies for recreational needs and supply are supported. In Particular, a survey of salt water and shoreline availability for water-oriented recreation is urged.

It is believed the data to support the statements made are available through the courtesy of county and city planning agencies, the Washington State Department of Natural Resources, Washington State Census Board, U. S. Bureau of Census, U.S. Forest Service and the Border Patrol of the U. S. Department of Justice.

It is recognized that the material presented is general and fragmentary. We hope that it will, nevertheless, provide you with some of the information desired. Further information can, I believe, be obtained from individuals and public agencies as you see need for it. Thank you for giving us the opportunity to present this statement.

MR. HOUGEN: Thank you, Dr. Kariel.

Next, we will have Mr. Thomas Glenn, Manager of the Port of Bellingham, who will talk on siltation of shipping channels.

Thomas J. Glenn was called as a witness:

(Prepared statement paraphrased. See Exhibit 8)

MR. GLENN: The Port of Bellingham is interested in many of the numerous aspects of the Comprehensive Water Resource Study. Let me comment on two.

One of them is the subject of a written statement in the hands of the Task Force already and concerns the emptying into Bellingham Bay of countless tons annually of silt from the Nooksack River. This silt is a washing down, as we understand it, of the uplands of Whatcom County into the Bay and this silt evantually finds its way into three federal waterways that are used by both domestic and foreign commerce.

The Port of Bellingham during 1963, 4 and 5 has budgeted and will spend upwards of $10,000 per year to maintain the depths in the privately main-

tained portion of these waterways only, and that's a small part of the waterway.

We ask that the Task Force examine this aspect in the hopes that the upstream projects will take place and that these uplands will be kept where they are now and not washed down to further silt these navigable waterways.

The second point, and it is not a subject of my report but of others, part of the activities of the Port include the operation of a deep-sea shipping terminal. Vessels depart from Bellingham for sea, many of them do, and before they do, they top up their tanks with fresh water, drinking water, potable water. We have been notified by the U. S. Public Health Service that if the level of pollution in the municipal water supply from which we get this water, namely, Lake Whatcom, exceeds a certain level, we will no longer be able to service international shipping and will be out of business as a deep-sea port. This would be a calamity, so we ask the Task Force, if possible, to take immediate study under consideration to examine the watershed of Lake Whatcom with the objective of preserving a reliable municipal water supply.

Thank you.

MR. HOUGEN: Thank you, Mr. Glenn.

The next speaker was to have been Dr. Easterbrook, but I will leave you the presentation because it just falls on this siltation from the Nooksack Delta, instead of going through and reading it here.

(See Exhibit 9)

The next speaker that Whatcom County has will be Mr. Harry Fulton, Planning Director, Whatcom County Planning Commission, and he will speak on flood damage prevention.

Harry R. Fulton was called as a witness:

(Prepared statement paraphrased. See Exhibit 10)

MR. FULTON: Members of the Task Force and ladies and gentlemen, I thought of a crack this morning, but I didn't think it was appropriate, how water could be so dry; but forgive me.

I understood I was going to follow our County Engineer's presentation, which would have given you some forerunner to what I am going to say; however, we will keep that in mind.

I am Harry Fulton, Planning Director for the Whatcom County Planning Commission. This is my own statement, I have not cleared it with them.

First, about the study approach, I want to express my very high regard for the approach being taken; the treatment of the entire subject of water resources in one inter-related whole, rather than separating the various aspects among the various federal agencies and state agencies, should produce very valuable results.

The need for an integrated approach is most clearly evident on the local scene. Our own county, Whatcom, is an example of where water is a matter of every man for himself. The division of water responsibilities leads to disjointed, unrelated policies and projects and overlapping and gaps in coverage both in subjects and in area of coverage.

Now, about the economic study itself, which, as I understand, is already under way, it is primarily oriented to the need for projects and the feasibility in the years ahead. Now, this should be a very useful thing from our standpoint. You see, our residential, industrial and agricultural future are greatly affected by relations we have with the Seattle-Tacoma metropolitan area. We are like a satellite whose course is dictated by the pulls and forces with Seattle as the main body. As congestion increases in Seattle and land becomes more difficult to obtain and large acreages near waterfronts and prices rise, then we stand to get more industry.

I want to suggest that the availability of waterfront industrial sites should be studied on a competitive basis among all of the waterfront areas in this whole Sound because then it will give us an idea of the timing when we could expect to have industrial growth more rapidly than we already have.

This study will also be valuable for many other purposes besides water resource planning, so much so that I want to make a plea for the study to be designed for multiple-purpose planning uses rather than just for single purpose planning use.

Now, the second main point is the need for federal and state, as well as local, policies in order to reduce the damage of flooding. This is the opposite concept from protecting against floods is to get people away from the floods, as you well know. Use of the power to zone against any building development in a flood plain would be greatly assisted by a good example, thus federal and state facilities should be located on high ground wherever possible.

A related suggestion which goes even further is that grants alone through public utilities and facilities should take flooding into account. This includes sewage and water systems federal and state building

installations and Indian reservation improvements and underline the latter.

Even more important is the matter of highway location, which can and does generate urban growth in flood plains. Choices are available where you can get away from flood plains.

Now, a third point I want to request the extension of your flood plain delineation already completed for the Nooksack to cover the Sumas River. Apart from using this information for zoning and building regulations purposes, it is my feeling that signs should be erected to mark all areas subject to flooding. (See Resolution No. 107, Exhibit 11)

Another possibility, and I hope you will investigate this, tax incentives for preventing building in the flood plain and getting up on higher ground.

More broadly, I want to endorse for the following local studies: (1) Early completion of the dam feasibility study for the Nooksack; (2) comprehensive plan for channel improvement of the Nooksack; (3) study of measures to control growing pollution of Lake Whatcom; (4) a study of the feasibility of creating a harbor for fish farm purposes; and (5) a study of our ground water supplies as an adjunct to a sensible plan for water distribution.

Thank you.

MR. HOUGEN: Next, we will have Mr. Jack Lay, Whatcom County Engineer. He will speak on management of the Nooksack River.

J. T. Lay was called as a witness:
(Prepared statement paraphrased. See Exhibit 12)

MR. LAY: Gentlemen, I have already presented my paper so I am not going to read from it.

I am representing my own office as County Engineer of Whatcom County and also all three of the gentlemen in my office mentioned they would like to be here, but with all the additional activity that is going on in Whatcom County right now, everybody is pretty busy and we have very little time to go around to meetings.

This phase that I have in my program is strictly flood control. We have a lot of very experienced people around our county that can talk on a number of other subjects, but the flood control, the actual control of the river irself is under the province of the County Engineer's office and has been for a good many years; and we have had quite a lot of experience with it, so that is my point here.

The only thing I am going to tell the public here, rather that to read over a long report which I have already submitted, is that our problem in the Nooksack River is primarily erosion. Now, we have a little flooding problem where the ground gets flooded and we have a little damage. We have dikes that go out and cause a little trouble and all that, but our main problem is erosion. We have had, for instance, just this last year, a situation where the flooding that we have had just recently is taking out about six or seven acres of a man's corn field and the corn was planted. Now, that's the kind of thing that's bad.

My paper is on erosion as our problem. I know that the Army Engineers so far have more or less ignored erosion problems but that is the expensive part of our flood control damage.

Now, outside of that, I did lose a group of water districts which have franchises over the county roads with our directors and so forth.

I believe that tells my story completely. Thank you.

MR. HOUGEN: I think I'll change this just a little bit, and I would like to have Mel Hollinger come up and he is going to speak on the Drayton Harbor. Is he here?

Melvin W. Hollinger was called as a witness:
(No prepared statement)

MR. HOLLINGER: Members of the Task Force, ladies and gentlemen, I am Mel Hollinger from Blaine and our County Engineer just said that he represented his office so in order to get in a commercial, I represent Mel Hollinger Realty, land developer in Blaine, Birch Bay. Now, Mr. Dodd, Mr. Blaine and myself are here representing the Chamber of Commerce. I wasn't sure why we were supposed to be here, but I think I have finally got the drift of the meeting and I made a few notes. I haven't handed in a paper here. If anything I say is worth while, I will write it up and hand it in.

Our economy is certainly tied very closely with water. Presently, our economy is primarily recreation and fishing and our port. We think that our future economy is going to be even more tightly involved with water, its multiple development in use, so I would like to present one phase of it. It seems to be our only problem relating to water, we certainly don't have the problems that some have with water.

We have a reducing plant or a sewage reducing plant completed, about a quarter of a million dollar plant for a small town of under two thousand, and we

are pretty pleased with that, and we have pure artesian fresh water. We have facilities to pump two million gallons a day now in our watershed, and we have already made a study and the plans that we have a capacity of approximately thirty million gallons a day, and this is pure artesian water, so we certainly don't have any problem there.

Then our problem must be one of development of another phase of the water, and that's one that you have heard mentioned here several times, the Drayton Harbor fish farm. We are not experts in fish farming, but we can get excited about the potential of this phase and we think that it certainly bears merit of everybody's consideration. This is not a Blaine project, it's not even just a Whatcom County project, but I'm not so sure it's just a state project. These fish don't know international boundaires, and if the Drayton Harbor fish farm was put into effect, it is my underatanding that it would be by far the largest fish farm in the United States and a step forward in this type of fish production.

Now, at present, I understand that we have in the State of Washington a total of about 1,600 acres of fish farms, a total of all the farms combined, and certainly the State of Washington is one of the leading fish states in the nation; and our Drayton Harbor possibility in the one bay is 2,700 acres as compared with the 1,600 total now.

In addition to that, we have two rivers that would go along with this project and be about 300 acres in each of those, and we have just recently discovered that this pure artesian water that we have and seem to have in abundance is perfect for incubation and rearing so we seem to have the whole bundle of yarn, so to speak, to promote fishing.

Now, the total fish that are produced by hatcheries at present in Alaska, Washington, Oregon and California are around 375,000,000, I am told, and from preliminary studies, apparently we could produce close to 50,000,000 in this one fish pond, Drayton Harbor, so you can see the magnitude of that alone.

Now, we are talking, of course, in terms of salmon and commercial fishing, but the nice part of it is that salmon or fish and our shellfish, oysters and clams and so forth, seem to be quite compatible so oysters would certainly be no small part of this fish farm, as well as the production of clams and crabs and other sea life.

I have heard so much about fish farming and it's not my field and it doesn't affect me too closely except I am interested in the community. They kept telling me what it would do for our area, and they said, "If you don't believe it, go down to Westport" so I did go down to Westport, I am sure that a lot of you have been there, but I would like to draw a little comparison with what I found down there. I found out what a salmon can do to a community and to a man. Some of you know this very well, but very briefly, a number of years ago they had the fish but they had no way to fish them commercially and sportwise, it was too dangerous, so their project was not one of bringing the fish in but one of getting to them and they put out the protection dike out there; and now, from a useless sand spit, they have developed where last year there were 153,000 fishermen came into that area and took on the line 192,000 salmon; and of course, fishermen and are a wealthy breed and when they come, they spend; and the field that I do understand is real estate. I happen to know one particular lot down there that sold in tax sale not too many years ago for $75.00 right by Freddie Steel's restaurant and they turned down $20,000.00 for that one lot in 1955 so I can get excited from the standpoint of real estate.

Now, they have working out of there thirty-four charter services with over three hundred boats and their crews. There are over three hundred commercial fishermen and their boats working out of there, so you can see this could be a tremendously important thing to our area up this way.

Now, I think one of the real nice things about this is that we seem to have everything there. There doesn't seem to be any obstacles, it doesn't interfere with anything else. Everything fits in and seems to be compatible with everything else. It develops the recreation, there will be over fifty miles of waterfront, which is now waterfront, however, most of it is mudflats and not highly desirable waterfront development; but with employment would make it some of the most desirable; and one thing that is always touching, and I know all are interested here today, some places of industry and commercial fishing and sport fishing and some of our timber industries are not compatible. This is not to say who is right or wrong or anything of that nature, but they are not compatible. Waste products and pollution control and dams, I missed the big one, the power, they just don't go arm in arm, but all of these forces, even though they have varied interests, are agreed on one thing, there is one possibility of solving the problem that all three have and that would come through fish farms;

and we think, therefore, that this should be given first priority or one of the first priorities in developing our waters in this particular area.

MR. HOUGEN: Thank you, Mr. Hollinger.

Mr. LeVern Freimann, our Agricultural Extension Agent, he will talk on the agricultural need for water.

LeVern Freimann was called as a witness:
(Prepared statement paraphrased. See Exhibit 13)

MR. FREIMANN: Members of the Task Force, ladies and gentlemen, this year the Lord took care of the water needs for Whatcom County. I am not so certain what may happen in the future, but it's difficult to ascertain the needs of water for our district. We do know or we believe that we would require at least five times or more the amount of water that we are using for irrigation in Whatcom County at the present time. Now, we base this on the past, the present and what we think the future need will be for our county.

Not more than fifty years ago, Whatcom County was almost entirely a lumbering county. Today, we have grown into a very important agricultural county.

According to the census, we are the largest dairy county in the Pacific Northwest, we have the largest number of laying hens of any county in the state. We grow ninety-five percent of the certified seed potatoes in the state, and we also have the largest acreage in strawberries. That's a pretty good indication that we have made a tremendous growth in the county and in the future, we are going to need water and we are going to need it in abundance. We are going to continue to grow.

That places us first in western Washington and about the eighth most important agricultural county in the state, so that gives you some sort of an idea of where we stand with reference to agriculture.

We are using water already for irrigation. According to the '54 census, we irrigated six thousand acres of land with supplemental water. Five years later, we increased twelve thousand acres and we have used to the best of our knowledge water to supplement twenty thousand acres in the county, so you can see that we expect the use of water in Whatcom County for agriculture will greatly increase as time goes on.

You may wonder on what basis we make this assumption. It must be remembered that just north of us we have over a million people clamoring for food, and in a very short time, as history goes on, Whatcom County will be one of the main producers of food for that particular area; and when we produce food for that area, we are going to change our type of agriculture, we have been changing it, and that's one reason it's so difficult to ascertain how much water we will need because when we change our cropping conditions, we very frequently grow more highly concentrated crops which require a much large amount of water. As we continue to clear our lighter soils, we are finding that some of the most highly concentrated crops are being grown in this area. We are also producing the highest crop yield per acre on this soil.

A few years ago, the Federal Land Bank refused to loan $5.00 an acre, so it gives you somewhat of an idea what changes are going to take place.

At the present time, we have over a thousand acres of raspberries, and the future is very bright, not only for the raspberry production, but giving you another example, now we have plane service. We thought all our raspberries had to be canned or they had to go into quick freezing. Now, undoubtedly, we are going to develop the fresh market, we can place fresh raspberries in every market in the United States within eight or ten hours.

We have an almost unlimited market and exclusive product for western Washington and western Oregon, which again gives, as an example, the changes which will come and undoubtedly these changes and more concentration in crops will demand a much larger use of water than we ever had in the past.

Thank you very much.

MR. HOUGEN: The next speaker we have will be Glen Hallman, Department of Public Health of Whatcom County. He will speak on the pollution aspects of our domestic water supply.

Glen F. Hallman was called as a witness:
(Prepared statement paraphrased. See Exhibit 14)

MR. HALLMAN: Gentlemen and members of the Task Force and ladies, I would like to quote from a portion or two of my report. As some of the others have said, it may be disjointed, but I do have a copy which I will leave you following my presentation.

The Bellingham and Whatcom County District Department of Public Health has public health jurisdiction that includes Whatcom County and the

City of Bellingham. This department has various public health responsibilities relating to domestic water quality and pollution control, shared with and in cooperation with the State Department of Health and State Pollution Control Commission.

Domestic Water Supply: The first portion of my presentation will deal with the source and quality of domestic water presently used by the City of Bellingham. The second portion will deal with the water supplies in the remainder of Whatcom County. I think this has been pretty well covered by Dr. Flora and Dr. Kraft and others.

I would like to briefly, however, review my suggestion of the needs that I feel are inevitable. The state and federal assistance is needed to study and develop comprehensive plans to assist in the construction of sewers and sewage treatment facilities for the habitable portion of Lake Whatcom. Every means of encouragement is needed in order to assist in this establishment, and the successful operation of a proposed sewer district. There is need to assist in the control and prevention of additional pollution of Lake Whatcom by sewage from such sources as septic tanks and boats with toilets, et cetera, additional regulations and enforcement by our local department is needed; but in order to do this and to adequately enforce our existing and any additional regulations, our own department does need more staff.

In order to continue to provide potable water of acceptable quality from Lake Whatcom, the recommendations of the City of Bellingham's Consulting Engineer, which I am sure more will be said a little later, will be put into effect.

I would like to deal a little more with the domestic water supplies outside the City of Bellingham. Excluding Bellingham, as of our records, to date we have 72 public water supplies in Whatcom County. These provide approximately, to the best of our knowledge, some 5,230 individual services. About one-half of the nearly 1,000 Grade A dairy farms to which Mr. Freiman referred are served by such public water supplies. For convenience, I have divided these supplies into three classifications. The first is deep drilled well supply, these are located primarily in the Everson and Ferndale areas and serve 699 individual residences or services, and they present little or no public health problem as to quality at this time. I have these listed here, together with the number of services, and these coincide somewhat with the ones Jack Lay gave you except that we have more than he listed because they all don't run in the county roads.

The second classification for convenience are shallow wells and treated surface supplies. These provide 453 individual services, and they are rather shallow or drawn from shallow sources and implies that there is no impervious strata between it and the surface and then somewhat open to contamination or potential contamination. Most of these supplies lie in the central portion of western Whatcom County. The water often contains a high amount of iron, and in the last few years, exactly why it is related to agriculture in someway but at least we know there has been an increase in the amount of nitrate in the water, not to a point of danger yet but it is there.

Then we have treated supplies of water, surface water. This includes the City of Bellingham and provides a number of districts and other groups outside the city, as well as themselves similarly, the City of Blaine, which has been mentioned, the City of Lynden with treated filtered Nooksack River water and provides both industrial users and some 1,150 services inside the city and 90 outside to various associations.

Then we have untreated surface water supplies providing a total of 238 services. These are the areas that cause us the greatest concern. It has immediate and potential health threats to them, with unprotected watersheds taking water from unprotected streams and rivers.

Of these many seventy-three public water systems, most of these are water associations that are made up of the cooperatively run board. They are legally organized, but from a public health standpoint, as well as this might be seen from a democratic viewpoint of people involved in local government, this does create real problems for public health people to keep track of what goes on, and I have a list here of some of the problems that we run into in locating water supplies, extending proper main size, cross connections, reclaimed boiler tubing used for pipelines, and you can add all of these problems and this makes it very difficult to maintain supervision and to assist these people in maintaining an adequate quantity of potable water.

Now, the needs relating to domestic water in Whatcom County is as I have listed them. I feel it is very evident that Whatcom County is long overdue for an extensive and coordinated program of multi-use planning to meet the need for water such as you propose in our new process here, that there are a number of studies which have been done in the past. One of the more recent ones is the one done by the

State Department of Conservation on the Nooksack River Basin, but really, little use has been made of many of these studies. As Mr. Fulton and others have said, we need to coordinate this. I think it's very great. I think this is a step in the right direction.

Then, with respect to water pollution control in the county, I would like to say one or two things, and I think I had best read this.

"The need to sewer a portion of Lake Whatcom and develop a comprehensive plan for the Lake Whatcom watershed has already been mentioned.

Detailed studies are needed to determine the present extent and potential hazard to shallow ground water supplies by contamination from surface waters. This is especially so in the central portion of the county with its high water table.

Adequate sewerage systems are needed in the towns of Everson and Sumas. A portion of the former's drainage finds its way into the Nooksack and the remainder, including the drainage from Sumas, eventually into the Frazier River. The City of Ferndale is in need of a modern adequate sewage treatment plant to replace its municipal septic tank. The resort areas of Birch Bay and Point Roberts will in the immediate future will need sewage collection and treatment systems if the beaches are to remain safe for public use."

Thank you.

MR. HOUGEN: Thank you.

I now call on Dr. Gilshannon, a member of the Lake Whatcom Improvement Association.

Dr. Bernard J. Gilshannon was called as a witness:
(Prepared statement read verbatim)

DR. GILSHANNON: Mr. Chairman and members of the Task Force, I will read my statement.

"Number one, I am a resident of Lake Whatcom, a member of the Lake Whatcom Committee and actively interested in clean water.

Number two, Lake Whatcom is used for multiple purposes, including water supply for Bellingham, waterfront recreation and tourism, residential development, fishing, boating and aircraft. Each of these uses requires clean water.

Soils around Lake Whatcom are generally unsatisfactory for operation of septic tanks. This has led to recent consideration by the residents of forming a sewer district.

Number four, cost of sewering is very expensive in comparison with the small population and assessed values. Accordingly an approach to the larger community who will benefit from clean water is now underway.

Number five, we feel that your concern with water quality and pollution as well as federally assisted projects and programs could be of very great importance to the community in arriving at a satisfactory solution to the Lake Whatcom problem.

Number six, we need technical and engineering assistance of both a broad preliminary nature and later on in detailed construction of facilities. You should be able to help with some of this but we have yet to find out just how.

Number seven, one aspect of our thinking on which you might advise us is the most appropriate boundaries for planning and control of the Lake Whatcom Watershed. The legal machinery for sewer districts is somewhat limiting, and we are anxious to learn of any other more broad possibilities covering more than simply construction of sewers.

Number eight, in conclusion, we are starting to get organized, and it is at this stage which any expert guidance would be most useful. We, therefore, ask that you give this matter your earliest possible consideration as an integral part of the Nooksack Basin study. Your action along these lines will receive full endorsement by everyone in the community who is concerned about our present and future use of Lake Whatcom."

MR. HOUGEN: Thank you very much, Dr. Gilshannon.

Mr. Charles Gold, the Bellingham Water Superintendent.

Charles C. Gold was called as a witness:
(Prepared statement paraphrased. See Exhibit 15)

MR. GOLD: Mr. Chairman, gentlemen of the Task Force, ladies and gentlemen, as soon as I stepped up here, I thought I had two main advocations; one, I know I am the Water Superintendent of the City of Bellingham, and my second advocation is sport fisherman deluxe; however, I have been finally rudely awakened because one of my colleagues from Blaine whom we heard recently mentioned that sports fishermen were a wealthy lot and I guess that leaves me out; and leaving me out, I guess I'll go back to my job being Water Superintendent and being perfectly happy.

The City of Bellingham is the largest municipality in Whatcom County. It is also the largest user

of both domestic and industrial water. Our current use of water from the city's sources averages about fifty million gallons a day, slightly more than that, of which the majority, of course, is industrial water. We have a potential, however, a current potential through our screen house and water distribution of roughly 100 million gallons a day.

We recently hired a consulting engineer to make a complete study of our water distribution system, among other things, who now tells us that our current capability is about 122,000,000 gallons a day. I personally feel that he is a little optimistic but it sounds great. At any rate, this current capability, we envision, will not be adequate in the future should the county develop in the manner which we all hope it will.

Through the farsighted clairvoyance of the city and the Water Board a few years back, a project was started and has started to completion to divert water from the middle fork of the Nooksack River to Lake Whatcom. This enhances the city's potential water supply by about sixty-six million gallons of water a day. In addition to this currently operating project, there is a provision that has been made in this project for the addition of about eighty-four more million gallons of water a day by the simple construction of a pipeline down from our dam and a diversion tunnel up in the mountains. This, of course, will give the City of Bellingham a tremendous capacity for expansion and also for the use of industrial water or should I say the distribution of industrial water almost anywhere in the county. This, I feel, is Bellingham's major role in the expansion and economic development of the county, which has recently taken a shot in the arm from this new plant that is being located on the north side of town.

I would like to have you gentlemen know that this city supports your Task Force in its studies, and we would like to draw particular attention of our committee to our large potential for the distribution of industrial and domestic water. I am sure that the City of Bellingham and its Water Department and its Water Board stand number one in line to enhance the development of the city and the county and the state and the nation economicwise through the good management of our water resources.

Thank you, gentlemen.

MR. HOUGEN: Thank you, Mr. Gold.

The next speaker will be Mr. Russell Martini, Manager of the Whatcom County Industrial Development Council, and he will speak on the needs for industrial water.

Russell F. Martini was called as a witness:
(Prepared statement read verbatim)

MR. MARTINI: Gentlemen of the Task Force, Mr. Hougen, ladies and gentlemen, "my name is Russell F. Martini, Director of the Whatcom County Industrial Development Council, whose office is located at 1258 North State Street, Bellingham, Washington. The W.C.I.D.C. is a nonprofit, civic organization designed to help, aid, and assist individuals, companies, and mainly industry in locating in the area for the purpose of raising the economic base. My Board of Directors is made up of representatives of the County and City Planning Commissions, Water Board, Utility companies, state agencies, Farm Bureau, Granges, Chambers of Commerce, labor and I have attached a list for the details of each organization.

The Council was organized August 1960, during which time more than 250 individual files have been built in developing leads. The basic requirements of them varies considerably but has given me a very accurate insight of the basic requirements needed in the area for its future economic development. Needless to say, one of our main assets is our abundant supply of fresh, palatable water. Since the Bellingham system is the largest in the County, I will use factual data to support my statement. The daily usage of water within the city limits of Bellingham varies from 45 to 47 million gallons a day; 37 to 40 is industrial and 7 to 11 is domestic. We are now drawing 60 million gallons a day from the middle fork of the Nooksack River which has a capacity, as I understand, up to approximately 120 million gallons a day. As you well know, the State of Washington was very fortunate in having Intalco locate in our area, and we can expect more to follow. Because of this situation, we must closely scrutinize our major assets and project our minds not to 10, not 50, but at least 100 years and make provisions as closely as possible that will meet future development needs, and with these current methods of doing business with some of these experts, I don't know if we can do that or not; but assuming everything goes forward as is, let's take a check on it. In closely analyzing our files in the Council's office, and assuming that the area will develop in the direction of the interest of these

companies, which include wood and metal products, chemicals, petroleum, food processing, fishing, recreation and agriculture, it is estimated that the 10-year projection of industrial usage of water within the city limits will be increased a minimum of five million gallons a day, which also applies to domestic.

Our major increases are in the Mountain View industrial area which currently includes a refinery and an aluminum operation which will require approximately ten million gallons a day, and with increased population, as well as with increase of industry, I can conservatively project an additional 35 or even 70 million gallons a day within the next ten years. There is hardly a question but what, after the area fully develops, the total usage in the county will exceed 200,000,000 gallons a day.

As a matter of clarification, this additional amount is available from either the South or North Fork of the Nooksack, which would give the area two sources of supply rather than the current single source. Adequate quantities of palatable, fresh water is a must. We now have a natural reservoir contained in the area of Lake Whatcom, and in the past years, its waters have required minimum treatment for human consumption. As Dr. Gilshannon had previously mentioned, the problem of influx of population and laxity of human waste disposal is causing a serious pollution condition in the lake, I cannot help but emphasize that this situation should be closely scrutinized and should be a definite part of your final study, as this condition will drastically affect the future industrial economy in our area. There are, of course, many other basic factors that will affect our future economy, several of which have been covered by previous speakers.

I can assume that individuals on local level in positions such as mine, will have the opportunity to review your comprehensive base study before it is in its final form."

Thank you.

MR. HOUGEN: Thank you.

I now call on Mr. Dick Minor who will speak on water resources and distribution problems.

Richard J. Minor was called as a witness
(Prepared statement read verbatim)

MR. MINOR: Mr. Chairman, members of the Task Force and ladies, the Public Utility Act was enacted to authorize the establishment of Public Utility Districts to conserve the water and power resources of the State of Washington for the benefit of the people thereof, and to supply Public Utility Service, including water and electricity for all uses.

The P.U.D. is the only legally organized local agency with over-all responsibilities and financial capability for management and control of the fresh water resources of Whatcom County.

Up until now, the need for comprehensive water planning and management has been ignored. This has resulted in establishment of some fifty odd water districts and associations which are uncoordinated and unable to fully meet our present water needs. Thus, there is a growing need for a single planning agency. Since the P.U.D. is the only legally authorized agency set up by the Legislature for this purpose, we are in a favorable position to carry out this responsibility. However, we are not yet engaged in any actual water supply or distribution activity. As we see it, we must start a comprehensive study of surface and ground waters for the needs in the foreseeable future.

We are presently in a position to obtain and transport water for the new Mountain View industrial area, particularly the International Aluminum Company which has recently located here, and any other industries which may follow. This would be a beginning step and as other water sources become available, supplies could be expected and extended to other areas of Whatcom County needing services.

As I envision our future financial operations, we should supply water at costs very favorable for industrial, domestic, municipal, agriculture and other users. We do not intend to make any profit, revenue would be expected to pay for all installations.

We of the P.U.D. are very interested in geological surveys for ground and surface water for future distribution in Whatcom County. We do have marginal farm areas that need irrigation water as well as domestic water; thereof, bringing a high level of living to the areas involved as well as to the entire county.

Any demand and supply studies which this Task Force may undertake on the future needs and development of water supplies would be very useful to the P.U.D. Accordingly, we want to endorse this survey, particularly the comprehensive multiple purpose approach which is being taken.

Thank you.

MR. HOUGEN: Thank you.

Before we go into our summary, I see four or five fellows sitting down here just staring at me, and I

would like to introduce the other members of the Board of Supervisors that might take that time, Stan MacDonald, Harry Vandermay, Jack Acker, and then the guy that uses the pitch fork on us, Byron Moser. Is there anyone else from Whatcom County? Don Allan, I don't see anyone else, Roy Brenner, is he here? Stand up, Roy.

Now, I am going to call on Mr. Lidstone, Manager of the Bellingham Chamber of Commerce. He is going to give us a summary of all of these.

Nicholas A. Lidstone was called as a witness:
(Prepared statement included in testimony)

MR. LIDSTONE: Gentlemen of the Task Force and ladies and gentlemen of the audience, the Bellingham Chamber of Commerce, of which I am Manager, and incidentally, my name is Nicholas Lidstone, for the record, has been well aware, of course, of the water situation in Whatcom County for some time. We are perfectly aware of the importance of water to our whole situation in Whatcom County; but to give you an example of how important water is to Bellingham, it it wasn't for Bellingham Bay, they would have no city. Our main products stem from water, our shipping travels on water and water to us is life itself.

In summation of what you have heard from the representatives of Whatcom County, we will take first our current water needs. It seems to us that Whatcom County now possesses ample water in lake storage. That, of course, is in Lake Whatcom. It is fed by pipeline from the middle fork of the Nooksack River, as well as from other sources, and this is ample to provide for the immediate needs of Whatcom County, including domestic, industrial and recreational requirements.

This water in storage must, however, be properly distributed in the areas requiring its usage, the most immediate and important of which, of course, is Mountain View industrial area north of Ferndale.

Now, the projected requirements in all three categories indicate that there will be sufficient water for domestic and recreational needs of the county but that industrial demands may rise above the present capacity of the major water storage area in Lake Whatcom.

Should this situation arise, the City of Bellingham has made provisions for the installation of an additional pipeline from the middle fork of the Nooksack River to Lake Whatcom which would be ample to supply any additional industrial needs for years to come. You heard Mr. Gold from the Water Board of Bellingham make his detailed analysis of this situation.

Lake Whatcom, the major storage area in Whatcom County, will suffer from the usual fate of lakes lying in the close vicinity of large cities in our state, that is, of course, the danger of pollution which will accompany the growth of the communities surrounding that lake. At the present time, the City of Bellingham, with a very effective water department organization, is preparing a program of action designed to completely cope with any rise of pollution of its source of water. You have heard the details, I think, of that very thoroughly explored here today.

The third item primarily concerned to Whatcom County, which comprises the geographical limits of the Port of Bellingham and the City of Bellingham where the major port installations are located, is the siltation and sedimentation of Bellingham Bay at the mouth of the Nooksack River. The Nooksack River has also been responsible for significant erosion of the farmlands lying within this area of Whatcom County. For this reason, the entire county, including the City of Bellingham, is very much interested in the future of the Nooksack River.

The Bellingham Chamber of Commerce urges the comprehensive study of the entire Nooksack River system be conducted in order to cope with these problems of erosion and sedimentation.

As a sidelight on this matter, a school of thought prevails in the Bellingham Chamber of Commerce pointing towards the ultimate reversion of the Nooksack River to its old channel which would cause the river to empty into salt water in Lummi Bay instead of Bellingham Bay.

Now, to a notable large extent, the economy of Whatcom County is based upon the forest products and fishing industries. In order to provide for a continuation of the fishing industry, there must be established a careful balance with logging practices, especially in the uplands towards the headwaters of the streams feeding and forming the Nooksack River. Without implying criticism of the current logging practices, it is submitted that proper maintenance of watersheds is essential to the fishing industry. The foregoing statement applies, of course, to the sport fishing industry also.

To date, there has been no cause for concern on this particular point, however, it is felt that any comprehensive study of the water resources of the

Puget Sound area should include consideration of practices and conservation in fish spawning areas.

The Bellingham Bay portion of the Port of Bellingham represents a major segment of the economy of Whatcom County. It is an excellent harbor, advantageously oriented towards Alaska and the Far East. Its value to the entire northern Puget Sound area demands that its capacity be fully developed.

Owing to the action of the Nooksack River, as previously noted, such ultimate development requires careful and complete study and planning. The Port of Bellingham Management Organization are proceeding along these lines in a very commendable manner, but it's probable that assistance from higher governmental levels will be required before the Port realizes its full potential.

Now, the water resources of Whatcom County are many and permanent, however, within the next twenty-five years, it is estimated that nature's generosity alone will not be enough to meet the community's water requirements. It is felt that nature must be assisted by wise water management. It is strongly felt that such wise management is not encompassed by any plan by locking this resource up in such devices as national parks and wilderness areas. Our water resources must be handled and nurtured on a scientific and businesslike basis.

Thank you very much, gentlemen.

MR. HOUGEN: I think that ends our summary. I would just like to add one footnote to it. The Nooksack is one of our main problems. If you could be up there and see it going down and coming out down there at Marietta, I don't think enough can be stressed on the control of the Nooksack.

Thank you.

MR. RICHARDSON: Thank you, Mr. Hougen. I want to thank your Board for acting as a coordinating agency, not only for this meeting today but for tasks you have taken on in this whole field for the county itself.

We will now recess for coffee and cake, which have been provided by the local Elks Lodge and we will convene at five minutes to three.

(Short Recess)

MR. RICHARDSON: We will now resume. I call first upon Mr. Mr. Halgren from the Port of Anacortes.

Mel Halgren was called as a witness:

(No prepared statement)

MR. HALGREN: I am Mel Halgren, Commissioner from the Port of Anacortes. I am not planning on any speech. I merely wish to present our comprehensive plan for the Port of Anacortes to the Chairman.

MR. RICHARDSON: Thank you very much.

Mr. Geran Dalenius, Traffic Manager of Anacortes Veneer.

Geran S. Dalenius was called as a witness:

(No prepared statement)

MR. DALENIUS: I do have a very short statement. I would like to make several points. Anacortes Veneer is the largest veneer plant north of Everett. It has five hundred employees, and we are vitally interested in the activities of the Port and the development of the Bay.

As the years go by, as our timbers and forests are being harvested, we have to go out farther back in the hills seeking other sources of raw material. We would like to see a deepening of the channel, primarily of Fidalgo Bay. This would enable us to bring in raw material, chips, fuel and other material directly to our plant. These materials are very essential to our operation and to our future and help us reduce our costs and insure a lasting supply.

We would like to actively support a study of Fidalgo Bay and we stand ready to make specific suggestions at such time.

Thank you.

MR. RICHARDSON: Next, we will hear from the County, Engineer, Lloyd Johnson, who will tell us more of the pleasant aspects, I am sure.

Lloyd H. Johnson was called as a witness:

(Prepared statement read verbatim)

MR. JOHNSON: Mr. Chairman, I would like to state on behalf of the County Commissioners that they are sorry they couldn't all be here all day, and I would like to state that I am confining my remarks mainly to the Skagit River and flood control; and I would like to assure everyone on Fidalgo Island and

Anacortes and the development associations and the various groups that they all have the support of the County Commissioners; but I want to emphasize this because I am presenting this side regarding flood control which I am more directly effected. Of course, the County Commissioners have the support of flood control and all of its aspects and work continually to help carry out these programs.

"We of Skagit County are happy to learn of this Task Force making a comprehensive study of the Puget Sound, but we are more particularly interested in the Skagit River Basin.

As we all know, most of Skagit County is directly affected by the Skagit River—its flood threats, its bank erosion, its water supply, its power source, its source of commercial fish and its provision for recreation, present and future. The Skagit River provides our future in industry, agriculture and recreation. This recreation is not restricted to people of Skagit County but is available to all people of Puget Sound and enhances the tourist industry of our county.

Flood control on the Skagit River is vital to any real future of Skagit County. There have been ten major floods in 55 years. The volume of water in these floods was and still is above the channel capacity to carry them, 130,000 cubic feet per second," being somewhat the rating of the Corps of Engineers channel capacity.

I would like to make a few other remarks on comments that were made today regarding the effect of the dams. I think the Corps has generally given the dams credit for containing about fifteen percent of the deep flow of the rivers, so we can evaluate ourselves what this will do.

"The diking districts of Skagit County, of which there are sixteen to twenty, together with the State of Washington and Skagit County, have spent $250,000,00 or one-fourth of one million dollars annually to do dike improvement work and to riprap to prevent erosion. The assessed valuation of Skagit County has now reached almost $75,000,000.00. Over one-third and approaching one-half of this valuation is subject to flood damage. A major flood could severelyy hurt this portion of our valuation, cripple its transportation and commerce, and also play havoc with municipal improvements such as roads, streets and sewers.

Several flood control projects are under study and will continue to be studied by the Corps of Engineers. These projects of the Corps of Engineers should be part of the comprehensive plan so that we may be provided with 100-year flood protection instead of the seven to ten-year protection which now exists.

It is vital that this Skagit River flood control be achieved but not to the detrimental loss of fisheries and recreation.

I believe too often we have opposed a project because it represents some minor changes without considering the project for its end result.

I believe it is necessary and vital that a comprehensive approach be given to our water resources so that our children may live in this county, prosper and yet retain and expand the great recreational areas that we so much enjoy.

In addition to what I have said, I would like to speak on behalf of the Washington State Flood Control Council and summarize some of their thoughts regarding flood control and water study.

We, I am speaking now for the Washington State Flood Control Council, we believe improvement can be made in the lines of responsibility. We are thinking about legislative responsibility. Perhaps some suggestions can come out of this study in the form of new legislation in this respect. I am thinking primarily, we have a federal stream, we have a local man with us and a small amount of plan and a home owner. It's necessary to spend more than the value of this home to preserve this home. We, as a group, tend to believe there possibly is some federal responsibility. We believe it should be looked into so that laws can be strengthened. We like to think of it such as the highway land responsibility. They tell me back over the years that the highway problems were as complex as our water problem today.

Perhaps we could look forward in having federal streams with federal control, local streams with local control responsibilities associated with them. I know it is something that we are not in agreement on, but we do believe that the lines of responsibility could be improved.

Thank you.

MR. RICHARDSON: Mr. George Dynes of Mount Vernon. Mr. Dynes is a farmer and also a Commissioner.

George M. Dynes was called as a witness:

(Prepared statement read verbatim)

MR. DYNES: Gentlemen, the ladies are gone

so it's only the gentlemen left, my name is George Dynes. I happen to be Chairman of the Avon By-Pass Committee. This Committee has been appointed by our Dike District of Skagit County, and I have this statement to make at this time.

"I represent the Committee appointed by the twenty Diking Districts in the areas and districts in Skagit County to work for flood control on the Skagit River. These Districts, along with Skagit County and the State of Washington, are spending annually at this time $250,000 per year on the Skagit River. Our District has gone on record that to give the Skagit River Valley flood protection, we should go ahead with the Avon By-Pass, strengthen the levies on the river and construct such dams on the Sauk and Cascade that are needed to give the valley the 100-year flood protection that is vitally needed at this time, not only by the agricultural interests but also for the economic development of this entire area. A major flood development in this area and with the housing especially in the Burlington and Mount Vernon areas on our flood plains would create a tremendous loss in property values.

Our Committee hopes that the Task Force for Comprehensive Study of the Puget Sound and Adjacent Waters will take in consideration the great value of the Skagit River as a value for its water resources, power resources, recreation and fisheries."

Thank you.

MR. RICHARDSON: We would like to hear from Mr. William Gallagher, the City Engineer of Anacortes.

William F. Gallagher was called as a witness:

(Prepared statement paraphrased. See Exhibit 16)

MR. GALLAGHER: Members of the Task Force and gentlemen, probably it is customary for the home team to come to bat last, and it looks like we're pretty much in that category.

The City of Anacortes and its immediate area is very much concerned with a number of the projects that are being included in this Basin study, particularly with reference to flood control, to recreation and small boat moorage, navigation and to water supply. We would like to propose two projects for inclusion in this study, one having to do with navigation and one having to do with water supply.

The navigation one is an extension of the dredging of Fidalgo Bay. The Pacific Northwest is experiencing a growing shortage of industrial sites that are included in a permanent area and bordering on developed waterfront facilities.

The City of Anacortes, because of its developed waterfront, because of the service of the railroads, highways and light air traffic and because of the availability of water and electric power, has a high potential for increased industrial expansion.

The land factor is being improved through a planned Industrial Park as a first step. To service the industrial area with navigational facilities will require the dredging of Fidalgo Bay and immediately in front of this proposed site.

A study of the feasibility of such dredging is considered essential in conjunction with a survey and marketability study that is now going on through the Urban Renewal project. On July 21 of this year, the City of Anacortes entered into a contract with the Urban Renewal Administration of the Housing and Home Finance Agency for planning in advance for a survey and marketability study for an urban renewal project which is termed the Anacortes Industrial Park. The project covers an area of about one hundred acres of existing land and about fifty acres of would-be reclaimed through a revetment.

The reservation of capital funds in an amount of $2,608,000 has been established by the Urban Renewal Commissioner for this park project. Prior to submittal of the application for this grant, all work approved under the existing planning and survey phase must be completed and satisfactorily completed. Some indication of the dredging operations feasibility by a target date of October 31, 1965 is therefore requested. Some indication of the feasibility of dredging operations by that date should be obtained as a delay beyond this date might jeopardize the city's opportunity to obtain certain funds to be used in this construction.

The Port of Anacortes has indicated their interest in this project by a resolution of November 7, 1963 in which they stated that the Port was desirous of having Fidalgo Bay dredged and that the Port would construct pier facilities when needed in this project area.

The city was advised by the United States Senate Committee on Commerce undertaken September 26, 1963 that the Senate Public Works Committee formally adopted a resolution requesting the Corps of Engineers to review the reports on the Anacortes Harbor with the view of determining whether the improvements to Fidalgo Bay to permit the accommodation of larger vessels should be in-

cluded. The City of Anacortes, therefore, requests that a study be made and an interim report be issued on the feasibility of dredging Fidalgo Bay and that indication of feasibility be obtained by the date of October 31, 1965.

The city also requests that if dredging is considered feasible an estimate of the cost be obtained so that the fund arrangements can be made for start of dredging operations possibly in the spring of 1967. The city will try to provide any information which will assist in this undertaking.

The Anacortes area also is in a strategic location for inclusion in any long-range study of industrial sites.

Now, with reference to the problem of water supply, the City maintains a water system which supplies several major industries and large residential areas. Studies are underway to determine methods and costs of increasing the supply to serve regular growth and to meet probably greater industrial demands. Plans for the expansion of the city water system should be correlated with the long-range supply needs of the entire geographical area.

The City of Anacortes water system obtains its main supply from two Ranney wells on the east bank of the Skagit River north of Mount Vernon. The well supply is supplemented with a small quantity from the river itself and water from the river and wells is pumped under the Skagit River and through a transmission line across the Swinomish Flats, a distance of about twelve miles, to a reservoir located on a high level of the city.

On its journey to the city limits through the transmission supply system, the city supplies water to a cannery at Avon during the canning season, and it regularly supplies two oil refineries, two chemical plants, the City of LaConner and the Naval Air Station at Whidbey Island. Within the city limits, the city supplies a pulp mill, a plywood factory, a shingle mill, fishing canneries and a number of numerous smaller industries, in addition to its 8,500 or close to 8,000 population.

The total demands vary from eighteen to twenty-one million gallons daily. During peak periods of use, the present system as now constructed, is very near its maximum capacity. Over a period of recent years, the city has had inquiries as to its ability to supply additional water demands. Studies have been made and more are in progress for ways to meet this probable increased demand. Recently the City obtained further rights on the Skagit River and now have a water right of slightly over 100,000,000 gallons of water for their wells and river use.

At the present time, studies are being made on the basis of using this water supply from the Skagit River at the location of Avon. This source of supply involves relatively high pumping costs. Early studies indicated that it was not economically feasible to incorporate a gravity supply as a source of supply for the system because in order to obtain the high level required for frictional resistance and for the high level inside the city, the line would have to extend quite a distance back up the river. However, in a long-range view and considering the Skagit Valley as a whole, the gravity source of supply might warrant consideration.

The City of Anacortes, therefore, requests that the needs of the area served by the city water system be included in any long-range plans for water supply to the Skagit Valley area. The City will supply any available information which might assist in this study.

Previously, we had a presentation by Mr. Marvin Mackey of the Bank of Anacortes and Mr. Robert Weller of the Scott Paper Company. We did have this morning some others that wanted to say a word and I am not sure if they are here. Jerry Mansfield of the Planning Commission, is Jerry here?

(No response.)

MR. GALLAGHER: We had Mr. Townsend of the labor organization, I believe that he has left also. Is there anyone else here that would like to add a word to what I have just said?

(No response.)

MR. GALLAGHER: If not, I would like to turn over to the Task Force the Anacortes Comprehensive Plan which indicates the direction that we want to head during the next twenty years as far as the development of the city is concerned and also the more recent report of the development of this Industrial Park concept.

MR. RICHARDSON: The next one I have is D. James Costanti, a school teacher. School must be out by now.

(No response)

Mr. A. F. Harms, who would like to present a statement on behalf of Robert L. Hulbert, Skagit County Soil and Water Conservation District.

Anton F. Harms was called as a witness:

MR. HARMS: Mr. Chairman and members of the Task Force, he is one of the farmers trying to harvest broccoli and some of the crops and thought it

more beneficial to be out there this afternoon, so the Board of Supervisors have prepared a brief statement and are transmitting some other material with the statement. I will read it at this time.

(Transmittal letter read verbatim)

"The study objectives as outlined in the information bulletin for the comprehensive Water Resource Study of the Puget Sound and Adjacent Waters are consistent with many of the objectives and problems of the Skagit Soil and Water Conservation District.

These objectives were most recently expressed through the District's revised program dated August 29, 1963. A copy of the program is attached.

The District Supervisors also expressed their viewpoint at the Corps of Engineers hearing regarding flood control on the Skagit River, held at Mount Vernon on February 8, 1961. A copy of the letter to Colonel Young, with accompanying statement from Anton F. Harms, Work Unit Conservationist with the Soil Conservation Service, is also attached." (See Exhibit 17) "Supplemental photos and the report of the 1951 flood are not included, since this material is substantially included in the District's Program.

The Skagit SWCD Supervisors are also concerned with the adequacy and stability of the salt water dikes which protect many thousands of acres of high value Skagit County bottomlands. These dikes are subject to attrition from tidal and storm action, as well as wave action from water borne commerce and pleasure boats. The possible safe outlet of river flood waters through the salt water dikes is an additional important consideration which we believe should be considered in a study.

One of the major threats to farmlands is the condition of the dikes along the Swinomish should be recognized in connection with future dredging and maintenance of the navigation channel. The District presented testimony concerning dike stability and need for protection at the Corps on Engineers hearing at LaConner on February 25, 1959. Copies of this testimony will be made available if desired by the Task Force. Current revetment operations underway with rock from the Hole-in-the-Wall project is commendable.

The SWCD Supervisors reaffirm the viewpoints presented through their revised Program and at the above named hearings".

MR. RICHARDSON Thank you very much.

I'm down the the last card and it's mine. I don't intend to do any more than thank you very much for presenting the views you have here today. I am sure that everyone knows a lot more about the circumstances of the water resource problems that have been discussed.

The record will be kept open for the balance of the month for anyone who wishes to submit anything in writing to supplement what may have been said here today.

As I mentioned earlier, the second hearing will be held at Everett on the 22nd of the month, and the concluding hearing will be held at Olympic on the 28th.

Thank you very much for coming.

(Whereupon, at 3:14 o'clock, p.m., Monday, October 12, 1964, the hearing in the above-entitled matter was closed.)

EVERETT HEARING

OFFICIAL TRANSCRIPT OF PROCEEDINGS

BEFORE THE

PUGET SOUND TASK FORCE, SUBCOMMITTEE ON COORDINATED PLANNING, COLUMBIA BASIN INTER-AGENCY COMMITTEE

In the Matter of

COMPREHENSIVE WATER RESOURCES STUDY PUGET SOUND AND ADJACENT WATERS

Everett, Washington

October 22, 1964

Cascade Reporting Company

BEFORE THE PUGET SOUND TASK FORCE,
SUBCOMMITTEE ON COORDINATED PLANNING,
COLUMBIA BASIN INTER-AGENCY COMMITTEE

In the Matter of:

COMPREHENSIVE WATER RESOURCES STUDY OF
PUGET SOUND AND ADJACENT WATERS

Snohomish PUD Auditorium,
Everett, Washington,
Thursday, October 22, 1964

Pursuant to notice, the above-entitled matter came on for hearing at 10 o'clock a.m.

BEFORE:

ROBERT H. GEDNEY, Co-Chairman, Puget Sound Task Force
DUANE E. BLUNT, Co-Chairman, pro tem, Puget Sound Task Force

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AREA 2, EVERETT, PROCEEDINGS

MR. GEDNEY: The meeting will come to order please.

I am Robert Gedney. I am Co-Chairman of the Puget Sound Task Force.

A Comprehensive study of the Puget Sound region was authorized by Congress in the 1962 Flood Control Act. This is a coordinated study which is being made by all of the various federal and state agencies who have an interest in the water resources plan. The study is being coordinated under the direction of the Columbia Basin Inter-Agency Committee. This Committee, in turn, has appointed Task Forces to make comprehensive studies of the Willamette and Puget Sound Basins.

In the case of the Puget Sound Basin, the Task Force is co-chairmanned by a representative of the State of Washington and by myself as a representative of the federal agencies.

Today, My fellow Co-Chairman, Mr. John Richardson, is required to be in central Washington for an important hearing authorizing or leading to authorization of an irrigation project in the upper Columbia River region. His assistant, Mr. Al Neil, who has been working actively with the Task Force, is unfortunately detained in Olympia because of the very serious illness of his wife; so they have asked Mr. Duane Blunt, who is the District Engineer for the State Pollution Control Commission, to represent the State of Washington as Co-Chairman at this meeting. Mr. Blunt is to my left.

We are very grateful to the Snohomish County PUD for hosting this meeting and for providing the meeting room, as well as for providing free coffee which many of you have enjoyed.

Our agenda for the meeting will consist of first a series of brief statements by the principal planning agencies of the federal government, a brief statement by a representative of the State of Washington, and then we will immediately proceed to hearings for the counties.

Our normal procedure at these hearings is to call on the counties that are most remote from the hearing area to present their statements first.

Before I begin the calling for testimony, I have been advised that there is a Fairlane in the parking lot, license number AFX 256, that has its bright lights on.

We show no favoritism in calling of the testimony by the public agencies. We normally proceed on the basis of alphabetical order. On that basis, I would like to ask the representative of the Department of Agriculture, Mr. Lewis Kehne, to say a word about the program of the Department of Agriculture.

Lewis F. Kehne was called as a witness:

(See pages 1-3 of pamphlet entitled, "Statements of Federal and State Agencies.")

MR. KEHNE: Mr. Chairman, Mr. Secretary and ladies and gentlemen, the official statement for the participation of the Department of Agriculture in the Puget Sound and Adjacent Waters public hearing is found in the pamphlet which you have picked up out at the desk. Mr. Secretary, I would like to have that entered as the official statement, however, rather than read that, I would like to visit with you for just a moment as to the Agriculture participation in the Comprehensive Study.

The USDA work can be carried out by the Conservation Service, the Forest Service and the Economic Research Service. This is in coordination with the other federal agencies. The Department of Agriculture analyzes and develops projections of the agricultural, forestry and related economies, their use of land and water resources and their relationship to the total economy of the Basin. It investigates and studies agricultural, rural and upstream water and related land resource problems and the need for development.

Now, the water problem studies include flood water and sediment damage to rural lands, impaired drainage of agricultural lands, agricultural drought and irrigation problems, water needs for livestock and rural and domestic uses and recreation, fish and wildlife and forest-based industries. It inventories and analyzes the potential water and related land resource development in upstream watersheds, including an analysis of the water storage capacities, the effect of land use and management practices on water quality and flow characteristics and the potential hydrologic effect of agricultural, rural and upstream watershed developments.

Now, more specifically, because I am from the Soil Conservation Service, I would like to mention some of the Basin responsibilities of the Soil Conservation Service.

We will, in addition to our regular program of assisting land owners and operators, through soil conservation districts, prepare work plans for Public Law 566, Watersheds.

As you know, there are several Public Law 566 Watersheds in various stages of development. Construction on the Saar Creek Watershed in Whatcom County was completed in 1959. Construction is underway in the French Creek and Marshland Creek in Snohomish County. Plans are completed on the Chimacum Creek Watershed in Jefferson County. That one right now is inoperative. Draft copies of the Green River Watershed project have been distributed for review and comment. The Skokomish River Watershed in Mason County was authorized for planning in Mason County in 1959, but however, we have been unable to find a beneficial cost ratio for the proposed work of improvement.

Several more applications for assistance in planning are now being prepared by local sponsoring agencies, and we will continue to prepare work plans on additional watersheds as they are authorized for planning and as funds are available; and through river basin planning, this will give us an opportunity to coordinate watershed planning with the activities of other groups and agencies. This is our basic purpose and intention.

Thank you.

MR. GEDNEY: Thank you.

The next speaker will be from the Department of the Army representing the Corps of Engineers. Colonel Charles C. Holbrook is the new District Engineer from the Seattle Corps of Engineers.

Colonel Charles C. Holbrook was called as a witness:
(Prepared statement paraphrased. See Exhibit 1)

COLONEL HOLBROOK: *Thank you, Bob.*

Mr. Steele, ladies and gentlemen, as Bob mentioned, I am relatively new here and I am greatly impressed with what I have seen in about the six weeks I have been here. It is quite obvious the Pacific Northwest enjoys a tremendous future and that Puget Sound enjoys a very favorable position, both now and with proper planning in the tremendous future that is ahead.

Practically all of you here, I know, are familiar with both the work and the studies and the hearings which the Corps of Engineers has conducted and will continue to conduct in the region in regard to this work. This Comprehensive Study, however, is unique in our experience here and particularly in regard to its membership. The coordination with the various agencies that are concerned in these matters is not new, of course, but the manner of undertaking this coordination for a comprehensive study is new. The Corps welcomes this approach and we are giving this Comprehensive Study our full support. We feel that it meets a pressing need for long-range planning to consider all aspects of water resources development.

Our primary responsibilities, as assigned by the Congress, concern navigation and flood control. However, we always, by choice and necessity, must consider the other aspects of water resource development in the pursuit of our own responsibilities, conservation of water supply, and so forth.

We are well aware of the necessity for this comprehensive plan, as in the case of our separate plans, to fully consider local needs and desires, social and economic factors, and state and federal policies.

This comprehensive study aims at identifying both interim and long-range projects or needs, or those projects which can be justified for undertaking in a ten-to-fifteen year short-range period and a fifteen-to-fifty year longer-range period. For the longer-range projects, we would have to look even further ahead in order to be sure that they were justified.

In addition, this Comprehensive Study, as we view it, should provide a framework within which other projects not conceived at the time of this study, or which develop later, can be considered. The Comprehensive Study is aimed for completion in 1969.

I review these aspects of the study with one thing primarily in mind, and that is to assure you that the Corps of Engineers has undertaken, and will continue to undertake, studies and projects which may fall outside the scope of this study. Some studies and projects may arise which must be dealt with more urgently than is possible under the Comprehensive Study, or they may be conceived too late for inclusion in this study. You have our assurance that this will be done.

In summary, the Corps of Engineers fully supports the Comprehensive Study and is an active participant in it. At the same time, we will continue to undertake projects which arise and have urgent need as well as those which develop later.

Thank you.

MR. GEDNEY: The next speaker is Mr. Carl Huish, who is Assistant Engineer for the Bureau of Reclamation, headquarters in Spokane. Mr. Huish.

E. Carl Huish was called as a witness.
(Prepared statement read verbatim)

MR. HUISH: Thank you Bob. Ladies and gentlemen, it is a real pleasure to be here today to discuss the Bureau of Reclamation's recommendations in the Puget Sound studies.

"The Department of the Interior, because of its broad responsibility in the development of water and related land resources, will play an active part in the Puget Sound Comprehensive Survey. Agencies within the Department have responsibility for planning and evaluating the functions of irrigation, recreation, fish and wildlife, municipal and industrial water supply and power. Many of the Interior agencies have responsibility for collection of basic data relating to water resource development, and some have important land management responsibilities in national parks, Indian reservations, wildlife refuges and on public lands not within national forests.

Interior agencies participating in the Puget Sound Comprehensive Survey include the Bureau of Reclamation, Fish and Wildlife Service, Geological Survey, Bureau of Indian Affairs, Bureau of Land Management, Bureau of Mines, National Park Service, Bureau of Outdoor Recreation, and Bonneville Power Administration.

The Bureau of Reclamation is the principal agency within the Interior Department having responsibility for the planning, construction and operation of multipurpose water resource projects. Although irrigation development has long been a major part of the Bureau's program, reclamation projects are multiple-purpose and in today's planning many other functions such as power, recreation, the preservation and propagation of fish and wildlife, municipal and industrial water supplies, flood control, navigation, water quality control, area redevelopment and sedimentation control are included in development plans.

The Bureau of Reclamation operated in the seventeen western states and in Alaska and Hawaii. In addition to its regularly scheduled program, the Bureau of Reclamation also administers the Small Reclamation Projects Act of 1956, which provides for loans to local organizations for water resource development of limited size. Although such projects are primarily for irrigation, other water uses may be served.

In the Puget Sound Comprehensive Survey, Reclamation will be concerned primarily with the identification of irrigation needs and potentials and in the development and evaluation of plans for serving these needs. Many people ask, "Why plan for irrigation in the Puget Sound area?". The facts are that although annual rainfall is high in this area, summer precipitation is not adequate for optimum growth of crops, and crop adaptability is limited because of a lack of summer precipitation. Rainfall from June through August is only about half the amount required for fall crop production. Through irrigation, a farmer gets much higher yields from crops which mature in early July or August and the farming operation is more profitable. There are about 60,000 acres now irrigated in the Puget Sound area as compared to about 45,000 acres in 1959, a growth of thirty percent in five years.

A large increase in irrigation is expected in this area in the future as more people recognize the benefits to be gained. Much of the truck crop and high-value row cropland now in production is being lost to urban expansion. With irrigation, other areas suited to the production of crops can be developed to meet the increasing demand and compensate for the areas being lost to urban development.

Our preliminary studies show the area covered by this hearing includes about 80,000 acres of potentially arable land. This doesn't mean that all of these lands should or could be irrigated. But, rather it does point out the general magnitude of the resource potential of this area.

You have the question in mind as to what you should do if you feel there is need for irrigation in your area. First of all, let this be known either at this hearing or subsequent to it, if you prefer. I must emphasize that our planning activities are dependent to a great extent on a showing of interest by the local people. This applies not only to the degree of detail of the studies but also to the plan of development and eventually the construction of a project.

You might be interested to know that the costs allocated to irrigation in a multipurpose project are reimbursable over a fifty-year period without interest. However, the capital cost must be repaid to the Federal Treasury. This is accomplished by the irrigators up to their repayment ability. Present policy is such that costs beyond the irrigators' ability to repay are paid into the Treasury through surplus power revenues or other similar means. In a multi-purpose project, the costs of some functions such as flood control, water quality control and some portions of recreation and fish and wildlife are nonreimbursable. Costs associated with power and municipal and industrial water supply are reimbursable with interest.

I would also like to point out several steps necessary to obtain an irrigation project. First of all,

the studies must show the project would be economically justified before the Congress would consider it for authorization. It must also be shown that reimbursable costs will be repaid within a specified time period and the sources of repayment must be identified. The irrigators must be willing to form a legal entity such as an irrigation district to contract with the government for repayment of the portion of the irrigation costs that lie within their repayment ability. Local groups must also be willing to support the project before the Congress and furnish satisfactory evidence that they are in favor of the plan.

The Bureau of Reclamation studies will be carried out by our Upper Columbia Development Office, North 1322 Port, Spokane. Mr. Rupert B. Spearman, Area Engineer, is in charge of this office."

Thank you.

MR. GEDNEY: Thank you, Mr. Huish.

Our next speaker is Mr. Grant A. Woolley, representing the U. S. Fish and Wildlife Service. Mr. Woolley serves as a coordinator for the Fish and Wildlife Service in the Puget Sound Comprehensive Study.

Grant A. Woolley was called as a witness:
(Prepared statement read verbatim)

MR. WOOLLEY: Mr. Chairman, ladies and gentlemen, "my name is Grant A. Woolley from the Bureau of Sport Fisheries and Wildlife, U.S. Fish and Wildlife Service, Portland, Oregon.

It is imperative that the comprehensive plan for Puget Sound and Adjacent Waters include full consideration of this region's valuable fish and wildlife. Such consideration, as well as necessity for coordination with other aspects of water resource development, is clearly defined in the Fish and Wildlife Coordination Act.

Recommendations of the Senate Select Committee on National Water Resources have set the stage for development of a workable program for fish, shellfish and wildlife. Water and land resources policies outlined in Senate Document 97 will guide its formulation.

Fish and wildlife planning will be the responsibility of the Fisheries and Wildlife Technical Committee, designated by the Puget Sound Task Force for this specific purpose. The Bureau of Sport Fisheries and Wildlife will work in close harmony with the many agencies, groups and individuals involved.

Data pertaining to fish and wildlife populations, distribution and habitat, sportsmen harvest, commercial catch, and man-days expended by hunters and anglers will be accumulated. Investigations to determine possibilities for increasing fish and wildlife populations will be made. In this sector of the Puget Sound region, the Snohomish River Basin will undergo active study during the coming months.

The Washington Department of Fisheries and the Washington Department of Game will provide much of the essential data required. The Bureau of Commercial Fisheries will be consulted whenever commercial fisheries are involved.

The benefits to be derived from inclusion of protective and enhancement measures for fish and wildlife in preliminary states of water development planning will be significant and lasting."

Thank you.

MR. GEDNEY: Thank you, Mr. Woolley.

Our next speaker is Mr. Francis L. Nelson, Sanitary Engineer Coordinator for the Public Health Service studies in the Puget Sound Comprehensive Study. Mr. Nelson.

Francis L. Nelson was called as a witness:
(Prepared statement read verbatim)

MR. NELSON: Thank you, Bob. Ladies and gentlemen, "the Public Health Service of the U. S. Department of Health, Education and Welfare is the federal agency charged with water resource planning responsibilities for municipal and industrial water supply and water pollution control. In the Pacific Northwest this activity is carried out by our Water Supply and Pollution Control Program office in Portland. All of these studies are done in close cooperation with the state and local regulatory agencies; for instance, in the Puget Sound Region we are working very closely with the State Department of Health and the Pollution Control Commission.

Authority for our planning responsibilities is contained in the Public Health Service Act and in the Federal Water Pollution Control Act. With regard to water quality management planning, the latter Act states, in part, and I quote: "In the development of such comprehensive programs due regard shall be given to improvements which are necessary to conserve such waters for public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, and agricultural, industrial and other legitimate uses".

In developing the water pollution control plan in accordance with this language, an examination is made by stream reach of all present legitimate water uses and those land management practices which influence water quality. These uses are projected to future levels of development and the effects of these uses on water quality are estimated. On the basis of quality objectives established for downstream uses, controls or management techniques are ascertained. In some instances, management and control of pollutants cannot by themselves maintain quality at suitable levels to permit full utilization by downstream users. In these cases storage in federal reservoir projects may be necessary to increase low stream flows and thereby improve the assimilation capacity of the stream during critical periods. The ultimate aim of a quality control plan, therefore, is to present the alternatives and consequences of various combinations of land management, waste control and flow regulation that are feasible in meeting quality objectives.

The municipal and industrial water supply plan provides projections of water requirements expected to be exerted by future populations and future economic conditions. It outlines the various means available to meet these water demands. The potential sources of future water supply may include, but are not necessarily limited to, federal reservoir projects. It should be emphasized that in developing water supply plans they are developed on an areal basis and are not intended to supplant the detailed plans and specifications required by the water purveyor through his consulting engineer.

The success and value of these aspects of the comprehensive water resource developing planning study of the Puget Sound Region rest on how realistically they reflect the local needs and desires of the people. My purpose in being here today is to hear these needs and desires from you people in the central Sound area."

Thank you.

MR. GEDNEY: Thank you, Mr. Nelson.

That concludes the testimony by the federal representatives. We will now hear from the state people. Mr. Blunt.

Duane E. Blunt was called as a witness:
(No prepared statement)

MR. BLUNT: Ladies and gentlemen, I want to welcome you to this meeting. As a representative of the State, I have to apologize that we don't have the genuine article here, Mr. Neil. His wife became quite ill and it was impossible for him to get here. Of course, a last-minute substitute like myself will have to suffice.

I don't want to speak too much for the State as a whole, I am sure Al had quite a prepared speech which would have been more informative, except to say that all of the water uses and water development planning and water needs that you have heard stated by the previous speakers, they are all part of this State's functions.

Speaking for myself, from a more grass-roots level, I am a District Engineer for King County, and we, of course, in the most populous county of the state have all the problems magnified that this state has as a whole. We get into drainage, into irrigation, into water quality and water use of every sort.

I would like to say that we do not finance as such so many of the projects as you will see financed by the federal government, at least to the same extent, but we are part of the planning, we are part of the allocation of water to different uses; and we are naturally hit on the day-to-day management of it.

The Pollution Control Commission is concerned mainly with water quality, and by water quality, I mean for every possible use, not only of human use but of fish and game and recreational.

In the area of water quality, we have to adjust, you might say, to many demands on water. We are consistently looking to the future in developing inter-agency mechanizations which will allow us to direct and develop for the future all the demands which are coming up; and of course, we see many demands now which are not important as yet but which are accelerating within the state now and particularly the county which I am active in.

Thank you.

MR. GEDNEY: Thank you, Mr. Blunt.

Our next speaker will be Mr. Al Koch who is District Engineer for the State Health Department located in Seattle, Washington.

Before Mr. Koch begins, we have a Lincoln Continental, AWM 302, with the lights on and a maroon Volkswagon, APR 490, with the lights on.

Alwin G. Koch was called as a witness:
(No prepared statement)

MR. KOCH: Ladies and gentlemen, I finally spotted the ladies, I see the lady there, the last

speaker said ladies and gentlemen, but I do see a lady here, my speech is going to be real short and to the point because my only purpose here is to recite very briefly the basic principles of the State Health Department's policy with respect to public water supply and its relation to watersheds and surface supplies in general.

Because these are basic points, I am almost forced to read them as points here. First, we feel that water must come from the best available source that is possible for the community involved.

Second, the water purveyor will be required to do all that he can to improve the water supply as it now exists, wherever that may be, and to do everything he can to legally and financially to make these improvements; and he will be required to do everything he can to change the source of less than desirable water source to a desirable water source. He will be required to provide a high-degree of treatment on all surface water supplies; however, the degree of treatment, while it can go as high as what we generally consider complete treatment, requiring coagulation and treatment, infiltration and disinfection before being delivered to the consumer, still this will be tempered by the considerations of what kind of watershed control exists, what kind of uses are on that water and how tight are the controls on these with respect to preventing or eliminating contamination; and by contamination, we are considering not only human contamination but certain types of chemcial contamination that come about through use of the land or protection of the timber resources.

The variety of types of watersheds are involved in this. Watersheds by type, I refer primarily to their general location with respect to major sources of contamination, such as communities. Watersheds high in the mountains certainly can't be considered the same as a watershed that is located adjacent to a major or minor community. Our past experience has shown that certain watersheds that were in the source of contamination are under very strict control, including the human population necessarily present in the watershed, and these watersheds to the degree of treatment required may be just simple chlorination or disinfection. When we say simple disinfection, we usually think in terms of chlorination.

Public water supplies is considered by us to be the highest use to which water can be put, and we will continue to support any water system of the state, no matter how large or how small, when the uses for water other than the public water supply are such that they interfere with this particular use to the detriment of the community.

That pretty well sums it up, and I would like to say that the policy of the State Health Department is in the process of being written and it is one of those things that is a departmental deal so that when we write a policy we kind of feel like we want to get it polished up so once we write them, we are not going to go back and change it again for a long time; however, the policy as it is now being written is based on these particular points.

That's the end of my talk.

MR. GEDNEY: Thank you, Mr. Koch.

Are there any other state or federal representatives who desire to be heard?

(No response)

MR. GEDNEY: If not, we will proceed to the next part of the meeting.

Before entering into discussion of water needs in each of the three counties with which we are concerned today, we will consider testimony of a general nature.

Mr. Lewis A. Bell, representing the Washington State Sportsmen's Council, will speak on the interests of this group and the water resources.

Lewis A. Bell was called as a witness:

(Prepared statement read)

MR. BELL: Mr. Gedney, ladies and gentlemen, I represent the Washington State Sportsmen's Council. "I am Chairman of the Lands Committee, and I am here on authority to speak on behalf of their Water Resources Committee.

This organization, for your information, consists of 138 member clubs reflecting accurately the attitudes of some 600,000 hunting and fishing license holders in the State of Washington.

It has historically been the organization from whose ranks all Game Commissioners of the State of Washington have come for over a quarter of a century.

It has actively participated in the political affairs of this state, successfully sponsoring legislation, initiatives and candidates for public office that espouse its purposes and are from its ranks.

It is allied to national conservation organizations and acts in concert with them on the national scene.

Its position on any planning or use of the water

resources of the State of Washington is simply stated. It is that no development of water resource needs shall destroy the purity of those waters, their local indigenous character as free flowing rivers, free access thereto, nor their ability to produce and perpetuate anadromous runs of fish and to nurture hinterlands and game thereupon.

It takes no position that these uses are inimical to other needed economic developments and fully believes and supports all principles of multiple use of waters provided such do not destroy these essentials.

It believes that proper planning need not sacrifice one water use to another.

In the first place, the Puget Sound Basin is unique in its water resource and physical characteristics. It has water in the greatest abundance in the nation in the smallest land area.

It has in Puget Sound an impoundment so great in area and utility for recreation by reason of weather and sheltered seas as to make completely superflous further impoundment of water for recreational need.

It has no agriculture of consequence with less than ten percent of its land area arable and the best of that is rapidly being swallowed up by urbanization. More favorable climes produce more economically the agricultural product needs of its metropolitan areas. In essence, Western Washington's farms are small, of a few acres in size and ranching is carried on in conjunction with the farmers working in industry in the near-by city.

Industrywise, Western Washington has been and probably always will be disfavored by geography. To its west is the Pacific Ocean and a distant Red China, no longer amenable to the traditional "Open Door" diplomacy.

To the north is British Columbia and Canada, a foreign nation with trade barriers and no populance with which to carry on substantial commerce.

To the east is the Cascade Range, the Rockies and the Western Plains, devoid of substantial populance or markets.

To the south is California, the recipient of our electrical energy by recent intertie, economically sufficient to fulfill all industrial needs, well watered and seeking more from the Northwest and politically powerful enough to get it, and favored by transportation, economics, climate, populance and geography.

Let us face it, Washington's industry will not outstrip, will not outgrow and will not supplant California's nor the industry of other industrial centers of this nation.

Rather, Washington will be fortunate if it can preserve for its citizens its natural resources of water and power and its patrimony for their benefit.

It could well be on the road to being impoverished by the siphoning off of its natural resources of water and power to California's benefit.

As a region, therefore, Western Washington must look, as it always has, to its natural resources which dictate its industrial climate regardless of other economics. This natural resource is timber, fish and recreation.

Its timber supplies the world and under proper management its forests will yield their largess forever.

Its salmon were, and again could be, the greatest fishery of the world feeding the multitudes and providing economic gain to those who participate in it.

Its recreational aspect is unequalled and unsurpassed. The nation comes to the area to breathe in its air, walk in its forests, view its scenery, enjoy its mild climate, and fish and hunt in its rivers, lakes and seas.

Make no mistake about it. The influx of populance to Western Washington since World War II is not by reason of economic opportunity. Those who desire economic gain have long ago gone to New York, Chicago, Houston, Miami, Los Angeles, Phoenix and other financial and industrial centers.

The majority of those who have come to the State of Washington are here for the amenities of life; for pure, free flowing water, for mountain vistas, natural impoundments and timbered hills, all generously endowed with easily accessible fish and game in abundance.

"Man does not live by bread alone." A nation on wheels in the "Great Society" with financial means to get there is now descending in ever inverasing numbers upon Western Washington for its recreation.

Recreation is Washington's third largest industry today. Recreation is the nation's health. It is industry's essential ingredient in efficient employment of its labor.

You are Federal people with basically little knowledge of this area. You are here to listen and to learn in a short time what we, who are native to this area, know, feel and consider to be our heritage and good fortune.

We face the atomic age. The Federal Power Commission prognosticates that atomic energy will be the major source of power in California by 1985 and despite our hydroelectric development and potential in the Northwest by the year 2000.

Do not perpetually flood our narrow, fertile valleys under the guise of flood control with monolithic soon to be outmoded hydroelectric structures of marginal value in order to make work by public projects and assure enormous profits to the few.

In most instances, there is adequate flood control that can be accomplished without inundating more land in perpetuity than any flood ever inundated during its occasional and temporary ascendancy.

Do not deprive the public of access to Federal land and projects as is now done in the Green River Valley and the Howard Hansen Dam impoundment by the United States Forest Service and the United States Army Engineers and as is now on occasion discussed for the upper Snoqualmie Basin and the Sultan Basin.

Confine your expenditure of public funds where they will give broad public benefit to the many without concomitant detriment to the amenities of life in Western Washington.

Above all, do not put us in a mold of national conformity. We, as a populance, will not allow it nor tolerate it.

The genius of our nation and of any republic is that an American in a sovereign state can so govern himself locally as to live in large measure in an environment of his choice and creation while participating of the strength and values of an entire nation.

We in Western Washington do not want to live as do those in other states. If we do, we are free to go there.

Plan our area, if such jurisdiction and political authority you have and can acquire, for what it is and inevitably must be, a nation's grower of trees for wood and paper products, a provider of its sustenance and a playground of the nation.

Do not deal with us as a region except as a piece of the whole.

Let this region give to that entirety of its uniqueness."

Thank you very much.

MR. GEDNEY: Thank you, Mr. Bell.

We will now proceed to the hearing of testimony on the water resource needs in each of the three counties for which this hearing is called.

Before we open with Island County needs, there is a dark blue Continental out there with its lights on.

Mr. Archie Ahlstrom, planner from Island County Planning Group.

Archie J. Ahlstrom was called as a witness:
(No prepared statement)

MR. AHLSTROM: Mr. Chairman, ladies and gentlemen, I am representing Island County.

The natural assets of Whidbey and Camano Islands are also shared by problems which up to the present have been resolved only partially and inadequately for the immediate future and long-range development.

In addition to existing requirements within the limits of individual and community available funds, high in the proprity of Island County's requirements are adequate quantities of quality domestic water, contamination control of land and beaches through adequate sewage disposal, land stabilization to protect the land and beaches, water navigation facilities and related harbors for public, commercial and pleasure use, outdoor recreational and fish and wildlife opportunities which can be provided for and/or enhanced by resultant work.

Island County's many miles of waterfront, although a valuable asset, also isolates the two islands from adequate sources of quality water.

The Olympic Mountains form a shield from the moisture laden air of prevailing southwesterly winds, especially in the north central Whidbey Island area which enjoys a low yearly rainfall of approximately nineteen inches compared to approximately thirty-eight inches on the adjoining mainland.

With the exception of a pipeline large enough to serve only the Naval Air Station at the north end of Whidbey Island, all the water is drawn from deep wells, all of which is more or less high in mineral content, , mucn of this not too palatable. The Skagit, Stillaguamish and Snohomish Rivers are nearby sources of quality water in adequate quantities which can be tapped for supplying domestic water to Whidbey and Camano Island.

It is requested that studies of the Task Force seek a means of making adequate quality of domestic water available to all residents of Island County.

It is further requested that Island County's other requirements also be actively considered for the

turn necessitates the construction of homes, farm

Paul C. Dickey was called as a witness:

immediate future and long-range planning within the scope of the Task Force's objectives.

Thank you.

MR. GEDNEY: Thank you, Mr. Ahlstrom.

Mr. Ernest G. Gallagher.

Ernest G. Gallagher was called as a witness:
(No prepared statement. See resolution, Exhibit 23)

MR. GALLAGHER: Mr. Chairman, ladies and gentlemen, what I came up to say here has partially said except that I represent a small minority in South Whidbey. We are separated by about sixty miles from the north end, and we represent a little group that wants to grow. On Whidbey Island, we are surrounded completely by water, but yet, the water is the most precious thing we need.

Now, a person can live a long time, several weeks, without food, but you can go very few days without water. The area on Whidbey Island, especially the southern area, does not have adequate water supplies by any means. Our water is developed primarily from driven wells with electric pumps in them and put up into storage tanks. It is always a problem to get good, clear water.

The area is growing very rapidly. In fact, for the next five or ten years, it will be quite a large residential area. It is not a commercial area in the general sense. It is primarily a residential and recreational area, so we need adequate water supplies and the time is now to plan for them, not after we are overpopulated. In fact most of the areas over there that have been platted and sold, they can't build homes because they don't have enough water, and we are requesting that a study but primarily a water supply be set aside from the Skagit River, or whatever river it is possible, in adequate quantities that can be piped the full length of the Island.

Now, as the speaker before me mentioned, North Whidbey has a small line to the Navy Field but there is no line on down. Now is the time to plan and get started on those lines before the population has increased to the point where in order to put in a water line we would have to dig up everybody's front yard and dig up every road and every street. Let us get the planning done now so that when they have the water rights set aside so that we can start in building a water line the full length of the Island they will not have to dig up everybody's home or some other part of the business that will be underway. Let's get the lines in first. The area will develop twice as rapidly and it will pay off just that much faster.

Now, we could go on and argue on it for weeks and weeks. Well, then, it takes money, but it's going to take three times as much money if the area has grown up before this water system is put in; and the area that I am in has had nothing but problems in the past because of poor water supply. The system is maintained to the best of its ability, but there isn't enough there to make a good system.

Within five years, we will be out of water. We will have to go to extreme expense to get more water, but yet, what can we do?

That is the request we have made, for additional water supplies for the south end of the Island so we don't have to dig a well and then have to contaminate it by overpopulation within five or ten years.

Thank you.

MR. GEDNEY: Is there any other speaker from Island County?

(No response)

MR. GEDNEY: If not, we will proceed to King County, One of the principal orgainzations in King County for organizing efforts for the citizens in the area for flood control and of the water resources lies in the County Engineer's office. I understand that the County Engineer's office has organized a presentation. Mr. Winters, do you wish to give that presentation? Mr. Winters is the County Engineer for King County.

Walter Winters was called as a witness:
(No prepared statement)

MR. WINTERS: Thank you, Bob. Ladies and gentlemen, we are very glad to be able to participate in this very necessary effort.

I think one of the main means in this field that the Task Force is investigating is the question of cooperation and coordination in the activites of the various agencies involved. I am thinking, for example, of several that we have in King County.

As most of you know, the Skykomish River and the Snoqualmie join to form the Snohomish River at a point some six or eight miles north of the King County line. At that point, the Skykomish has formed a delta that very definitely restricts the flow of water in the Snoqualmie channel in King County. This certainly, then, would call on very definite coordination and cooperation between two counties

involved and any other agency that is concerned with the development studies such as the Corps of Engineers is making.

Another problem that we have at the present time is the studies that are going on in the Green River on Public Law 566 where there is a question of discharging water from the Green at the lower reaches either by pumping, a pumping system or a gravity flow arrangement. One might come under the Soil Conservation Service, the other could very possibly be a navigational project in which the Corps of Engineers and other agencies would be involved. Here, again, of course, this coordination is so necessary.

Now, this little group that we have here will discuss mainly the flood control problems that we have in King County.

There are many other agencies represented here today, Bob, and I know you will call on them later. I see the Northern Pacific Railroad is represented, Weyerhaeuser and many other agencies. We have not included them because we have felt our discussion might better just deal with the flood control phase of this study.

I think in the brief that was set up by the past for us that there are four major items that are of concern to the flood control department and the activities that we have in King County. We have first under this list flood control, we have drainage, which is very close to flood control in many instances; we have land stabilization, of course, in reducing or the elimination of soil erosion and that sort of thing. Then, the navigational possibilities might develop on at least one of our rivers.

As I have mentioned, our basic interest here in this little, short presentation will be flood control. We will certainly have to touch on other interests because, for example, multi-purpose dams, which are a distinct possibility in King County, to cover hydroelectric flood control, domestic water and recreation, these are all benefits that can be developed.

Now, flood control is a very necessary thing in King County, as it is in other areas. Our records show, although they are sketchy and previous to this period, but they show that from 1940 to 1960 the county experienced twenty-three floods with damages accruing to some fifty-one million dollars. Now, this is a terrific economic loss for any county or any area to take, and this is the reason, of course, that the County Commissioners and the citizens of King County are so intent on correcting this condition. This can best be done, as I mentioned before, through the coordinated efforts of the Soil Conservation Service of adjacent counties and other agencies.

We have in King County the Green River, the Snoqualmie, the Cedar, the Sammamish, and we have at the present time a large project on the Sammamish under the direction of the Corps of Engineers, the Raging River, the Tolt and the Skykomish. Each of these rivers presents some special problem, and I would like to have just a few—we will have several speakers who will cover different phases of these areas.

As the first speaker, I would like to call on my Assistant County Engineer, Warren Gonnason, who will touch on the general things that we have to contend with. Warren Gonnason.

Warren C. Gonnason was called as a witness:
(Prepared statement read verbatim)

MR. GONNASON: Thank you, Walt. Ladies and gentlemen, to sort of formally present a statement for the record with regard to this over-all program in King County, I would like to read these comments and this represents what Mr. Winters had in mind and I think in connection with setting the stage for the over-all aspects of this study in King County.

"King County is vitally interested and concerned that the maximum multi-purpose and comprehensive use be made of the water resources of the County and of the Puget Sound region. We, therefore, heartily endorse this study and are hopeful that it will lead to the development of a comprehensive program for the maximum multi-purpose uses of our valuable water resources.

The population in King County in 1960 was 935,000. It is estimated that this will increase to 1,185,000 by 1970 and to 1,663,000 by 1985. This represents a seventy-eight percent increase in population in the twenty-five-year period from 1960 to 1985. This can immediately be related to future requirements for water use needs. These will include water for domestic, municipal, irrigation, recreation, hydro power and industrial use; requirements for water quality and pollution control; requirements for flood control facilities, navigation and boating, and development and conservation of water resources for fish and wildlife. To serve this rapidly expanding population, it is essential that our water resources be

protected and utilized to the maximum extent possible and in accordance with a comprehensive multiuse program.

King County has assumed the responsibility and leadership for the development of a specific Comprehensive Plan for Flood Control for King County. We take this opportunity to present copies of this plan for your future considerations and deliberations in this study. We feel that this plan goes into sufficient detail to outline the specific needs and plans for flood control on a comprehensive basis in King County. Specific needs and programs are included herein for the major river basins in King County, namely, the Snoqualmie River, Cedar River, Green River and Sammamish River."

I would like to comment that in connection with the study that Colonel Holbrook mentioned the study was to be completed in 1969 but there would be inter-reports and some of these projects of urgency, such as flood control on the Snoqualmie and the 566 project on the Green, can proceed in accordance with the development of this plan at an early time.

"We are currently undertaking the next phase of our Comprehensive Plan for drainage and flood control on smaller watersheds tributary to these major river channels. In the rapidly urbanizing areas of King County, flood control zone districts are being established and comprehensive drainage and flood control plans are being prepared. It is our hope to develop these comprehensive plans for all the smaller watersheds in King County, especially those in the rapidly developing urban areas where problems of drainage and storm water run-off are acute.

In addition to the Comprehensive Plan for Flood Control adopted by the Board of King County Commissioners, the Board has recently adopted a Comprehensive Plan. This Comprehensive Plan includes all elements and establishes the policies for the comprehensive development of the County as a whole. Even though this comprehensive plan is not yet under publication, we are submitting a copy at this time for your further use. Additional copies may be made available when printing is accomplished. Of particular interest to the Water Resource Study will be the policies on open space development in which the policies regarding water-oriented recreation are established. I quote from the Comprehensive Plan as follows: "As the water areas of King County provide a natural asset, their value should not be allowed to be destroyed by public or private misuse. Space should be made available throughout the County for all types of waterfront recreation—swimming, boating, water skiing, fishing, et cetera, but areas for each type of use should be so located and designed so as to not conflict with one another. Because of the limited amount of water frontage devoted to public recreational use in King County, any such accessible water frontage of reasonable size should be acquired and utilized for its appropriate function."

The Board of King County Commissioners has a direct responsibility in the areas of flood control, open space and recreation facilities. This does not limit their concern, however, with the other multipurpose uses of our water resources and they are constantly working with the City of Seattle and all other municipalities and agencies engaged in the use of water resources in an effort to bring about this comprehensive multi-use concept.

The Board of County Commissioners has directed this office to provide whatever assistance is available to the Task Force in order to further expedite the final report. We are very desirous of receiving interim reports as the planning studies progress.

We want to take this opportunity to thank you for this opportunity of presenting this information to you and we stand willing to cooperate and assist in any way possible."

Thank you.

MR. WINTERS: Through the next speaker, we would like to get into more detail. I would like to call on Brad Gillespie, who heads our Flood Control Division of the County Engineer's office. Brad will touch on various phases of our operation.

W. B. Gillespie was called as a witness:
(No prepared statement)

MR. GILLESPIE: Thank you, Mr. Winters. Ladies and gnetlemen, I would like to expand a little further on King County's flood control activities, more especially our county-wide Citizens Advisory Committee on Flood Control.

Indicative of the interest of the people of King County in flood control was their passage of two five million dollar bond issues. This represents a considerable amount of money to be devoted to this specific purpose. The County Commissioners thought that in light of this interest and the need for proper utilization of these funds that this committee should be appointed. They did appoint this committee, some

nine members, from all walks of life and all areas in the County. We have utilized their services to a great degree in our particular activity. They have been advisory to the County Commissioners and to the County Engineer and ourselves in the proper expenditure of these funds. They have advised the County Commissioners, in conjunction with us, on our major flood program and they have also assisted to a great degree in implementing the formation of these flood control zone districts that Mr. Gonnason spoke of.

I think that's about all in this regard. We have several of those members with us today.

Thank you.

MR. WINTERS: Thank you, Brad. We would like to call on some other members of the Advisory Committee to touch on certain streams that they are particularly familiar with. The first speaker I have is Mr. Mueller back there. If he will come forward and give a brief review of the Green River activities, the Soil Conservation 566 Project, and other things we have of that nature.

A. C. Mueller was called as a witness:
(No prepared statement)

MR. MUELLER: Mr. Chairman, ladies and gentlemen, down in the Green River area for the past year, as it has been pointed out, we have these floods that come on yearly, and at times, like in 1947 and 1959, they had what they called a king-size flood which really took the valley down the drain, causing millions of dollars of damage.

Now, in the past years, there was a program started in which the Howard Hansen Dam was to be the main factor in this flood control. Now, after some years of effort, it finally got underway, and it was completed but not before we had one more big flood in 1959.

Out where I live, I have a farm that was under from three to ten feet of water. There wasn't a speck of dry land anywhere. Now, if any of you have ever been in water like that, which I know you have, you can appreciate what the need for water control to a community would mean.

Now, at the completion of this dam, which largely will control these kind of floods, there was a program started through the issuance of a bond issue, people voted on and passed it overwhelmingly, and the work of repairing the banks, the farms that were involved, and there were miles, I wish you people could get down there and see the miles of work that have been done through this bond issue to protect the banks so the agricultural lands and also of the towns in the Valley.

Now, there is another program that water has to do with and that is rain water. Now, the problem is to get rid of the rain water. It lies on the ground all winter, preventing the practical use of a lot of farm lands, and also hampering the industrial development that is headed out towards the Valley.

Now, there has been undertaken a study of how to drain the Valley and get rid of all of this rain water, and that study has been taken on by the Soil Conservation Service and the Department of Army Engineers and they are soon coming up with a program that will take care of that problem.

Now, I will further state that all these things are being done with a multi-purpose service to the public in mind. The fisheries, for one, have been greatly benefited by the control of bank erosion, reducing siltation to a very minimum in the area. The farm lands have been protected from washouts. There have been parks. The County has bought land for parks along this river. There are other places that they are considering for park areas, recreation areas, and when the dam was underway, the City of Tacoma, which derives its main source of water supply from the Green River, the City of Tacoma's reservoirs were greatly enlarged for their use.

Now, it just shows us the way, and I think the big word is "cooperation" of the various county government agencies to get together and work these things out.

Now, these things can be done because we in King County have done these things. We follow very closely the program that these people are outlining for us, and I think with that kind of cooperation that we can establish this whole Puget Sound Basin, not only as a recreational area but of commercial benefit not only to the State of Washington but for the whole country.

There are plans underway for certain industries coming into the State. Now, who can say where they will end? We've got a great country and we have got to work together.

Thank you.

MR. WINTERS: Thank you.

I think we might mention another thing as to present activities under 566 in the Green River Valley, that in addition to the drainage problem that was mentioned, we also have a condition to release from the Howard Hansen Dam is necessarily great

because of the possible repetition of floods, that there are times that there are possibilities, and it actually happens, where the river channel will not carry the discharge and there is flooding in the upper region or the upper part of the Valley, rather. In addition to that, we can have that condition with heavy rainfalls below the dam, which also would tend to overtax the capacity of the river.

Now, under these conditions, we hope to correct with the activities that are now going on.

Another member of our Advisory Committee, a retired business man from North Bend, Mr. Hall, will touch on the Snoqualmie River and the work that is being done and perhaps contemplated in the future.

Mr. Hall

C. Beadon Hall was called as a witness:
(No prepared statement)

MR. HALL: Gentlemen, I live in Snoqualmie, you put me down in North Bend, I am Mayor there, I have to be careful.

I think that I would like to touch on a couple of things which are not engineering or anything like that. One thing, our citizens' board, the citizens' group that works with the County on this, a relationship of that kind can be a very pleasant relationship or it can be rather nasty. Ours have been very, very pleasant. We have enjoyed it a lot and I think in the other counties it is worth remembering that these things can be done. We feel that we can do them quite a lot of good, and they have been nice enough to say that that was true; but we try not to overstep our bounds.

Another thing that I would like to mention is that when a county has ninety percent of the people living where the only water they can see comes out of the tap and you can vote a bond issue for water control, somebody has been doing a very fine job.

Throughout King County, I think it's recognized that this flood control business has been very well handled, and we on the Committee are in a position to tell folks how well it has been handled and it really has been.

As far as the Snoqualmie River is concerned, there are some things that come out of this flood control business that may be a little interesting to you. In the upper valley where I live, I am not in the flood zone but a lot of folks are, and it's a very worrisome thing all the time, how big a flood are we going to have and we have had some real dillies, but we have a flood control warning system up there that is very fine, not too expensive, it has been well set up and it keeps people feeling a lot easier than they ever felt before.

In putting through these two bond issues, we have had money to work with to pledge support for greater programs to be helped by the State and by the nation, and it has made it possible there can be a continuity in this thing which we never did have before. We have lived up there a long time and the most important place would be patched up and then the next year or two maybe the stuff would be all washed down. Now it is planned ahead so that the job is done and it isn't washed out, and as we go along, we think from year to year will be much, much safer than we have been in the past.

Thank you very much.

MR. WINTERS: Thank you, Beadon.

I would like to re-emphasize to you the value of the Advisory Committee, the county-wide committee, composed of nine people that was mentioned previously that had just rendered invaluable aid to our operation in the flood control division. They have made very sound recommendations to the Board Commissioners. They have worked with us really a hundred per cent and it's largely through their efforts that there are bond issues, two of them now have been passed. I think the County, when this program is completed, is going to owe the Advisory Committee

We had several years ago put considerable effort into the passing of a flood control zone act. These flood control zones can be set up in a manner somewhat similar to an improvement district. There are just different ways of financing it and so on. Others here in this audience, I know, have helped put this act over. How much is used other than in King County, I am not sure, but we do have six or seven districts now or zones that either have been or will be or are in the process of being organized; and we have Mr. Maskrod from the upper reaches of the Snoqualmie River in the Kimball Creek area who was one of the moving lights in the formation of the district in that area. I wonder, John, if you would say a word in connection with that district?

J. M. Maskrod was called as a witness:
(No prepared statement)

MR. MASKROD: Thank you, Mr. Winters, and Mr. Chairman, ladies and gentlemen, I represent the

Kimball Creek Flood Control Zone District. This is a misnomer, it's a drainage district not flood control, in the area of Snoqualmie and North Bend.

This is a bothersome creek, this Kimball Creek has been for years. It has been plugged with debris and silt and has backed up and caused slow run-off any time there was a flood. There has been no feasible method in the past to drain this creek, but under a law passed by the State Legislature in '61, we have the unique distinction of being the first flood control zone district formed in the state; and with the very great cooperation of Mr. Winters' office and the King County Engineers and I think probably some cooperation from the Corps of Engineers as well, we were able to vote and pass, we formed a district and voted and passed a bond issue to drain Kimball Creek. This work is being done now, and we are probably eighty-five percent completed with the job. I think it is a very satisfactory method.

The area comprises some several square miles. Our property evaluation, assessed evaluation of the area was right at a million dollars or just under. With all the assistance we had from the Engineer's office, we were able to do this with an assessment of the property of only about $4.69 per thousand; so we have gone ahead with this project and it is working very well as far as the project being put into effect, and I am sure it will work very well in the physical property as well.

If any of you in any area that would have a drainage problem, I would like to suggest that you investigate this method of handling it.

Thank you.

MR. WINTERS: Thank you, John.

This pretty much concludes the ideas that we had on flood control, Bob. Unfortunately, some of our speakers were delayed. The Chairman of the Advisory Committee, Larry Hall, is very active, as you know, in flood control activities. He is on his way here but probably won't arrive until this afternoon. Maybe at that time he will be able to get in the program.

As I mentioned previously, there are many other groups that are represented from King County, and I am sure you will call on them.

Thank you very much for your consideration.

MR. GEDNEY: Thank you very much.

I think Mr. Winters' very effective presentation reflects the organization planning that is going into flood control measures in King County.

Our next speaker, Mr. Howard Harstad, Consulting Engineer representing King County Water District No. 97.

Howard T. Harstad was called as a witness:

(Prepared statement paraphrased. See Exhibit 24.)

MR. HARSTAD: Thank you; Mr. Chairman, ladies and gentlemen, I am here on behalf of Water District 97 which provides public water supply to approximately 25,000 persons east of Lake Washington. It's a rapidly growing area, and by the estimates of the various agencies, it is going to need a tremendous supply of water as time passes.

The Water District desires to develop a water supply on the North Fork of the Snoqualmie River for its present and future customers and for such other water utilities in which they may wish to participate.

We point out that this arrangement would be a participating proposition where there would be some joint ownership rather than a simple matter of selling water to someone.

To this end, the Water District has filed and obtained a Federal Power Commission permit for developing this project and has filed for water rights and reservoir rights with the State of Washington and has a permit from the State of Washington for the same study.

The Water District desires to pursue a course of action which will fully develop this natural resource. This involves the full development of probably the only good reservoir site on the North Fork of the Snoqualmie, as well as Lake Hancock, Lake Calligan and Beaver Creek, Beaver Creek being somewhat incidental to the way the project is proposed to be handled.

The District proposes to cooperate with the Federal, state and county agencies on flood control. This would probably mean additional height to a dam, aid in spillways and such other facilities as the agency paying the bill might designate to provide flood control storage, which has been roughly estimated at 60,000 acre-feet.

This development would produce quite a lot of electric power and some of this would be used for pumping water and the balance would be sold to electrical utilities in the area. It would have some effect on the Puget Sound Power and Light Company's plant at Snoqualmie Falls, and negotiations have been had with Puget Sound and the District is

cooperating and Puget Sound is cooperating to a full development of the resources.

The recreational uses should not be inconsistant with the other uses and it is believed that this can be worked out. It will take considerably study. There will undoubtedly be a lot of interplay with the various health agencies or the several health agencies on this plan.

The Water District desires to cooperate with all of the interested parties and districts for the best use of this resource, and I have filed a statement which has some of the other points there in more detail.

Thank you.

MR. GEDNEY: Thank you, Mr. Harstad.

Mr. Harold A. Hagestad, City Engineer, Auburn.

Harold A. Hagestad was called as a witness:
(No prepared statement)

MR. HAGESTAD: Chairman Gedney, ladies and gentlemen, I want to expres the regrets of our Mayor, Bob Gaines. He wanted to come, he happens to be one of those mayors who is trying to earn a living and he felt he couldn't quite make it up here today, and besides it's a little foggy down our way.

I just wanted to bring to you some of the thoughts of the people of Auburn, which is just about on the southern end of this whole study that we are speaking of and right at the beginning of the Green River as it comes out of the mountains to the east.

Auburn's population now is approximately 14,500 people and is naturally estimated to increase along with many of the other cities in the Valley in the region that it will probably go to someplace over 50,000 in the near future.

Our water capability now is someplace around ten and a half millions gallons per day, but we have a peak demand of nearly half of that right now; so naturally, we are looking for more water sources.

We are in the process now of drilling some test wells right within the city limits of our own town, and we hope that very shortly we can develop them from five to six million gallons a day additional source from these wells.

We are also looking at the possibility of developing other sources, possibly to the east of Auburn. Our main supply now comes from the Coal Creek Springs, which is on the bank of the Stuck River to the east and to the south of the City of Auburn.

We are undertaking through the funds to the City through HFA, Housing Finance Agency, a sanitary storm sewer comprehensive plan for our city, and naturally, this plan will coordinate all of our future plans, especially in this storm drainage area, with that of the King County Flood Control District, and certainly we are most gratified to find the bond issue having passed recently which will allow us the opportunity to carry on with the study and to develop it in conjunction with the King County plans.

We are actually expanding our water system in two areas outside of the city and particularly at this time to the area to the east of the City of Auburn and up on what we call Lee Hill. This system is being developed, in fact is actually under construction now. Our primary reason is to develop a water supply system for the Green River Community College, which is scheduled to open September 1, 1965. Our system is being built from funds from our city water system, however, to a scale and to a scale and to a size in capacity which will accommodate the eventual service of water to this whole region of Lee Hill.

One thing I would like to bring to your attention is the fact that the prime industrial areas that are in the City of Auburn and adjacent to the City of Auburn are located primarily on the flatland areas, which are almost unusable now for development of these industries and also for the actual construction of buildings because of the silt conditions that we have and the depths of water; and I think maybe the last thing I could say in bringing succienctly to your attention the conditions that occur in these flatland areas, which are to be developed some day for industry, is the statement that we have very often used in our Public Works Department is whenver we are working out in this region, we must get out there and do our work, do our sewer work and our street work, and we used to say this has to be done just before the tide comes in. I think you know what I am talking about.

Thank you very much.

MR. GEDNEY: Mr. James Magee of the Lake Sawyer Improvement Club.

James A. Magee was called as a witness:
(No prepared statement)

MR. MAGEE: Mr. Chairman, thank you very much for the opportunity to speak.

I brought a sample along of something that came out of the lake where I live at Lake Sawyer in southeast King County, so if you would like to see it; this weed is named the Brazilian Water Weed and

there are only two places in the Pacific Northwest where it is and that is Lake Sawyer and in a place called Silkers Lake In Oregon.

We had a biologist, Mr. Henry P. Carson of Tacoma, take a sample of this and he sent a sample to Dr. Harry K. Finney, Assistant Professor of Botany at the Oregon State University, and he is the one that identified this as a Brazilian Water Weed. Don't ask me how it got here or in Oregon, I don't know; but I tell you that this is a death-dealing weed to recreation in the State of Washington.

I have been here for twenty years and there are two other kind of weed types in here, but the Brazilian Water Weed outgrows the others tremendously; and this lake is a half to three-quarters of a mile wide, it is three miles long, in front of my house, fifty feet from shore, it is a hundred and eighty foot and fifty foot deep, there are places in here that are two hundred feet. It slopes in many places, naturally, like the local lakes do, from six on out in the center where it gets deeper and deeper.

This weed has no link. There are several places in the lake where it is so tremendously deep that you can have a skin diver and they can go down and pull these weeds and before spring comes, they are up again. I have had it done in front of my house twice.

We have tried out best to get this thing put on a tax roll that the citizens that own the lake proper would have an opportunity to pay for this, but the people are afraid of a law suit because of the stuff that Mr. Carson would use to poison this weed. He poisoned part of the weeds at one time for $3,000.00 and guaranteed that he would kill them where it wouldn't come back for $10,000 for a period of one year. The people there are afraid, as I said, that they are going to be sued because there are people of that lake that takes the water into their homes to drink, and for that reason, no one has been able to get this on a tax roll.

If someone, Federal, State or county, doesn't come forth, if not with the money to help kill the weeds in this lake or orient the people through orientation there on that lake as to the possibilities of whether they can or cannot be sued, in another twenty years, from the twenty years of what I have seen here in this county, you can write the fourth largest lake King County off as for recreational purposes.

A skier can go through the lake and cut the weed and it wraps around the prop or wraps around his ski, and wherever that Brazilian Water Weed is dropped the seeds come up and it doesn't make any difference. We use the stuff they call Curon. We have had a freeze in the lake in front of my house, which is half a mile wide, it froze eight inches thick, the other people across the lake walked across. It froze the weeds and they dropped to the bottom and in six months, they were back twice as bad as they was before. There are some places on the lake, you drop anything without a life preserver on and you couldn't swim, you would drown in some places.

I don't know the answer, and I have come here to present it and bring the thing itself. I am going to leave it here, you can have it. Just don't throw it in any lake anywhere.

Thank you.

MR. GEDNEY: Thank you, sir.

Mr. Ford L. Bulloch, representing Fishermen's Cooperative Association of Seattle.

Ford L. Bulloch was called as a witness:

(No prepared statement)

MR. BULLOCH: Mr. Chairman, ladies and gentlemen, I didn't come here with any prepared script. I didn't know what you were going to do here.

My name is Fred Bulloch. I represent the commercial fishermen and specifically, the salmon trollers of the State of Washington. We feel we constitute a pretty good sized segment of the industry of the State.

Whenever one of these research boards' studies come about, the first thing we get is big visions of hydroelectric dams at the mouth or somewhere on every one of these major watersheds in Puget Sound. From past history, we know what this does to the fishing industry. We would like to go on record as saying "Please don't take all of these watersheds for spawning areas away from us".

We have seen this happen in the past in the Columbia River watershed, and I think you are all familiar with what happened to the fishing industry because of the tremendous loss of specifically all the salmon in the Columbia River watershed.

We are not so narrowminded as to think that all of these rivers couldn't be used jointly for multi-purpose reasons. There are many, many assets to these waters, but if you deny these waters to the fishing industry, that is as serious as taking all the fish away from them ourselves.

We feel that the State Department of Fisheries has done a tremendous job of rehabilitating all of

these major watersheds in the past eight years. We want this trend to continue. Without the use of this water, there will be no commercial fisheries in the State of Washington; and I think we can speak from this year's record alone that in all the hatcheries the State has on each of these major water basins they have done a real fine job of bringing the salmon back into portions even greater than what we experienced many years ago.

We are not an obstinate group of people. All we ask is would this research board please give us some consideration and some shot to the commercial industry when you start planning the use of the waters in these watersheds.

MR. GEDNEY: Mr. Edward V. Gruble, representing the Citizens for Clean Water.

Edward V. Gruble was called as a witness:
(Prepared statement read verbatim)

MR. GRUBLE: Ladies and gentlemen, I have a prepared statement here.

We are concerned with the multiple use of water in this State. We are primarily concerned with the pollution of these waters by industry and secondarily by domestic pollution. "We wish you every success in your study, which is long overdue.

Our organization has concerned itself with the problem of pollution of our waters by the discharge of millions of gallons of digester liquor from sulfite pulp mills.

We believe that it is fundamental that the regulation of the purity of our waters should slways remain under the control of those federal and state departments which are charged with that duty, namely, the Federal Department of Public Health and the Washington State Department of Health, Fisheries and Fish and Game.

These departments are not concerned with the appropriation and use of our waters but only in maintaining water purity for the benefit of our people and the sea life in our waters.

The Federal Department of Public Health works closely with our Washington Pollution Control Commission made up of the department heads of Health, Fisheries and Fish and Game together with the Directors of Conservation and Agriculture.

These departments and the Pollution Commission must be allowed to function honestly and without political interference. Neither should they be dominated by the very interests which should be regulated in the public interest.

Sulfate process pulp mills evaporate eighty per cent of their digester liquor and re-use the chemicals. Both sulfite pulp mills in Grays Harbor have modernized and also evaporate eighty per cent of their digester liquors. All Alsska pulp mills evaporate eighty per cent of their sulfite liquors. Puget Sound sulfite mills should be forced to modernize and do what the other pulp mills have done voluntarily a long time ago."

MR. GEDNEY: Mr. R. H. Bailey, representing Citizens for Clean Water.

MR. BAILEY: Mr. Gruble has already spoken for us.

MR. GEDNEY: Is there anyone else from King County who wishes to be heard? Will you come forward, please?

A. C. Mueller was called as a witness:
(Prepared statement and resolution read verbatim)

MR. MUELLER: Mr. Chairman, ladies and gentlemen, this letter is to the Task Force for Comprehensive Study Puget Sound and Adjacent Waters, John Richardson and Robert H. Gedney; Gentlemen:

The objectives of your Task Force are most timely and worthwhile. Soil and Water Conservation Districts, as governmental agencies set by and for land owning people to manage their lands in line with State and national objectives; our efforts can be very much more effective when these objectives are well defined and when all groups and agencies concerned with them are working together.

Our District comprises a metropolitan county; many of our problems and interests are different from those of more agricultural counties. One of these is the matter of suburban lakes so much desired for residential and recreational use. The steadily deteriorating condition of these lakes is a matter of growing concern; it demands immediate study of all the factors contributing to this condition. Among these factors are pollution, sewage, detergents and other chemicals, run-off water management on adjacent lands and roads; fish management practice, that is, the role of scrap fish, effects of Rotenone poisoning such fish, et cetera; greatly increased growth of algae, weeds, etc.

Another problem is land and water manage-

ment practices in urban and suburban housing developments. King County has experienced a rash of run-off water flood water problems arising out of such developments. There is reason to believe that storm drainage practices could be improved so as to allow or preserve as much as possible water circulation conditions that will prevent floods, store water in the ground, and return water to streams and lakes in the best possible condition.

In a metropolitan county where they are so many people who must find outdoor recreation it behooves us to consider all land use practices such as closing off large areas of our mountain watersheds to public access; there is some contradiction in the idea of closing off these areas in the interest of the metropolitan citizens who at the same time are impacting our open space with their recreational needs. We urge a study, "exhaustive and forthright", as stated in a resolution we adopted in this matter. A copy of this resolution is attached.

The points outlined are the more salient points in our view. Members of our Board of Supervisors who will attend the Everett hearing will elaborate on these and perhaps present other information. Because these problems come so frequently before our Board for discussion, we are happy to prefer them to you as areas for study."

Thank you. I have this resolution. Should I read it?

MR. GEDNEY: Very well, if you would like.

MR. MUELLER: "The following resolution was adopted by the Board of Supervisors, King County Soil and Water Conservation District, at their regular meeting, December 11, 1963:

Whereas the U.S. Forest Service has proposed increased recreational use of the Green River Watershed,

And whereas the growing population in the Puget Sound Area will make greater and greater demand upon the West Cascade watersheds for municipal water supply,

And whereas continuation of the present restricted public access to such watersheds will eventually remove the bulk of the west slope of the Cascades from public access:

Therefore, be it resolved that the King County Soil and Water Conservation District commend the U.S. Forest Service for its proposal in regard to the Green River Watershed and urges exhaustive and forthright public study of this plan, to the end that not only on the Green River, but on all such watersheds, the best and wisest possible multiple use be made of the natural resources involved."

Thank you.

MR. GEDNEY: I think it's indicative of the deep concern which the people of this region have regarding water resources that representatives of organizations who have diverse views on water resources development have taken the time to listen to all the testimony this morning and remained for this hearing.

We shall reconvene at 1:15 at which time we will hear the testimony with respect to water resources and needs of Snohomish County.

(Whereupon a recess was taken until 1:15 o'clock, p.m.)

After recess (Whereupon, the hearing was resumed, pursuant to the taking of the recess, at 1:15 o'clock, p.m.)

MR. GEDNEY: We will reconvene.

We will open our meeting this afternoon and I will call on Syd Steele, who is the Manager of the Snohomish County PUD and is our host here today. Mr. Steele.

Syd Steele was called as a witness:
(Prepared statement read verbatin)

MR. STEELE: Mr. Gedney, members of the Task Force and ladies and gentlemen, it gives me great pleasure to welcome you people to use our facilities here today. I hope you find them adequate. You are always welcome to it in the future any time that you want to meet here.

"The Snohomish County Public Utility District has long realized that both short and long-range planning are prerequisites for sound and economic development of its electric and water distribution systems to meet present and future power and water needs of Snohomish County and Camano Island, and this District commends the Task Force for its present planning to develop comprehensive plans for management and development of the water and related land resources of the Puget Sound region.

During the entire fifteen years of the PUD's existence a large portion of time and effort of the staff of this utility has been devoted to planning its excellent electric distribution system, and, jointly with the City of Everett, developing both the water and hydroelectric potential of the Sultan River. As a result of these efforts we are now in the following position:

No. 1, we are assured, through our recent contract negotiations, of an adequate wholesale supply from Bonneville Power Adimistration at low rates through the year 1983.

No. 2, we have constructed a transmission backbone throughout the electrical requirements of any industry desiring to locate in this area with a constant projection of plans five years hence to meet all future power demands.

No. 3, we are hearing completion of first-stage development with the City of Everett of the water supply potential of the Sultan River with ability to provide Everett and Snohomish County a continuous flow of about 170 million gallons per day, the first stage of which will be completed next year. The ultimate economic development of Stage Two of the Project will provide approximately 330 million gallons per day firm water yield and an electrical supply of 140,000 kilowatts of hydroelectric peaking power.

No. 4, we stand ready to provide adequate electric power at low industrial rates to the many potential industrial sites throughout Snohomish County.

We hope from this and other similar meetings there will emerge full recognition of the industrial potential of Snohomish County and plans for its development.

We again commend the Task Force for undertaking this study and assure of our cooperation in every way possible."

Mr. Gedney: Thank you, Mr. Steele.:

At this time, we are honored to have with us Representative Westland from this area who represents this area in the House of Representatives and who would like to say a word or two to us about recent activities of the Congress with respect to water resources and planning. Congressman Westland.

Honorable Jack Westland was called as a witness:

(No prepared statement)

Mr. Westland: Thank you very much. Ladies and gentlemen, I hope you gentlemen don't mind this television business. KING arrived in the office to do some of these things, and Phil will do his best, I am sure, to not interrupt us, won't you, Phil?

I don't want to make this in any sense a political speech, but I think you fellows would be interested in what the Congress has done in this last two years in the water field.

In my opinion, both the Interior and Insular Affairs Committee, of which I am a member, and the Joint Committee on Atomic Energy, also of which I am a member and Scoop Jackson is a member of it, too, have taken an unsuually broad cognizance of the water problems, not only, of course, in the Northwest but the whole United States.

I would like to preface what I am going to say by telling you that I hadn't been in Congress more than six months before I realized that the water resources of the Pacific Northwest and the State of Washington, and even more particularly the Second Congressional District, were probably the greatest resource of the whole area; and despite our resources of timber and mining and fish, I thought this fresh water that we have in great abundance in the Northwest over the years would proved to be the greatest resource that we have; and for that reason, I have paid pretty strict attention to any legislation that might conflict with the development of our water resources.

One piece of legislation, for example, was the Wilderness Bill, which I thought at first might be very restrictive in the subsequent or future development of our water resources. In other words, if you are going to tie up certain areas into wilderness areas and never permit any future use of the water resources of those areas, I thought that could badly affect the economy of the Northwest.

Now, that legislation has passed and it contains language which will permit the development of those water resources, and I think that's the way it should be. It would require, as I recall, a presidential okay; but I think that's all right.

The Land and Conservation Bill which went through the Interior Committee and through the House and finally become law is an extremely important piece of legislation. This way will help, I think this legislation will help to conserve the water resources of the whole United States.

The bill to provide for water research centers throughout the United States for the various colleges and universities of the country was a substantial piece of legislation in this same water resource field.

In the Atomic Energy Committee, we have gone into the matter of desalinzation, what I mean is taking the salt out of water throughout the country.

When you realized that down in the Virgin Islands, for example, where you have a saline water project that water costs with that plan about $2.50 a

thousand gallons, you can get some idea of what the cost of water can be. What do we pay around here, fifteen, sixteen cents, something like that, for a thousand gallons, somewhere in that area. You hear of people paying $2.50.

When you see states like Arizona and New Mexico, Utah and California at death's grip over a stream the size of the Pilchuck or something, you can realize the great importance of this water matter.

I think Congress in the last two years has recognized the tremendous importance of the water resources of this country more than ever before. I recall quite a few years ago when President Eisenhower made a substantial statement in this field. President Kennedy and President Johnson have done the same thing.

Now, you have this Task Force that is out here making a survey of the water resources and the future development of this area, and while we may think at the present time that we have a great supply of water, fresh water, I think that we must prepare now for the future and not wait until we find ourselves getting short.

I had one experience here a couple of years ago that impressed me tremendously. As a member of this Joint Committee on Atomic Energy, I went over to some of the NATO countries. One of them was Greece and we went to Athens where we had atomic weapons, and I read Greek history when I was in college a hundred years ago and thought it was a great beautiful place and all that; and I was very surprised to find that the hills were practically barren, that there were just little scrub trees growing on these hills and nothing much else; and I remember saying to one fellow, "They must not have much rain around here."; and this fellows says, "They get about forty-five inches a year of rainfall right around Athens"; and yet those Greeks, the ancient Greeks, with all the great brains that they had never thought to conserve their water resources. They had never built a single reservoir, and now they are a couple thousand years, perhaps almost too late.

It behooves us, I think, to recall this to realize that what you fellows are doing here today and what you gentlemen will continue to do in the future is of the utmost importance. I don't believe that there can be any greater matter for consideration of you gentlemen and the Congress than this conservation of our water resources.

Thank you.

MR. GEDNEY: Thank you, sir.

We find we have one or two speakers remaining on the agenda to discuss matters pertaining to King County. If those speakers will come forward, we will clean up our discussion with respect to King County.

Mr. Leif Eriksen, President of the Northwest Fisheries Association.

Leif Eriksen was called as a witness:

(No prepared statement)

MR. ERIKSEN: Mr. Chairman, ladies and gentlemen, after such an eloquent speech of Mr. Westland, I feel somewhat inadequate up here. My whole purpose is to let you people know that the twenty-five or so firm members of the Northwest Fisheries Association is concerned over the problem that is being discussed here today.

We have members in Bellingham, in Everett, in Seattle and also in Alaska, the livelihood of all of whom rests with the fishery resource throughout the Pacific Coast, but for the purposes here in the Puget Sound Area, I was happy to hear this morning, for instance, the colonel from the Corps of Engineers at least mention this fishery connection in this study.

The fish that we look to for our livelihood have many battles before they can get back up to the ground where they spawn. One of these has been mentioned quite extensively so far today, and it has to do with the pollution of our waters by some industries.

The fish also had a battle getting past Mr. Bell's anglers, to say nothing of the battle they have getting past our own commercial fishermen; but I can assure you that the Northwest Fisheries Association is extremely concerned with the conservation of our fisheries resource and works as much as possible hand in glove with the State of Washington Department of Fisheries, as well as with the U.S. Bureau of Commercial Fisheries.

All we wish to do here today is to point out to the people who are conducting this study that we are concerned about the future of the fishery resource, particularly in the Puget Sound Basin, and we hope you will let us be heard in the future should questions concerning the fisheries come up.

Thank you very much.

MR. GEDNEY: Thank you, sir.

Is there anyone else from King County that wishes to be heard?

E. R. Opstad was called as a witness:

(No prepared statement)

MR. OPSTAD: I just want to make a statement in regard to the use of the water on the North Fork of the Snoqualmie that was proposed this morning by the gentleman from Water District No. 97 in King County. It is our intention to draw attention to the Committee the necessity for a complete study of an area such as this.

The Town of Snoqualmie has a water source that is supplied from this area. It does not come directly from the North Fork of the Snoqualmie River. It comes from a spring-fed hillside where we have kept one or two of those springs and bring water to our little town; without ever seeing daylight, it comes out of our taps.

There is a spring-filled hillside there that could supply domestic water to all the people that would likely in the next thirty or forty years be in the Snoqualmie Valley if it were developed, without impounding the water in storage dams or otherwise making a water reservoir area that has to be closed to public access, to public hunting and fishing and so forth, because this water is filtered so perfectly now; and there is a great deal of excess water in the area where we have tapped a small portion; so we would like to call to the attention of this Committee the necessity for a complete look at this situation to see that the established supplies are not jeopardized by a dam which might affect, I don't know that it would, but it might affect the flow in this hillside, and determine whether it would be better to leave the water supply that is there for the use of the people in the neighborhood, the potential of the area, instead of building a dam above the area, which might destroy it, and haul that water to a metropolitan area not contiguous to this area.

MR. GEDNEY: Thank you, sir.

Is there anyone else from King County who wishes to be heard?

(No response.)

MR. GEDNEY: We will now progress to the lower Snohomish River Basin or the Snohomish River Basin proper.

The Snohomish River represents almost a full gamit of resource planning and usages which are considered desirable in this area. We have fisheries, agriculture and down at the lower end of the river, we have a port development, a commercial development.

We are going to start and try as nearly as possible to progress from the upper end of the Snohomish River Basin to the lower end of the river basin.

The first speaker will be Mr. Floyd E. Howell, representing the Snohomish Soil Conservation District. Mr. Howell.

Floyd E. Howell was called as a witness:

(Prepared statement read verbatim)

MR. HOWELL: Thank you; Mr. Chairman and friends, I represent the Snohomish County Soil Conservation District. We have just a brief statement which we would like to make.

"Snohomish County is blessed with an abundance of water in lakes, stream, wells and Puget Sound. This same source of water creates many problems for which solutions need to be found and placed into use.

This County all lays to the west of the Cascade summit; the headwaters of our streams, a distance of approximately eighty miles from the mouth of the larger rivers in Puget Sound.

The rainfall varies from about thirty inches at sea level to a hundred and forty inches at the summit. With this heavy rain and snow fall in the mountains and the short distance from the mouth of the streams to the headwaters a serious erosion and flood problem exists. Due to these streams depositing their silt loads in the lower valleys and the glacial actions centuries ago, thousands of acres of fertile soils now exist. These soils under soil survey classification range mostly from Class 1 to Class 4 in a classification of 1 to 8.

It is now these bottom land soils that are being used for agricultural production and which are providing by far the larger percentage of our dairy and cash crop production. It is also in these lowland areas where roads, railroads, utility lines, homes, farms, schools, and industries are located.

In the last twenty-five years we have had a doubling of our population in this County. Due to improved roads and the increase in industrial expansion in King County, which is forcing farms out of existence, we look for more agricultural and industrial expansion in Snohomish County.

Such expansion means that all of the better agricultural lands will be developed for more intensive agricultural use and much to industrial use. This in

turn necessitates the construction of homes, farm buildings, roads, utilities, industrial buildings, sewage facilities and numerous other things which add to the valuation of the County.

The problem encountered by this agricultural and industrial expansion are many, but most result from either too much or too little water of a required quality. We have all the water, salt water, that is, we need in Puget Sound, but it has a very limited use. We also have all the fresh water we need from our upland streams, if controlled and managed and often times isn't.

This fresh water is badly needed for domestic, industrial, agricultural, wildlife and recreational uses and will become more precious in the very near future. Without control of this water, our economy is endangered by the terrific loss of soil, crops, property, domestic animals, fish and quite often human life. Millions of dollars have been and are being spent in our lower valley areas to control these waters; first to keep it off the land in the form of flood waters and drainage water and to get it off the land and then to get it back on the land in the form of irrigation. There is an economic limit to which this land will justify. That point for agricultural purposes under present conditions has just about been reached, but for domestic, industrial, fish and wildlife and recreational uses, we have a long way to go.

It is the belief of we, the board of supervisors of the Snohomish Soil and Water Conservation District, that the control of our waters can best be made at or near their source. By this we mean that our county is drainaed by hundreds of lakes and streams, each of which is a contributor to floods but is also a potential reservoir. We believe that by a careful study certain areas can be found where: No. 1, enough water can be stored to prevent serious flood damage; No. 2, water can be stored to provide good, pure water for domestic and industrial uses; No. 3, water can be stored for recreational use; 4, where water can be stored, for agricultural use; and 5, water can be stored to provide water year around for fish.

We believe that where possible and practical, these reservoirs should be developed for multipurpose use. We commend our federal government for initiating this study and commend our state government for their active participation."

Thank you.

MR. GEDNEY: Mr. Paul C. Dickey, representing the Marshland Flood Control District.

Paul C. Dickey was called as a witness:

(Prepared statement read, in part. See Exhibit 25.)

MR. DICKEY: Mr. Chairman, ladies and gentlemen, as the Chairman mentioned, I am speaking for the Marshland Flood Control District, sponsoring the Marshland Watershed Project and the French Slough Flood Control District, sponsoring the French Creek Watershed District Project. These are Public Law 566 watershed projects.

This report is prepared on the basis of the following assumptions from the estimates of the Washington Soil and Water Conservation Needs Inventory of the Washington Conservation Needs Committee, April 1962: 1. The population of Washington is expected to increase from approximately 2,800,000 to 4,000,000 by the year 1975; 2. Food requirements are likely to increase sixty per cent by the year 1975; 3. An estimated 488,000 acres of land will be taken out of agricultural use by so-called "urban sprawl"; 4. There will be continued development of Washington's important water resources during the period until 1975; 5. The demand for recreational, wildlife and outdoor facilities should boost the amount of state land used for this purpose by forty per cent.

We presume that all the developments listed in the above estimates, except possibly item No. 4, will be more marked in western Washington and especially in the area from Seattle to Bellingham than in the rest of the State of Washington.

The farmers in the two watershed areas are acutely interested in each of the tendencies represented in the above estimates, but especially in their relationship to floodwater and sediment damage to the lands within these watersheds. The Conservation Needs Inventory shows that 1,599,300 acres of land have a problem of floodwater and sediment damage in this state. King, Snohomish and Island Counties have 18.2 per cent of this land or 291,072 acres. Skagit, Whatcom and San Juan Counties have 30.25 per cent or 483,788 acres. Together the six counties have a problem of floodwater and sediment damage on 744,860 acres, which is more than 48 per cent of the land in Washington sustaining such damage.

In general this damaged land is our best and most productive farmland. I feel a little bit sorry for people who are so ill informed as to write off this land as unimportant to the State of Washington for this is the kind of land that is in the top three percent of agricultural production, which the Department of

Agriculture estimates show has a productive power equal to 78 per cent of the poorest farmland. This land has so good productivity that the United States census over and over again show that its specific commodities, our counties in western Washington are listed right at the top of productive capacity for the United States.

The Marshland and French Creek Watersheds, adjacent to the Snohomish River near Snohomish, include 34,420 acres of land on which dwell 9,337 persons. Not all of the land is flood plain, but all of the residents on it, including those in the nearby towns, suffer from the far reaching economic results of disastrous floods. These results include great pits and channels cut out in the valley floor. Dikes and roads are destroyed. Bridges are dislodged. Industrial plants are damaged to the point of ruin. Many tons of sediment are laid on fields, ruining existing crops and reducing productivity. Cash crops are ruined by water with great financial loss to the landowner and the community. Logs and debris are dropped extensively over the area. Damage to homes in the area is often completely beyond repair.

Flood control structures installed in the two watershed areas previous to undertaking the watershed programs have a probable replacement value of $750,000 to $1,000,000. In addition, very extensive emergency funds have been expended by Snohomish County, the State Department of Conservation and the U.S. Corps of Engineers to rebuild damaged dikes, roads and pumping plants.

The Marshland Watershed Project and the French Creek Watershed Project have been organized under the authorizations of Public Law 566. The estimated cost of both projects is approximately $8,000,000. Very briefly, the plan for each watershed project includes a continuous dike along the riverbank, a floodway to carry impounded water to a discharge point and a massive discharge structure to take flood and drainage water through the dike and into the Snohomish River.

Obviously, the economic returns available in an agricultural community do not justify dikes that will exclude all floods. The planned dike height is estimated to shut out all growing season floods and a high percentage of winter floods. To reduce damage from overtopping at the lowest cost, the dikes are designed with a two and a half to one percent slope—rather two and a half to one slope on the river side but a five to one slope on the land side. Both slopes are seeded to erosion resistant grasses in all areas where otherwise unprotected soil is exposed.

Of necessity these dikes are designed for overtopping. However, the occasional floods that occur still have a very great cost to the residents. Data compiled from flood records by the Soil Conservation Service shows that eleven completely overbank floods occurred here from 1942 to 1955, or one every fourteen months. No one knows what the flood frequency will be when the watershed projects are completed, but the danger remains very real and flood damage will still be very great on the occasions when it occurs.

The most beneficial control measure that this Task Force can promote, in the thinking of the flood control District directors, is a single-purpose flood water storage dam, and by that, I mean not a power dam, on the Snohomish River at a strategic point above the flood plain and immediate foothill area. Such a dam could reduce peak flows to the point where the planned dike systems for these watersheds could provide permanent protection or the frequency of flooding would be very greatly reduced.

Thank you for the opportunity to present this report.

MR. GEDNEY: Mr. Sid Staswick, representing Snohomish County Drainage District No. 13.

Sid Staswick was called as a witness:

(Prepared statement read, in part. See Exhibit 26.)

MR. STASWICK: Mr. Chairman, ladies and gentlemen, on behalf of the Snohomish County Drainage District No. 13, consisting of twenty homes and/or farms on 623 acres of valley farm land, I present the following information:

About 400 acres of this land is plagued with overflow waters in four out of every five years, causing approximately $50.00 per acre loss or a total of $20,000 loss because of reduced crop yields, and/or $50.00 per acre additional cost in reseeding flood-destroyed crops. In floods similar to those we had in 1951, 1959 and 1960 the entire area is covered, resulting in approximately $50.00 per acre lost in crops on the total 623 acres, totaling over $30,000.00 loss to the area.

In the cases of extreme flooding, such as 1951, 1959 and 1960, there is considerable damage to existing inadequate levies in the way of erosion,

which has cost from $5,000.00 to $8,000.00 to repair.

Debris removal after extreme flooding is costly in time and energy spent for removal. Destruction to fences because of flooding would average $750.00 per year in Drainage District No. 13.

Loss to dairymen because of inability to haul milk during extreme flooding would average about $300.00 per day for two to three days in our smaller areas, totaling fron $600.00 to $900.00 for every two or three days of inaccessibility on the roads.

There is a wage loss to wage earners living in the area because of inability to use flooded roads, and schools lose because students cannot get to school.

I am sure that expense to the County Road District is considerable in removing debris, removing silt, and repairing erosion to flood-damaged roads, particularly in the years of extreme flooding.

We are faced with the danger and worry of loss of life because of the swift, rampaging waters of flooding.

Adequate flood control could easily double the economic potential of Drainage District No. 13 from about $180,000.00 to about $630,000.00.

There is a loss in financial remuneration to owners of rental homes and farms because of the fear of flood waters on the part of prospective renters.

The danger of flooding suppresses the value of farms and homes in Drainage District No. 13.

In the light of these financial losses, the fears and anxieties of the twenty families in Snohomish County Drainage District No. 13, and in the interest of conserving our limited valley farmland, we strongly suggest the improving of levees in our district and the creation of flood storage reservoirs on the tributaries of the Snohomish River.

That's from the Secretary of Drainage District No. 13.

MR. GEDNEY: Mr. Ralph Robinson? Mr. Robinson represents the Snohomish County Sportsmen's Association.

Ralph K. Robinson was called as a witness:
(No prepared statement)

MR. ROBINSON: Mr. Chairman and gentlemen, the Snohomish County Sportmen's Association did not know of this hearing at their last meeting so they did not take any action on a recommendation, however, over a period of years, they have gone on record time and again on various subjects on water resource development.

On one of these, river improvement, we are opposed to improving the river to such an extent that it becomes merely a flume to ferry water from the mountains to the Sound in a hurry.

This area has not only recreation values but fishery value. The two together form a large segment of the Northwest's economy.

On the other hand, there are proposals for a series of dams. This would check the water; in the spring time, you would have a large series of lakes extending up the valley and early in the summer, the water would be receding and consequently, you would have a small lake and a large area of mud surrounding it. You have all probably seen that same thing in various parts of the country.

Like I said, the Snohomish Sportsmen's hasn't taken an official position, but we do believe that rivers should be conserved in as natural a state as possible. If we can't keep them the way they are now, we must have flood control because these people, these farmers and other people that live in the flood plain, their livelihood, and in fact at times their very lives, depend on flood control; but we think there should be something worked out from this study group, and they probably could come up with an answer, to maintain the rivers as nearly as natural as possible.

Now, Mr. Chairman, the statement prepared by the Everett Hunting and Fishing Club, Dr. Richard Van Driel is here and he would like to read that statement.

MR. GEDNEY: Very well.

MR. ROBINSON: I will yield to Dr. Van Driel.

Dr. Richard W. Van Driel was called as a witness:
(Prepared statement read verbatim)

DR. VAN DRIEL: Mr. Chairman and gentlemen, this is a statement on behalf of the Everett Hunting and Fishing Club.

"We are a club dedicated to the principles of conservation of our natural resources, and water is the greatest of natural resources.

We are blessed here in Snohomish County with an abundance of good, clean waters which wisely administered will provide this area with its greatest asset.

The Everett Hunting and Fishing Club would recommend to you that those rivers now without

dams be left in their natural state as far as possible. This is to augment another natural resource, namely, the migration and spawning of anadromous fish, the salmon, steelhead and trout, in these unobstructed rivers.

Those rivers now with dams and hydroelectric installations should be utilized to their fullest capacity.

The Everett Hunting and Fishing Club would like to point out and recommend: 1. Along needed correction to the Snohomish River System, namely, the area from Avenue D bridge to the railroad bridge at the mouth of the Pilchuck River, a distance of approximately one mile upstream. This area contains three bridges and is one of the narrowest spots in the river, resulting in a natural bottleneck that causes the river to back up, with flooding of land between Snohomish and Monroe, Washington. 2. The continuance of maintenance dredging in the lower reaches of the Snohomish River system is a much needed operation for the fullest use of the lower reaches by river navigation for water service to industry located thereon. 3. We would urge the fullest cooperation with the Port of Everett in their program for the development of Tract Q, one of the last large industrial sites in the Northwest that would be available for deep water transportation. 4. Another project we feel is most urgent and should receive immediate attention is the raising of the present jetty in the Port of Everett to its original height as established years ago when this jetty was built. Due to settling and erosion, this installation is now only one-half efficient. Present and future up-river boat launching, moorage and recreational areas have created a much greater need for protection than ever before, both to pleasure and commercial navigation.

Respectfully yours, Water Resource Committee," of which I am Chairman.

Thank you very much.

MR. GEDNEY: The Snohomish County Economic Council is instrumental in organizing and planning for various types or evaluating the industrial and commercial potential of the lower Snohomish River Basin. Mr. William G. Hulbert, representing that group, will make a statement and present the organized statements of the others.

William G. Hulbert, Jr. was called as a witness:

(Prepared statement read verbatim)

MR. HULBERT: I heard on television there are three times a man is truly alone. One is when he is born, one is when he dies and the other is when he testifies. Now, I assure you I am not alone in this testimony. There has been a great deal of effort and a lot of cooperation from many facets and phases of Snohomish County.

"My name is William G. Hulbert, Jr., speaking as a Director of the Snohomish County Economic Development Council, Inc., a nonprofit civic organization formed for the purpose of developing the economic-industrial base of the cities and towns within Snohomish County, as well as the county itself.

The Economic Development Council is composed of the following organizations. For the record and for those here, I think I should read them so you will know that we are not just speaking for myself or two or three people. We are composed of the following organizations: City of Everett; Everett Area Chamber of Commerce; Port of Everett; Snohomish County PUD No. 1; Snohomish County Labor Council; Snohomish County Airport; Arlington Chamber of Commerce; Darrington Chamber of Commerce; Lynnwood Chamber of Commerce; Town of Mukilteo; Sultan Ad Club; Port of Edmonds; Monroe Chamber of Commerce; Marysville Chamber of Commerce; Mountlake Terrace Chamber of Commerce; Snohomish Chamber of Commerce; Stanwood Chamber of Commerce; Arlington Airport; Edmonds Chamber of Commerce; Granite Falls Lions Club; Town of Index; Pinehurst Commercial Club; Tulalip Tribes, Inc.

The Council's objectives are to work as a team to assist individuals, companies and communities to develop jobs and markets for existing industry, in addition to attracting new industry and payrolls to broaden our tax base which will pay for community necessities and amenities.

Because the Council's approach recognizes the need for area-wide, coordinated planning, which includes multiple use, the Council believes the Water Resources Study, with its agencies working as a team, can do an outstanding job of providing the data for that planning. The Council assures the Task Force its support.

In conjunction with the broad objectives of the Task Force, the Economic Development Council wishes to cooperate fully so that a balanced program for the development of all community areas can be

projected. The Council feels this program must take into consideration the near-term demand for deepwater, forty foot, deepwater sites, and sites which are related to our natural geography; particularly those sites which lie within, or adjacent to the existing transportation networks of railroad, freeway, primary highway, existing utilities and other pertinent, competitive, feasibility factors for attracting new industry. The immediate demands for sites of several acres to one hundred acres in size which have access to tidewater have not been met because of unavailability. These demands have come from basic industries which the economy of this region requires.

The Sites and Resources Team of the Economic Development Council, working with county and city planners, is currently preparing a coordinated plan of existing transportation and utility networks with which to identify existing and potential industrial sites which would meet demands for new industry." We are enclosing as part of our testimony here a small-scale map of a much larger map that we have of the entire Snohomish County, showing these in relation to the various river systems and the topography of the area.

If you wish, we could show this map at this time or else just simply present it as part of the brief.

MR. GEDNEY: I think you can do it that way.

MR. HULBERT: We will do it that way, then. A small scale map is attached.

The cities and county recognizes the need for a Port-Cities–County balanced plan for comprehensive development which will allow us to meet both current and long-term demands for industry development, existing and new, in conjunction with the needs for recreation, agriculture, conservation, and so forth.

In this connection, I should like to emphasize, and it could be more plainly shown on the map, but I should like to that the Snohomish and Stillaguamish River valleys are traversed by three transcontinental railroads–

MR. GEDNEY: Why don't you bring the map up?

MR. HULBERT: Will you bring the map up, Lloyd, and use it folded so they can see it.

–the Snohomish and Stillaguamish River valleys are traversed by three transcontinental railroads, the railroads are in green color, I believe, anyway, believe me, they are on there; the east-west transcontinental highway, U.S. 2, is shown on the map, and a north-south international highway, which will eventually be known as the International Highway No. 5, which is now what we know as 99, such a combination, all of which are also contiguous to deep water or potential deep water in Everett, Stanwood and other areas in Snohomish County. Such a combination of transportation facilities is unique and all-important for the economic future of Snohomish County. At the same time the Snohomish and Stillaguamish River valleys are a rich and fertile agricultural area, as you have heard. With the increase in frozen food industry in this vicinity, as well as dairying and cattle feeding, the importance of this agricultural asset must not be overlooked. To these we must add the recreational contributions of the two river systems, fishing, both sport and commercial, hunting, camping and hiking.

All of these elements add to the economic base of Snohomish County, as well as to the needs and enjoyment of the people.

We submit that any over-all planning of the Snohomish and Stillaguamish Rivers and their tributaries must take into account all of these elements, and others, and none must be sacrificed for the enhancement of the others.

I think that's enough for the map. I have a few more comments to make.

We have attached to our brief letters of documentation for this need balanced development from various public and private officials, among them. D. A. Duryee & Co., Scott Paper Co., Stanwood Chamber of Commerce, Schiefelbein, a realtor, Washington Natural Gas Co., Simpson Lee Paper Co., American Tug Boat Co., Public Utility District No. 1 of Snohomish County, City of Everett Water Department, Columbia Cascade Corporation, Snohomish County Labor Council, Office of the County Commissioners–Snohomish County, Pacific Tow Boat Company, office of the Mayor of the City of Everett, The Port of Edmonds, Bakken Iron, Inc., and others. (See Exhibits 27-46)

It is the Council's belief that the deepwater potential areas of Tract Q, as well as the delta area of the Snohomish River, can best be developed on the area-wide concept basis which should take immediate consideration of current freeway, bridge planning which conceivably could prevent the access of rail and navigational channels to the delta area and the Snohomish River valley."

I might depart from my prepared text to state that this is an urgent matter, and I am sure Mr. Gedney is very aware of this, that is, whether or not

there will be stationary or movable bridges between Everett and Marysville; and the State Highway Department could very well effect the usage in the planning of this eventually made of the Snohomish River delta area.

Similarly, the existing Port Susan and Stanwood area and the county shoreline potentially offer sites which could become economically feasible for payroll-industry development on a compatible basis with recreation and flood control programs.

The Council, in its desire to cooperate with the Task Force, would appreciate receiving information on the progress of the study at periodic intervals in order that we may coordinate our local and county plan for the best public interest benefit."

We are planning and attempting to reach what you might call an early conclusion on which direction we and all of our members would go. It would be very helpful it we could be kept abreast of any thoughts or plans that you might have.

"We would also appreciate a later public hearing opportunity to present further detailed information on specific projects as they are developed."

It has been my pleasure to be able to present this on behalf of the Snohomish County Economic Development Council, and I will hand this to the Secretary and include the map also.

Thank you.

MR. GEDNEY: Rollie D. Berry, Superintendent of the Everett Water Supply

Rollie D. Berry was called as a witness:

(Prepared statement paraphrased. See Exhibit 47.)

MR. BERRY: Thank you. Mr. Chairman, ladies and gentlemen, I am here representing the City of Everett primarily with respect to their Water Department. I am Rollie Berry, Water Superintendent for the City.

We have considerable plans and data that we have turned in here, along with comments and recommendations; and I won't make a verbatim recital of all of these at this particular time. This will be rather brief and I will just cover a few of the points that are particularly important, at least that we feel are important in this type of an undertaking.

We certainly welcome this comprehensive study. We regard this as a real opportunity, as far as our department is concerned, rather our section is concerned, and we plan to cooperate to the fullest possible extent with the Task Force in this study and further plan to fully utilize the results of the study.

I might mention a few words about the Everett water system. The City of Everett acquired its water system in 1916, and since that time, the system's usage or consumption has increased from 4,000,000 gallons a day to about 110,000,000 gallons in 1963. The annual average daily consumption of the system was 109.7 million gallons per day. This represents an increase in a period of less than fifty years of something like 27 times from the 1916 consumption.

The system serves over half the population of Snohomish County in the range of 120,000 persons, including some 50,000 located within the corporate city limits of the City of Everett.

Planning is important and as a result of some of our previous planning, we are now in the process of more than one rather large construction project, and as Mr. Steele of the PUD has previously mentioned, we are over ninety per cent complete on the first stage of the Sultan project, which will initially develop, as mentioned, 70,000,000 gallons per day additional firm supply.

This is a joint development by the PUD of Snohomish County and the City of Everett. The estimated cost is in the vicinity of $10,000,000 for this first stage.

The City is just embarking on another $10,000,000 project which involves the replacement of one of the existing transmission lines, increasing its capacity from a nominal 10,000,000 gallons per day to the vicinity of 50,000,000 gallons per day.

There are also several other features, such as a new tunnel from Lake Champlain, some terminal storage to be installed along the Casino Road as a local distribution system and minor, at least a smaller size transmission system piping to be located within the city.

We recognize this has undoubtedly taken planning. We know it was involved as far as we were concerned to get this far. We further recognize that there is a great deal of planning yet to be done. We only hope to be able to utilize this.

As indicated by the figures of 120,000 persons served in Snohomish County, with some 50,000 of them being located in Everett, we in the Everett water system have not confined our efforts solely to the city. This has been viewed as an area-wide development, and we like this concept. We stayed with it in the past. We plan to stay with it in the

future, and we feel that the results of this study will very definitely enhance our ability to go along with the area-wide concept.

There is one thing I would like to mention with respect to the multiple-use concept. Now, everyone is for the multiple use. If you're not for multiple use, you must be against motherhood. It's that type of thing.

From a practical point of view, we would like to mention one particular point with respect to multiple use, and we have heard examples of this, I think, in the testimony presented here already in regard to the varied interest or multiple discipline involved with multiple use. The one thing we feel is quite important to establish, and we sincerely hope that as a result of this study that these uses will be established on a rather local basis, is the concept of priority. Now, multiple use by itself sounds very good until we start looking at the various interests represented by these various multiple uses. I think one of the really truly good benefits that could be derived from the study is an allocation under a local basis, at least a recommendation, for priority of the various multiple uses. We reel this is particularly apropos within the watershed areas.

As an example of some compatible uses, that we would consider being compatible uses in our Sultan River watershed, water supplies, flood control, power, logging, mining, fish and wildlife enhancement.

One other point I would like to make, we are very interested in an opportunity to review interim reports. We understand this will be developed. As we go along, the Task Force produces certain results and interim reports, we would be very interested in being informed on these reports, having an opportunity to review and comment on them, particularly with respect to the area here, but also with respect to the balance of the area encompassed in the study.

The majority of our information and data and so on has been presented here. I think this will terminate my general remarks on the subject.

Thank you.

MR. GEDNEY: Thank you, Mr. Berry.

Mr. George Bartch, Manager of the Port of Everett.

George D. Bartch was called as a witness:
(Prepared statement read verbatim)

MR. BARTCH: "Mr. Chairman, ladies and gentlemen, we wish to report to you the activities of the Port of Everett and to comment upon the necessity for long-range water and land resource development in the Everett area.

Preparatory to this report, the major employers of the community were contacted relative to their interests in the short and long-range development of the Everett Harbor and the lower Snohomish River delta area. Their statements are included with the exhibit we are submitting today. Our Everett local of the International Longshoremen's and Warehousemen's Union and the Everett Retail Trade Bureau have also lent support to the Port exhibit by resolutions which are included with out exhibit.

Key points have been stressed by all of these organizations: 1. The need for fresh water log storage areas now and for the future; 2. The ability to move logs by water under all weather conditions; 3. The Port of Everett should prepare a plan which will provide for industrial and recreational development of Tract Q; 4. No adverse effects on the quality of fresh water now and in the future should be made; 5. That we should recognize the fact that future industrial growth for Everett is directly linked to deep water sites such as Tract Q; and 6. The need for deep water channel inside the jetty as far upstream as economically feasible for existing industry and new industrial land development.

The Port of Everett, under the laws of Washington, is charged with the responsibility of promoting the economic advancement of their Port District. The Port of Everett has, over the past years, invested heavily in dock construction, small boat and industrial land facilities, and is currently completing a million dollar small boat harbor to serve the fishing and recreation interests of the community. The Port of Everett recognizes that the Port area is the hub of an increasingly important industrial and recreational perimeter, that is, Snohomish County. Cognizant of the still growing need for further industrial land and recreational development, the Port employed the firm of Tippetts-Abbett-McCarthy-Stratton to prepare a comprehensive development plan of tract Q in the Everett Harbor. The plan recognizes the log storage, land and water requirements of existing timber industry; the growing need for new recreation facilities on Puget Sound and the requirement of needed new deep draft industrial site development in the Everett area. We are submitting this report today to be included with the official record of these proceedings."

I would like to show you the map as Tippetts-Abbett-McCarthy-Stratton have prepared it. This is the City of Everett. This is east, this is north (indicates), south and Puget Sound. This is the huge area that is known as the Tract Q. The area noted in red here represents approximately 500 acres and is reserved for industrial lands. These marked in this region over here is approximately 200 acres reserved exclusively for log storage. The area shown in green is approximately 80 acres reserved exclusively for recreation.

It is the position of the Port of Everett that this Tract Q can only be developed for the multiple-use concept. Only through the use of log storage and industrial land are we going to be able to amortize the cost of road facilities; and only through the use of industrial land and log storage are we going to provide roads that may in turn serve the great recreation interests that are in this Puget Sound and Snohomish County area.

The Port of Everett has received these resolutions and letters from the community. They feel that it is the position of the community and, indeed, it is the position of the Port of Everett Commission that such development cannot be accomplished without a multiple-use concept for the Tract Q area. The Tippetts-Abbett-McCarthy-Stratton report offers a most suitable and practical plan as to how the Port of Everett Tract Q can coordinate with the over-all Comprehensive Water Resources Study and contribute to Snohomish County economic growth."

I submit these reports to you for your records, and this report includes a map like this on a smaller scale.

MR. GEDNEY: Mr. William E. Brooks, General Manager of the Everett Area Chamber of Commerce.

William E. Brooks was called as a witness:
(Prepared statement submitted. See Exhibit 48)

MR. BROOKS: Mr. Chairman, we are all entitled to a break. I am going to give you another one here. Much of my statement contains a lot of repetition.

I would like to point out, however, that the Chamber's position in this will be to cooperate with the Port Rivers and Harbor Committee that assisted the solicitation of statement from existing industry relative to their requirements today and some of their projections for the future.

I am also enclosing a resolution from our most recent Board meeting authorizing this appearance and specifically requesting the opportunity for further hearings.

MR. GEDNEY: Thank you, sir.

Mr. Russell J. LeRoux, Branch Manager of the Weyerhaeuser Pulp & Paper Company.

Richard K. Headley was called as a witness:
(Prepared statement read verbatim)

MR. HEADLEY: Mr. Chairman, ladies and gentlemen, I am filling in this afternoon for Mr. Russel J. LeRoux, Manager of the Everett Branch of the Pulp & Paper Division of Weyerhaeuser Company. He was scheduled to make a position statement this morning but because of a prior commitment cannot be here this afternoon.

"I am Richard K. Headley, Manager of the Everett, Washington, branch of Weyerhaeuser Company's Wood Products Division. I would like to express our company's multiple interests in both short and long-range water resource planning, management and wise use in this region. While the company is primarily concerned with the forest and land resources and their management, we are almost equally reliant upon water resources and their management.

Let me be specific. One of the principal tributaries to the Snohomish River is the Snoqualmie River which arises in our Snoqualmie Falls tree farm. Periodic flooding of the Snoqualmie River has caused serious damage in the Snoqualmie valley to homes, homesites and to substantial commercial operations including our mill at Snoqualmie Falls. Our company has been a prime supporter of a King County flood control bond issue, passed twice by the people of that county.

In the area of watershed management, our concern can perhaps best be expressed by citing a number of present activities and research projects in which we are involved. On Boise Creek at our White River operations near Enumblaw we are cooperating in a water quality and biological productivity survey with the Washington State Pollution Control Commission, the Fisheries Research Institute, the College of Fisheries at the University of Washington, the U.S. Geological Survey, and the U.S. Soil Conservation Services. The company is also participating in a study, together with several local univertisy officials as well

as northwest public fisheries departments, investigating certain basic factors responsible for the productivity of streams. We are also currently meeting with representatives of the State Fisheries and State Game Departments to develop a set of common ground rules and practices in connection with logging in or near water courses.

In the area of water quality protection, Weyerhaeuser is committed to a company-wide water resource management and water protection program which includes the following points: A. A positive management-directed attitude based on appreciation of the social and economic values of the water resource; B. An active program of positive water protection accomplishment; C. An aggressive research program encouraged to develop more basic water resource knowledge and to develop practical applications to solve water quality problems; D. A cooperative approach to water quality problems; D. A cooperative approach to water management with appropriate private and public institutions and agencies.

At Everett, where we operate both sulphite and kraft pulp mills, the company has expended several millions in installation, construction and maintenance costs to protect the waters adjacent to our operations on Port Gardner Bay. These installations, some of them currently under construction, have been made in cooperation with joint findings of our own research personnel and the Washington State Pollution Control Commission. It is perhaps pertinent to point out that as a matter of record in the offices of the Washington State Pollution Control Commission there have been no fish kills attributed to our company's pulping operations on Port Gardner Bay or in Everett Harbor since the installation of some of our water protection devices in 1951.

Recreation is a growing activity, and for that matter a growing business in the State. Because of our tremendous water resources, much of the recreational attraction in the state is oriented to our waters and our shorelines. Our company's interest in this activity is not insignificant. In addition to a number of tree farm parks and boat ramps established in our own lands for public use, our company currently is supporting a referendum measure and in initiative measure, both on the November 3, ballot, which will give the people of the State of Washington an opportunity to enlarge their ownership of marine recreational lands and facilities.

We have an interest, too, in the adequacy and number of deep water industrial sites and the uses to which tidelands are and may be put. A statement in this regard has been prepared for the Port of Everett and is included in that agency's presentation today.

It should, of course, be pointed out that while our lumber mills, pulp mills and converting plants utilize considerable water in their manufacturing processes, we should perhaps be classified as water producers primarily and water users secondarily. In the first place, waters which are used in our operations are not consumed; they are used and reused many times, and returned to the water courses for further use. In the second place, here in the State of Washington, at least 43 municipalities, including Seattle and Tacoma, two of the state's largest, derive substantial portions of their water supply from company-owned and managed tree farms.

Weyerhaeuser Company views the proposed comprehensive water resource study of Puget Sound and adjacent waters as being potentially highly desirable. We are pleased to note that the project will be coordinated through the joint efforts of federal and state agencies. We would like to point out that since these state agencies, especially the Pollution Control Commission, the Department of Conservation, the Departments of Fisheries, Game, and Health, have prime responsibilities in the management of activities affected by water resources, they should each be adequately and fully represented on the appropriate subcommittees working in this survey. Further, the State of Washington should have full and adequate representation on the over-all policymaking committee which finally submits recommendations since we are confident that many of the recommendations coming from this study will have to be implemented by the state agencies themselves.

Weyerhaeuser Company appreciates this opportunity to be heard prior to the time that a comprehensive water resource study is fully underway. We wish to extend at this time our full cooperation to the state and federal agencies under whose sponsorship this study will be conducted."

Thank you.

MR. GEDNEY: Thank you, sir.

Mr. Robert March, General Manager of Scott Paper Company.

Robert E. March was called as a witness:

(Prepared statement read verbatim)

MR. MARCH: "My name is Robert E. March, and I am the General Manager of the West Coast Division of Scott Paper Company.

The West Coast Division operates a mill at Everett, which uses approximately 295 million board feet of timber each year to produce some 300 thousand tons of pulp and some 150 thousand tons of paper; three large tree farms, one in Skagit County, one in Snohomish County and one largely located in the southern portions of the Puget Sound Basin; logging camps at Hamilton in Skagit County, Granite Falls in Snohomish County and Lester in King County, together with smaller logging operations and other assorted facilities. This Division also operates a pulp mill at Anacortes and Mr. Robert Weller, General Superintendent there, presented a statement before your Task Force at the hearing in that city in October 12th. The entire Division employs nearly 2,000 people.

Our Everett mill uses more than 65 million gallons per day of fresh water from the City of Everett's supply in the Sultan River basin, and operates under waste discharge permits from the Washington Pollution Control Commission authorizing the discharge under specified procedures of liquid mill effluents into Port Gardner Bay. The electric power requirements of this mill are very substantial, and they are now being met from hydroelectric generating facilities in the Columbia Basin. The present low cost of this energy is an important factor in our ability to compete. Natural gas and hogged fuel, a waste product of the wood working industries in the area, are used to generate steam for process uses.

We use water to transport some of our raw materials and products, as well as for a storage place for some of our logs. We have our own deep water dock facilities to handle ocean going freighters and barges. We own or lease water storage areas in locations influenced by fresh water. The movement of logs from the dumps to storage areas and finally to our pulp mill is accomplished primarily by towing. In order to assure continuous mill operations during adverse weather conditions, we must draw logs from protected storages close to the mill. Unfortunately, the jetty which forms the west bank of the Snohomish River has deteriorated to a point where towing becomes hazardous under certain weather conditions. Moreover, its condition has led to the loss of some log storage areas and has endangered others. We are working with the Port of Everett and other interested parties to remedy these difficulties.

There is another matter that I would like to bring to your attention today, one that I believe should be an important part of this Task Force's thinking as it develops a study of water and water resource development in this area.

The major factor that attracted Scott and other wood products industries to the Puget Sound Basin was the existing timber stand and the favorable timber growing conditions, one of the most vital of which is plentiful rainfall. However, other attractions of this region, such as our natural beauties and generally mild climate, make it a highly desirable place in which to live and to work, and a focal point for vacationers and tourists from other regions. As a result, we see a constant reduction in the acreage devoted to the growing of timber. Examples of this trend are numerous. Large areas have, properly, been set aside for park and wildenress purposes and there proposals to increase them. As population and industry grow around the shores of the Sound, more and more of the highly productive bottomlands are permanently removed from production and there are demands for flood control projectes, hydroelectric power facilities and larger municipal water supplies. Most of such developments call for large water impoundments in our fertile river valleys. In addition, the lines for the transmission of electricity and natural gas to consumers have an increasingly noticeable effect on tree gorwing acreage. As an example, approximately 750 acres of Scott Paper Company's timberlands, a very small percentage of the total of private and public timberlands so affected, are now removed from timber production due to these rights-of-way, and this figure will increase as the years go on.

It is not my intention to claim at this point in time that this region's forests and watersheds are in imminent peril. However, I do feel that the time has certainly been reached when we can no longer be in any way extravagent with the lands that remain for timber production and watershed protection.

While it is difficult to forecast with any precision what the future will hold, it seems clear that there will be further population growth, more industrialization and more economic growth in the Puget Sound Basin, and there will be more and more demands and pressures. The exact shape of things to come will almost certainly hinge in large measure on

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the way we develop and use all of our water resources. This, in turn, will have a definite effect on the continued availability of process waters and timber which are so vital to the future of Scott Paper Company and all other wood products firms in this region.

It will certainly be a difficult task to fit together in one pattern all competing demands and contradictory development possibilities. It is for these reasons that we welcome the fact that the Columbia Basin Inter-Agency Committee through your Task Force is to make a comprehensive study of all these water related problems. We are hopeful that its work will help to make it possible for these inevitable changes to take place without adversely affecting industries presently located here.

We note that your format calls for a full-scale federal and state participation in the study. We are pleased that the state will be so closely involved so that, while the various participating Federal agencies present and represent the broad range of national concerns, local viewpoints, interests and problems will be thoroughly presented and considered in your deliberations.

We stand ready to help you in any way that we reasonably can. However, until we have a little more knowledge of the manner in which you will conduct your study and the type of information you need, we find it difficult to know just what kind of presentation will be of help to you. For this reason, we hope that you will call on us in the near future for further detailed information that we may be able to provide. We suggest that you periodically conduct public meetings at which your progress can be reported and that you hold public hearings from time to time at which interested parties may present further pertinent information as you proceed with your study.

I thank you for the opportunity to appear before you."

MR. GEDNEY: Thank you.

Mr. Victor A. Johnson, representing the Everett Yacht Club. Mr. Johnson's statement from Everett Yacht Club will be read into the record.

Victor A. Johnson was called as a witness:
(Prepared statement read verbatim)

MR. JOHNSON: "Statement of the Everett Yacht Club to Columbia Basin Inter-Agency Committee, October 22, 1964;

Gentlemen:

We are club dedicated to recreation afloat and as such are interested in the preservation of existing waterways and facilities as well as the creation of new facilities and continued conservation of our most valuable resource water.

Specifically, we would like to suggest continued dredging of the Snohomish River so as to maintain a minimum depth of at least 14 feet so as to benefit industry along the river and as an aid to upstream flood control. We would also suggest a test dredging of the mouth of the Snohomish River so that the main river would flow past Priest Point toward Mission Beach instead of flowing into the main Everett Harbor. A side effect of this exploratory dredging would be an exploratory placing of sand traps on the bay side of Tract Q so as to utilize the forces of nature in an effort to build the Tract above high water. Along this line. we would urge the fullest cooperation of the Corps of Engineers with the Port in their program for the development of Tract Q, the last large industrial site left in the Puget Sound area that is available for deep water transportation. Finally, a project we feel is most urgent and should receive immediate attention is the restoration of the existing jetty at the mouth of the river to its original height. Due to settling and erosion, the jetty is mostly underwater at high tide and as such, is not performing its intended function. A westerly extension of the jetty to the vicinity of the lighted buoy No. 2 so as to prevent the filling of the entrance to the river by the backflow of water off of Tract Q is also imperative.

Present and future river commerce have created a much greater need for protection than ever before, both for commercial and pleasure navigation.

Respectfully yours, Michael G. Baker, Commodore, Everett Yacht Club"

MR. GEDNEY: Mr. Williams, Business Manager of the Tulalip Tribes.

Wayne W. Williams was called as a witness:
(Prepared statement read verbatim)

MR. WILLIAMS: Mr. Chairman, ladies and gentlemen, don't let the rustling of these papers frighten you. I am just going to read a very brief prepared statement. It won't take more than a few minutes.

"The Tulalip Tribes support in principle the aim of the comprehensive water resources study now

being conducted. This study is an opportunity for our region to plan for the future in an intelligent manner and in so doing avoid the mistakes of others. It is fitting that study of this kind is being undertaken as our Pacific Northwest county deserves not less than our best efforts to preserve and at the same time develop it to its highest and best use. The Tribe especially supports the industrial development of the Puget Sound region with special emphasis on the Tulalip-Marysville-Everett area. The Tribe was instrumental in securing federal legislation that permitted Union Oil Company to secure approximately 2,000 acres of lands on the Tulalip Indian Reservation for a $50,000,000 refinery site. We own and are presently leasing to Boeing the land upon which their Test Site is located. More recently our Tribe has been engaged in efforts to reclaim over 300 acres of land in the Snohomish River delta area with the aim of utilizing it for an industrial site. With the addition of adequate water transportation facilities in the form of deep water channels the entire area between Everett and Marysville will become a tremendously valuable addition to the inventory of Puget Sound industrial sites. These three instances are cited to illustrate our Tribes' interest and activity in the field of industrial development.

The ability of our area to grow is of particular concern to us as other Tribal enterprises are contingent upon such growth. As concerned as we are for the attraction of new industries to the area, we are also interested in the retention of existing industries. Specifically, we are directly concerned with the preservation of the existing salmon runs that are dependent upon the Snohomish and Stillaguamish River systems for their continuance. This natural resource contributes not only to the economy of our tribal members but also to a multitude of other commercial fishermen, both American and Canadian, as well as to the sportsmen of the Northwest.

At a time when the nations of the world are facing the immense problem of feeding a rapidly expanding population more attention is being directed toward the sea providing part of the answer to this complex situation. It behooves us to voice our concern over the future of the salmon. Our own country's concern was given form in the recent passage in the Congress of Senate Joint Resolution 174, which authorizes the Bureau of Commercial Fisheries to "conduct a survey of marine and fresh water commercial fishery resources of the United States."

"Pollution and dams are two of the salmon's most serious obstacles in their fight to perpetuate their own kind. As hardy as the salmon have been thus far does not mean that they will continue in the face of continued mistreatment. Should the salmon disappear from our rivers and streams, an industry will die and will be comparable to a thriving industry moving to another state. One industry should not be sacrificed for another. If it can be shown that the salmon runs will be relatively unharmed by the future development plans for our rivers and streams, the support of our Tribe will be gladly extended toward such a development program. If, however, the salmon are to be regarded as expendable, we will take every action necessary to prevent their destruction with every resource at our disposal, not the least of which is the Treaty of Point Elliott, in which the United States of America accords recognition to the vested interests of our people in these salmon. We are hopeful, however, that the needs of the area, both present and future, will be considered and that the future of both the salmon and the Puget Sound country will be bright."

MR. GEDNEY: Mr. Ronald G. Triggs, Joint operator of the Hermosa Point Resort, Inc., from Marysville.

Ronald G. Triggs was called as a witness:
(No prepared statement)

MR. TRIGGS: Mr. Chairman, ladies and gentlemen, this is somewhat of a surprise to me. I didn't know I was going to make this report until this morning.

I am operating a resort in the bay Mr. Williams was talking about that is in this territory and we have a problem of the bay filling up. Since the Alaska earthquake, the low tide had gone down at least a foot more than it did before, and we have a maximum depth water at a minus three foot. The bay is used by many pleasure boats and fishermen, and we have visitors from all over the country, from New York, coming there to exercise their fishing rights and fish for salmon, which are gradually disappearing; but the prime importance is to recover the salmon and dredge the bay. It's a big job for a dredge to come in there. I have here a couple of pictures.

MR. GEDNEY: As a matter of interest relative to Mr. Triggs' testimony, the Corps of Engineers, in cooperation with the Tulalip Tribes, is making a study of the feasibility of developing this small boat basin in Tulalip Bay.

Mr. George Petrie, Manager of the Snohomish County Airport.

George C. Petrie was called as a witness:
(Prepared statement read verbatim)

MR. PETRIE: Mr. Chairman, ladies and gentlemen, I have a brief statement to read into the record on behalf of the Snohomish County Airport Commission. It is addressed to the Task Force for the Puget Sound and Adjacent Waters Study.

"Gentlemen:

The Snohomish County Airport Commission has developed an industrial park upon the County Airport and recognizes the importance of Water Resources in the Puget Sound Area. We believe your Study of Water Resources will be of value to the future development of this area and commend and encourage you in your efforts.

The Airport Commission feels the most immediate need for the area we are concerned with is for the development of further deep-water port facilities in the Edmonds-Everett-Tulalip area. This would be of benefit to the industrial tracts bounding the airport and in turn assist the airport's industrial development.

While there are many facets to the Water Resources Study, we feel it best to confine our recommendations to a specific and urgent need which is deep-water port facilities such as the development of the Snohomish River delta for industrial and recreational acreage and a possible airport.

We also feel that this could be accomplished under a program that would retain a balance in the over-all water resource development of Snohomish County.

Thank you for the opportunity to place into the record our recommendation and thoughts on this important subject. Yours very truly." and it's signed by Robert D. Best, Chairman of the Snohomish County Airport Commission.

MR. GEDNEY: Is there anyone else from Snohomish County who wishes to be heard?

(No response.)

MR. GEDNEY: Is there anyone else who wishes to be heard on the general subject of this hearing?

(No response.)

MR. GEDNEY: If not, the hearing is adjourned.

(Whereupon, at 3:00 o'clock, p.m., Thursday, October 22, 1964, the hearing in the above-entitled matter was closed.)

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OLYMPIA HEARING

OFFICIAL TRANSCRIPT OF PROCEEDINGS

BEFORE THE

PUGET SOUND TASK FORCE, SUBCOMMITTEE ON COORDINATED PLANNING, COLUMBIA BASIN INTER-AGENCY COMMITTEE

In the Matter of

COMPREHENSIVE WATER RESOURCES STUDY PUGET SOUND AND ADJACENT WATERS

Olympia, Washington

October 28, 1964

Cascade Reporting Company

BEFORE THE PUGET SOUND TASK FORCE,
SUBCOMMITTEE ON COORDINATED PLANNING,
COLUMBIA BASIN INTER-AGENCY COMMITTEE

In the Matter of:

COMPREHENSIVE WATER RESOURCES STUDY OF
PUGET SOUND AND ADJACENT WATERS

Auditorium,
General Administration Building,
Olympia, Washington,
Wednesday, October 28, 1964

Pursuant to notice the above-entitled matter came on for hearing at 10 o'clock a.m.

BEFORE:

JOHN A. RICHARDSON, Co-Chairman, Puget Sound Task Force
ROBERT H. GEDNEY, Co-Chairman, Puget Sound Task Force

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AREA 3, OLYMPIA, PROCEEDINGS

MR. RICHARDSON: Good morning.

Unfortunately, we do not have a public address system in the building here, so I am going to ask everyone who speaks to come to the lectern in front here and will you please speak up.

This is the third and final of three public hearings of the Puget Sound Basin Study Task Force. There is an outline of the report available on the rear tables.

I believe most everyone here is familiar with the way that this is established as part of the number of basin studies authorized by Congress following an extensive study by the Senate Select Committee on Water Resources. We held a hearing at Anacortes about six weeks ago or four weeks ago, and we had one at Everett last week; and this one is the final one of the three.

We would like to make sure that everyone has filled out a registration card and has indicated whether or not they wish to make a statement or to file a statement for the hearing record. It is permissible to file the statement alone. You don't have to speak unless you wish to. We would like, if you have an extra copy of your statement, to leave it at the rear of the room.

We will hear first very briefly gentlemen, from the state and federal agencies who have all filed written statements. I would ask that these persons that I first call on summarize their statement and try to do this in two minutes or so.

First, I would like to call on Mr. Lewis Kehne, representing the United States Department of Agriculture. Mr. Kehne is with the Soil Conservation Service in Spokane.

Lewis F. Kehne was called as a witness:

(See pages 1-3 of pamphlet, "Statements of Federal and State Agencies" bound at back of report.)

MR. KEHNE: Mr. Chairman, ladies and gentlemen, I am very happy to be here to participate in the hearing on the Puget Sound Study.

As Mr. Richardson told you, my name is Lewis Kehne. I am with the U. S. Soil Conservation Service, but I am speaking for the U. S. Department of Agriculture. The official statement of the U. S. Department of Agriculture is found in the bulletin which is on the table in the back. I am sure you all have copies, and I would ask the Secretary that this be entered as the official statement of the U. S. Department of Agriculture.

In the meantime, I will make a little summary off the cuff of the important points we cover.

We want you to know that the U. S. Department of Agriculture work is being carried on by the Soil Conservation Service, the Forest Service and the Economic Research Service.

The Department of Agriculture analyzes and develops projections of the agricultural, forestry and other related economies, their use of land and water resources and the relationship to the total economy of the basin. It investigates and studies agricultural, rural and upstream water and related land resource problems and needs for development

The water problems analyzed include flood water and sediment damage to rural lands and properties, impaired drainage of agricultural lands, agricultural drought problems and the water needs for livestock and rural domestic use, recreation, fish, wildlife and forest-based industries.

It inventories and analyzes potential water and related land resource development and upstream watersheds, including an analysis of water storage capacity, the effect of land use and management, practices on water quality and flow characteristics and the potential of hydrological effect of agricultural, rural and upstream watershed developments.

Because I am from the Soil Conservation Service, I would like to elaborate a little bit on what the Soil Conservation Service is going to do, and our work will be in addition to our regular program of assisting soil and water conservation districts in their program and also in preparing work plans for Public Law 566 Watersheds where they have been authorized.

Now, there are several Public Law 566 watersheds in the Puget Sound Basin in various stages of development. Some of you may know the Saar Creek watershed in Whatcom County was completed in 1959. Construction is underway on French Creek and Marshland Projects in Snohomish County. Plans have been completed for the Chimmacum watershed in Jefferson County, but this watershed is inoperative. Draft copies of plans for the Green River project in King County have been distributed for review and comment. The Skokomish watershed, which is in the area you are interested in here in Mason County, was authorized for planning in 1959, but to date, we have

not been able to come up with a favorable benefit-cost ratio for the project and it is considered inoperative.

Several more applications for assistance and planning are now being prepared by sponsoring agencies. We will continue to plan and prepare work plans and watersheds where we have application, and the river basin activities will give us the opportunity to coordinate water supplies with the activities of other groups and agencies. We will work closely with the U. S. Forest Service and the U. S. Research Service on the investigation. In fact the Forest Service and Economic Research Service personnel assigned to river basin surveys are quartered and stationed with our Area Conservation in the Federal Building in Seattle. The soil conservationists and the soil scientists are also stationed there. There are various other technical specialties in the field of engineering, hydraulically, economics and so forth located in our Spokane office who will participate.

In closing, I want to call attention to several letters from the Pierce County Soil and Water Conservation District which enumerate problems on the Puyallup River, Wapato Creek, South Prairie Creek, Hylebos Creek and Brighton and Horn Creeks. I am talking to Mr. Richardson, I believe those letters are on file.

Briefly, the problems as I read them, summarize them, their main problem appear to be flooding, sediment deposition, scarring, impounding of water, and suggest that works of improvement are flood channel development, drainage outlets, open and closed drains and stream bank protection.

I think with that I will close because they may wish to make a presentation in regard to that.

MR. RICHARDSON: Thank you, Mr. Kehne.

Before calling on the next speaker, I would like to introduce the Co-Chairman of the Puget Sound Study, Robert H. Gedney of the Crops of Engineers.

I will now introduce his boss, Colonel Charles C. Holbrook, the Seattle District Engineer who arrived on the scene a few days ago. Colonel Holbrook.

Colonel Charles C. Holbrook was called as a witness:
(Prepared statement paraphrased. See Exhibit 1)

COLONEL HOLBROOK: Thank you. Ladies and gentlemen, I, too, have submitted a statement, however, I would like to emphasize a few points that I made therein and perhaps elaborate upon them slightly.

I think we all realize, and I certainly do even though I have been here only a couple of months, that the Pacific Northwest has a tremendous future. The Puget Sound Basin enjoys a very prominent place in the future.

I belive all of you are familiar with the work of the Corps of Engineers, what they have been and are doing, and with our hearing and study procedures.

The Comprehensive Study is unique in our experience, particularly in its scope and membership.

I would like to have you all know that the Corps of Engineers fully supports this approach, is an active participant, and extends its full cooperation.

We feel that the Comprehensive Study meets a very pressing need for long-range planning to consider all aspects of water resources in their proper balance, including not only flood control and navigation in which we have a primary interest, but also including the other aspects of water resource development to which we must give full consideration. These are conservation, irrigation, water supply and so forth.

We recognize, too, and feel the need for the Comprehensive Study in that it will give full consideration to State and local policies in regard to water resource development, the social and economic factors involved, and, of course, local desires and needs.

The Comprehensive Study, as perhaps most of you know, is aimed at identifying interim and long-range needs as the basis for projects to be accomplished. By interim and long-range, we mean those projects which might be justified for undertaking in 10-15 year period and in a 15-50 year period.

In addition, we expect that the Comprehensive Study also will provide a framework within which other projects that are conceived later or arise due to some urgency might be considered more intelligently at some other time.

The Comprehensive Study is planned for completion in 1969. In the meantime the Corps of Engineers will continue to undertake studies and projects which fall outside the comprehensive Study. By these, I mean projects which are necessary to meet urgent or particular local needs that are not affected by the broad concept of the Comprehensive Study.

In summary, the Corps of Engineers recognizes the urgent need for the Comprehensive Study, will be

an active participant, and extend to it our full cooperation, while at the same time we will continue to undertake studies and projects necessary to meet urgent needs in accordance with local desires and the dictates of the Congress.

Thank you very much.

MR. RICHARDSON: I would like to now introduce Mr. Gilbert Schirk of the Department of Interior from Boise who will make a short statement.

Gilbert V. Schirk was called as a witness:

(Prepared statement read verbatim)

MR. SCHIRK: Ladies and gentlemen, I would like to read and submit a short statement from the Bureau of Reclamation with regard to the Puget Sound hearings.

"The Department of the Interior, because of its broad responsibility in the development of water and related land resources, will play an active part in the Puget Sound Comprehensive Survey. Agencies within the Department have responsibility for planning and evaluating the functions of irrigation, recreation, fish and wildlife, municipal and industrial water supply and power. Many of the Interior agencies have responsibility for collection of basic data relating to water resource development and some have important land management responsibilities in the national parks, Indian reservations, wildlife refuges and on public lands not within national forests.

Interior agencies participating in the Puget Sound Comprehensive Survey include the Bureau of Reclamation, Fish and Wildlife Service, Geological Survey, Bureau of Indian Affairs, Bureau of Land Management, Bureau of Mines, National Park Service, Bureau of Outdoor Recreation and Bonneville Power Administration.

The Bureau of Reclamation is the principal agency within the Interior Department having responsibility for the planning, construction and operation of multi-purpose water resource projects. Although irrigation development has long been a major part of the Bureau's program, reclamation projects are multiple-purpose and in today's planning many other functions, such as power, recreation, the preservation and propagation of fish and wildlife, municipal and industrial water supplies, flood control, navigation, water quality control, area redevelopment and sedimentation control are included in development plans.

The Bureau of Reclamation operates in the seventeen western states and in Alaska and Hawaii. In addition to its regularly scheduled program, the Bureau of Reclamation also administers the Small Reclamation Projects Act of 1956, which provides for loans to local organizations for water resource development of limited size. Although such projects are primarily for irrigation, other water uses may be served.

In the Puget Sound Comprehensive Survey, Reclamation will be concerned primarily with the identification of irrigation needs and potentials and in the development and evaluation of plans for serving these needs. Many people ask, "Why plan for irrigation in the Puget Sound Area?" The facts are that although annual rainfall is high in this area, summer precipitation is not adequate for optimum growth of crops, and crop adaptability is limited because of a lack of summer precipitation. Rainfall from June through August is only about half the amount required for fall crop production. Through irrigation, a farmer gets much higher yields from crops which mature in early July or August and the farming operation is more profitable. There are about 60,000 acres now irrigated in the Puget Sound Area as compared to about 45,000 acres in 1959, a growth of thirty percent in five years.

A large increase in irrigation is expected in this area in the future as more people recognize the benefits to be gained. Much of the truck crop and high-value row cropland now in production is being lost to urban expansion. With irrigation, other areas suited to the production of crops can be developed to meet the increasing demand and compensate for the area being lost to urban development.

Our preliminary studies show the area covered by this hearing includes about 190,000 acres of potentially arable land. This doesn't mean that all of these lands should or could be irrigated; but, rather it does point out the general magnitude of the resource potential of this area.

You may have the question in mind as to what you should do if you feel there is need for irrigation in your area. First of all, let this be known either at this hearing or subsequent to it, if you prefer. I must emphasize that our planning activities are dependent to a great extent on a showing of interest by the local people. This applies not only to the degree of detail of the studies but also to the plan of development and eventually the construction of a project.

You might be interested to know that the costs allocated to irrigation in a multi-purpose project are reimbursable over a fifty-year period without interest.

However, the capital cost must be repaid to the Federal Treasury. This is accomplished by the irrigators up to their repayment ability. Present policy is such that costs beyond the irrigators' ability to repay are paid into the Treasury through surplus power revenues or other similar means. In a multi-purpose project, the costs of some functions, such as flood control, water quality control and some portions of recreation and fish and wildlife, are nonreimbursable. Costs associated with power and municipal and industrial water supply are reimbursable with interest.

I would also like to point out several steps necessary to obtain an irrigation project. First of all, the studies must show the project would be economically justified before the Congress would consider it for authorization. It must also be shown that reimbursable costs will be repaid within a specified time period and the sources of repayment must be identified. The irrigators must be willing to form a legal entity, such as an irrigation district, to contract with the government for repayment of the portion of the irrigation costs that lie within their repayment ability. Local groups must also be willing to support the project before the Congress and furnish satisfactory evidence that they are in favor of the plan.

The Bureau of Reclamation studies will be carried out by our Upper Columbia Development Office, North 1322 Post Street, Spokane, and Mr. Rupert B. Spearman, Area Engineer, is in charge of that office."

MR. RICHARDSON: Thank you, Mr. Schirk.

The next speaker, for another agency of the Department of the Interior, is Mr. Grant A. Woolley of the Bureau of Sport Fisheries and Wildlife. Mr. Woolley.

Grant A. Woolley was called as a witness:
(Prepared statement read verbatim)

MR. WOOLLEY: Mr. Chairman, ladies and gentlemen, "my name is Grant A. Woolley of the Bureau of Sport Fisheries and Wildlife, U. S. Fish and Wildlife Service, Portland, Oregon.

Under the Fish and Wildlife Coordination Act, our service and the State fish and game agencies with whom we work exercise the authority and assume the responsibility for conservation and enhancement of fish and wildlife as part of the national water development program.

The Pacific Northwest is noted for the abundant wealth of its fish, shellfish and wildlife. It is of paramount importance that such resources be accorded full consideration in the comprehensive study of the Puget Sound region now underway.

The Fisheries and Wildlife Technical Committee has been designated by the Task Force as the work group with the sole purpose of preparing a sound development plan for fish and wildlife. This group will comply with recommendations of the Senate Select Committee on National Water Resources, as well as related water and land resources policies set forth in Senate Document 97.

The Bureau of Sport Fisheries and Wildlife, assigned to coordinate group activities and progress, will maintain close liaison with other agencies and individuals concerned with plan development.

During the course of the five-year study, it will be necessary to gather and analyze data on fish and wilflife populations, distribution and habitat, sportsmen harvest, commercial catch and man-days of angling and hunting.

All sectors of Puget Sound undergo study pertaining to fish and wildlife aspects. An awareness of specific fish and wildlife needs in the river basins designated for early consideration by water development agencies is essential. The potential for fish and wildlife enhancement in these and other drainage areas could result in project construction to satisfy those specific needs.

Basic fish and wildlife data necessary for plan development will be obtained through the combined efforts of the Washington Department of Game and Washington Department of Fisheries. The Bureau of Commercial Fisheries will be consulted whenever commercial fisheries are involved.

During this comprehensive study of the Puget Sound region, an unparalleled opportunity exists to achieve—for fish and wildlife—the status and consideration these natural resources so justly merit."

Thank you.

MR. RICHARDSON: The next speaker for the Department of Health, Education and Welfare is Mr. Francis L. Nelson of the Public Health Service in Portland.

Francis L. Nelson was called as a witness:
(Prepared statement read verbatim)

MR. NELSON: Thank you John. Mr. Co-Chairman, ladies and gentlemen, the Public Health Service is also indeed happy to be a part of the Puget Sound Task Force, and "our responsibilities in the

Department of Health, Education and Welfare are concerned with water resource planning for municipal and industrial water supply and water pollution control. In the Pacific Northwest region and the Pacific Sound region, this activity is carried out by the Water Supply and Pollution Control Program office in Portland, Oregon. All of our studies are done in close cooperation with appropriate regulatory agencies; for instance, in the Puget Sound region we are working closely with the Washington State Department of Health, the Washington Pollution Control Commission and other state and local agencies interested in these aspects of water resource planning.

Authority for our planning responsibilities is contained in the Public Health Service Act and in the Federal Water Pollution Control Act. With regard to water quality management planning, we are directed to give due regard to improvements necessary to conserve waters for public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, and agricultural, industrial and other legitimate uses.

In developing the water pollution control plan in accordance with this language, an examination is made by stream reach of all present legitimate water uses and those land management practices which influence water quality. These uses are projected to future levels of development and the effects of these uses on water quality are estimated. On the basis of quality objectives established for downstream uses, controls or management techniques are ascertained. In some instances, management and control of pollutants cannot by themselves maintain quality at suitable levels to permit full utilization by downstream users. In these cases storage in federal reservoir projects may be necessary to increase low stream flows and thereby improve the assimilative capacity of the stream during critical periods. The ultimate aim of a quality control plan, therefore, is to present the alternatives and consequences of various combinations of land management, waste control and flow regulation that are feasible in meeting quality objectives.

The municipal and industrial water supply plan provides projections of water requirements expected to be exerted by future populations and future economic conditions. It outlines the various means available to meet these water demands. The potential sources of future water supply may include, but are not necessarily limited to federal reservoir projects. It should be emphasized that these water supply plans are developed on an areal basis and are not intended to supplant the detailed plans and specifications required by the water purveyor through his consulting engineer.

The success and value of these aspects of the comprehensive water resource development planning study of the Puget Sound region rest on how realistically they reflect the local needs and desires of the people. My purpose in being here today is to hear these needs and desires from you people" in the south Sound and the Peninsula area.

MR. RICHARDSON: The first speaker for the State agencies will be Robert G. Bollen of the State Department of Health. Gerry?

Robert G. Bollen was called as a witness:
(Prepared statement quoted verbatim)

MR. BOLLEN: Members of the Task Force, ladies and gentlemen, I assure you my statement will be very short.

At the two previous public hearings that have been held a representative of our department has made a statement. In the interest of time and to avoid duplication today, I will merely refer the Task Force to the statements that have been made.

In addition, for your records, gentlemen, we will respectively submit the statement of the Washington State Department of Health entitled "The Position of the Washington State Department of Health on Recreational Use of Water Supply Reservoirs and Watersheds."

I thank you.

"The subject of this forenoon session is not centered on the rights and privileges of cities versus sportsmen. It is an issue having to do with assuring protection of public health.

We understand that a purpose of this Conference is to allow expressions of interests and viewpoints, and that such will contribute to the formulation of guidelines for comprehensive planning for water resources development in the Puget Sound Basin. To this end we welcome the opportunity to participate in this discussion of the advisability of recreational use of municipal watersheds. It is our most sincere hope that this will contribute to developing necessary public interest in, and understanding of the issues, and the development of policy which will assure resolution of the conflict on the basis of the greatest good for the greatest number.

It seems appropriate here in the beginning to advise that a demanding and inherent characteristic of our responsibilities for the protection of public health requires that we take the conservative, safe course in evaluating water supply problems. We cannot wait until a calamity occurs before taking corrective measures. Nor, we might add, is it always possible to furnish positive proof. Proof in such instances generally would mean waiting for an epidemic.

I am sure our best interests would be served if the other panelists would join with me in centering the discussions on the specific and very limited number of restricted use watersheds we have in this state and on the need for and advisability of opening these particular areas for recreation. This could lead to a much different conclusion than if we were to discuss the matter on the basis of what the practices and experiences are elsewhere. We should not confine ourselves to determining whether we can live with and should adopt the practices from other states. Rather, we should take a deep look at the necessity for doing this, and what the consequence may be in our particular situation.

Generally speaking, we believe that it is paradoxical and somewhat of a senseless situation that we are faced with this issue. The proposition is one of a deliberate move to have man defile his drinking water supply without an apparent justifiable cause. And to think we should do this in face of the fact that we are just now beginning to fully appreciate and understand the seemingly endless possibilities of detrimental effects of the environment on man's health and welfare.

Further, to think we should do this—a very deliberate and avoidable action—at a time when all of us, including those on the other side of the table from me, are trying desperately to bring about a change in our approach to the control of water quality—to adopt the concept of 'prevention' and to thereby provide a little margin of safety and leeway to meet the impact of tomorrow's new developments and population boom. And, I would certainly hope that most of you in this room would join with me in the idea that we must have a little extra margin of safety in the measures for the protection of our health.

In keeping with my suggestion that we center our discussion on the situation here at home, let me identify what we should be talking about. First, we might look to the future. There will be no need for an appreciable increase in closed watershed practices. The communities in a position to derive their supplies from upland streams have them established; and the existing sources for these communities are adequate for many years to come.

This, then, leads us to the point that we are essentially considering just a few communities and watersheds here on the west side of the Cascades and the Olympic Peninsula. These are known to most of you. There are about ten in number which are of any appreciable size and significance. Additional details on some of these will be presented by the other panelists.

We could at this point develop our position on this issue by identifying the health hazards which may be associated with recreational use of reservoirs and watersheds and the potential shortcomings which prevail in water treatment facilities, and come to a conclusion that such activities should not be allowed. There is room for some comment in this area, but to lead off in this direction would not permit getting down to realities and practical considerations which we must recognize; and which are the governing factors in our position.

Let us assume that recreational activities could be allowed provided they were under strict control and with proper facilities, and provided there is adequate treatment of the water supply. In saying this, I draw your particular attention to and underline the provisions. Let us fully identify them, examine their dimensions and look in on what may be involved in bringing them into being.

First, recognize an obstacle to bringing about a 'controlled' situation, with respect to the recreational activity. No matter how good the design of your program or your regulations you cannot open the door just a little bit. You can only control an individual up to a certain point; and there will be relentless pressure for expanded uses by those same people who want the door open in the first place. The experiences of our State Parks, Highway and Game Departments, I am sure, will bear this out.

Sanitary facilities must be provided and maintained. Who will be responsible, and who will pay for this? Maintenance is a distasteful job, is subject to neglect and presents complex problems in arranging for disposal of wastes. And there is a major problem in getting people to use them; and not to be overlooked is vandalism.

There must be effective patrol and supervision of the public, and again who does this and pays for it? Also, there must be an adequate program of

surveillance and water quality monitoring by the Health or Water Department authorities.

A pattern for restriction of certain activities in certain locations must be established and enforced. And finally, a most important consideration—adequate water treatment must be provided. In our situation, this would mean in every case, the communities would be required to construct water filtration plants.

Together these factors constitute a chain of protection—maintenance of the controlled environment concept, provision and maintenance of sanitary facilities, patrol and supervision, surveillance, restriction of activities and water treatment. Each one is significant in itself. They must all be in full force and effect to assure a reasonable degree of safety of the water supply.

With just a little consideration of what is involved in bringing these provisions into being, it should be obvious that there are many things to do before further consideration is given to opening watersheds in this particular area. The major factor is additional treatment of the water supplies. This will be discussed by Mr. Heath. And with respect to the others, let me just comment that they require much more consideration than I have seen in the watershed bills in our legislature wherein it simply stipulated that recreational activities were to be controlled by regulation of some agency.

With respect to water-borne disease aspects and potentials—we, and the other health authorities, have been accused of making too much noise over the years. On the other side of the coin, it is equally proper to note, however, that there has been too much discrediting of the significance of this concern, and I am a sure there will be some more of this laid on the table here today. It cannot be claimed that the potential does not exist, and that the absence of epidemics should serve as grounds for relaxation.

In other words, our case is simply this: pathogenic (disease causing) organisms will gain entrance to the water supply and under certain circumstances they can move on through the system to the consumer; and so the question or discussion must center on how good and reliable are the protective barriers. All added up it becomes a matter of accepting some degree of calculated risk. On matters relating to our health, we of course, believe, and have the responsibility to see to it that such a risk is minimal.

Let us take a brief look at just a few of the variety of factors which we must consider and overcome to assure that the hazard will not be conveyed to the consumers.

Dr. James W. Mosley has reviewed and reported on 28 epidemics of infectious hepatitis attributed to drinking water supplies in the New England Journal of Medicine, October 1959. In his article he noted that it is important to recognize that it is difficult to establish the waterborne route of infection, and that such may account for more cases than can be demonstrated by available methods. And it is to be noted that his summary of epidemics did not include those wherein there was just a suspicion of implication that it may have been water-borne.

With respect to survival of hepatitis virus, Dr. Mosley in referring to work of others, points to that treatment of raw water with as much as 15 ppm of chlorine after 30 minutes did not totally inactivate the virus when turbid water was not subject to pre-treatment; however, chlorination to a level of about 1 ppm residual after 30 minutes did inactivate the virus in water which had been coagulated, settled and filtered. It should also be noted that hepatitis virus was detected after 10 week storage in well water.

Dr. Gerald Berg, Public Health Service, in a paper on 'The Virus Hazard in Water Supplies', Noted several factors pertinent to our considerations at this point: (1) During the warm summer months, 5% to over 60% of young children excrete viruses with their feces; (2) The important concern to community water supplies may relate not to major outbreaks but to low level transmission and the seeding of communities with viruses to which they might otherwise not be exposed; (3) The quantitative detection of viruses in raw water by available techniques is improbable; (4) Field studies to determine efficiency of virus removal by water treatment are presently not feasible; and, (5) Laboratory studies reveal that using rapid sand filtration as the sole means of water purification is attended by obvious potential danger.

In citing these considerations in connection with viruses, it is not my purpose to wave red flags to imply we are on the brink of a disaster; rather, it is to support my contention that we are dealing with a most complex problem, that we can't sweep it under the rug, and especially to direct attention to the fact that we have many things to learn before we can

determine and evaluate the full dimensions of these hazards. Until we gain this knowledge, we must be cautious in considering evidence which may be presented in support of that epidemics have not occurred.

Another factor in the array of obstacles to providing adequate safeguards is the matter of reliability of water treatment facilities—this is independent of the previous questioning of their efficiency. Their operation involves a consideration of the uncertainties and failures of men, machines, and the behavior of nature. Temporary failure of electrical power supply, breakdown of mechanical equipment, misunderstandings and neglect of duty among operating personnel and devastating weather conditions do occur. Any one or combinations of these could be most disruptive to reliability of treatment facilities.

Before leaving the discussion in this area, it is appropriate to recognize some unavoidable weaknesses in our routine surveillance procedures. In a strict sense, the laboratory examination of water samples is only partially reliable. The results are not known until two or three days after the samples reach the laboratory; and laboratory methods have not been developed to permit detection of some contaminants, including certain of the viruses. In other words, the status of knowledge and procedures for determining precise information on the safety of a water supply is not much better than to reveal how good the water was; and to allow some prediction as to what the results may be. Under this handicap, it becomes mandatory in the water works business to assure reliability through the provision of a sufficient number of barriers or protective devices in the total system and not to place reliance on testing water samples.

We have indicated that additional water treatment (filtration) would be required as recreational activities are established in the watersheds. And, as we say this, it is to be understood that we are assuming that the controlled environment feature would be destroyed; and not being misled by someone's vision that as you create access, you can keep things under stipulated controls and in line with a nice orderly plan. The requirement that filtration be provided under these conditions is fully supported by policy of every other state in the nation, the U.S. Public Health Service and the American Water Works Association.

Our Department requires that all surface supplies be subjected to at least disinfection by chlorination or other acceptable methods. Requirements for higher degrees of treatment are based on a thorough consideration of all the potential sources of contamination and the extent to which they may possibly affect the quality of the water. Having done this, the scope of the safeguards to be incorporated in the treatment process become evident.

It should be noted at this point that the current evidence indicates that such supplies as Seattle, Tacoma and Everett can under existing conditions continue to produce safe water supplies with chlorine disinfection as the only means of treatment. The many years of records reveal an unusually high compliance with quality standards. And examination of the environmental factors in relation to the sources reveal that there is a reasonable margin of safety.

The issue we are discussing in this morning's session is bigger than what it may appear as you might choose to compare it with the wide array of water resources management problems which have been discussed in the total seminar. It does not involve (international or interstate considerations, public versus private power) dams versus fisheries, nor intense pollution problems. It is relatively narrow in this sense, however, it is big in that in my version we are giving consideration to what will be the one and only water supply for more than four million people (over 60% of the State's population) by the year 2000. And, at this point note that on the other side of the coin we are not by any stretch of the imagination talking about the one and only available re creational area for these four million people.

In conclusion, I wish to note that as we face the predicted population increase and widening industrial use of water over the next several years, it is of utmost importance that we prepare for it by taking necessary steps to protect all that we have that is now to our advantage. Let us not become a part of the national water problem and find ourselves in the position of having to accept and adjust to a category of 'tolerable standards'.

And finally, upon recalling my identification of the watersheds under consideration in this discussion, note that with each one that they are an integral part of the community which they serve—there is economic dependence on utilization of the various resources, they furnish the community water supply and interrelated to this is the involvement of their public health. Also, it would be these people who would have the primary interest in and have the need for additional recreational outlets. In view of this, it

would appear to be without question that any further consideration of this issue and the decisions should rest with the communities involved."

MR. RICHARDSON: Next, we would like to call on Mr. Walter Williams of the State Fisheries Department speaking on behalf of the Fisheries Department in this survey.

R. Walter Williams was called as a witness:
(Prepared statement read verbatim)

MR. WILLIAMS: Mr. Chairman, ladies and gentlemen, this is a statement on the position of the Washington Department of Fisheries concerning this Puget Sound Basin Comprehensive Study.

"The fisheries resources of Puget Sound and adjacent waters are of outstanding importance to local, state and national interests. Large populations of anadromous fish support extensive sport and commercial fisheries within the State of Washington and in offshore fisheries from California to Alaska. The Puget Sound Basin is the single, most important salmon producing area of the State of Washington, and as such, its extensive watersheds must be preserved and enhanced to provide more extensive production and utilization in spite of ever increasing population pressure and the need for multiple water uses.

Five species of salmon at present utilize the various watersheds encompassed by the Puget Sound Comprehensive Study Program. These are chinook, coho, pink, chum and sockeye salmon. In addition, the shellfish resource within Puget Sound is unique and extensive, providing abundant recreational and commercial value, that is directly dependent on the quality of the fresh water and estuarial basins.

The Washington State Department of Fisheries is charged with the responsibility for maintaining and perpetuating the salmon and shellfish resources for the State of Washington and has through its long history endeavored to preserve and enhance the various watersheds of the State to produce a maximum sustained yield to the various fisheries, both sport and commercial. The Department's present program in the fields of artificial propagation, stream improvement, fishway engineering and management are among the most modern in the fishery technology field.

This Department believes that the Puget Basin Comprehensive Water Resource Study should lead to a comprehensive long-range plan of development for the streams of this region in which the fisheries resource will play a primary role. This Department will coordinate its present long-range plans for increasing the salmon and shellfish resources of the study area with all other users of water and related land resources. The specific objectives of the fishery study will be to, (1) review all available data with particular attention to specific problems and to seek solutions to these problems through coordinated planning with the other agencies, (2) to study available data with attention to fisheries enhancement possibilities and incorporate these into the over-all comprehensive plan, and (3) to propose ways and means for the improvement of the stream habitat for increasing the recreational and commercial potential of this resource.

This comprehensive water resource study poses a new concept in water management—that is, to develop a long-range water-management plan that will not only sustain the present fishery resource but in addition enhance the resource in the face of growing population pressures throughout the Puget Sound Basin. We earnestly hope that these goals will be achieved and that the fisheries resource will be of prime importance in the over-all considerations of water use. The Fisheries Department is entering into this cooperative study with the understanding that the salmon and shellfish resources of this area will be given important consideration in any future planning for Basin projects. It has often been true in past years that the fishery interests were either (1) disregarded, or (2) not adequately taken into consideration in the piecemeal water use planning that has occured throughout the country. We sincerely hope that this type of shortsightedness may be averted in the future.

Our agency is responsible for management and conservation of the salmon and shellfish stocks in the State of Washington and will strive at all costs to protect these resources from encroachment by other water users. The Washington Fisheries Department is entering this Puget Sound Comprehensive Basin Study in a spirit of cooperation with other state and federal agencies in the hope that salmon and shellfish resources of this state may continue to play an important role in the over-all economy to the people of the State of Washington."

Thank you.

MR. RICHARDSON: The next speaking on behalf of the State Department of Commerce & Economic Development is Paul T. Benson, Jr., State Planner.

Paul T. Benson, Jr. was called as a witness:

(Read excerpts from prepared statement. See Exhibit 62.)

MR. BENSON: Mr. Chairman, ladies and gentlemen, I am here representing Robert E. Rose, who is the Director of the Department of Commerce & Economic Development.

We are participating in the Puget Sound Adjacent Waters Study primarily through work with two of the technical subcommittees who are advising the Task Force, the committees on economics and on land usage and development. I would like to read just a few excerpts from Mr. Rose's official statement.

The Department of Commerce Economic Development has a very vital interest in the Comprehensive Water Resources Study of the Puget Sound and Adjacent Waters.

I think that it is fundamental that we not lose sight of the imperative industrial requirements. Industry remains the basic building block in providing jobs for our people. The multiplication of jobs in services and trades always must be built upon the cornerstone of manufacturing industries Despite our enchantment with our exotic and sophisticated mid-20th century industries, the basic requirements for industry still remain in large measure the traditional ones of markets, labor, utilities, trandsportation, raw materials and so on. Among these, and particularly important in the development and growth potentials for Washington, industrial water looms as a large factor.

Certainly the assurance of adequate industrial plant sites is an imperative in providing for our future economic wellbeing. The Seattle Area Industrial Council, in its publication entitled "Puget City, Year 2000", estimated a need for 52,000 acres for industrial purposes in the nine Puget Sound counties. According to the SAIC at the time of publication of this report in 1963, and I quote, "Right now, in the nine counties, there are around 20,000 acres in use, but only 12,000 acres of land earmarked for industrial growth . . . we are going to need 20,000 more."

Reverting for a moment to economic forecasts, projections of the labor force in Washington State to 1976 by three reputable agencies, range from 1.4 million to 1.6 million. The present labor force is approximately 1.1 million. So whether we take the low or the high projection, or the mid-point, we have a formidable task ahead. In our economy, manufacturing employment currently accounts for approximately 20% of total employment. Projected increases to 1976 range from 24% to 52% or from 290,000 to 353,000. From these projections, it means that we're going to have to provide somewhere between 70,000 and 130,000 new manufacturing jobs in the next twelve years.

It is imperative that we get down to the brass tacks of earmaking and reserving suitable land areas for industrial sites which can be served with the required transportation and utilities facilities. In dealing with multiple purpose planning and problems of competitive use, the stake in industrial development needs to be clearly identified.

Direct consideration needs to be given to the specifics of industrial development as related to water resources management.

Thank you.

MR. RICHARDSON: That concludes presentation by federal or state agencies participating in the study.

I would now like to call on the representative of the general industry in the area, Mr. Donald J. Benson of the Northwest Pulp & Paper Association.

Donald J. Benson was called as a witness:

(Prepared statement read verbatim)

MR. BENSON: Chairman, Members of the Task Force, ladies and gentlemen, "I am Donald J. Benson, Executive Secretary of the Northwest Pulp and Paper Association.

This Association is a research and information organization serving the industry in Oregon and Washington in the rapidly developing technical fields of Air and Water Resources.

My remarks today will be confined to the Pulp and Paper Industry located in the Puget Sound and Adjacent Waters study area.

You have received testimony from several individual pulp and paper manufacturers today, or you will, and at your previous hearings.

These remarks will first briefly summarize why this industry is vitally interested in your planning efforts.

In addition, we want to offer the results of some of our research efforts for your information. Finally, we wish to suggest an administrative strengthening of the Task Force.

The State of Washington is the nation's largest producer of wood pulp. About half of the state's annual production, or one and a half million tons is

manufactured within the Puget Sound and Adjacent Waters study area. In this region, nine companies with 13 pulp and paper manufacturing sites normally operate 24 hours a day, approximately 362 days a year, and employ about 7500 people highly skilled in their pulp and paper making trade.

To produce these high quality products for the international market, about 275 million gallons of fresh water are required daily. The industry is becoming more skilled in the reuse of this water so that future water need should not rise at the same rate as production. Although these mills are mainly located at tidewater, the industry's interest in water resources extend upwards to the watersheds where the forests serve many uses, including the continous production of both water and fiber, and of course, recreation for the public at large.

There is perhaps no basic industry in the region which has nore at stake in a continous supply of high quality water than the pulp and paper industry. The ability to sustain and increase its contribution to the State's economy depends in no small measure upon the continued availability of sufficient quantities and quality of water. Indeed this industry has probably invested a greater amount of money to insure this end than any other in the state.

The Northwest Pulp and Paper Association sponsors research at the science centers of our northwest universities to increase knowledge of water and air resource as it relates to this industry.

Some recently completed studies should be of particular interest to the Task Force. The publication "Some Economic Aspects of the Pulp and Paper Industry" by John A. Guthrie and William Iulo of Washington State University was produced to develop facts indicating the future potential of pulp and paper manufacture in the Pacific Northwest. The information should be most valuable for projections when properly applied to the Puget Sound region.

To augment this analysis with current figures, the Association publishes, through a private accounting firm, our "Economic Survey" which will provide composite pulp and paper economic data for various sub-basins in the study area on a semi-annual basis.

A third recent research item of interest to the Task Force is the Association sponsored "Methodology for Evaluating Uses of Water in the Pacific Northwest" by Warren Etcheson and Joseph McGuire of the University of Washington Bureau of Business Research. This work is pioneering effort to develop techniques of placing economic values on water in its various beneficial uses. We hope that this initial work will inspire others to consider the problem and refine the methods proposed. In the meantime, much of the information contained therein will be of value to the Task Committee.

As a final remark—we note that this study is a cooperative effort between the several State and Federal agencies dealing in whole or in part in water resources. As an industry, we are primarily responsible to many of these State agencies for the manner in which we conduct our business.

It is apparent also that many aspects of the over-all water resource study of the Puget Sound and Adjacent Waters lies solely or primarily in the purview of one or more state agencies. In view of this, we strongly recommend that the makeup of both the steering committee and the technical subcommittees for this study be examined thoroughly for adequate state representation.

In addition, we urge that adequate financing be sought for the participation of state agencies to insure that this representation results in a true state partnership.

We thank the Task Force for this opportunity to appear. If we can be of assistance as the study progresses, do not hesitate to let us know."

MR. RICHARDSON: Thank you, Mr. Benson.

Now, we will proceed to the people who come from the various counties involved in the study, and first, I would like to call on Mr. Elmer Critchfield, County Commissioner for Clallam County.

Elmer L. Critchfield was called as a witness:

(Prepared statement read verbatim)

MR.CRITCHFIELD: Mr. Chairman, ladies and gentlemen, I have a brief statement here from the County Commissioners of Clallam County which reads: "Gentlemen: I will try to make a few brief remarks in regard to the water resources within Clallam County. As you know, your contemplated study ends at the Elwha River. We have several very important rivers west of the Elwha which would include the Lyre, Pysht, Clallam, Hoko and Sekiu Rivers which lie on the north slope of Clallam County and empty into the Straits of Juan de Fuca.

We feel in the future planning of our county, these rivers will play a very important part in the development of our fisheries program for the propagation of our salmon and steelhead runs as well as

our domestic and industrial water supply along with flood control and recreation programs.

At the present time the communities between the Lyre River and Port Angeles are contemplating two domestic water systems, one from a well adjacent to the Elwha and the other from springs in the Joyce area.

In our present planning program for the county, many industrial sites are being set aside. At present, our local industry is consuming all available water.

We, as Commissioners of Clallam County, would strongly urge that this study take into consideration the need for a long-range industrial and domestic water supply for Clallam County along with the development of our fisheries potential from the Dungeness River in the east to the Sekiu River in the west, as well as flood control recommendations.

We would strongly urge that you include these rivers west of the Elwha in your study if possible. Sincerely".

MR. RICHARDSON: Thank you Mr. Critchfield. That's information the Task Force is looking for.

I would like to call on Mr. Jack Hoover of Port Angeles, representing Clallam County Pomona Grange.

Jack Hoover was called as a witness:

(Read excerpts of prepared statement. See Exhibit 63.)

MR. HOOVER: Mr. Chairman, ladies and gentlemen, I am here representing the Clallam County Pomona Grange in Clallam County. We have two projects we feel are quite important to our area.

One of them is for many years we have strived for a fish program for the Elwha River as a means of replenishing the salmon runs of previous years and also to provide fish for our future needs, both commercially and sports fishing. As there is a number of obstacles in trying to get salmon over the dams so as to spawn and then to get the young fish through the turbines of the dam in their return to the salt water, so we decided that the next best thing was that we would endorse the fish program as outlined by the State Department of Fisheries, which includes fish ponds or fish farms at the mouth of the river. We also have the endorsement of the Washington State Grange, representing 54,000 members in this state which has made it a part of their policy since 1959.

Originally, the Elwha River consisted of 3,200 square miles of spawning area available for salmon. Now it is almost down to nothing as there are constructed two dams within the river and there is also another what they call a low dam that diverts some of the water for industrial and individual use at Port Angeles.

It is a natural for a fish farm, as I understand it, at the mouth of the river, It has two natural springs that feed in that area.

We think that the amount of salmon that will return from this fish farm program they would be able to spawn in excess of twenty million eggs to perpetuate the race of fish in this area and also to provide a surplus of eggs for other areas to be raised.

In addition to this progran, we are also endorsing the proposed development of the Dungeness area in a comprehensive and multiple purpose area that consists of approximately 3,200 acres and is in the area of the Dungeness Spit. It would include a fish farm program also there and rearing ponds and boat haven facilities, picnic and recreational facilities. This area also has a natural holding pond. It has been stated that the financial outlay would make it the largest and best fish farm in the world. Estimates have been made that it would produce in the neighborhood of anywhere from 500,000,000, to 100,000,000 fish per year. Also, there is no pollution in this area. The property at present is now owned by the federal, state and county governments.

We feel that this is, too, a natural deal there because of the fact they tell us that it would cost one–one–hundreths as much for a natural rearing area as it costs for a concrete, man–made rearing pond, so these two programs the members of our area feel is most important.

MR. RICHARDSON: I would like to call on Mr. O. Charles Wheeler of Port Angeles, Assistant Manager of the Crown Zellerbach Corporation.

O. Charles Wheeler was called as a witness:

(Prepared statement read verbatim)

MR. WHEELER: Mr. Chairman, ladies and gentlemen, I have a brief statement that I would like to read considering the Port Angeles Division of the Crown Zellerbach's economic distribution in the Port Angeles area.

"Our mill converts Olympic Peninsula wood into newsprint, largely sold in the State of Washington and other western states. Our daily production

averages about 500 tons. The Port Angeles mill is an around-the-clock, seven-day week, 360 days a year manufacturing operation. It provides regular employment for approximately 550 people. This is an annual payroll of about four million dollars. Add to this one million dollars paid 200 loggers and foresters on Crown Zellerbach's Olympic Peninsula Tree Farms and you have a total Clallam County paycheck of five million dollars a year.

This is only part of our economic story. About 60% of the mill's wood needs are supplied from our own tree farms. The balance we buy from other Olympic Peninsula forest land owners in amounts that total about one million dollars a year. To keep our tree farms operating at top efficiency, we spend nearly half a million dollars a year in the Clallam County area with logging and road building contractors.

Wood supply is only part of our economic story. In 1963 our division spent $2.6 million for rail and truck freight; $6.9 million for materials, supplies and services (all purchased in the Northwest); we spent $500,000 for electrical power and $379,000 for state and local taxes, and our annual investment in plant additions and new equipment averages more than half a million dollars a year.

To supply water requirements for the mill, we take about nineteen million gallons perday from the Elwha River. Although this water comes right off the Olympic snowfields, it must pass through a filtering plant to remove silt, mud and minerals. Only after the river water has been thoroughly filtered is it usable for making paper. All this water is supplied through a pipeline built and maintained by the three pulp and paper mills located on the Port Angeles waterfront. This water line is owned by the City of Port Angeles and is a source of revenue to the City.

As you all know, power – like wood and water – is essential to paper making. I've mentioned that we purchase more than half a million dollars worth of electrical energy a year. This purchased power actually accounts for a little less than half our needs. The balance is generated in two Crown Zellerbach hydro plants on the Elwha River, the first of which was installed by predecessor company in 1911. Today our Elwha River power plants are part of the Bonneville grid.

Our mill is an unusually heavy consumer of power because our newsprint product is four-fifths groundwood pulp, made by grinding wood. For each ton of wood processed, we produce a ton of usuable pulp.

The remaining portion of our mill's pulp supply is kraft pulp raplaces a similar tonnage of sulfite pulp that until July of this year was manufactured in Port Angeles. On that date our sulfite mill was permanemtly closed down.

The movement of pulp over our Port Angeles waterfront is just one of many uses we make of the harbor for transport of raw materials and manufactured products. There are daily shipments of paper from our mill across to Seattle and other Puget Sound ports. Four or five ocean freighters tie up at our dock each month to load paper. Usually these shops are in port from one to three days. Tankers also tie up at our dock several times a year to unload fuel. All this provides extra income for Port Angeles longshoremen.

We bring in about eight sea-going rafts of logs per month, containing about half a million board feet. To assure a continous wood supply for our mill, we maintain a log inventory on Port Angeles harbor of from ten to twenty-five million board feet at all times. This is kept in continuous rotation.

In closing, let me say that the Port Angeles Division of Crown Zellerbach is proud of its record of cooperation with the State of Washington commission and agencies having to do with resource conservation and water quality. We expect to continue to work closely with all of them in the years ahead."

Thank you.

MR. RICHARDSON: Also from Port angeles, Mr. Tom Neal. Manager of the port of Port Angeles.

Thomas C. Neal was called as a witness:

(Prepared statement read verbatim)

MR. NEAL: Mr. Chairman, ladies and gentlemen, my name is Tom Neal. I am Manager of the Port of Port Angeles;

"The Port of Port Angeles is concerned with both industrial and recreational usage of water and feels that this particular study is most parctical in that it will help provide a guide toward the best use of lands adjacent to Puget Sound and in this manner help to prevent difficulties arising between different agencies seeking to acquire these lands," or control of them.

"The harbor of Port Angeles has not been overdeveloped, and although specific plans have not

been formaulated, physical improvements are expected within the next ten years.

The changing characteristics of the population in the Sequin-Dungeness area indicate that probably in the next two or three years a protected, small-boat moorage will be required. Due to the geography, it is probable that this development will be the result of efforts of several agencies on a joint venture basis.

This study which you are preparing has the complete support of the Port of Port Angeles and in the event that the Port has records or information useful to you, we should be pleased to make them available."

MR. RICHARDSON: Thank you very much, sir.

I would like to call on Mr. Jack D. King, Vice-President of the Black Ball Transport, who is also representing the Port Angeles Chamber of Commerce.

Jack D. King was called as a witness:
(No prepared statement)

MR. KING: Thank you. Ladies and gentlemen, my remarks will be real brief.

I am representing today the President of our Chamber, who, due to illness in his family, couldn't be here. I am representing the Chamber as a member of the Board, and we want to go on record, and I think some of our delegates here have shown, Mr. Neal and Mr. Wheeler, that we are very interested in this program and this resource study and that anything we can do to help, we offer our facilities of our organization and we are primarily interested not only, as Mr. Wheeler and Mr. Neal have brought out industrywise, we are concerned with the problem of water and its resources for our tourist and recreation development.

In addition to those you have heard today, we have Mr. Henry Charnell, the Assistant Manager of Rayonier, who is a member of our board who is here today, Mr. Don Herman, our City Manager whom you will hear from, and myself; and again, we wish to go on record as most cooperative and most interested in this study; and I thank you.

MR. RICHARDSON: Now, we shall hear from Donald D. Herrman, City Manager of Port Angeles.

Donald D. Herrman was called as a witness:
(Prepared statement submitted. See exhibit 64.)

MR. HERRMAN: Mr. Chairman, ladies and gentlemen, I have a statement written out here so I won't take the time to read it. I just like to state that I am City Manager of Port Angeles. Vice-Chairman of the Clallam County Area Redevelopment Act Committee and a member of the Chamber of Commerce, and to a certain extent, I represent all three of these bodies.

I would like to emphasize that all three of these bodies have discussed this study and are fully in agreement with it, and we would like to encourage it to proceed as soon as possible, especially on behalf of the ARA Committee I would like to strongly recommend it; and second, Mr. Critchfield's recommendation that this study, if possible, be extended to take in the rivers in the west part of Clallam County that empty into the Strait of Juan de Fuca. If it is not possible to take in all of these, we would at least like to see it take in the Lake Crescent and the Lyre River area.

Thank you.

MR. RICHARDSON: Thank you, sir.

From Port Townsend I would like to call on Mr. F. Leonard Ziel, also of the Crown Zellerbach Corporation.

F. Leonard Ziel was called as a witness:
(Prepared statement submitted. See Exhibit 65.)

MR. ZIEL: Mr. Chairman, members of the Task Force, ladies and gentlemen, my name is Leonard Ziel. I am Resident Manager of the Port Townsend Division of Crown Zellerbach. I hoped to see more of Port Townsend here today, but if they are, I haven't located them.

I took the liberty of preparing two little talks here, one for presentation to file as a brief and one which briefly covers our operations.

I can second what Chuck Wheeler said for Port Angeles. It's almost identical with Port Townsend. We have one less paper machine, there is a little difference.

Our water is vital to us in our process, on our shipping and all of the raw materials come in by barge. All of our finished products are shipped out by barge. We are dependent on a twenty-eight mile waterline from Quilcene River. Port Townsend is in dire need of water, and for expansion purposes, we could use additional water so you can readily see that we would like to cooperate to the fullest degree to

get more water for the beautiful banana belt of Port Townsend.

I might mention that in all these barges coming into Port Townsend we receive supplies from twenty-five different sawmills, and if you were to visit these mills, you would find that they no longer have incinerators or anything like that, so we consider ourselves the utmost in conservation mills.

Port Townsend, with the help of the Army Engineers, is in the process of developing a boat haven up to a million dollars. We expect to expand our mill so we need additional water in all respects.

With that, I want to say that we want to cooperate to the fullest degree, and I speak for Port Townsend as well and the other areas around.

MR. RICHARDSON: Thank you, sir.

Now, we will skip over to the Kitsap side, and I am pleased to call on Mr. Henry Brown, Kitsap County Commissioner.

Henry A. Brown was called as a witness:
(Prepared statement read verbatim)

MR. BROWN: Mr. Chairman, ladies and gentlemen, I have a report from the Kitsap County commissioners for your Task Force.

MR. RICHARDSON: Will you please read it?

MR. BROWN: "Mr. John A. Richardson, Co-Chairman, Task Force for Comprehensive Study Puget Sound and Adjacent Waters, 325 General Administration Building, Olympia, Washington.

Dear Sir: We, in Kitsap County, through our common knowledge of the area (because we live here), realize that there will be a time in the not to distant future when our domestic, municipal and industrial water needs will be most critical. In fact, shortages are apparent in industrial supply at present.

Our mainland portion of the County, a peninsula with salt water of Puget Sound surrounding us on three sides, places its reliance for water supply entirely upon ground water sources, as does its island areas. This, in turn, according to information available, is recharged from precipitation falling on the immediate Cascade Mountains, which lie to the west and east of Puget Sound, as are other mainland areas. Most of this precipitation, which is less than thirty inches per annum in some places in the county, occurs during the late fall and winter months; the summers being quite dry. These facts are also pointed our in considerable detail in studies already made by the U. S. Geological Survey, as well as the Washington State Department of Conservation and Development, which have come to our attention.

The County's main support industry is Puget Sound Naval Shipyard at Bremerton, with its several attendant military activities, such as Bangor Polaris Missile Facility, Keyport Torpedo Station and others. Improvements in cross-sound transportation movements are expected in the near future which will surely hasten growth to swelling urban developments now taking place here.

We, the Board of Kitsap County Commissioners of Kitsap, Washington, in recognition of these things, would be most willing to join in cooperative effort with whatever organizations that may be involved toward seeking a solution to this very obvious water shortage situation which faces us. Henry A. Brown, Member of Kitsap County Commissioners."

MR. RICHARDSON: Commissioner Brown, we recognize you have a severe problem there and we are pleased to have your statement.

I would like to now call on Mr. Warren J. Montgomery of Seattle, who will speak on behalf of the Water Study Program of Kitsap County, Public Utility District NO. 1. Mr. Montgomery.

Warren J. Montgomery was called as a witness:
(No prepared statement)

MR. MONTGOMERY: On behalf of the Kitsap County Public Utilities No. 1, I would like to inform you and the Task Force that we are presently engaged in a comprehensive water study of the Kitsap County area. The project has just commenced and any data that accumulates at the end of our report will be available to the Task Force.

MR. RICHARDSON: Thank you very much.

I would like to ask Commissioner Martin Auseth of Mason County to make his statement.

Martin E. Auseth was called as a witness:
(Prepared statement read verbatim. See Exhibit 66 for summarization.)

MR. AUSETH: Mr. Chairman, ladies and gentlemen, this is in cooperation with Mason County SCD as well as the Mason County Commissioners. I will just read it.

"Gentlemen: This report covers what we consider to be nearly all the water needs for Mason County, State of Washington. We will itemize the needs, then briefly summarize item by item.

1. A complete study is needed on the proposed Skokomish Watershed Porject. (It is presently in an inactive status due to lack of complete information).

2. Investigate the proposed dam by Tacoma City Light on the South Fork of the Skokomish River.

3. Consider the utilization of a part of Oakland Bay for a fresh water lake with adjacent land for a park.

4. There is a need for a complete ground water investigation to determine future supply for municipal, domestic and industrial purposes.

5. Investigate ground and surface water sources for projected agricultural needs. (Irrigation, livestock ponds, wildlife ponds).

6. A complete study of Skokomish Indian lands to formulate over-all plans for orderly, well-managed development.

7. There is a great need for a determination of sewage disposal needs on the waterfront property that is being developed now very rapidly. Need is on both sound and lakes.

8. Help is desired for oyster growers who have wave action, disease and siltation problems.

9. Study the Skokomish Watersheds Area and determine priority and kind of land management practices needed.

10. Complete a channel improvement survey on 8.5 miles of Mill Creek. Plan Mill Creek Watershed.

11. Make determination on Goldsborough Creek Watershed and needs of about eleven miles of channel improvement.

12. A detailed survey is needed on Coffee Creek Watershed. About two miles of channel improvement would improve hydrology characteristics.

13. The Union River near Belfair needs about six miles of channel improvement.

14. Develop a watershed plan on the Cloquallam River."

All of this is summarized in statements that I will just turn over.

Thank you.

MR. RICHARDSON: Thank you, Commissioner.

We're getting closer home now, We will call on Mr. Charles W. O'Neill, representing the committee recently formed in the Deschutes River Basin of Thurson County. Mr. O'Neill.

Charles W. O'Neill was called as a witness:

(Prepared statements paraphrased. See Exhibits 67 and 68.)

MR. O'NEILL: Mr. Chairman, ladies and gentlemen, I speak for a group of farmers in this area, some of whom have farmed on the Deschutes River longer than many in this room are alive. Having been born and raised on the Deschutes, my granddaddy told me no one man fights the river alone. I am happy to see that this group is being formed to help all concerned with water and land to make sure that we are not fighting the river alone. I sincerely hope that one agency or industry does not feel that they should take it all. I think they all should work together. We have a statement prepared here.

It is our impression that this program is being set up for the comprehensive and proper use of both land and water of the Puget Basin.We would like to suggest a few items for the Deschutes River.

First, we feel that the proper use and care of the waters for farm irrigation and farm use should be considered. Due to the type of soil we have in the basin, irrigation is a "must", and the water should be available for this purpose.

A study of flood and debris control should be made, and the plan taken into consideration the fact that new owners are settling on the river. The survey, report and recommendations should be made available to us and to them through the local agencies that have been in force and doing a fine job--the County Extension Service.

The land use for the basin should be studied with farming and recreational ground in mind.

Each river is peculiar to itself. Ours does not lend entirely or very adequately to industrial uses, so we would like to recommend that the survey take into consideration farming and recreational ground. Some areas for individual recreation have come into being and more are already planned. Three recreational areas set up by individuals and foundationshave been put in operation and more of these are planned. Our written report covers these points and elaborates on them, which I will turn in.

I have one letter from the Thurston County Resource Council that I would like to read.

(Read excerpt. See Exhibits 69 and 70.)

"The Thurston County Resources Council requests the assistance of the Technical Action Panel

for technical help to the recreation committee in such capacity as needed, including map interpretation of the best land use and with particular application to recreation. We would also like to have further assistance when other committees need technical aid."

I would like to make one comment before I leave, and that is we can do a lot of talking in this room, a lot of agencies can get together, but if the people that are living on the ground don't get the word, we have had all this for nothing. We request that you be sure the people out in the area get the final word of your determinations.

We thank you very much.

MR. RICHARDSON: Thank you, Mr. O'Neill.

I would like to call on Mr. G. Noyes Talcott, President of the Olympia Federal Savings and Loan, who is here representing the Port of Olympia. Mr. Talcott.

G. Noyes Talcott was called as a witness:

(Prepared statement paraphrased. See Exhibit 71.)

MR. TALCOTT: Chairman Richardson and Chairman Gedney and Colonel Holbrook, being introduced as representing the Port of Olympia, it is a matter of fact that the waterfront of the industrial areas of Seattle, Tacoma and even at Olympia are being used up. Even the Port of Seattle at the present time is developing industrial sites at a cost between thirty, fifty and sixty thousand dollars an acre.

We feel that the marvelous laws have enabled the ports of the State of Washington to be able to step forward and to do the basic and fundamental planning that must be done for the industrial growth of the Northwest and that we must do this job.

I would like to speak at the present time on the development of the Nisqually Flats. The Port of Tacoma at the present time, at the end of some five years, even with the development of the work that they are doing at the present time, will have used up practically all of their manufacturing sites that they can possibly produce there. The next normal development will be the Nisqually Flats. This ia an immense project. It is possible to have deep water for the Nisqually Flats. It is going to take long planning to be able to dredge the waterway in there to make the necessary fills, and I would say, also, that the Port of Olympia is advancing the plan that we work with Pierce County because our state port laws make it possible for us to join together, that the cost of this project is possibly more than either Pierce County or Thurston County can possibly afford. It is going to take all the federal aid we can get and all the state aid.

Yet, here is the challenge that we must meet, and I think that we would be very shortsighted in any way to not submit this forward-looking plan at this present time.

We would recommend at the present time a feasibility study put on by the United States government's engineering staff and the Port of Tacoma is glad to join with us in this project.

This is a challenge and the Port of Olympia feels that it must meet this challenge. It is a long time to develop but it must be met now and started.

We are very much interested in the development of the Deschutes River, very mindful of the wonderful work that has been done by the federal engineers on the east side of the Willamette River where the local citizens, the local farmers on the Willamette River have been very, very pleased to work with that development, on the west side, they have not joined in at all, so with the idea of fish and wildlife development, the development of farm lands and irrigation for the farm lands, the providing of recreational areas, of flood control and along with that the production of industrial water power and industrial water with the thought of the normal, pleasant, beautiful development of that river.

We have been told by the federal government that Olympia is capable of offering to the people of the Puget Sound Area and that we would draw from Centralia and Chehalis and even as far south as Portland the development of a marina, a goodsized marina. The federal government has already done some of the survey work and engineering work on this project, and we are very anxious also that the development work that has to be done on the Olympia Harbor in the depthening of the channel coming into Olympia, the development of the turning bason and the filling of additional lands that that be also considered at this present time.

I feel that these projects are the things that may take the next five or ten years, but the foundation must be met at this time, that we must not be hampered by the things that our parents thought of or done, that we must be constructive, creative, and we must go forward and with a reasonable millage in taxes that we must meet this challenge.

I am very pleased with the work that this committee is doing. I think it speaks well for the

splendid development of the entire area of the State of Washington and the leaders of all these communities are challenged to see that the proper amount of taxes are raised and the proper force is done to develop these things.

Thank you very much.

MR. RICHARDSON: Thank you, Mr. Talcott.

We move now up to Pierce County. I would like to call on Mr. V. B. Jones, Power Manager for the Tacoma City Light.

Vivan B. Jones was called as a witness:
(Prepared statement read verbatim)

MR. JONES: Mr. Chairman, ladies and gentlemen, my name is Vivan Jones, Power Manager of Tacoma City Light, and I have given two copies of a prepared statement to the Chairman before the meeting opened. Because it is very brief, I would like to read part of it.

"We are pleased to cooperate with your Task Force for Comprehensive Study of Puget Sound and Adjacent Waters, and the Hearing as outlined in your notice dated September 25, 1964, scheduled for October 28, 1964, in Olympia.

Tacoma City Light has a vested interest of record in the South Fork of the Skokomish River in Mason County, Washington. This future hydroelectric project, designated as Cushman No. 3, would consist of a suitable concrete dam impounding some 180,000 to 225,000 acre feet of storage, and a development for (a) at site generation, or (b) by means of a tunner for diversion into Lake Cushman for use in the City's existing Cushman plants 1 and 2, thereby generating approximately 250 million kilowatt hours annually of additional power, Scheduling will proceed as the need arises.

There are a number of relatively small, generally high cost hydroelectric developments, possible, through impoundment and some diversion, in Pierce County, which with proper plant design and coordinated operation with the City's Nisqually River power developments may well become economically feasible in the future.

Now shown as part of Areas 1, 2 and 3 hereof, but tendered as a matter of related information, are several potential hydroelectric sites on the Cowlitz River and its tributaries, in and adjacent to Lewis County, which with proper plant design and coodinated operation with the City's Mayfield and Mossyrock projects in Lewis County, would warrant development by the City for power supply purposes."

Thank you.

MR. RICHARDSON: Thank you, Mr. Jones.

Now, I would like to hear from Mr. Keith F. Jones, Pierce County Engineer. It looks like these engineers named Jones do very well in Pierce County.

Keith F. Jones was called as a witness:
(No prepared statement)

MR. JONES: Mr. Chairman, of necessity my statement will be very brief. I just want to be on record that we will have and are working on formal statement. Through some mixup in communications, we didn't get notice of this until Wednesday, but I assure you our boys are working on it and we will mail it to you, pertaining particularly to the needs of flood control and fresh water supply.

MR. RICHARDSON: I would like to hear now from Mr. John A. Roller, Supervisor of Sanitary Engineering for the City of Tacoma.

John A. Roller was called as a witness:
(Prepared statement submitted. See Exhibit 72.)

MR. ROLLER: Mr. Chairman, Colonel Holbrook and members of the Task Force, my name is John Roller. I am Supervisor of Sanitary Engineering for the City of Tacoma Water Division, and I have prepared statement which was to be presented by Mr. A. J. Bennadetti, the Assistant Director of Utilities and Superintendent of the Water Division on behalf of the City of Tacoma. He was not able to attend. The statement is quite lengthy, and I will not try to recap or review it, although I would like to make several comments.

As a representative of the municipality concerned with the total needs of our citizens, we are concerned with the education, recreation, public health and economic well-being of the people whom we represent. All of these things are important and must be evaluated and considered in a logical order of importance as the affect the total welfare of the individuals and the community.

On a scale of priority, there is little argument that insuring the public health is of prime importance because public health deals with the lives of individuals, and a high margin of safety in matters of water supply is essential.

Now, generally, in the Pacific Northwest, it is an accepted practice to utilize surface waters as a source of domestic and industrial water supply. This area is indeed fortunate that we are able to rely on water from natural streams of such high quality that only simple chlorination is necessary in order to meet U. S. Public Health Service drinking water standards.

Now, in the State of Washington, there are eleven such major watersheds. These watersheds represent less than one per cent of the total land area of the state, and yet supply the domestic and industrial water for approximately one-half of our state's population. The economic growth of this area is dependent upon the continuing supply of this high-cost -- or should I say high-quality, low-cost water.

Fortunately, here in the Pacific Northwest our resources have not yet been allowed to deteriorate. We are in a position to guide and determine the destiny of the natural water resource of this area. Here, through the proper and wise management and control of our water resources, we can avoid the national problems that have occurred in public health, in conservation in other states.

Historically, communities have grown and declined, dependent upon the availability of an ample and pure water supply. We, therefore, submit for your consideration that a wide margin of safety be given those matters which deal directly with the economic abundance of pure, good-tasting water supply and public health of our communities.

We trust that this Committee will give significant consideration to the position of the municipal health authorities of the area in your comprehensive study.

Thank you.

MR. RICHARDSON: Thank you, Mr. Roller.

We are now down to the point where we are out of cards for persons who have indicated that they wish to make an oral statement. Is there anyone who wishes to leave the position of observer and become a speaker?

Mr. Keizer was called as a witness:

(No prepared statement)

MR. KEIZER: My name is Keizer. I am from Pierce County. I would like to bring to the attention of this Committee this pollution of our waters in the state. In this area, we have many, many wonderful rivers. We have many, many good roads running around in this area where the waters are fast getting polluted from recreation, people stopping, throwing stuff in the river; and I just wanted to draw to the attention of this Committee to see if they wouldn't investigate and see if anything could be done along those lines.

MR. RICHARDSON: Thank you very much, sir.

I see Mr. Roy Harrison, Director of our Pollution Commission here.

Unless there is any other person who wishes to make a statement, we will conclude the meeting shortly.

I want to ask the members of the Task Force, such as Mr. Huish, Grant Woolley, Francis Nelson, Mr. Kehne and Mr. Phillips and Bob McNeil and Ray Holmes and others who are here as observers for federal and state agencies who are members of the Task Force to reconvene here for an informal meeting of the Task Force at approximately 1:15, after lunch.

Unless there is anyone else who wishes to make a statement, I would like to thank you very much. You can understand that the technical committees will need all of your help. Any additional information that you wish to submit in writing we would be pleased to accept until November 15. If you know of any other organizations or groups that wish to submit a written statement, we will be pleased to receive them until November 15.

Thank you very much for coming.

(Whereupon, at 11:45 o'clock, a. m., Wednesday, October 28, 1964, the hearing in the above-entitled matter was closed.)

SECTION 4 — ATTENDANCE RECORDS

PUBLIC HEARING ATTENDANCE REGISTER
ANACORTES, WASHINGTON-12 OCTOBER 1964

NAME	ADDRESS	OCCUPATION, ORGANIZATION
Aker, Jack	Rt. 1 Ferndale, Wash.	Farmer
Aldridge, Frederick F.	570 Pittock Block Portland, Ore.	Sanitary Engineer, U. S. Public Health Service
Allen, Donald E.	P. O. Box 745 Bellingham, Wash.	Forester, Mt. Baker National Forest
Amble, Wilfred D.	11318–2d N. W. Seattle, Wash.	Civil Engineer, Stevens & Thompson, Inc.
Atterberry, Robert M.	1617 K. Avenue Anacortes, Wash.	Grocery Store Operator
Baker, Wm. W.	Box 339 Friday Harbor, Wash.	Retired County Agent
Bartch, George D.	Pier No. 1 Everett, Wash.	Mgr., Port Everett
Bechly, J. F.	1519 Alaskan Way S. Seattle, Wash.	Project Engineer U. S. Army Engr Dist, Seattle
Bennett, Laura	Olga, Wash.	Orcas Island Grange
Bennett, Raymond H.	Olga, Wash.	Farmer; Orcas Island, Grange
Benson, Donald J.	2633 Eastlake Ave. E. Seattle, Wash.	Sanitary Engineer, Northwest Pulp & Paper Assn.
Black, George O.	P. O. Box 4332 Portland, Ore. 97208	Biologist, Bureau of Commercial Fisheries
Blake, T. G.	Lopez, Wash.	San Juan County Commissioner
Britton, Merle R.	336 Federal Off. Bldg. Seattle, Wash.	Soil Conservation Service
Bruce, Norman E.	Rt. 2, Box 690 Oak Harbor, Wash.	Engineer, Shell Oil Co.

Bulger, Thomas D. C.	3419 West 2d, Anacortes, Wash.	Technical Director, Scott Paper Co.
Cahail, H. James	P. O. Box 729 Friday Harbor, Wash.	Engineer, San Juan County
Condon, Robert W.	Rt. 1 Friday Harbor, Wash.	Surveyor, San Juan County
Costanti, D. James	10 Doser Edison, Wash.	School Principal, Samish Area Rec. & Farmer
Dalenius, G. S.	3805 Terrace Dr. Anacortes, Wash.	Traffic Manager Anacortes Veneer
Davison, Glen A.	1608 So. 7th Mt. Vernon, Wash.	Hydro Engr., Milo Moore
Deane, Lavern M.	Rt. 3, Box 600 Anacortes, Wash.	Postmaster
Dickhaus, Reynold V.	219 Crown Lane Bellingham, Wash.	Chief Forester, Georgia Pacific Corp., Puget Sound Div.
Dodd, Harold R.	Blaine, Wash.	Blaine City Council; Blaine Chamber of Commerce
Dynes, George M.	Rt. 4, Box 246 Mt. Vernon, Wash.	Farmer; Real Estate; Chairman, Avon-By-Pass Committee
Evans, J. Allan	249 Middlefield Bellingham, Wash.	Asst. Secretary, Georgia Pacific Corp.
Finnegan, W. J.	Puget Power Bldg. Bellevue, Wash. 98004	Hydrologist, Puget Sound Power & Light Co.
Flora, Charles J.	Biology Dept., West Wash. State College	Professor, Institute for Freshwater Studies
Foster, E. Bert	2828 Broadway Bellingham, Wash.	Business; Bellingham Water Board
Freimann, LaVern N.	1907–38th Bellingham, Wash.	Agricultural Agent, Whatcom County Extension Service
Fulkerson, Earl T.		U. S. Dept. of Agriculture, SCS
Fulton, Harry R.	County Courthouse Bellingham, Wash.	Whatcom County Planning Commission

Gallagher, William F.	1417–38 St. Anacortes, Wash.	Engineer, City of Anacortes
Gedney, Robert H.	1519 Alaskan Way S. Seattle, Wash.	Chief, Project Planning Branch, U. S. Army Engr Dist. Seattle; Co-Chairman, Puget Sound Task Force
Getz, Lawrence W.	Friday Harbor, Wash.	Council Member, City of Friday Harbor
Gilshannon, B. J., Dr.	2112 Dellesta Park Bellingham, Wash.	Retired Surgeon; Lake Whatcom Improvement Committee
Glenn, Thomas J.	P. O. Box 728 Bellingham, Wash.	Manager, Port of Bellingham
Gold, Charles C.	2918 Iowa Drive Bellingham, Wash.	Supt., Water & Sewage, City of Bellingham
Goodman, Ray	Box 500 LaConner, Wash.	Salmon Canner, San Juan Fishing & Packing Co.
Green, Albert G.	Rt. 2, Box 5 Anacortes, Wash.	Laborer
Grunhurd, Leroy C.	2320 North Shore Bellingham, Wash.	Asst. County Engr., Whatcom County
Halgren, Mel	317 X Ave. Anacortes, Wash.	Port of Anacortes
Hallman, Glen F.	509 Girard St., Bellingham, Wash.	Public Health Dept., Whatcom County
Harms, Anton F.	Union Bldg Mt. Vernon, Wash.	Soil Conservation Service
Hauber, Russell B.	416–2d Street Anacortes, Wash.	Operator, Bryant's Marina, Inc.
Hawkins, Russell	Rt. 1, Box 79 East Sound, Wash.	Farmer; San Juan County Soil and Water Conservation District
Holbrook, C. C., Colonel	1519 Alaskan Way S. Seattle, Wash.	District Engineer, U. S. Army Engr Dist, Seattle
Hollinger, Melvin W.	P. O. Box 187 Blaine, Wash.	Blaine Chamber of Commerce; Blaine City Council

Hougen, Conrad L.	Rt. 2 Everson, Wash.	Logging; Whatcom Soil & Water Conserv. Dist.
Huish, E. Carl	N. 1322 Post St. Spokane, Wash.	Engineer, U. S. Bureau of Reclamation
Hulbert, Robert J.	Rt. 6 Mt. Vernon, Wash.	Farmer
Johnson, Lloyd H.	Court House Mt. Vernon, Wash.	Skagit County Engineer
Kariel, H. G., Dr.	Dept. of Geography Western Wash. State College, Bellingham, Wash.	Professor; Recreational Interests, Whatcom County
Koch, Alwin G.	1309 Smith Tower Seattle, Wash.	State Health Dept.
Kraft, Gerald F.	Biology Dept. Western Wash. State College Bellingham, Wash.	Teacher, Inst. for Fresh-water Studies
Kjargaard, Donna	Lopez, Wash.	Farmer
Kredel, E.K.W., M.D.	500 Girard Street Bellingham, Wash.	Public Health Physician; District Health Officer
Lay, J. T.	1828 Laurel Road Bellingham, Wash.	Whatcom County Engineer
Lidstone, Nicholas A.	P. O. Box 958 Bellingham, Wash.	Manager, Bellingham Chamber of Commerce
Lloyd, Nels V.	1466 Peterson Road Burlington, Wash.	Retired; Drainage Dist. 19
Lund, Lewis D.	1149 Toledo Street Bellingham, Wash.	Fish Biologist, Dept. of Game
Macdonald, Stanley A.	Rt. 2 Everson, Wash.	Farmer; Whatcom County S.W.C.D.
Mackey, Marvin G.	P. O. Box 160 Anacortes, Wash.	Banker; Chamber of Commerce
Mansfield, Jerry L.	3910 V Ave. Anacortes, Wash.	Owner, Stevedore Co.

Martini, Russell F.	1258 No. State St. Bellingham, Wash.	Director, Whatcom County Industrial Development Council
McNallie, Harold R.	East Sound, Wash.	San Juan County Commissioner
Minor, Richard J.	3310 W. Maplewood Ave. Bellingham, Wash.	Earth Work; Whatcom County PUD No. 1
Moore, Milo E.	RFD No. 2, Box 752 Anacortes, Wash.	Fisheries Consultant
Moser, Byron D.	P. O. Box 1056 Bellingham, Wash.	U. S. Dept. of Agriculture, SCS
Nelson, Francis L.	570 Pittock Block Portland, Ore.	Sanitary Engr., U. S. Public Health Service
Nielsen, James M.	1511 32d St. Anacortes, Wash.	Postal Employee; Anacortes Jaycees
Nolan, Harry L.	14th & Commercial Anacortes, Wash.	Manager, Chamber of Commerce
Norberg, Harold B.	401 Harris Ave. Bellingham, Wash.	Pres., Puget Sound Salmon Canners, Inc.
O'Keefe, Michael P.	Box 357 Friday Harbor, Wash.	Work Unit Conservationist, Soil Conservation Service
Ovenell, Fred J.	313 Kincaid St. Mt. Vernon, Wash.	Manager, Skagit County PUD
Peabody, Tyler W., Jr.	5013 Seaview Way Everett, Wash.	Scott Paper Co.
Pentz, Mable T.	Rt. 3 Anacortes, Wash.	Editor, Anacortes American
Peterson, Egiel L.	2702 Oakes Ave. Anacortes, Wash.	Real Estate; Port of Anacortes
Plancich, John N.	3rd & M Sts. Anacortes, Wash.	Past Pres., Puget Sound Salmon Canners Assn.; Mgr, Fishermen's Packing Corp.
Radke, Ryle A., M.D.	4600 Baker Drive Everett, Wash.	Physician; Wash. State Sportsmen's Council
Rees, William H.	Gen. Admin. Bldg. Olympia, Wash.	Biologist, Wash. Dept. of Fisheries

Repman, Lloyd V.	2432 Wetmore Ave. Everett, Wash.	Consultant, Snohomish County Development Council
Richards, Scott O.	2517 Commercial Ave. Anacortes, Wash.	Skagit County Commissioner
Richardson, John A.	335 Gen. Admin. Bldg. Olympia, Wash.	Asst. Director, Dept. of Conservation; Co-Chairman, Puget Sound Task Force
Ringler, I. E.	Friday Harbor, Wash.	Retired; Friday Harbor Port Commission
Robertson, Kenneth E.	Bellingham, Wash.	Bellingham Herald
Ruff, James D.	1514 M Ave. Anacortes, Wash.	Liquor Store Clerk
Rupeiks, Val	1517 NW Market St. Seattle, Wash.	Regional Planner, Clark, Colman & Rupeiks, Inc.
Russell, Donald L.	1853 So. 130th Seattle, Wash.	Civil Engr; Cornell, Howland, Hayes & Merryfield, Consulting Engrs.
Sapp, Jess V.	1304 231 Sedro Woolley, Wash.	Retired; Sedro Woolley Chamber of Commerce
Schirk, Gilbert V.	Box 937 Boise, Idaho	U. S. Bureau of Reclamation
Schoen, Robert F.	Box 2 Orcas, Wash.	Union Oil Consignee
Scofield, Robert J.	14625 S.E. 37th Bellevue, Wash.	Forester, U. S. Forest Service
Skrinde, R. A.	1519 Alaskan Way S. Seattle, Wash.	Chief, Puget Sound Section, U. S. Army Engineer District, Seattle
Servoss, Nolan B.	Courthouse Annex Mt. Vernon, Wash.	County Agent, Skagit County Extension Service
Steffen, Eugene F.	2302–43d Ave. E. Seattle, Wash.	Recreation Planner, Bureau of Outdoor Recreation
Stein, Jerome E., Dr.	621 12th Street Shelton, Wash.	Scientist, Rayonier Corp.

Stevens, John A.	35th St. Anacortes, Wash.	Anacortes Veneer, Inc.
Strandberg, Herbert V.	1015–3d Ave. Seattle, Wash.	Chief Engr., Seattle City Light
Sundquist, Daniel	Rt. 3, Box 66 Mt. Vernon, Wash.	Farmer, Diking District No. 3
Townsend, Chas. C.	1301 12th St. Anacortes, Wash.	Longshoreman, I.L.W.U.
Vander Mey, Harry	Sumas, Wash.	Retired; Whatcom County SCD Board
Weller, Robert	Anacortes, Wash.	Gen. Supt., Scott Paper Co.
Williams, R. Walter	4910 Lee St. Olympia, Wash.	Fisheries Biologist, Washington Dept. of Fisheries
Wilson, James F.	Rt. 4, Box 117 Port Orchard, Wash.	Aerial Photographer, Northwest Air Photos
Woolley, Grant A.	Room 600 Lincoln Bldg., Portland, Ore.	Biologist, Bureau of Sport Fisheries & Wildlife

PUBLIC HEARING ATTENDANCE REGISTER
EVERETT, WASHINGTON–22 OCTOBER 1964

NAME	ADDRESS	OCCUPATION, ORGANIZATION
Aakre, Einar G.	2031 Rucker Ave. Everett, Wash.	County Supervisor, USDA Farmers Home Admin.
Ahlstrom, Archie J.	Box 122 Coupeville, Wash.	Planner, Island County Planning Commission
Aldridge, Frederick F.	370 Pittock Block Portland, Ore.	Sanitary Engineer, U. S. Public Health Service
Anderson, A. Gordon	Rt. 2 Wenatchee, Wash.	Engineer, USDA–FHA
Anderson, Roy	Snoqualmie, Wash.	Town of Snoqualmie
Backer, Earl A.	Rt. 3 Snohomish, Wash.	Farmer; Snohomish County ASC Committee
Backstrom, Ralph V.	301 King Co. Courthouse Seattle, Wash.	King County Extension Agent
Bailey, Robert H.	301 Lloyd Bldg. Seattle, Wash.	Civil Engineer; Citizens for Clean Waters
Barnwell, Earl	Court House Everett, Wash.	County Engineer, Snohomish County
Bartch, George D.	Pier 1 Everett, Wash.	Mgr., Port of Everett
Beaty, William H.	Rt. 1 Box 991 Everett, Wash.	County Planner, Snohomish County Planning Commission
Bechly, J. F.	1519 Alaskan Way S. Seattle, Wash.	Project Engineer, U. S. Army Engr. Dist., Seattle
Bell, Lewis A.	314 1st Natl. Bank Bldg. Seattle, Wash.	Lawyer; Wash. State Sportsmen's Council
Bennett, Delbert C.	City Hall Renton, Wash.	Asst. City Engr., City of Renton
Bennett, Frank H.	City Hall Everett, Wash.	Planning Director, City of Everett
Berry, Rollie D.	City Hall Everett, Wash.	Water Supt, City of Everett

Bigger, Daniel E.	P. O. Box 394 (629 1st) Sultan, Wash.	State Forester, Dept. of Natural Resources
Blunt, Duane E.	409 Pub. Hlth. Bldg. Olympia, Wash.	Sanitary Engr, Wash. Pollution Control Commission
Bourque, Damian R.	13025–8th NW Seattle, Wash.	Self Employed
Bowyer, Eugene P.	Rt. 2, Box 247 Arlington, Wash.	Recreational Developer, Rainbow Springs
Britton, Merle R.	332 Federal Office Bldg. Seattle, Wash.	U. S. Dept. of Agriculture, Soil Conservation Service
Brodenen, Laurence	Rt. 1 Marysville, Wash.	Farmer
Brooks, William E.	2532 Wetmore Everett, Wash.	Gen. Mgr., Everett Area Chamber of Commerce
Bullock, F. L.	Pier 59 Seattle, Wash.	Manager, Fishermen's Co-operative Assn.
Carlson, Clifton L.	5007 Delaware Everett, Wash.	Gen. Agent, Great Northern Railway Co.
Chase, S. L.	Everett, Wash.	Everett Fish Co.
Christopher, Eugene L.	16520–10th Ave. W., Alderwood Manor, Wash.	Wash. State Ferries
Clement, Thos. H.	2939 Colby Ave. Everett, Wash.	Everett Chamber of Commerce
Cokeley, William L.	908 2d St. Snohomish, Wash.	Project Engineer, U. S. Dept. of Agriculture, SCS
Curry, W. Loren	3001 Rockefeller Everett, Wash.	County Extension Agent, Agricultural Extension Service
Custer, Donald W.	City Hall, Cedar River Park, Renton, Wash.	Mayor, City of Renton
Dams, Les R.	2007 Cedar Everett, Wash.	Everett Hunting & Fishing Club
Danielson, Cliff M.	P. O. Box 437 Standwood, Wash.	Editor, The Stanwood News

Denison, John G.	Star Rt. 1, Box 15 Hoodsport, Wash.	Biological Oceanographer, Rayonier, Inc.
Deuster, Frank B.	1500 Westlake N. Seattle, Wash.	Manager, Northwest Marine Industries, Inc.
Dickey, Paul C.	Second and Union Snohomish, Wash.	Contracting Officer, Marshland Flood Control Dist. and French Slough F/C Dist.
Downie, Richard S.	811 Olympia Blvd. Everett, Wash.	Dir. Personnel & Advertising, PUD No. 1 Snohomish County
Drake, Theodore F.	2615 E. Phinney Bay Dr. Bremerton, Wash.	Management Analyst, Kitsap County Planning Commission
Ekloff, Emil H.	20021 Little Bear Creek Road, Woodinville, Wash.	Retired; Horseshoe Grange
Elder, R. Emerson	4735 Glenhaven Drive Everett, Wash.	Public Relations Mgr., Weyerhaeuser Company
Endicott, Harold W.	1519 Alaskan Way S. Seattle, Wash.	Civil Engineer, U. S. Army Engr. Dist., Seattle
Eriksen, Leif	705 Terminal Sales Bldg. Seattle, Wash.	President, Northwest Fisheries Assn.
Fallon, John J.	1411–4th Ave. Bldg. Seattle, Wash.	Bonneville Power Admin.
Finnegan, W. J.	Puget Power Bldg. Bellevue, Wash.	Hydrologist, Puget Sound Power & Light Co.
Flora, Donald F.	400 Boren Ave. Seattle, Wash.	Economist, U. S. Forest Service
Forbes, Bruce F.	Rt 1, Box 3706 Issaquah, Wash.	Engineer, King County
Fowler, Richard L.	5114 Picnic Pt. Road Edmonds, Wash.	Planning Director, Snohomish County
Gallagher, Ernest G.	Rt. 1 Clinton, Wash.	Clinton District Business Association
Gardner, Dwight R.	Box 333 Tukwila, Wash.	Tukwila City Council

Gedney, Robert H.	1519 Alaskan Way S. Seattle, Wash.	Chief, Basin Planning Branch, U. S. Army Engr Dist, Seattle; Co-Chairman, Puget Sound Task Force
Gillespie, Wm. B.	5110–NE 201st Pl. Seattle, Wash.	Chief Flood Control Engr, King County
Gonnason, Victor N.	5239–117th Ave. S.E. Bellevue, Wash.	Retired; King County SWCD.
Gonnason, Warren C.	400 County Court House Seattle, Wash.	Asst. Co. Engr, King County
Groshell, Ed. W.	600 Ninth Ave. Seattle, Wash. 98104	Flood Control Engr, King County
Gruble, Edward V.	1437 Elliott Ave. W. Seattle, Wash.	Citizens for Clean Water
Hager, Douglas W.	618–2d Ave. Seattle, WAsh.	Vice President, New England Fish Co.
Hagestad, Harold A.	20 A St. NW Auburn, Wash.	City Engineer, Auburn
Hall, C. B.	Snoqualmie, Wash.	Retired; King County Advisory Committee
Hansen, H. Chris	Rt. 4 Everett, Wash.	Farmer
Harstad, Howard T.	2512–2nd Ave. Seattle, Wash.	Consulting Engineer, King County Water Dist. No. 97
Haun, Harold E.	Box 157 Langley, Wash.	Resort Owner; Port District of Langley
Hausman, Weston H.	851 Poplar Pl. So. Seattle, Wash.	Sales Mgr., Ryan Recording Thermometer Co.
Hayes, Frederick W.	Snoqualmie Falls, Wash.	Manager, Cascade Branch, Weyerhaeuser Co.
Hayfield, Walter E.	Sultan, Wash.	Farm Forester, Dept. of Natural Resources
Headley, Richard K.	Everett, Wash.	Manager, Wood Products Div., Weyerhaeuser Co.

Healy, Donald H.	18800 Highway 99 Lynnwood, Wash.	Secretary, Modern Home Builders, Inc.
Heigh, W. Dale	Box 552 Darrington, Wash.	Forester, U. S. Forest Service
Hein, Bernard B.	Foot of Wharf St. Langley, Wash.	Marina Opr., Hammond, Collier & Isaac; Town of Langley
Henderson, John I.	P. O. Box 49 Everett, Wash.	Traffic Manager, Simpson Lee Paper Co.
Holbrook, C C., Colonel	1519 Alaskan Way S. Seattle, Wash.	District Engineer, U. S. Army Engr Dist, Seattle
Holseman, Richard C.	Coupeville, Wash.	County Engineer, Island County
Hoving, John E.	181 King Street Seattle, Wash.	Asst. Chief Engr., Northern Pacific Ry. Co.
Howell, Floyd E.	Rt. 2 Monroe, Wash.	Snohomish Soil Conservation Dist.
Huish, E. Carl	N. 1322 Post Spokane, Wash.	Asst. Area Engineer, U. S. Bureau of Reclamation
Hulbert, W. G., Jr.	P. O. Box 1111 Everett, Wash.	Businessman; Snohomish County Economic Development Council
Iverson, William M.	Everett, Wash.	Div. Controller, Western Gear Works
Jarrett, Chas. E.	G. N. Ry. Bldg. 201–4th & Union Seattle, Wash.	Western Development Agent, G. N. Ry.
Jenner, Lawrence M.	919 Smith Tower Seattle, Wash. 98104	Industrial Agent, Northern Pacific Ry. Co.
Johnson, L. P.	Rt. 5 Everett, Wash.	Engineer, Graves & Johnson
Johnson, Victor A.	2610 Colby Everett, Wash.	Real Estate Broker; Everett Yacht Club
Kinch, Clyde M.	310 Union Avenue Snohomish, Wash.	Real Estate; Snohomish Chamber of Commerce

King, James F.	Box 955 Star Rt. Marysville, Wash.	Civil Engineer; Graves & Johnson
Kinnune, Paul	616 Laurel Dr. Everett, Wash.	Port of Everett
Klein, William H.	Rt. 3, Box 3176 Bainbridge Island, Wash.	Recreational Resource Specialist, Bureau of Outdoor Recreation
Kock, Alwin G.	1309 Smith Tower Seattle, Wash.	District Engineer, State Health Dept.
Lang, Allen L.	13020 NE 113th Kirkland, Wash.	Hydraulic Engr., King County Flood Control
Larson, Ralph W.	600 No. Capitol Way Olympia, Wash.	Power Dam Coordinator, Wash. Dept. of Game
Laubenstein, Donald C.	4816 W. Glenhaven Dr. Everett, Wash.	Public Relations, Scott Paper Co.
McCormack, Elizabeth H.	Rt. 1, Box 138 Stanwood, Wash.	
McCormick, Robert K.	1638 W. Lawton Way Seattle, Wash.	Sanitary Engr., N.W. Division, Bureau of Yards & Docks
Magee, James A.	Rt. 1, Box 987 Kent, Wash.	Compositor, Lake Sawyer Improvement Club, JC
Magnuson, Roy F.	16431 Corson Ave. So. Seattle, Wash.	Engineer, Wash. Dept. of Highways
March, Robert E.	Everett, Wash.	General Manager, West Coast Division, Scott Paper Company
Martin, Jack R.	2927 Colby Everett, Wash.	Manager; Govt. Repr; S.C.E.D. Council
Maskrod, J. W.	P. O. Box 471 Snoqualmie, Wash.	Service Station Operator; Kimball Creek Flood Control Zone Dist.
Miller, Kermit K.	4320 Ridgemont Drive Everett, Wash.	Auditor, PUD No. 1 of Snohomish County
Minish, Mervin A.	200 Broadway Seattle, Wash.	Consulting Engr., Minish, Webb & Associates

Mueller, A. C.	Rt. 1, Box 882 Auburn, Wash.	King County Flood Control, & Soil Conservation Dist.
Nelson, Francis L.	570 Pittock Block Portland, Ore.	Saniatry Engr., U. S. Public Health Service
Nelson, Vern R.	814 E St. Renton, Wash.	Work Unit Conservationist, Soil Conservation Service
Opstad, Ed. R.	Snoqualmie, Wash.	Clerk-Treasurer, Town of Snoqualmie
Ostroth, George P.	1519 Alaskan Way S. Seattle, Wash.	U. S. Army Engr Dist, Seattle
Pajari, T. M.	2501 E. D St. Tacoma, Wash.	Div. Engr., Chicago, Milwaukee, St. Paul & Pacific Railway Co.
Peterson, Roy A.	Everett, Wash.	West Coast Telephone Co.
Petrie, George C.	607 Sound Place Everett, Wash.	Airport Mgr., Snohomish County Airport Commission
Pettibone, Wilbur C.	Rt. 3, Box 4 Snohomish, Wash.	Soil Conservation Service
Phillips, Earl L.	14816 9th N.E. Seattle, Wash.	State Climatologist, U. S. Weather Bureau
Pisila, Dennis W.	1632 Virginia St. Everett, Wash.	Planner, Snohomish County Planning Dept.
Quast, Tom	Cedarcrest Golf Course Marysville, Wash.	Snohomish County P.U.D.
Repman, Lloyd V.	2532 Wetmore Ave. P. O. Box 538 Everett, Wash.	Consultant, Snohomish County Economic Development Council
Rhoades, E. D.	711 Lincoln Snohomish, Wash.	Retired; Snohomish City Council
Robinson, Ralph K.	Rt. 4, Box 35 Everett, Wash.	Saw Filer; Snohomish County Sportsmen's Assn.
Sarsfield, William P.	921–126th Everett, Wash.	Commissioner, U. S. Dept. of Agriculture, ASCS
Sater, Herman C.	1048–9th Ave. So. Edmonds, Wash.	Retired; City of Edmonds

Schaefer, R. F.	406 Center Place Everett, Wash.	Asst. Mgr., P.U.D. No. 1 of Snohomish County
Schiefelbein, R. C.	1515 Olympic View Dr. Edmonds, Wash.	Realtor; South Snohomish County Chamber of Commerce
Scott, Edward R.	336 Sunset Avenue Edmons, Wash.	Retired; Port of Edmonds
Sherwood, Glen W.	City Hall Kent, Wash.	City Engr., City of Kent
Skrinde, R. A.	1519 Alaskan Way S. Seattle, Wash.	Chief, Basin Planning Section, U. S. Army Engr Dist. Seattle
Smith, LeRoy E.	1514 Rockefeller Everett, Wash.	Technical Supervisor, Weyerhaeuser Co.
Soli, A. E.	Everett, Wash.	Pres., American Tug Boat Co.
Staswick, Sid	Rt. 2 Everett, Wash.	Dairy Farmer; Snohomish County Drainage District No. 13
Steele, Syd	924 Hoyt Everett, Wash.	Mgr., Snohomish County PUD
Taylor, Robert E.	Star Route Granite Falls, Wash.	Forester, U. S. Forest Service, Monte Cristo R.D.
Thomas, B. P.	600 W. Olumpic Pl. Seattle, Wash.	Consulting Engr., King County Flood Control
Thompson, James H.	Labor Temple Everett, Wash.	Sec., Carpenters; Snohomish Labor Council
Thompson, John H.	Rt. 2, Box 193 Everett, Wash.	Dairy Farmer; Diking Dist. No. 6
Thornton, Alex	517 So. State St. Kent, Wash.	Mayor of Kent
Tinney, William A.	Box 192 Nisqualley, Wash.	Forester, Industrial Forestry Association
Tolnay, James	1332 Mukilteo Blvd. Everett, Wash.	Asst. Water Supt., Everett Water Dept.
Towne, E. Louis	P. O. Drawer 330 North Bend, Wash.	Manager, Tanner Electric Co.

Triggs, Ronald G.	Star Route Marysville, Wash.	Resort Operator
Tschirley, Paul R.	700 East Mercer Seattle, Wash.	Planner, Harstad Associates, Inc.
Tucker, Willis D.	411 Ave. J Snohomish, Wash.	News Reporter, Herald
VanDrieh, R. W., Dr.	537 Med. Dent. Bldg. Everett, Wash.	Dentist; Snohomish County Sportsmen's Assoc.
Van Skiver, Jack C.	8612–52 Dr. NE Marysville, Wash.	Telephone Co. Representative
Wallgren, Lloyd E.	Rt. 5, Box 579 Everett, Wash.	Candidate for Commissioner, Port of Everett
Watkins, G. A.	313 Heather Everett, Wash.	Asst. Mgr., American Tug Boat Co.
Whitmore, L. M., Jr.	P. O. Box 148 Mukilteo, Wash.	Engineer, Scott Paper Co.
Williams, Wayne W.	Star Route Marysville, Wash.	Business Manager, The Tulalip Tribes
Wilson, Charles H.	918 Colby Everett, Wash.	Gen. Agent, NP. Ry; Snohomish County Economic Development Council
Wilson, Jack E.	City Hall Renton, Wash.	City Engr., City of Renton
Wood, Elmer H.	Box 448 Darrington, Wash.	Grocer; Darrington Chamber of Commerce
Woolley, Grant A.	Rm. 600, Lincoln Bldg. Portland, Ore. 97204	Biologist, Bureau of Sport Fisheries & Wildlife
Yoshioka, Arthur H.	Box 1209 Seattle, Wash.	Planner, Port of Seattle

PUBLIC HEARING ATTENDANCE REGISTER
OLYMPIA, WASHINGTON—28 OCTOBER 1964

NAME	ADDRESS	OCCUPATION, ORGANIZATION
Auseth, Martin E.	Rt. 2, Box 564 Shelton, Wash.	Mason County Commissioner; SCD
Ayer, Ruby M.	Rt. 5, Box 505 Olympia, Wash.	Farm Housewife; Group from Deschutes River
Ayer, Travis	Rt. 5, Box 505 Olympia, Wash.	Farmer; Deschutes River Land Owners
Barrett, Laurence O.	905–2d Ave. Bldg. Seattle, Wash. 98104	Forester; Snoqualmie National Forest
Baskett, Frank	2002 E. 93d St. Tacoma, Wash.	Lumberman; Drainage District No. 14, Pierce Co.
Bechly, J. F.	1519 Alaskan Way S. Seattle, Wash.	Project Engineer, U. S. Army Engr. Dist., Seattle
Bell, Amy M.	1510 E. Day Dr. Olympia, Wash.	Housewife; Mountaineers
Benson, Donald J.	2633 Eastlake Ave. E.	Engineer, Northwest Pulp and Paper Assn.
Benson, Paul T., Jr.	Gen. Admin. Bldg. Olympia, Wash.	Planner, State Dept. of Commerce & Economic Development
Betzing, Sidney D.	2409 Calloway Olympia, Wash.	Thurston County Engineer
Bigley, Michael	2705 So. Fir Olympia, Wash.	Public Lands Consultant, State of Wash.
Bollen, Robert G.	406 Public Health Bldg. Olympia, Wash.	Engineer, State Health Dept.
Bower, Rex D.	Rt. 8, Box 201 Olympia, Wash.	Real Estate Salesman
Brown, Henry A.	Rt. 2, Box 253 Poulsbo, Wash.	Kitsap County Commissioner
Bullard, Laroyd V.	Courthouse Port Orchard, Wash.	County Engineer, Kitsap County
Cavanagh, Ed	Port Angeles, Wash.	Resident Mgr., Fibreboard Paper Products

Chambers, John L.	106 Maple Park Olympia, Wash.	Executive Secretary, Wash. State Assn. of County Commissioners
Chase, William J.	3104 Western Ave. Seattle, Wash.	Civil Engr, Hill & Ingman, Engrs.
Chornell, Henry V.	706 So. Ennis Port Angeles, Wash.	Asst. Manager, Rayonier, Inc.
Clark, John A.	522 So. Franklin Olympia, Wash.	State Parks and Recreation Commission
Critchfield, Elmer L.	Rt. 3, Box 1586 Port Angeles, Wash.	County Commissioner, Clallam County
Davis, Geo. F.	Rt. 1, Box 468 Lakebay, Wash.	Retired; Grange
Dickson, William K.	Rt. 2, Box 2266 Bainbridge Island	PUD Commissioner, Kitsap County
Eacrett, Harvey E.	P. O. Box 665 Sequim, Wash.	County Commissioner, Clallam County
Finnegan, W. J.	Puget Power Bldg. Bellevue, Wash. 98004	Hydrologist, Puget Sound Power & Light Co.
Fischler, Harold	1802 Nipsic Bremerton, Wash.	Commissioner, Kitsap County PUD
Flora, Donald F.	400 Boren Ave. Seattle, Wash.	Economist, Greenacres, Inc.
Flynn, William C.	Port of Olympia	Engineer, Port of Olympia
Gedney, Robert H.	1519 Alaskan Way S. Seattle, Wash.	Chief, Basin Planning Branch, U. S. Army Engr. Dist, Seattle; Co-Chairman Puget Sound Task Force
Gehrke, Clarence W.	Rt. 1, Box 128 Vaughn, Wash.	Civil Engineer; Upper Sound Grange No. 702
Gillmor, Lloyd G.	1724 North Central Olympia, Wash.	Forest Supervisor, U. S. Forest Service
Hall, Hugh D.	1010 East 3d Port Angeles, Wash.	Retired; Clallam County Pomona Grange
Hammond, William H.	1076 S. Washington Olympia, Wash.	Director of Research, Assn. of Wash. Industries

Hansen, Geo. H.	Public Health Bldg. Olympia, Wash.	Sanitary Engr., State Pollution Control Commission
Harrison, Harold H.	Rt. 1, Box 125 Yelm, Wash. 98597	Fieldman, PCA & Farmer, Deschutes Watershed
Hastings, Warren W.	345 Middlefield Rd. Menlo Park, Calif.	Hydrologist, U. S. Dept. of the Interior
Hendricks, Vernon	Gate, Wash.	Farmer
Herrman, Donald D.	140 W. Front St. Port Angeles, Wash.	City Manager, City of Port Angeles; Pt. Angeles Chamber of Commerce; Clallam County ARA Committee
Holbrook, C. C., Colonel	1519 Alaskan Way S. Seattle, Wash.	District Engineer, U. S. Army Engr. Dist., Seattle
Holmes, Ray E.	210 Custom House Portland, Ore.	Chief, Planning Branch, U. S. Army Engr. Div., North Pacific
Hoover, Jack	821 S. Peabody Port Angeles, Wash.	Accountant; Clallam County Pomona Grange
Huish, E. Carl	N. 1322 Post Spokane, Wash.	Asst. Area Engineer, U. S. Bureau of Reclamation
Jones, Keith F.	County City Bldg. Tacoma, Wash.	County Engineer, Pierce County
Jones, Vivan B.	P. O. Box 11007 Tacoma, Wash.	Power Manager, Tacoma City Light Co.
Kehne, Lewis F.	W. 2925 Rosewood Spokane, Wash.	Soil Conservationist, U. S. Dept. of Agriculture
Keizer, John R.	1324 Browns Pt. Blvd. Tacoma, Wash.	
Kelly, Gerry D.	905–2d Ave. Bldg. Seattle, Wash.	Forester, U. S. Forest Service
King Jack D.	Rt. 2, Box 1160 Port Angeles, Wash.	Vice Pres., Blackball Transport; Port Angeles Chamber of Commerce
Kohan, Fred F.	Box 82 Vaughn, Wash.	Retired; Upper Sound Grange

Leaver, Robert E.	1309 Smith Tower Seattle, Wash.	Sanitary Engr., Wash. State Dept. of Health
Martin, Stanley E.	1939–5th Bremerton, Wash.	Retired; Dist. 111, W.S.S. Co.
McCormack, Elizabeth	Rt. 1, Box 138 Stanwood, Wash.	
McCormick, Robert K.	1638 West Lawton Way Seattle, Wash.	Sanitary Engineer, NW Div., Bureau of Yards & Docks
McKay, Robert W.	226 Court House Annex Olympia, Wash.	Thurston County Extension Agent
McNeil, Robert L.	2115 NE 49th Portland, Ore.	Staff Director, CBIAC
Miller, Harvey L.	1519 Alaskan Way S. Seattle, Wash.	Chief, Project Planning Branch, U. S. Army Engr., Dist., Seattle
Mills, Don S.	Olympia, Wash.	Industrial Development Analyst, Wash. Dept. of Commerce & Economic Development
Montgomery, Warren J.	3104 Western Ave. Seattle, Wash.	Engineer, Hill & Ingman, Engineers; Kitsap County PUD No. 1
Murphy, Phillip B.	Box 269 Shelton, Wash.	Mgr., Shelton Chamber of Commerce
Neal, Thomas C.	1522 So. Pine Port Angeles, Wash.	Manager, Port of Port Angeles
Nelson, Francis L.	570 Pittock Blcok Portland, Ore.	Sanitary Engr., U. S. Public Health Service
Nelson, Robert	Rt. 5, Box 288 Olympia, Wash.	
Ness, Charles R.	1007 Washington Olympia, Wash.	Engineer, U. S. Dept. of Agriculture, SCS
O'Neill, Charles W.	350 North St. Olympia, Wash.	Feed Dealer, Deschutes Basin
Perry, Charles	1519 Alaskan Way S. Seattle, Wash.	Civil Engr., U. S. Army Engr. Dist., Seattle
Phillips, Earl L.	14816–9th NE Seattle, Wash.	State Climatologist, U. S. Weather Bureau

Phinney, Cecil A.	525 So. Foote Olympia, Wash.	Soil Technician, Soil Conservation Service
Pluntze, James C.	4617 Anita Ave. Olympia, Wash.	Saniatry Engineer, Wash. State Helth Dept.
Porter, John N.	905 King Co. Courthouse Seattle, Wash.	Director, Puget Sound Governmental Conference
Rasp, Walter F.	700 Norton Bldg. Seattle, Wash.	Civil Engineer, Federal Housing Administration
Richardson, John A.	335 Gen. Admin. Bldg. Olympia, Wash.	Asst. Director, Wash. Dept. of Conservation; Co-Chairman, Puget Sound Task Force
Richardson, W. Ronald	2559 Magnolia Blvd. Seattle, Wash.	Mgr., Crown Zellerbach
Robison, Robert S.	5011 Laura Lane Olympia, Wash.	Fisheries Adm., Wash. Dept. of Fisheries
Roe, Charles B.	Temple of Justice Olympia, Wash.	Asst. Attorney General, State of Wash.
Roller, John A.	P. O. Box 11007 Tacoma, Wash.	Supv. of Sanitary Engineering, City of Tacoma
Schirk, Gilbert B.	Box 937 Boise, Idaho	U. S. Bureau of Reclamation
Shell, James R.	1109 So. Albert St. Port Angeles, Wash.	Retired; Pomona Grange
Sibold, Gene W.	3151 So. Pear Olympia, Wash.	Manager, Port of Olympia
Siebeutheler, Melvin J.	1313 McMillan Ave. Sumner, Wash.	Retired; Pierce County Sportsmen's Council; Sumner Sportsmen's Assn.
Skrinde, R. A.	1519 Alaskan Way S. Seattle, Wash.	Chief, Puget Sound Section, U. S. Army Engr. Dist, Seattle
Spencer, Wesley R.	1007 S. Wash. Olympia, Wash.	Soil Conservation Service
Smith, Denholm	801 Canal Street Tacoma, Wash.	Manufacturing; St. Regis
Smith, Newton V.	Yelm, Wash.	Farmer

Stitt, Claude M.	P. O. Box MM Antioch, Calif.	Mgr., Water Resources & Effluent Control, Fibreboard Paper Products Corp.
Talcott, G. Noyes	420 Capital Way Olympia, Wash.	President, Olympia Federal Savings & Loan Port of Olympia
Thomspon, M. H.	822 Division St. Port Orchard, Wash.	PUD Commission, Kitsap County
Tinney, Tinney A.	Box 192 Nisqualley, Wash.	Forester, Industrial Forestry Assn.
Visell, Alden E.	Rt. 4, Box 4781 Gig Harbor	Retired Lumberman; Grange
Wagner, Albert K.	2716 Otis Olympia, Wash.	Office Mgr., ASCS
Walker, Murray G.	335 Gen. Admin. Bldg. Seattle, Wash.	Supv., Div. of Water Resources, State of Wash.
Ward, John M.	Rt. 3, Box 358-B Olympia, Wash.	Fish Biologist, Wash. Dept. of Game
Welch, Dan	Rt. 1, Box 128 Vaugh, Wash.	Painter; Upper Sound Grange
Wheeler, O. Charles	1128E–3rd St. Port Angeles, Wash.	Asst., Manager, Crown Zellerbach Corp.
Williams, R. Walter	4910 Lee St. Olympia, Wash.	Fishery Biologist, Wash. Dept. of Fisheries
Wohleb, Robert H.	P. O. Box 1426 Olympia, Wash.	Architect, Port of Olympia
Woolley, Grant A.	Room 600, Lincoln Bldg. Portland, Ore. 97204	Biologist, Bureau of Sport Fisheries & Wildlife
Ziel, F. Leonard	Clallam & McKinley Port Townsend, Wash.	Paper & Pulp Mill Mgr., Crown Zellerbach Corp.

SECTION FIVE—CONTENTS, UNPUBLISHED APPENDIX

A copy of the mailing list for the hearing announcements, documents read into the official transcripts, and voluminous maps, reports, brochures, etc., received during the course of the hearings have been placed in the unpublished appendix to this record. The unpublished appendix is available for inspection from the Task Force Secretary, c/o Seattle District, Corps of Engineers, 1519 Alaskan Way South, Seattle, Washington.

ANACORTES HEARING AREA

UA No.

1 Statement of the U.S. Department of Agriculture read by Earl T. Fulkerson, with brochure entitled, "Washington Watershed Projects," prepared by the Soil Conservation Service.

2 Statement of the Department of the Interior read by Gilbert V. Schirk.

3 Statement of the U.S. Department of Health, Education and Welfare, read by Francis L. Nelson.

4 Statement of the U.S. Fish and Wildlife Service read by Grant A. Woolley.

5 Statement of the Department of Fisheries, State of Washington, read by R. Walter Williams.

6-7 Photographs of Friday Harbor, submitted by Robert W. Condon, San Juan County Commissioner.

8 "Engineering Report" dated July 1963, prepared by the Eastsound Water User's Association, submitted by Russell Hawkins.

9 Statement of the Friday Harbor City Council read by Lawrence Getz.

10 Statement of the Washington State Sportsmen's Council, Inc., read by Dr. Ryle Radke.

UA No.

11 Statement of the Scott Paper Company read by Robert Weller.

12 Report entitled, "Plans and Details for a Comprehensive Development Program of Natural Salmon Rearing Areas in the State of Washington," prepared and submitted by Milo Moore, Fisheries Consultant.

13-14 Engineering Report entitled, "Development of Cultus Mountain Watershed for Gravity Water Supply," and Township Map, submitted by Fred J. Ovenell for Public Utility District No. 1 of Skagit County.

15 Report entitled, "Whatcom County Water Quality (Lake Whatcom)," prepared by the Institute for Freshwater Studies, Western Washington State College, submitted by Dr. Gerald F. Kraft.

16 Statement of the Lake Whatcom Improvement Association read by Dr. Bernard J. Gilshannon.

17 Statement of the Whatcom County Industrial Development Council, Inc., read by Russell F. Martini.

18 Directory, Board of Directors, Whatcom County Industrial Development Council, Inc., submitted by Russell F. Martini.

19 Statement of Public Utility District No. 1 of Whatcom County read by Richard J. Minor.

20 Statement of the Bellingham Chamber of Commerce read by Nicholas A. Lidstone.

21 "Report on Comprehensive Plan for Port of Anacortes," prepared by Marshall, Barr & Associates, submitted by Mel Halgren.

22 Statement of Lloyd H. Johnson, Skagit County Engineer.

UA No.

23 Statement by the Avon Bypass Committee read by George M. Dynes.

24-25 Reports entitled, "Anacortes Comprehensive Plan," and "Anacortes Industrial Development," prepared by John Graham and Company, submitted by William F. Gallagher.

26 Statement of the Skagit County Soil and Water Conservation District read by Anton F. Harms.

27 Report entitled, "Skagit Soil and Water Conservation District Program (Revised 1963)," submitted by Anton F. Harms.

28-30 Brochures entitled, "The Wild Cascades," "Prospectus for a North Cascades National Park," and "A Proposal for an Alpine Lakes Wilderness Area, Washington," prepared by the North Cascades Conservation Council, submitted by Patrick D. Goldsworthy.

EVERETT HEARING AREA

31 Statement of U.S. Department of the Interior, read by E. Carl Huish.

32 Statement of the U.S. Fish and Wildlife Service, read by Grant A. Woolley.

33 Statement of the U.S. Department of Health, Education and Welfare, read by Francis L. Nelson.

34 Statement of the Washington State Sportsmen's Council, Inc., read by Lewis A. Bell.

35 Statement of Warren C. Gonnason, Assistant King County Engineer.

36 Report entitled, "The Comprehensive Plan for King County, 1964," prepared by the King County Planning Department.

UA No.

37 Report entitled, "King County, Washington, Comprehensive Plan for Flood Control," prepared by the Board of King County Commissioners.

38 Statement of Citizens for Clean Waters, read by Edward B. Gruble.

39 Statement of the King County Soil Conservation District, read by A.C. Mueller, inclosing resolution dated December 11, 1963.

40 Statement of Public Utility District No. 1 of Snohomish County, read by Syd Steele.

41 Statement of the Snohomish County Soil and Water Conservation District, read by Floyd E. Howell.

42 Statement of the Everett Hunting and Fishing Club, read by Dr. Richard W. Van Driel.

43 Statement of the Snohomish County Economic Development Council, read by William G. Hulbert, Jr.

44 List of studies and reports prepared by or for the city of Everett.

45 List of studies and reports prepared by or for Snohomish County.

46 Brochure entitled, "Hulbert Industrial Tracts."

47 Brochure entitled, "The Snohomish County Airport Industrial Park."

48 Pamphlet entitled, "Arlington, Washington, Municipal Airport Industrial Park."

49 Pamphlet entitled, "Mountlake Terrace Industrial Park."

50 Brochure entitled, "Puget Sound Industrial District," developed by the Modern Home Builders, Inc.

UA No.

51 Map 1, entitled, "Puget Park Properties."

52 Brochure entitled, "The Port of Everett, Washington."

53 Map entitled, "Major Transportation Facilities, Snohomish County."

54 Report entitled, "A Plan for Replacement and Expansion of Water Supply and Transmission Facilities for the city of Everett."

55 Statement of George D. Bartch, Manager, Port of Everett.

56 Report entitled, "Development of Tract 'Q' in Everett Harbor."

57 Statement of Everett Wood Products Division of the Weyerhaeuser Company, read by Richard K. Headley.

58 Statement of the West Coast Division, Scott Paper Company, read by Robert E. March.

59 Statement of the Everett Yacht Club, read by Michael G. Baker.

60 Statement of The Tulalip Tribes, read by Wayne W. Williams.

61 Photographs of Hermosa Point Resort, presented by Ronald G. Triggs.

62 Statement of the Snohomish County Airport Commission, read by George C. Petrie.

63 Drawing No. 1306, entitled, "Langley Port Commission, Island County, Washington, Proposed Development, Small Boat Haven," dated 6-26-64.

64 Map entitled, "Comprehensive Sewerage Plan," adopted by the Municipality of Metropolitan Seattle on 22 April 1959.

UA No.

65 Map of San Juan Islands leased to the State of Washington for recreational use, prepared by the Washington Foldboat Club.

66 Map of recreation-navigable rivers, prepared by the Washington Foldboat Club.

OLYMPIA HEARING AREA

67 Statement of the Department of the Interior read by Gilbert V. Schirk.

68 Statement of the U.S. Fish and Wildlife Service, read by Grant A. Woolley.

69 Statement of the Department of Health, Education and Welfare, read by Francis L. Nelson.

70 Statement of the Department of Health, State of Washington, read by Robert G. Bollen.

71 Statement of the Department of Fisheries, State of Washington, read by R. Walter Williams.

72 Statement of the Northwest Pulp & Paper Association read by Donald J. Benson.

73 Part One, report entitled, "Some Economic Aspects of the Pulp and Paper Industry," prepared by John A. Guthrie and William Iulo of the Washington State University under the sponsorship of the Northwest Pulp and Paper Association.

74 Part Two, report entitled, "Methodology for Evaluating Uses of Water in the Pacific Northwest," by Warren W. Etcheson and Joseph W. McGuire of the College of Business Administration, University of Washington, sponsored by the Northwest Pulp and Paper Association.

UA
No.

75 Report entitled, "Economic Survey," prepared by Arthur Andersen & Co., for the Northwest Pulp and Paper Association.

76 Statement of the Board of Clallam County Commissioners read by E.L. Critchfield.

77 Statement of the Port Angeles Division, Crown Zellerbach Corporation, read by O. Charles Wheeler.

78 Statement of the Port of Port Angeles, read by Thomas C. Neal.

79 Statement of the Board of Kitsap County Commissioners, read by Henry A. Brown.

80 Statement of the Department of Public Utilities, city of Tacoma, read by Vivan B. Jones.

UA
No.

81 Map entitled, "City of Tacoma, Green River Water Supply," submitted by A.J. Benedetti, Superintendent, Water Division, city of Tacoma.

OTHER

82 Mailing List for announcement of public hearings held at Anacortes, Everett and Olympia, Washington, held on 12, 22 and 28 October 1964, respectively.

83 Supplement No. 1 to Mailing List.

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EXHIBIT A

INFORMATION BULLETIN

INITIAL PUBLIC HEARINGS

Columbia Basin Inter-Agency Committee

TASK FORCE FOR COMPREHENSIVE STUDY
PUGET SOUND AND ADJACENT WATERS

Task Force Members
State of Washington
Dept. of Agriculture
Dept. of Army
Dept. of Interior
Dept. of Labor
Federal Power Commission
Dept. of Commerce
Dept. of Health, Education & Welfare

*John A. Richardson
Assistant Director
Address Replies to
either Co-Chairman
* XXXXXXXXX
Dept. of Conservation
335 General Adm. Bldg.
Olympia, Washington
Phone 753-6178

Robert H. Gedney
Chief, Basin Plng. Br.
U.S. Army Engr. Dist., Seattle
1519 Alaskan Way South
Seattle, Washington 98134
Phone MU 2-2700 Ext. 382

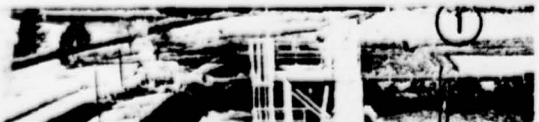
25 September 1964

NOTICE OF PUBLIC HEARING ON COMPREHENSIVE WATER RESOURCE STUDY, PUGET SOUND AND ADJACENT WATERS

Announcement is made of the following public hearings to obtain views of interested parties on water and related land resource measures for consideration in the Comprehensive Water Resource Study of the Puget Sound and Adjacent Waters region. Hearings applicable to the 12-county areas within the study limits are listed below and are shown on the attached map.

Area 1 Whatcom Skagit San Juan	October 12, 1964 - 10:00 a.m. Elks Lodge 1009 - 7th Street Anacortes, Washington
Area 2 Island King Snohomish	October 22, 1964 - 10:00 a.m. Snohomish County P.U.D. Auditorium 2320 California Avenue Everett, Washington
Area 3 Clallam Mason Kitsap Pierce Thurston Jefferson	October 28, 1964 - 10:00 a.m. Conference Room (first floor) General Administration Building Olympia, Washington

The hearings will be conducted by the Task Force for the Puget Sound and Adjacent Waters Study. This Task Force is composed of representatives of Federal and State agencies concerned with water resources in the State of Washington. The objective of the Task Force is preparation of coordinated plans for immediate and long-range water and land resource development in the study area. The inclosed Information Bulletin gives further details on the scope, purposes and organization of the study effort.



NOTICE OF PUBLIC HEARING ON COMPREHENSIVE WATER RESOURCE STUDY, PUGET SOUND AND ADJACENT WATERS (Cont'd)

All interested parties are invited to present testimony and to be present at one of the above hearings. Testimony is invited from representatives of Federal, State, County, municipal agencies and planning bodies concerned with water and related land resource planning. Testimony is also desired from representatives of commercial, agricultural, industrial, civic, recreation and conservation, highway, railway, utilities, private citizens and any others concerned with water and related land resource planning.

The purpose of the hearings is to solicit the views of interested persons concerning the need for construction of projects required within the next 10 to 15 years, and also as a basis for long-range plans where immediate development is not feasible. Examples of the kinds of testimony desired are: data on water needs and future requirements for domestic, municipal, irrigation, recreation, hydropower, and industrial use; requirements for water quality and pollution control; water and land treatment measures necessary to reduce erosion, siltation, and sedimentation; specific requirements for flood control protection or planning; information on immediate and long-range requirements for port facilities, channel or other navigation needs for water movement and boating, both commercial and pleasure type; and on development of water resources for fish and wildlife. In order that the planning by the Task Force may be responsive to all the various water use needs, testimony on all the foregoing water requirements and any additional purposes not heretofore cited are requested.

For the record, all important facts and testimony should be submitted in writing. Oral testimony is invited. All oral presentations should be limited to brief summarizations of written material so there will be adequate time for all interested parties to be heard. Written statements may be handed to either Co-Chairman of the Task Force at the hearing or mailed beforehand.

Please bring this notice of hearings to the attention of all persons known to be interested in water resource planning.

John A. Richardson

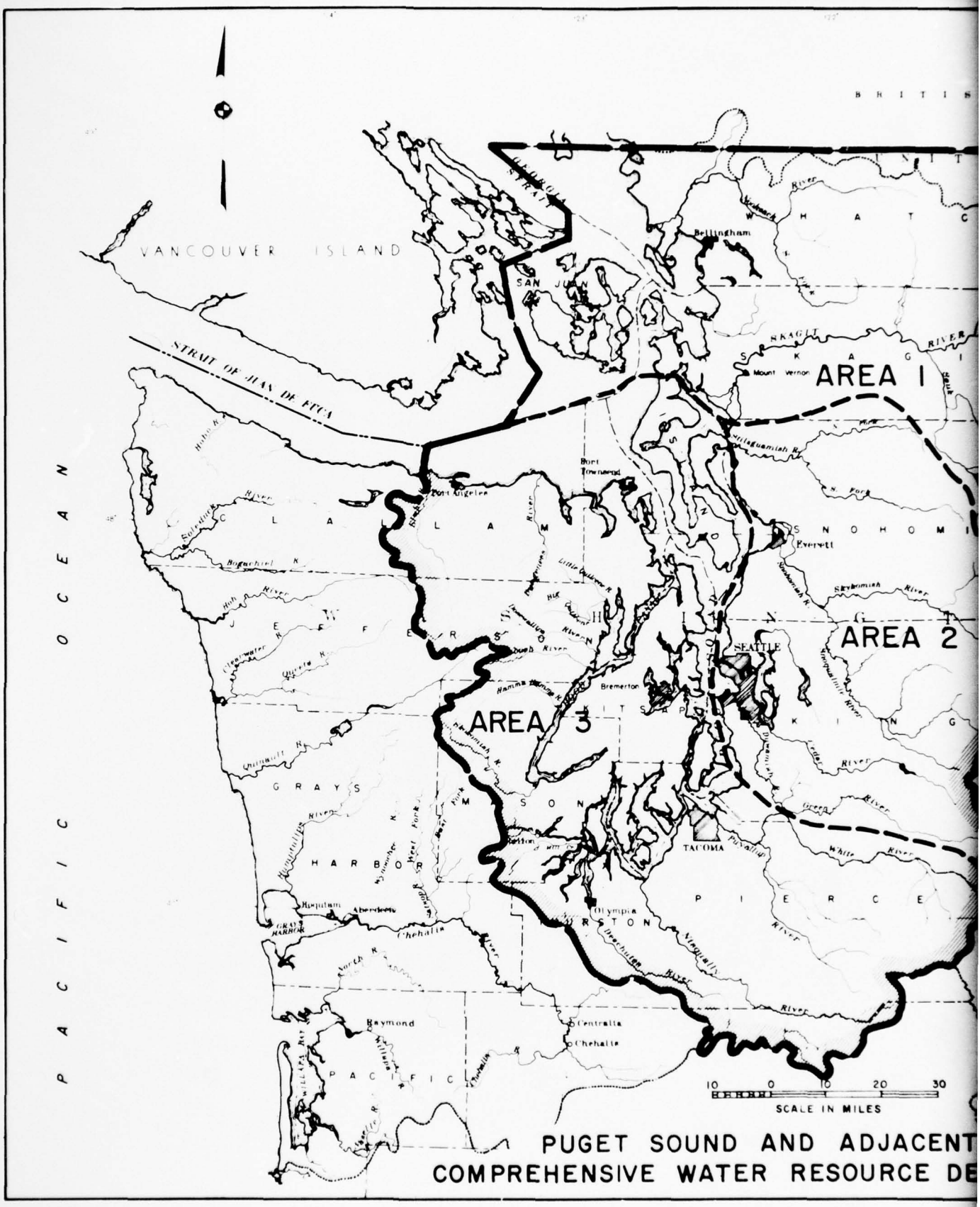
JOHN A. RICHARDSON, Co-Chairman

Robert H. Gedney

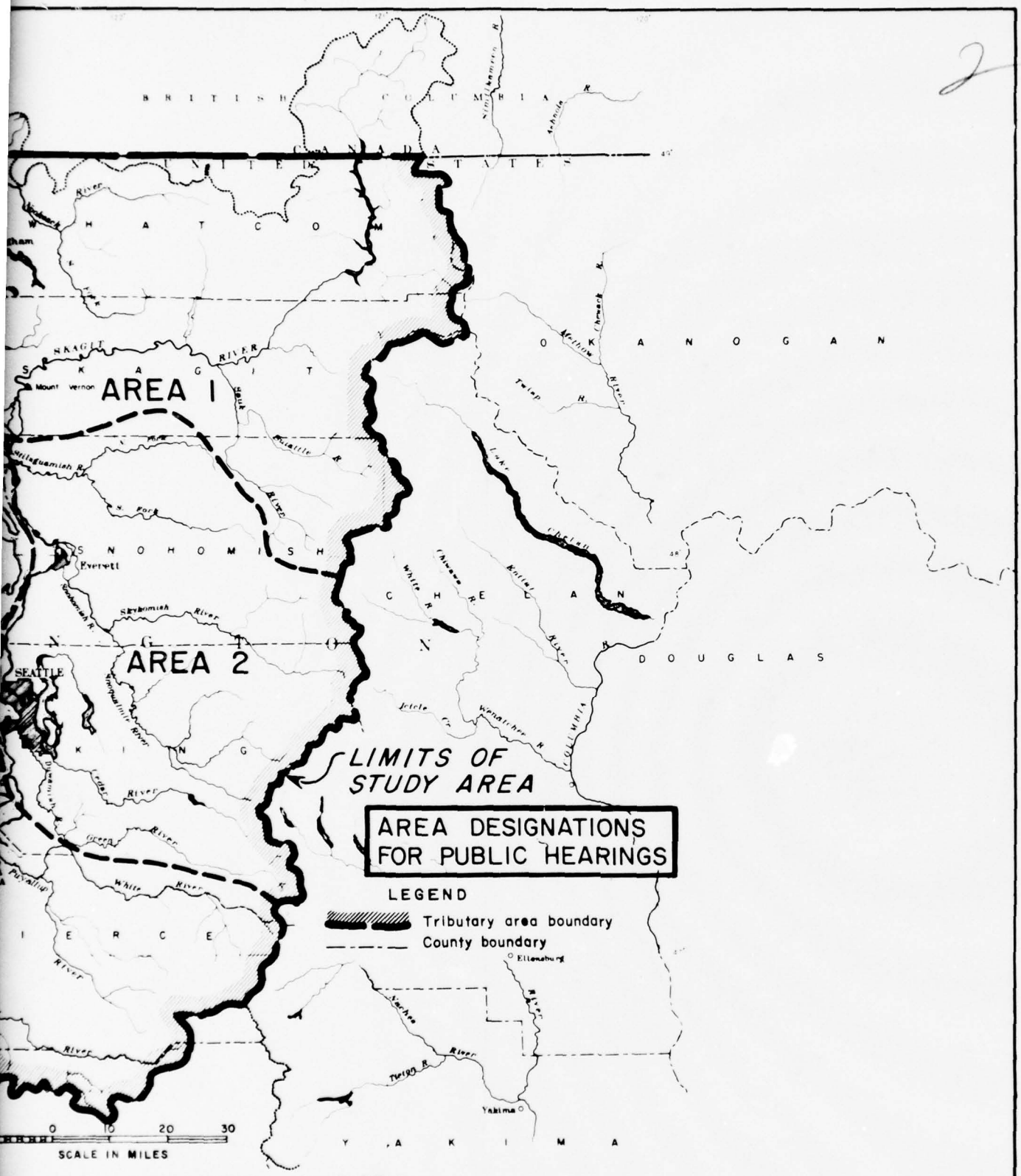
ROBERT H. GEDNEY, Co-Chairman

2 Incl
1. Map
2. Information Bulletin*

* Bound at back of Record of Hearings



PUGET SOUND AND ADJACENT
COMPREHENSIVE WATER RESOURCE DE



D AND ADJACENT WATERS
TER RESOURCE DEVELOPMENT STUDY

INFORMATION BULLETIN

Comprehensive water resource study

PUGET SOUND AND ADJACENT WATERS

INTRODUCTION

The Puget Sound Region of the State of Washington is in an enviable position with respect to the abundance and the high qualities of its water resources. The people of the area and the State and Federal agencies concerned recognize that far-reaching social and economic developments will occur in this area at a rapidly expanding rate within the foreseeable future.

Accordingly, in January 1964 the Congress appropriated funds to begin a comprehensive study of the water resources of a region designated as Puget Sound and Adjacent Waters.

All the major Federal and State of Washington agencies having an interest in water resource planning will participate in the study. Coordination will be through the Columbia Basin Inter-Agency Committee. The guidelines for the study are set forth in Senate Document 97, 87th Congress, Second Session. Because these guidelines are so essential to an understanding of the study objectives, they are quoted, in part, as follows:

"*A. Development*

National economic development, and development of each region within the country, is essential to the maintenance of national strength and the achievement of satisfactory levels of living. Water and related land resources development and management are essential to economic development and growth, through concurrent provision for—

Adequate supplies of surface and ground waters of suitable quality for domestic, municipal, agricultural, and industrial uses—including grazing, forestry, and mineral development uses.

Water quality facilities and controls to assure water of suitable quality for all purposes.

Water navigation facilities which provide a needed transportation service with advantage to the Nation's transportation system.

Hydroelectric power where its provision can contribute advantageously to a needed increase in power supply.

Flood control or prevention measures to protect people, property, and productive lands from flood losses where such measures are justified and are the best means of avoiding flood damage.

Land stabilization measures where feasible to protect land and beaches for beneficial purposes.

Drainage measures, including salinity control where best use of land would be justifiably obtained.

Watershed protection and management measures where they will conserve and enhance resource use opportunities.

Outdoor recreational and fish and wildlife opportunities where these can be provided or enhanced by development works.

Any other means by which development of water and related land resources can contribute to economic growth and development.

B. Preservation

Proper stewardship in the long-term interest of the Nation's natural bounty requires in particular instances that—

There be protection and rehabilitation of resources to insure availability for their best use when needed.

Open space, green space, and wild areas of rivers, lakes, beaches, mountains, and related land areas be maintained and used for recreational purposes; and

Areas of unique natural beauty, historical and scientific interest be preserved and managed primarily for the inspiration, enjoyment and education of the people.

C. Well-being of people

Well-being of all of the people shall be the overriding determinant in considering the best use of water and related land resources. Hardship and basic needs of particular groups within the general public shall be of concern, but care shall be taken to avoid resource use and development for the benefit of a few or the disadvantage of many. In particular, policy requirements and guides established by the Congress and aimed at assuring that the use of natural resources, safeguard the interests of all of our people shall be observed."

The water resources of the Puget Sound region are its most important natural asset, shaping not only its economy but the living habits and environment of its residents. Broadly, the study has as its purpose the development of comprehensive plans for management and development of the water and related land resources of the region. A systematic, planned basis of development will avoid the piecemeal approach too often followed in handling of these important resources.

PURPOSE

Engineering and economic investigations will be made of the region with emphasis on river basins having outstanding water resource development needs. Plans will be prepared to satisfy basin and regional requirements for water and related land resource development through coordinated local, State and Federal programs.

Long range plans will be developed on a framework basis for guidance in future planning where immediate development is not now feasible Detailed plans will be prepared for implementation where there is an immediate need and economic justification. The needs of recreational boating and deep water commerce on the Sound and adjacent tidal waters will be included.

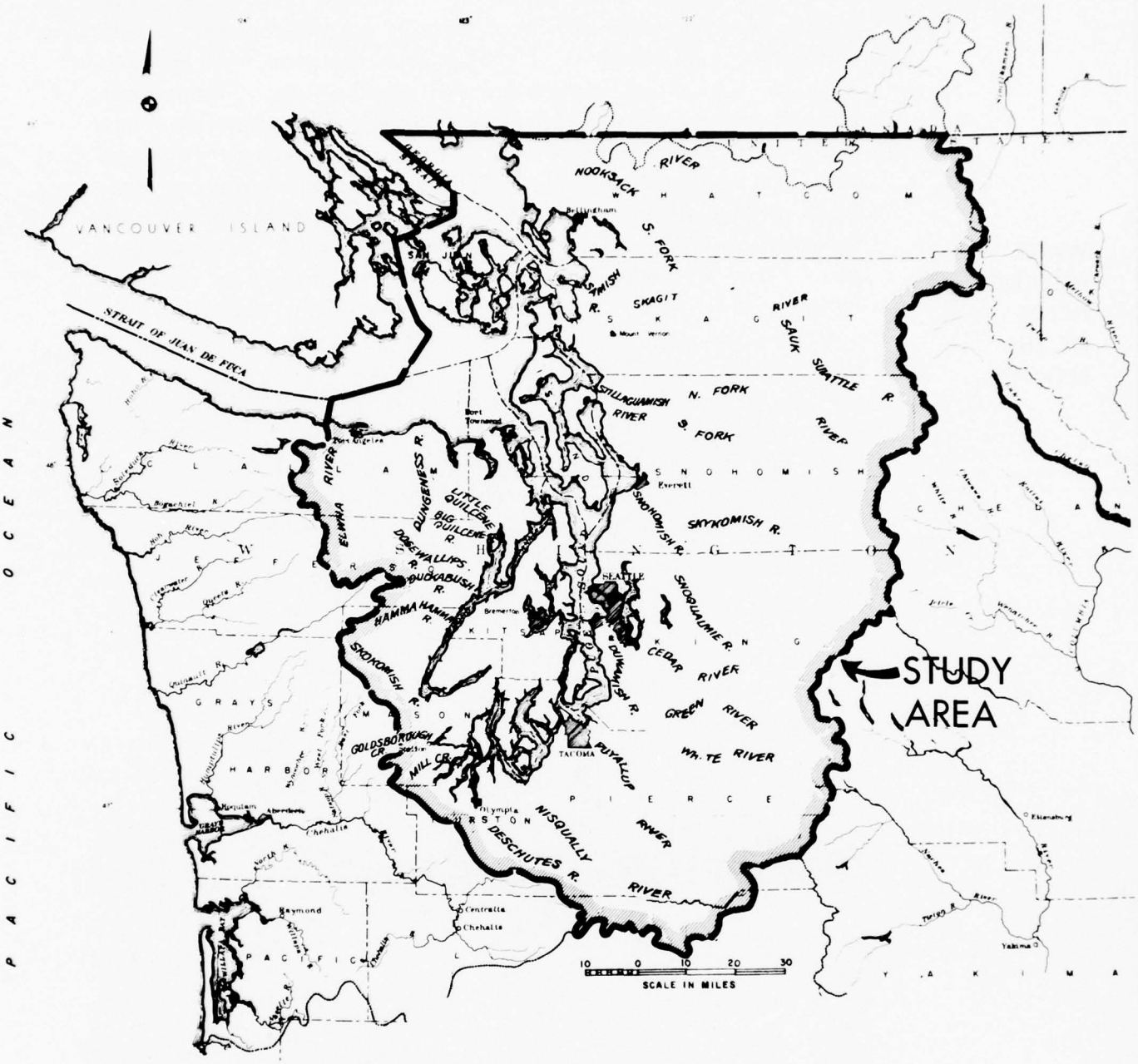
Industry and agriculture in Snohomish River Delta near Everett, Washington.

THE REGION

The study area lies between the Cascade and Olympic Mountains in northwestern Washington, as shown by the map on the opposite page. The region has 10 major and 12 minor rivers flowing into Puget Sound, Georgia Strait, Hood Canal and the Strait of Juan de Fuca. Its 13,500 square miles of land lying in a setting of forests and mountains has a terrain varying from bare, glacier-covered peaks through forest-covered slopes to fertile farm lands and urban centers on river deltas and shorelands. The 2,500 square miles of nearly landlocked salt water form an inland sea with 10 major ports having deep water access to the Pacific Ocean.

The region has wild areas in the Cascade Mountains, primitive areas on the Olympic Peninsula, salt water beaches, and sheltered inlets along interior waterways. Productive agricultural land, adequate sites for industry including deep access to coastal and world markets, water oriented plants, abundant year-round water supply, extensive forests, a skilled labor force, reasonably priced hydroelectric power, and a marine fishery resource combine to form a basis for residential, industrial, commercial and agricultural development. The mild climate and opportunities for the full range of outdoor recreation in marine and mountain settings, salt- and fresh water sports fisheries, and a variety of wildlife further enhance the region.

In 1960 the region's total population was one and three-fourths million persons concentrated in a densely settled urban band in river basins and along the eastern shores of Puget Sound and adjoining waters. The Seattle-Tacoma-Everett metropolitan complex has the largest concentration of population. Other centers extend from Bellingham to Olympia to Port Angeles. Many important communities are found in the flood plains along the river channels. In the past several decades the economy has changed from a dependence on natural resources to a more diversified commercial and industrial base. Forest industries, agriculture and commercial fisheries still represent a significant economic segment. Other important industries are aerospace, aircraft, food processing, pulp and paper making, and petroleum refineries. Outdoor recreational and scenic areas are significant regional assets adding substantially to the economy as a result of tourist related income. Population of the area is forecast to reach more than 4,500,000 by the year 2000. This growth will result in changes in the pattern of residential, commercial and industrial uses of land and the needs and patterns of water resource development. Water will become increasingly valuable, not only for domestic and industrial use, for power and irrigation, but also for recreation and the preservation and enhancement of fish and wildlife resources. The control of floods, stabilization of erosion along river banks and sea shores, irrigation of land, and the control of pollution will be essential.



Major River Basins		Minor River Basins	
Nooksack River	Nisqually River	Elwha River	Duckabush River
Samish River	Deschutes River	Dungeness River	Hamma Hamma River
Skagit River	Puyallup River	Little Quilcene River	Skokomish River
Stillaguamish River	Cedar River	Big Quilcene River	Goldsborough Creek
Snohomish River	Green River	Dosewallips River	Mill Creek

WATER RESOURCE NEEDS OF THE REGION

A well based, comprehensive water resource plan for each river basin is essential to direct and to program the development of water and related land resources. Water supplies are needed for domestic, municipal, agricultural, recreational and industrial uses. Water quality and pollution control require recognition as important requirements. Water and land treatment measures must be carried out to reduce erosion, siltation and sedimentation. The management and improvement of watersheds, grazing, cropland, forests and mines, as affected by water resource developments, are essential. The near threefold population growth forecast by the year 2000 increases the present urgent need for flood protection, control or prevention. The improvement of port facilities, channels and other navigation features is a continuing program which must keep pace with the demands for water movement and boating of both a commercial and pleasure type. Fish and wildlife are matters of primary concern in planning and development of the water resource. Recreational assets have a major role in the economy and well-being of the people. Hydroelectric power from watersheds in the Puget Sound region will be a significant asset when Columbia River power is fully developed and committed.

1921 Skagit River flood at Burlington, Washington.

COLUMBIA BASIN INTER-AGENCY COMMITTEE (CBIAC)

Many aspects of the water resource needs and problems of the Pacific Northwest have been under study by a large number of agencies representing the public at various levels of government. Over the past years there has been a growing recognition of the need for cooperation and coordination of effort in order to make the best use of the manpower and knowledge of these agencies. In order to develop such a goal, several levels of inter-agency cooperation have emerged. A focal point for cooperative effort in water resource studies has been the CBIAC, consisting of the governors of Washington, Idaho, Oregon, Montana, Utah, Nevada and Wyoming, and representatives of the six Federal departments and one Federal commission, which have water and related land resource responsibilities in the seven Columbia basin states. Since 1946 the CBIAC has facilitated coordination of water resources policies and programs. Technical subcommittees have been established to divide coordination work among appropriate groups.

SUBCOMMITTEE ON COORDINATED PLANNING

The CBIAC established this subcommittee in 1962 to coordinate the water resource planning efforts of the member State and Federal agencies. The subcommittee is composed of key technical and administrative leaders of the Federal and State agencies with water resource planning and management responsibilities. One of the subcommittee's main responsibilities has been to establish separate Task Forces for major basin or subregional studies. A Task Force for a Willamette River basin study was established in 1963, and for a Puget Sound regional study in 1964.

TASK FORCE FOR PUGET SOUND AND ADJACENT WATERS COMPREHENSIVE STUDY

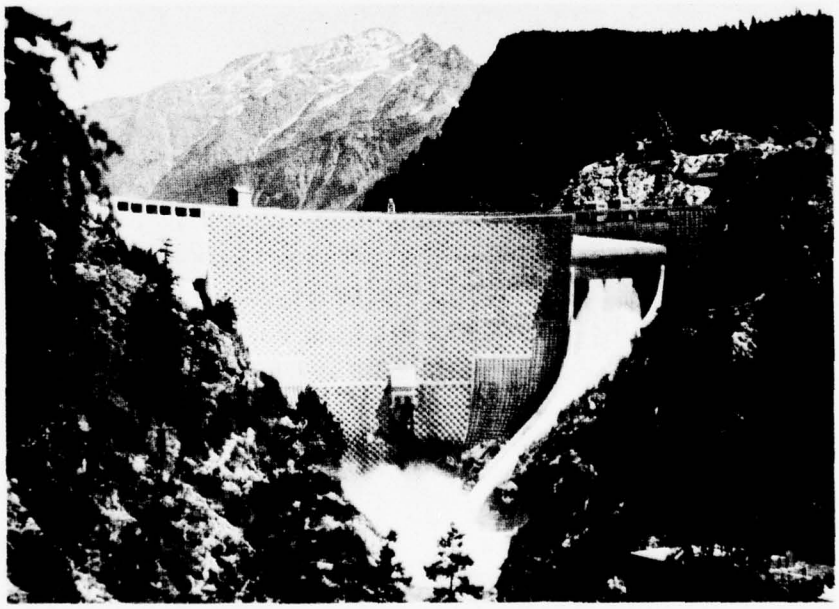
The Task Force is composed of representatives of the State and Federal agencies shown in the diagram on the next page. The Task Force is co-chairmanned by the Washington State Director of the Department of Conservation and by a representative of the Federal agencies. Each organization, generally, has specific responsibilities in planning, in management, or in operation of water and related land resource projects.

COORDINATION

Through the Task Force, contacts will be maintained with county and municipal agencies and with other planning bodies having an interest in water resource planning. Data and planning by the Puget Sound Governmental Conference and by the Puget Sound Regional Transportation Survey are examples of regional planning efforts which will be utilized in the comprehensive study.

The Task Force objective is primarily the development of coordinated plans for water and related land resource development in the Puget Sound region.

As corollary measures, the Task Force will coordinate data gathering and compilation among member agencies; avoid overlapping work between agencies; ascertain public views and interests; and undertake measures necessary to achieve the highest degree of efficiency possible among the member agencies in accomplishment of the study.



Hydroelectric power and flood control are provided by the Ross Dam of Seattle City Light on Skagit River.

COLUMBIA BASIN INTER-AGENCY COMMITTEE (CBIAC)

Subcommittee for Coordinated Planning

Task Force for Comprehensive Water Resource Study
Puget Sound and Adjacent Waters

TASK FORCE AGENCIES

STATE OF WASHINGTON

DEPARTMENTS –
- COMMERCE & ECON. DEVL.
- CONSERVATION
  - WATER RESOURCES DIVISION
  - FLOOD CONTROL DIVISION
  - POWER RESOURCES DIVISION
  - RECLAMATION DIVISION
  - MINES AND GEOLOGY DIVISION
- FISHERIES
- GAME
- HEALTH
- HIGHWAYS
- NATURAL RESOURCES

COMMISSIONS –
- POLLUTION CONTROL
- PARKS & RECREATION

FEDERAL AGENCIES

- DEPT. OF AGRICULTURE
  - ECONOMIC RESEARCH SERVICE
  - FOREST SERVICE
  - SOIL CONSERVATION SERVICE
- DEPT. OF ARMY
  - CORPS OF ENGINEERS
- DEPT. OF COMMERCE
- DEPT. OF HEALTH, EDUC. & WELFARE
  - PUBLIC HEALTH SERVICE
- DEPT. OF INTERIOR
  - BONNEVILLE POWER ADM.
  - BUREAU OF INDIAN AFFAIRS
  - BUREAU OF LAND MANAGEMENT
  - BUREAU OF MINES
  - BUREAU OF OUTDOOR RECREATION
  - BUREAU OF RECLAMATION
  - FISH & WILDLIFE SERVICE
  - GEOLOGICAL SURVEY
  - NATIONAL PARK SERVICE
- DEPT. OF LABOR
- FEDERAL POWER COMMISSION

Water oriented recreation at Deception Pass, Washington.

Several Federal agencies have projects in various stages of planning under way in the Puget Sound region. The State of Washington, through its various agencies, is performing planning studies covering many aspects of water uses. County, city and regional planning studies are also being made. The following summarizes some of the major Federal planning studies under way in the region which will be coordinated with the study of Puget Sound and Adjacent Waters:

PLANNING STUDIES IN PROGRESS

The Corps of Engineers is studying the Nooksack, Skagit, Green-Duwamish, Stillaguamish and Snohomish river basins.

The Department of Health, Education and Welfare has a comprehensive study under way for the whole region covering water supply and water quality control.

The Soil Conservation Service is developing a plan for soil conservation measures and runoff disposal in the Skokomish and the lower Green River Valley.

The Bureau of Reclamation is initiating a study of irrigation potentials in each river basin.

The Bureau of Outdoor Recreation is conducting a Wild River study of the Skagit River basin.

Other agencies have continuing responsibilities as regards water resources and related land uses. These responsibilities include data collection, management, hydrologic data, recreation and parks, mineral and natural resource studies, fish and wildlife, and hydroelectric power. All of these continuing responsibilities or activities need to be fully coordinated and utilized in the comprehensive planning study.

STUDY COMPLETION

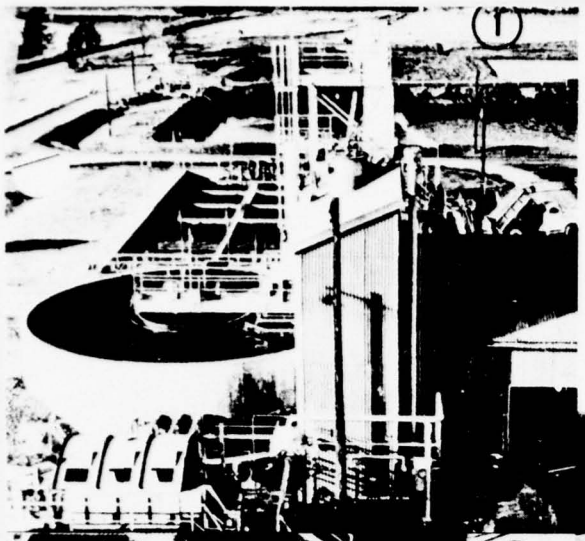
Interim reports will be made on planning studies in progress. Schedule completion of the overall report is 1969.

Photos by:

Corps of Engr., page 2; Mrs. Melvin Bell, page 5; Seattle City Light, page 7; Joseph Scaylea, page 8.

Photos this page are:

Public Health Service, 1; Port of Seattle, 2; Corps of Engrs., 3; Wash. State Dept. of Comm. & Econ., 4; Northwest Air Photo, 5; U. S. Forest Service, 6; and Puget Sound Power & Light, 7.

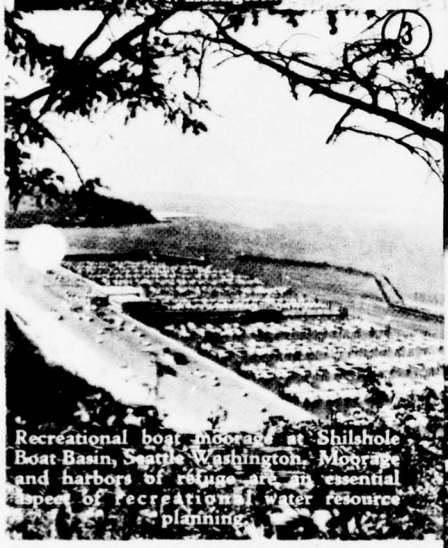


1

Water quality management, Ferndale sewage treatment plant, Nooksack River, Washington.

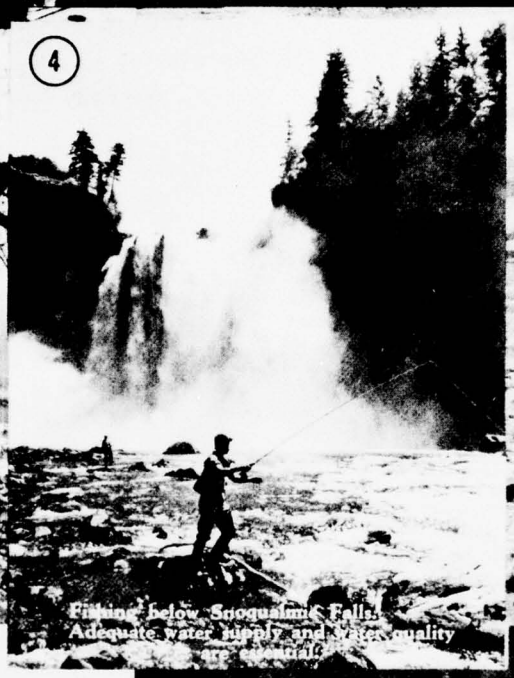
2

Deep draft transport at Port of Seattle is an essential element in water resource planning.



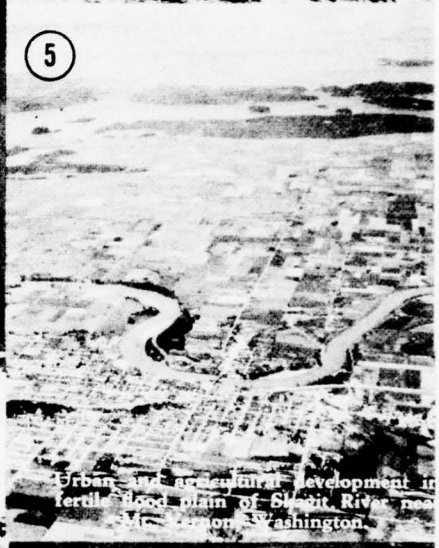
3

Recreational boat moorage at Shilshole Boat Basin, Seattle Washington. Moorage and harbors of refuge are an essential aspect of recreational water resource planning.



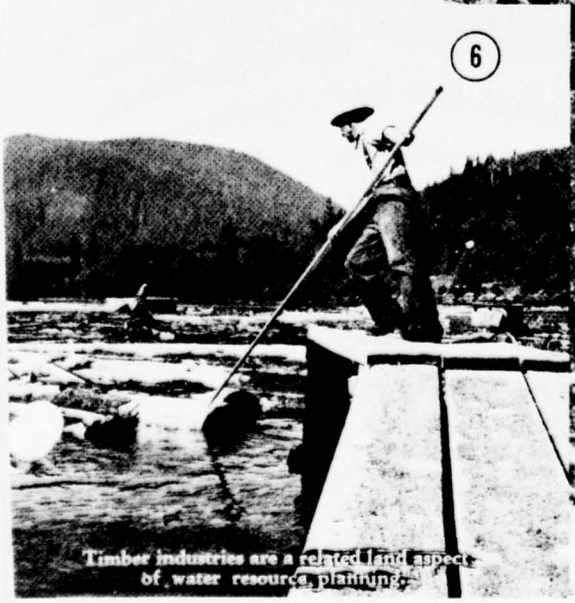
4

Fishing below Snoqualmie Falls. Adequate water supply and water quality are essential.



5

Urban and agricultural development in fertile flood plain of Skagit River near Mount Vernon, Washington.



6

Timber industries are a related land aspect of water resource planning.

7

Hydroelectric power, Puget Sound Power and Light Company.

TASK FORCE FOR PUGET SOUND AND ADJACENT WATERS

Co-Chairmen: Mr. John A. Richardson
Assistant Director, Department of Conservation
State of Washington

Mr. Robert H. Gedney
Department of the Army

Mr. Warren W. Hastings
Department of the Interior

Mr. Lewis F. Kehne
Department of Agriculture

Mr. Horace W. Harding
Department of Labor

Mr. Allan J. Meadowcroft
Federal Power Commission

Mr. Francis L. Nelson
Department of Health, Education and Welfare

Mr. E. L. Phillips
Department of Commerce

For further information about this study, write to either Co-Chairman:

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Assistant Director, Department of Conservation
State of Washington
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Olympia, Washington 98501

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Corps of Engineers
[illegible] Alaskan Way South
Seattle, Washington 98134

EXHIBIT B

STATEMENTS OF FEDERAL AND STATE AGENCIES

Statements of Federal & State Agencies

participating in the

Comprehensive Study for PUGET SOUND AND ADJACENT WATERS

Columbia Basin Inter-Agency Committee

Inter-Agency Committee on Water Resources
Washington D.C.

7 NORTHWEST GOVERNORS

Idaho

Montana

Nevada

Oregon

Utah

Washington

Wyoming

C B I A C

Chairman
Executive Secretary

Executive Subcommittee

Permanent Staff

7 FEDERAL DEPARTMENTS

Agriculture

Army

Commerce

Federal Power Commission

Health Education & Welfare

Interior

Labor

Subcommittee for
Coordinated Planning

Task Force
Willamette River Basin Study

Task Force
Puget Sound and Adjacent Waters Study

The Columbia Basin Inter-Agency Committee consists of the seven governors and representatives of the six federal departments and one federal commission which have water and related land resource responsibilities in the seven Columbia Basin states. Since 1946, the Committee has facilitated coordination of water resources policies and programs. Technical subcommittees have been established to divide coordination work among appropriate groups. The Subcommittee for Coordinated Planning has been assigned the function of providing a method to coordinate the water resources planning efforts of the member states and federal agencies. This Subcommittee does the following things:

a. Provides a forum for the free exchange of information concerning the planning activities of member agencies.

b. Works towards the establishment of mutually satisfactory priorities and schedules for water and related land resource planning throughout the Pacific Northwest, and towards the programming of funds to meet these coordinated planning schedules.

c. Works towards the selection of comparable criteria and procedures, uniform basic data, and consistent projections of future conditions and needs.

d. Provides and supervises separate Task Forces, as required, for major basin (i.e., the Puget Sound) or subregional studies, to effect detailed coordination of planning at the working level.

e. Keep the Columbia Basin Inter-Agency Committee fully informed concerning the status of coordinated planning activities.

PREFACE

A comprehensive study of water and related land resources for Puget Sound & Adjacent Waters was authorized by the Flood Control Act of 1962, Section 209, Public Law 874. This study is described in a separate "Information Bulletin, Comprehensive Water Resources Study, Puget Sound and Adjacent Waters" issued in July 1964.

Many persons have inquired about the capabilities and interests of the Federal and State agencies participating in the study. Accordingly, this pamphlet on "Statements of Federal and State Agencies" has been prepared to supplement the Information Bulletin.

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DEPARTMENT OF AGRICULTURE

The Department of Agriculture has responsibility in agricultural, forestry and National Forest, rural and upstream aspects of river basins. The objectives of its participation in coordinated comprehensive river basin planning are consistent with the principles and concepts which have been developed by the Interdepartmental Staff Committee of the President's ad hoc Water Resources Council.

The USDA participates nationwide in river basin surveys to facilitate the coordinated and orderly development, control, management and use of water and related land resources. Accordingly, the Department will use information developed in these studies to correlate its water and related land resource conservation and development programs with those of other Federal and State agencies. Thus, USDA programs will contribute more effectively to the satisfaction of current and long-term needs for land and water resource development.

The Department of Agriculture studies agricultural, forestry and related economics, problems and needs, and their relationship to the total economy of the basin. Studies include floodwater and sediment damage to rural lands, impaired drainage, drought problems and irrigation requirements, livestock and rural domestic use, recreation, fish and wildlife, and forest-based industries water requirements.

Potential water and related land resource development in upstream watersheds is inventoried and analyzed. This includes an analysis of water storage capacity, the effect of land use and management practices on water quality and flow characteristics, and the potential hydrologic effect of agricultural, rural, and upstream watershed developments. The impacts of potential water resource development projects on lands and programs administered by USDA are studied. The USDA work is carried out through the Soil Conservation Service, Forest Service, and Economic Research Service in coordination with other agencies.

Soil Conservation Service

The Soil Conservation Service is responsible for (1) determining treatment needs for the non-forested lands in the basin; (2) physical phases of the appraisals of agricultural, rural and upstream needs; (3) determining the physical and economic feasibility of watershed projects and the development potentials of upstream areas; and (4) coordination of the physical and economic effects of upstream projects and non-project type improvements with the proposals of other departments.

Forest Service

The Forest Service is responsible for (1) investigations and analyses pertinent to use, treatment, development and management of National Forests to meet basinwide needs for water and related land resource development; (2) appraisal of the water needs of National Forests and forest-based industries; (3) determination of impacts of

proposals by other agencies on National Forest lands; (4) determination of cover conditions, present and future and treatment needs, of all forest lands; and (5) the forest resource sector of the economic base study.

Economic Research Service

The Economic Research Service is responsible for economic investigations relevant to the identification of beneficial patterns of water and related land use and development. Major investigational activities involved will be (1) analysis and projection of economic activity and land use in the agricultural, rural and related sectors of the economy; (2) analysis of the economic aspects of major agricultural and rural water problems including their relationship to production, employment, income, and other elements of economic activity; (3) economic appraisal of agricultural and rural needs for water and related land resource development; and (4) appraisal of the prospective economic impact of development proposals on the agricultural, rural and related economies and the economic relationship of such proposals to comprehensive basin-wide programs of water development.

DEPARTMENT OF THE ARMY

The Department of the Army is represented in this study by the Corps of Engineers. The Corps has had a historic major role in development of the nation's water resources dating from 1824. Starting traditionally with flood control and navigation as major problem areas of interest, the Corps' water resource planning objectives have broadened in recent years to include the full range of modern day comprehensive planning. By working closely with other Federal, State and municipal agencies, the Corps will consider all beneficial water uses in its project planning, including municipal and industrial water supply, flood control, fishery and wildlife needs, irrigation, recreation, hydropower, navigation and other uses.

The Corps has long been active in planning water resource projects in the Puget Sound region. Completed works include major dams in the Green and White Rivers, six small boat basins, many levee and channel works, and deepwater channels in major ports.

In the present Comprehensive Water Resource Study the Corps will join with the other Task Force agencies to develop immediate and long-range plans for orderly development of the Puget Sound regional water resources. Work initiated in 1961 on river basin studies in the Nooksack, Skagit, Stillaguamish and Snohomish River basins will be completed as separate interim reports or incorporated into the

Comprehensive Study, as appropriate. As a starting point in the study, the Corps will participate with the Task Force in a regional economic survey to define present economic development and to identify and forecast future growth potential.

The Corps will make survey-scope investigations for projects that are feasible for development in the next 10 to 15 years. Water resource projects for which a need exists over a longer period of time will be studied on a framework basis and thus identified for future development.

The Corps will look to, and cooperate with, all other interested agencies for planning information and assistance. For some purposes, they will furnish financial assistance to other agencies; for example, U. S. Fish and Wildlife Service, Bureau of Indian Affairs, and Bureau of Mines studies will be financed by the Corps. Further advice and assistance from other organizations and individuals will be sought as the study progresses.

DEPARTMENT OF COMMERCE

The Department includes the Bureau of Public Roads, the Coast and Geodetic Survey, various business bureaus, and the Weather Bureau.

The Bureau of Public Roads is concerned with all highway programs and cooperates extensively with the Washington State Highway Department, U. S. Forest Service and Bureau of Land Management. The Bureau of Public Roads is primarily affected in the Puget Sound and Adjacent Waters Region through the necessity of highway relocation, providing navigational clearances in highway bridges, and the development of the overall transportation policy.

The Weather Bureau's principal interest in the Puget Sound and Adjacent Waters Region is that of collecting and providing basic hydrologic and climatological data; short-and long-term river and flood and water supply forecasts; and weather warning services for the general public.

FEDERAL POWER COMMISSION

The Federal Power Commission issues and administers permits and licenses for the planning, construction, and operation of non-Federal hydroelectric projects on waters or lands subject to Federal jurisdiction; gathers, analyzes, maintains, and publishes information concerning the electric power industry generally; studies plans for proposed dams to be constructed by the Department of the Army, the Department of the Interior, and other Federal agencies, and makes recommendations concerning the installation of penstocks and power-plant facilities for the development of hydroelectric power. The Commission determines and assesses headwater benefit charges against the owner of any non-Federal water power project directly benefited by upstream improvements constructed by the United States, or the licensees or permittees of the United States; allocates the costs of certain Federal projects, and participates in the allocation of costs of certain others. This Agency also reviews and, if satisfactory, confirms and approves proposed rates for the sale of electric power from certain Federal and international projects, and for the sale of power in interstate commerce; and participates with other Federal and State agencies in coordinating efforts toward the development and utilization of water and related land resources. The objectives of the Puget Sound investigations are consistent with the functions of the Federal Power Commission relating to river basin planning studies.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

The Public Health Service of the U. S. Department of Health, Education, and Welfare is engaged in a program to develop comprehensive water supply and water pollution control plans for the entire Pacific Northwest area. This program is being carried out under the provisions of the Federal Water Pollution Control Act and the Public Health Service Act.

As a major part of the Pacific Northwest area, a comprehensive study of water supply and water quality management needs in the Puget Sound Region was undertaken about a year ago and includes the following elements for each major drainage basin:

1. The obtaining of information on physical, chemical, and biological quality and characteristics of waters in the basin;

2. The determination of existing and potential water uses;

3. The making of inventories of sources of pollution; determination of present and future needs for waste treatment facilities; and examination of the need for, and value of, water storage in Federal reservoirs for regulating streamflow designed to improve water quality;

4. The determination of present and potential municipal and industrial water supply requirements and development of broad engineering and institutional aspects for meeting projected regional requirements.

5. The examination of water and land resource development and estimation of their impact on water supplies and water quality;

6. The identification of those areas where conflicts between water uses and water quality may be expected, so that alternatives may be offered to minimize such conflicts, including an evaluation of the costs and benefits of each proposed alternative;

7. The identification of areas where research is needed in order to develop better tools for decision making and for water quality control.

The Public Health Service will work closely with and assist other Federal agencies in matters of water supply and water quality involved in the Task Force planning study in Puget Sound and Adjacent Waters Region. In addition to coordination with Federal agencies, the Public Health Service will continue to work closely with the Washington Pollution Control Commission, the Washington Department of Health and other State and local agencies having a concern with the Region's water resources.

DEPARTMENT OF THE INTERIOR

The Department of the Interior formulates and administers programs for the management, conservation and development of the natural resources of the Nation. The Department has been engaged for many years in water and related land resource programs in the Puget Sound Basin. Ten Interior agencies have significant programs in this area and most have offices located in Seattle, Tacoma, or elsewhere in the Basin. The responsibilities and activities of the Interior agencies are summarized in the following pages.

Bonneville Power Administration

The Bonneville Power Administration is the power marketing agency for all Federal multipurpose projects in the Pacific Northwest which supply over half of the Pacific Northwest's electric power needs. The market area embraces Oregon, Washington, Idaho, and western Montana.

Power flows from generators of 21 multipurpose dams over 9,000 circuit miles of high-voltage transmission lines throughout the Pacific Northwest. BPA will also market power from six additional projects now being built. The federal system has 6,600,000 kilowatt capacity currently in operation. Approximately fifteen hundred miles of BPA's transmission lines are in the Puget Sound Basin.

BPA will adapt the Pacific Northwest Economic Base Study to the Puget Sound Basin study. BPA cooperates with interested Federal and State agencies in their planning for power resources and marketing

arrangements. Existing reservoir and power projects will be reviewed in light of any reassignment of reservoir space to purposes other than those originally planned. Analysis of load resources and transmission will be made to determine effects on the regional power supply. Potential power projects will be studied to determine generator installation and construction schedules. Transmission system additions and extensions will be planned to integrate new plants into the regional system.

Bureau of Indian Affairs

The basic, long-range goals of the Bureau of Indian Affairs are to assist the Indian people of the United States to achieve maximum economic self-sufficiency and full and equal participation in American life.

Within the Puget Sound Basin the Bureau of Indian Affairs has a service population of some 1,950 Indian people living on or adjacent to eleven reservations, comprising about 24,700 acres of tribal and allotted land. Although relatively small in comparison with the total area of the Puget Sound Basin, the Bureau foresees considerable development within and near these reservations, and is presently carrying forward programs for such development.

The Bureau will, within limitations imposed by budget and program commitments, make available to the Puget Sound Task Force the considerable fund of data presently available concerning population, land use and ownership, water resources, flood control, forestry, roads, marine biology and fisheries, agriculture, current development activities and

programs and many other types of basic data that are related to reservations within the Basin. As additional data become available and additional programs are developed during the life of the Task Force, such information will be made available to the Task Force. Technical staff within the Bureau can be made available for such activities as coordination of design and cost estimates of structures, roads, etc., where such features may be involved in relocation. The Bureau will provide continuous coordination and liaison with tribal groups to keep them informed of Task Force plans and activities as they affect Indian reservations.

Bureau of Land Management

Through its program of multiple-use management of the public lands, the Bureau of Land Management attempts to balance all beneficial uses for the public domain. The Bureau is responsible for inventory, evaluation, conservation, management and development of the public land.

In brief, the Bureau's goals include: (1) development of public land laws, (2) improvement of land-tenure pattern, (3) reduction of source losses from natural and man-caused calamaties and (4) extension and improvement of roads, structures and facilities for the protection and recreational use of the land resources.

In the Puget Sound Basin the Bureau of Land Management protects and manages roughly 5,000 acres of public land, the majority of which is accessible by road. Most of this land occurs as river frontage,

and though small in total acreage, is quite valuable for public recreational use, summer-home sites, fishing, wildlife and timber management.

As custodian of this land, the Bureau of Land Management must be cognizant of the public needs for the land, as well as industrial demands for economic resources thereon. Much of the land is open for entry and patent under the many existing public land laws.

Through the coordination within the Puget Sound Task Force, the Bureau of Land Management will be able to manage these lands more effectively and in more accord with multiple-use or maximum value concepts, through a close working relationship with other Federal, State and local governments. This operational rapport will insure greater benefit for all the people.

The BLM Field Office is located in Spokane, including the Spokane land office, which is responsible for all official public land records for the State of Washington, and is custodian of the official cadastral records for the State.

Bureau of Mines

The activities of the Bureau of Mines as they relate to minerals and metals are designed to: (1) appraise the area mineral position to provide Government and industry with economic facts that influence mineral development and new supply, (2) develop technologies for exploitation of significant submarginal mineral deposits, (3) find use for abundant mineral resources and promote new industry,

(4) develop new and improved technologies for production of scarce minerals and metals, or substitutes for them so as to relieve strategic dependence and (5) conserve the mineral resources by efficient exploitation and wide use.

Research continues to be of special concern to the Bureau of Mines, and the Bureau's entrance into a new scientific field--marine research--may be of concern to the Puget Sound Basin. The Bureau plans to expand its studies of such areas as marine prospecting, underwater mining and problems of seawater pollution. Another important function of the Bureau is cooperation with other Government agencies, especially in evaluation of area employment opportunities relating to industrial mineral resources.

As air pollution problems mount in urban industrial locales, especially in relation to minerals and mineral fuels, the Bureau will seek to eliminate or alleviate such causes as lie within their control.

The Bureau of Mines will make an economic study of the mineral resources of the basin area, will determine the water requirements of the mineral and mineral-processing industries, and will evaluate the impact of the proposed water-development projects in the existing and potential mineral industry.

Bureau of Outdoor Recreation

The Bureau of Outdoor Recreation is the newest of the agencies in the Department of the Interior. The formation of this agency

resulted from recommendations made by the Outdoor Recreation Resources Review Commission. This Commission, established by Congress in 1958, made an intensive study of the wants and needs of the American people now and in the future, the resources available, and the policies and programs necessary to use and conserve these resources. Briefly, the functions of the BOR include: (1) coordinating related Federal recreation programs, (2) stimulating and providing recreation assistance to the States, (3) sponsoring and conducting research and education, (4) encouraging interstate and regional cooperative recreation projects, (5) conducting recreation resource surveys, and (6) formulating a nation-wide recreation plan on the basis of State, regional and Federal plans.

The Puget Sound Basin enjoys a combination of marine and mountain recreation opportunities denied the majority of our states. The location within the Basin of two national parks, Mt. Rainier and Olympic, adds immeasurably to the recreation opportunities of the area. The accessibility of Mt. Rainier and the wild character of Olympic National Parks are especially valuable to the large urban population occupying the eastern shore of the Sound.

The evolution of the Puget Sound shoreline as a Northwest megalopolis, the increase in leisure time, more disposable income, and greater mobility portend a significant increase in demands for outdoor recreation. The "war babies" of the late '40's are now raising their own families, increasing population growth rates.

This transition, and the large percentage of persons in the age group participating most in outdoor recreation will further accelerate demand.

The Bureau of Outdoor Recreation as a participant in this study will include recreation planning as an integral part of over-all resource utilization. A survey of existing and potential recreation sites, public and private, will be the initial step. An analysis of factors affecting demand for recreation will follow. These include, but are not limited to, population growth, income, age, education, sex and life cycle. These demands will be projected to the year 1980, 2000 and 2020. Supply and demand will be compared to determine needs. Additional functions of the Bureau will include coordination of planning between Federal agencies, formulation of a comprehensive recreation plan to be used as a guide for public and private development, and a cost-benefit analysis of proposed recreation areas.

Bureau of Reclamation

The Bureau of Reclamation has authority for investigating, designing, and, when authorized by the Congress, constructing multipurpose water resource projects. Although irrigation is generally the primary function, such projects also include other multiple-purpose functions such as recreation, fish and wildlife preservation and propagation, municipal and industrial water supplies, power, water quality control, flood control and navigation. Plans for utilization of irrigation water stored in multipurpose reservoirs planned and constructed by

the Corps of Engineers in the Puget Sound Basin are also a responsibility of the Bureau of Reclamation through the Secretary of the Interior. Bureau studies for this area will be carried out by the Upper Columbia Development Office with headquarters in Spokane.

The Bureau's studies encompass a wide range of interests and responsibilities. Investigations in various degrees of detail have been made in the Nisqually, Puyallup, Duwamish, Dungeness, and Elwha River Basins. In fiscal year 1963 studies were started as a part of a basin-wide survey in the Snohomish, Stillaguamish, Skagit, and Nooksack River Basins. All basic data previously obtained will be utilized in this Comprehensive Basin Survey.

In addition to its regularly scheduled programs, the Bureau administers the Small Reclamation Projects Act of 1956 which provides for loans to local organizations for water resource development of limited size. Although such projects are primarily for irrigation, other water uses may be served. The share of the loans assigned to irrigation under this program, as under the Bureau's regular program is reimbursable without interest.

A steady and continuous increase in irrigated areas illustrates the success of irrigation in western Washington. There are now about 60,000 acres irrigated in the Puget Sound area as compared to about 45,000 acres in 1959, or a growth of 30 percent in five years. Further irrigation development can be expected on lands improved by flood control and drainage projects. Although the annual rainfall

is high, summer precipitation is not adequate to permit optimum growth of crops. The prospect is for the irrigation development of about 400,000 acres in the Puget Sound Basin.

Fish and Wildlife Service

The Fish and Wildlife Coordination Act, Public Law 85-624, dated August 12, 1958, delegated to the U. S. Fish and Wildlife Service and to State fish and game agencies, authority and obligation for preservation and enhancement of fish and wildlife resources as part of the national water development program.

The Bureau of Sport Fisheries and Wildlife is primarily responsible for the development of a comprehensive plan which will meet future requirements of fish and wildlife in the Puget Sound Basin. The plan will be responsive to recommendations of the Senate Select Committee on National Water Resources and will be developed in accordance with water and related land resource policies in Senate Document 97. Full consideration will be given to fish and wildlife conservation and development. The Bureau of Commercial Fisheries will be consulted whenever commercial fisheries interests are involved.

The Washington Departments of Fisheries and Game will be responsible for collection of most of the basic fish and wildlife data required.

Specific information and data needed will be developed concerning (1) fish and wildlife resources: populations, distribution, habitat, harvest by sportsmen, commercial catch, and sportsmen-days of hunting and fishing; (2) development effects on fish and wildlife: water temperatures, flow schedules, diversions, and impoundments. Data analysis will provide the basis for fish and wildlife measures incorporated in the comprehensive plan.

As a part of this study, this Bureau, in cooperation with State fish and game agencies, will appraise existing wildlife abundance and habitat in the Puget Sound Basins. Projection of future use will be made to determine future hunting pressures and anticipated game harvests.

Also the cooperative studies will include appraisal of existing fish resources in the Puget Sound Basins. Current utilization will be determined to provide a basis for future projections. The impact of project construction and operation on fish resources will be studied to develop a maximum value concept. Recommendations for feasible alteration of project plans or operations will be formulated to conserve and develop the fish resources.

Geological Survey

The U. S. Geological Survey has a principal responsibility for determining the distribution and quality of the mineral and

water resources, and for surveying and mapping the land surface; for establishing the character and structure of subsurface rocks and for supervising the economic development of fuels and minerals on Federal lands. This agency has no responsibility for construction or engineering works, nor for management action except in connection with mineral leasing and classification of mineral and water resources values of public land. Their facilities and technical "know-how" provide an invaluable source of information and interpretation to guide decisions for resource development and management by other agencies.

As part of the Puget Sound Basin study, the Geological Survey will make a water resources appraisal of the area, involving an overall description of the occurrence, distribution, availability and quality of the water resources and the environmental framework of the hydrologic system. A large amount of water resources data has been collected and hydrologic appraisals have been conducted by the Geological Survey throughout the Puget Sound Basin. These fact-finding studies provide a broad base of knowledge to fulfill the needs of other agencies with respect to the water resource potentialities in the area.

The Geological Survey will closely coordinate their activities with other agencies in the planning and execution of hydrologic studies, to promote better understanding of water in the particular environment and the effects of man's activities on both the water and its environment.

National Park Service

The National Park Service provides:

1. Site planning services as requested by other Federal agencies, including reservoir recreation area planning and negotiation of reservoir recreation area management agreements.

Reservoir planning and negotiations are conducted within the framework of broad-scale analyses provided by the Bureau of Outdoor Recreation. Within this framework, and beginning with the feasibility report stage, the Service is responsible for studies of what facilities are needed, preparation of development and site plans showing location, plus estimates of monetary benefits on projects of the Bureau of Reclamation and, upon request, of the Corps of Engineers.

When requested, the Service also advises the administering agency concerning the construction of recreation facilities. Periodic inspections of transferred recreation areas are made.

2. Historical investigations and salvage at reservoir sites.

3. Upon request, advise the States and their political subdivisions concerning park, parkway, and recreation area operational and management techniques.

4. Planning for areas administered or proposed for administration by the National Park Service.

DEPARTMENT OF LABOR

The Department of Labor is primarily concerned with the well-being of people. The relationship of people and employment opportunities to water resources planning is of first importance since all resources planning should be oriented to meet people's needs and wants. There may be alternative proposals which better meet people's needs even though having less attractive cost-benefit ratios.

The Department of Labor, through its Bureau of Employment Security which administers the federal and state system of employment offices and unemployment insurance and several of its other bureaus, is closely related to this Puget Sound and Adjacent Waters Basin planning effort. Assistance willbe provided in the fields of labor economics and in furnishing farm, industrial, and other employment information.

Resources development planned to provide for the good of many, cannot neglect the special needs of particular groups which are affected one way or another in planning programs. The Department of Labor will provide assistance in evaluating planning proposals to meet the needs, wants, and problems of the labor force.

The Bureau of Employment Security and the Bureau of Labor Statistics will provide statistical information on labor economics and employment. Upon request, specialized information can be developed in labor market analysis.

STATE OF WASHINGTON

Department of Conservation

In 1925, the Washington State Legislature established the State Department of Conservation with the principal responsibility of developing a master plan of utilization of the state's water and related land resources.

Functions of the Department are carried out through the Divisions of Reclamation, Power Resources, Water Resources, Flood Control and Mines and Geology. The Department also administers the Columbia Basin Commission, Soil and Water Conservation Committee, Canal Commission and the Weather Modification Board.

Ground and surface water rights and adjudications are administered by the Division of Water Resources, which also divided the state into 52 river basins for comprehensive study in 1957. One of the basin studies in the Puget Sound region, that of the Nooksack River, has been completed.

The Department serves as the reporting agency for the state on projects to be constructed by the Army Corps of Engineers, Bureau of Reclamation, and Department of Agriculture.

Through the Columbia Basin Inter-Agency Committee, the Department has taken the lead in seeking stronger coordination between the states and federal agencies in the region in all phases of resource planning. A representative of the Department serves as co-chairman of the Task Force for Comprehensive Water Resource Study of Puget Sound and Adjacent Waters.

AD-A037 567 PACIFIC NORTHWEST RIVER BASINS COMMISSION VANCOUVER WASH F/G 8/6
COMPREHENSIVE STUDY OF WATER AND RELATED LAND RESOURCES. PUGET --ETC(U)
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567

Washington State Department of Fisheries

The State Department of Fisheries adminis
tions relating to propagation, protection, con
and management of food fish and shellfish.

Department functions include the establis
fish farms, rearing stations, cultural station
shellfish sanctuaries and related facilities.
stream clearance and fish passage facilities.

Major areas of fisheries concern in the P
include:

1. Collection and evaluation of water qu
flow data to assess existing and requ
rehabilitation or maintenance of anad
2. Provisions for new or improved upstre
passage facilities.
3. Consideration of water storage for lo
4. Development of new and improvement of
for the artificial propagation of sal

Washington State Department of Game

The Department of Game administers laws a
to game animals, birds and game fish, which ar
state. The Department is made up of the State
Director.

The Commission investigates and determine
bution of the various species of wild animals,

It regulates the propagation and preservation of these species and operates game farms and fish hatcheries.

In the Puget Sound Study, the Department will be especially concerned with basic data on existing game fish and wildlife resources and the evaluation of proposed basin developments.

Pollution Control Commission

Created by a 1945 act of the Legislature, the Pollution Control Commission administers laws and regulations relating to the quality of the waters of the state.

The Directors of the Departments of Conservation, Fisheries, Game, Health and Agriculture comprise the membership of the Commission. As stated by the 1945 Act:

"It is declared to be the public policy of the State of Washington to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wildlife, birds, game, fish and other aquatic life, and the industrial development of the state, and to that end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the State of Washington."

In the Puget Sound Basin Study, the Commission will assist in obtaining data necessary to develop comprehensive plans for satisfaction of municipal and industrial water supply and water quality control needs of the region.

Department of Commerce and Economic Development

Created by an act of the 1957 Legislature, the Department of Commerce and Economic Development is concerned with the development of all phases of the economy of the state.

In the Puget Sound Basin Study, the Department will assist in providing economic data and projections and in coordinating existing studies in these and related fields.

Other Agencies

Playing leading roles in developing information for the Puget Sound Basin Study in their respective technical fields will be the Department of Natural Resources, Parks and Recreation Commission, Department of Health and Department of Highways.

Created by an act of the 1957 Legislature, the Department of Natural Resources administers the state's public lands and tidelands and laws relating to state forests and forest protection.

The University of Washington and Washington State University will be called upon for specialized assistance in water and land resource management, where the state institutions may contribute in areas of competence.

ORGANIZATION OF COORDINATED PLANNING SUBCOMMITTEE
AND PUGET SOUND TASK FORCE

COORDINATED PLANNING SUBCOMMITTEE

Mr. W. W. Towne, Chairman
Mr. John H. Davidson, Secretary
Department of Health, Education, and Welfare

Mr. Carl E. Tappan
State of Idaho

Mr. C. H. Raymond
State of Montana

Mr. Hugh A. Shamberger
State of Nevada

Mr. Donel J. Lane
State of Oregon

Mr. Roy Mundy
State of Washington

Mr. Eugene J. Van Camp
State of Wyoming

Mr. Oke Eckholm
Mr. Kermit W. Linstedt
Department of Agriculture

Mr. Ray E. Holmes
Department of the Army

Mr. Anthony J. Polos
Department of Commerce

Mr. Paul T. Quick
Mr. Warren H. Marple
Mr. E. J. Palmer
Mr. Elwyn L. White
Mr. John G. Tkach
Department of the Interior

Mr. Horace W. Harding
Department of Labor

Mr. Robert H. Griffin
Federal Power Commission

Mr. Robert E. McCabe
Housing & Home Finance Agency

PUGET SOUND TASK FORCE

Mr. John A. Richardson, Co-Chairman
State of Washington

Mr. Robert H. Gedney, Co-Chairman
Department of the Army

Mr. Francis L. Nelson
Department of Health,
Education, and Welfare

Mr. Lewis F. Kehne
Department of Agriculture

Mr. Warren W. Hastings
Department of the Interior

Mr. Horace W. Harding
Department of Labor

Mr. Earl L. Phillips
Department of Commerce

Mr. Allan J. Meadowcroft
Federal Power Commission

The Columbia Basin Inter-Agency Committee maintains an office at 511 N. W. Broadway, Portland, Oregon. Communications should be addressed to the CHAIRMAN, Box 4208, Portland, Oregon 97209.

SEATTLE DISTRICT CORPS OF ENGINEERS
9 OCTOBER 1964

EXHIBIT C

PRESENTATIONS NOT INCLUDED IN OFFICIAL TRANSCRIPTS

ANACORTES HEARING
Exhibits No's. 1 through 22

EVERETT HEARING
Exhibits No's. 23 through 61

OLYMPIA HEARING
Exhibits No's. 62 through 86

EXHIBITS
No's. 1 through 22
Anacortes Hearing Area

ANACORTES HEARING AREA

Prepared Statements Not Read Into Official Transcript

No.

1 Statement of the U.S. Department of the Army submitted by Colonel Charles C. Holbrook, Seattle District Engineer, Corps of Engineers.

2 Undated letter from Robert W. Condon, Chairman, San Juan County Planning Commission, with six inclosures pertaining to domestic water supply, pollution, flood and erosion control, harbor development, fisheries and recreation.

3 Letter dated October 12, 1964 from Russell Hawkins, Chairman, San Juan County Soil and Water Conservation District, inclosing the District's program pertaining to water and related land use problems.

4 Letter dated October 8, 1964 from Helen Lohman, Secretary, Eastsound Water Users Association, presented by Russell Hawkins.

5 Letter dated October 8, 1964 from John M. Nelson, Superintendent of Lighting, City of Seattle, submitted by Herbert V. Strandberg.

6 Statement of Fred J. Ovenell, Manager, Public Utility District No. 1 of Skagit County, inclosing Resolution No. 634, Certification, and Schedules A and B.

7 Statement of Dr. Herbert G. Kariel, Western Washington State College, Bellingham, Washington.

8 Letter dated September 29, 1964 from T.J. Glenn, Manager, Port of Bellingham.

9 Paper entitled, "Diversion of the Lower Nooksack River," by Don J. Easterbrook, Assistant Professor of Geology, Western Washington State College, inclosing three maps of the Nooksack River delta.

10 Letter dated October 30, 1964 from Harry R. Fulton, Planning Director, Whatcom County Planning Commission.

11 Resolution No. 107, entitled, "A Resolution Requesting Consideration of Sumas Creek and Adjacent Waters to the Town of Sumas, Whatcom County, Washington," submitted by Harry R. Fulton.

12 Letter dated October 8, 1964 from J.T. Lay, Whatcom County Engineer, inclosing a list of Whatcom County Water Associations.

13 Paper entitled, "Irrigation Needs of the Future," by LaVern Freimann, Chairman, Whatcom County Extension Service.

14 Testimonial by Glen F. Hallman, Administrative Assistant, Bellingham-Whatcom County District, Department of Public Health.

15 Statement, dated October 12, 1964, of Charles C. Gold, Superintendent of Water and Sewage, City of Bellingham.

16 Letter dated October 1, 1964 from William F. Gallagher, Anacortes City Engineer, inclosing statements on "Deep Water Navigation in Fidalgo Bay" and "Water Supply for Industrial and Domestic Use."

17 Copy of letter dated February 7, 1961 from Floyd Nelson, Chairman, Board of Supervisors, Skagit Soil and Water Conservation District, inclosing report dated February 6, 1961 by Anton F. Harms, Work Unit Conservationist, Soil Conservation Service, U.S. Department of Agriculture.

Prepared Statements Received Before and After the Hearing

No.

18 Letter dated October 9, 1964 from Fred T. Darvill, Jr., M.D., Chairman, Conservation Committee, Skagit Alpine Club.

19 Statement of the Department of Game, State of Washington.

20 Letter dated October 27, 1964 from George Garmo, Whatcom County Engineering Department.

No.

21 Letter dated November 2, 1964 from Eckley S. Ellison, Department of Commerce Representative, Columbia Basin Inter-Agency Committee, inclosing a Memorandum dated October 15, 1964 from Howard J. Marsden, Chief, Division of Ports, Office of Program Planning, Maritime Administration.

22 Letter dated October 22, 1964 from Conrad Hougen, Chairman, Whatcom County Soil and Water Conservation District.

COMMENTS BY COLONEL CHARLES C. HOLBROOK AT

PUBLIC HEARING FOR COMPREHENSIVE WATER RESOURCE STUDY

PUGET SOUND AND ADJACENT WATERS

Mr. Richardson, Mr. Gedney, ladies and gentlemen. This hearing is a new experience for us in the Corps of Engineers. Many of you are familiar with our usual Corps of Engineer Hearings on specific types of water resource studies. However, today we are concerned with a water resource study that is unique in breadth and scope of planning. To assure that all aspects of planning for development of water and related land resources receive adequate consideration during the course of the study, we are pleased to join in a Task Force approach with other Federal and State agencies having experts in water resource planning. We think it particularly appropriate that the Task Force effort should be coordinated under the leadership of the Columbia Basin Inter-Agency Committee, which has long served in a coordinating capacity for Federal and State efforts in water resource planning throughout the Pacific Northwest.

I would like to briefly define Corps of Engineer objectives in the Puget Sound Comprehensive Study. Working with the Task Force, we must first determine the needs of the area for future water resource development. This hearing is an essential step in this purpose. A physical inventory of the water resources will also be required. Another early step will be a regional economic survey to determine to the best of our capabilities water and related land resource requirements for the next 10, 20, and perhaps 50-year period. With this information, we look forward to planning of projects that will satisfy long-term requirements for flood control, for water supply, for fish and wildlife conservation, for hydropower, for irrigation, for recreation and for all the other single or multi-purpose usages that justifiably should be incorporated into a project. We hope to formulate our projects in such a manner so that they will be responsive to these requirements:

(1) Local needs and desires.

(2) State and National policies for sound water quality management.

(3) State and National policies for the social and economic planning objectives which so importantly affect this area. These latter categories include such considerations as the effect of wild river and national park type developments, recreation, fish and wildlife requirements and similar matters.

I want to emphasize that our project planning will not and cannot supplant normal local interest responsibilities for developing say a water supply, or say a recreation project. However, when a major project which we may consider can incorporate these features with others in which Congress has indicated a federal interest, we are prepared to enter fully into discussions which will lead to the best and most economic use of the water resource.

Projects necessary for both immediate and long-range planning will be considered. By immediate, I mean projects suitable for development within the next 10 to 15 years. Projects which are found to have sound justification for development in the near future will be investigated in the extensive detail necessary for congressional authorization. Long-range applies to projects which should be considered for development, in say, the next 15 to 50 years. This type of project will only be given framework type study.

The overall study is scheduled for completion in 1969. However, in situations where an urgent need exists for project development and where overall planning can be accomplished substantially in advance of 1969, we will be prepared to submit earlier, interim reports to the Congress for consideration.

Finally, a brief statement on how this study affects usual Corps of Engineer studies for say a small boat basin. A deepwater channel or a local flood control project. If these projects can be evaluated as units complete in themselves, we would like to treat them as separately authorized and funded reports. We would like to reserve to the comprehensive study, project studies which depend on broad based concepts that affect in some significant measure - overall basin planning.

I wish to express a deep feeling of responsibility and obligation on the part of the Corps of Engineers to make this as effective and as responsive a study as possible in planning for the future water and related land resources of the Puget Sound region. I extend a wholehearted invitation for you to confer or to call upon me or members of my staff at any time that you consider it desirable.

COPY

SAN JUAN COUNTY

WASHINGTON

Mr. John A. Richardson
Mr. Robert H. Gedney
Co-Chairmen, Task Force
Comprehensive Water Resource Study
Puget Sound and Adjacent Waters

Gentlemen:-

The attached detailed preliminary reports of our needs in San Juan County cover the fields of:-

1. Domestic Water Supply
2. Pollution
3. Flood and Erosion Control
4. Harbor Development
5. Fisheries and
6. Recreation

San Juan County is now classed as a "depressed area" by the Federal Government. This in itself is indicative of one of our problems--providing payrolls for the area. The Fisheries report covers one phase of this problem.

As with most areas our problems are associated with population growth. However ours are unique in that the major problems anticipated are due to the influx of people using the area for recreational purposes--in other words to escape the crowded facilities anticipated along the Mainland areas of the Region. We are already feeling the effects of not having enough facilities to handle these people.

The statistics which we have been able to assemble together with the forecasts of population growth and recreational trends in the balance of this Puget Sound Region are rather startling to those of us who live here. With our small population and limited resources we feel we need assistance in more fully detailing our problems and then we will need further assistance in helping to carry out the solutions found for those problems.

Respectfully submitted,
/S/ R. W. Condon
by Robert W. Condon
Chr. County Planning Commission

for Carl G. Nash
Chr. Board of County Commissioners

Exhibit 2

San Juan County, Washington - Domestic Water

There are many families that receive their water from community systems. Most San Juan County residents however rely on their own wells for water and supplies vary from abundant to barely enough to supply modern household needs. A great deal of view and other desirable property does not have water available at reasonable cost.

Since the information that is needed in the County is a survey of existing wells in order to compile statistics regarding depth, capacity, quality and future expansion any report made by the County can only point out instances that are scattered and hearsay. A property owner that drills a well and comes up with a dry hole or salt water is naturally reluctant to publicize his misfortune.

A survey of ground water is necessary to adequately plan for further residential development on the Islands. The use of water from our surface sources may be a necessity in the future although more costly than water obtained at reasonable depths underground. The advantages of obtaining water from underground sources are obvious and listed as follows: 1. Ground water may be reached within a few hundred feet of the place where it is to be used, and on the same property, whereas surface water may require pipelines and rights-of- way over stretches of several miles.

2. Ground water may be available for use in areas where the water in lakes and streams has already been appropriated.

3. Yield from wells generally fluctuate less than streamflow in alternating wet and dry periods.

4. Ground water is more uniform in temperature and soluble mineral load than free water or surface water, and is generally free of turbidity and bacterial pollution.

1.

In order to preserve the recreation and retirement potential of San Juan County, the problem of sewage disposal must be met.

The problem is the increasing pollution of ground waters throughout the County, as well as the adjacent salt waters.

We recognize the several aspects of this problem, but we do not have the resources available to determine the magnitude and scope of the sewage contribution to the total pollution problem.

2.

The sources of pollution are:

1. Rural or individual sewage disposal systems.

2. The sewage systems of the several small population centers.

3. The sewage discharge from boats in moorages and harbors.

The high proportion of unsuitable soil structures and types for adequate and safe disposal systems creates the pollution problem in the rural areas. Such pollution inhibits growth and development.

3.

The small population centers lack the resources to provide sewage treatment to prevent direct pollution to the salt waters.

The primary need at this time is the provision of adequate resources to define the magnitude, scope and significance of sewage pollution in San Juan County.

4.

The secondary need is the provision of adequate resources for detailed studies to establish priorities and to determine the feasibility of designing and implementing programs and projects aimed at meeting specific sewage problems in the order of established priority.

From: ROBERT WEAVER,
Health Department

Incl 2,
Exhibit 2

FLOOD AND EROSION CONTROL

Beach and bank erosion is the major problem under this category. Some 22,000 linear feet of waterfront immediately adjacent to the county road system is now, or will be in the near future, subject to erosion by tidal wave action and poses a serious threat to the roadbeds themselves. In addition many privately owned tracts of land are suffering the same fate. With the loss of from ½ to 2 feet of land each year, some type of preventative or corrective action must be taken to protect these areas from further loss.

Out of nine sections of roadway comprising the 22,000 feet referred to above, six carry daily school bus and rural mail routes. Four of the sections provide the only access to residential areas of the various islands and failure of the roadway due to erosion would cause complete isolation from the rest of the island.

During the last three years, San Juan county has undertaken and completed the protection of some 9,000 feet of bank by rock rip-rapping along the sections of roadway, through participation of the county and the State of Washington Department of Conversation. Both sections had eroded to the point of undermining the edge of the pavement.

Another item under this heading which is becoming more of a problem is drainage, handling, and controlling the annual runoff. In years past drainage ditches were constructed by local farmers with either their own capital or in a joint venture with their neighbors. Now that farming has decreased and changed in type, little or no maintenance has been done on these ditches, and brush overgrowth obstructs the flow of water and silt and debris is deposited. These obstructions in the waterways, combined with the increased runoff due to development and improvement of land in numerous locations, are causing the water to backup and overflow adjacent land as well as many of the county roads.

It is very evident that a study must be made of the erosion and drainage problems in San Juan County, a plan for correcting these problems and preventing future ones be drawn up and a method of financing the plan be determined. Without a definite plan to follow, and help in carrying it out, the residents of San Juan County stand to lose property and damage to both public and private facilities.

Incl 3,
Exhibit 2

PORT OF FRIDAY HARBOR

FRIDAY HARBOR, WASHINGTON

The Port of Friday Harbor requests a study be made for the improvement of facilities for both commercial and pleasure boats. As is shown in other parts of this report, the use of water-oriented recreational facilities has increased 220.8% between 1954 and 1963, for an average of 13.6% per year increase. Due to a projected Federal Park on San Juan Island this increased use of Port area facilities will increase at a rate several times what it is now.

The generated demand for new moorage facilities will more than double by 1975 - where we have now 7.5 boats for each moorage space, we will have 12 boats or better.

We wish to point out the fact that the addition of more floats and moorage is physically or geographically impossible without the building of breakwaters to give protection to the installations. In 1951 all the waterfront floats in the Friday Harbor area were destroyed by a strong northeast wind. Again, in 1959, they were badly damaged, pointing up the need for a protected boat basin where floats and moorage will be safe through the winter months.

Private facilities have made use of the protected harbor and bays to the maximum extent of their abilities. However, their facilities are totally inadequate against the peak summer influx of water-bourne tourists. It should also be noted that in 1950 there was a mere handful of boats that stayed in this area the year around, whereas we now have better than 500 boats.

The Port of Friday Harbor Commissioners are well aware of the need for improved facilities and have made some studies pertaining to the improvement, but due to lack of funds, these studies are not complete.

This area, classed as a depressed area, is fast becoming the most popular recreational center in the Northwest. However, the permanent population is not large enough nor wealthy enough to provide the facilities needed to properly handle the high influx of tourists during the short three-month summer season.

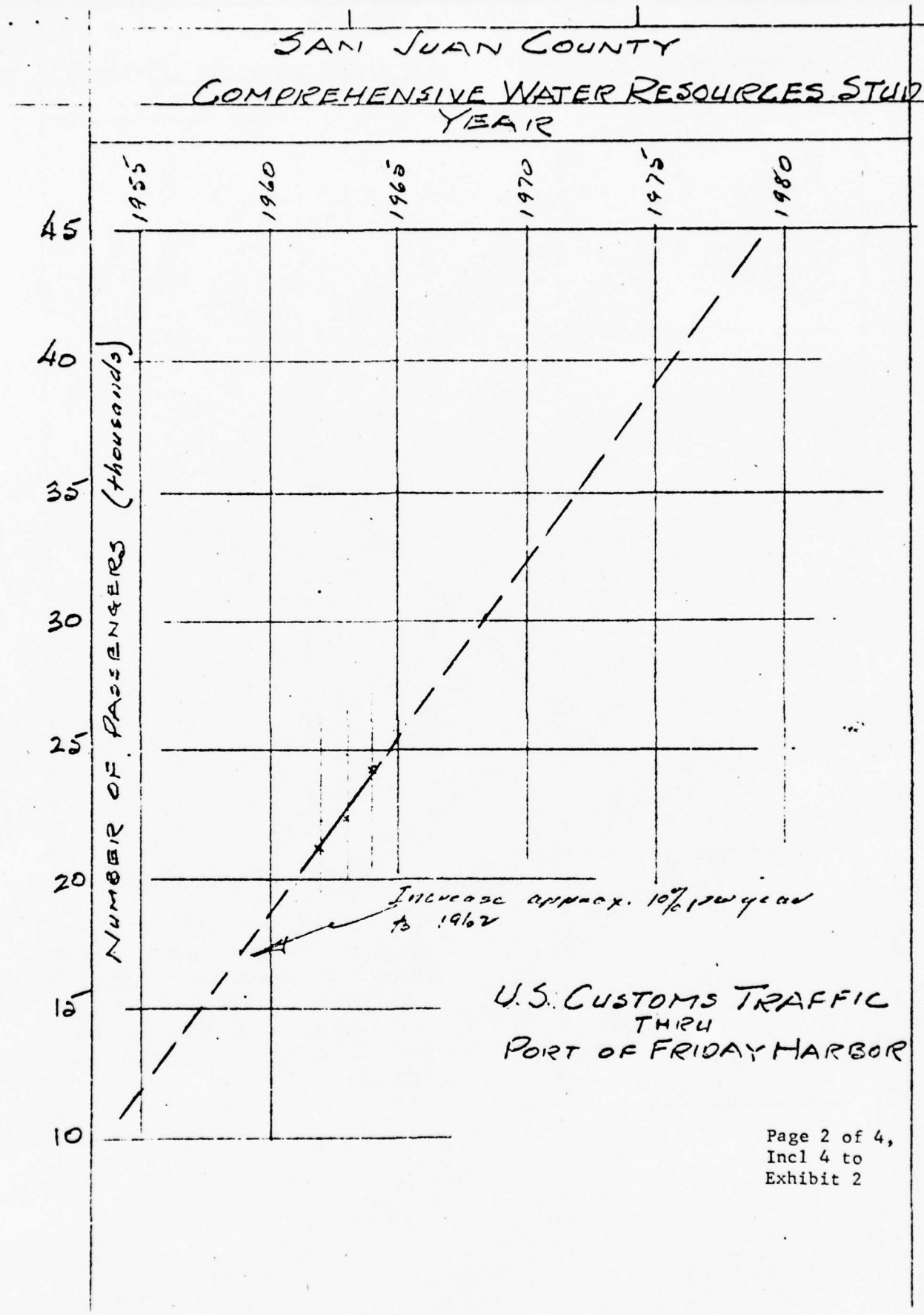
Attached hereto are graphs showing the trend and use of this area.

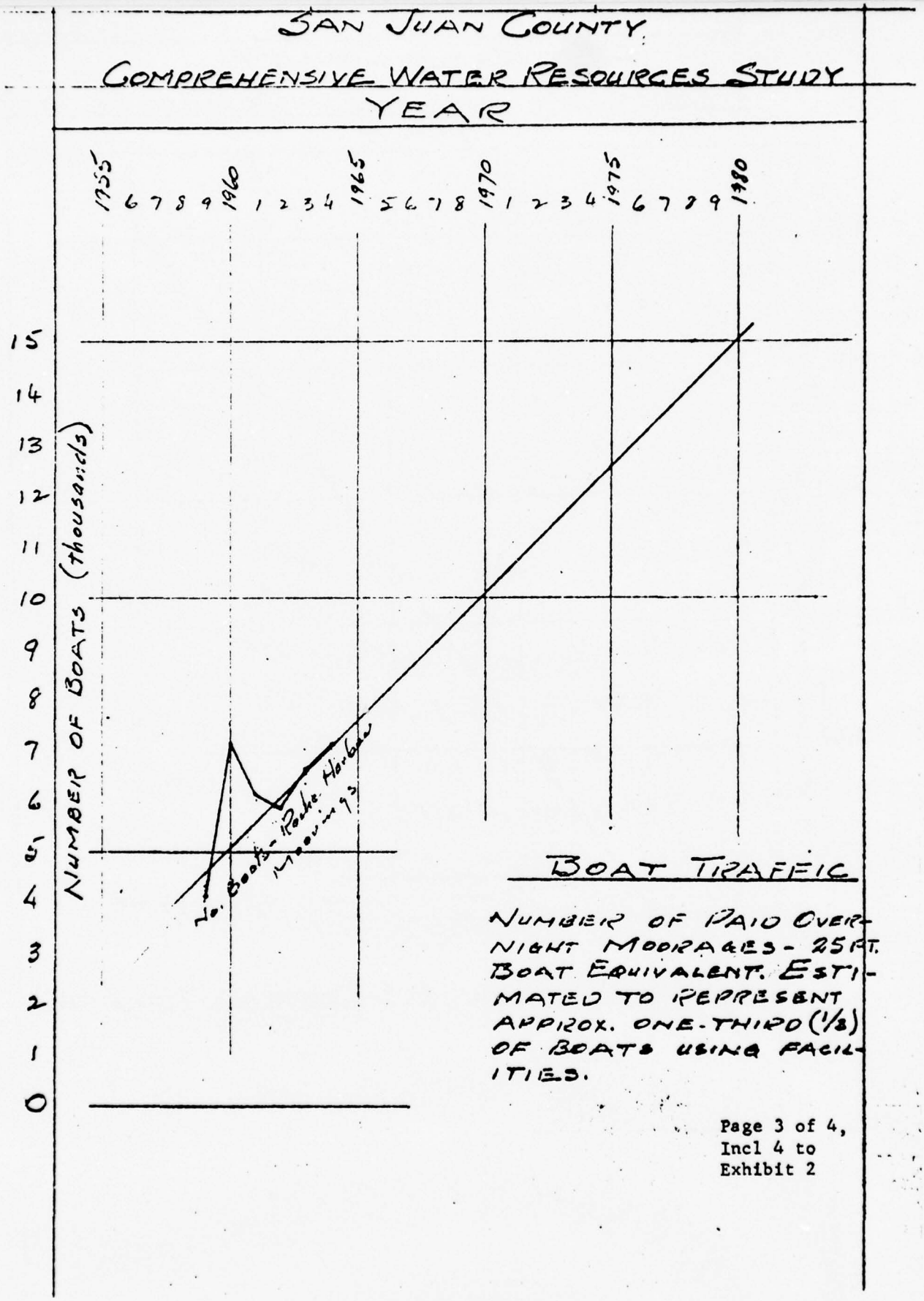
This report prepared by the Commissioners of the Port of Friday Harbor, October 10, 1964.

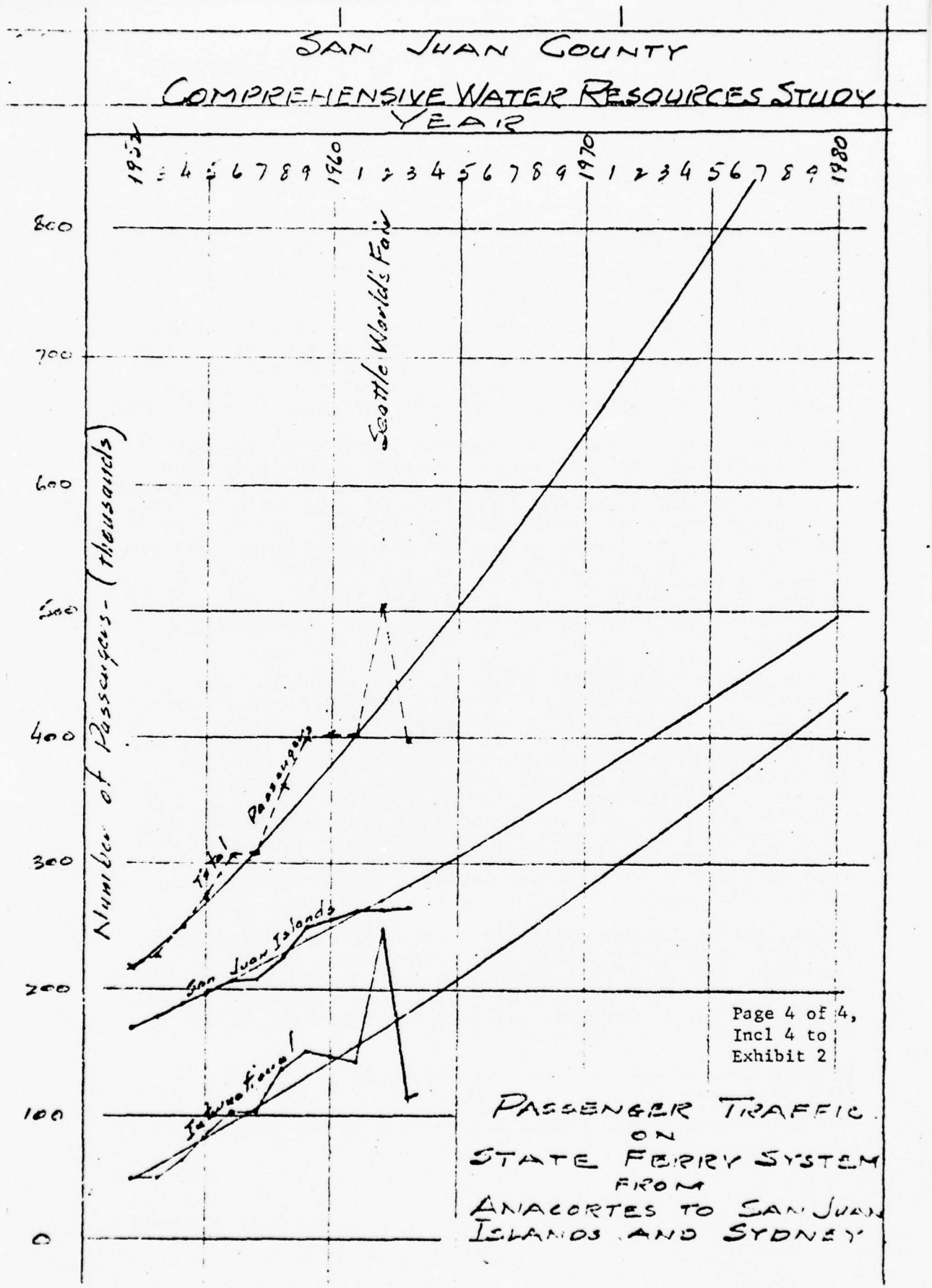
PORT OF FRIDAY HARBOR

By N. H. Jensen

N. H. Jensen, Commissioner


SAN JUAN COUNTY
COMPREHENSIVE WATER RESOURCES STUDY
YEAR
1955
1960
1965
1970
1975
1980
45
40
35
30
25
20
15
10
NUMBER OF PASSENGERS (thousands)
Increase approx. 10% per year to 1962
U.S. CUSTOMS TRAFFIC
THRU
PORT OF FRIDAY HARBOR


SAN JUAN COUNTY
COMPREHENSIVE WATER RESOURCES STUDY
YEAR
1955
6 7 8 9
1960
1 2 3 4
1965
5 6 7 8
1970
1 2 3 4
1975
6 7 8 9
1980
NUMBER OF BOATS (thousands)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
No. Boats - Roche Harbor Moorings
BOAT TRAFFIC
NUMBER OF PAID OVER-NIGHT MOORAGES - 25 FT. BOAT EQUIVALENT. ESTIMATED TO REPRESENT APPROX. ONE-THIRD (1/3) OF BOATS USING FACILITIES.



Page 4 of 4,
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Exhibit 2

Fisheries Evaluation
by C.H. Nash

Fishing in the San Juan Islands has been an important activity since pre-historic times. Archaeological findings made during the past few years have verified that the earliest inhabitants on the San Juans, were transient Indian, or pre-Indian fishermen.

The San Juans are closely associated with the salt water, and appear to have been at one time mostly covered with salt wate r. Shallow excavations in the interior of the Islands show clam-shells in plentiful amounts.

Geoloical investigations seem to indicate that the San Juans were once in the stream of a giant river or glacier. Extremely interesting alluvial deposits are found in the vicinity of Mt. Finlayson on San Juan Island, in an area which may be encompassed by the proposed "Pig War" National Historic Park.

The word "fish" in San Juan Islands terminology has meant Salmon, as that fish has been closely associated with the Islanders since time immemorial. Salmon was the "Gold" of the San Juans in the late 1800's and the early part of this century.. It was the one commodity that could, if one were lucky, mean riches. Any other type of income in the San Juans meant work and sweat, and toil. A man could make more in a good season, fishing Sockeye Salmon than he could reasonably expect to make in five or ten years working for wages. Salmon made the first stake for many of the financially important Puget Sound families of today.

The decline of fisheries as an important resource, with the onslaught of civilization can likely be considered a natural phenomenon. However the precise reason why fisheries decline has to be, has never quite been pinned down. Is it polution? Over fishing? Changes in river flow characteristics? The taking of the"good" fish and leaving the predator fish, birds, and animals to increase without molestation? Salmon in the immature stage are eaten by the scrap fish, and in the adult stage the good fish find that the competition has taken over the feeding grounds; thus perhaps upsetting the delicate balance that nature had provided before the demand for salmon became world wide.

Salmon to the San Juan Islander is part of his livelihood... Directly or indirectly those that must make a living in the San Juans find that in the recreation industry, the services industry and the building industry, the attraction of fishing, either for fun or fortune, has been the adrenalin in the blood-stream of the Island economy.

We feel that an intense study of the whole of the problem is long past due.

Not attempting to go into detail on each of the mentioned

problems, we take the title,"Salt Water Polution in the San Juans", and attempt to explain briefly why, in an area that is considered by many to be uncontaminated, we believe that an immediate study is imperative.

A fish on its way to the spawning grounds meets many obstacles. It is guided by an uncanny sense of smell that can detect an odor when duluted many millions of times. A fish breathes water, if water is poluted the fish has to breath it regardless... It must overcome all obstacles to return to the stream of its birth, to complete the age old cycle of hatching, to natural death on the spawning grounds close to where its life began, in order to replenish its kind.

Polution, especially of the industrial type, has been studiedsome by both State and private agencys, usually with a very limited budget, and most often in areas adjacent to pulp mills and oyster beds. Some chemicals are harmful even though diluted many, many times; it is important to find an area that is near the population centers, but remote enough so that control studys and cataloging of the various flora and fauna be made, so as to be able to detect changes at a later date.. Some chemicals are harmful to the young fish swimming near the surface and not to the deeper swimming adult.. Some polutants affect the delicate homing instinct of the fish while others tend to affect the reproductive organs. Barges of waste caustic liquors are dumped into the inner Strait of Juan De Fuca, not many miles from the San Juans.

Friday Harbor has one of the foremost Marine Biological Laboratories in the Nation. One of its most important advantages is a glass pipe line of about 1/8 of a mile in length that is used to pump unudulterated seawater through a series of laboratory facilities the year around without stopping, in order that marine organisms can be kept and studied through their life and family cycles. This rare advanced equipment would be of little use in a poluted area.

We believe that fish farming feasability studies should be made so that the Islanders can have a local supply of Salmon to augment the widley varying migratory runs passing through the islands.This study might be made with two purposes in mind. That of, Fish Farming with public owned facilities, and also to investigate the Possibilities of privately owned hatcheries and farms, with the profit being that what adult fish escape the regular fishery, that the fish farmer may have all those that enter his small exclusive zone. He would then turn some into ripening ponds so that he will have eggs and sperm for his next setting of eggs.

We might ask that a study be made of the uses of scrap fish for food and other byproduct uses. It seems reasonable that as the population increases, that most fish will be needed for food and fertilizers. The technical work of determining just what is the best way to treat the various types of fish for their ultimate use is important. The high protein value, and other information of each type of fish should be established. Work,for instance has been done in making a no taste fish paste out of scrap fish, that has high food value and that synthetic flavors are added. This food is in demand in Europe. The technical assistance is needed

in designing efficient, possibly mass produced plants with a known cost to production ratio. This foregoing mentioned assistance would in some cases surely start new industry, using raw material which we now consider to be serious pests. One product for example, that probably did not have enough technical research and publicity, was that of a fruit tree fungicide made from the liver oil of the Dogfish Shark, a serious predator and pest to commercial, and sportsfishermen alike.

Local water temperatures, salinitys, and river flow surges are factors which may affect fish migrations and survivals. The Plankton which the beginning of the fish feeding cycle starts, may be affected by subtle changes in these or other factors. These minute changes may only be discovered by studys of statistical compilations of the different possible contributing facets. We doubt if there is enough information from several observation stations, available at the present time.

It is in consideration of the foregoing remarks, that we ask that a comprehensive study be made of our Saltwater resources, in this Island area.

COMPREHENSIVE AREA RESOURCES STUDY

RECREATIONAL FACILITIES IN SAN JUAN COUNTY

San Juan County is a unique area composed entirely of islands, 172 in number of which the four principal islands are served by the State Ferry system. The climate of the area is particularly delightful with an average annual rainfall of between 20 and 25 inches and more than its share of clear days, as compared to the balance of the region. The Islands have been nicknamed "The Banana Belt" as illustrative of the climate.

With a year-round population of some 3,000 people it is evident that the recreational facilities that are available would meet the requirements of the local people for many years to come. However, those of us who live here know from experience and statistics prove that we are at the outset of a mad rush from people of the Mainland to participate in enjoyment of this Island paradise. As illustrative the attached photographs show the line up at Friday Harbor of vehicles waiting for the 5:30 P.M. Ferry to take them off the island at the conclusion of the Labor Day weekend this year. This lineup was continuous from 11:00 A.M. To further verify this statement we are grafically presenting, herewith, statistics obtained from the Washington State Ferry System, the United States Customs Service and the Roche Harbor Resort as typical of the area and for background information we have obtained from the Puget Sound Governmental Conference statistics in conjunction with their Open Space Study which certainly support and amplify our local findings.

The Washington State Ferry System report shows an annual increase, or current growth rate, on the domestic run to the San Juan Islands alone of approximately 10,000 persons, or 4% per year. The International run thru the Islands shows ever a greater growth rate and as facilities are made available more of these people are expected to stop over in the Islands. It will be noted that as these graphs are extrapolated to show future trends, the figures become astronomical.

Figures from the United States Customs Service show an annual increase of approximately 10% in Yacht and Passenger traffic per year. Figures were available locally for only the past three years, because local records prior to that time had been destroyed by fire. However, the local Customs officer reported that this trend has held for many years. It is interesting to note that in 1963 the Customs Port of Friday Harbor accounted for 13.4% of all of the Yacht entries handled by the Customs Service in the United States.

The Roche Harbor Boatel reports an increase in Pleasure Boat traffic thru their facilities of approximately 15% per year. Figures were not available for their first two years of operation beginning in 1957.

For further background information we went to the Puget Sound Governmental Conference to obtain results of their Open Space Studies on Marine Shoreline, Recreational Boating and State Parks in the four County area making up their district, i.e. King, Snohomish, Pierce and Kitsap. The following date was obtained from their reports:-

> "The use of water-oriented recreational facilities has increased by 220.3 percent between 1954 and 1963, accounting for a moving average of 13.6 percent per average year. In conclusion it can be stated that the use of these facilities is increasing five times faster than the aggregate population of the four counties for the same period of time. At this rate of growth it is anticipated that by 1970 the Shoreline recreational facilities will have an attendance of 2.8 million and 4.9 million by 1975. The problem is that 80 percent of the tidelands in this Central Puget Sound Region are

privately owned and the attendance is going up at an extremely rapid rate, while the availability of additional land is progressing very slowly.

The expenditures on boating is expected to increase (in millions of dollars) from an estimated 48.0 to 161.4 between 1960 to 1985. The estimated number of boats will probably increase from 64,300 to an estimated 1,480,500 by 1985, while the number of persons per boat will decline from an estimated 23.5 to 18.5 in the same period of time.

The generated demand for new moorage facilities is expected to reach

1965	1970	1975	1980	1985
11,080	12,960	14,520	16,730	18,800

At the same time the existing 7.5 boats to each moorage space is expected to increase to 7.9 boats per their available moorage space.

At the entire State level the attendance in State Parks has increased from 1,640,000 in 1950 to 9,580,000 in 1963. If this trend in State Parks attendance continues, the available estimate indicates that by 1985 we should be coping with an estimated low and high attendance between 22 million to 35 million people."

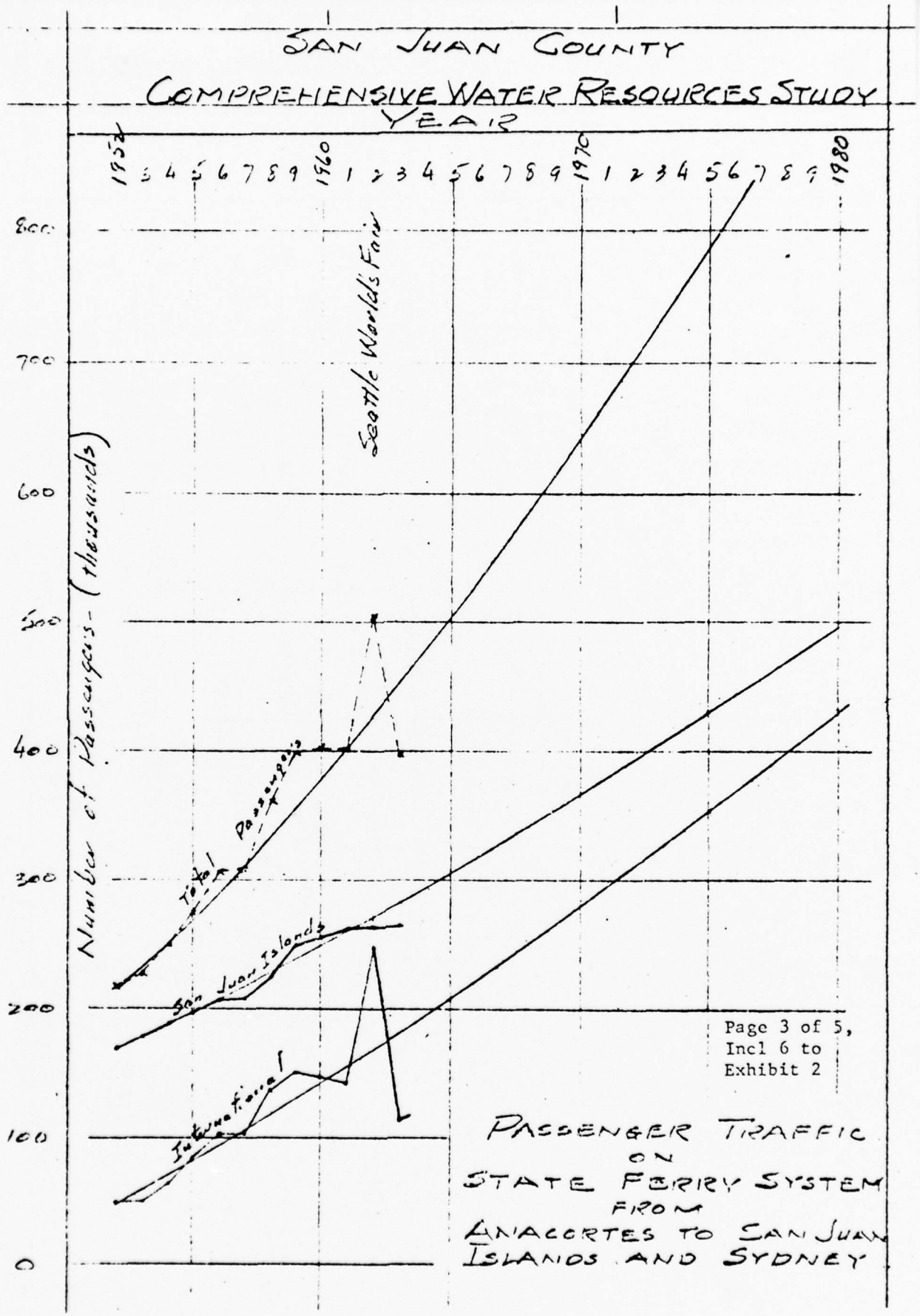
The figures are overwhelming to this small County which is currently classed by the Federal Government as a "depressed area" and which certainly does not have the resources to cope with the recreational requirements in the way of parks, camping areas, harbor facilities, moorages, etc. which are indicated during the next ten to fifteen years.

Our specific request with respect to the current Comprehensive Water Resources Study is for a more detailed study of the Recreational problem as it will effect the San Juan Islands by competent authority and then assistance in establishing the facilities found to be justified by these studies. This is a problem of endeavoring to obtain an orderly development of a recreational area, second to none, which can be enjoyed by the expanding population of the Puget Sound Region in generations to come.

Other reports will cover some immediate and specific requirements for breakwater, harbor and moorage facilities. However, plans have not been adequately developed for a long range program because of lack of funds and lack of sufficient information. To this end we request assistance.

Respectfully submitted,

Robert Condon,
Chairman
San Juan County Planning Commission



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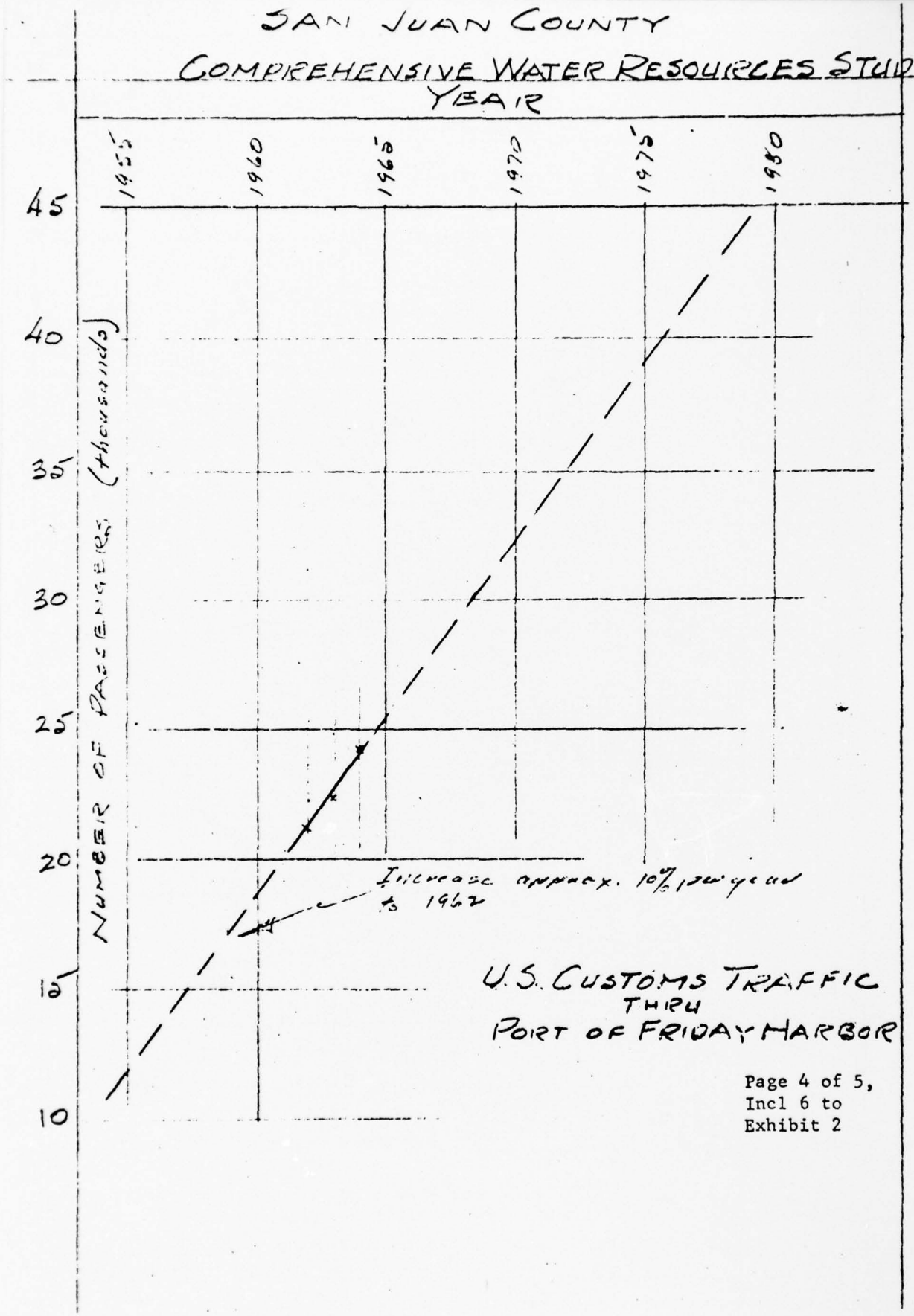
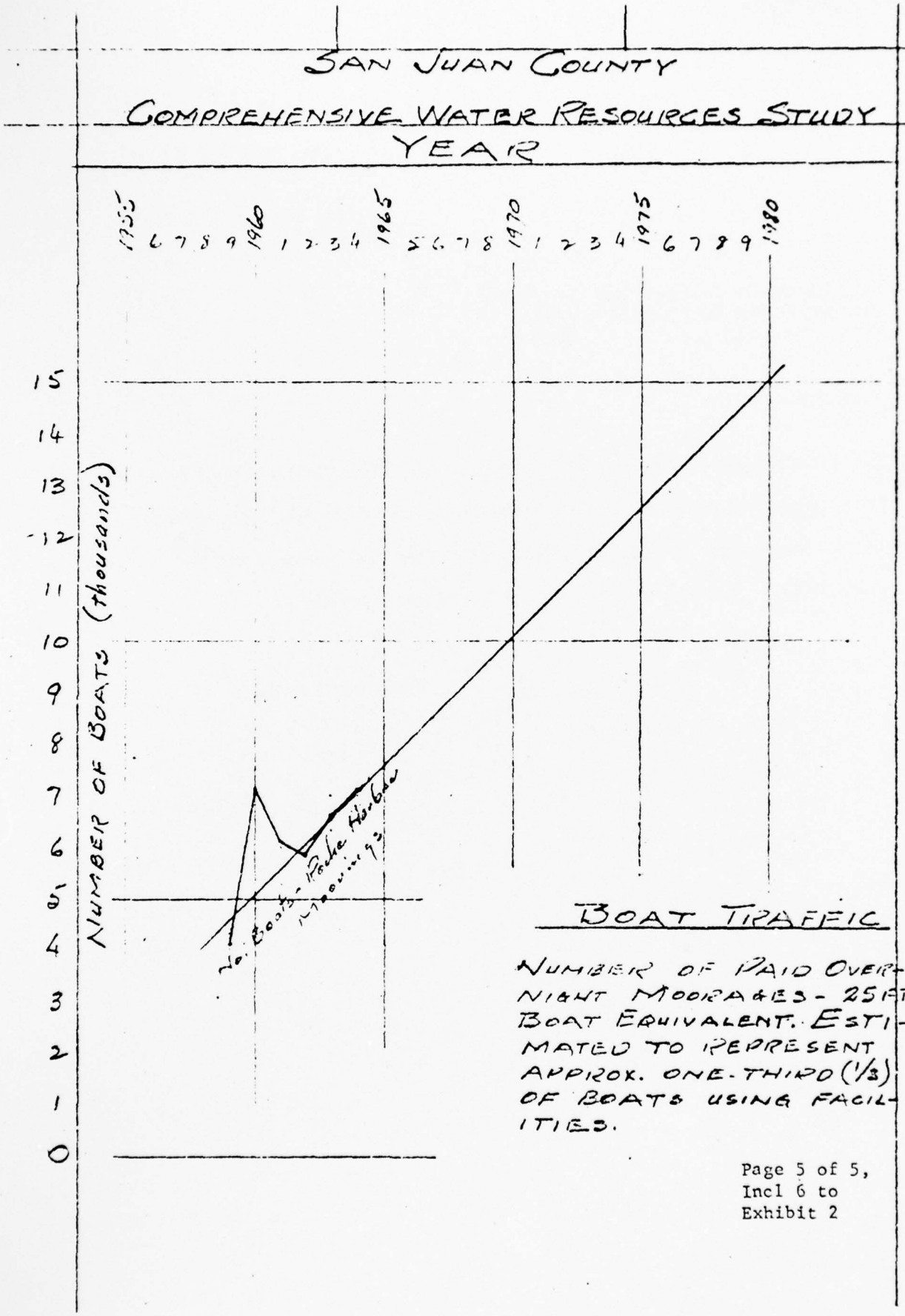
PASSENGER TRAFFIC
ON
STATE FERRY SYSTEM
FROM
ANACORTES TO SAN JUAN
ISLANDS AND SYDNEY


SAN JUAN COUNTY
COMPREHENSIVE WATER RESOURCES STUDY
YEAR
1955
1960
1965
1970
1975
1980
45
40
35
30
25
20
15
10
NUMBER OF PASSENGERS (thousands)
Increase approx. 10% per year to 1962
U.S. CUSTOMS TRAFFIC
THRU
PORT OF FRIDAY HARBOR


SAN JUAN COUNTY
COMPREHENSIVE WATER RESOURCES STUDY
YEAR
1955
6 7 8 9
1960
1 2 3 4
1965
5 6 7 8
1970
1 2 3 4
1975
6 7 8 9
1980
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
NUMBER OF BOATS (thousands)
No. Boats - Roche Harbor
Moorings
BOAT TRAFFIC
NUMBER OF PAID OVER-NIGHT MOORAGES - 25 FT. BOAT EQUIVALENT. ESTIMATED TO REPRESENT APPROX. ONE-THIRD (1/3) OF BOATS USING FACILITIES.

San Juan County Soil And
Water Conservation District
P.O. Box 38
Friday Harbor, Wn. 98250
October 12, 1964.

Columbia Basin Inter-Agency Committee
TASK FORCE FOR COMPREHENSIVE STUDY
PUGET SOUND AND ADJACENT WATERS

Gentlemen:

The attached updated San Juan County Soil and Water Conservation District Program adopted by the Board of Supervisors on October 2, 1964 contains information which we believe adequately states the problems of our County pertaining to water and other related land use problems.

Sincerely yours,

Russell Hawkins

Russell Hawkins
Chairman, San Juan County
S.&W. Conservation District

— **Exhibit 3**

COPY

SAN JUAN COUNTY SOIL AND WATER CONSERVATION DISTRICT PROGRAM

1964

I. Introduction

The San Juan County Soil and Water Conservation District was consolidated and enlarged on April 3, 1964 to include the present geographical boundaries of San Juan County; San Juan Island, Orcas Island and Lopez Island Soil and Water Conservation Districts under section 89.08.180 pursuant to Chapter 240, Laws of 1961.

Location and Boundaries (Map attached)

The center of the San Juan County area can be located by the point of intersection of the 123rd meridian of west longitude with the north latitude line of 48° 30'. The County is situated in Washington Sound immediately north of Puget Sound. It is 70 miles north of Seattle and just south of the Canadian border. On the west it is bounded by the waters of Haro Strait and Boundary Pass which serve as the west International boundary line. Farther westward lies Vancouver Island and other smaller Canadian Islands.

History

The present San Juan County SWCD originally comprised three separate Soil and Water Conservation Districts. They were organized with the Certificate of Organization issued by the Secretary of State as follows: Orcas Island SWCD #44, September 6, 1947. On April 16, 1954 its boundaries were enlarged by a certificate of inclusion to incorporate Shaw Island. San Juan Island SWCD #43 formed its district September 9, 1947 and Lopez Island SWCD #62 was created on June 16, 1949. Charter supervisors for Orcas were Russell Hawkins, Harold McNallie, Glen Rodenberger, Tom Harrison and Barton Green. For San Juan, Bert Lawson, Virgil Thompson, Harold Guard, Adrian Boyce and R. D. Wilson. For Lopez, T. J. Blake, Sam McCauley, Owen Higgins, Don Forest and Gearhart Kring.

The petition for consolidation to include the three districts with County-wide geographical boundaries was submitted to the Washington State Soil and Water Conservation Committee and signed by the Secretary of State on April 3, 1964.

Initially the districts were concerned with the following conservation problems:

1. Moderate gully and sheet erosion.
2. Shore wind erosion and consequent dune formation.
3. Low agricultural yields.
4. Bottomland drainage.
5. Lack of adequate irrigation water.

6. Surface water impoundment.
7. Land capability classification.
8. Sustained yield woodland program.
9. Conservation farm by farm planning.

Soil and Water Conservation District Accomplishments:

The staff made available through the years by the Soil Conservation Service has provided required services in agronomy, forestry, engineering, conservation planning and a completed Soil Survey Report of San Juan County. The district has approximately 483 cooperators with 449 basic farm plans.

To June 30, 1964 the following listed conservation practices were reported on the islands:

Brush and Weed Control	2,646 acres
Subsoiling	600 acres
Conservation Cropping Systems	23,729 acres
Controlled Burning	160 acres
Cover and Green Manure Crops	1,336 acres
Crop Residue Use	4,004 acres
Dam, Multiple-Purpose	1 number
Ditch Bank Seeding	14,300 feet
Farm Ponds	160 number
Firebreaks	247,055 feet
Fishpond Stocking	28 number
Grasses and Legumes in Rotation	20,000 acres
Grassed Waterway or Outlet	27 acres
Irrigation Pipeline	5,000 feet
Irrigation Storage Reservoirs	30 number
Irrigation Systems, Sprinkler	18 number
Land Clearing	847 acres
Livestock Exclusion	6,900 acres
Drainage Main or Lateral	380,008 feet
Obstruction Removal	20 acres
Pasture and Hayland Renovation	12,000 acres
Pasture and Hayland Planting	15,600 acres
Pipeline - Livestock and Recreation	9,220 feet
Pond Sealing or Lining	9 each
Pasture - Proper Use	1,600 acres
Woodland - Proper Grazing	1,300 acres
Rotation Grazing	21,390 acres
Recreation Access Road	80 feet
Spoilbank Spreading	34,000 feet
Tile Drain	22,536 feet
Tile System - Structure	22 each
Tree Planting	30 acres
Trough or Tank	70 each
Wells	47 each
Wildlife Habitat Preservation	900 acres

Wildlife Wetland Development	780 acres
Wildlife Habitat Development	269 acres
Woodland Harvest Cutting	29,183 acres
Woodland Intermediate Cutting	11,400 acres
Woodland Interplanting	7 acres
Woodland Pruning	13 acres
Woodland Thinning	59 acres
Woodland Weeding	36 acres
Cropland to Grassland	559 acres
Cropland to Other	290 acres
All Other Uses to Cropland	81 acres
All Other Uses (Except Cropland) to Wildlife-Recreation	80 acres

Description of the District

At low tide the county consists of a group of 743 islands and reefs, but at high tide this number is reduced to 428.

The land area of the county is 110,080 acres or about 172 square miles. In total land and inland water area (265 square miles) San Juan is the largest of four counties in the continental United States consisting of islands located in offshore waters. It not only exceeds three other counties similarly located on this continent in total land-water area, but has the largest number of islands and islets. The waters of the area are sheltered and favorable for small boat travel at virtually all seasons of the year. There are numerous inlets offering excellent sites for small boat harbors.

The islands enjoy a favorable year-long climate considering that they are at a latitude of nearly 49 degrees. January temperatures average 39 degrees. Snow is rare, and when it does fall it melts within a few hours, or at most, a few days. Summers are dry and cool, with an annual July temperature of 60 degrees, and the average annual yearly high is 80 degrees. Yearly rainfall is light varying from 17 to 29 inches, depending on location. Fog occurs occasionally, but is less frequent and lighter than on the nearby mainland. The extreme beauty of the islands, the protected waters and favorable climate are counted as most important assets.

The San Juan Islands are part of a submerged mountain range that crosses Washington Sound in a northwesterly direction. The channels and harbors have been greatly modified by glacial erosion making them fjord-like in character. The regional surface is marked by abrupt changes in elevation from sea level to a maxiuum altitude of 2,409 feet on Mount Constitution.

The deepest sounding recorded occurs in Haro Strait near Stuart Island with a depth of 1,356 feet below sea level.

Land Use:

The 110,080 acres that comprise San Juan County are divided as to resource areas as follows:

1.	Cropland	20,024 acres
2.	Grassland	1,397 acres
3.	Woodland	86,201 acres
4.	Miscellaneous	2,458 acres

The major portion of the County is in private ownership with the except ion of 3,501 acres of State and 2,244 acres of Federal woodlands. There are approximately 918 operating units in the district which represents the total workload with reference to soil and water conservation planning and application of land management measures.

Agricultural Economies:

The decline in agriculture from its peak in 1925 is evident from recent employment statistics. In 1940, 34 percent of the work force in the County was classified as being engaged in agriculture. In 1963 only 7 percent was so classified. Many enterprises that were formerly of primary importance have virtually disappeared. Most notable are dairying, poultry, tree fruit, berries, and seed potatoes. Other endeavors that have come and gone in the past include turkeys, certified seed production (both vegetables and field crops), rhubarb, pulpwood, fur farming, and hops. Beef has gradually replaced dairy cattle in numbers as the market for cream has declined. The only milk processing plant closed in late 1963. Agricultural activity has been aided in recent years by hobby farmers and retired persons moving to the Islands. Sub-dividing farms for rural residence is an active enterprise, particularly waterfront and view property. Some conversion of farms to recreational endeavors has taken place. These include three golf courses, one shooting preserve, hunting cabin camp, recreation camps and riding academies. Production of beef and sheep will probably remain the most important agricultural enterprise.

The production of poultry, vegetables and dairy products for local consumption should be feasible but production beyond that point seems questionable because of the high expense in delivering to mainland markets.

Woodland Economic Aspects

With a total land area of 110,080 acres 78 percent of the county is in woodlands. Harvesting of timber for commercial building purposes began around 1945. Prior to this time the primary use of woodland products was firewood for the lime kilns and home uses, very little was exported.

Timber harvesting is now at the lowest ebb since its inception. Primary reasons for decline of the industry are:

1. Lack of mainland markets and the low prices offered.

2. A depletion in the supply of local timber.

It can be expected that a significant portion of the woodland areas will be used for homes, for recreation, or put to other uses. With so high a percentage of land classified for forest use it is apparent that serious attention should be given to conserving and maintaining timber resources on a sustained yield basis. Since 1952 local participation in the ACP program of ASCS on woodland improvement practices by private woodland owners has amounted to only $511.00 on a cost sharing basis involving seven ownerships for a total of 23 acres. The reasons for this lack of participation can only be conjectural. Some of the causes may be:

1. Lack of publicity and emphasis.

2. Unattractively low cost sharing payments.

3. Too stringent regulations for qualifying.

4. Lack of sufficient appropriations earmarked for woodland improvement.

The importance of woodlands for erosion control, watershed areas, underground water sufficiency, recreation and wildlife as well as a commercially valuable asset to the County, is in need of renewed emphasis.

II. District Problems

1. Water Shortages - The lack of water, both surface and subsurface, will grow increasingly acute as further sub-development on waterfront and view property continues.

2. Inadequate Drainage - Land Shaping

   Brush control on existing open drains. Land shaping to promote surface drainage and eliminate wet pockets. Rolling benchlands and bottomlands require internal drainage.

3. Soil Structure - Fall and winter grazing contributes to compaction. Pasture and hayland go into fall and winter with little growth for erosion protection.

4. Wind Erosion - Approximately 92 acres of active dune land exists on San Juan Island and 32 acres on Lopez Island.

5. Wildlife - Rabbit and deer damage to agricultural and woodland areas is extensive due to over-population of these species.

6. Gully and Sheet Erosion - This condition, though moderate, still requires emphasis.

7. Uneconomic Farm Units - The livestock grazing or grassland agriculture on relatively small holdings dictates a need for off-farm employment.

8. Drainage Sewage Hazards - Waterfront residences face special problems from existing and future subdivision of elevated view property.

9. Low Capability Lands - Income is low from present use. Local research needed to determine possible returns and other benefits to be derived by diverting to woodlands.

10. Machinery Lack - Small land holdings suffer through lack of common conservation applications - Seedbed preparation, planting, fertilizing, weed control.

11. Poisonous and Noxious Weed Eradication - This problem requires the utmost in cooperative relations.

12. Shore Erosion and Channel Sedimentation.

13. Recreational Development - Needed on private, County, State and Federal lands. Supply inadequate for peak seasonal demands.

14. Grassland or Rangeland - On San Juan Island condition of range is fair; on Spieden Island, condition poor. Approximately 1,397 acres involved county wide.

15. Family Farm and Part-Time Farm Ownership Retention - Problems regarding strengthening of these ownerships so that people who wish to remain in the country or rural areas may do so.

16. Woodland Problems - Non-stocking, brush and hardwood competition for seedling conifers, premature clear-cutting of second growth conifer stands. General woodland management practices.

III. Short and Long Range General Objectives:

Originally the Soil and Water Conservation Districts of San Juan County were formed to exercise local self-government in the solution of the conservation problems of the individual islands concerned. The consolidation of the previous Districts into a County-wide organization was deemed necessary to help strengthen this original intent. Through a unified effort it is hoped to more effectively utilize County, State, Federal, and any other assistance which may become available through consolidated cooperative effort. The following is a brief outline of District goals:

1. Continue to assist landowners and users of land to develop and implement basic conservation plans as the primary step for land use and treatment measures.

2. Encourage the construction of all types of water retention structures. Seek means in conjunction with the San Juan County ASCS Committee to increase funds for these long-lived water saving structures.

3. Seek means consistent with the desires of property owners to attain a wildlife balance. Promote hunting clubs. Use educational media to appraise hunters of their responsibilities to landowners.

4. Stress use of the recently published San Juan County soil survey report by county planners, residential subdivision locations, agricultural zoning and other land use location problems.

5. Investigate possibilities for local field-size trial plantings on duneland and unstable grasslands to control wind erosion.

6. Encourage establishment of a custom farm machinery enterprise to make conservation means available to small landholders at a published hourly rate.

7. Promote the strengthening of the existing policy of taxing lands used for agricultural purposes that these lands be taxed as such and not at a higher sub-division potential.

8. Assist the local RAD program and implementation of the O.E.D.P., particularly regarding efforts to attract small industry to the area to help provide jobs for part-time farmers.

9. Provide technical assistance available to help those landowners desiring and capable of shifting enterprises to part-time or full-time recreational uses.

10. Investigate and publicize work being done in other areas to control shoreline erosion and channel sedimentation.

11. Re-emphasize the importance of woodlands for erosion control, watershed areas, underground water sufficiency, recreation and wildlife, as well as a commercially valuable asset.

12. The district appreciates the need for a continued educational promotional program among landowners, operators, and all segments of the population. News articles, tours, demonstrations, slides, motion pictures and talks will be used to attain the desired accomplishments.

This program was adopted and submitted through appropriate channels for suggested inclusion as a supplement to the San Juan County Overall Economic Development Program by the governing body of the San Juan County Soil and Water Conservation District at a meeting held October 2nd, 1964.

APPROVED:

s/ Elwyn Ackley
Secretary, District Governing Body

s/Russell Hawkins
Chairman, San Juan County
Soil and Water Conservation District

Eastsound, Wash.
Oct. 8, 1964

Water Resources Development
Bureau of Governmental Research and Services
3935 University Way, N.E.
Seattle, Wash.

Gentlemen:

We, The Eastsound Water Users' Association, provide water for 120 members in Eastsound, Washington, on Orcas Island. It may be necessary to expand our project in the next few years. With this in mind, we are inclosing an engineering report with this letter. We should like to be included in any long range plan or survey to be conducted in the future.

Very truly yours,

Helen Lobermeier
Sec., Eastsound Water Users' Ass'n.

Exhibit 4

CITY OF SEATTLE
DEPARTMENT
OF LIGHTING

CITY LIGHT BUILDING • 1015 THIRD AVENUE • SEATTLE, WASHINGTON 98104 • Telephone MAin 3-7600

JOHN M. NELSON, Superintendent
MEMBER, BOARD OF PUBLIC WORKS

October 8, 1964

Mr. Robert H. Gedney, Co-Chairman
Task Force For Comprehensive Study
Puget Sound and Adjacent Waters
1519 Alaskan Way
Seattle, Washington 98134

Dear Sir:

We take notice of the public hearings scheduled for the month of October, 1964. Our Mr. Herbert V. Strandberg, Chief Engineer, will attend the meeting scheduled for 10:00 a.m., October 12, at the Elks Lodge in Anacortes.

We have an interest in future hydroelectric developments on the Skagit River and its tributaries in the Skagit and Whatcom counties. Recent developments in the northwest power supply program have, on the basis of current load forecasts, pushed the construction of these projects into the future but still within the period of your study, the exact timing being dependent upon the future industrial development and electric energy requirements of the region.

These projects are identified as follows:

Ross Dam

Raise Ross Dam 125 feet from Elev. 1600 to Elev. 1725 (water surface), which will increase the mean effective head of the Ross plant 150 feet and increase the plant capability at time of system peak 60,000 kw and provide 42,000 kw average energy.

Thunder Creek Project

Construct a dam on Thunder Creek below the mouth of McAllister Creek which will provide 100,000 acre-feet storage in a reservoir about four miles long. Waters of Thunder Creek will be conducted through nine miles of tunnel and penstock to a powerhouse near Newhalem in which will be installed from 100,000 kw to 140,000 kw of generating capacity under a gross head of 1,500 feet.

Divert Stetattle Creek

This project contemplates the diversion of Stetattle Creek into Diablo reservoir by the construction of a 1.9-mile tunnel to utilize its flow of 120 cfs through the Diablo plant, thereby increasing the output of that plant by 3,300 average kilowatts.

Newhalem Creek

Increase the capacity of the Newhalem plant to develop the full economic potential of Newhalem Creek. This plant was originally constructed to supply construction power. The increase in installed capacity would be about 4,170 kw.

Copper Creek

This project is on the main stem of the Skagit River above Bacon Creek in Skagit County. The project contemplates the construction of an earthfill dam which will provide 167-foot gross head and back water to the Gorge plant at Newhalem. It would have an installed capacity of 80,000 kw to 100,000 kw. This project is currently under study to determine its construction and financial feasibility.

We believe that all of the projects listed above will prove financially feasible when compared with future alternate sources of capacity and energy. We will be glad to furnish such data as you may require for your studies with respect to these projects.

Yours very truly,

John M. Nelson

JOHN M. NELSON
Superintendent of Lighting

HVS:mm

cc: Mr. John A. Richardson
Co-Chairman
Olympia, Washington

Mr. Truman Price
Division of Power Resources
Olympia, Washington

PUBLIC UTILITY DISTRICT No. 1 OF
SKAGIT COUNTY
Mount Vernon, Washington

TESTIMONY GIVEN BEFORE THE TASK FORCE FOR
COMPREHENSIVE STUDY OF PUGET SOUND AND
ADJACENT WATERS, ANACORTES, WASHINGTON,
OCTOBER 12, 1964.

My name is Fred J. Ovenell, Manager of Public Utility District No. 1 of Skagit County, Washington. We operate a water system serving close to 8,200 domestic, commercial and industrial customers residing in Central and Western Skagit County. Outside of the 250 customers on Fidalgo Island, about 5,000 customers are located within the cities of Mount Vernon, Burlington and Sedro-Woolley. The balance of them (nearly 3,000) are spread over the area from Allen on the north to the south end of Fir Island, and from LaConner and Bayview on the west to nearly 3 miles east of Sedro-Woolley on the east. This extensive distribution system involves around 275 miles of mains.

Among the larger industrial customers dependent upon the District's water facilities are the Skagit Corporation in Sedro-Woolley, fruit, vegetable and milk processing plants in Mount Vernon, Burlington and Avon, along with many smaller establishments throughout the area.

Since the time of giving information in support of the flood control studies at the hearing conducted by the Corps of Engineers in Mount Vernon, major transmission facilities costing about one million dollars have been installed from the District's headwaters east of Clear Lake into Mount Vernon. A current construction program will more than double the capacity of impounding facilities at the headwaters and is nearing completion at this time. Such facilities should meet the needs of the normal growth of water demands in our service area for about ten years.

In addition to the gravity supplies referred to, the District has a four to five million gallon per day Ranney Well near Mount Vernon, a conventional 1 million gallon per day well near Sedro-Woolley as well as a 2 million gallon per day filtration plant located in the former city. These facilities are used primarily as standby and supplemental sources of water.

As a water utility whose principal service area is within the flood plain of the Skagit River, and whose ~~main~~ supply mains must needs pass through this lowland area, we strongly support the continuation of studies designed to determine the most effective and economical methods of providing the maximum

practical protection from the recurrence of the devastating floods which have wrought so much havoc in former years and which still threaten our county. With the continuous growth in population and property installations being experienced, the value of both of these in the exposed area becomes sizably greater each year. Until reasonably controlled, the flood threat in Skagit Valley remains our No. 1 hazard. It is to be hoped that a feasible plan, acceptable to the great majority of the affected citizenry, may be developed.

Certainly a study of the Skagit River Basin on a comprehensive basis is a desirable step forward. As a resource with great potential as a valuable asset to our county, the compilation of data is essential to its intelligent and efficient use in the public interest. While the economy of the county is considered relatively sound, the addition of desirable types of industry to widen the tax base and provide greater year-around payrolls would greatly improve the business climate by supplying increased opportunities for its citizens. It is hoped that the benefits to be derived from the fuller ultimate use of the Skagit River will become a resource which will contribute to the sound economic growth of this county and such benefits not be siphoned off to other areas already having a more balanced economy.

Skagit County is rich in its water resources. If these can be carefully studied so as to reveal the best and highest uses for the purpose of benefiting the greatest number of our people in Skagit County; an important service will have been rendered in setting up valuable guidelines to the orderly development of this asset. By statute, a public utility district is set up "to conserve the water and power resources of the State of Washington for the benefit of the people thereof and to supply public utility service, including water and electricity for all uses". The Skagit district, formed by vote of the people here in 1936, sensed the greatest need of our county to be in the field of an adequate water supply and distribution system. Three years after its formation, the District had negotiated the purchase of three separate water systems in the cities mentioned, which system with their 3,000 customers became the nucleus of the expanded system which we now have.

During the 25 years of operation the approximately 270% growth in customers represents an increase in population served from 10,000 to 25,000. If the same rate of growth occurs during the next 25 years the population will reach 70,000. Gallonage needed to meet maximum summer usage has increased from about 3 million gallons per day to over 10 million gallons per day during this period.

In view of the growth experienced and the potential needs based upon

what are probably conservative projections, the Utility District has placed emphasis upon long-range planning for many years. Copies of these plans have been made available to the appropriate governmental agencies.

Basically, these studies make it apparent that the best water and the most economical source of supply in the long run can be obtained by a gravity system using surface supplies from the nearby mountain streams. Sizable strides in the development of such a system have already been taken in accordance with the long-range plan, some of which have been mentioned. It is interesting to note that most communities in the coastal areas of the Pacific Northwest have found such supplies to be best from the standpoint of quality and cost. Among these are Vancouver, B.C., Bellingham, Everett, Seattle, Tacoma, Portland and many others.

In all cases the sizable investment in longer transmission lines is more than offset by the savings realized by the elimination of treatment costs required where local supplies are used. Materials now available and used in pipeline installations have a life expectancy far in excess of the normal period during which their installation is financed, thus producing outstanding economies in water production costs once the bonds are paid off.

While notable advances have been made in the science of water purification, our public health authorities are not at all sure that modern treatment facilities are efficacious in the removal of certain viruses. In fact, the evidence is substantial that the infectious hepatitis virus will survive for weeks under conditions normally considered unfavorable for survival and require much heavier applications of chlorine than do the bacteria for which water is normally treated. This is the principal reason why water purveyors as well as public health authorities who carry a high responsibility for such matters take a dim view of treating polluted waters for public supplies when relatively uncontaminated sources are available. In addition to the safeguards involved there are obvious aesthetic and psychological considerations favoring the use of water which has been protected at its source. Even where treatment is resorted to there are the possibilities of mechanical failure of the apparatus which haunts the water industry wherever it is dependent upon the process.

For these reasons, we believe the public interest requires the allocation of a very small fraction of the watershed for the purpose of supplying a first quality potable water to the people of the county. The area designated for this purpose in the attached resolution represents a scant 2% of the county and would remain in timber production as a compatible use along with that of water

production. Plans call for added storage facilities beyond that currently developed and being constructed so that a high degree of efficiency in the use of this source will result. Since the estimated yield of water supply will approximate three times the present peak usage it can be seen that such provision will meet the projected water needs of the county for a long time.

It is to be hoped that your study will give full and favorable consideration to the future requirements of our county with respect to its water supply and that not only the quantitative but also the qualitative needs be provided in your much needed evaluation of this resource. We appreciate the opportunity to present this information to you.

Page 4 of 4,
Exhibit 6

COPY

PUBLIC UTILITY DISTRICT NO. 1
SKAGIT COUNTY, WASHINGTON

RESOLUTION NO. 634

A Resolution of the Board of Commissioners of Public Utility District No. 1, Skagit County, Washington, declaring and establishing two permanent watersheds; one for the present water supply requirements of the residents of Skagit County and one for their future requirements and setting forth the boundaries of each watershed.

WHEREAS, Public Utility District No. 1, Skagit County, Washington is presently utilizing water flowing in the Cultus Mountain Watershed and it is necessary to formally establish a watershed with definite boundaries to promote the orderly and proper use of the property within the watershed for the preservation of the domestic water supply of Skagit County, and

WHEREAS, Public Utility District No. 1 of Skagit County, Washington, will require the water flowing in the Day Creek Watershed to service the future water requirements of the residents of Skagit County and it is necessary to formally establish a watershed with definite boundaries to promote the orderly and proper use of the property within the watershed and to preserve the future domestic water supply of Skagit County.

BE IT RESOLVED BY THE BOARD OF COMMISSIONERS OF PUBLIC UTILITY DISTRICT NO. 1, SKAGIT COUNTY, WASHINGTON, as follows:

Section 1: The Public Utility District No. 1, Skagit County, Washington, hereby establishes as a watershed for the present domestic water use of its customers the real property described in

COPY

Schedule "A" attached hereto and made a part hereof, which henceforth shall be called the Public Utility District Cultus Mountain Watershed.

Section 2: That Public Utility District No. 1, Skagit County, Washington hereby establishes as a watershed for future domestic water use of its customers the real property described in Schedule B, attached hereto and hereby made a part of this resolution, which shall henceforth be called Public Utility District Day Creek Watershed.

ADOPTED by the Board of Commissioners of Public Utility District No. 1, Skagit County, Washington, at a regular meeting thereof, this 7th day of November 1960, the following Commissioners being present and voting.

Harvey Benson (signed)
President and Commissioner

Herman I. Hanson (signed)
Commissioner

ATTEST:

Ted A. Lloyd (signed)
Secretary and Commissioner

CERTIFICATE

STATE OF WASHINGTON)
) ss
COUNTY OF SKAGIT)

I, TED A. LLOYD, Secretary of the Board of Commissioners of Public Utility District No. 1 of Skagit County, Washington, do hereby certify that the attached Resolution, being Resolution No. 634, is a true and correct copy of the original Resolution adopted on the 7th day of November 1960, as said Resolution appears on the Minute Book of the District.

DATED this 7th day of November, 1960

Ted A. Lloyd
Secretary of the Board of Commissioners
of Public Utility District No. 1 of
Skagit County, Washington

Incl 2 to
Exhibit 6

Schedule "A"

"WATERSHED NOW IN USE"

TOWNSHIP 34 NORTH, RANGE 5 EAST, W.M.

Section	Description	Record owner
2	South half of the SW¼	State Forest Board
2	NE¼ of the SW¼; SE¼ and SW¼ of the NE¼	Puget Sound Pulp and Timber Co., a Delaware corporation
3	Government lots 5, and 6; SE¼ of the NW¼; and NE¼ of the SW¼	State Forest Board
3	Government lot 7 and the SE¼ of the SW¼	Puget Sound Pulp and Timber Co., a Delaware corporation
4	SE¼ of the NE¼; east half of the SE¼	State Forest Board
9	East half of the SE¼	Puget Sound Pulp and Timber Co.
9	NE¼; NW¼; SW¼, EXCEPT the NW¼ of the NW¼ thereof; west half of the SE¼	State Forest Board
10	ALL	Puget Sound Pulp and Timber Co.
11	ALL	Puget Sound Pulp and Timber Co.
12	ALL	Puget Sound Pulp and Timber Co.
13	NE¼; NW¼; south half of the SE¼ and south half of the SW¼	Puget Sound Pulp and Timber Co.
13	North half of the SE¼ and the north half of the SW¼	State Forest Board
14	ALL	Puget Sound Pulp and Timber Co.
15	ALL	Puget Sound Pulp and Timber Co.
16	NW¼ of the NW¼	Public Utility District No. 1
16	Section 16, EXCEPT the NW¼ of the NW¼	State of Washington (School land)

Township 34 North, Range 5 East, W.M. (Continued)

Section	Description	Record owner
21	SE¼ of the NE¼ and NE¼ of the SE¼	Puget Sound Pulp and Timber Co.
22	Government lot 2; SE¼ of the NW¼; and all of the NE¼	Puget Sound Pulp and Timber Co.
22	The south half of section 22	Simpson Logging Company
23	SW¼ of the NW¼; west half of the SW¼; SE¼ of the SW¼	Simpson Logging Company
23	NE¼; SE¼; north half of the NW¼; NE¼ of the SW¼ and SE¼ of the NW¼	Puget Sound Pulp and Timber Company
24	All	State Forest Board
25	North half of the NW¼; west half of the SW¼	Simpson Logging Company
25	South half of the NW¼; east half of the SW¼	Scott Paper Company
[illegible]	East half of the NE¼; east half of the SE¼	Puget Sound Pulp and Timber Company
25	West half of the NE¼; west half of the SE¼	State of Washington
26	All of section 26, EXCEPT the SW¼ of the NW¼	Simpson Logging Company
26	SW¼ of the NW¼	State Forest Board
27	Government lot 1; east half of the NW¼; NE¼ and the east half of the SE¼	Simpson Logging Company
35	NW¼ of the NW¼; NE¼ of the NE¼	Simpson Logging Company
35	NE¼ of the NW¼; NW¼ of the NE¼	Puget Sound Pulp and Timber Company
36	ALL	State of Washington (School land)

TOWNSHIP 34 NORTH, RANGE 6 EAST, W.M.

	Government lots 1, 2, 3 and 4; east half of the NW¼; east half of the SW¼ and NW¼ of the SE¼	Puget Sound Pulp and Timber Company

Township 34 North, Range [illegible] East, W.M. ([illegible])

Section	Description	Record Owner
19	Government lots 1, 2, 3 and 4; east half of the NW$\frac{1}{4}$; east half of the SW$\frac{1}{4}$; west half of the NE$\frac{1}{4}$; west half of the SE$\frac{1}{4}$	Puget Sound Pulp and Timber Company
30	Government lots 1, 2, 3 and 4; east half of the NW$\frac{1}{4}$ and the NE$\frac{1}{4}$ of the SW$\frac{1}{4}$	Puget Sound Pulp and Timber Company

Schedule "B"

"PROPOSED FUTURE WATERS"

TOWNSHIP 34 NORTH, RANGE 6 EAST, W.M.

Section	Description	Record owner
1	SW¼	Scott Paper Company
1	SE¼	Puget Sound Pulp and Timber Company
7	SE¼ of the SE¼	Puget Sound Pulp and Timber Company
8	South half of the SW¼ and NW¼ of the SE¼	Puget Sound Pulp and Timber Company
8	South half of the SE¼ and NE¼ of the SE¼	Scott Paper Company
9	NW¼ of the SW¼; east half of the SW¼; all SE¼	Weyerhaeuser Timber Company
9	SW¼ of the SW¼	Scott Paper Company
10	South half	Weyerhaeuser Timber Company
10	South half of the NE¼	Puget Sound Pulp and Timber Company
11	SW¼	Weyerhaeuser Timber Company
11	NW¼ and the east half of section 11	Puget Sound Pulp and Timber Company
12	All	Puget Sound Pulp and Timber Company
13	ALL	Puget Sound Pulp and Timber Company
14	NE¼	Puget Sound Pulp and Timber Company
14	Section 14, EXCEPT the NE¼ thereof	Weyerhaeuser Timber Company
15	ALL	Weyerhaeuser Timber Company
16	East half; west half of the west half	Scott Paper Company

Township 34 North, Range [illegible] East, W.M. (Continued)

Section	Description	Record Owner
16	East half of the west half	State of Washington (School land)
17	West half	Puget Sound Pulp and Timber Company
17	East half	Scott Paper Company
18	East half; east half of the SW$\frac{1}{4}$	Puget Sound Pulp and Timber Company
19	East half; NE$\frac{1}{4}$ of the NW$\frac{1}{4}$; SE$\frac{1}{4}$ of the SW$\frac{1}{4}$	Puget Sound Pulp and Timber Company
20	ALL	Scott Paper Company
21	ALL	Puget Sound Pulp and Timber Company
22	ALL	Puget Sound Pulp and Timber Company
23	ALL	Puget Sound Pulp and Timber Company
24	West half; NE$\frac{1}{4}$	Puget Sound Pulp and Timber Company
24	SE$\frac{1}{4}$	Weyerhaeuser Timber Company
25	ALL	Puget Sound Pulp and Timber Company
26	South half of the SW$\frac{1}{4}$; SW$\frac{1}{4}$ of the SE$\frac{1}{4}$; north half of the NW$\frac{1}{4}$; NE$\frac{1}{4}$ of the NW$\frac{1}{4}$	Puget Sound Pulp and Timber Company
26	NE$\frac{1}{4}$; east half of the SE$\frac{1}{4}$; NW$\frac{1}{4}$ of the SE$\frac{1}{4}$; north half of the SW$\frac{1}{4}$; SE$\frac{1}{4}$ of the NW$\frac{1}{4}$	Weyerhaeuser Timber Company
27	ALL	Puget Sound Pulp and Timber Company
28	ALL	Puget Sound Pulp and Timber Company
29	NW$\frac{1}{4}$; SW$\frac{1}{4}$; SE$\frac{1}{4}$	Puget Sound Pulp and Timber Company

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Township 34 North, Range 6 East, W.M. (Continued)

Section	Description	Record Owner
29	NE¼	Nettleton Timber Company
30	East half; NW¼; east half of the SW¼	Puget Sound Pulp and Timber Company
31	North half of the NE¼	Puget Sound Pulp and Timber Company
32	North half of the NE¼; north half of the NW¼	Puget Sound Pulp and Timber Company
33	North half of the NE¼; north half of the NW¼	Puget Sound Pulp and Timber Company
34	North half of the NW¼; NE¼	Puget Sound Pulp and Timber Company
35	NW¼; NE¼ of the SW¼; west half of the NE¼; north half of the SE¼ and SE¼ of the SE¼	Puget Sound Pulp and Timber Company
35	East half of the NE¼	Weyerhaeuser Timber Company
36	ALL	State of Washington (School land)

TOWNSHIP 34 NORTH, RANGE 7 EAST, W.M.

7	Government lots 3 and 4 and the SE¼ of the SW¼	United States of America
18	Government lots 1, 2, 3 and 4; east half of the NW¼; east half of the SW¼; west half of the SE¼; SW¼ of the NE¼; SE¼ of the SE¼	United States of America
19	ALL	United States of America
20	West half of the SW¼; west half of the NW¼	United States of America
28	West half of the SW¼; SW¼ of the NW¼	United States of America
29	ALL	United States of America
30	ALL	Puget Sound Pulp and Timber Company

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Township 34 North, Range 7 East, W.M. (Continued)

Section	Description	Record Owner
31	Government lots 1 to 8 inclusive; SE$\frac{1}{4}$ of the NW$\frac{1}{4}$; NE$\frac{1}{4}$ of the SW$\frac{1}{4}$; NE$\frac{1}{4}$ of NE$\frac{1}{4}$; south half of the NE$\frac{1}{4}$; north half of the SE$\frac{1}{4}$	Puget Sound Pulp and Timber Company
31	Government lot 9	State of Washington (School land)
32	South half; north half of the NW$\frac{1}{4}$; NW$\frac{1}{4}$ of the NE$\frac{1}{4}$	United States of America
32	South half of the north half; NE$\frac{1}{4}$ of the NE$\frac{1}{4}$	Puget Sound Pulp and Timber Company
33	West half	United States of America

TOWNSHIP 33 NORTH, RANGE 7 EAST, W.M.

4	Government lot 4	Puget Sound Pulp and Timber Company
5	North half of the NW$\frac{1}{4}$; north half of the NE$\frac{1}{4}$	Puget Sound Pulp and Timber Company
6	North half of the NW$\frac{1}{4}$; north half of the NE$\frac{1}{4}$	State of Washington (School lands)

STATEMENT ON BEHALF OF RECREATION FOR WHATCOM COUNTY FOR THE COMPREHENSIVE WATER RESOURCE STUDY: PUGET SOUND AND ADJACENT WATERS*

Area 1, October 12, 1964, Anacortes, Washington

Members of the Task Force for the Comprehensive Water Resource Study, Puget Sound and Adjacent Waters:

My name is Herbert G. Kariel. I am Assistant Professor of Geography at Western Washington State College, member of the Executive Board of the Bellingham Mountain Rescue Council, Vice Chairman and past Chairman of the Conservation Committee of the Pacific Northwest Chapter, Sierra Club, have worked for the U.S. Forest Service and the National Park Service and have been interested in all types of outdoor recreation for many years. I have been asked to represent recreational interests in Whatcom County and take this opportunity to thank you for permitting me to present some of these wishes and points of view.

It is gratifying to note that the importance of including recreation has been explicitly stated in the guidelines established for this study. This is in keeping with long-standing wishes of recreation-minded individuals and students of recreation. It also recognizes the increasing importance of this sector of the economy and the need and desire of people for outdoor recreation. It appears to be realized that, since major benefits accrue to the population from outdoor water-oriented recreation, major consideration should be given to it in planning for the water resources of this area.

That most outdoor recreation is water oriented has been established by many studies, of which the report of the ORRRC is perhaps the best known. These studies have documented the fact that the supply of areas available for outdoor recreation are decreasing at the same time that the demand for such recreation is increasing. In Whatcom County, for example, Bloedel-Donovan City Park and Larabee State Park show an increas in use. We as individuals can confirm the increase suggested by these statistics when visiting these and other recreation sites. Less land and fewer sites become available as formerly vacant land around lakes or on beaches is developed, homes built and "No Trespassing" signs are posted. With decreasing site availability, remaining

* This statement is made at the request of Mr. Harry Fulton, County Planner, Whatcom County, Washington. Altho various individuals concerned with water-oriented recreation in the county have been consulted, the writer accepts sole responsibility for the statement and for recommendations made therein.

sites get more usage. Sine some land owners object to heavy recreational use of their property, more land is posted, resulting in a further reduction of available sites and an increase in the use of public and private lands.

It is significant to note that specific mention is made in the guidelines for the study of the water resources of this area of three objectives: a) development, b) preservation and c) well-being of people. It seems to me that most of use are in agreement with these three broad objectives. In speaking on behalf of recreation at a hearing for development, I should like to take the opportunity to point out that altho recreation interests are indeed often served by development, that they are also frequently served, sometimes more completely, both quantitatively and qualitatively, by preservation.

When planning for water uses under a multiple use concept, as we are doing here, the benefits to which a particular project is meant to contribute will often include recreation. It would therefore be well to assess recreational benefits and needs for people of this area. In Whatcom County, outdoor water-oriented recreation presently includes fishing of various sorts, i.e. stream, lake, ocean and beach fishing; water skiing; boating in both fresh and salt water; skin diving; river running; simming; clamming, relaxing, hiking and camping along streams and beaches; and skiing and mountain climbing on another form of water.

This means that places where these recreational activities can be engaged in by the people of this area are needed and should be made available. Locations satisfying these needs should possess certain site as well as certain water quality characteristics. Water should be unpolluted. Site characteristics are more difficult to specify, altho the following would certainly be included.

First, we need streams. Some of these should be left in their wild state without developments along their banks. This type of stream or stream segment is of the type envisioned under the Wild River concept of the Bureau of Outdoor Recreation. Some camping facilities and input sites for foldboats might be developed along other streams.

Secondly, lakes and reservoirs are important recreation sites. Sometimes lakes and reservoirs are considered to be synonymous, but for purposes of

recreation a distinction needs to be made between them. For optimum recreational use the body of water needs to be maintained at a constant level. Fluctuating reservoirs are far from optimum for several of the water-oriented recreational uses listed. Suitable swimming, camping and boat launching sites should be developed according to need.

Thirdly, many salt water locations are desirable for recreation. For these sites, as for the others mentioned, as many shorelines as possible should be retained in their wild state. Public access to wild shorelines is almost totally lacking and is needed. For this type of recreation somewhat greater development, as in the form of boat havens, may be desirable. Such provisions are being made in many new state-owned areas in the San Juans.

In summary, the importance of leaving the natural scene in its pristine state is stressed, not to the exclusion of development, but as an alternative to it in certain selected areas. It is far easier to develop an area later than to reverse the process of development once it is begun.

In addition to having the sites, whether in their natural setting or developed, the problem of access needs to be faced; without access a site cannot be used. Unlimited access to all sites, on the other hand, is equally undesirable. Fishing is at times best in areas with little access. Similarly, wilderness experiences can only be obtained where there is an absence of crowded conditions associated with mass recreation. One can even have too many power boats and water skiers on a lake.

Let us next turn to the dual problem of "How much to plan for whom?" We will need to know how many people will be using the resources for outdoor water-oriented recreation. This means that in planning it is necessary not only to recognize the total number of people constituting the recreational demand, but also to distinguish between occupational, age and sex groups, for example, so as to permit estimates of the total demand for different kinds of recreational facilities.

Knowledge of the location of these people is important, because there is inverse relationship between home residence and distance travelled, i.e. most recreation is done close to home. But, at the same time, we know that with increased mobility and leisure time people travel further. Hence, if

there are many people in an area the demand for recreation is greater, and more recreation facilities are needed near large population centers than near small ones. Also, depending on the sites themselves, people will travel farther to "desirable" ones than to "less desirable" ones. In planning for this area of the Puget Sound and adjacent waters, i.e. that area considered at this hearing, recognition must therefore be given to the population centers of Washington, especially the Seattle metropolitan area and to those of British Columbia, especially the Vancouver metropolitan area.

If the demand generated by the population of both of these metropolitan areas is not considered, then little, if anything, will remain for the population of Whatcom County. Checks at United States-Canadian border crossings and U.S. Forest Service visitor counts will, I believe, support the contention that the number of visitors from these metropolitan centers is increasing. This means that if a boat haven or a water-oriented recreation site in a park, for example, is established, sufficient facilities need to be incorporated to handle the present and projected demand. For this area, consideration should be given our northern neighbors. Justification for considering the Canadian demand stems not only from the fact that if we don't we may be crowded, but also from the financial benefits which accrue to this area from the expenditure of funds or "tourist dollars."

Recommendations:

For the reasons stated above, it is maintained that more water-oriented recreation sites should be established. It is felt that altho a complete inventory of specific proposals of particular sites for development can not be made at this time, some guidelines can be set forth and a few areas or sites which should be developed can be specified.

1) The concepts of zones of use intensity and zones of site intensity are suggested as useful guidelines. The concept of zone of use intensity means that there are areas of high intensity use at the center of particular sites and areas of less intense use with distance from the center, or densest use. The concept of zones of site intensity means that there should be a a greater number of sites near population centers and fewer sites away from such centers. For this area, the location of both Seattle and Vancouver,B.C. as well as other cities needs to be recognized as relevant. By combining these

two concepts, one can arrive at the notions that areas removed from population centers should be less developed than areas near such centers and some areas of less development are to be found even near population centers. In this way recognition is given for the need for developed sites as well as for undeveloped ones.

2) The policy of increased public land acquisition is supported. It is suggested that all of Point Francis be acquired and developed as a boat harbor with marina and related facilities. Additional frontage on Lake Whatcom and Lake Samish should be obtained for high intensity water-oriented recreation. As many additional sites should be obtained as are found necessary from this water resource study. Land acquisition should proceed as rapidly as possible.

3) The B.O.R. study of the Skagit River is supported. It is suggested that segments of streams other than the Skagit River should also be left undeveloped and, altho perhaps not qualifying completely as a Wild River under the Wild River concept, be administered in keeping with this concept by local, ~~or~~ state ~~xxxxxxxx~~ or federal agencies.

4) Altho no final recommendations for reservoirs in this area are made at this time, the whole notion of the need for a reservoir for water-oriented recreation in this area of the state is seriously questioned. While it is possible that a dam on the Nooksack River would result in benefits for water-oriented recreation, it is essential to consider detrimental side effects or costs which might result from the presence of a dam and a fluctuating reservoir.

5) Continued effort to obtain unpolluted water is supported. The question of the effect of poisonous waste disposal from the Intalco plant near Ferndale on the Strait of Georgia waters and adjacent beaches has not yet been settled satisfactorily. Altho 80-90% of the air-borne poisons are supposedly to be removed, the process by which this is to be accomplished uses fresh water which will be disposed of in the Strait of Georgia.

6) Consultation of non-governmental studies for water development is supported. Specific mention is made of one such report based on a study of water and economic development of the Meramec Basin in Missouri. Insofar as the recommendations arrived at in that report are applicable to the area presently under study this report should be consulted. The over-all approach

appears to be relevant, as well as the section on Administration for Recreation.

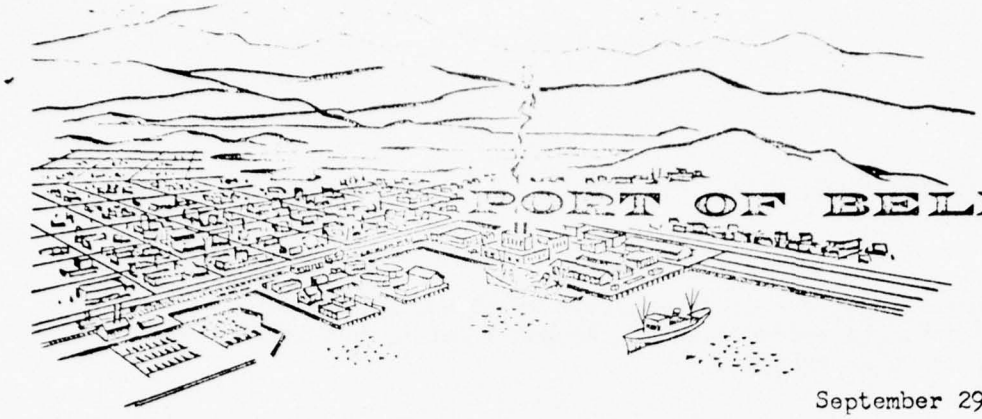
It is believed that data to support the statements made are available through the courtesy of county and city planning agencies, the Washington State Department of Natural Resources, Washington State Census Board, U.S. Bureau of the Census, U.S. Forest Service and the Border Patrol of the U.S. Department of Justice.

It is recognized that the material presented is general and fragmentary. We hope that it will, nevertheless, provide you with some of the information desired. Further information can, I believe, be obtained from individuals and public agencies as you see need for it. Thank you for giving us the opportunity to present this statement.

Bibliography

Ullman, Edward L., Ronald R. Boyce and Donald J. Volk, THE MERAMEC BASIN: WATER AND ECONOMIC DEVELOPMENT, Report of The Meramec Basin Research Project, Kirkwood, Mo.: Meramec Basin Corporation, 1962. (114 W. Madison, Kirkwood, Mo.)

7) Surveys and studies for recreational needs and supply are supported. In particular, a survey of salt water and shore line availability for water-oriented recreation is urged. Such a survey would fill the gap in a survey made by the U.S. Department of Interior along the Pacific Coast.



PORT OF BELLINGHAM

COMMISSIONERS
Peter Zuanich President
Robert Hyldahl Vice Pres.
T. B. Asmundson Secretary
George Livesey Jr., Port Attorney

P. O. Box 728
Bellingham, Washington, 98225
Administration Office — Telephone 733-5410
Port Dock Office — Telephone 734-2511

STAFF
T. J. Glenn Manager
E. A. Seaton Traffic Manager
C. H. Erlandson Auditor
Theo P. Scholz Engineer

September 29, 1964

U. S. Army Engineer District, Seattle
1519 Alaskan Way South
Seattle, Washington 98134

ATTENTION: Robert H. Gedney
Chief, Basin Planning Branch

SUBJECT: COMPREHENSIVE WATER RESOURCE STUDY OF NOOKSACK BASIN

Gentlemen:

The purpose of this letter is to point out the need, from the viewpoint of the Port of Bellingham, for certain water resource development projects in Whatcom County, specifically the Nooksack River Basin.

The Port of Bellingham is a municipal corporation under the laws of the State of Washington and has port district boundaries co-extensive with Whatcom County. In addition to such functions as industrial development, management of extensive lease properties and operations of Whatcom County's one municipal airport, we also operate a deep sea shipping terminal facility and two boat harbors, one in Blaine, the other in Bellingham. The latter two functions are directly affected by certain aspects of water resource development in this area, namely recreation and navigation.

Discharge of silt from the Nooksack River makes necessary a continuing program of maintenance dredging of navigable waterways in Bellingham Bay. In 1964 the Port of Bellingham budgeted $12,000 for this purpose, and $11,000 for 1965. These are typical annual costs and are in addition to such funds spent by the U. S. Corps of Engineers to maintain depths of approved projects in our district.

If siltation from the Nooksack River could be eliminated or substantially reduced by flood control, land reclamation and other similar projects upstream, we would be able to turn at least 90% of our annual maintenance dredging money to other, more constructive purposes.

To date we have performed only minor maintenance dredging in the Bellingham Boat Harbor, known as Squalicum Boat Harbor. However, we note the presence of shoaling which in time will require dredging.

We are aware of numerous other benefits which would come to our community from water resource projects in the Nooksack Basin, but leave the enumeration of these to other agencies.

Very truly yours,

PORT OF BELLINGHAM

T. J. Glenn

T. J. Glenn
Manager

TJG:mr

DIVERSION OF THE LOWER NOOKSACK RIVER

Don J. Easterbrook
Assistant Professor of Geology
Department of Geology
W.W.S.C., Bellingham, Washington

INTRODUCTION

The purpose of this proposal is to point out several features of the Nooksack River which may in the future critically affect the economy of Bellingham and the surrounding area. In order to properly understand the problem it is first necessary to understand the nature of rivers such as the Nooksack and how certain characteristics may be used to predict with reasonable certainty future events likely to be caused by the river.

The present Nooksack River consists of three forks which drain a large area in the Cascades east of Bellingham. The forks unit in the vicinity of Deming and the main Nooksack then flows across the lowland, making a broad loop to Lynden then turning southward to flow into Bellingham Bay. Because the river originates in a mountainous terrain it carries in its upper course a large amount of sand and gravel, derived by erosion of the main valley and its tributaries. The sand and gravel is continually carried downstream by bouncing and rolling along the channel floor under the influence of turbulent water. The material may pause in its journey downstream long enough to form bars but the material is eventually picked up again and moved downstream. Abrasion of particles against one another causes them to be broken into smaller and smaller pieces, providing a constant supply of sand, silt and clay. These finer particles are then carried in suspension by the river downstream, giving it its typical muddy brown color.

In the Cascades the Nooksack carries chiefly gravel and sand, where it flows into Bellingham Bay mostly sandy silt and clay. The movement of material is a continuous process which goes on 24 hours a day, 7 days a week, the result being similar to an endless conveyor belt carrying sand, silt and clay into Bellingham Bay. In the relatively quiet water of Bellingham Bay, the velocity of the stream is checked and the material which was held in suspension by the turbulence of the river settles to the bottom of the bay or is carried along the shore by local

currents. The result is that the Nooksack continuously deposits its load of sand, silt and clay and builds a delta out into the bay a measurable amount each year, the rate of delta advance depending on the amount of sediment carried annually by the river.

Only that portion of the delta which rises above the surface of the bay is obvious to man. A large amount of the sediment deposited by the river each year is deposited below sea level on the bottom of the bay off the mouth of the river where it is not so obvious to man. Thus in the normal process of delta building there is first a shallowing of the bay opposite the mouth of the river, then development of tide flats with arms extending along the shore away from the main delta and finally the area becomes dry land.

HISTORY OF THE NOOKSACK

The present course of the Nooksack is a relatively young feature, geologically speaking. Its upper reaches in the Cascades probably date back to a time just prior to the great ice age which occurred about one million years ago. Its lower extent on the lowland west of the Cascades is a much more recent feature. The course of the river was obliterated several times during the ice age when large continental glaciers moved southward from British Columbia into the Puget Sound region, covering Bellingham and vicinity with some 5000 to 7000 feet of ice, and extending 150 miles south of the Canadian border to Tacoma. In the Cascades east of Bellingham, ice filled the entire Nooksack valley, covered all of the foothills, and only peaks above 5000 feet were not enveloped by the ice.

During the last part of the ice age, marine deposits indicate that all of the lowland was submerged beneath sea water and the Nooksack River was then restricted to its present upper course. These marine waters covered the area up to elevations now 500 feet above sea level and extended up the Nooksack River to the vicinity of Deming. Radiocarbon dates obtained from marine shells in deposits left by the submergence indicate that this occurred 11,600 years ago. At the end of the ice age sea water withdrew from the area but the lowland west of Sumas Mountain and the Cascades looked much different than it does now. The present upland between Ferndale and Birch Bay was then an island as was the present Lummi Peninsula southwest of Bellingham. At this time the Nooksack

flowed into Puget Sound somewhere near Everson. As the Nooksack continued to carry its load of sand, silt and clay into the sound, it progressively filled the sound with sediment and in so doing eventually tied to the mainland the island which then existed near Ferndale, now the Mountain View upland. As it continued filling the sound with sediment, the Nooksack built its delta southward from the vicinity of Ferndale which then marked the edge of the sound. At one point in its southward building, the delta advanced to the northern end of the present Lummi Peninsula, then an island, connecting it to the mainland. Since the island had a rough north-south alignment, as the Nooksack delta became attached to the northern end, the river alternately flowed southwestward into Lummi Bay and southward into Bellingham Bay. Deltas were extended along the sides of the peninsula and the channel between the Mountain View upland and Lummi Peninsula was filled in with sediment, as was the channel between the upland between Marietta and Lummi Peninsula. Since then, in more recent historic time, the Nooksack has flowed at times into Lummi Bay and at times into Bellingham Bay. Some years ago the course of the Nooksack was restricted to the Bellingham Bay mouth by the erection of artificial levees. The history of the tremendous amount of filling accomplished by the Nooksack in the last 10,000 years illustrates dramatically the point that rivers must be taken into account in planning for such things as harbor facilities, deep water channels, dock construction and other features of port development.

DIVERSION OF THE NOOKSACK

Some idea of the present rate of delta building may be estimated by comparing the position of the delta margin in the past with the present margin. As shown on the U. S. Geological Survey topographic map published in 1907 (surveyed in 1905), the margin of the delta at that time was at or slightly north of the town of Marietta (fig. 1). The position of the margin of the delta as shown in the 1952 edition of the same map (fig. 2) is one mile farther south, not including tide flat areas which are daily covered and uncovered by a few feet of water. Since the conditions which resulted in the advance of the delta of one mile in about 40-45 years are no different than conditions existing today, we may expect a similar advance of the delta in the next 40-45 years. Actually the rate of filling of Bellingham Bay should be greater than before because it

is now prevented from occasionally spilling into Lummi Bay as it used to.

The portion of the delta now above sea level lies approximately three miles from present harbor facilities. However, tide flats and shallow water less than six feet deep extend approximately a mile and a half farther out into the bay, making this portion of the bay as unuseable as the delta above water. Moreover, arms of the delta extend as tideflats laterally from the main delta and silting up of harbor facilities will considerably precede the march of the main delta toward port facilities.

The question then arises, what is going to happen to the harbor facilities of the port of Bellingham? An optimistic attitude might be to keep the harbor facilities open by dredging and let the next generation worry about the future of the port. At the rate of delta building under present conditions, the port will either become unuseable or will require dredging so extensive as to make it uneconomical to operate, within a hundred years or less. The outlook of Bellingham as a port would indeed look gloomy unless something can be done to alter the rate of filling by the Nooksack. Fortunately, there exists a simple solution which would not only alleviate the silting-up problem but probably eliminate it almost entirely. Recalling the fact that the Nooksack used to flow southwestward from the vicinity of Ferndale to Lummi Bay suggests the possibility of diversion of the Nooksack back into its old channel. What would the effects of such a diversion be? Most important, of course, would be that the sand, silt and clay presently being deposited in Bellingham Bay by the Nooksack would be diverted to Lummi Bay. This would solve the greater part of the silting up problem, eliminate much of the need for costly dredging, and insure the continued useability of Bellingham Bay as a harbor. But what effect would it have on property owners near Lummi Bay? Some room would be taken up by the river channel itself, but then the Red River slough already takes up some space. It would mean extension of the Lummi Bay delta and conversion of the Lummi Bay tide flats into an extensive farmable land.

In view of the certainty of the eventual doom of Bellingham as a port and the rising costs of dredging as the bay continues to silt up, the diversion of the lower course of the Nooksack seems not only desirable but essential to the continued prosperity of Bellingham. The cost of such a diversion would be small indeed compared to the long-term gains.

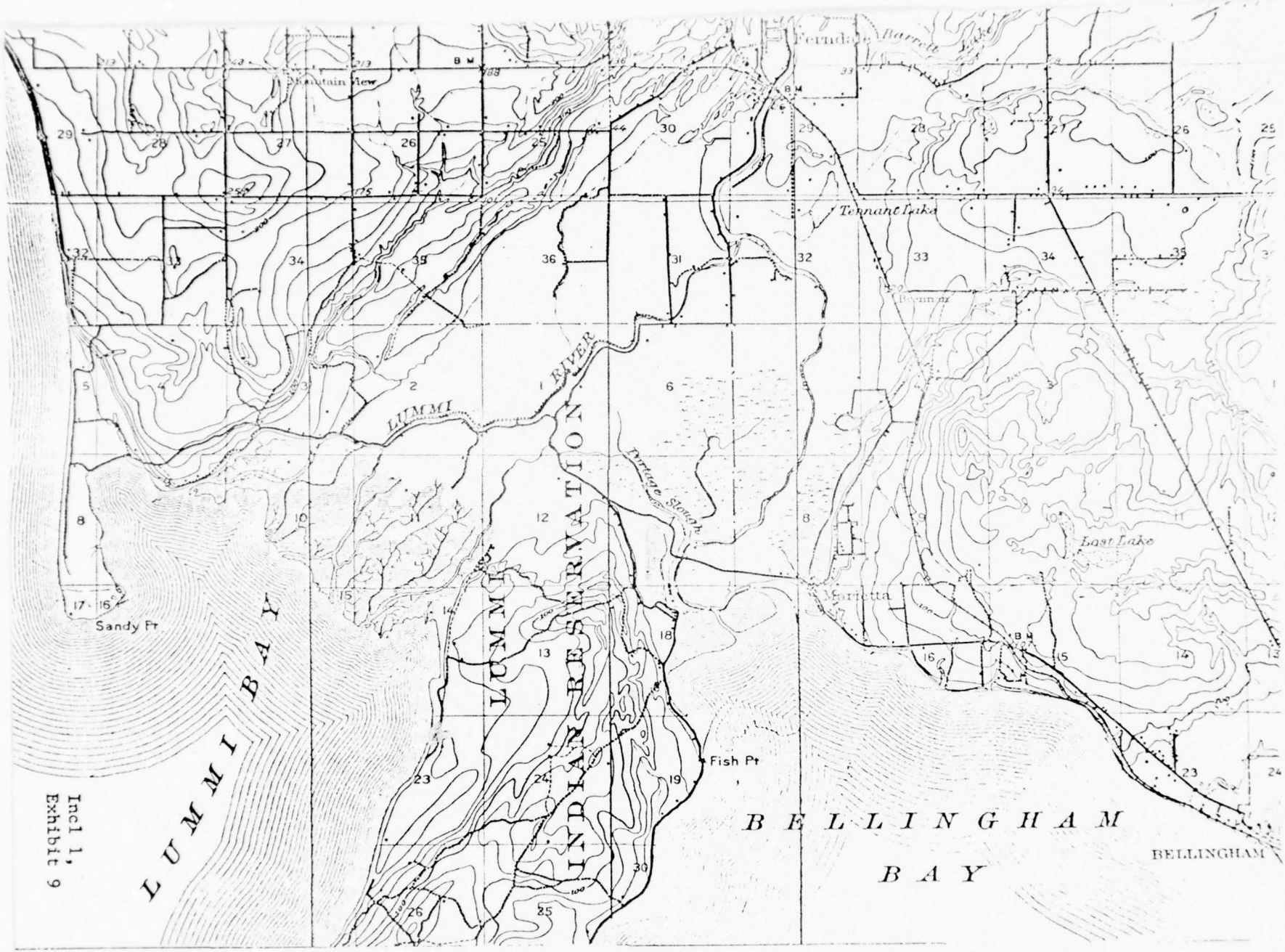


Fig. 1 Nooksack delta on 1907 USGS map. Position of delta on 1952 map shown in red.

Incl 1,
Exhibit 9

LUMMI BAY
BELLINGHAM BAY
LUMMI FLATS
SAND
Sandy Point
Neptune Beach
Ferndale
Pioneer Park
Tennant Lake
Barrett Lake
Radio Range Sta
Cemetery
Lummi River
Lummi Levee
Smuggler Slough
Slater Slough
NOOKSACK RIVER
Lummi Sch
Fish Point
Marietta
BELLINGHAM AIRPORT
BELLINGHAM
North Bellingham Sch
County Hospital
Brennan
Mountain View
Green Acres Memorial Park
Piles
Rocks
Wreck
Incl 2,
Exhibit 9

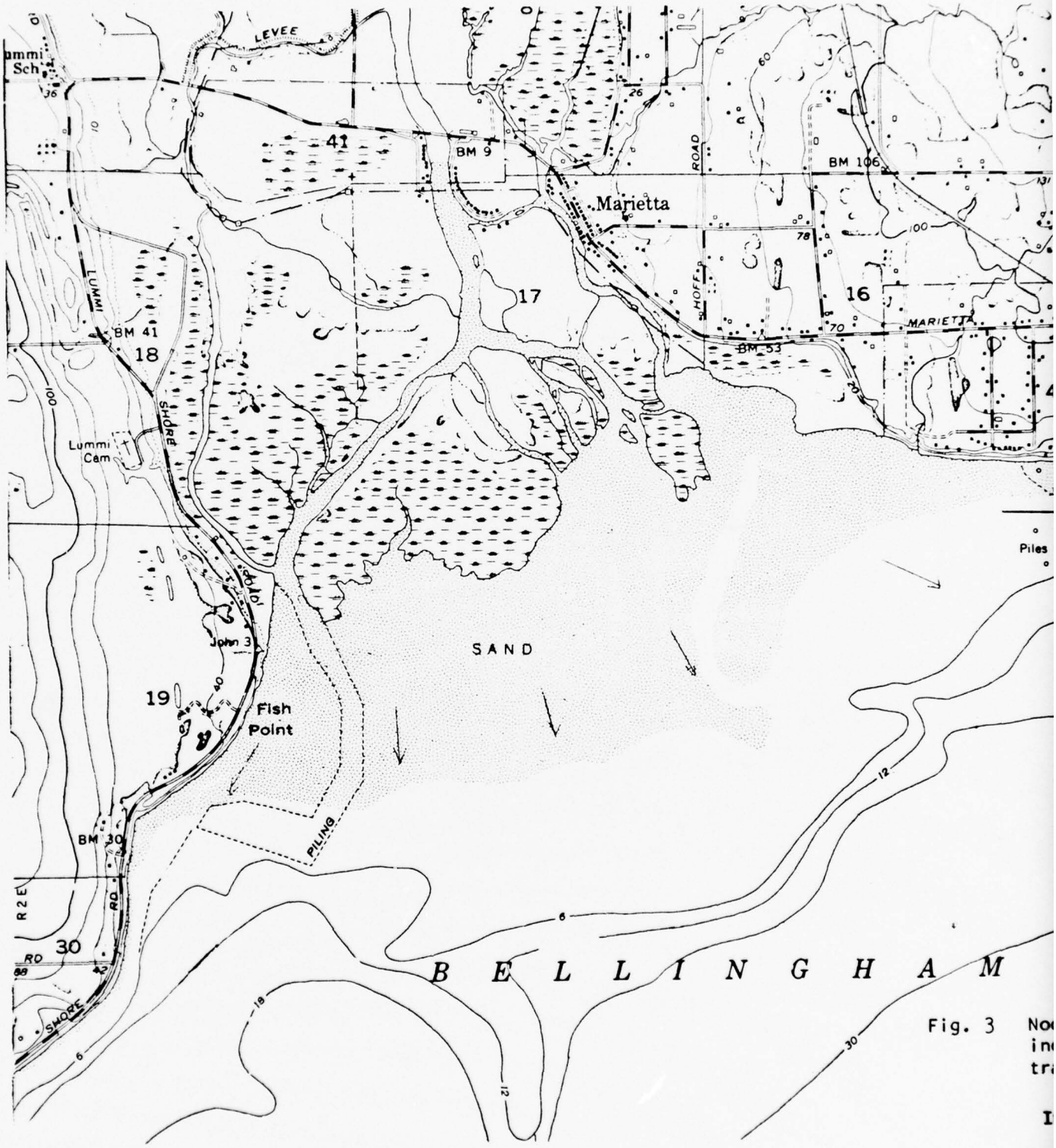


Fig. 3 No
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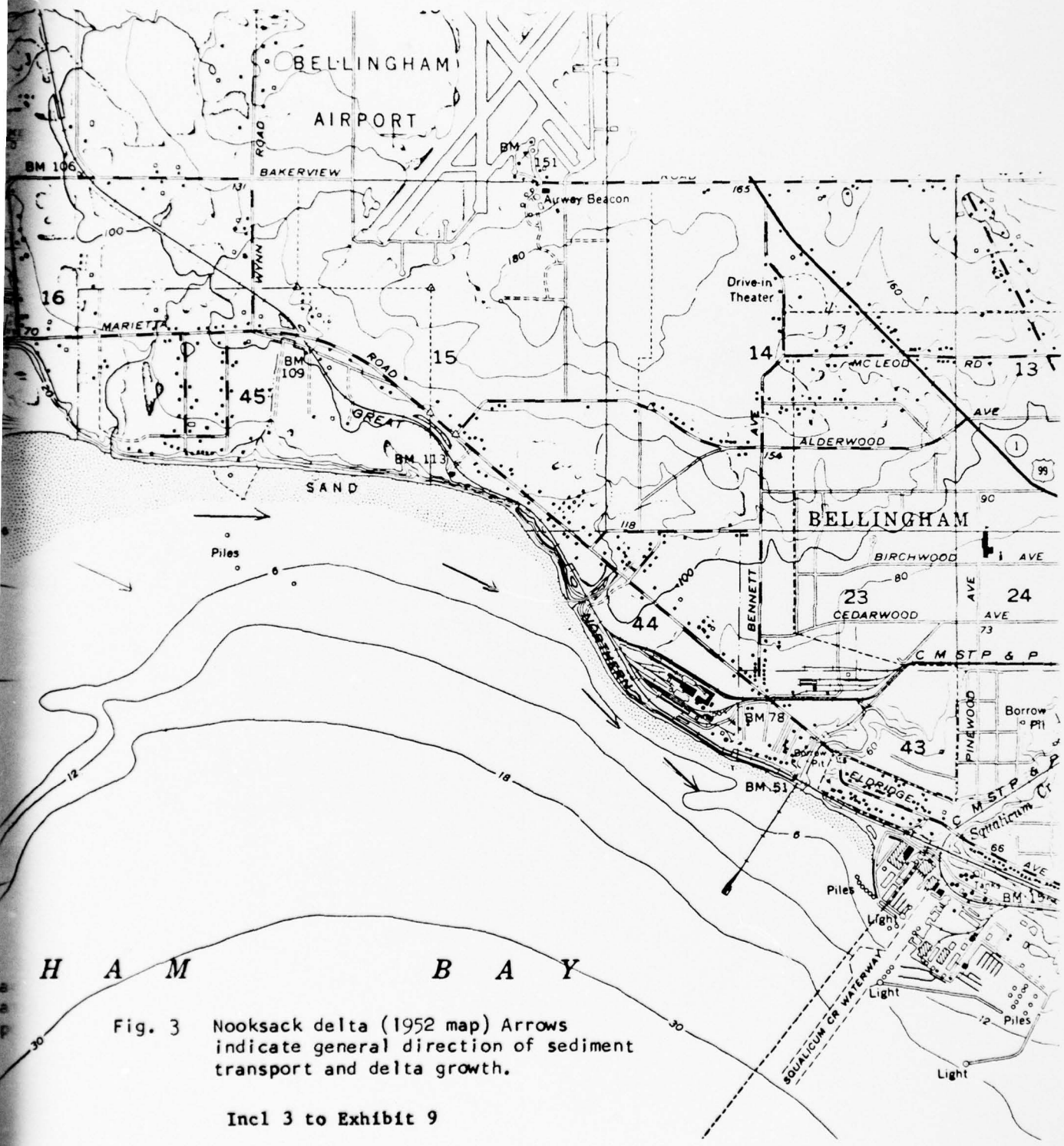

Fig. 3 Nooksack delta (1952 map) Arrows indicate general direction of sediment transport and delta growth.

Incl 3 to Exhibit 9

Whatcom County Planning Commission

WHATCOM COUNTY COURT HOUSE
BELLINGHAM, WASHINGTON

October 30, 1964

Robert H. Gedney, Co-Chairman
Columbia Basin Inter-Agency Committee
U. S. Army Engineers District, Seattle
1519 Alaskan Way South
Seattle, Washington 98134

Dear Sir:

I want to express my high regard for the approach being taken in the Puget Sound Water Resource Study. Treatment of the entire subject of water resources as one inter-related whole, rather than separating the functions of the various federal and state agencies should be very valuable. The need for an integrated approach is most clearly evident at the local area level; our own County of Whatcom for example, where water is presently a matter of every man for himself. Division of water responsibilities leads to disjointed and unrelated policies and projects as well as overlapping and gaps in coverage of the subject of water and in the area of development.

The economic study you are undertaking for the entire Puget Sound Basin shows in another way just how valuable your approach will be from our standpoint. You see, our industrial, residential and agricultural future growth is greatly affected by our relations with the Seattle-Tacoma metropolitan area. We are like a satellite whose course is dictated by the forces pulling toward and away from the main planet-that is Seattle. As conjestion increases in Seattle, and as land becomes more difficult to obtain in the large acreages near waterfront, and prices rise then we stand to obtain more industry.

As industry tends to decentralize along the Puget Sound strip population and commerce will follow and our County will become more urbanized. The big question is how rapidly this growth will take place and how extensive it will be at a given time in the future. I want to

suggest that the availability of waterfront industrial sites be studied on a competitive basis among the different parts of the region. Such a study of the supply side of the question should be supplemented by an attempt to forecast the demand for industrial land. The types of industry of the future will vary from those here in Puget Sound at the present time. What will this industry require in the way of water, power, transport, resources, land etc. If answers to these questions can be developed the study will be very valuable for purposes other than water resource planning - so much so that I want to make a plea for the study to be designed for multiple purpose planning use - rather than for water alone.

As to the matter of flood control, it is important to dramatize the amount of damage which could be caused to the economic life of our community by an extreme flood. Unfortunately, the extent of the danger is not appreciated, and the main apprehension of the community is the continuing problem of bank erosion. In the event that construction of flood control projects ~~are~~ postponed, this emphasis on the danger of an extreme flood will be invaluable in encouraging steps to reduce the damage potential.

Use of the power to zone against building development in the flood plain would be greatly assisted by a good example. Thus Federal and State facilities should be located on high ground wherever possible. A related suggestion is that grants and loans for public utilities and facilities should take flooding into account. This includes sewage and water systems, federal and state building installations and Indian Reservation improvements. Even more important is the matter of highway location which can and does generate urban growth. Incidental to the possibility of reducing damage by proper control of development is the question of whether or not ~~both~~ flood control projects and such controls are both necessary. Do they overlap or can they be designed to supplement each other? Of course preventive regulations should certainly be put into effect during the period prior to actual completion of projects, but what about afterward?

In the meanwhile, signs could be erected to mark all areas subject to flooding. This could be done quickly and easily, without any regulation or project going into effect. In our County this could have an excellent effect on the pattern of development. But any sign program should cover all areas subject to flooding. If regulations are to follow, the need for equitable treatment of all areas subject to flooding demands complete delineation of all flood plains. Accordingly, a study of the Sumas River flood plain is also required.

More broadly, I would like to endorse the need for the following local studies:

1. Early completion of the dam feasibility study.

2. Comprehensive Plan for channel improvement of the Nooksack.

3. Study of measures to control growing pollution of Lake Whatcom.

TESTIMONIAL COPY

4. Study of the feasibility of Drayton Harbor as a fish farm.

5. Study of ground water supplies as an adjunct to water distribution planning.

As an organizational suggestion for the study, I would urge that an inter-agency study team be set up for each two or three sub-basins. The members of the team should work together rather than independently, so that each agency doesn't end up writing its own report. Local areas would benefit greatly by contact with the study, and very likely the study would be better as a result. Also, the local area would benefit by integration of the methods of classification, benefit-cost analysis and so on. Thus it is my considered professional opinion that the "planning team" approach would be the best in the circumstances.

Respectfully submitted,

Harry R. Fulton

Harry R. Fulton
Planning Director

HRF/cc

RESOLUTION NO. 167

A RESOLUTION REQUESTING CONSIDERATION OF SUMAS CREEK AND ADJACENT WATERS TO THE TOWN OF SUMAS, WHATCOM COUNTY, WASHINGTON,

WHEREAS, a public hearing will be held to obtain views of interested parties on water and related land resource measures for consideration in the comprehensive water resource study of Puget Sound and adjacent waters at Anacortes, Washington, on the 12th day of October, 1964, at 10:00 a.m., and

WHEREAS, Sumas Creek and adjacent waters in the region of the Town of Sumas, Whatcom County, Washington, are proper areas for consideration in said comprehensive water resource study.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF SUMAS that the attention of said task force for comprehensive study of Puget Sound and adjacent waters be requested to consider Sumas Creek and its water adjacent to the Town of Sumas, Whatcom County, Washington, and said study with a view to correct current situations and for improvement of the area with reference to the problems appertenant thereto.

PASSED by the Town Council of the Town of Sumas and approved by the Mayor this 28th day of September, 1964.

Stephen R. Koehler
MAYOR

ATTEST:

Florence Hill
CLERK-~~pro-tem~~ Treas.

Exhibit 11

Town of Sumas
Box 5
Sumas, Washington 98295

TESTIMONIAL COPY

Engineering Department
Phone 733-0360
Bellingham Washington

October 8, 1964

Robert H. Gedney, Co-Chairman
Columbia Basin Inter-Agency Committee
U. S. Army Engineers District, Seattle
1519 Alaskan Way South
Seattle, Washington 98134

Re: Comprehensive Study, Puget Sound
and adjacent Waters

Dear Mr. Gedney:

The problem of controlling the Nooksack River has been confronting the people of Whatcom County for a number of years. There is evidence of works along the banks of this river that were put in thirty or forty years ago. This work was done on a piece-meal basis then and is still being done the same way today. There has never been any comprehensive plan or study to determine where the bank protection should be or of the height and location of the dikes- the river grades - volume of water at flood stage or the area of the channel necessary to carry the water.

During the past seventeen years the staggering amount of $1,711,000
has been expended by Whatcom County on flood control works.
Glancing back over these same years, one realizes that we have been extremely fortunate inasmuch as we have witnessed no excessive emergency during the last twelve years.

During the last twelve years Whatcom County expenditures amounted to an average of $57,000 a year or a total of ..... $ 684,000
However, the picture for the preceding years is a great deal blacker inasmuch as throughout each of these periods a serious emergency existed.

TESTIMONIAL COPY

In 1948 flood damages soared to an estimated $237,200
It became necessary to bring to vote a 2-mill levey which
produced toward the fund $78,500
County Commissioners also requested an emergency
supplement of 17,500
which, along with the 1-mill maintenance levy of..... 21,750
swelled the flood control fund to $117,750
but which fell far short of the amount necessary.

In 1949 the damage costs were again terrific, amount to..... $214,600
with all appropriated funds exhausted.

In 1950 damages arose to $125,675
This year saw a break in the levee above Lummi dam caused by an ice jam - otherwise the overflow would have flooded Marietta and the fishing settlement. Again a 2-mill levy was put to the popular vote, but was defeated.

In 1951 damages leaped to an all-time high of $304,800
This was the year the State found it necessary to reduce their amount of participation in various projects from 50% (and often 66 2/3%) to 40%. Senator Jackson appealed to President Truman for Federal Assistance; however, as this petition to Congress should have come through the Governor, the problem was stalemated.

During the past seven years we have accomplished a total of 110
individual projects with costs amounting to $456,000
Of this amount we realized a return of 40% by the State and on a small percentage of them, 10% from the property owners. In the remaining jobs, the county alone picked up the tab.

Not knowing the whims of nature, we are constantly wondering - could this be another $300,000 year - or worse. That is always the prospect confronting those who are involved in flood control works.

In the past thirty years alone there have been 1,100 acres of Whatcom County's best farm land eroded to an average depth of approximately 18 feet. The conservative estimate of the gross value of this good farm land lost forever is $800 to $1500 per acre. Only an over-all, long-range plan could possibly change this damaging and costly situation. It is my contention that the value of the farm land to the county, state and nation, should be calculated on the gross product of the land over a period of at leat 50 years. I do not believe any plan for permanent control of the river can be established until we know the volume of water we have to contend with - the grades along the river and the area calculated for the channel for each grade change. This would necessitate a complete physical survey of the river from its mouth to where the river leaves the mountains. Aerial maps would facilitate such a survey.

With the co-operation of and voluntary services from Whatcom County's Superintendent of Schools, Soil Conservation District, Planning and Engineering Departments; the State Departments of Fisheries, Game, Natural Resources and Conservation; and the Federal Forest Service - a 16mm, 20-minute, sound and color motion picture of the Nooksack River is now being made. This film will encompass the entire river watershed with views of timber harvesting, game management, fisheries control; with the related problems of pollution, flooding, silting and erosion included. This film, covering the river from its source in the mountain lakes and glaciers to its mouth in Bellingham Bay, should be completed during the summer of 1965.

The channel from the mouth of the river to Lynden is fairly stable so there would be no necessity to change it. The area necessary for the channel should be determined and dikes reconstructed to the proper height and spacing so the channel will hold all the water. The banks should be rip rapped where there is evidence of scouring. Much of the existing dike work and rip rap could be incorporated in the plan.

The gradient of the river above Lynden is quite steep which increases the velocity of the water at flood stage to a point where it is difficult to control bank erosion. The river has been meandering back and forth across the flood plain- first one side and then the other. This flood plain varies in width from 200 yards to more than a mile and consists of gravel bars, logs, stumps and other debris. I believe the best plan for this area would be to bulldoze a channel to the proper width and construct dikes to proper height with rip rap facing. The channel should be deliverately meandered back and forth to reduce the gradient and velocity of the river. Particular attention should be given to those places where river skirts high hills and good farm land - for these are the places where river gets most of the new material which is carried down stream.

The comprehensive plan should be flexible enough to take advantage of the vagrancies of the river to cut the costs of construction. If this comprehensive plan was designed and established, then the work could be carried out in an orderly manner.

Co-ordinating the work of local, state and federal agencies with a long-range program, aside from avoidance of direct flood damages, would bring the following benefits:

1. Betterment of land and improvement values.
2. Encouragement of new agricultural development.
3. Reduction of emergency project costs and snagging costs.
4. Stronger economic basis for processing and service industries.
5. Reduced risks of public health hazards and well polution.
6. Dry season irrigation from dam reservoirs.
7. Barge transportation possibility if river dredged.
8. Reduced bank erosion.
9. Reduced survey, hearing and review costs.
10. Possible benefit to fish runs.

It is going to take a long time and a lot of money to control the Nooksack River; only a comprehensive plan will conserve this time and money! With all agencies working towards this goal, the Nooksack River can be controlled.

Very truly yours,

J. T. Lay, Whatcom County Engineer

JTL/jh

enc: List of Whatcom County
Water Associations

WHATCOM COUNTY WATER ASSOCIATIONS

1.	ALDERGROVE WATER ASSOCIATION	J. Barnhart Route #3, Ferndale
2.	BAKER-JAMES WATER ASSOCIATION	Paul H. Chrisman, President
3.	BEL-BAY-JACKSON WATER ASSOCIATION	Donald L. Whitesmith
4.	BIRCH BAY WATER COMPANY	Walter Gischer, Manager Route #1, Blaine
5.	CUSTER WATER ASSOCIATION	Jack Hills Route #2, Ferndale
6.	CITY OF BLAINE	Vincent Jordan Route #1, Baline
7.	CENTRAL CITY WATER ASSOCIATION	Henry Pheifer, President
8.	DELTA WATER ASSOCIATION	Herman O. VanderGriend
9.	EAST BAKERVIEW WATER CORPORATION	Marguerite Hansen 3545 Noethwest Ave., Bellinham
10.	FERTIEL MEADOWS WATER ASSOCIATION	Frank Imhof, Ferndale
11.	GENEVA WATER CORPORATION	Jack Barrett 1059 State, Bellingham
12.	GLEN COVE WATER CORPORATION	Ralph E. Wyndham, Secretary 1614 Euclid, Bellingham
13.	GUIDE MERIDIAN WATER ASSOCIATION	Harold Knight, President Bill Gardner, Attorney
14	GRANDVIEW BEACH WATER ASSOCIATION	H. M. Hill, President Bill Gardner, Attorney
15.	HAMPTON WATER ASSOCIATION	Harold Wight, Secretary Route #2, Everson
16.	HEMMI ROAD WATER ASSOCIATION	Gordon McGillwray, President
17.	"H" STREET WATER ASSOCIATION	Everett A. Minsker, President
18.	KELLY ROAD WATER ASSOCIATION	Ray L, Mullinix, President
19.	KOK ROAD WATER ASSOCIATION	Einer Simonarson, Attorney 104 - 6th Lynden
20.	LAKE TERRELL WATER ASSOCIATION	Norman Jodock, President Route #2, Ferndale
21.	LAKE TENNANT WATER ASSOCIATION	Elmer Gawley, President
22.	MEADOWDALE WATER ASSOCIATION	C. M. Ross, President
23.	MT. BAKER WATER ASSOCIATION	L. A. Storms, President -SMith Rd.
24.	MAPLE FALLS WATER COOP.	Cecil Clinard, Maple Falls, Wn.
25.	NORTH LYNDEN WATER ASSOCIATION	John P. Oestema
26.	NEPTUNE BEACH WATER ASSOCIATION	J. E. Nash, Secretary Route #3, Ferndale
27.	NORTHWOOD WATER CORPORATION	Joe Alexander, Secretary Route #1, Everson

28	NORTH STAR WATER ASSOCIATION	Earl Kobberstad Route #2, Ferndale
29	NORTHWEST WATER ASSOCIATION	H. J. Perry, President Bill Gardner, Attorney
30	NOOKSACK VALLEY WATER ASSOCIATION	John Stott Route #2, Everson, President
31	OLD SETTLERS WATER ASSOCIATION	Charles Hendricks Route #1, Blaine
32	ORCHARD WATER ASSOCIATION	G. A. Bezona Route #2, Ferndale
33	PLEASANT VALLEY WATER ASSOCIATION	Alfred Linde Route #1, Blaine
34	PANGBORN WATER ASSOCIATION	John H. Bruns, President
35	RIVER ROAD WATER ASSOCIATION	Dave Elsasser, President Route #3, Ferndale
~~[illegible]~~		~~[illegible]~~
36	SUMAS RURAL WATER ASSOCIATION	Harry VanderMay
37	SUNSET WATER ASSOCIATION	J. A. Nesbitt, President Bill Durnan, Attorney
38	SKOOKUM CHUCK WATER ASSOCIATION	Ward Williams, Attorney
39	SMITH ROAD WATER ASSOCIATION (Smith & Guide)	Gill Breuer, President
40	THORNTON WATER ASSOCIATION	Ed Swenson, President
41	TWIN DITCH WATER ASSOCIATION	Doyle DeJong, President
42	TWIN LAKES WATER CORPORATION	David L. Anderson, President
43	VALLEY VIEW WATER ASSOCIATION	Truman King, President
44	VICTOR WATER ASSOCIATION	Wm. A. Gardiner, Attorney Ferndale
45	WHATCOM COUNTY WATER DISTRICT #1	Alfred Peterson Route #1, Everson
46	WHATCOM COUNTY WATER DISTRICT #2	Bruce Couilthurst 1234 Marine Drive
47	WHATCOM COUNTY WATER DISTRICT #3	Fred Kemp Route #3, Ferndale
48	WHATCOM COUNTY WATER DISTRICT #4	D. O. Iverson
49	WHATCOM COUNTY WATER DISTRICT #5	

Whatcom County Extension Service
LeVern Freimann, Chairman

IRRIGATION NEEDS OF THE FUTURE

It is difficult to ascertain the future needs of water for agriculture in Whatcom County. The use of water up to the present time and the trends for the future are an indication of the needs. In this area the average dates of the last killing frost in spring and the first killing frost in the fall are April 10 and October 23, respectively. The growing season is approximately one hundred sixty-five days. The rainfall is heaviest during the months of December, January and February, with a winter seasonal of 12.5 inches. The spring months of March, April and May have a combined total of around seven inches . The summer months are quite dry with approximately four inches of rain in three months. July is the low month with an average of less than one inch. Rainfall increases again in the fall of the year.

The summer rainfall is insufficient for most agricultural crops, which accounts for an ever-increasing use of supplemental sprinkler irrigation.

Whatcom County has a wide diversity of soil types. The soils of the agricultural area of Whatcom County are very sensitive to drainage and even a small difference in relief will be reflected by the crop produced. The soils respond well to fertilization and farming practices.

In 1900, due to the large number of shake and shingle mills going out of production, the Settlers began to explore the agricultural possibilities of the county. Many people began to combine farming with work in the forest or mills. Then people took advantage of low land prices and bought "stump land" from the timber companies. This land was often sold in twenty and forty acre tracts and was frequently used as grazing land for dairy cattle. The dairy cow seemed well suited to cut-over land and the farmer could get returns from the land without completely clearing it.

In 1900 horses did what tractors, trucks and cars do today. Most of the agriculture was aimed at the local markets. During this period there were only a few settlers farming full time.

In 1900 there were 2300 acres of oats which were used almost exclusively as animal feed. Dry peas was another crop used for animal feed, but many tons were lost due to drying difficulties. Potatoes were very important in the diet during this period and over 700 acres of Burbank potatoes were grown. Raspberries and strawberries were grown in small quantities in the early 90's.

When the Great Northern and Northern Pacific extended their lines through Whatcom County into Canada and by doing so, opened new markets for agricultural commodities, more people migrated to the county. Among these were the Dutch who settled around the Lynden area. Their primary interest was dairying and the Lynden area became the center of the dairy industry in Whatcom County.

By 1910 much more agricultural land was cleared of stumps. Most of the land was cleared with the steam donkey and stumping powder. Much of the cleared land was used for the production of hay and forage crops which represented a large percentage of the total agriculture in 1910.

By 1920 agriculture in the county was increasing at a rapid rate. A big land clearing program was carried on after World War I as a result of government sales of surplus powder at bargain rates.

Poultry was also becoming important in the economy of the county. Egg production increased so rapidly that the local market was flooded. Processing plants for poultry were set up in Bellingham and Lynden. Chickens were processed in assembly line fashion and shipped throughout the Northwest.

By 1930 Whatcom County was truly an agricultural county, with dairying being the most important industry. Dairy herds were constantly being improved. There were 4662 farms in the county as compared to 1262 farms in 1900.

By 1940, Whatcom County was noted for its dairy industry, poultry industry and vegetable growing. Agriculture continued to forge ahead until it represented a $22,000,000 industry. According to the latest agricultural census in 1959, Whatcom County is the most improtant agricultural county in Western Washington, and the eighth in the state. At the present time, the main crops in the fertile valleys of the county are dairying, poultry, string beans, seed potatoes, raspberries, strawberries, blueberries, cucumbers and ornamentals.

According to the census, Whatcom is the leading county in the state in the number of dairy cattle, laying hens, acreage of certified seed potatoes and strawberries. Nearly all of the milk produced has been Grade A and approximately 25% of the amount produced goes to the Seattle milk shed. It has been estimated that 65% or more of the cows are of the Holstein breed, with Guernseys in second place. From 1940 to 1960, the number of milk cows increased from 30,000 to approximately 40,000 and it is anticipated that the dairy industry of the county will continue to show its slow but steady growth. It is very common to find herds of 100 cows or more in this area.

Irrigation has made it possible to produce the high quality of pasture during the summer months and also to insure good cash crops. The 1954 census reports that 8662 acres of land in Whatcom County had been irrigated. By 1959 the acreage under irrigation had increased to 16,669. In a five-year period, the acreage of irrigated land had doubled. It is inevitable that in the future supplementary irrigation will be needed for all the crops grown in this county in order to produce the high quality produce demanded by the markets.

We are also faced with a serious situation in the rich Nooksack Valley with frequent floods from the river. To maintain the highest quality pasture of palatable varieties, it is essential to control flooding. The flooding has been responsible for changing the species of grass, bringing in obnoxious weeds, and drifts of silt.

In a relatively short period of history we have seen Whatcom County change from a lumber to an agricultural economy. Undoubtedly the county will continue to expand

in agriculture and considerable shifting into new crops may take place. With the rapid population growth of Vancouver, B.C., it is inevitable that in the future the county will be growing agricultural products for this market. When this market develops, vegetables and small fruits grown on the undeveloped peat bogs and the uncleared lighter soils will provide for the future expansion of these crops. It is most important that supplementary irrigation be provided for the normal growth of these crops to produce the highest quality. In projecting the future, it is difficult to foresee how crops may expand or how new crops may develop, depending on economic conditions. As an example, the entire picture of growing raspberries has been changed with the introduction of picking machines and rapid air transportation. This one crop may have an enormous impact on the future development of the agricultural economy of the county. The acreage of raspberries was limited by the number of available pickers. Raspberry picking machines are being developed which change the entire picture for Whatcom County. Formerly it was considered essential to grow raspberries on the rich bottom land that was well drained. However, with the change in technology and irrigation the lighter soils are producing tonnages equal to the river bottom areas. Since commercial raspberries are an exclusive crop to Western Washington and Oregon, the possibilities of expansion are tremendous. The fresh market has been untouched and with the fast air service, the major markets of the nation can be reached overnight. With over a thousand acres of raspberries in the county, the saturation point with reference to available pickers has been reached. The picking machines will change the entire industry, allowing for a rapid expansion and growth. The expansion of this industry is dependent on an ample supply of supplementary water during the dry season.

The outlook for a rapid expanding agricultural economy is largely dependent on an ample supply of irrigation water. The Soil Conservation Service estimates that there are 180,000 to 200,000 acres of available agricultural land in Whatcom County. In view of the trends, it is predictable that at least ten times the amount of water now used for irrigation will be needed in the future.

COPY

TESTIMONIAL

BY: Glen F. Hallman, Administrative Assistant

REPRESENTING: Bellingham-Watcom County District, Department of Public Health
509 Girard Street, Bellingham, Washington

PRESENTED TO: Columbia Basin Inter-Agency Committee
Task Force for Comprehensive Study
Puget Sound and Adjacent Waters
Public Hearing - October 12, 1964
Anacortes, Washington

The Bellingham and Watcome County District Department of Public Health has public health jurisdiction that includes Watcom County and the City of Bellingham. This department has various public health responsibilities relating to domestic water quality and pollution control, shared with and in cooperation with the State Department of Health and State Pollution Control Commission.

DOMESTIC WATER SUPPLY: The first portion of my presentation will deal with the source and quality of domestic water presently used by the City of Bellingham. The second portion will deal with the water supplies in the remainder of Whatcom County.

For many years the City of Bellingham has obtained its domestic and industrial water from Lakes Watcom and Padden. The major portion of the supply has come from Lake Whatcom, an unprotected watershed. About 2000 persons outside the City of Bellingham and 2000 persons inside the city live on the watershed. Approximately two-thirds of these latter are served by a public sanitary sewer and treatment facility located outside the watershed area. This summer the Bellingham City Council passed a resolution prohibiting any further construction of residences in the watershed inside the city limits that dispose of their sewage by septic tanks and subsurface sewage disposal systems.

The approximate 400 homes outside the City of Bellingham in the watershed are located on or near the shores of the lake. These homes are served by septic tanks and subsurface sewage disposal systems. Because of topographic and soil conditions that are unsuited for the proper operation of sewage disposal systems, there is a considerable amount of sewage, directly or indirectly, that finds its way into the lake. This is evidenced by the increasing coliform density found in the lake water over the last ten years with which I have experience.

The City of Bellingham's recent water development project, diverting water from the Middle Fork of the Nooksack River into the lake began in the fall of 1962. Subsequent to this diversion into the lake, the coliform density of lake water per 100 milliliter water sample averaged

about 60 MPN with an occasional high of 700. In 1964, with a much above normal summer rainfall, the coliform density of lake water samples have averaged about half of the 1962 average.

The water shed of the Middle Fork of the Nooksack river above the diversion dam is relatively heavily populated with wild life. This area is also open to logging and hunting. These facts no doubt account for the fact that this river water has a low but significant coliform organism density. Additional coliform organisms are contributed to this river water from farm land along Anderson creek just before it enters Lake Whatcom. These two conditions probably account for the fact that the inlet end of the lake has the highest coliform density in the lake. (For the period April 9 through Oct. 27, 1963 the average coliorm density at the inlet end of the lake was 33.7).

Efforts are being made to establish a Sewer District encompassing the Lake Whatcom water shed in the area outside the City of Bellingham. Further studies, plans and coordination of this effort is needed. Assistance from state and federal agencies will be needed if sewers are to be provided for the populated areas along the Lake outside of the City.

The city of Bellingham recently has retained a firm of consulting engineers to study and evaluate and recommend methods of treating Lake Whatcom water for its domestic use in order to meet the Public Health Service Drinking Water standards.

NEEDS:

1. State and federal assistance is needed to study and develop a comprehensive plan and to assist with construction of sewers and sewage treatment facilities for the habitable portion of Lake Whatcom. Every means of encouragement is needed in order to assist in the establishment and successful operation of the proposed Lake Whatcom Sewer District.

2. To assist in the control and prevention of addition pollution of Lake Whatcom by sewage from such sources as septic tanks and boats with toilets, additional regulations and their enforcement by the local Health Department is needed. In order to adequately enforce the existing and any additional regulations, additional Health Department staff will be needed.

3. In order to continue to provide potable water of acceptable quality from Lake Whatcom, the recommendations of the City of Bellingham's consulting engineers, who are now in the process of making a study report, will need to be carried out.

TESTIMONIAL COPY

A smaller portion of the City of Bellingham's domestic water supply is derived from Lake Padden. The city owns and protects the larger portion of this watershed. However, a portion of the watershed is inhabited primarily along Yew Street Road. If Lake Padden is to continue as a water supply, then study and consideration will need to be made in order to divert the run off and drainage from the Yew Street Road area from entering the lake.

WHATCOM COUNTY DOMESTIC WATER SUPPLY OUTSIDE THE CITY LIMITS OF BELLINGHAM: There are 72 public water supplies, not including the City of Bellingham, on record as of this date with our department. These water supplies provide 5230 individual services with domestic water. About one-half of the nearly 1000 Grade 'A' milk producer farms in the county are served by such public water supplies. For convenience I have divided these supplies into three supply classifications as follows, deep drilled wells, shallow wells and treated surface supplies and unprotected surface supplies.

DEEP RILLED WELL SUPPLIES: These supplies are located primarily in the Birch Bay, Everson and Ferndale areas. They serve approximately 699 individual services and present no current or potential public health problem as to quality. The deep drilled wells in the Mountain View area contain traces to 0.4 ppm natural flourides.

The following named water associations or organizations, together with the number of individual services in this classification are listed herewith:

Aldergrove Water Assoc. - 18
Bakerview Water Assoc. - 7
Birch Bay Water Co. - ?
Belden Acres - 10
Bell-Bay Jackson Water Assoc. - 18
Central City Water Co. - 20
Custer Water Assoc. - 75
Fertile Meadows - 8
Grandview Water Assoc. - 12
H. Street Road - 5
Kelly Road Water Assoc. - 15
Laurel (Holz) - 6
Lake Terril - 28
Laurel (Erickson) - 9
King Mountain - 10
Meadowdale - 52
Northwood - 10
Mt. Baker - 50
Neptune Beach - 35
North Star - 30
Old Settlers - 40
O.P.C. - 10
Orchard -24
Pleasant Valley - 8
River Road Water Assoc. - 9
Sandy Point - ?
Smith Road - 17
Thornton Rd. - 18
Victor - 7
Pt. Roberts - Whatcom County Water District #3 - 50
City of Blaine - 700 (supplied by Blaine total 700 - Birch Bay Water Co., Bay View)

City of Everson supplying Trap Line Road Assoc., Burien Rd. Assoc. and Emerson Road Association - total 200.

City of Ferndale also supplies Terrant Lake Assoc. and an area to the east of town total services - 250.

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Fertile Meadow Assoc. with 16 services also supplies the River Road Water Assoc. with 8 services.

SHALLOW WELL AND TREATED SURFACE SUPPLIES: This classification of supplies provides 453 individual services. The shallow well aquifers are of course close to the surface and have no impervious strata between it and the surface. Protection of the aquifer from surface contamination is an increasing problem. Most of these supplies lie in a central portion of western Whatcom County. The water often contains a high iron content, is acid to the point of being corrosive and a few have an increasing concentration of nitrate. They are identified together with the number of services below:

R. R. Anderson Assoc. - 5
Delta View - 80
Dierick Assoc. - 5
Guide Meridian - 30
Hemmi Road -18
Northwest Road Water Assoc. - 65
Pangborn - 10
Skookum Chuck - 40
Everson - 200
Gooseberry Point - 20
Delta Water Assoc. which also supplies Valley View Water Assoc.

TREATED SURFACE SUPPLIES:
City of Bellingham, which also supplies about 1200 surfaces to the following districts or associations:
Geneva Water Assoc.
Whatcom County Water District #1
Whatcom County Water District #2
Chuckanut Drive Area
Mt. Baker Water Assoc. to the Everson-Goshen Road.

City of Blaine also uses some spring water supply as well as deep drill wells. City of Sumas provides water from springs to the following associations:
Rock Road Water Assoc.
Nooksack Valley Water Assoc.
The Town of Nooksack with a total services in the city of about 150 and 550 outside the city limits.
City of Lynden with treated filtered Nooksack River water supplies about 1150 services within the city and 90 outside to the following associations:
Kok Road Water Assoc.
Glendale Water Assoc.
Double Ditch Water Assoc.

UNTREATED SURFACE SUPPLIES SERVING A TOTAL OF 238 SERVICES. These are listed below together with the number of individual services:

Whalens in Pt. Roberts - 100
Orr - ?
Sunrise Cove - ?
Glacier - 30
Town of Maple Falls - 30
Town of Wickersham - 20
Town of Acme - 40
(All these towns are unincorporated)

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These supplies are all open to contamination and do not presently meet our minimum recommended standards for a potable water supply. Improvements are needed immediately to bring these supplies up to standard.

Seven of the seventy-three public water supplies in Whatcom County are operated by cities or towns with full time service and maintenance personnel. Nearly all of the remainder are legally constituted water associations whose membership constitute its customers. They are run by a small board of about five elected from among the users. These unpaid board members are untrained and unskilled persons and run the association including the actual maintenance and operation. Upon organization the plans and well locations are usually submitted in advance for approval by the State Department of Health and this department. Subsequently, however, nearly all extensions and improvements are made without prior approval or knowledge by this department although this requirement is pointed out repeatedly. Such things as unsuited reclaimed water tubing used as water mains, undersized piping, overextended service lines, improper maintenance of reservoir lines, improper or no sanitization of the mains before usage, are common occurrences with this unskilled and untrained personnel. There is a continuous turnover of members in the association and on the board and maintaining contact and supervision, especially with our present staff is almost impossible. No county-wide or even area planning can be done to coordinate and efficiently group these many water associations together into a systematic safe distribution and supply system of domestic water.

NEEDS RELATING TO DOMESTIC WATER IN WHATCOM COUNTY OUTSIDE THE CITY OF BELLINGHAM:

I feel it is very evident that Whatcom County is long overdue for an extensive and coordinated program of multi-use planning to meet the need for water including domestic water. At the present time we have adequate quantities of water available yet it is being developed in an unplanned and thoroughly confusing method.

A number of individual water studies have been made of our area such as the water resources study of the Nooksack River Basin issued in 1960 by the State Department of Conservation, Division of Water Resources, but little utilization of this collected data has been made.

No real solution to this uncoordinated development of water in Whatcom County will be realized until coordinated plans are made and cooperative methods are devised to implement these plans. From a public health viewpoint this is absolutely essential if potable water is to be provided in adequate quanities when and where needed.

As a secondary concern this department feels that any plan to provide an industrial water supply that does not meet potable water standards introduces the following public health hazards.

TESTIMONIAL COPY

1. The double water supply within a plant, one safe and one unsafe, creates grave cross connection potentialities. This can thereby create a real potential to the health of its workers. If at all economically possible, therefore, I feel the industrial water supply should be potable.

2. Should a large segment of the county be provided with industrial water that is not potable, then a problem may ensue which would retard or inhibit the development of adequate safe potable water in that portion of the county.

WATER POLLUTION CONTROL:

The need to sewer a portion of Lake Whatcom and develop a comprehensive plan for the Lake Whatcom watershed has already been outlined.

Detailed studies are needed to determine the present extent and potential hazard to shallow ground water supplies by contamination from surface waters. This is especially so in the central portion of the county with its high water table.

Adequate sewerage systems are needed in the towns of Everson and Sumas. A portion of the former's drainage finds its way into the Nooksack and the remainder, including the drainage from Sumas, eventually into the Frazier River. The City of Ferndale is in need of a modern adequate sewage treatment plant to replace its municipal septic tank. The resort areas of Birch Bay and Point Roberts will in the immediate future will need sewage collection and treatment systems if the beaches are to remain safe for public use.

GFH:jc

CITY OF BELLINGHAM
WASHINGTON

Water Department

OFFICE OF THE SUPERINTENDENT

October 12, 1964

STATEMENT

By: Charles C. Gold
Superintendent, Water and Sewage
City of Bellingham, Washington

To: Columbia Basin Inter-Agency Committee
Task Force for Comprehensive Study
Puget Sound and Adjacent Waters

Subject: Current capabilities and projected potential of the water distribution system of the City of Bellingham.

The city of Bellingham procures its industrial and domestic water supply from two natural lakes. The largest of these two lakes -- Lake Whatcom -- is 315 feet above sea level, and is approximately twelve miles long and one mile wide with varying depths up to 350 feet. The smaller lake -- Lake Padden -- is 454 feet above sea level and covers 160 acres with depths up to 60 feet.

Lake Whatcom supplies water to the greater portion of the city and to all the city's major industrial water users. Average daily consumption the year around is approximately 50 million gallons per day. Maximum design capability is 100 million gallons per day.

Lake Padden supplies water to a small portion of the city through a 20 inch main by gravity. Consumption varies from 1.0 to 4.5 million gallons per day with a yearly average of 1.6 million gallons per day.

Purification of the water supply from both lakes consists of simple chlorination, with lime and ammonia added. The watershed for Lake Whatcom is uncontrolled. The watershed for Lake Padden is city owned except for one very small portion.

The supply of water from Lake Whatcom can be supplemented by the addition of approximately 66 million gallons per day through a tunnel and pipe line system 11 miles long from the middle fork of the Nooksack River. This water is piped directly into a settling basin and then directed into Lake Whatcom through a natural creek some 13,500 feet in length. Provision has been made in this supplementary supply to add an additional 84 million gallons per day into Lake Whatcom by installing a second pipe line some 10 miles in length if necessary. An additional possible supplementary source

of water is the South Fork of the Nooksack River. The city owns water rights on this river for 2.0 cubic feet per second but no development of this source has as yet been undertaken.

With the abundant quantity of water available to the city, no possible shortage of domestic water can be foreseen. However, industrial water needs in excess of 100 million gallons of water per day (present industrial consumption averages 47 MGPD) will have to be provided for by additions to the city's existing distribution system, both from the sources of our water supply to the control tower as well as within the city limits. At the present time, no major industrial users outside the city limits are supplies with water. Should such a requirement develop, adequately sized pipelines could easily be put in place to distribute the necessary gallonage.

NEEDS

The major need of the Bellingham water distribution system is for protection of our watershed against rapidly increasing human pollution or, in lieu or in addition thereof, an effective purification and filtration plant. The watershed of the principal source of our supply -- Lake Whatcom -- is so extensive in size as to preclude even the remotest possibility of the city acquiring control of same. Sewering the environs of the lake (some 28 miles of shoreline) therefore appears to be called for, as does adequate filtration of the domestic water supply whether or not the lakeshore is sewered.

Since only a small portion of the shoreline of Lake Whatcom lies within the city limits, coordination and cooperation of Whatcom County planners and residents will be required to accomplish the sewering requirement. As the cost will be such that private landowners around the lake will face economic ruin should they be required to defray said cost, governmental assistance in planning and constructing the required sewer lines will be a prerequisite to realizing a domestic water supply for the City of Bellingham which will meet Federal drinking water standards in all respects.

City of Anacortes

Washington

October 1, 1964

Mr. Robert H. Gedney, Co-Chairman
Task Force for Comprehensive Water Resource Study
U. S. Army Engineering District, Seattle
1519 Alaskan Way South
Seattle, Washington 98134

Dear Mr. Gedney:

Your notice of Public Hearing on Comprehensive Water Resource Study, Puget Sound and Adjacent Waters issued September 25, 1964 requested that facts and testimony on water resource needs be submitted in writing. Enclosed is information on two major concerns of the City of Anacortes:

(1) Dredging of Fidalgo Bay to provide access for deep water navigation to a proposed Anacortes Industrial Park, planned under Project No. Wash R-15 of the Urban Renewal Administration of the Housing and Home Finance Agency.

(2) Water supply for future domestic and industrial needs of the general area between Avon and Anacortes, covered by the City water transmission system.

A brief oral summarization will be presented at the hearing.

Sincerely,

William F. Gallagher

William F. Gallagher
City Engineer

WFG:at
Encl.

Exhibit 16

Comprehensive Water Resource Study

Puget Sound and Adjacent Waters

City of Anacortes

Deep Water Navigation in Fidalgo Bay

The Pacific Northwest is experiencing a growing shortage of industrial sites, suitable for integrated development in an urban area and within proximity of developed waterfront facilities. The City of Anacortes is in a location of an abundant supply of natural resources, raw materials, inexpensive power and available labor force. The land factor is being improved through a planned industrial park, as a first step. To serve this industrial area with navigational facilities will require the dredging of Fidalgo Bay, adjacent to the proposed site. A study of the feasibility of such dredging is considered essential in conjunction with survey and marketability studies now under way through an urban renewal grant.

On July 21, 1964, the City of Anacortes entered into a contract with the Urban Renewal Administration of the Housing and Home Finance Agency for a planning advance for surveys and plans for an urban renewal project No. Wash R-15, Anacortes Industrial Park. The project covers an area of approximately 150 acres, located in the southeast section of the City adjacent to the waters of Fidalgo Bay. The Survey and Planning phase of the project includes structural surveys, engineering and planning, market study, land surveys and appraisals and relocation planning.

A reservation of capital grant funds in an amount of $2,608,000 has been established by the Urban Renewal Commissioner for the park project. Prior to submittal of an application for Loan and Grant for these funds, all work approved under the Survey and Planning phase must be satisfactorily completed. Some indication of feasibility of dredging operations by the target date of October 31, 1965 should be obtained as a delay beyond this date might jeopardize the City's opportunity to obtain the funds to proceed with the project.

The Port of Anacortes has indicated their interest in this project by their resolution of November 7, 1963 in which is stated that:

(1) the Port is desirous of having Fidalgo Bay dredged and has been taking steps and proceeding with planning in the hopes of accomplishing said end.

(2) the Port will construct pier facilities when needed in the project area.

The City was advised by the U.S. Senate Committee on Commerce under date of September 26, 1963 that the Senate Public Works Committee formally

adopted a resolution requesting the Corps of Engineers to review the reports on Anacortes Harbor with a view to determining whether the existing project should be modified in any way, with particular reference to improvements in Fidalgo Bay to permit the accommodation of larger vessels.

The City of Anacortes therefore requests that a study be made and an interim report be issued on the feasibility of dredging Fidalgo Bay and that indication of feasibility be obtained by the date of October 31, 1965. The City also requests that, if dredging is considered feasible, estimated costs be obtained so that funds can be made available for start of dredging operations in the spring of 1967. The City will try to provide any information which will assist in this undertaking.

The Anacortes area is in a strategic location for inclusion in any long range study of industrial sites.

Comprehensive Water Resource Study

Puget Sound and Adjacent Waters

City of Anacortes

Water Supply for Industrial and Domestic Use

The City of Anacortes is in a general area of high potential for industrial expansion. Because of the excellent deep water harbor, highway and railroad service, availibility of natural resources and accessibility to many commercial enterprises, the City and immediate enviorns provide an attractive site for large industries. The City maintains a water system which supplies several major industries and large residential areas. Studies are under way to determine methods and costs of increasing the supply to serve regular growth and to meet probable greater industrial demands. Plans for expansion of the City water system should be corelated with long-range water supply needs of the entire geographical area.

The City of Anacortes water system obtains its main supply from two Ranney wells located on the east bank of the Skagit River north of the city of Mount Vernon. The well supply is supplemented with a small flow directly from the river at periods of low turbidity during high seasonable demand. The river intake is located near the west bank of the Skagit at the town of Avon. Water from the wells and river is pumped through an iron removal filtration plant located near the wells on the east bank, through a transmission line under the river near Avon and across the Swinomish flats for a distance of 12 miles to a reservoir located on the high ground immediately southwest of the City.

The City system supplies a utility district at Avon with water during the canning season. It regularly supplies the City of LaConner, two major oil refineries, two chemical plants, the naval air base on Whidbey Island, and domestic users in the Summit Park area with water from the transmission line before the flow reaches the City reservoir. Within the City water is furnished to a pulp mill, plywood mill, shingle mill, fish canneries and minor industrial and commercial users in addition to the domestic use. Total demand varies from 18 to 21 million gallons daily.

During peak periods of use, the present system as now constructed is very near maximum capacity. Over the period of recent years, the City has had inquiries as to its ability to supply additional quantities of water to potential industries. Studies have been made and more are in progress for ways to meet probable increased demands. Recently the City obtained further water rights on the Skagit River, increasing its total well and river rights to slightly over 100 million gallons daily.

At the present time studies are being made on the basis of using water supply from the Skagit River at Avon. This source of supply involves a high pumping cost. Early studies indicated that it was not economically feasible to incorporate a gravity source of supply, because in order to obtain the high level required and to compensate for friction loss, the water supply would have to originate a considerable distance up river. However, in a long range view and considering the Skagit Valley as a whole, a gravity source of supply might warrant consideration.

The City of Anacortes therefore requests that the needs of the area served by the city water system be included in any long-range plans for a water supply to the Skagit valley. The City will provide any available information which will assist in the study.

COPY

SKAGIT SOIL AND WATER CONSERVATION DISTRICT

MOUNT VERNON, WASHINGTON

February 7, 1961

Col. R. P. Young
U. S. Army, Corps of Engineers
1519 South Alaskan Way
Seattle 4, Washington

Dear Col. Young:

Re: Public Hearing on Flood Control - Skagit River Basin, Washington

The Supervisors of the Skagit Soil and Water Conservation District are extremely interested in any plans which the Corps might develop to control floods on the Skagit. Since the Skagit SWCD was formed in 1942, the District Supervisors have received many requests for assistance concerning erosion and flood control problems on the Skagit.

We recognize that during the life of the Skagit SWCD there have been substantial land use changes. Additional land has been cleared and crop production has varied materially in accordance with market demands. It has been our observation, and this has been supported by soil surveys carried out by the Soil Conservation Service, that our Skagit River flood plain contains the largest, or one of the largest, bodies of high-quality land to be found west of the Cascades. Much of the area in the lower Skagit Delta is protected by dikes from river and salt water inundation and land owners, through their organized drainage and diking districts, have expended large sums of money to provide and maintain protective dikes and drainage outlet systems.

A considerable acreage of bottomland in the upper Skagit area above Burlington is still subject to overflow during periods of moderate flood which have recurred periodically during the past ten years. Much of this non-diked area is capable of more intense use if the flood threat was eliminated or reduced. As urbanization and industrialization continues, the responsibility of the presently non-diked areas to contribute more substantially to the agricultural economy of the county seems likely. We believe, therefore, that flood control measures which would reduce these moderate floods should have consideration in future studies.

Since 1945, substantial engineering assistance has been provided by the Skagit SWCD to improve the drainage systems of the Skagit and Samish river deltas. Farmers in turn have invested many thousands of dollars in their drainage works, and the Federal Government, through ACP cost-sharing help, has provided additional thousands. Any major flood which would top dikes would reduce the effectiveness of the recently installed drainage systems, resulting in substantial crop loss and high costs for rehabilitation.

We are including as a part of our statement the report submitted by Work Unit Conservationist Anton F. Harms, who has been assisting the Skagit SWCD since 1945. We concur in this report. Included with Mr. Harms' statement is a report of land damage caused by the 1951 flood, with accompanying photographic documentation.

Very truly yours,

Board of Supervisors
Skagit Soil & Water Conservation District

Floyd Nelson, Chairman
Arthur L. Johnson, Vice-Chairman
W. James Wylie, Sec.-Treas.
Pete C. Olsen, Member
Jess A. Knutzen, Member

By /s/ Floyd Nelson
Chairman

Attachments:
Harms' Report
Land Damage Report
Photographic Documentation

AD-A037 567 PACIFIC NORTHWEST RIVER BASINS COMMISSION VANCOUVER WASH F/G 8/6
COMPREHENSIVE STUDY OF WATER AND RELATED LAND RESOURCES. PUGET --ETC(U)
MAR 70 A T NEALE, S STEINBORN, L F KEHNE

UNCLASSIFIED NL

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UNITED STATES DEPARTMENT OF AGRI
SOIL CONSERVATION SERVICE
Union Block, First and Pine S
Mount Vernon, Washington

February

Board of Supervisors
Skagit Soil & Water Conservation District
Mount Vernon, Washington

Attention: Floyd Nelson, Chairman

Gentlemen:

In accordance with the Skagit SWCD Supervisors' r
officers of the Skagit Flood Control Council, I a
statement relating to the Skagit River flooding a
the Skagit. This might be considered in connecti
at the flood control hearing being conducted by t
Mount Vernon on February 8, 1961.

Extent of Flooding

Since the Skagit SWCD was organized in 1942 there
floods which have inundated substantial areas of
Peak floods during these years have occurred in J
October, and November. The floods in November of
and in October of 1955 broke through dikes and in
of the lower Skagit delta. None of the above flo
the volume of the 1909 and 1921 floods.

The 1951 flood, for example, caused land damage i

1. Serious erosion of top soil
2. Deposition of coarse sand over otherwise
3. Logging debris on land.
4. Damage to established drainage systems.
5. Loss of production.
6. Damage to farmsteads and residential pro
7. Damage to livestock through death or los
8. Damage to feed supplies.
9. Damage to communications including roads

SCS technicians estimated 1951 farm flood losses
this report is attached.

A substantial land area has been cleared in the N
non-diked areas since 1940 and substantial losses
areas from floods of a much lower intensity than

Possible Effects of a Major Flood Which Would Top Present Skagit River Dikes:

Most acreage in the Skagit and Samish deltas could be substantially inundated by a major flood of the magnitude that would top dikes. Eighty percent or more of Skagit County's agricultural production could be affected bu such inundation. Types of damage which could be expected would include the following:

1. Damage to existing tile and open ditch drainage systems.

   a. There are presently approximately 165 miles of open drain ditches on the Skagit and Samish Flats. Investment in these drainage works vary from 30¢ per l. ft. for some farm ditches to $5 or more per l. ft. on the larger district canals.

   b. Existing tile under-drainage would become ineffective as open ditch outlets become filled with sand and debris.

2. Major tidegate outlet structures to salt water would likely be destroyed as flood waters approached salt water.

3. Salt water dikes would be broken by flood waters, permitting inundation of land by salt water during periods of high water. Land damaged by salt water inundation would require one to five or more years for restoration to full crop production.

4. Damage to farm buildings, especially to modern Grade A dairy set-ups, would be higher than in former floods because of mechanization, modern milking parlors, etc.

5. Farm and urban residence losses would be high because of preponderance of modern one-story, low-level homes.

6. Land damage caused by extensive sand deposition and channeling from erosion of top soil would permanently reduce land value.

7. Livestock losses through death and/or loss of production could be expected to be extremely high. Inability to milk a high-producing dairy cow for 24 hours or more could result in disabling her for future milk production. Damage to stored livestock feed, including hay and silage, could be large.

8. Loss of crop production for one or more years on many thousands of acres could be expected. Extent of loss would depend on time of year when flood occurred.

9. Loss of processing crops would affect payrolls in all communities of the county and would also affect ability of processors to meet commitments.

River Bank Erosion Problems:

Since the district's formation in 1942, numerous requests for assistance in controlling river bank erosion, largely in areas above the Great Northern bridge, have come to the attention of the Skagit SWCD. For the most part, remedial measures are too costly for individual farmers to meet. County and State Flood Control Funds have provided limited assistance in controlling river bank erosion.

A substantial portion of the revetment work installed during the 1930's in the area above Sedro Woolley has now failed.

Aerial flights made in 1941, 1947, and 1956 show substantial channel changes and soil losses during a 15-year period. These photos are available at the Mount Vernon Soil Conservation Service office for review of the problem. They are regular tools used by SCS personnel in conservation planning, engineering and application work with farmers.

Small Stream Tributaries to the Skagit River

Small stream tributaries to the Skagit are contributing substantial amounts of sand, gravel and logging debris during periods of heavy rainfall. This small stream erosion is most severe on recently logged, non-restocked, steeply sloping areas. Substantial amounts of finer materials from such stream erosion are carried downstream, contributing to the siltation problem at and near the mouth of the Skagit. This siltation creates an additional outlet problem for drainage districts.

Other Considerations

If dredging is considered as a partial solution to the flooding problem, studies should be made as to the desirability of bank revetment to reduce river bank erosion. Farmers, individually and through their drainage and diking districts, spend large sums for protecting their land and improving their drainage. A major flood would place an undue burden on these farmers.

Farmers have received some assistance through cost-sharing payments of the ACP program of the U. S. Department of Agriculture. Approximately $150,000 in cost-sharing funds have been provided for drainage during the past ten years in this county.

Attached are photos documenting conditions at the time of the 1951 flood. Damages of this sort might be multiplied manyfold should a major flood occur.

Very truly yours,

Anton F. Harms
Work Unit Conservationist

Attach.

SKAGIT ALPINE CLUB

MEMBER OF THE FEDERATION OF WESTERN OUTDOOR CLUBS
MEMBER OF GOOD OUTDOOR MANNERS ASSOCIATION

809 SOUTH 15TH STREET
MOUNT VERNON, WASHINGTON

October 9, 1964

1964 Officers:

President:
E. G. "Ben" Englebright
Route 2, Box 247
Anacortes, Wash.

Vice-President:
Jack Davis
705 S. 1st St.
Mount Vernon, Wash.

Secretary:
Mrs. C. W. Cates
1204 Cascade Circle
Oak Harbor, Wash.

Treasurer:
Delbert E. Tillotson
720 North 21st St.
Mount Vernon, Wash.

Immediate Past President:
William A. Rivord
504 Talcott St.
Sedro Woolley, Wash.

1964 Committee Chairmen:

Budget & Finance:
Del Tillotson
720 North 21st St.
Mount Vernon, Wash.

Cabin:
Jack Davis
705 S. 1st St.
Mount Vernon, Wash.

Climbing:
Ramon Pruitt
Route 4, Box 66E
Mount Vernon, Wash.

Conservation:
Dr. Fred T. Darvill
809 So. 15th St.
Mount Vernon, Wash.

Outing:
William Werner
1011 N. 14th St.
Mount Vernon, Wash.

Program:
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Mrs. William A. Rivord
504 Talcott St
Sedro Woolley, Wash.

Inter Sports:
Cory Crooks
1525 Dunbar Rd.
Mount Vernon, Wash.

Task Force for Comprehensive Study
Puget Sound and Adjacent Waters
c/o Elks Lodge
1009 7th Street
Anacortes, Washington

Gentlemen:

It will not be possible for one of our members to present this testimony in person, but we ask that it be included in the record of the hearing to be held October 12, 1964.

The Skagit Alpine Club is opposed to the construction of any further dams on the Skagit River, or any of its tributaries. We feel that further dams would work a severe hardship on both salmon and steelhead runs in the Skagit River, and on the opportunities for mountain and stream recreation in our mountain area.

We are in favor of appropriate recreational development, both marine and riverside, in Skagit, Island, and San Juan Counties.

We have also gone on record as favoring the development of a national recreation area in the North Cascades, to include the head waters of many of the streams and rivers draining this area.

Sincerely,

Fred Darvill

Fred T. Darvill, Jr., M.D.
Chairman Conservation Committee

FTD/ne
cc:file

Exhibit 18

STATEMENT OF THE WASHINGTON STATE DEPARTMENT OF GAME
RELATIVE TO THE COMPREHENSIVE WATER RESOURCES STUDY
OF PUGET SOUND AND ADJACENT WATERS

The information bulletin on the Puget Sound Basin Study makes some basic statements on water that we heartily concur with. Under the section entitled "Purpose" it states "The water resources of the Puget Sound Region are its most important natural asset, shaping not only its economy, but the living habits and environment of its residents". Later, the bulletin states "Fish and wildlife are matters of primary concern in planning and development of the water resource. Recreational assets have a major role in the economy and well-being of the people".

It is our hope that those who make the final decisions on the development of the Puget Sound Basin consider very carefully the statements quoted above since we feel that they reflect the need for, and importance of, fish and wildlife in the planning for development of the various watersheds within this Basin. All too often, we find the fish and wildlife resources being given inadequate consideration. Fish and wildlife people have fought many times in the past for recognition of these valuable resources; only to find their efforts thwarted by courts of law and federal agencies in Washington. It is time that we as people of the State of Washington take the lead in determining the best development of our water resources and also begin to recognize the importance of fish and wildlife as a part of our economy and as an important part in the future recreational development of this State.

The value of sport fishing and hunting is readily seen when we realize that fishermen and hunters spend $100,000,000.00 annually in this state in pursuit of fish and game. To jeopardize this phase of our economy is folly. Therefore we must strive to protect this resource by giving it adequate consideration in the planning of various watershed development projects. The fish and wildlife people recognize that some projects that will be proposed upon completion of this study will spell disaster to these resources; some will be compatible while still others could provide some benefits. We hope that the latter two types of projects will prevail.

Natural habitat of fish and wildlife is rapidly diminishing in our state. The construction of large reservoirs has inundated thousands of acres of wildlife habitat and hunting area. Intensive management and development of remaining habitat have been necessary to attempt to maintain the wildlife populations at a satisfactory level, this has required increased manpower and financing. The inundated hunting areas, however, are lost forever. Reservoirs have inundated spawning grounds for fish and extensively altered their natural habitat. Stream fishing areas have been lost. Artificial propagation and rearing facilities have been required to replace these spawning and rearing areas. These facilities have required additional manpower and financing. Stream fishing areas, however, are irreplacable. Construction of more and more reservoirs that inundate fish and wildlife habitat will continue to crowd our fishery resources into artificial propagation facilities, our wildlife onto smaller range areas, and our hunters and stream fishermen into smaller areas. Orderly and well planned development can minimize

some of these problems by combining facilities and developments. In addition, the greatest problem areas could be bypassed and reserved for fish and wildlife purposes. We hope that lessons have been learned from the problems associated with piecemeal development of the Columbia River and tributaries and that these lessons can serve as a guide for development of the Puget Sound Basin and adjacent waters.

The area involved in this particular study produces over 50% of the winter run steelhead of the State. It also provides over 48% of the deer, 74% of the pheasants, 68% of the grouse, and 75% of the ducks harvested in Western Washington. Therefore, water resource development in this study area may have a serious affect on these fish and wildlife resources. It is mandatory therefore, that the Washington State Department of Game take an active role in the Puget Sound Basin Study to insure that these resources are given adequate consideration.

We recognize the Puget Sound Basin Study as a new concept in watershed planning. Planning future developments with all agencies concerned having a part in the planning could lead to optimum development of the Puget Sound Basin with all interests being satisfactorily served. We sincerely hope that these goals can be achieved.

Page 2 of 2,
Exhibit 19

Engineering Department
Phone 733-0360
Bellingham Washington

October 27, 1964

Robert H. Gedney, Co-Chairman
Columbia Basin Inter-Agency Committee
U. S. Army Engineers District, Seattle
1519 Alaskan Way South
Seattle, Washington 98134

RE: Comprehensive Study, Puget Sound and Adjacent Waters

Dear Mr. Gedney:

From the time of the Big Flood recounted in Genesis, to the present, men have employed various methods to alleviate the damage of floods. Floods are largely responsible for the formation of the rich alluvial soils of the Nooksack Valley. With the advent of civilized man, the areas immediately adjacent to the stream were cleared and inhabited. From mans egocentric view it became necessary to arrest the very force that created the soil upon which he stood.

Some of the early attempts at flood control are remembered by "Old timers" and some of them are a matter of record. All of them were piece meal and directed to a confined area with no thought to consequent affects on the entire river system.

One of the homesteaders recalls the quarrying of stone with a hand held drill and single jack and the rock conveyed to the bank of the river on a wooden sled or "stone boat." This early, laborious and expensive method was used to abate erosion that threatened the abutments of bridges. It was beyond economic possibility to employ such means merely for the purpose of protecting or alleviating damage to relatively cheap cultivated land. Here too, their efforts often met with failure. The loss of the abutments and the west span of Nugents bridge during the flood of 1910 was evidence of inability to control the waters of the flooded river.

Nooksack River - - Flood Control

Early attempts were made at protecting more valuable property such as buildings and roads. The method employed consisted of driving piling in tight rows. Each pile was lashed to two horizontal wale logs to keep them in position. Some of these structures were called "Wing dams." Wing dams were relatively short rows of driven piling set at an angle to the bank. These were nearly always placed in a series on the inside of a curving bank. The purpose was to deflect the force of the current.

It was soon found that a resulting eddy continued erosion immediately below a "Wing" hence one was placed below another in a series to deflect the water and break it's turbulence.

Occasionally, especially in the lower reaches of the Nooksack River in the vicinity of Marietta, continuous rows of piling were driven parallel to the bank. In some instances the space between the piling and the steep bank was filled with the branches of coniferous trees. This type of bank protection was quite widely used for a period of time. Hay that had remained out in the rain to the point that it was unsuitable for livestock feed was often used. This commodity could be very common and readily available during some seasons in the Nooksack Valley.

Many failures in the "Wings" is evidenced in the remnants of piling still to be seen protruding from the water along the river. They not only often failed to function as they were intended, but were costly and at present constitute a hazard. A few old piling frequently initiate a collection of debris or a "Log jam" that deflects the force of the current into the bank resulting in accelerated erosion. The material for the "Wings," the piling, was usually furnished by the property owner and the piling was driven by experienced County Crews.

Another revetment known as a "brush mat" came into prominence during the Works Progress Administration. First the banks were sloped and then a dense mat of coniferous boughs was placed upon the area. The mats of boughs were in turn held in place by a system of cables, anchored at the upper end and held in place below the water surface by fascines. Fascines were long continuous cylindrical bundles of branches or brush bound around a core of adjacent concrete blocks. Willow cuttings were sometime stuck into the ground covered by the mat. Many of the remains of these revetments are still to be seen along the Nooksack River. Concrete blocks and tangled cable are in evidence on several sites. The brush mat had the advantage of flexibility, where the wing dams were rigid. When the earth behind or below the mat eroded, the fascines and attached cables were free to conform to the new contour and continue to offer protection against further loss. In addition, in the cases where willow cuttings were used, the banks became a tangle of living trees and brush. The willow clad banks were not as effective as the ones that were permitted to establish a covering of grass sod. Winds that accompany flood causing rain storms sway the trees causing the roots to move and consequently loosen the surrounding earth which is then more vulnerable to erosion.

Later a system of revetments employing large logs in fascine like bundles was much in use. Here again the object was to furnish a flexible deterrent to erosion. The logs were bound with cables, employing a winch or a tractor to supply the power. The cables were then secured to stumps or trees along the bank. The logs were then free to rise or fall with the level of the water and interrupt the force of the current. Some of the logs were fastened in such a manner as to project out into the stream. The object in this method, usually attained, was to collect debris floating down the stream at flood stage and creat a more permanent barrier to the force of the current. The desired effect, however, was not always attained. Similar to the "Wings" of vertical piling, the horizontal logs created an eddying turbulence

that was some time more destructive than the direct current. Consequently nearly all of the jams tied to the bank in this way are characterized by deep underlying pools with the adjacent bank undermined.

With the advent of smooth hard surfaced roads and fast pneumatic tired trucks of greater capacity, as well as more improved methods of quarrying, the system of revetments is again changing. At present a loose rubble masonry is placed on sloping banks where erosion is eminent. Rock rip rap conbines many of the qualities of the previously employed systems. It presents a rigid and unyielding surface to' the force of the current and simultaneously retains the ability, when properly placed, to settle and conform to a new contour if scouring undermines the bank.

The chief causes of failure in revetments of rock are quantity and quality of material. When there is insufficient thickness of rocks the underlying bank is left exposed when the rocks settle into a deepened channel. There are a few isolated revetments of rock out in the middle of the stream bed that attest to the fact that the current has cut into the upstream end of the system and washed away the supporting soil. There is also a marked variation in the hardness of the different deposits of Chuckanut Sandstone that is available in local quarries. The yield of one quarry in particular is so soft that the rising waters of a flood reduce many of the large pieces to piles of sand. Fortunately the majority of stone used in rip rap is of a hard and durable nature that withstands weathering and abrasion and go to make a rather permanent structure. An added advantage of rock rip rap is the speed and ease with which a breach may be repaired. When there is access to the affected area, rock may be hauled in before the entire system is lost.

The foregoing is confined to alleviation of bank erosion. There are no dikes or levees or other structures designed to control or confine flood waters constructed by county crews. There is a rather unified system of dikes paralleling the Nooksack River that start in the vicinity of Lynden and continue down stream to its mouth. These dikes have largely been due to the combined efforts of mutually interested individuals.

The degree nor the frequency of floods has not been abated or diminished through the concerted efforts of the present combination of county, state and individual land owner. The ravages of erosion have been greatly reduced and in many instances halted, but the flood plain of the Nooksack River is still subject to inundation to the same extent as it always has.

There is one item that changes drastically with passing time. Reference is made to damages. Damages related to economics increase proportionally to the value of the encroachments on the flood plain. The economic losses are a matter of record. After each flood the damage is assessed and the figures published in the various news media.

Damages related to human disaster are proportional to the number of habitations adjacent to the stream. According to the records of the Whatcom County Chapter of American Red Cross flood damages have reached the proportion of disaster no less than fourteen times during the past twenty five years. Individual cases involving fifteen to thirty two families have been recorded during this period.

The river is a juggernaut in whose path the residents of the valley have placed themselves. The natural habits of the stream are quite well established. It is true and certain that flood conditions will recur. The extent of a probable

maximum flood could be plotted with a fair degree of accuracy. It is possible to place signs to mark the extent of past floods and the predicted limits of future floods, as a warning to the inexperienced and as a reminder to the established residents.

Through subsequent meanderings, the capacity of the channel has wide variations. At many points the existing channel is adequate and could be maintained. At other points it will be necessary to increase the capacity by enlarging the section. At points where a large area has been devestated, the need for reclamation measures are indicated. The present value of the wood together with its speed of growth and low demands on its site make the growing of cottonwood feasible from the standpoint of a private individual. The far reaching benefits accruing from decaying vegetation in creating soil make the project worthy of governmental subsidy. Many of the gravel bars support a growth of Cottonwood trees at present.

Present regulations governing gravel removal from river bars should be reviewed. The benefits of increased section and resultant water carrying capacity are worthy of consideration. Demands for rock aggregate have been greatly increased by road building as well as general construction concomitant with increasing population. Gravel removal at a local point may be considered as a dredging operation when its replacement from upstream deposits is assured by subsequent stream flow.

There is need for continuing participation of private individuals in construction of immediate erosion abatment facilities. State and local governments benefit by preservation of tax producing land adjacent to the river. It is beyond the ability of local sources to construct reservoirs remote from the area where the greatest damage is sustained. Impounding waters from freshets for later release requires construction of extensive dams. The initial cost and long period of amortization preclude local financing. It is in the area of long range planning and construction that aid is solicited from the Federal Government.

Submitted by,

George Garmo

George Garmo

Bellingham, Washington

UNITED STATES DEPARTMENT OF COMMERCE
WEATHER BUREAU

November 2, 1964

Mr. John Richardson,
Assistant Director
Washington State Department of Conservation
Chairman, CBIAC Task Force on
Puget Sound Planning
Olympia, Washington

Dear John:

Attached correspondence from Maritime Commission of Department of Commerce is self explanatory. They are anxious to participate in the Puget Sound planning.

Will appreciate your inclusion of this material in the transactions of the Task Force with Commerce label.

You are probably aware of the strong interest of the U. S. Coast Guard in aids to navigation and search and rescue operations. Although this is Treasury Department business, I can name the key man if you do not already know him.

Best wishes,

Eckley S. Ellison
Commerce Representative CBIAC

Exhibit 21

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UNITED STATES GOVERNMENT

U.S. DEPARTMENT OF COMMERCE
MARITIME ADMINISTRATION
Washington, D.C. 20235

Memorandum

TO : Mr. Bailey S. Ellison
U.S. Weather Bureau
Portland, Oregon

DATE : October 1[illegible]

FROM : Chief, Division of Ports
Office of Program Planning

SUBJECT: Columbia Basin Inter-Agency Committee, Task Force for Comprehensive Study Puget Sound and Adjacent Waters

Reference is made to the memorandum dated September 3, 1964, from the Under Secretary for Transportation to the agencies of the Department to directly communicate with you relative to the Columbia Basin Inter-Agency Committee.

It is understood that you will present at the three scheduled meetings a general statement in behalf of the Department of Commerce relative to its interests in and its ability to contribute to the studies for the immediate and long-range water and land resource development in the study area. In the past, the Maritime Administration has worked closely with the President's Study Commission on River Basins at other locations concerning the needs and opportunities for land and water resources development. The Administration participated in the preparation of comprehensive plans that contributed to the promotion and general welfare of the river basins. In this respect, the Administration made forecasts of future port needs to accommodate ocean ships as industry and commerce develop along the deepened channels and hopes to have the opportunity to assist in the work of your Committee.

The purpose of the Administration's participation in the port planning program is to match the shipping activities in order to provide a balanced and orderly schedule for optimum developments. As a sidelight on the subject, the Administration is charged with certain responsibilities to investigate the subject of water terminals with a view to devising and suggesting the types most appropriate to transfer the waterborne commerce of the United States, and advise communities regarding the appropriate location and plans for construction of port and transportation facilities in connection with such commerce

Knowledge of some recent and current port development works and other activities directly related to the ports in your area of study are varied and numerous and appear to be of significance to you.

<u>Anacortes</u> - Construction is proceeding on a berth for ocean-going vessels and adjacent open storage and assembly areas.

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Bellingham - Recent construction projects include a new administration building, 6.5 acres of open storage space, gantry cranes, extension of available berthing space and liquid storage and transfer facilities.

Everett - The port district intends to create additional space for industrial development.

Seattle - Contracts in force or let in 1963 amounted to $13.5 million. Some of the works were: construction of additional berth, warehouses, grain handling equipment and improvement of existing grain handling facilities. Also, additional waterfront properties were purchased.

Tacoma - One of two berths seriously damaged by fire in 1963 has been repaired and rebuilding of the second berth is almost completed. Construction of a third berth has begun. The harbor area is being dredged and the spoil is being used to create 1,200 acres of land which will be developed for industrial purposes.

The above information will provide you with a statement of our interest and ability to contribute to the subject river basin study.

Howard J. Marsden

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COPY

Mr. John A. Richardson,) Co-Chairmen
Mr. Robert H. Gedney,)
Columbia Basin Inter-Agency Committee
Task Force for Comprehensive Study,
Puget Sound and Adjacent Waters.

Gentlemen:

Whatcom County is the western pivot of the United States-Canada border. As the extreme north-west corner of the contiguous States, it may have been subject to some neglect in the past. Aside from its strategic position as an International boundary it has a unique combination of desirable geographic features: a moderate climate in the extensive flatland bordering on the Stratis of Georgia, giving way gradually to the extremes of the alpine climate of 10,000 foot high Mt. Baker; the complete Nooksack River basin, with an annual discharge of nearly two million acre feet of water, as well as the headwaters of the Skagit system lie within its borders; the deepwater port of Bellingham serves an ever increasing international trade. Agriculture, Industry, Recreation, Flood Control and Hydro-electric Power -- any one of these would demand a far-reaching plan and careful control over water resources. With all of these present, the need for a comprehensive study is most urgent; the development of a plan to serve the multi-purpose uses - most difficult.

Lake Whatcom long has been the focal point of water resource development in the county. This has been justifiable in that the heaviest industrial and domestic water demands in the past were centered in Bellingham. With the development of industry now in various parts of Western Whatcom County, and with the possible growth of the communities of Blaine, Sumas, Lynden, Ferndale, and others, and with the ever increasing pressure for recreational uses, an all-county water plan is needed.

Research in water quality and quantity must be conducted to lay the groundwork for specific parts of the overall plan. Studies must be directed toward the following which, we feel, are some of the most important problems:

1. The feasibility of the impoundment of waters of the Nooksack River System.

   The Corps of Engineers has already made a study of the area and has proposed a number of potential dam sites. Additional studies are needed to determine the impact of these dams on water quality, water supply for industrial uses, recreational uses, and the effect on salmon fisheries.

COPY

2. The Sumas River Problem:

The Sumas River flows northward into Canada. Because of what might be termed two "topographic mistakes", a serious International problem exists: in the first place, the area in British Columbia into which the Sumas drains is below sea level, and consequently water must be pumped out (by Canada) to conserve valuable agricultural lands. Secondly, when the Nooksack floods in the area of Swift Creek, the overflow inundates the Sumas River basin with silt-laden waters. A study of the feasibility of dikes along the Nooksack is urgently needed.

3. Water capacity of Whatcom County.

In addition to the Sumas River and the periodic drenching from the Nooksack River, the town of Sumas has another kind of water supply - the Sumas wells. These artesian waters are the most desirable from the standpoint of domestic supply. Numerous other artesian wells are known of in the county and a preliminary survey of part of Whatcom County ground water supply has been made by the Department of Conservation of the State of Washington. What is needed here is a complete up-to-date survey of all the water resources -- both surface and ground water -- Whatcom County.

4. The Potability of Surface and Ground Water.

In the development of a system for the distribution of water within the County, the problem of water quality cannot be neglected. A survey of the extent and points of concentration of human focal contamination now is needed.

5. Return of the Mouth of the Nooksack to its former position.

While the cost-benefit ratio of this project would have to be determined by the City of Bellingham Port Authority, one fact seems to make the study of the feasibility of this action necessary: Bellingham Bay is being silted heavily and is actually filling up in some areas. If the river were to be diverted into its old channel north of Marietta, it would flow down what is now called the Lummi River (through an area which is almost completely unoccupied at the present time) and into Lummi Bay. Silt-carrying waters would then flow into the Strait of Georgia where currents would dissipate it harmlessly. The possibility of diking Lummi Bay (leading to the development of an extensive valuable delta) and the probability that the Salmon Fisheries of the Nooksack might be improved (since the river would then flow into water of higher salinity and perhaps lower level of pollution) are additional benefits to be derived from this project.

COPY

6. Point Roberts.

The political-geographic improbability of the occurrence of an area such as this makes it a special kind of problem. The development of housing projects on this peninsula is going on without adequate concern for the inter-related problems of domestic water supply and sewage disposal. The economic life of a recreational area such as this depends upon more than adequate provision for these utilities.

7. Island Water Supply:

Three major islands lie within Whatcom County. The realization of the recreational and agricultural potential of these islands, as well as their development for suburban homesites cannot be attained until the problem of water supply is solved. It has been at least hypothesized that artesian waters - having their head high up on Mt. Baker - provide water for some of the San Juan Islands and may be tapped for supplying other islands.

8. Recreational Needs:

A preliminary study of the recreational needs of this region has been made - but what of the future? Many of the more than 200 lakes in Whatcom County are not accessible and the major lakes - Whatcom, Samish, Ross, and Baker - are reservoirs. In the future these major lakes may have to be protected from recreational use; areas may have to be protected from recreational use; areas may have to be developed specifically for fishing, boating and other aquatic activities.

In future years, Whatcom County is bound to receive at least the "overflow" from the heavily populated centers of Seattle, and Everett to the South, and Vancouver, B. C. to the north. This, coupled with our intrinsic population growth potential and the parallel development of agriculture, industry and recreational needs - all of which foster the necessity for hydro-electric and flood control projects - should serve to emphasize the need for the development of a plan for the management of the water resources of Whatcom County. We urge the early execution of measures necessary to provide for the present needs and to ensure an abundance of water of high quality for future generations.

Submitted by : Conrad Hougen, Chairman,
Whatcom County Soil and
Water Conservation District

GFK/1
October 22, 1964.

EXHIBITS
No's. 23 through 61
Everett Hearing Area

EVERETT HEARING AREA

Prepared Statements Not Read Into Official Transcript

No.

23 Letter dated October 21, 1964 from E.G. Gallagher, President, The Clinton District Business Association.

24 Letter dated October 21, 1964 from C.W. Duffy, President, Board of Water Commissioners, Water District No. 97 of King County, submitted by Howard T. Harstad.

25 Statement dated October 22, 1964 of Paul C. Dickey, Contracting Officer and Secretary, Marshland and French Slough Flood Control Districts, inclosing Fact Sheets for each District.

26 Letter dated October 22, 1964 from Sid Staswick, Secretary, Snohomish County Drainage District No. 13.

27 Letter dated October 21, 1964 from D.A. Duryee & Co.

28 Letter dated October 21, 1964 from R.E. March, General Manager, West Coast Division, Scott Paper Company.

29 Letter dated October 21, 1964 from Jerry McAfee, President, Stanwood Chamber of Commerce.

30 Letter dated 20 October 1964 from R.C. Schiefelbein, Realtor.

31 Letter dated October 22, 1964 from Charles D. McMillen, Everett, Manager, Washington Natural Gas Company.

32 Letter dated October 20, 1964 from Robert M. Boyle, Vice President and Mill Manager, Simpson Lee Paper Company.

33 Letter dated October 20, 1964 from A.E. Soli, President, American Tug Boat Company.

No.

34 Letter dated October 21, 1964 from A.S.J. Steele, Manager, Public Utility District No. 1 of Snohomish County.

35 Letter dated October 20, 1964 from Rollie D. Berry, Water Superintendent, City of Everett.

36 Letter dated October 13, 1964 from Robert J. Block, President, Columbia-Cascade Corporation.

37 Letter dated October 13, 1964 from P.L. Cope, Secretary, Snohomish County Labor Council.

38 Letter dated October 19, 1964 from E. Sam Kraetz, J.E. McCollum and W.A. Wyatt, Board of Snohomish County Commissioners.

39 Letter dated October 21, 1964 from Walter D. Wallace, Pacific Tow Boat Company.

40 Letter dated October 20, 1964 from A.F. Alexander, Mayor of Everett.

41 Letter dated October 21, 1964 from E.R. Scott, Commissioner, Port of Edmonds.

42 Letter dated October 22, 1964 from Donald L. Bakken, Bakken Iron, Inc.

43 Letter dated October 22, 1964 from L.P. Johnson of Graves & Johnson, Structural and Civil Engineers.

44 Letter dated October 21, 1964 from D.H. Healy of Modern Home Builders, Inc., inclosing diagram showing marketing radius in northwest trading area and map of Puget Sound Industrial District.

45 Letter dated October 21, 1964 from George C. Petrie, Airport Manager, Snohomish County Airport (Paine Field).

46 Letter dated October 22, 1964 from Russel J. Loveland, President, West Coast Telephone Company.

No.

47 Statement entitled, "The Everett Water System in Snohomish County," by Rollie D. Berry, Superintendent of Water, City of Everett.

48 Letter dated October 22, 1964 from William E. Brooks, General Manager, Everett Area Chamber of Commerce, inclosing resolution adopted 19 October 1964.

Prepared Statements Received Before and After Hearing

49 Letter dated October 9, 1964 from Richard C. Hulseman, County Road Engineer, Office of Island County Engineer.

50 Letter dated October 13, 1964 from J. Ray Heath, Superintendent of Water, City of Seattle.

51 Letter dated October 19, 1964 from J. Eldon Opheim, General Manager, Port of Seattle.

52 Statement entitled, "Proposed Development of Port of Langley, Washington."

53 Letter dated October 22, 1964 from J.H. Thompson, Secretary, Diking District No. 6 of Snohomish County.

No.

54 Letter dated October 26, 1964 from Fred E. Lange, Acting Executive Director, Municipality of Metropolitan Seattle.

55 Letter dated October 26, 1964 from L.E. Hall, Director of Public Affairs, Puget Sound Power & Light Company.

56 Letter dated November 9, 1964 from Patrick D. Goldsworthy, President, North Cascades Conservation Council.

57 Letter dated November 9, 1964 from L.E. Hall, Chairman King County Flood Control Citizen's Advisory Committee.

58 Letter dated November 23, 1964 from John F. Herman, Planning Director, the City of Bellevue.

59 Letter dated December 14, 1964 from Lloyd S. Capp, Chairman, Island County Fire Protection District No. 3.

60 Undated letter from Robert E. Buck, Chairman, Seattle Area Industrial Council.

61 Undated letter from Wolf G. Bauer, Corresponding Secretary, Washington Foldboat Club.

CLINTON DISTRICT BUSINESS ASSOCIATION
(SOUTH WHIDBEY)
CLINTON, WASHINGTON

PRES.....E. G. GALLAGHER
V. PRES.....KEN BRIDGES
SEC.-TREAS...MRS. DODGE

OCTOBER 21, 1964

WATER RESOURCES STUDY BOARD
c/o P.U.D. BUILDING
EVERETT, WASHINGTON

ATTENTION: COL. CHARLES C. HOLBROOK

GENTLEMEN:

WHEREAS WHIDBEY AND CAMANO ISLANDS ARE BEING RAPIDLY DEVELOPED INTO RESIDENTIAL AND RECREATIONAL AREAS AND ASSOCIATED BUSINESSES AND INDUSTRIES ARE NEEDED TO SERVE THE EXPANDING POPULATION; AND AS THESE DEVELOPMENTS AND BUSINESSES ARE IN NEED OF GREATER QUANTITIES OF PURE, FRESH WATER BOTH FOR HUMAN CONSUMPTION AND FIRE PROTECTION; AND AS DRIVEN WATER WELLS DEPENDING ON SOIL PERCOLATION BECOME CONTAMINATED FOR VARIOUS REASONS DUE TO INCREASED POPULATION, IT IS HEREBY RESOLVED THAT THE CLINTON DISTRICT BUSINESS ASSOCIATION RESPECTFULLY PETITIONS THE WATER RESOURCES STUDY BOARD TO SET ASIDE SUFFICIENT WATER RIGHTS ON THE SKAGIT RIVER TO SUPPLY ALL THE FRESH WATER NEEDED BY ALL OF ISLAND COUNTY AND THAT ENGINEERING STUDIES AND WATER LINE EASEMENTS BE OBTAINED ON BOTH WHIDBEY AND CAMANO ISLANDS BEFORE THE POPULATION INCREASE MAKES SUCH A PROJECT MORE COSTLY.

RESPECTFULLY SUBMITTED BY:

THE CLINTON DISTRICT BUSINESS ASSN.

E. G. Gallagher
E. G. GALLAGHER
PRESIDENT

EGG/VA

Exhibit 23

WATER DISTRICT NO. 97 OF KING COUNTY

16049 N. E. 8th Street

Bellevue, Washington

October 21, 1964

Mr. John A. Richardson and
Mr. Robert H. Gedney, Co-Chairmen
Task Force for Comprehensive Study
Puget Sound and Adjacent Waters

Re: North Fork Snoqualmie River Water Supply Project
FPC No. 2316

Gentlemen:

We have your notice of public hearing on "comprehensive water resources study" dated September 25, 1964, which provides for a hearing October 22, 1964, at 10:00 A. M. in the Snohomish County P.U.D. Auditorium, 2320 California Avenue, Everett, Washington.

Water District No. 97 of King County and other areas east of Lake Washington in King County are in need of large quantities of high quality water for future requirements of municipal and industrial water and are also desirous of cooperating and assisting in the full development of the North Fork Snoqualmie River for water supply, for power, for flood control, for recreation and for such other uses as may be of benefit to the people of this area. Your information bulletin makes mention of the "near three fold population forecast by the year 2000". This predicted population and the further population increases of the area will require the full development of the North Fork Snoqualmie River for water supply together with related and generally non-competing development of the stream for hydroelectric power and flood control as well as development and utilization of the recreational potential of the river.

In order to further these ends, this Water District has filed an application and obtained Federal Power Commission Permit No. 2316 for the study of such a development and has also filed application for water rights and reservoir rights with the State of Washington for the same purpose and has received a Preliminary Permit providing for the same study. The Federal Power Commission application and the several studies involving the projects are on file with the Federal Power Commission, with the State of Washington and the Army Engineers. The Water District has financed installation and operation of stream gages by the United States Geological Survey at the several sites involved in the Water District plan. The Water District and the Puget Sound Power and Light Company who own the Snoqualmie Falls generating plant downstream from the proposed project have cooperated in the above effort toward the common objective of full development of the stream.

Briefly, the Water District's proposed project consists of the following: A storage dam on the North Fork Snoqualmie River at approximately elevation 1406 with spillway elevation approximately 1560 providing 90,000 acre feet of active storage. For flood control purposes it is proposed that the dam height be increased by 25 feet and spillway gates be added to provided 60,000 acre feet of flood control storage. Water would be carried by a pressure conduit to a power house on Beaver Creek with tail race elevation of approximately 940 feet. Low dams would be constructed at the outlets to Calligan Lake and Lake Hancock with spillway elevations approximately 2230 feet and active storage of approximately 27,000 acre feet. The water would be carried in a closed conduit to the same power house on Beaver Creek with tail race elevation 940 feet. The water would then flow approximately 3-1/4

miles through the Beaver Creek channel and re-regulating reservoir where it would enter a closed conduit and flow to the proposed Carnation power station at the east side of the Snoqualmie Valley. From the power house the water would pass to an open tail race channel approximately two miles to the Snoqualmie River. Excess water would be discharged into the Snoqualmie River. Water supply requirements would be carried in a low pressure closed conduit by gravity to the sump of the main pumping station at the west side of the Snoqualmie Valley from where it would be pumped into the water transmission system and carried to Water District No. 97 and other water utilities who would participate in the project. Depending on the economic considerations, an intermediate power station might be installed at Griffin Creek rather than using the entire fall from Beaver Creek at the Carnation power station. The pump station would be driven by power generated in the project. Excess power would be sold under contract to electrical utilities in the area.

The project would produce an annual regulated flow of 495 cubic feet per second in an average year and 365 cubic feet per second in the driest year of record. From 70,000 to 100,000 kilowatts hydroelectric capacity would be installed depending on eventual peaking requirements for water and depending on the value of peaking power. The project would produce an average of over 230 million gallons per day of water in the driest year of record. With a daily peaking factor of 2.5, it would produce a daily peak of approximately 580 million gallons per day.

The proposed water district project would full utilize the water supply potential of the river and would make particularly efficient use of the fall of the

river providing a total gross head of approximately 2150 feet from Calligan and Hancock Lakes and 1480 feet of gross head from the North Form Damsite.

There is no habitation within the drainage areas and the Water District proposes to make studies leading to controlled usage of the basins for recreational purposes. It appears that reasonable controls on the watershed area would provide sanitary protection for the watershed which is at least as good as existing major watersheds in the area.

BOARD OF WATER COMMISSIONERS
WATER DISTRICT NO. 97 of KING COUNTY

By: C. W. Duffy
C. W. Duffy, President

COLUMBIA BASIN INTER-AGENCY COMMITTEE
TASK FORCE FOR COMPREHENSIVE STUDY
PUGET SOUND AND ADJACENT WATERS

OCTOBER 22, 1964, EVERETT, WASHINGTON

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Statement for Marshland Flood Control District
Sponsoring Marshland Watershed Project
and
French Slough Flood Control District
Sponsoring French Creek Watershed Project

Prepared by Paul C. Dickey
Contracting Officer and Secretary

- - - - - - - - - - - - - - - - - - - -

This report is prepared on the basis of the following assumptions from the estimates of the Washington Soil and Water Conservation Needs Inventory of the Washington Conservation Needs Committee, April, 1962:

1. The population of Washington is expected to increase from approximately 2,800,000 to 4,000,000 by the year 1975;

2. Food requirements are likely to increase 60 percent by 1975;

3. An estimated 488,000 acres of land will be taken out of agricultural use by "urban sprawl";

4. There will be continued development of Washington's important water resources during the period until 1975;

5. The demand for recreational, wildlife and outdoor facilities should boost the amount of State land used for this purpose by 40 percent.

We presume that all the developments listed in the above estimates, except item No. 4, will be more marked in Western Washington and especially in the area from Seattle to Bellingham than in the State as a whole.

The farmers in the two watershed areas are acutely interested in each of the tendencies represented in the above estimates, but especially in their relationship to floodwater and sediment damage to the lands within these watersheds. The Conservation Needs Inventory shows that 1,599,300 acres of land have a problem of floodwater and sediment damage in this State. King, Snohomish and Island Counties have 18.2 percent of this land or 291,072 acres. Skagit, Whatcom and San Juan Counties have 30.25 percent or 483,788 acres. Together the six counties have a problem of floodwater and sediment damage on 744,860 acres, which is more than 48 percent of the land in Washington sustaining such damage.

In general this damaged land is our best and most productive bottomland. Its productive capacity for food products is proportionately far greater than that of other land in the area and equal to the best in the United States. The U. S. census shows some of these counties to rank high in production among all the States.

The Marshland and French Creek Watersheds, adjacent to the Snohomish River near Snohomish, include 34,420 acres of land on which dwell 9,337 persons. Not all of the land is flood plain, but all of the residents on it, including those in the nearby towns, suffer from the far reaching economic results of disastrous floods. These results include great pits and channels cut out in the valley floor. Dikes and roads are destroyed. Bridges are dislodged. Industrial plants are damaged to the point of ruin. Many tons of sediment are laid on fields, ruining existing crops and reducing productivity. Cash crops are ruined by water with great financial loss to the landowner and the community. Logs and debris are dropped extensively over the area. Damage to homes in the flood zone is often beyond repair.

Flood control structures installed in the two watershed areas previous to undertaking the watershed programs have a probable replacement value of $750,000 to $1,000,000. In addition very extensive emergency funds have been expended by Snohomish County, the State Department of Conservation and the U. S. Corps of Engineers to rebuild damaged dikes, roads and pumping plants.

The Marshland Watershed Project and the French Creek Watershed Project have been organized under the authorizations of Public Law 566. The estimated cost of both projects is approximately $8,000,000. Very briefly, the plan for each watershed project includes a continuous dike along the riverbank, a floodway to carry impounded water to a discharge point and a massive discharge structure to take flood and drainage water through the dike and into the Snohomish River.

The inserted fact sheets show progress to date.

Obviously, the economic returns available in an agricultural community do not justify dikes that will exclude all floods. The planned dike height is estimated to shut out all growing season floods and a high percentage of winter floods. To reduce damage from overtopping at the lowest cost, the dikes are designed with a $2\frac{1}{2}$ to 1 slope on the river side but a 5 to 1 slope on the land side. Both slopes are seeded to erosion resistant grasses in all areas where otherwise unprotected soil is exposed.

Of necessity these dikes are designed for overtopping. However, the cost of a flood to the Snohomish Valley residents is very great. Data compliled from flood records by the Soil Conservation Service shows that eleven overbank floods occured here from 1942 to 1955, or one each 14 months. No one knows what the flood frequency will be when the watershed projects are completed, but the danger remains very real and flood damage will occur.

The most beneficial control measure that this Task Force can promote, in the thinking of the flood control District directors, is a single purpose flood

water storage dam on the Snohomish River at a strategic point above the flood plain and immediate foothill area. Such a dam could reduce peak flows to the point where the planned dike systems for these watersheds could provide permanent protection or the frequency of flooding would be very greatly reduced.

Not immediately listed among water resources, but rather closely related to it is land drainage. The accomplishment of drainage is the responsibility of drainage districts on farm lands or of municipalities within municipal boundaries. Over the years much inconvenience and a real handicap to effective land drainage has been caused by the tendency on the part of railroad lines, highway departments, and other bodies constructing continuous cross country embankments to provide for drainage under their structures only to such depths as would remove surface water from the ground, except where they crossed existing underground drainage lines.

Now the history of farm drainage in Western Washington has been that of progressive improvement. First the land was made suitable for water tolerant grasses and legumes. Later, and by degrees, drainage was improved to the point suitable for growing very profitable cash crops that are quite sensitive to poor drainage.

Provision should be made for the installation of facilities for good underground drainage in all highways, railroad lines, etc. to be constructed in the future because no one can now say what type of land use our population increase will force on us within the period envisioned in this study. By making such provision for drainage, any needed land development can proceed unimpeded by need to secure, under highways and railroads, facilities for land drainage which the governing bodies of such structures often stubbornly resist.

The Marshland Flood Control District and the French Slough Flood Control District thank the Task Force for the opportunity to submit this testimony.

B. J. Houck, Chairman
MARSHLAND FLOOD CONTROL DISTRICT

W. C. Romberger, Chairman
FRENCH SLOUGH FLOOD CONTROL DISTRICT

Paul C. Dickey, Secretary and Contracting Officer

FACT SHEET - MARSHLAND WATERSHED

Area of Watershed		- 14,006 acres
Flood Damage		- 5,378 acres
Estimated Cost; Benefit ratio		- 1 to 1.4
Estimated Costs:	Federal	- $2,963,022
	Local	- $1,257,688
	Total	- $4,220,710

Works of Improvement

Floodways	- 8½ miles; 4-1/3 miles completed
Dikes	- 8½ miles; 0 miles completed
Outlet Structure	- $946,852.45

Outlet Structure - Details

2 pumps, 100 H.P. - Capacity 38,000 G.P.M.
4 pumps, 250 H.P. - Capacity 224,000 G.P.M.
Total - 262,000 G.P.M.

(Capacity rated at 12.5 ft. T.D.H.)

4 floodgates - each 10 ft. wide x 15 ft. high

Estimated time to empty basin behind dikes - 10 days

PROGRESS - CONTRACTS TO DATE

CONTRACT	NAME	LOCAL COST	FEDERAL COST	TOTAL COST
Surace - M-FCD-1	Preload	0	$ 76,271.00	$ 76,271.00
Wilder - M-FCD-2	Upper Valley Floodway	0	$ 75,833.68	$ 75,833.68
American Pile Driving M-FCD-3	Floodway Bridges	$ 36,880.91	0	$ 36,880.91
Mullen - M-FCD-4	Discharge Structure	$ 96,507.70	$ 852,794.75	$ 949,302.45
Stoen - M-FCD-5	Avenue D Bank Revetment	$150,108.50	0	$ 150,108.50
Henry Bros. - M-FCD-6	Seeding Floodway	0	$ 7,410.50	$ 7,410.50
Sprague - M-FCD-7	Seeding Structure	0	$ 2,787.20	$ 2,787.20
*Kathman - M-FCD-8	Lower Floodway	0	$ 48,948.96	$ 48,948.96
TOTAL EXPENDED		$283,497.11	$1,064,046.09	$1,347,543.20

Incl 1 to
Exhibit 25

* In progress

FACT SHEET - FRENCH CREEK WATERSHED

Area of Watershed		- 18,414 acres
Flood Damage Area		- 6,168 acres
Estimated Cost; Benefit ratio		- 1 to 1.7
Estimated Costs:	Federal	- $2,359,981
	Local	- $ 761,814
	Total	- $3,121,795

Works of Improvement

Floodways - 2.6 miles; 1.8 miles completed, 0.8 mi. remains
Dikes - 3½ miles; 2 miles completed, 0.86 miles in progress
Outlet Structure - $1,135,611.06

Details of Structure

2 pumps, 150 H.P. - Capacity 44,000 G.P.M.
4 pumps, 450 H.P. - Capacity 256,000 G.P.M.
Total - 300,000 G.P.M.

(Capacity rated at 16 ft. T.D.H.)

6 floodgates - each 10 ft. wide x 15 ft. high

Estimated time to empty basin behind dikes - 10 days

PROGRESS - CONTRACTS TO DATE

CONTRACT	NAME	LOCAL COST	FEDERAL COST	TOTAL COST
Stoen - FS-FCD-1	Dike at Van Soest & Floodway FWA-1	0	$ 177,650.05	$ 177,650.05
American Pile Drive. FS-FCD-1A	Van Soest Bridge	$10,750.00	0	$ 10,750.00
Wayne - FS-FCD-2	Discharge Structure	$16,870.84	$1,118,740.22	$1,135,611.06
Anderson - FS-FCD-3	Upper Snohomish Dike	$ 3,493.02	$ 36,671.00	$ 40,164.02
Saimons - FS-FCD-4	Upper Pilchuck Dike	0	$ 31,662.20	$ 31,662.20
Henry Bros. - FS-FCD-5	Seeding Dikes & Floodway	0	$ 3,297.66	$ 3,297.66
Stoen - FS-FCD-6	Floodway joining Structure	0	$ 65,420.50	$ 65,420.50
Walters - FS-FCD-7	Floodway above Old Pump Plant	0	$ 88,574.79	$ 88,574.79
Black River Quarry FS-FCD-8	Dike above Structure	$ 600.00	$ 51,907.84	$ 52,507.84
Saimons - FS-FCD-9	Seeding Pilchuck Dike	0	$ 920.00	$ 920.00
Misich - FS-FCD-10	Seeding & fencing	0	$ 2,224.44	$ 2,224.44
*Kent & Tucker FS-FCD-11	Floodway & dike	$ 280.10	$ 317,778.50	$ 318,058.60
	TOTAL EXPENDED	$31,993.96	$1,894,847.20	$1,926,831.16

* In progress

Route 2, Box 138
Everett, Washington
October 22, 1964

Department of the Army
Corps of Engineers

Dear Sirs:

On behalf of Snohomish County Drainage Districe #13, consisting of 20 Homes and or farms on 623 acres of valley farm land, I present the following information:

About 400 acres of this land is plagued with overflow waters in four out of every five years, causing approximately $50 per acre loss, or total of $20,000 loss, because of reduced crop yields, and or $50 per acre additional cost in reseeding flood-destroyed crops. In floods similar to those we had in 1951, 1959, and 1960 the entire area is covered, resulting in approximately $50 per acre lost in crops on the total 623 acres, totaling over $30,000 loss.

In the cases of extreme flooding, such as 1951, 1959, and 1960 there is considerable damage to existing inadequate levies in the way of erosion, which has cost from $5,000 to $8,000 to repair.

Debris removal after extreme flooding is costly in time and energy spent for removal. Destruction to fences because of flooding would average $750 per year in Drainage District #13.

Loss to dairymen because of inability to haul milk during extreme flooding would average about $300 per day for two to three days, totaling from $600 to over $900.

There is a wage loss to wage earners living in the area because of inability to use flooded roads, and schools lose money because students cannot get to school.

I am sure that expense to the County Road District is considerable in removing debris, removing silt, and repairing erosion to flood-damaged roads, particularly in the years of extreme flooding.

We are faced with the danger and worry of loss of life because of the swift, rampaging waters of flooding.

Adequate flood control could easily double the economic potential of Drainage Districe #13 from about $180,000 to about $360,000.

There is a loss in financial remuneration to owners of rental homes and farms because of the fear of flood waters on the part of prospective renters.

The danger of flooding suppresses the value of farms and homes in Drainage District #13.

In the light of these financial losses, the fears and anxieties of the 20 families in Snohomish County Drainage Districe #13, and in the interest of conserving our limited valley farm land, we strongly suggest the improving of levees in our district, and the creation of flood storage reservoirs on the tributaries of the Snohomish River.

We urge immediate attention be given to the levees in our district to tie in with publicly financed levees being constructed and to be constructed in areas adjacent to Drainage District #13.

Sincerely submitted,

Sid Slaswick
Sec. Snohomish
Co. Drainage Dist #13

D. A. DURYEE & CO.
[illegible]
[illegible]
[illegible] COLBY AVENUE
EVERETT, WASHINGTON [illegible]

October 21, 1964

Mr. Lloyd V. Repman, Manager
Snohomish County Economic Development Council, Inc.
2532 Wetmore Avenue
Everett, Washington

Dear Mr. Repman:

Our firm wholeheartedly supports your organization's recommendations to the Water Resources Task Force for balanced planning.

We feel this planning should include provisions involving the items of jobs - - resources - - and markets for existing payrolls located in Everett at the present time.

It is so apparent that the city and county must have additional deep water sites in order to fulfill the demands for new industry.

We also feel great importance should be stressed on the large land area accessible to and which lies adjacent to the present and proposed transportation facilities consisting of rail and truck routes.

Very truly yours,

D. A. DURYEE & CO.

Dan A. Duryee, Jr.

DADjr:pm

Exhibit 27

C O P Y

SCOTT PAPER COMPANY
West Coast Division

Everett, Washington 98201
Telephone Alpine 2-8111

October 21, 1964

The Snohomish County Economic
Development Council, Inc.
2532 Wetmore Avenue
Everett, Washington

Gentlemen:

Scott Paper Company looks forward to the further industrialization and economic growth of Snohomish County. We regard this as a natural and desirable thing. The main question really involves the course which this development will follow. If it is well thought out and properly balanced between the needs of new and existing industry, if it takes into proper account the various raw materials and natural resources available here in relation both to industrial needs and the needs of our growing population, the development is to be heartily endorsed. If, however, the development proceeds thoughtlessly along unbalanced lines, we shall all have cause for regret.

Insofar as our own current and future position is concerned, we require ample supplies of wood, water, power and transportation, as well as adequate fresh water log storage.

With respect to wood, we believe that care must be exercised to preserve the land base, both privately and publicly owned, on which all wood products industries depend for the growth of timber. This land base is under constant pressure from park and wilderness proposals, dam impoundments, electric and gas transmission lines and the other encroachments of urban civilization. We do not oppose every suggested project which would change the land-use pattern, but we do feel that each must be evaluated on its own merits with due consideration given to its long range effect on the raw material available for the wood products industries of which we are one.

Insofar as water is concerned, we believe that at present ample supplies are available. However, this resource can, unless care is exercised, be squandered so that the future of all industries in the area can be placed in question.

C O P Y

Our power requirements are presently met from a variety of sources: electricity, fuel oil, natural gas and hogged fuel from the wastes of the wood products industries. We believe that hydro-electric developments will continue to provide the main source of our power for the indefinite future in view of the further developments to be expected in the Columbia River under the Canadian Treaty and the possibilities in the Sultan Basin.

We have certain log storage and navigation needs which pertain chiefly to the immediate Everett area concerning which we have been in touch with the Port of Everett. However, it is true that our needs, as well as those of the wood products industries as a whole in this connection, are of a broader geographical scope than just the Everett harbor area. In any long-range planning for the County, we urge that these be kept in mind.

Insofar as other transportation of our products and raw materials is concerned, we rely on deep water vessels, barges, towboats, trucks and railroads to handle the traffic incident to our operations. So far as we can foresee, we will continue to require the efficient services of all these types of transportation if we are to remain here and to grow.

We are pleased to note that various agencies of our federal and state governments, under the aegis of the Columbia Basin Inter-Agency Committee, are embarking on a comprehensive study of the water resources of the Puget Sound Basin. This effort should provide valuable guide posts for planning future development of the water uses in this region, and should prove to be most helpful in preventing the unwise and thoughtless piecemeal attack on problems related to this great resource.

In sum, we foresee further economic growth and industrialization for Snohomish County. We believe that this process can, with proper planning, be accomplished in such a manner that it will not be at the expense of Scott Paper Company and other members of the wood products industries, but rather that it will be compatible with the continued existence and growth in this County of our Company and other companies of the industry of which it is a part.

Sincerely yours,

R. E. March
General Manager

REM:amp

STANWOOD CHAMBER OF COMMERCE

October 21, 1964

THE TASK FORCE
Puget Sound and Adjacent Water Study
Robert H. Gedney, Co-Chairman
1519 Alaskan Way South
Seattle, Washington 98134

Gentlemen:

The Town of Stanwood, situated at the historic mouth of the Stillaguamish River, is now entering upon an era of burgeoning, economic development and long-range plans should assure water navigation facilities in order that our available industrial sites may be provided transportation services.

The U.S. Army Corps of Engineers is presently engaged in flood control and navigation studies in order to minimize huge financial losses which have occurred in the past due to floods.

A comprehensive study is being undertaken as to the possibility of the lower reaches of the Stillaguamish River being converted to a fish farm by a joint federal and state authority.

The Great Northern Railway is presently in the final phases of planning an extension of rail transportation from their main line to tidewater in the western environs of Stanwood.

It is vital to the interests of the Stanwood area, and indirectly the state and nation as a whole, that due and weighty consideration be given to our industrial potential of great magnitude.

Recreational boating in the area, increasing by leaps and bounds, requires more and more port facilities, and the Stanwood area will have a great deal to offer small boat owners if the potential of the Stillaguamish River is realized.

The consideration of your committee to the many possibilities and necessities for navigational improvement, flood control and conservation measures is sincerely invited.

The Stanwood Chamber of Commerce stands ready to be of assistance in surveys, accumulation of information, and providing publicity in connection with your endeavor.

Yours very truly,

JMcA:vk

Jerry McAfee, President

Exhibit 29

C O P Y

"For Properties
in the
Banana Belt"

R. C. S H E F

SCHIEFELBEIN - REALTOR
1515 Olympic View Drive
Edmonds, Washington
PRospect 8-1224

20 Oct. '64

Mr. Lloyd V. Rapman, Manager
Snohomish County Economic Development Council Inc.
2532 Wetmore Avenue, Everett, Washington.

Dear Lloyd:

Thanks for bringing to my attention the meeting of the Comprehensive Water Resource Study. I will be present on 22 October in Everett.

As one of the twenty one Directors of the South Snohomish County Chamber of Commerce and as a Charter Member of the Edmonds Yacht Club I am extremely interested in giving some time to this study.

Our Yacht Club in Edmonds is a case in point showing the need of such planning. We have grown in two years to a membership of over three thousand members. We have 400 covered moorage and many open moorage piers. We have over three hundred thirty boat owners on the waiting list for covered moorage.

At this rate what will it be in the year 2000?

I am certainly glad that those charged with the responsibility of making this study are interested in Recreational Development along with the other vital needs listed in the brochure.

Sincerely,

R. C. SCHIEFELBEIN

Exhibit 30

C O P Y

WASHINGTON NATURAL GAS COMPANY

2607 Colby Avenue, Everett, Washington, Telephone: ALpine 9-4186

October 22, 1964

Mr. Lloyd Repman, Manager
Snohomish County Economic Development Council
2532 Wetmore Avenue
Everett, Washington

Dear Mr. Repman:

Regarding the current comprehensive water resource study involving Puget Sound and adjacent waters, while there is nothing to indicate what, if any, future proposals may arise from this study, we would like to enlist your cooperation to the following extent.

It is our opinion that this is only a partial study and could result in a partial project. In order that a study of only one phase of the industrial and civic life of an area does not do serious injury to the total needs of each area we believe the study should include real estate and industrial development of the entire area as well as all utilities, private or otherwise, such as electric, gas, telephone and transportation. We further recommend that the interests of these groups as well as those of community planners be given careful consideration prior to any decision that would pertain to a given resourse.

We urge you to make these needs known to the task force in charge of the current study. Your cooperation will be greatly appreciated.

Sincerely yours,

Charles D. McMillen
Everett Manager

CDM:fr

Exhibit 31

COPY

Simpson SL Lee Paper Company/Everett, Washington
252-2131
TWX ET 76 . Area Code 206

October 20, 1964

Snohomish County Economic
Development Council
P. O. Box 538
Everett, Washington

Attn: Mr. Lloyd V. Repman

Gentlemen:

You have asked for our comments regarding the hearing to be conducted on October 22, 1964, by the Task Force for Comprehensive Study, Puget Sound and Adjacent Waters.

Simpson Lee Paper Company favors a constructive, comprehensive analysis of Puget Sound water and related land resources. We are certain that only through a coordinated objective approach is it possible to realize the greatest potential realistic development of our region.

We would caution that in the search for the proper key to future growth we not overlook for one minute the current needs of existing industry and commerce.

Instinctively we are vitally concerned with any specific plans involving the Snohomish River which serves us as an alternate source of process water and a necessary recipient of mill effluent. Furthermore, because of our river bank location we are subjected to flooding conditions of this river.

We would be hopeful that throughout the course of this study consistent, continuing lines of communication be maintained between the Task Force and all elements of the communities involved.

Sincerely,

/S/ Robert M. Boyle
Robert M. Boyle
Vice President and Mill Mgr.

RMB:ds

Exhibit 32

COPY

ATBCo AMERICAN TUG BOAT COMPANY TUGS

A.E.Soli
President and Manager

GENERAL TOWING

Office: Pier 2 Telephone Alpine 2-1117

Everett, Washington

October 20, 1964

Snohomish County Economic Development Council
P. O. Box 538 BARGES
Everett, Washington

Gentlemen:

We, the American Tug Boat Company, would like to assure you of our support towards industrial development of Tract Q, and adjacent tidewater and river areas within Snohomish County.

As a transportation company, our interest in development of industrial sites adjacent to deepwater and tidewater is intense.

American Tug Boat Company serves all of Puget Sound, Canada and Alaska with barging and towing services, utilizing a fleet of 20 tugs and 40 barges.

This company has been in business since 1902, and has steadily increased its position in the towing industry. Employment level varies from a low of 100 to a high of 140.

Consideration must be given the following conditions relative to our industry which you will find closely related to those requirements of our prime industries of pulp, paper, lumber and other wood products:

a. Fresh water log storage.

b. Adequate channels to service such areas, including weather factors.

c. Deepwater barge moorings and loading sites.

Yours very truly,

AMERICAN TUG BOAT CO.

A. E. Soli, President

AES:lh

Exhibit 33

ALL --

COPY

PUBLIC UTILITY DISTRICT No. 1

Of Snohomish County
Everett, Washington - 98201

October 21, 1964

Mr. Lloyd V. Repman
Snohomish County Economic Development Council
P. O. Box 538
Everett, Washington

Dear Mr. Repman:

As a contributing member of the Snohomish County Economic Development Council, Public Utility District No. 1 of Snohomish County urges you to present to the October 22 Water Resources Hearing an overall evaluation of the industrial possibilities and needs of the county so they may become a positive consideration in any projects the United States Army Corps of Engineers or other organizations may undertake.

The PUD's current five-year development plan, running through the year 1968, is a schematic presentation of future extensions of our electrical facilities in Snohomish County and on Camano Island. Rather than add to what I am sure will become a voluminous number of exhibits, let me sum it up by stating that as flood control or industrial development raises a need for additional electrical power in an area, any demand can normally be met by the time the project or a new industrial concern is completed and ready for operation.

For the record, the United States Army Corps of Engineers has on file detailed plans and studies of the development of water storage, hydroelectric and flood control capabilities of the George Culmback Dam in the Sultan River Basin. Power-wise this dam may provide up to 140,000 kilowatts to our system when the generating equipment is installed.

Yours very truly,

A. S. J. Steele
Manager

Exhibit 34

COPY

Incorporated

1893

CITY OF EVERETT
City Hall, Everett, Washington 98201
Telephone: Alpine 9-7101

WATER DEPARTMENT
A.C."Jerry"Krekow
Commissioner

Rollie D.Berry
Water Supt.

October 20, 1964

Mr. Lloyd Repman, Manager
Snohomish County Economic Development Council
2532 Wetmore Avenue
Everett, Washington

Dear Mr. Repman:

Our recent extensive discussion on industrial site requirements and availability within the Snohomish County area was very timely, educational and interesting. We would like to take this opportunity to express our conviction that your area-wide coordinated planning approach to the defining and reservation of industrial sites constitutes the best method of procedure in this endeavor. This type of balanced planning is essential.

To elaborate a bit on our discussion, the area-wide aspect is a particularly important concept for this type of planning in order to achieve the best over-all balanced results. The area-wide concept is the general approach of this department in its sales and distribution of water from the Sultan River sources as witnessed by the multi-purpose development of the Sultan Project with P.U.D. No. 1 of Snohomish County and the extended water service area which includes a large portion of the western section of Snohomish County. The Everett water system stands ready to supply any and all industrial and other water demands within its large service area.

Immediate availability of industrial sites in close proximity to deep water, freeway and rail transportation are of major community concern as well as logically planned reservation and development of additional potential sites. Such additional potential sites should not be encumbered with non-compatible developments such as housing and encroachments of any other type which would impair such sites for industrial development.

THE EVERGREEN CITY

COPY

PUBLIC UTILITY DISTRICT No. 1

Of Snohomish County
Everett, Washington - 98201

October 21, 1964

Mr. Lloyd V. Repman
Snohomish County Economic Development Council
P. O. Box 538
Everett, Washington

Dear Mr. Repman:

As a contributing member of the Snohomish County Economic Development Council, Public Utility District No. 1 of Snohomish County urges you to present to the October 22 Water Resources Hearing an overall evaluation of the industrial possibilities and needs of the county so they may become a positive consideration in any projects the United States Army Corps of Engineers or other organizations may undertake.

The PUD's current five-year development plan, running through the year 1968, is a schematic presentation of future extensions of our electrical facilities in Snohomish County and on Camano Island. Rather than add to what I am sure will become a voluminous number of exhibits, let me sum it up by stating that as flood control or industrial development raises a need for additional electrical power in an area, any demand can normally be met by the time the project or a new industrial concern is completed and ready for operation.

For the record, the United States Army Corps of Engineers has on file detailed plans and studies of the development of water storage, hydroelectric and flood control capabilities of the George Culmback Dam in the Sultan River Basin. Power-wise this dam may provide up to 140,000 kilowatts to our system when the generating equipment is installed.

Yours very truly,

A. S. J. Steele
Manager

Exhibit 34

In summary, we concur with and endorse your method of balanced and coordinated industrial site planning.

Rollie D. Berry
Water Superintendent

RDB:el

cc: A. F.Alexander, Mayor
Mildred F. Simpson, Commissioner of Finance
A. C. Krekow, Commissioner of Public Works

RECEIVED OCT 13 1964

COLUMBIA - CASCADE CORPORATION
100 UNION STREET
SEATTLE 1, WASHINGTON
TELEPHONE MAIN 2-7505

Dear Mr. Repman:

I have been actively engaged as a developer in the Northwest Area for over five years and it is my observation that if the Northwest is to reach its potential it must have comprehensive planning for competitive commercial and industrial sites. This will require our taking advantage of our natural position in developing deepwater sites. We also desperately need a comprehensive review of industrial areas in relationship to existing and planned transporation arteries. This includes both rail and highway.

I would be pleased to cooperate in any effort to develop such a comprehensive study in this direction.

Very truly yours,

COLUMBIA CASCADE CORPORATION

Robert J. Block, President

October 13, 1964

Snohomish County Economic Development
Council
Post Office Box 538
Everett, Washington

ATTN: Mr. Lloyd Repman

Exhibit 36

c o p y

Affiliated with AFL-CIO
Washington State Labor Council

Meets first, third, fifth
Wednesdays- Labor Temple,
Everett, Washington

S N O H O M I S H C O U N T Y L A B O R C O U N C I L

Everett, Washington

October 13, 1964

Mr. Lloyd V. Repman, Manager
Snohomish County
Economic Development Council, Inc.
2532 Wetmore Avenue
P. O. Box 538
Everett, Washington

Dear Lloyd:

On behalf of the Snohomish County Labor Council I wish to advise you that we support your organization's recommendation to the Water Resource Task Force for balanced planning.

It is understood that this planning must include a realistic identification for the near and long term need of providing jobs as well as resources and markets for existing industry. It is further understood that our County, in order to attract new industry, needs more deep water sites, sites with large land areas accessible to tidewater and also sites which lie within, or adjacent to the existing and planned transportation arteries of rail and freeway.

Very truly yours,

/S/ P. L. Cope

P. L. Cope
Secretary

PLC:lin

Exhibit 37

RECEIVED OCT 15 1964

Office of County Commissioners

E. SAM KRAETZ
COMMISSIONER 1ST DISTRICT
CHAIRMAN

E. McCOLLUM
COMMISSIONER 2ND DISTRICT

WILLARD A. WYATT
COMMISSIONER 3RD DISTRICT

MARCELLA STRIEBY
SECRETARY

Meetings Every Monday

October 19, 1964

Snohomish County Economic Development Council, Inc.
Everett, Washington

Gentlemen:

On behalf of Snohomish County, Washington, we, the Board of County Commissioners wish to advise that we support your organization's recommendation to the Water Resources Task Force for balanced planning.

It is understood that this planning must include a realistic identification for the near and long term need of providing jobs as well as resources and markets for existing industry. It is further understood that our County, in order to attract new industry, needs more deep water sites, sites with large land areas accessible to tidewater and also sites which lie within, or adjacent to the existing and planned transportation arteries of rail and freeway.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS
SNOHOMISH COUNTY, WASHINGTON

/S/ E. Sam Kraetz
E. SAM KRAETZ, Chairman

/S/ J. E. McCollum
J. E. McCOLLUM

/S/ W. A. Wyatt
W. A. WYATT

Exhibit 38

PACIFIC TOW BOAT COMPANY
P.O. Box 720
Everett, Washington

October 21,1964

Snohomish County Economic Development Council
2532 Wetmore
Everett, Washington

Gentlemen:

Everett's Deep water Harbor and the Snohomish River were recognized almost 100 years ago, as a premium asset for a future industrial community. These assets resulted in Everett developing into a major producer of timber and wood products.

The timber industry is dependant on water transportation; and to serve this industry, we require fresh water log storage and access from the storage areas to mills, in all weather conditions.

In recent years, changes in the requirements of water transportation for industry require deep water channels to take advantage of bulk movements of raw materials and finished products.

Industrial diversion and expansion has been slow to develop in the Everett area, considering that we are one of the few communities on Puget Sound with three trans-continental railroads, a modern highway system, and a deep water harbor. We lack deep water access to the literally thousands of areas of potential industrial land.

The development of Tract Q, as well as lands available in the delta area of the Snohomish River, cannot be economically developed until a firm long range plan is developed, and the technical problem in connection with rivers are solved.

The timber industry still provides the base to our local economy and future plans should consider the needs of our existing industries, as well as the changes required to accommodate an industrial expansion, and new industries.

Pacific Tow Boat Company has been in operation in Everett since 1915, providing towing service primarily on Puget Sound. We operate a deep water marine terminal in Everett, having a fleet of fifteen tugs with an average of seventy-five employees.

The Water Resources Study that is underway, in our opinion holds the key to the future development of the Everett area, and you can count on our support.

Yours very truly,

WALTER D. WALLACE

Exhibit 39

C O P Y

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OFFICE OF THE MAYOR - CITY OF EVERETT

A. F. "BUD" Alexander
Mayor

October 20, 1964

Mr. Lloyd Repman
Snohomish County Economic Development Council
2532 Wetmore
Everett, Washington

Dear Mr. Repman:

The City of Everett is vitally concerned with the proposed Comprehensive Water Resources Study to be conducted for the Puget Sound and adjacent water region. We wish to indicate our support and commend your group for the interest you have shown in the proposed study.

Planning for the region must encompass the entire range of both immediate and long term needs of existing and future industrial, residential, agricultural and recreational uses of land and water if any comprehensive plan for the region is to emerge from the proposed study.

Because of the short time we have been aware of the scope and purpose of this proposed study, the City of Everett is not in a position to make positive recommendations to the study group. However, one aspect of Everett's governmental function, the supplying of domestic and industrial water to Everett and its environs, will be presented by the City's Water Department to the Subcommittee. The entire Everett watershed is located within the study area and one of the prime conclusions of the study group should point to the protection of this area from encroachment, deletion and pollution, so as to ensure an adequate supply of water for the present and future generations.

The City officials support the theory of balanced planning and in addition desire the opportunity to participate in the conclusions that will be forthcoming from this study. Any results from a survey such as proposed must, by its nature, be oriented to implementation by the very groups it seeks to aid.

Sincerely,

/S/ A. F. Alexander
A. F. ALEXANDER
Mayor

/S/ Mildred F. Simpson
MILDRED F. SIMPSON
Commissioner of Finance

m The Evergreen City

Exhibit 40

A. G. KREKOW
Commissioner of Public Works

COMMISSIONERS
E. R. SCOTT
T. P. CHITTENDEN
J. E. MCKAY

DOCK MASTER
CARL AGS

ENGINEER
JAMES H. REID

ATTORNEY
JERALD O. HALL

AUDITOR
A. P. SEVERSON

PORT OF EDMONDS

P. O. BOX 268, EDMONDS, WASH., 98020
PROSPECT 8-0411
456 ADMIRAL WAY

OCTOBER 21, 1964

SNOHOMISH COUNTY ECONOMIC
DEVELOPMENT COUNCIL

EVERETT WASHINGTON:

WITH RESPECT TO WATER RESOURCES DEVELOPMENT IN THE AREA, AND JOINT USE FOR BOTH RECREATIONAL AND INDUSTRIAL USES.

I WOULD FULLY SUPPORT THE JOINT USE PROGRAM, BUT IN VIEW OF THE LIMITED AREA OF TIDELANDS SUITABLE FOR INDUSTRIAL DEVELOPMENT, I WOULD SUGGEST THAT VERY CAREFUL CONSIDERATION BE GIVEN TO THE ASSIGNMENT OF SUCH TIDELANDS FOR INDUSTRIAL USES.

YOURS TRULY,

E. R. Scott

E. R. SCOTT

Exhibit 41

C O P Y

B A K K E N I R O N, I n c.

Railings Structural Steel - Metal Fabrication

Post Office Box 37

Lynwood, Washington 98036

PRospect 6-3195

October 22, 1964

Snohomish County
Economic Development Council, Inc.
2532 Wetmore Avenue
Everett, Washington 98201.

Gentlemen:

Please be advised that we support your organization's stand on the Water Resource Task Force issue and the need for Balanced Planning.

We feel this planning should be on a long range, comprehensive nature, so as to provide jobs and a better climate for existing industry.

It is further felt that to go beyond this and attract new industry into the area, more deep water sites, of sufficient size and with access to rail and freeway arteries are needed.

Very truly yours,

DONALD L. BAKKEN

DLB:hm

Exhibit 42

COPY

GRAVES AND JOHNSON

STRUCTURAL AND
CIVIL ENGINEERS

Pacific and Wetmore
Everett, Washington
AL 9-4524

October 22, 1964

Snohomish County
Economic Development Council
P. O. Box 538
Everett, Washington 98201

ATTENTION: Mr. Lloyd Repman

Gentlemen:

In regard to the Water Resources Conference to be held at the P.U.D. today, I have the following thoughts concerning some of the problems and needs of this county in relation to future development.

1. With the steady growth of residential areas in the farming sections of this county, there is an increasing demand for domestic water supply which had been formerly supplied by private wells, springs and creeks. Many of the areas now are interested in development of municipal water systems. The problem is always one of adequate water supply sufficient for municipal development. The areas paralleling and near to the Everett mains from the Sultan Water Basin are quite fortunate in obtaining water from this source directly or indirectly. However, there are many areas to the north, especialy which do not have this type of water supply. In this regard, a comprehensive study of water resources for future development should be made, including some type of master plan which could eventually be realized with a most efficient use of the water resources in this county. Also to be considered would be the water resources necessary for industrial development.

2. Deep water terminals for shipping with adequate abutting and adjacent property for storage and cargo handling is necessary in this area. This topic has been discussed many times and studies have been made, but it is necessary to continue working toward this end as a stimulant to industrial development in our area.

3. Some work has been done in the county by individual groups to promote development of industrial areas. Some of these have been well thought out. However, there apparently has been

American Society of Civil Engineers - Structural Engineers Association of Washington . American Institute of Architectects

no unified effort in reviewing the potential sites for industrial development in conjunction with adequate transportation, water supply, power supply, and site conditions required by this type of development. In order to utilize the land within the county to the best interests of all, some attempt should be made to designate areas which have high potential for industrial development that would not hinder the orderly development of residential and municipal areas.

These thoughts are submitted for your consideration with the hope that they might contribute something to the over-all development and betterment of our county.

Yours truly,

GRAVES & JOHNSON

L. P. Johnson
LPJ:cs

October 21, 1964

Mr. Lloyd V. Repman
Snohomish County Economic Development Council
Box 538
Everett, Washington

Dear Mr. Repman:

We were most pleased to hear of your recommendations to, and interest in, the Comprehensive Water Resource Study. We feel Snohomish County has a decided need for additional deep water developments, not only to provide jobs but, equally important, to provide markets for existing industries.

With the completion of the Freeway, anticipated in the very near future, we can expect the Everett area and other parts of Snohomish County to advance rapidly; however, a development will proceed more rapidly if we have deep water resources permitting us to develop our foreign trade.

This company has had numerous inquiries regarding our 2000 Acre Tract, and in almost every instance the lack of sufficient deep water facilities proved a deterrent in spite of our splendid rail, air and Freeway availabilities.

We enclose a map of our Industrial District which clearly shows its relation to the use of all transportation facilities. We heartily approve your active participation in this good work.

Sincerely,

MODERN HOME BUILDERS, INC.

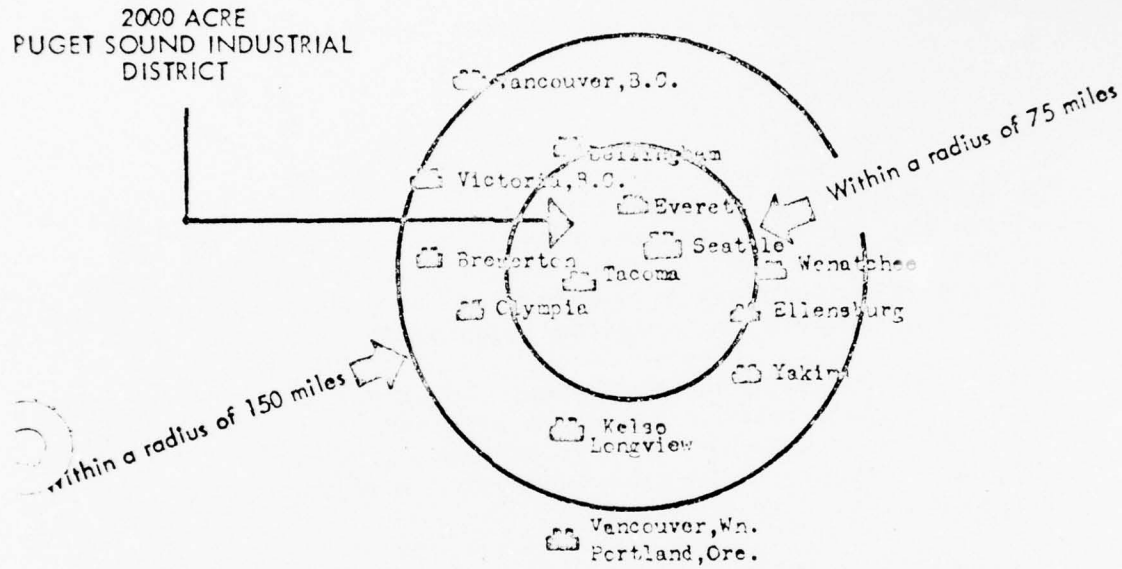
D. H. Healy

vr

Exhibit 44

MARKETING

NORTHWEST TRADING AREA

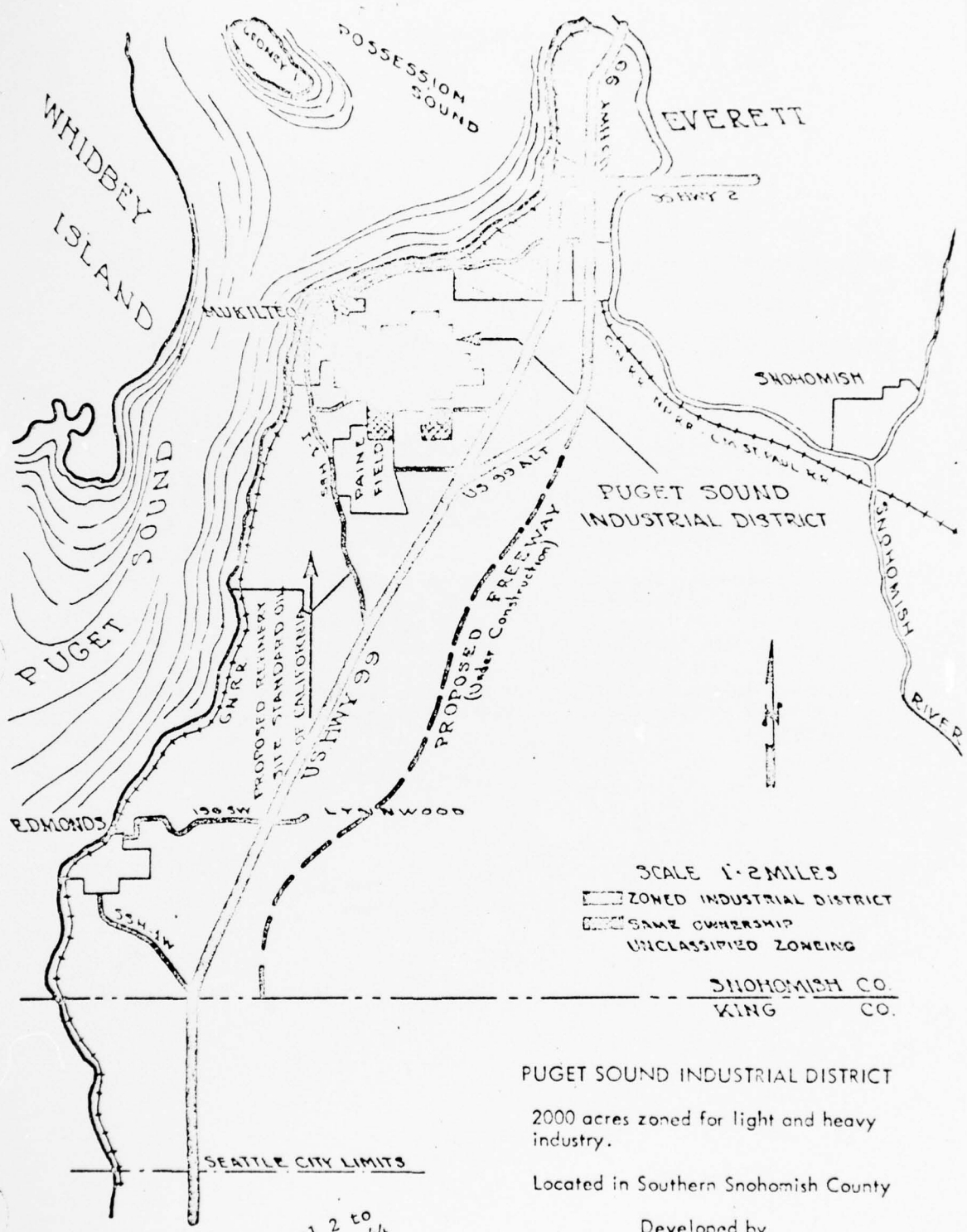


The Puget Sound area (including the lower mainland region of British Columbia) had a population of 1,919,800 in 1954 and retail sales in excess of $2 1/4 billion. There is every indication that this area will continue to expand, and persistently growing area solidarity will demand locally made products.

The continuing developments in Alaska also promise a great potential market for products from this area.

While world conditions are certainly unpredictable, there are many indications that a vast Oriental market is in urgent need of many products from our farms and shops, and it is to be hoped that political road blocks will be lifted, and this potential released. Cities on Puget Sound are ideally located to profit from such a development, and the trend should be watched closely and anticipated if possible.

Incl 1 to
Exhibit 44



PUGET SOUND INDUSTRIAL DISTRICT

2000 acres zoned for light and heavy industry.

Located in Southern Snohomish County

Developed by

MODERN HOME BUILDERS, INC.
18800 Highway 99, Lynnwood, Washington
PRospect 8-1116

Incl 2 to
Exhibit 44

C O P Y

P A I N E F I E L D

Everett, Washington 98202

October 21, 1964

Snohomish County Economic Development Council
P. O. Box 538
Everett, Washington

Attention: Mr. Lloyd Repman, Manager

Gentlemen:

Snohomish County Airport is engaged in developing an Industrial Park on the Airport property. In addition to our Airport sites we are concerned with the county-wide industrial development. This concern is evidenced by our active participation in the Economic Development Council.

The Airport endorses the concept of a balanced development of recreational and industrial resources. We feel a county-wide, comprenensive study incorporating existing and potential industrial sites and transportation facilities is desirable. This should encompass rail, freeways, highways and waterways. Any such study or survey should emphasize the need for, and proper utilization of, deep-water port facilities and tide-water industrial and recreational tracts.

Yours very truly,

George C. Petrie
Airport Manager

GCP:lc

Exhibit 45

WEST COAST TELEPHONE COMPANY

GENERAL OFFICES: EVERETT, WASHINGTON • AREA CODE 206 • ALPINE 9-2111

Everett, Washington
October 22, 1964

Task Force for the Puget Sound
and Adjacent Waters Study
c/o Mr. Robert Gedney, Co-chairman
U. S. Army Engineer District
1519 Alaskan Way South
Seattle, Washington 98134

Gentlemen:

Since our company provides communication services in a portion of your study area, we wish to express our interest in your Comprehensive Water Resources Study. Water is certainly one of the most important assets of the Puget Sound Area and we are glad to see that long range plans are being made for the most effective use of that asset.

We urge that your planning should recognize the need for balanced development to include:

1. Use of our water resources for industrial development in order to provide jobs and an expanding economy for our area. This use will include primarily (a) the industrial uses of water for such purposes as paper and pulp manufacturing, (b) use of water for transportation to include development of deep water industrial sites that tie in with rail and highway networks and (c) use of water for agriculture.

2. Recreational uses of our water resources. Assuming we do a good job in industrial development as outlined in "1" above, there will be (a) a need for more beaches and river areas designated for recreational use because of the greater number of people in our area and (b) the ability to pay for such recreational facilities.

3. Flood control. More land will become available for industrial development, residential use and agricultire if the flood threat can be eliminated.

Very truly yours,

Russell J. Loveland
President

Exhibit 46

THE EVERETT WATER SYSTEM IN SNOHOMISH COUNTY

TO: THE TASK FORCE FOR
THE PUGET SOUND AND ADJACENT WATERS STUDY

FROM: ROLLIE D. BERRY, SUPERINTENDENT OF WATER
REPRESENTING THE CITY OF EVERETT WATER SYSTEM

Submitted at the Area II Hearing (Island, King and Snohomish Counties)
Held October 22, 1964 at the Snohomish County PUD Auditorium
In response to the
"Notice of Public Hearing on Comprehensive Water Resources Study,
Puget Sound and Adjacent Waters" dated September 25, 1964

PUBLIC HEARING PRESENTATION

THE EVERETT WATER SYSTEM IN SNOHOMISH COUNTY

To: The Task Force for the Puget Sound and Adjacent Waters Study
From: Rollie D. Berry, Superintendent of Water
Representing the City of Everett Water System

Submitted at the Area II Hearing (Island, King and Snohomish Counties) Held October 22, 1964 at the Snohomish County PUD Auditorium in response to the "Notice of Public Hearing on Comprehensive Water Resources Study, Puget Sound and Adjacent Waters" dated September 25, 1964.

HISTORICAL

The Everett Water System as it presently exists provides water for approximately 120,000 persons in Everett and western Snohomish County and constitutes the major single source of domestic and industrial water for the area.

The City has not always owned its own water system. Everett's original supply in the late 1800's (in addition to then existing relatively small individual wells and systems) was obtained from the Woods Creek area located about four miles south of the present City center. The water was impounded in a small dam across a ravine and transmitted to the City through a 20" wood stave pipeline. This source of supply yielded a maximum of about 5 million gallons per day.

The original forerunner of the present Everett water system was owned by Everett Railway Light and Water Company and the Puget Sound International Railroad and Power Company. Negotiations before purchase of the system by the City of Everett started in 1911 and were completed in 1916. The City purchased the original system in its entirety including the source of supply for $994,000.

Extensive planning and engineering studies, sponsored by the City, had been underway during the negotiations. These studies indicated that the best source of supply for long range development prospects was the Sultan River which is the City's present source of supply.

In August of 1916, the first contract was let for construction of a 28" diameter wood stave and riveted steel pipeline (Sultan River Line No. 1). The line's capacity was 10 million gallons daily and was 26 1/2 miles in length, bringing water directly from the Sultan River (without benefit of sedimentation) to the City. The new line was put in operation in 1920 and

and the original Woods Creek supply was maintained for a period of time as a reserve and used during emergencies only as an alternate source of supply. Since that time, the Woods Creek source, which stems primarily from springs, has become contaminated due to encroaching residential development and would normally serve only as a limited industrial supply today.

A new 20 million gallon ground storage reservoir was constructed in 1923 south of the then corporate limits near 63rd and Evergreen Way (U. S. 99 Business Route) to serve the growing water requirements of the City.

By 1929, the City's use of water was approaching the capacity of the No. 1 Line and the Puget Sound Pulp and Timber Company (now the Scott Paper Company) located in Everett. This resulted in Sultan River Project No. 2, the major features of which are generally described as follows: (Proceeding from the River toward the City) a concrete diversion dam with a 120 foot spillway section and accompanying flood and control gates; about 2, 000 feet of 54" diameter wood stave pipe to conduct the water from the dam to the inlet of a large tunnel; Tunnel No. 1, 7, 064 feet in length, which conducts water to Lake Chaplain through a hill existing between the Sultan River and Lake Chaplain; the development of Lake Chaplain, originally a natural lake, to a capacity of 1. 35 billion gallons; Tunnel No. 2, 4, 415 feet in length, concrete lined, to bring the water from the Lake Chaplain storage to the upstream end of the new transmission line (Sultan Line No. 2). The No. 2 transmission line is approximately 18 1/2 miles in length with 7. 3 miles of the upper end of the line being 52" diameter pipe and the balance being 48" in diameter. This line delivers 50 million gallons per day to the City and at a high point between the City and the Lake, the water is screened and chlorinated at the Panther Creek station. All facilities of the No. 2 project are still in use today.

By 1935, the industrial and domestic water demand had increased substantially, particularly due to the expansion of the Weyerhaeuser Pulp Division. This resulted in Sultan River Project No. 3 which was started in 1936 and completed in 1938. This project consisted primarily of a second 50 million gallon per day transmission line (Sultan Line No. 3) parallel and adjacent to pipeline No. 2 from the Lake to the City, together with an enlargement of the Panther Creek screening and chlorination plant.

As the water demands continued to increase, it was necessary to enlarge the storage capacity of Lake Chaplain which was done in 1940-1942 by raising the dam at the south end of the Lake and building a new lower dam at the north end. This increased the storage to its present usable capacity of about 4-1/3 billion gallons.

Sultan River Project No. 4 was completed in 1960 and consisted of a third

50 million gallon per day water transmission line (Sultan Line No. 4) paralleling Lines No. 2 and 3. Eighty-four per cent of the cost of this construction was paid by the Scott Paper Company and Weyerhaeuser Company for the purposes of "firming up" the transmission capacity for industrial water to the City.

The above brief resume' indicates only the major improvements of the system. Numerous other necessary but more minor facility installations have been undertaken, such as additional storage reservoirs, extension of the distribution system, minor transmission lines, pumping stations and numerous other features improving the service and strengthening the reliability of the Everett system.

The "book value" at the end of 1963 for the fixed assets of the Everett system was a nominal $17 million. This represents only a fractional amount of the money which would be required to replace the entire system at present day prices for labor and materials.

PRESENT SYSTEM AND OPERATIONS

The present Everett water system provides water for approximately 120,000 persons in Everett and western Snohomish County and constitutes the major single source of domestic and industrial water for the area.

The present system consists of approximately 229 miles of water distribution main, 75 miles of major sized water transmission main, approximately 63-3/4 million gallons of distribution storage capacity and about 4-1/3 billion gallons of impounded storage at Lake Chaplain. The water system serves, directly, some 13,000 residential flat rate services within the City, about 2,000 metered customers inside the City and nearly 1,000 metered customers outside the corporate limits located primarily along the transmission lines and in the Eastmont area.

In addition to the foregoing water consumers served directly on a retail basis by the Everett system, water is wholesaled to numerous other distribution agencies which include the Town of Monroe, the PUD's Lake Stevens and Sunnyside Water Districts, a portion of the Town of Snohomish, Swan's Trail Water District, Silver Lake Water District, the Mukilteo Water District, the Alderwood Water District along with numerous other individual groups, co-operatives, water districts and associations.

The Alderwood Water District distributes the Everett supply to Mountlake Terrace, Lynnwood and portions of Edmonds. At the present time, negotiations are underway between the Alderwood Water District and the three aforementioned Cities for firm contractual commitments for the Alderwood District to supply the entire water requirements for these three Cities.

Interesting and significant conclusions may be drawn in regard to the tremendous importance and use of water in this area by reviewing the following table which shows the average annual water requirements of the Everett system and the year in which the requirements occurred.

Year	Average Annual Flow (Approximate)
1915	4.0 million gallons per day
1920	5.0 million gallons per day
1925	9.0 million gallons per day
1930	15.0 million gallons per day
1935	22.0 million gallons per day
1940	63.0 million gallons per day
1950	90.0 million gallons per day
1960	97.0 million gallons per day
1963	109.7 million gallons per day

The economic importance of this water resource to the area cannot be over-emphasized and considerable emphasis must be placed on careful planning for the development of sufficient quantity and protection of water quality.

ENGINEERING REPORT

There is submitted herewith for the purpose of providing basic engineering data, a comprehensive report dated December 1963, from the City's Consulting Engineers, Gray and Osborne, entitled "A Plan for Replacement and Expansion of Water Supply and Transmission Facilities for the City of Everett".

The Engineering Report defines the potential service area to which water may be economically supplied through the Everett system, develops projections of future population and water demands in these areas and provides recommendations for the sizing, location and estimated costs for water supply transmission and storage facilities to provide service to the designated service area. Individual domestic and industrial demands and fire flows for separate sections of the area are also projected.

The Report summarizes the projected stage development of the Sultan River water supply on a time basis through to the ultimate development of the Sultan River as now conceived.

The last portion of the Report includes a map showing the master plan for development for supply and transmission facilities with a schedule showing the projected timing for each of the needed facilities.

The City is planning at this time to proceed immediately with the initial phases of construction in keeping with the recommendations of the Engin-

eering Report for the master plan. This initial construction will consist primarily of the replacement of the City's existing No. 1 Line which has reached the end of its useful life with a new 51" diameter transmission line (Pipeline No. 5) which will have a capacity of 50 m.g.d. and be approximately 23 miles in length extending between Lake Chaplain and Everett. This new installation will also include a new intake structure, screening plant and chlorination station at the Lake.

Other facilities to be included as a part of the immediate construction will consist of a nominal 4 million gallon steel reservoir storage tank near the south side of Casino Road approximately one mile west of Evergreen Way (U.S. 99 - Business Route) together with about one mile 30" diameter pipeline connecting this reservoir to the existing system. Other large diameter local transmission piping will be installed in the vicinity of the City's reservoir No. 3. A new tunnel (Tunnel No. 3) will be constructed parallel to the existing outlet tunnel (Tunnel No. 2) between Lake Chaplain and the three major existing transmission lines (Lines No. 2, 3 and 4) together with the reconditioning of the existing Tunnel No. 2.

This immediate construction will necessitate a bond issue in the estimated amount of $10 million to provide sufficient financing.

JOINT DEVELOPMENT OF THE SULTAN BASIN

In July, 1960, the City of Everett and Public Utility District No. 1 of Snohomish County entered into a contract for the joint development of the Sultan Basin, with the City's interest being primarily water supply and the District's interest being primarily hydro-electric power. The City was (and is) in immediate need of additional upstream storage capacity. The Sultan Project is being constructed in two stages with the first stage scheduled for completion in mid-1965. At the present time, construction of this first stage is over 90% completed. The first stage of the dam is being constructed for water supply purposes only with certain features being incorporated in the structure so that the second stage of construction may be used for both water supply and hydro-electric purposes.

Completion of the first stage will "firm up" the City's ability to provide a continuous flow of about 170 million gallons per day. The ultimate economic development of the Sultan by means of this two stage construction will provide approximately 330 million gallons per day firm water yield. At the present time, water demands show that the Sultan River is approximately one-third developed with respect to water production capacity.

The Culmback Dam (named in honor of Everett's late Mayor George Culmback) will back water up approximately 3 miles forming Spada Lake (named in honor of John Spada, one of the first Commissioners of the PUD).

The first stage of the rock fill dam will be approximately 200' in height backing up some 20,000 acre feet of water which is contributed from

approximately 69 square miles of Sultan Basin watershed area located upstream from the dam. This estimated cost of this first stage is $10 million.

The joint development of the Sultan River for water supply and power production purposes through the cooperation of two public agencies, the City and the PUD, represents a tremendous cooperative effort in furthering the interests of Everett and Snohomish County in the development of its water resources. Ultimate development of the Sultan under the present plan contemplates 330 million gallon daily firm water supply and an ultimate of 140,000 kilowatts of peaking power with inclusion of flood control being dependent upon conclusions reached in studies now under way by the Corps of Engineers.

Complete plans, specifications and other details for this work may be obtained for purposes of a comprehensive study of Puget Sound and adjacent waters from R. W. Beck and Associates, Consulting Engineers on the project.

AREA-WIDE CONCEPT

As evidenced by the past history of the extended service area encompassed by the Everett water system and in accordance with the accompanying Engineering Report on the development of water supply and transmission facilities, it is apparent that the Everett water system has been and will continue to be utilized for the benefit of the entire area and not reserved for the exclusive use of the residents, businesses and industry located only within the corporate limits of the City. This is an important concept to the economy of the area and for purposes of the forthcoming comprehensive study of Puget Sound and adjacent waters, this concept should be maintained in the forefront for consideration of any over-all plan involving the Sultan River.

We would urge that, as a part of the comprehensive study, an additional source, or sources of supply, of water for municipal, industrial, agricultural and other purposes be investigated with an eye toward ultimately supplementing water available from the Sultan River source.

Further in this connection, we would also urge the investigation of potential treatment methods which would enable the water purveyor to locate the source of supply in a closer proximity to the points of demand within the area.

The possibilities and limitations for development of local ground water supplies for purposes of supplementing the basic surface water supplies for municipal and other uses, should be investigated and summarized as a part of the study.

MULTIPLE USE CONCEPT

We are in substantial agreement with the concept of conservation and utilization of the country's natural resources through multiple use as promulgated by the Federal and State governments. There is, however, one aspect of the multiple use concept which must be observed in order to make any over-all multiple use plan practical. This is the establishment of a priority of uses for a given local area.

Specific reference is made to the Sultan Basin watershed where certain of the multiple uses would be eliminated by reason of the physical area (for example, range land or grazing would not be practical) but where other multiple uses could be practically and compatibly pursued.

We feel that one of the most useful products of this comprehensive water resource study as far as the Sultan Basin is concerned would be a careful analysis and establishment of a priority of multiple uses within the Sultan Basin. This priority listing would necessarily have to be established by a careful physical assessment and economical analysis of the Basin with respect to the entire area. Provision is made within the Multiple Use Act for an indication of priority of use on a local basis and without a clear cut priority, any comprehensive plan involving this area could not readily proceed.

As an example of compatible uses in the Sultan, we would consider the following: Watershed area (to be protected as a source of municipal and industrial supply), logging, fish and wildlife enhancement, mining, power production and flood control.

We are most interested in the comprehensive water resources study and offer our complete cooperation and assistance in making available all data, plans and other related information which may be of help to the Task Force in completing this study. We recognize that a considerable amount of data has already been compiled in regard to the water resources of this area and would welcome any specific inquiries as to data and information which may be needed or desirable for the study. Specific requests for information would avoid duplication of a large amount of material already available to the Task Force.

EVERETT AREA CHAMBER OF COMMERCE
P.O. BOX 1114 • EVERETT, WASHINGTON 98201 • PHONE ALPINE 2-5106

October 22, 1964

Task Force for the Puget Sound &
Adjacent Waters Study
% Mr. Robert Gedney, Co-Chairman
U. S. Army Engineer District, Seattle
1519 Alaskan Way South
Seattle, Washington 98134

Gentlemen:

In keeping with the general objectives of a Chamber of Commerce, which is to create an environment conducive to a favorable business climate, the Rivers and Harbors Committee has directed attention to the problems related to the commerce affected by our waterways, the harbor and the Snohomish River.

It is the opinion of this committee that there are several alternate approaches to provide step-by-step development. We recognize the interests concerned with the development of both industrial and recreational facilities. We believe it to be possible to design an arrangement compatible for both facets of port improvement.

In our study of various proposals we find that two problems are obvious: (1) The flow of the Snohomish River is the first key to future plans because of the advantages of the supply of fresh water but complicated by the problem created by the amount of silt and sand deposited in the area annually.

A way to convert this into an advantage must be taken into consideration in any designing of future proposals. (2) The development of Tract Q will be dependent upon the convenience of access to both beach front and potential industrial property by an adequate bridge.

By keeping uppermost in mind the needs of existing industries we have requested that letters be directed to the port documenting current needs, future projections and general indication of feeling toward port development.

Since other groups have made requests for the development of additional deep-water sites we feel a clear expression of interest can be considered in the engineering of various phases of an over-all comprehensive plan which will be acceptable by the community.

It is most urgent that particular consideration be given to the number of fixed bridges scheduled to be built over the waterways of the Snohomish River Delta in the immediate future in conjunction with construction of the new freeway.

Bridge design could well be the deciding factor on future development of delta lands to the east of the new freeway and potential navigational use of Steamboat Slough.

The Everett Area Chamber of Commerce shall continue to provide the leadership necessary to bring people together in a mutual effort to provide the best solutions to the problems in the interest of all involved in developing our area to its full industrial and recreational capabilities.

A copy of a resolution of the Everett Area Chamber of Commerce supporting this stand is attached to this letter.

Very truly yours,

William E. Brooks

William E. Brooks
General Manager

WEB:gw
Attachment

R E S O L U T I O N

WHEREAS, the Task Force for the Puget Sound and Adjacent Waters Study has scheduled a hearing for October 22, 1964 for the purpose of hearing proposals for development of various resources related to water use and;

WHEREAS, the citizens of Everett are vitally interested in phases of development ranging from navigational to industrial and domestic to recreational and conservational, including wildlife preservation and;

WHEREAS, specific segments of the local economy have gone on record as supporting specific projects relating to aforementioned areas.

NOW THEREFORE BE IT RESOLVED that the Board of Directors of the Everett Area Chamber of Commerce shall favor the multiple use concept with adequate consideration given to any and all areas in this community's area of influence, and does hereby designate the Rivers and Harbors Committee of the Chamber to represent this organization at the above mentioned hearing.

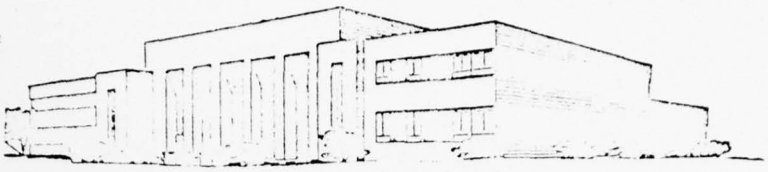
The committee is also directed to go on record as requesting subsequent opportunities to request additional hearings to add or delete to the comprehensive plan for water resources development affecting this community.

RESOLVED at a regular Board of Directors meeting this 19th day of October, 1964.

Signed William E. Brooks
William E. Brooks
General Manager
EVERETT AREA CHAMBER OF COMMERCE

Incl to Exhibit 48

RICHARD C. HULSEMAN
ENGINEER



PHONE
ORANGE 8-4758

OFFICE OF ISLAND COUNTY ENGINEER

COUPEVILLE, WASHINGTON

October 9, 1964

Mr. John A. Richardson, Co-Chairman,
Task Force for Comprehensive Study
Puget Sound and Adjacent Waters
Department of Conservation
335 General Administration Building
Olympia, Washington

Dear Sir:

Island County is intensely interested in the water resources of the Puget Sound region and supports the purpose of the Comprehensive Water Resource Study of Puget Sound and Adjacent Waters. The Study objectives to develop and manage water and related land resources, to preserve the region's natural beauty, and to promote the well-being of all the people by means of the best use of water and land resources, conforms with the objectives of Island County's Comprehensive Plan. Island County, comprising Whidbey and Camano Islands, and located in the center of the Puget Sound region, contains 208 square miles of land and 201 lineal miles of waterfront, surrounding the land masses.

The natural assets of Whidbey and Camano Islands are also shared by problems, which, up to the present, have been resolved only partially and inadequately for immediate, future and long range development in addition to existing requirements, within the limits of individual and community available funds. High in the priority of Island County's requirements are: (1) Adequate quantities of quality domestic water; (2) Contamination control of land and beaches through adequate sewage disposal; (3) Land stabilization to protect land and beaches; (4) Water navigation facilities and related harbors for public, commercial and pleasure use; and (5) Outdoor recreational and fish and wildlife opportunities which can be provided or enhanced by development of works.

Island County's many miles of waterfront, although a valuable asset, also isolates the two Islands from adequate sources of quality domestic water. The Olympic Mountains form a rugged shield from the moisture-laden air of the prevailing southwesterly winds - especially in the north-central Whidbey Island area, which enjoys a low yearly rainfall of approximately 19 inches, compared to approximately 38 inches on the adjoining mainland. With the exception of a pipeline large enough to serve only the Naval Air Station at the north end of Whidbey Island, all water is drawn from deep wells, all of which is more or less

high in mineral content, and much of this, not too palatable. The Skagit, Stillaguamish and Snohomish Rivers are nearby sources of quality water in adequate quantities which could be tapped for supplying domestic water for Whidbey and Camano Islands.

It is requested that the studies of the Task Force urgently seek a means to making adequate quality domestic water available to all residents of Island County. It is further requested that Island County's other requirements, as stated above, also be actively considered for immediate, future and long-range planning within the scope of the Task Force's objectives.

The Public Hearing for Area 2 at Everett on October 22 will be attended by the following officials of Island County.

C. F. Andrews	Commissioner
Richard C. Hulseman	County Engineer
Archie J. Ahlstrom	Planner

If there is any specific material that we can bring to the hearing that will support any testimony pertaining to the Task Force studies, please advise. Further, the Task Force is invited to utilize Island County and its requirements as a "pilot shop" task force operation to initiate its operating procedures.

Yours very truly,

RICHARD C. HULSEMAN, PE
County Road Engineer

RCH:ms

cc District Engineer, Corps of Engineers
C. F. Andrews, Chairman, Bord of County Commissioners

Page 2 of 2,
Exhibit 49

MAYOR
J. D. BRAMAN

CITY OF SEATTLE
WATER DEPARTMENT
1015 THIRD AVENUE—8TH FLOOR
SEATTLE, WASHINGTON 98104

SUPERINTENDENT
J. RAY HEATH
MEMBER A.S.C.E.
MEMBER N.S.P.E.
MEMBER A.W.W.A.

October 13, 1964

Mr. Robert H. Gedney, Chairman
Task Force for Comprehensive Study
Puget Sound and Adjacent Waters
U. S. Army Engineering District
1519 Alaskan Way South
Seattle, Washington 98134

Gentlemen:

The City of Seattle Water Department, which obtains its water from the Cedar and Tolt rivers to supply the metropolitan area, is pleased that a comprehensive study of this important resource is being made.

Since 1901 the City of Seattle has obtained its water from the Cedar River watershed. In 1963 the Tolt River water was brought to our city and adjacent communities. These watersheds have been and are presently operated as closed areas, prohibiting public access thereto. Both areas are being operated as tree farms in the development of our timber resources. In addition, the Cedar River Watershed also has a power development supplying power to the City of Seattle.

Recent activities by the United States Forest Service and others, indicating that these areas should be developed and open for recreational use is of considerable concern to the City of Seattle and other communities in the State of Washington.

In the State of Washington practically 1/3 of the State's area is in public ownership and should be available and ample for recreational requirements for the next 50 to 100 years at least. The less than 1% of the State's area now being used for watersheds for domestic and industrial water supply, is being in my opinion, put to the highest and best use.

I urge that your group exert every effort in recommending that watersheds presently being used for domestic water supply, <u>not be</u> considered available for public access or recreational activities. These areas should be held in reserve until need develops for additional recreational facilities, at which time they then can be made available for recreational use, as required. In that event, it will be necessary for the municipalities to develop water treatment facilities to assure a safe supply of water to the citizens of the State. This cost obviously will have to be borne by the consumers of water and will result in higher water rates.

Mr. Robert H. Gedney, Chairman
Task Force for Comprehensive Study
Puget Sound and Adjacent Waters

10-13-64

This increase in rates would have a detrimental affect on the economy of the entire state at the present time. Later, with increased population and industrial development, the costs can be more easily absorbed. The City of Seattle is presently serving many communities adjacent to the City, with a total population of 810,000 people. Our present development is capable of supplying 1½ million; with further development of both the Tolt and Cedar supplies we will have capacity sufficient to supply 2½ million population. This, we feel is adequate at least until the year 2000.

I sincerely urge your serious consideration in supporting closed watersheds to maintain a supply of uncontaminated water to the citizens of the Puget Sound Basin.

Very truly yours,

J. Ray Heath

J. Ray Heath- Superintendent
of Water

JRH:lw

P.O. BOX 1209
SEATTLE, WASHINGTON 98111
PHONE MAin 2-8124

Port of Seattle

Commission
MERLE D. ADLUM
MINER H. BAKER
JOHN M. HAYDON
FRANK R. KITCHELL
ROBERT W. NORQUIST

General Manager
J. ELDON OPHEIM

October 19, 1964

Robert H. Gedney
Chief, Basin Planning Branch
U.S. Army Engineer District, Seattle
1519 Alaskan Way South
Seattle, Washington 98134

Subject: Area 2 Public Hearing, Snohomish County PUD Auditorium, Columbia Basin Inter-Agency Committee, Task Force for Comprehensive Study, Puget Sound and Adjacent Waters.

Dear Mr. Gedney:

The Port of Seattle takes this opportunity to support the Comprehensive Water Resources Study - Puget Sound and Adjacent Waters.

We will give our full cooperation in furnishing whatever information we possess which may be helpful in the conduct of the study.

We urge that every consideration be given to studying the economic and physical requirements for deep water and other waterway commerce and for water-oriented industrial sites.

Sincerely,

J. Eldon Opheim
General Manager

JEO:AHY:pb

Exhibit 51

PROPOSED DEVELOPMENT

OF

PORT OF LANGLEY, WASHINGTON

The following information was prepared for the public meeting to be held in Everett on October 22, 1964, on the Comprehensive Water Resource Study of Puget Sound and Adjacent Waters. It is a brief outline of the existing port facilities and proposed future development of the port.

Location: Port of Langley is situated in Island County on the eastern shore of Whidbey Island approximately 8 miles from the southern end of the island. It faces the south end of Saratoga Passage which is the channel between Whidbey Island and Camano Island, west of the City of Everett. The present population of the Town of Langley is 485 people.

Existing Port Facilities:

(1) Public wharf large enough to handle inter-island commercial boats. The depth of water on the seaward side adjacent to the wharf is approximately 10 feet at lower low water. There is a small boat float 100 feet long with semi-protected moorage for year-around use and in the summer time two or three more small floats are placed in use. All of these facilities are owned by the Town of Langley.

(2) Private - Sunrise Beach Resort with cabins and outboard boats for rent, fueling facilities, supplies, small boat storage, small boat repairs and outboard motor repairs.

(3) Private - Langley Marina with fueling facilities, supplies,

small boat storage, small boat repairs and outboard motor repairs.

Proposed Port Development:

(1) Present - Develop the port into a small boat haven for pleasure craft by dredging south and inshore of the existing city wharf and providing additional floats and several bouys for moorage.

(2) Future - Further develop the small boat haven by construction of pile and timber breakwaters for protection from the weather. Extension of the existing wharf with additional permanent floats.

(3) Long-range - Construction of new community pier for both pleasure and commercial boats sheltered by rock and piling breakwaters with additional area for parking and industrial development.

Financing:

The source and method of financing the proposed improvement to the existing port facilities is not known at the present time.

C O P Y

Oct. 22, 1964

The Commissioners of Dikeing district #6 of Snohomish County would like to present the following information concerning the flooding of our district.

We have about 500 acres of land that are subject to flooding every time the river is up, means that we can not farm our land to the best advantage, haveing to reseed frequently with water resistant grasses that are not to good for milk production, also the ground is deprived of lots of its fertilizers.

It has cost the dist. about $8 per acre per year for the last 20 years to build and maintane our dikes. Also pumping out the water is expensive.

The City of Everett's #1 water line is flooded every time we have high water which means that hundreds of people would be out of water if the line broke. The County road is under water forcing all the people in this area to have to go miles out of there way to get to town, as well as the cost of repairing the roads. The PUGET SOUND POWER AND LIGHT CO. transmission line is also in the water causing hardship on the LIGHT CO.

There has been times when live stock has been lost in a flash flood, bridges washed away, ditches filled up, land covered with debris, dikes washed out, etc., this all costs the farmers money.

The value of the land is but a fraction of what it would be if the rivers were controled.

There seems to be no permanent solution other than controling the rivers with dams.

The Commissioners of Dikeing Dist. #6 hartely endorse the Army Engeneers plan to control all the rivers in the water shed.

Secretary /S/ J.H.Thompson
Rt. #2. Box 193
Everett, Wn.

Exhibit 53

MUNICIPALITY OF METROPOLITAN SEATTLE

METRO

410 W. HARRISON STREET SEATTLE 99, WASHINGTON AT 4-5100

Office of Executive Director

October 26, 1964

Columbia Basin Inter-Agency Committee
Task Force for Puget Sound Study
1519 Alaskan Way South
Seattle, Washington 98134

Attention: Mr. Robert H. Gedney, Co-Chairman

Gentlemen:

The Municipality of Metropolitan Seattle is the public agency with responsibility for sewage disposal for an area fronting on Puget Sound from the southern boundary of Snohomish County to the northern boundary of Pierce County.

The Municipality has adopted a Comprehensive Plan for sewerage of the entire drainage basin and is currently constructing the first stages of that plan within the present Metropolitan boundaries. The enclosed map shows the extent of the drainage basin (the study area) and the present boundaries of the Municipality.

As the map shows, final disposal of treated wastes under this plan will be to Puget Sound. All discharges of untreated sewage and industrial wastes to Lake Washington, Lake Sammamish, Duwamish Waterway and other public waters will be ended when the Metro system now under construction is completed.

We recognize that urban life requires many uses to be made of our water resources; different uses having different values. One of these uses is the disposal of public wastes at costs commensurate with the financial resources of the region.

It is Metro's policy to develop an area-wide wastes disposal system making use of available receiving waters in ways most beneficial to the most people and within the economic framework of the region.

This philsophy is perhaps best expressed in an excerpt from the guidelines set forth in Senate Document 97, 87th Congress, Second Session, as follows:

> "Well-being of all of the people shall be the overriding determinant in considering the best use of water and related land resources. Hardship and basic needs of particular groups within the general public shall be of concern, but care shall be taken to avoid resource use and development for the benefit of a few or the disadvantage of many. In particular, policy requirements and guides established by the Congress and aimed at assuring that the use of natural resources, safeguard the interests of all our people shall be observed."

To insure that its operations will create no conditions inimical to other uses of public wastes, Metro has established and maintaines an extensive, comprehensive water quality monitoring program.

We would be pleased to make available to the Task Force any of the data thus accumulated and to assist in any other way within our means.

Very truly yours,

Fred E. Lange

Fred E. Lange
Acting Executive Director

FEL:ms
Enclosure

PUGET SOUND POWER & LIGHT COMPANY

Puget Power Building
Bellevue, Washington
October 26, 1964

Mr. Robert H. Gedney
U.S. Army Engineer District, Seattle
Corps of Engineers
1519 Alaskan Way South
Seattle, Washington 98134

Mr. John A. Richardson
Assistant Director, Department of Conservation
State of Washington
335 General Administration Building
Olympia, Washington 98501

Gentlemen:

Thank you for sending us notice of public hearings of the Comprehensive Water Resource Study of Puget Sound and Adjacent Waters.

As the electric utility serving a substantial part of the area included in this study, we are interested in the economic development and growth of the area. Also, we have six operating hydroelectric projects on the rivers within this area. Accordingly we are interested in any developments which will affect the operations of these projects; possible expansion of these projects; the construction of additional facilities for greater utilization of our existing projects; or new facilities to obtain additional electric power to meet the needs of the customers.

It would be appreciated if you would continue to send us notice of future public hearings and keep us advised of the progress of this study. Such notices and information should be directed to me.

If there is any assistance or information that we can supply you, please let us know.

Very truly yours,

L. E. Hall

L. E. Hall
Director of Public Affairs

Exhibit 55

North Cascades Conservation Council

Founded in 1957

3215 North East 103rd Street
Seattle, Washington, 98125
November 9, 1964

RECTORS, 1964-1965

sident
Patrick D. Goldsworthy
Seattle, Washington

t Vice President
Charles D. Hessey, Jr.
Naches, Washington

ond Vice President
R. D. Watson
Seattle, Washington

responding Secretary
John W. Anderson
Seattle, Washington

cording Secretary
Miss Eileen Ryan
Seattle, Washington

asurer
Joseph W. Miller
Bellevue, Washington

Robert G. Albrecht
Seattle, Washington

David R. Brower
Berkeley, California

Irving Clark, Jr.
Seattle, Washington

Joseph Collins
Spokane, Washington

Dr. Fred Darvill
Mt. Vernon, Washington

Miss Una V. Davies
Lake Oswego, Oregon

Mrs. John A. Dye.
Seattle, Washington

Jesse Epstein
Union, Washington

Dr. Donald Fager
Wenatchee, Washington

Hal Foss
Yakima, Washington

Mrs. Neil Haig
Seattle, Washington

Henry J. Kral
Everett, Washington

Arthur Kruckeberg
Seattle, Washington

Harvey H. Manning
Issaquah, Washington

Marion E. Marts
Seattle, Washington

. Michael McCloskey
Eugene, Oregon

Grant McConnell
Chicago, Illinois

ack Stevens
eattle, Washington

ohn F. Warth
eattle, Washington

Robert L. Wood
eattle, Washington

Philip H. Zalesky
Everett, Washington

Mr. Robert H. Gedney
U. S. Army Engineer District, Seattle
Corps of Engineers
1519 Alaskan Way South
Seattle, Washington, 98134

Dear Mr. Gedney:

Enclosed are three studies which we have made in those portions of the Cascades to be included in the "Comprehensive Water Resource Study, Puget Sound and Adjacent Waters":

1. "Prospectus for a North Cascades National Park" (1963)
   The western half of this proposed park lies within AREA 1.

2. "A Proposal for an Alpine Lakes Wilderness Area" (1963)
   The western third of this proposal lies within AREA 2.

3. "North Cascades /Wilderness Area Proposal" (1960)
   The western half of this proposal lies within AREA 1.

We request that these studies be made a part of the official records of the hearings held October 12 and 22, 1964 in Anacortes and Everett.

We wish to emphasize that, in the course of deriving any plans for the Puget Sound watershed, adequate consideration should be given by your Committee to the scenic and recreational resources of the area. Our studies will make it very apparent that some of the nation's most outstanding natural scenery lies in Washington's Northern Cascades. Any forthcoming development plans which may result in impairment of portions of this scenery should provide for alternate proposals which will not damage the scenery.

This should be especially true for those areas under consideration for ultimate classification into Wilderness Areas by the Forest Service. These are the North Cascades Primitive Area (our proposal #3 above) and the Alpine Lakes Limited Area (our proposal #2 above).

In addition, we wish to urge that those river stretches currently being studied by the Wild Rivers Study Team for their potential as Wild Rivers be left in their present natural state. This is especially the case for the Skagit River and its tributaries upstream from Concrete with exception of the Diablo and Ross Reservoirs.

. . . To protect and preserve the North Cascades' scenic, scientific, recreational, educational, wildlife, and wilderness value

We would appriciate receiving two more copies of the Information Bulletin (July 1964) describing the Study. Also we wish to be advised of publication of the Hearing Records and any subsequent action taken by the Task Force for Puget Sound and Adjacent Waters.

Yours sincerely,

Patrick D. Goldsworthy

Patrick D. Goldsworthy, President
North Cascades Conservation Council

encl: 3 proposals

J. ALHADEFF
WASHINGTON JOCKEY CLUB

P. DYKSTRA
DAIRY FARMER

BEADON HALL
RETIRED BANKER

C. MUELLER
FARMER

SSELL PFEIFFER
CARNATION MILK FARMS

A. SCHIESSL
TENTRON INDUSTRIES, INC.

ERSON B. THATCHER

BERT E. COLWELL
WASHINGTON STATE'S
SPORTSMEN'S COUNCIL

KING COUNTY FLOOD CONTROL
CITIZEN'S ADVISORY COMMITTEE
King County Court House
SEATTLE, WASHINGTON 98104

BOARD OF COUNTY COMMISSIONERS
ED MUNRO, CHAIRMAN
JOHN T. O'BRIEN
SCOTT WALLACE

KING COUNTY ENGINEER
WALTER F. WINTERS

L. E. HALL, CHAIRMAN
OF ADVISORY COMMITTEE
GL 4-6363, EXT. 354

ED GROSHELL, SECRETARY
MA 2-5900, EXT. 610

November 9, 1964

Mr. Robert H. Gedney
U.S. Army Engineer District, Seattle
Corps of Engineers
1519 Alaskan Way South
Seattle, Washington 98134

Mr. John A. Richardson
Assistant Director, Department of Conservation
State of Washington
335 General Administration Building
Olympia, Washington 98501

Gentlemen:

At the Everett public hearing, concerning the Comprehensive Water Resource Study of Puget Sound and Adjacent Waters, several members of the King County Flood Control Citizen's Advisory Committee and officials of King County submitted statements. An official statement was not submitted by the King County Citizen's Advisory Committee. We are, therefore, submitting the following statement and would appreciate it if you would make it a part of the official hearing record.

King County has an extensive program of flood control, including drainage, underway. The desires and participation of local interests play a substantial part in this program. The Board of County Commissioners, through their Engineering Department (Flood Control Division) are the supervisors and in charge of this program. A vital link between the local people and the Board of County Commissioners is a Citizen's Advisory Committee of nine members, representing the entire county. The Advisory Committee meets regularly and obtains the views of the areas that they represent and make recommendations to the Board of County Commissioners as to steps they feel will benefit and enhance the Flood Control program.

The overall program is in its second major phase with a recent bond issue of $5,000,000 recently passed by the voters (the second of two such bond issues), so that this program may move ahead.

It is essential that local interests and organizations who are playing a substantial role in development of our water resources be kept up to date and advised of the program and the direction that the overall Puget Sound Water Resources Study will be taking.

Timing of studies for development of water resources is always important, but it is particularly important in King County as to how this county's water resources are to be developed because of its rapidly growing population. It is our understanding that this overall Puget Sound study has a target date five years from now. Even if this target date is successfully met, there are many answers which need to be obtained, at least in King County, long before this time. Studies are now underway of several river basins in the Puget Sound area by the Corps of Engineers, Soil Conservation Service, and other Federal agencies which affect King County. Early completion of these studies and the associated reports are needed so that the immediately needed work can proceed.

The Comprehensive Water Resource Study of Puget Sound and Adjacent Waters properly done will provide many important answers, but we would like to emphasize the importance of the studies now in progress being completed as soon as possible. It is requested that manpower, funds, and other similar resources not be diverted from the studies in progress in order that the overall Puget Sound study may proceed. Your consideration of this very vital and important point would be appreciated.

Thank you for the opportunity of presenting this statement to you.

Very truly yours,

L. E. Hall

L. E. Hall
Chairman

The City of Bellevue ALL AMERICA CITY BELLEVUE STATE OF WASHINGTON

November 23, 1964

Mr. Robert H. Gedney
U.S. Army Engineer District, Seattle
Corps of Engineers
1519 Alaskan Way South
Seattle, Wash. 98134

Dear Mr. Gedney:

I realize I am almost a month late writing this letter. The information bulletin on the hearings got buried with some other papers and just returned to light.

I have one suggestion that may be related to the water resource study. In the City of Bellevue, Washington, there is an area known as the Mercer Slough. The slough is essentially a peat bog comprising about 600 acres. Perimeter portions of the slough are usable for normal building development and in time will probably be used. Today some areas are in use for farming - truck and blueberries. The city has a 48-acre park in the center of the slough and a 4-acre boat-launching site near the south end of the slough. Some 40± years ago a drainage canal with a 60' R/W was cut through the length of the slough. Today the canal barely functions - overgrown with brush, except where the farmers have kept it open. It is possible to fight your way through most of the canal in a small boat. A year-round stream feeds the canal from the north. The canal empties into Lake Washington on the south.

The slough area and the canal have several potential uses if the canal was open and maintained.

1. The city boat-launching site would be more usable if the canal was cleared of brush, dredged, and a turning basin opened up at the launch ramp.

2. The private drainage ditches on the farms, which control the water table, would be more efficient if the canal was free-flowing.

3. The opportunity to develop the 48-acre city park as a specialized water oriented recreation area would become practical.

4. The Bellevue School District would be encouraged to pursue its concept of a nature study laboratory in this location.

5. The Nature Conservancy, a national organization, would be encouraged to pursue their interest in acquiring a portion of the slough for a permanent natural refuge and study area.

6. Private development of the upper or northern end of the slough into a small boat marina, a golf course, and an apartment development would become feasible if the canal was open and usable.

The Mercer Slough is in the Seattle metropolitan urban area - surrounded by people. Any development of the slough would used by the public.

Respectfully,

John F. Herman
Planning Director

JFH:cc

Island County Fire Protection District No. 3

COMMISSIONERS:
[redacted]
[redacted]
LLOYD S. CAPP
DAVID C. HENNY
Joseph H. Long

"What Burns Never Returns
---Don't Give Fire a Place to Start"

MARION E. HUNTER
CHIEF OF DEPARTMENT
Secretary
CLINTON, WASHINGTON

Clinton, Washington
December 14, 1964

Water Resources Study Board
% P.U.D. Building
Everett, Washington

Att: Col. Charles C. Holbrook

Gentlemen:

Whidbey and Camano Islands are rapidly growing in population, and the recreational and business growth is pacing this growth on both Islands, with the consequent need for abundant supplies of fresh pure water for both human needs and fire protection. Because of sewerage problems in various areas brought on by soil percolation conditions, contamination of local water supplies is a very real threat to these local water sources, and will be increasingly so as time passes with the increased population growth. In some areas a lowering water table and a diminishing supply will also threaten these supplies.

Therefor, be it resolved that the board of Commissioners of Island County Fire Protection District No 3 respectfully petition the Water Resources Study Baord to take steps to insure that a plentifull supply of water from the Skagit river be available to all of Island County, and that engineering studies, and water line easements be secured to fulfill this need, in the very near future, before increasing costs of same make it difficult of obtaining.

Respectfully submitted by: The Board Of Commissioners for,

ISLAND COUNTY FIRE PROTECTION DISTRICT No 3

Lloyd S. Capp, Chairman

LSC: meh

Exhibit 59

SEATTLE AREA INDUSTRIAL COUNCIL

Seattle Chamber of Commerce Building—215 Columbia Street • Seattle, Washington • 98104
MAin 2-5060

DRAFT

Robert H. Gedney and
John A. Richardson, Co-chairmen
TASK FORCE FOR COMPREHENSIVE WATER
RESOURCE STUDY, PUGET SOUND & ADJACENT WATERS
c/o U. S. Army Engineering District, Seattle
Seattle, Washington 98134

Gentlemen:

The Seattle Area Industrial Council is pleased to present this statement for inclusion in the record of the public hearing on the comprehensive water resource study, Puget Sound and adjacent waters, held on Thursday, October 22, 1964, in accordance with your invitation on this subject dated September 25, 1964.

The Industrial Council is affiliated with the Seattle Chamber of Commerce. Further expansion of industry in the Seattle-Puget Sound area is its primary objective. In line with this objective, the Industrial Council has a direct and continuing interest in planning and projects which will help to assure supplies of water adequate for expanded future industrial needs and for uses by the increased population foreseen in the future. Similarly, in support of increasing transportation of goods associated with the future growth of the area, the Industrial Council has a strong interest in maximizing navigable waters and facilities for water-borne commerce. Utilization of water as a source of low-cost hydro-electric power to meet the industrial needs of the area, and flood control projects which will provide additional industrial sites, also come within the purview of the SAIC.

In light of the Industrial Council's deep and continuing interest in and concern with the area's water resources, the Council recognizes the need for comprehensive studies of the type envisioned by the task force and encourages all interested firms, organizations and agencies of local government to submit statements of views concerning water resource utilization and needs in the Puget Sound area.

Beyond the desire to express general support for the proposed comprehensive water resource study, which this letter intends to convey, the Industrial Council also wishes the following generalized points of view incorporated in your record testimony of the October 22 meeting:

1. The comprehensive study should not act to delay any other studies currently under way, as completion of such current studies is considered essential to provide conclusions on which decisions by firms and local governmental agencies must be made as expeditiously as possible.

Dedicated to Industrial Expansion in cooperation with: City of Seattle, King County Commissioners, Seattle Chamber of Commerce, Seattle Port Commission, and State of Washington Department of Commerce and Economic Development

2. Since the study would be a joint effort by federal and state agencies, the strongest possible coordination between the agencies concerned is considered essential to the effecient progress and timely conclusion of the study.

3. Protection of the integrity of watersheds under local management is essential.

4. Management of the study should hold itself open throughout the course of the study to receive comments, views, recommendations and statements of fact which any interested organization may wish to have entered into the official record.

5. The study should seek only to develop a plan for future water resource development and utilization; actual acceptance and implementation of any part of the plan which currently involves local responsibility should continue to rest with local entities.

6. The study should encompass maximum utilization of all navigable waters, including rivers, for shipping by commercial vessels.

7. The study should envision plans for the fullest possible development of all of the area's water resources for the maximum long-range benefit to and use by all of the people of the area. This statement is in full accord with the caution expressed by the 87th Congress, Second Session, in Senate Document 97 that in developing such plans " . . . care shall be taken to avoid resource use and development for the benefit of a few or the disadvantage of many". As an example, the plans should seek to maximize the multiple use potential of all streams and rivers.

Sincerely yours,

Robert F. Buck, Chairman
SEATTLE AREA INDUSTRIAL COUNCIL

RFB:ps

PUGET SOUND AND ADJACENT WATER STUDY

STATEMENT FOR INCLUSION IN THE RECORD

WASHINGTON FOLDBOAT CLUB

Mr. Robert H. Gedney
U.S. Army Engineer, District Seattle
CORPS OF ENGINEERS
1519 Alaskan Way South
Seattle 98134

Dear Sir:

The Washington Foldboat Club respectfully wishes to have included into the preliminary hearing record of the Task Force for Comprehensive Water Resources Study, Puget Sound and Adjacent Waters, the following statements of facts and interpretations pertaining to the unique recreational values of our rivers and inland waters in terms of kayak and canoe travel:

1. As one of the more active and larger paddlesport groups in the country, we recognize present unmatched opportunities for river touring and sea cruising in and around the Puget Sound Basin in manually-propelled craft, and we therefore urge that the Recreational Technical Committee give due consideration to the future needs of this sport, both for our own growing number of devotees in the State, as well as toward maintaining continued opportunities and regional reputation for the purpose of attracting out-of-state visitors who come to paddle our waters.

2. We submit that paddle-touring our natural waterways is akin to hiking and foot-camping in our famous primeval back country. As such, these recreational values become increasingly important with time, and represent an element of irreplaceability. We further submit that these values are not only of an esthetic and therapeutic nature, but are of highest economic importance to a region which is fast becoming nationally renowned for the uniqueness of its remaining untampered natural waterways.

3. While we recognize the needs for flood control in special isolated instances, we also wish to place into the record our opposition to last-stage damming of the remaining sport-navigable free-flowing streams in Western Washington for hydro-electric power generation purposes; our contention being that development of equivalent avail-

able substitute power would not likely raise the region's power costs significantly, and certainly retain it below the national average, - while it might very well protect irreplaceable recreational resources having values far above the national average.

4. Finally we wish to place into the record of preliminary hearing certain specifics and suggestions for evaluation by the Recreational Technical Committee as follows:

   a. We urge the formation of a recreational river-use evaluation committee composed of private, commercial, and agency representatives to work within the framework of the Technical Committee for the purpose of determining recreational-use parameters, and establishing a tentative primary-use classification of the recreation-available rivers and river sections.

   b. We urge that a designated representative of the Washington Foldboat Club be asked to become a member of the Recreational Technical Committee for river evaluation phases of the study.

   c. We submit Exhibit A, a map of recreation-navigable rivers and river sections in western Washington, which indicates navigational classifications but not recreational use designations.

   d. We submit Exhibit B, a map of thirty-five islands leased by the State of Washington for recreational public use, which we urge be bought by the State and protected in their natural condition with minimum of added man-made facilities. We also urge that some representative islands exhibiting typical marine and land characteristics be protected fully in their natural state without any development whatsoever for esthetic and scientific values.

Very truly yours,

Encl: 2

WASHINGTON FOLDBOAT CLUB

Wolf G. Bauer, Corr. Sec.
5622 Seaview Ave., N.W.
Seattle, Washington 98107
Phone: SU 3-2119

cc/ Mr. Mark J. Pike, Chairman Recreational Technical Committee
BUREAU OF OUTDOOR RECREATION

Mr. John A. Richardson, Co-Chairman
Puget Sound Task Force
DEPARTMENT OF CONSERVATION, Olympia

EXHIBITS
No's. 62 through 86
Olympia Hearing Area

OLYMPIA HEARING AREA

Prepared Statements Not Read Into Official Transcript

No.

62 Statement of the Department of Commerce and Economic Development, State of Washington.

63 Undated letter from Earl Livingston, Master, and Jack Hoover, Chairman of Committee, Clallam County Pomona Grange No. 31.

64 Memorandum dated October 26, 1964 from Donald D. Hermann, City Manager of Port Angeles.

65 Statement of F.L. Ziel, Resident Manager, Crown Zellerbach, Port Townsend Division, dated October 28, 1964.

66 Letter dated October 28, 1964 from Martin Auseth, et al, Mason County Soil Conservation District.

67 Letter dated October 27, 1964 from Charles W. O'Neill, Chairman, Deschutes River Committee.

68 Letter dated October 27, 1964 from Messrs. Charles W. O'Neill, Harold Harrison and Travis Ayer, representing property owners along the Deschutes River, inclosing attendance register of October 21, 1964 meeting.

69 Letter dated October 23, 1964 from Richard Drew, Chairman, Executive Committee, Thurston County Resource Council.

70 Letter dated October 26, 1964 from George Whitakker, Jr., Secretary, Thurston County Resource Council.

71 Letter dated October 27, 1964 from G.W. Sibold, Manager, Port of Olympia.

72 Letter dated October 28, 1964 from A.J. Benedetti, Superintendent, Water Division, City of Tacoma, inclosing:

73 Statement of Water Division, Department of Utilities, City of Tacoma.

No.

74 Letter dated September 9, 1963 from Bernard Bucove, State Director of Health.

75 Undated resolution by Watershed Committee, Association of Washington Cities.

76 Green River Watershed Resolution, adopted September 25, 1964 by the Isaak Walton League of America, Puget Sound Chapter.

77 Resolution No. 18022, adopted September 16, 1964 by the City of Tacoma.

Prepared Statements Received Before and After Hearing

78 Letter dated October 12, 1964 from Honorable Don Miles, State Representative, 22d District, State of Washington.

79 Letter dated October 16, 1964 from Gus Erickson, Chairman, Jefferson County Soil and Water Conservation District.

80 Letter dated October 22, 1964 from Russell J. Loveland, President, West Coast Telephone Company.

81 Letter dated October 22, 1964 from Richard Ellison, Master, Dry Creek Grange No. 646.

82 Letter dated October 26, 1964 from Herbert G. Nelson.

83 Letter dated October 26, 1964 from Ernest L. Perry, General Manager, Port of Tacoma.

84 Letter dated October 28, 1964 from Fred E. Schoneman, Commissioner of Public Works and Utilities, and Everett G. Humber, Water Department Superintendent, City of Bremerton.

85 Letter dated November 15, 1964 from Amy Bell, Chairman, Conservation Committee, Olympia Branch, The Mountaineers.

86 Letter dated December 2, 1964 from Elmer D. Larson, Chairman, Pierce County Soil and Water Conservation District, inclosing data sheets describing problems along the Puyallup River, and Ohop, Wapato, South Prairie, Hylebos and Brightman-Horn Creeks.

DEPARTMENT OF COMMERCE & ECONOMIC DEVELOPMENT
ROBERT E. ROSE, DIRECTOR
ALBERT D. ROSELLINI, GOVERNOR
GENERAL ADMINISTRATION BUILDING • OLYMPIA, WASHINGTON 98502

PUBLIC HEARING, OLYMPIA, WASHINGTON, OCTOBER 28, 1964

STATEMENT TO THE TASK FORCE FOR COMPREHENSIVE

WATER RESOURCE STUDY, PUGET SOUND AND ADJACENT WATERS

by Robert E. Rose, Director
Department of Commerce & Economic Development

The Department of Commerce and Economic Developmeht has a very vital interest in the Comprehensive Water Resources Study of the Puget Sound and Adjacent Waters. I would like to restate my remarks as presented to the Water Resources Management Seminar at the University of Washington earlier this year.

Comprehensive river basin planning needs to be based on an adequate economic analysis of the area. It seems pertinent to ask ourselves whether our water resource management and river basin planning efforts are properly directed toward the realization of our economic needs and potential, particularly with respect to industrial development. Among others, I think we need to ask ourselves these kinds of questions:

1. Are we planning for adequate supplies of good quality water for industrial use? Since most of this water is returned to the water course rather than actually consumed, is the cost of treatment for pollution control in the "ball park" for the typical industrial plant at future production levels?

I think it is fundamental that with all the emphasis upon conservation and recreation, we not lose sight of the imperatives of industrial requirements. Industry remains the basic building block in providing jobs for our people. The multiplication of jobs in services and trades always must be built upon

the cornerstone of manufacturing industries. Despite our enchantment with our exotic and sophisticated mid-20th century industries, the basic requirements for industry still remain in large measure the traditional ones of markets, labor, utilities, transportation, raw materials, and so on. Among these, and particularly important in the development and growth potentials for Washington, industrial water looms as a large factor.

A very excellent study sponsored by the Northwest Pulp and Paper Association on Methodology for Evaluating Uses of Water in the Pacific Northwest, concludes that out of eight major uses of water, the most valuable is its domestic use - that is for human consumption and other domestic purposes, including use in homes, commercial establishments, state and national parks, and so on. The second most valuable use is in industry. I think this is significant and is a point which should be kept well in mind.

2. Will plans for navigation facilities, particularly on inland waterways, meet our industrial requirements?

3. Are reclamation and drainage projects being keyed to industrial development potential as well as the needs for agricultural lands?

4. Is our thinking on power generation limited to hydro possibilities without giving sufficient attention to conventional thermal and nuclear generation possibilities? In this connection, also, are we giving appropriate consideration to long distance - high voltage transmission of power?

5. Is our soil conservation planning giving adequate attention to the possibility of shifting poor agricultural land to other uses, including industrial?

6. To what extent can comprehensive river basin planning minimize the potential conflict of land use in areas suitable for fish, wild life and other

recreational activities, as well as industrial development? Can good long range planning make these uses compatible neighbors, particularly along water frontage created by the hydro dam pools?

Certainly the assurance of adequate industrial plant sites is an imperative in providing for our future economic wellbeing. The Seattle Area Industrial Council, in its publication titled, "Puget City, Year 2000," estimated a need for 52,000 acres for industrial purposes in the nine Puget Sound counties. According to the SAIC at the time of publication of this report in 1963, and I quote, "Right now, in the nine counties, there are around 20,000 acres in use, but only 12,000 acres of land earmarked for industrial growth....we are going to need 20,000 more."

7. And finally, we need to ask whether pollution control measures are planned for greatest economy and efficiency through joint municipal - industrial treatment facilities.

These are some of the questions that come quickly to mind. I am sure you can think of many more. The reason for the questions, and the direction in which the answers to them must be pointed, is simply that substantial industrial development is essential to the growth needs of our state. Careful attention to industrial requirements is imperative, for the expansion of industrial employment is an essential part of assuring job opportunities for our growing labor force.

Reverting for a moment to economic forecasts, projections of the labor force in Washington State to 1976 by three reputable agencies, range from 1.4 million to 1.6 million. The present labor force is approximately 1.1 million. So whether we take the low or the high projection, or the mid point, we have a formidable task ahead. In our economy, manufacturing employment currently

accounts for approximately 20% of total employment. Projected increases to 1976 range from 24% to 52% or from 290,000 to 353,000. From these projections it means that we're going to have to provide somewhere between 70,000 and 130,000 new manufacturing jobs in the next twelve years.

I am simply urging that industrial development needs and potential be given more consideration in river basin planning and water resource management than they have received in the past.

It is important that industrial development in river basin and water resource planning not be limited merely to general indications of the effects of the plan on rates of development, or to development implied in the projections of manufacturing employment alone. It is imperative that we get down to the brass tacks of earmarking and reserving suitable land areas for industrial sites which can be served with the required transportation and utilities facilities. In dealing with multiple purpose planning and problems of competitive use, the stake in industrial development needs to be clearly identified.

Although more difficult to measure, the benefits of regional economic growth need to be given primary consideration along with the directly measurable dollars and cents benefits from a particular diking, irrigation or other typical project.

Here is a direct quotation from a recently completed river-basin plan of broad scope: "There are no features that will directly provide industrial development. However, this plan will enhance the environment for industrial development. Nearly all of the planned projects and programs will have some encouraging effects on the growth of manufacturing as well as non-manufacturing industries." This is an encouraging step in the right direction. But it obviously stops short of the desired goal. It is significant that not even

AD-A037 567 PACIFIC NORTHWEST RIVER BASINS COMMISSION VANCOUVER WASH F/G 8/6
COMPREHENSIVE STUDY OF WATER AND RELATED LAND RESOURCES. PUGET --ETC(U)
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one project in the plan could be cited as directed specifically toward industrial development.

Certainly in this "frontier" state of Washington, where growth and economic development is a difficult and laborious process, more direct consideration needs to be given to the specifics of industrial development as related to water resources management.

Clallam County Pomona
No. 31

Task Force for Comprehensive Study
Puget Sound and Adjacent Waters

Gentlemen: We the members of Clallam County Pomona Grange # 31 in response to the future planning of the water resources in our county wish to express ourselves as to the needs of our area as follows:

For many years we have strived for a fish program for the Elwha River as a means of replenishing the salmon runs of previous years and also to provide fish for our future needs both commercially and sports fishing. As there is a number of obstacles in trying to get salmon over the dams so as to spawn and then to get the young fish through the turbines of the dam in their return to the salt water, we wish to endorse the fish farm development program for the Elwha River as proposed by the State Dept. of Fisheries which calls for fish ponds at the mouth of the river. The Washington State Grange, representing 54,000 members in this state has also endorsed this fish program for the Elwha River and made it a part of their policy since 1959.

In addition we heartly endorse the proposed development of the Dungeness Spit area comprising aproximately 3,200 acreas for a multiple purpose area including fish farm rearing ponds, boat haven facilities, picnic and recreational facilities. This area has a natural holding pond and the financial outlay would make it the best fish farm in the world. There is no polution in this area and the property is owned by the Federal, State and County governments. Because of its multiple use, ARA could be of assistence in this program.

Our committee will be present at your hearings on the 28th of October, 1964 and will be glad to supply additional information on these two projects.

Sincerely,

Earl Livingston, Master
Rt. 1
Sequim, Washington

Jack Hoover, Chairman of Committee
129 E. 1st
Port Angeles, Washington

Exhibit 63

MEMORANDUM TO: Columbia Basin Inter-Agency Committee. COPY

FROM: Donald D. Herrman, City Manager of Port Angeles.

DATE: October 26, 1964.

Gentlemen:

I would like to make the following statements as the City Manager of Port Angeles, Vice-Chairman of the Area Redevelopment Act Committee and a board member of the Port Angeles Chamber of Commerce.

The City of Port Angeles obtains water from two sources: One source is an industrial water line running from Elwha River which is capable of carrying 60 million gallons of water a day and supplies the Crown Zellerbach Corporation, Rayonier, Incorporated, and Fibreboard Paper Products, Incorporated, the three largest industries in Port Angeles. The second source is from Morse Creek and is capable of delivering 13 million gallons of water to the city. This water must serve the residents, businesses and industries other than the above. Past engineering firms have stated that Morse Creek is sufficient for the City of Port Angeles but should not be used for the area west of Port Angeles as it would not be sufficient in years to come. At the present time the City of Port Angeles uses from two and one-half million gallons of water a day to a maximum of eight or ten million gallons of water a day.

The areas west of Port Angeles are developing plans now to bring water to their areas. However, the federal agencies undertaking this work are uncertain as to their acts due to the lack of long range plans. If another industry was started in the Port Angeles area that would require a large amount of water we would have to develop yet another supply source.

We would like to encourage this water resource study as there are many questions in our minds now that cry for an answer. We need to know how much water can be obtained from the various rivers in the area both in the summer and in the winter months. We need to know how much water can be obtained underground in areas not readily accessible to other sources. We need data on flooding so that flood plain zoning might be accomplished so that areas that are potential flood plains cannot be used for purposes in conflict with the flood plain zoning. We need more data on snow and run-off water from the snow so that long range forecasts can be made. Fishing, of course, is a most important industry in this area and the rivers must be kept at such a level and in such a condition that the salmon can spawn in them.

It is recommended that if possible, the study area be extended to take in the west part of Clallam County or at least extend the study to take in Lake Crescent and the Lyre River.

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It is also recommended that the proposed study proceed as rapidly as possible as water is certainly one of the most important resources in this area and adequate and long range planning will mean that in the long run the entire area will benefit many times more than the cost of planning. There are examples all around us of the lack of planning in the past. Let us proceed to plan so that in the future people cannot say that we did not plan.

Crown Zellerbach Corporation MANUFACTURERS OF PULP AND PAP

PORT TOWNSEND, WASHINGTON 98368

Statement for F. L. Ziel, Resident Manager Crown Zellerbach Port Townsend, to be made in Olympia, Wash. on Oct. 28 concerning a comprehensive water resource study of Puget Sound and Adjacent Waters:

My name is F. L. Ziel. As Resident Manager of the Port Townsend Division of Crown Zellerbach I have the responsibility for a manufacturing operation that provides year around jobs for 650 Jefferson county men and women. We make about 400 tons of kraft paper a day. Most of this production is converted in our Port Townsend plant into bags, sacks, wrapping paper and other products for sale throughout the West and overseas.

Ours is a business dependent on water, wood and the skills of people. Port Townsend, Jefferson county and the Puget Sound region generally share in the economic success of our business. Let me list some specifics:

Our mill payroll amounts to about $4-1/2 million annually. Supporting logging and forestry operations by the company on its Jefferson county tree farm lands add substantially to that figure. Our manufacturing operations generate $1,550,000 a year in rail and truck freight. We ship about 1200 rail cars of paper out of the Port Townsend mill each year. All these rail shipments leave the Port Townsend waterfront by barge. In addition two or three sea-going freighters load paper cargo at our mill dock each month. Since its startup 36 years ago, the Port Townsend mill

has operated for the most part on wood residuals -- chips made from slabs, edgings, ends, cores and other leftovers purchased from sawmills and plywood plants around Puget Sound and along the British Columbia coast. We unload about two dozen chip and fuel barges a week. All this wood moves in by water. We also buy over half a million dollars worth of pulpwood a year from nearby Jefferson, Kitsap and Clallam county tree farmers.

While our mill generates 15 per cent of its electric power needs by burning pulping residuals, bark and hog fuel we still must buy upwards of $300,000 of electrical energy a year. Other supplies, such as fuel oil (we use 76,000 barrels a year), chemicals, equipment, etc., amount to about $2,500,000 a year. Most of these supplies are purchased in the Pacific Northwest. Our capital expenditures for modernization and improvements in manufacturing processes have averaged better than half a million dollars a year over the last decade. All together 6 1/4 million dollars are spent in our local economy each year.

None of this economic activity would be possible without water. Our mill consumes 14 million gallons every 24 hours. The water we use, actually it is used and reused several times, comes from the Quilcene River through a 30-mile-long pipeline owned by the city and maintained by Crown

Crown Zellerbach Corporation MANUFACTURERS OF PULP AND PAPER

PORT TOWNSEND, WASHINGTON 98368

Zellerbach, Port Townsend. This serves our mill, the city of Port Townsend and the communities of Chimacum, Hadlock, Irondale and Indian Island.

For all these reasons Crown Zellerbach's Port Townsend Division is vitally interested in any plan for a comprehensive water resource study of Puget Sound and adjacent waters. Over the years we have worked closely with the several state agencies that deal with water resources. As a good corporate citizen of the State of Washington we look forward to full and continuing cooperation.

Mason County Soil Conservation District

P. O. Box 279 • Courthouse Annex • Shelton, Washington
Phone HA 6-2251

October 28, 1964

Columbia Basin Inter-Agency Committee
Task Force for Puget Sound & Adjacent Waters
General Administration Building
Olympia, Washington

Gentlemen:

This report covers what we consider to be nearly all the water needs for Mason County, State of Washington. We will itemize the needs, then briefly summarize item by item.

1. A complete study is needed on the proposed Skokomish Watershed Project. (It is presently in an inactive status due to lack of complete information).

2. Investigate the proposed dam by Tacoma City Light on the South Fork of the Skokomish River.

3. Consider the utilization of a part of Oakland Bay for a fresh water lake with adjacent land for a park.

4. There is a need for a complete ground water investigation to determine future supply for municipal, domestic, and industrial pruposes.

5. Investigate ground and surface water sources for projected agricultural needs. (Irrigation, livestock ponds, wildlife ponds).

6. A complete study of Skokomish Indian lands to formulate overall plan for orderly, well- managed development.

7. There is a great need for a determination of sewage disposal needs on the waterfront property that is being developed very rapidly. Need is on both sound and lakes.

8. Help is desired for oyster growers who have wave action, disease, and siltation problems.

9. Study the Skokomish Watershed Area and determine priority and kind of land management practices needed.

10. Complete a channel improvement survey on 8.5 miles of Mill Creek. Plan Mill Creek Watershed.

MASON COUNTY
SOIL CONSERVATION DISTRICT
MASON COUNTY, WASHINGTON

11. Make determination on Goldsborough Creek Watershed and needs of about 11 miles of channel improvement.

12. A detailed survey is needed on Coffee Creek Watershed. About two miles of channel improvement would improve hydrology characteristics.

13. The Union River near Belfair needs about six miles of channel improvement.

14. Develop a watershed plan on the Cloquallam River.

SUMMARIZATIONS

(1) Proposed Skokomish Watershed project was placed in an inactive status October 13, 1964. The damage survey completed by the Soil Conservation Service of the Department of Agriculture indicated large quantities of riprap would be required to provide the needed protection. Transportation of heavy rock raised the estimated installation cost to nearly $3 million. The total average annual equivalent costs are $117,575, and the average annual benefits are $85,000. This resulted in an unfavorable benefit to cost ratio of .72 to 1. Please refer to Soil Conservation Service letter to Mason County Commissioners, etc., dated October 13, 1964.

Additional benefits can be accrued from a study by State of Washington, Departments of Conservation, Fisheries, Game, Parks & Recreation. Also Federal agencies, Department of the Interior, Fish & Wildlife Service, and Bureau of Outdoor Recreation.

A comprehensive study by State and Federal fisheries would indicate that correctional measures would greatly improve their respective programs, i.e., permanent spawning beds could be established, Hunter and Weaver Creeks could be utilized more fully for spawning and necessary drainage.

It is recommended that an overall plan of development be prepared for the whole valley. Then as individual landowners apply corrective measures they will compliment other jobs performed on the river.

(2) If the proposed dam by Tacoma City Light on the South Fork of the Skokomish should go into the planning stage, we would strongly encourage that it be a multiple purpose project. It could include flood control, fishing provisions, recreational aspects, etc.

(3) The conversion of part of Oakland Bay to a fresh water lake would furnish additional recreational area, fish rearing ponds, and could be developed into a park.

(4) The ground water investigation will ascertain source utilized by Cities of Shelton, Hoodsport, Belfair, Union, Allyn, etc. This study will indicate potential of present sources and need to develop new ones.

(5) Agricultural needs for water must be considered as they are constantly increasing. Livestock and wildlife ponds are utilizing many more acre feet every year.

(6) The Skokomish Indian lands carry a tremendous development potential. The future agricultural needs require that an overall development plan be deverloped.

(7) Most waterfront property in Mason County, State of Washington, is either on the real estate market, developed, or being platted for building sites.

A study by the Department of Health, Education and Welfare - Public Health Service and the Pollution Control Commission is urgently needed to prevent further damage to existing resources.

Perhaps the County and State Health Departments and the Pollution Control Commissions should review and revise their specifications to cope with the increasing congestion of people and houses.

(8) The oyster problems may be linked to the aforementioned pollution problems in some instances. Tide action is responsible for some problems. Other problems are caused from logging the watershed areas and general mismanagement of the land. Perhaps some watershed projects and upper watershed treatments could eliminate the biggest problem - silt.

(9) The study of reforestation in the Skokomish Watershed Area would compliment the oyster study needed on Hoods Canal. Skokomish River undoubtedly contributes many, many tons of silt to the canal annually. Perhaps a tree planting program should be figured in the overall Skokomish River Project.

(10) Prepare a watershed inventory of the Mill Creek drainage.

(11) Complete Goldsborough Creek Watershed plan.

(12) Complete Coffee Creek Watershed plan.

(13) Complete Union River Watershed plan.

(14) The Cloquallam River winds its way through about 24,000 acres in Mason County on its way to the Chehalis River. It is in need of erosion control measures to prevent further damage to croplands along its route.

Thank you.

Very truly yours,

William O. Hunter
Mason County Soil & Water Conservation District

Martin Auseth
Mason County Commissioners

Theodore Rickert
Skokomish Flood Control District

Donald W. Ragan
Mason County Agricultural, Conservation and Stabilization Committee

October 27, 1964

Mr. John Richardson
Mr. Robert Gedney
Co-Chairmen
Task Force for Puget Sound & Adjacent Waters
General Administration Building
Olympia, Washington

Gentlemen:

I, Charles O'Neill, represent the farm people on the Deschutes River.

Our impression of this program is to set up a comprehensive plan for the future proper use of both land and water of the Deschutes River basin. We would like to suggest a few items of and about the Deschutes basin.

First, we feel the proper use and care of the waters for farm irrigation and farm use should be considered. Due to the type of soil we have in the basin, irrigation is a "must", and the water should be available for this purpose.

A study of flood and debris control should be made, and the plan take into consideration the fact that new owners are settling on the river. The survey, report and recommendations should be made available to us and them through the local agencies that have been in force and doing a fine job -- the County Extension Service.

The land use for the basin should be studied with farming and recreational ground in mind. Three recreational areas have been established already by individuals and foundations and more are planned. Some areas for individual recreation have come into being, and more of them also are planned. Our written report covers these points and elaborates on them, with some of our recommendations, which may aid you in your study.

We thank you for taking your time to hear us on this problem.

Yours truly,

Charles W. O'Neill

Charles W. O'Neill

Exhibit 67

CWO:fw

October 27, 1964

Mr. John A. Richardson
and
Mr. Robert H. Gedney
Co-Chairmen
Task Force for Puget Sound and Adjacent Waters
General Administration Building
Olympia, Washington

Gentlemen:

The property owners along the (total) length of the Deschutes River have studied the long range management and development needs of this Basin. We believe this river offers some of the best opportunities for a long range comprehensive plan. A detailed study now is timely. Land owners have expressed their support of this study and will cooperate. Our review of the problems point up the present urgent needs, and a preliminary report by 1970 is imperative if the present rate of population growth continues.

Three main subjects were agreed upon:

A. Supply of irrigation water
B. Flood and debris control
C. Recreation and residential development

A. Supply of irrigation water

Surface water rights to irrigate 1,400 acres of land on the Deschutes River have been granted. Approximately 4,400 acres are suitable for irrigation. This acreage will be important to the expanding population of the Puget Basin as a source of truck crops. The present stream flow will not provide for any significant increase in irrigated lands. Therefore modern agricultural development is restricted. The following is requested:

1. Development of water storage capacity to irrigate all of the irrigable lands (4,400 acres) along with storage for other uses.

2. Maintenance of the present irrigated acreage.

B. Flood and debris control

Floods generated by extended rainfall periods and rapid snow melt in this foothill watershed or cominations of these situations create downstream floods. Flood water accumulations collect and discharges logs, stumps, slashings, and other woodland debris into the river.

Flood waters and debris inundate river lands, and cause bank cutting, channel changes, and lodgement of channel obstructions, and other property damage and destruction.

The following requested:

1. Flood control by upstream structures for

   a. Control of stream flow
   b. Storage of irrigation water
   c. Storage of domestic water and

2. Flood and water supply control by diversions into or out of the Deschutes according to need.

3. Debris abatement

4. Correction of streambed and channel conditions following floods.

C. Recreational and residential developments

It is recognized that the river lands and adjacent lands are and will continue to attract recreational and residential development. The following is requested, that the study group determine the potentials and develop guide lines for orderly development as:

1. Polution control of the watershed area

2. Flood and debris control

3. Development of domestic water sources

It is further requested that information available from the Study Group be made available to landowners and prospective landowners through the Thurston County Extension Service as the normal channel of information to local residents.

Sincerely,

Charles W. O'Neill, Chairman
Charles W. O'Neill

Harold Harrison
Harold H. Harrison

Travis Ayer
Travis Ayer

RWM:bg

Enclosure - Roster sheet of October 21, 1964 meeting (copy)

Attendance at the meeting of October 21, 1964 is attested by this copy of the meeting roster.
This meeting was held at Chambers Prairie Grange Hall to consider the matters of this report.

Charles W. O'Neill, Chairman - Harold Harrison - Travis Ayer were duly elected as our representative

C. P. Ocklen	R5 Bx 247 Olympia
Newton J. Smith	Rte. 1 Box 140 Yelm
Roy P. Longmire Sr	Rt 1 Box 190 Yelm
Mrs. Roy P. Longmire	Rt 1 Box 190 Yelm
Mrs. Kenneth P. Brock (Frances)	P.O. Box 352, Yelm
Mrs & Mrs. Richard Guthrie	Rt 1 Box 153, Rainier
Bernelda T. Berger	Rt. I Box 154 Yelm
Richard + Beverly Mobley	RT I Box 152-B Yelm
Ted E. McGill	Rt 1 Box 414 Olympia
Chester Reichel	Rt 1 Box 136 Yelm
Richard C. Ayer	Rt 5 Box 488 Olympia
Earl A. Wasner	Rt 5 Box 594 Olympia
Robert Nelson	Rt 5 Box 3[illegible] Olympia
Harold Harrison	RT 1 Box 125 Yelm
Richard E. Mills	Rt 5 Box 314 Oly
Charles O'Neill	350 [illegible] St
Thomas A. Holden	RR 7 - Box 417
Dee R. Johnson	Rt 5 Box 450A Oly.
John C. Ryan	R[illegible] Box [illegible] Rainier
[illegible]	[illegible]
E. W. Buck Ashburn	4907 Laura Lane Olympia
C. O. Drewry	RT 3 Box 91 Oly Wn
K. F. Montgomery	Rt 5 Box 90A Oly Wn.
F. S. Stallmeyer	R5 Box 89 Olympia
Travis Ayer	R 5 Box 505 Olympia
A. K. Wagner	2716 Ohio Ol.

Incl to
Exhibit 68

THURSTON COUNTY RESOURCE COUNCIL

OFFICIAL RURAL AREAS DEVELOPMENT COMMITTEE

Room 226 — Courthouse Annex
OLYMPIA, WASHINGTON

October 23, 1964

Mr. Wallace W. Riehle, Chairman
Thurston County
Technical Action Panel
1007 South Washington Street
Olympia, Washington

Dear Mr. Riehle:

The Thurston County Resources Council requests the assistance of the Technical Action Panel for technical help to the recreation committee in such capacity as needed, including map interpretation of the best land use and with particular application to recreation. We would also like to have further assistance when other committees need technical aid.

Approval is being given to the committees working under the resource council to do their mapping on a standard of one-inch to the mile and four-inches to the mile in concentrated population centers, (Olympia, Lacey, Tumwater).

Sincerely,

Richard Drew

Richard Drew, Chairman
Executive Committee
Thurston County Resource Council

RWM:bg

c.c. Richard Drew
Robert McKay
Recreation Committee

Exhibit 69

THURSTON COUNTY RESOURCE COUNCIL

OFFICIAL RURAL AREAS DEVELOPMENT COMMITTEE

Room 226 — Courthouse Annex
OLYMPIA, WASHINGTON

October 26, 1964

Mr. John A. Richardson
and
Mr. Robert H. Gedney
Co-Chairmen
Task Force for Puget Sound and Adjacent Waters
General Administration Building
Olympia, Washington

Gentlemen:

The Thurston County Resource Council, the official Rural Areas Development (RAD), County Committee: composed of a general cross section of the county's people, does hereby generally endorse the material presented by those property owners and operators on the Deschutes River in Thurston County.

In so doing, the Thurston County Resource Council encourages the consideration of all future water needs and development in the county including irrigation, recreation, municipal, industrial, domestic, and pollution uses. The orderly development of Thurston County is greatly dependent upon the recognition of water problems and needs and the future utilization of this resource.

We not only endorse the material presented by those from the Deschutes area but we appreciate the effort being made by your coordinated group in the comprehensive water resource study of the Puget Sound and adjacent waters.

Sincerely,

Richard Drew
Chairman

BY: George E. Whittaker
George Whittaker, Jr.
Secretary

RWM:bg

c.c. Port Commission
Soil Conservation Service
County Commissioners
Cattlemen's Association
Press

Exhibit 70

Devoted to the Orderly Development of Thurston County

PORT OF OLYMPIA

FOOT OF NORTH WASHINGTON STREET P. O. BOX 827
OLYMPIA, WASH., U.S.A. PHONE AREA CODE 206 357-4433

October 27, 1964

Messrs. John A. Richardson
and
Robert H. Gedney
Co-Chairmen
Task Force for Comprehensive Study,
Puget Sound and Adjacent Waters,
State of Washington
General Administration Building
Olympia, Washington

Gentlemen:

This is in response to your notice of a public hearing scheduled for October 28 at Olympia, Washington, concerning the "Comprehensive Water Resource Study, Puget Sound and Adjacent Waters". Your attention is directed to the following areas of interest of the Olympia Port Commission in the Thurston County area which the Olympia Port Commission believes should be included in the considerations of the Task Force undertaking the aforementioned study.

1. For immediate consideration, a feasibility study to determine the desirability of channel and other navigational needs and port facilities in connection with the suggested development of the Nisqually River Delta, or more commonly and locally known as the Nisqually Flats Area, for deep sea water transportation oriented industry and commerce. The growth of the Seattle-Tacoma-Olympia metropolitan area is being progressively handicapped by the lack of deep water navigation and commercial and industrial facilities. Industrial site inquiries in the Puget Sound area for both large and small industries are becoming more and more frequent because of a growing population and therefore market in the area, and because of the Puget Sound area's abundance of natural resources, inexpensive power, available land areas, and desirable labor market. The greatest deterrent to readily satisfying

COMMISSIONERS
G. NOYES TALCOTT
DELTA V. SMYTH
ROBERT H. WOHLEB
MANAGER
GENE SIBOLD

industrial site inquiries is the lack on Puget Sound of deep draft navigation facilities adjacent to the available land area such as exists in the Nisqually Flats. The Nisqually Flats Area is partly in the Olympia and Tacoma Port Districts and a recommended immediate feasibility study would be jointly sponsored by the Ports of Olympia and Tacoma.

2. Also in Thurston County is the Deschutes River and the Deschutes River Valley which is considered as a potential source for industrial water supply to meet the future demands of the Olympia Industrial Airport enlarged, a need for flood control features, and as a water resource for the propagation of fish and wildlife. This Deschutes River would also appear to have a potential for meeting at least a portion of the year-round water supply demands for lockage in the proposed Columbia River-Puget Sound Canal. This project would be of interest to all of Thurston County and possibly sponsored by the Port of Olympia along with other municipalities within the County.

3. Attention of the Task Force is called also to the potential long-range development of commercial and pleasure boating facilities in the Olympia Harbor at the head of Budd Inlet., where there currently exists an improved deep-draft navigation channel and turning basin fronting on the commercial ocean terminal facilities of the Port of Olympia. The commercial and recreational potential of a fully developed Olympia Harbor has only partially been developed and the long-range requirements of a more heavily populated greater Olympia area appear to definitely warrant consideration of a fully developed Olympia Harbor. The Olympia Harbor project is sponsored by the Port of Olympia.

The Port of Olympia strongly urges your consideration of the aforementioned projects in your timely study of the comprehensive water resources of the Puget Sound and adjacent waters. The Port of Olympia offers its resources and assistance in the conduct of your study of the suggested projects.

Yours very truly,
PORT OF OLYMPIA

G. W. Sibold
Manager

GWS:hh

DIVISIONS
Light
Water
Belt Line

Please address reply to:
City of Tacoma
Department of Public Utilitie
P. O. Box 11007
Tacoma, Washington 98411

Attention:

City of Tacoma
WASHINGTON

DEPARTMENT OF PUBLIC UTILITIES
C. A. Erdahl, Director

October 28, 1964

Mr. Robert H. Gedney, Chairman
Task Force for Comprehensive Study
Puget Sound and Adjacent Waters
U. S. Army Engineering District
1519 Alaskan Way South
Seattle, Washington 98134

Dear Mr. Gedney:

Attached please find three copies of a written statement prepared by the Water Division of the Department of Utilities on behalf of the City of Tacoma for presentation on October 28, 1964 to the Area 3 Meeting of the Task Force for Comprehensive Study, Puget Sound and Adjacent Waters at Olympia, Washington.

Municipal water supply systems of this area represent a vital key to the future growth and development and the position taken in the attached statement has been prepared with full recognition of the responsibility which a municipality has for the total needs of its citizens including education, recreation, public health and economic well-being.

We believe that while this statement has been prepared specifically to cover the situation in the City of Tacoma, that it generally represents the composite thinking of the municipal and health authorities in the Pacific Northwest Area having responsibility for supplying and insuring the potability and safety of public water supplies.

We trust that your Committee will give significant consideration to the position of the municipal and health authorities in this area in your Comprehensive Study of the Puget Sound and Adjacent Waters.

Very truly yours,

A. J. Benedetti
Superintendent
Water Division

Exhibit 72

AJB:EW
enc. (6)

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
WATER DIVISION

PUBLIC UTILITY BOARD
CITY OF TACOMA

Leo A. McGavick, Chairman
A. A. Adams
Jay Grenley
Henry W. Loren
Arthur R. Anderson

C. A. Erdahl
Director of Utilities

TASK FORCE FOR COMPREHENSIVE STUDY

PUGET SOUND AND ADJACENT WATERS

A. J. BENEDETTI
Superintendent - Water Division

OCTOBER 27, 1964

OCTOBER 27, 1964

TASK FORCE FOR COMPREHENSIVE STUDY

PUGET SOUND AND ADJACENT WATERS

Statement by the Water Division, Department of Public Utilities, City of Tacoma, Washington in reference to the relation of the Green River Water Supply to the Task Force for Comprehensive Study, Puget Sound and Adjacent Waters.

The City of Tacoma, the third largest city in the State of Washington, is located in the southern Puget Sound Area. The Green River, which flows westerly from the Cascade Mountains, is a major source of water supply for approximately 250,000 people and a variety of industrial, commercial and residential users in Tacoma, Pierce County and southern King County. We are including herewith a copy of a map which shows the size and relative location of the Green River Watershed to other parts of the Puget Sound Region. We have also outlined on the map the limits of the service area from the Green River System as seen at this time.

For the last 50 years Tacoma's principal water supply has been taken from a diversion dam on the Green River thence flowing in a westerly direction by gravity through a pipeline approximately 42 miles long to the City. At the present time the City is diverting 113 second feet, or, approximately 73 million gallons per day which comprised in 1963 approximately 90% of the water used by the City. To date Tacoma has constructed the Headworks dam and approximately 60 miles of main transmission lines together with approximately 310 million gallons concrete lined storage reservoirs and distribution facilities at a cost of approximately $34,000,000. The future water supply of Pierce County and South King County area will depend upon the availability of water from the Green River Watershed Area.

In addition to the river supply the City has a series of auxiliary wells which are located generally in the southern part of the City. These wells have been developed to deliver a large volume of water over a short demand period and are used when the Green River is turbid or muddy or during periods when the pipeline from the Green River is not sufficient to furnish the total demands of the City. These wells do not have enough capacity to supply all of the demands of the City over a sustained period. Over the last 50 years the City has been able to divert water directly from the Green River with only simple chlorination necessary to make it acceptable for domestic, industrial and commercial needs.

Under the regulations of the Washington State Health Department, and in cooperation with the major landowners, including the U. S. Forest Service, the Water Division exercises control over the 148,000-acre Green River Watershed Area above Tacoma's intake. The average stable population of this area is less than one person per square mile although summer activities due to railroad maintenance, logging camp operation and maintenance of power and telephone lines causes this population to vary on a seasonal basis.

The Water Division over a period of years has purchased considerable property in the watershed and by enforcing police measures on these lands and lands owned by others with whom the Water Division has control agreements, it has been possible to prevent deterioration of the water quality.

While population density is one of the most significant items of concern in a watershed, it is difficult to predict the exact number of people required to cause a deterioration of the water quality to the point where complete treatment processes would be required to insure the public health.

The principal concerns of Public Health Authorities in water supply sanitation are the matter of water-borne diseases and certain chemical and physical characteristics which pollute the water. The transmission of disease through a water supply is a constant and ever present threat. A human being is a carrier of diseases such as typhoid, infectious hepatitis, bacillary dysentery and polio, and epidemics are still a threat because of our natural immunity and resistance to disease have been lessened by the excellence of sanitary environment, the increased use of antibiotics and other medical measures.

The laboratory testing of water supplies does not disclose the presence of disease as such. It does, however, indicate contamination but unfortunately the results of such tests are so delayed because of the time required for the test that it is quite possible that a community can become affected before remedial measures can be taken. In addition to the consideration of disease, we are concerned with certain physical and chemical characteristics of the water. Some of these occur naturally, others are the results of man's activities. It would appear on the face that treatment might easily remove many or all of the problems of disease or chemical contamination but unfortunately this is not true. In recent years we have come to realize that certain virus diseases can be water-borne and conventional methods of water treatment fail to remove them. Likewise, we are faced with an overwhelming number of chemicals reaching our water through their use as herbicides and insecticides and from industrial waste discharges. The number of such chemicals increase each year at a rate that far surpasses our ability to find methods of detection. Again, conventional methods of treatment are not capable of removing these chemicals.

The Green River Watershed Area to date has been managed in such a way as to utilize the area for reasonable compatible multiple uses, i. e., water supply, management and harvest of forest products, power and communication rights of way and flood control. The unrestricted utilization of roadway systems within municipal watersheds by the general public would cause problems of refuse and sanitary disposal and would increase turbidity from the area. Another matter of significant concern with unrestricted access and use of a watershed area is the danger of forest fire. A forest fire in a watershed is a wasteful hazard which not only destroys timber crops and ground cover but also destroys the moisture holding characteristics of the soil with resulting erosion. The ashes which are leeched from the area, together with the turbidity caused by erosion, tend to deteriorate the quality of water available and reduce its desirability.

In the State of Washington approximately 32.3% of the total land area is presently set aside in public ownership and available for general recreational activities. Additionally, recreational statistics indicate there are approximately 5,100 lakes, 109 rivers, 239 major creeks in addition to Puget Sound and the Pacific Ocean coastal areas available for outdoor recreational activities, many of which are yet undeveloped for public enjoyment. There are eleven major municipal watershed areas in the State of Washington. These eleven watersheds serve approximately one-half of the population of the State of Washington and yet utilize only approximately one percent of the State land area for watershed purposes.

The State of Washington Health Department is very cognizant of the problems involved in recreational use of watersheds and by letter under date of September 9, 1963, copy of which is attached hereto, have advised the City of Tacoma that if recreational development is to be implemented within the Tacoma Watershed the City

must make immediate plans for constructing the necessary full water treatment facilities. If the City were required to install a treatment plant, the annual treatment costs would approximate $510,000 for operation and maintenance and a minimum debt service requirement of $350,000 per year as a result of a necessary initial capital cost of $5,000,000.

A number of other organizations have expressed concern for the public health and economic problems attendant to unrestricted access and recreational development of watersheds and have joined with the Council of the City of Tacoma in issuing policy statements in this regard. We are attaching herewith a copy of the policy statements of two of these organizations; the Watershed Committee of the Association of Washington Cities and the Puget Sound Chapter of the Izaac Walton League of America, together with a copy of the Resolution by the Council of the City of Tacoma.

For the above reasons the City of Tacoma is vitally interested in any proposed change of status of that section of the Puget Sound area known as the Green River Watershed and the general policy for watershed area utilization within the State of Washington.

ERT D. ROSELLINI
OVERNOR

ARD BUCOVE, M.D., D.P.H.
RECTOR

The State of Washington
Department of Health

OLYMPIA OFFICE
GENERAL ADMINISTRATION
BUILDING

SEATTLE OFFICE
SMITH TOWER

ADDRESS REPLY TO OFFICE OF ORIGIN

September 9, 1963

Honorable H. M. Tollefson, Mayor,
and Members of the City Council
City Hall
Tacoma, Washington

Subject: Green River Watershed
U. S. Forest Service
Multiple Use Management Plan

Gentlemen:

Reference is made to the Special Area Multiple Use Plan prepared by the United States Forest Service in conformity with the Multiple Use Act of 1960 (Public Law 86-517), and submitted to the City of Tacoma on May 28, 1963, by L. O. Barrett, Forest Supervisor, Snoqualmie National Forest. The plan describes a program proposed by the Forest Service to provide greater freedom of access to the Green River Watershed by the general public and provision of certain recreational facilities within the watershed. To implement this plan, the Forest Service asks the City of Tacoma to relax long standing restrictions on activities within the watershed which Tacoma has been empowered to impose through an agreement with the U. S. Department of Agriculture dating back to 1914.

Because the proposed plan has a significant bearing on the future of Tacoma's water supply and the city's ability to maintain water quality, this department is obliged to advise you of the probable consequences should this proposal be put into effect.

It is our policy that a water supply be obtained from the cleanest possible source and that a continuing effort be made to prevent and control all potential or actual sources of contamination. This is to say that we seek to attain the necessary protection of the supply through natural means and prevention of contamination rather than having to place reliance on treatment.

The history of the development of the Green River Watershed by Tacoma has been one of constant endeavor to improve its system of controls to meet these criteria. In the process, the city has faced many obstacles and delays, but the effort has been consistent. We cannot but feel that adoption of the plan proposed by the Forest Service would be a step backwards in this effort and would lead ultimately to abandonment of the goal the people of Tacoma have so long pursued.

It appears that there are two chief arguments presented by the Forest Service in support of their plan. One is the pressure of public demand for outdoor recreational sites and the other is that recreational activities are pursued at the present time in the Green River Watershed, restricted only by lack of access and provision of facilities. Under the mandate to the Forest Service expressed in the terms of the Multiple Use Act of 1962, it appears that the Forest Service feels that there is justification in setting up the proposed program, based on the two foregoing arguments.

The utilization of certain river basins for the production of safe and adequate water supplies is of higher priority than all other uses, and far outweighs any argument in favor of recreational development. The State of Washington undoubtedly needs increased development in available recreational sites, but there are presently vast areas of forest land in other river basins equally close to centers of population which can be used for this purpose. It is our contention that, until these areas have been fully exploited, there is no justifiable reason for interfering with long-established public water supply sources.

In citing the fact that there is current use of the watershed for hunting, fishing, hiking, and other forms of recreation, the Forest Service claims that better access roads and more points of free entry by the public, coupled with properly established and controlled campsites, would result in an improvement of water quality potential because of the controlled nature of the program as opposed to the casual, and, in their term, unrestricted nature of the present use. Likewise, the facilities prepared for the public would be an automatic limiting factor on how many people were in the watershed at any one time.

These arguments represent misconceptions. The record is replete with instances where just such plans of controlled campsites have been instituted on watersheds, and where control programs have been carefully worked out. In every instance there has been failure to secure the kind of control envisioned by the planners. This has been due in part to the high cost of maintaining the degree of control necessary, and in part to the failure of the general public to cooperate in the program by self-policing. Because no method has yet been devised to screen out undesirable persons, much damage has been wrought through carelessness and vandalism.

As to limiting the number of persons in the watershed by limiting the facilities, it must be clear that the limited facilities being proposed are the result of public pressure brought to bear by that portion of the public interested in such developments. When the limited area turns out to be not enough, this segment of the public will once more bring pressure to bear to have the facilities expanded, and the same arguments will be used to justify such expansion. We find these arguments unrealistic.

The presence of recreational activities in a watershed used as a source of public water supply is a hazard to the quality of the water and to the health of the people who consume it. When the watershed is sparsely inhabited, and in the presence of a good control program, there will be a period of time when simple disinfection of the water, such as with chlorination, will suffice as minimum treatment. As the general public is permitted access in increasing numbers the means of control of their activities becomes more difficult and less efficient. Under such conditions we would have to require complete treatment of the Tacoma water supply, together with an efficient program of surveillance and control of watershed activities beyond that presently required. Whether, in the face of this certainty, the city would find it worth while to abandon its present source development in favor of the costs of providing such treatment and control is questionable.

On September 4, 1963, we met with Mr. Barrett, Forest Supervisor, to discuss the contents of the proposed Special Area Multiple Use Plan. The purpose of this meeting was mainly to inform Mr. Barrett of our responsibilities and interest in this matter and to lay the groundwork for better coordination between our respective offices in the future. We advised him that we would submit a statement setting forth in detail our views and comments regarding the proposed plan. Upon completion of this statement, a copy will be furnished to the City of Tacoma.

In preparing our statement to Mr. Barrett, we approached other cities in the Northwest, asking them to give us their views on the matter of permitting recreation on public water supply watersheds. Letters of inquiry were sent to Seattle, Everett, Portland, and to the Oregon State Board of Health. Copies of these letters and the replies received are enclosed for your information. We feel that our position as stated earlier in this letter has been given ample support by these replies.

In consideration of the foregoing, the City of Tacoma must recognize that, should it accept the proposal of the Forest Service, in keeping with the policies outlined above we would expect the city to begin immediate planning for full water treatment. It is our recommendation that the City of Tacoma intensify its long-established program to improve upon and extend its control over the Green River Watershed and that the city request the Forest Service to lend its support and assistance in this program.

Very truly yours,

Bernard Bucove

BERNARD BUCOVE, M.D., D.P.H.,
State Director of Health

BB-SE
cc: L. O. Barrett
" A. J. Benedetti
Water Div. Supt., Tacoma

Association of Washington Cities

Watershed Committee

Resolution

WHEREAS in the Pacific Northwest it has been a long accepted practice for many municipalities to protect and restrict access to surface watersheds which are the source of their potable fresh water supply in order to produce water of high quality requiring only simple chlorination in order to safeguard the public health of the customers, and

WHEREAS the protection and preservation of these watershed areas has permitted the production of high quality water at low cost which has contributed materially to the economic growth and well-being of this area, and

WHEREAS the municipal watersheds in the State of Washington supply the potable water for approximately one-half of the population of the State while occupying less than one percent of the State land area without detracting from the exceptional recreation opportunities already available which include many lakes, rivers and creeks, in addition to the Puget Sound and Pacific Ocean coastal areas, and

WHEREAS the State of Washington already has approximately one-third of its area set aside in public land which is available for recreation, and which includes ample present and future camping, picnicking and hunting lands, and

WHEREAS water pollution has become a matter of tremendous magnitude and pressing concern on a national scale and is becoming more acute to the prejudice of the public health and well-being of the citizens of this Country, and

WHEREAS municipalities of the State of Washington are expending funds to protect their consumers and to preserve and maintain the purity of their municipal water supply sources through the control of access into their watershed areas, and

WHEREAS certain agencies of the Federal Government are attempting to interfere in matters of local determination by opening watersheds for unrestricted access and recreational purposes contrary to the recommendations of the majority of local interests and Public Health Authorities, and

BE IT, THEREFORE, RESOLVED that the Watershed Committee of the Association of Washington Cities is unanimously opposed to the efforts of Federal Government agencies in attempting to open municipal watersheds for unrestricted access and recreational development without regard to the economic requirements of the area and contrary to the recommendations of local interests and Public Health Authorities, and

BE IT FURTHER RESOLVED that a copy of this resolution be sent to the President of the United States, Secretary of Agriculture, Secretary of Army and all of the members of the Washington and Oregon Congressional Delegation, the Governor and State Legislators of the State of Washington urging that every effort be made to protect and preserve the purity of our most basic of all natural resources.- WATER!

Exhibit 75

The Izaak Walton League of America
INCORPORATED
BUILDING A BETTER OUTDOOR

PUGET SOUND CHAPTER

GREEN RIVER WATERSHED RESOLUTION

Whereas, the City of Tacoma has for many years obtained its municipal water supply from the Green River Watershed located in the Cascade Mountains, and

Whereas, the Green River Watershed of the City of Tacoma is being used for compatible multiple uses at this time, and

Whereas, according to public health authorities, building public camps and permitting unrestricted access in the watershed would pose a health problem for the City of Tacoma, making it necessary to build expensive facilities to protect the City's water, and

Whereas, there are many thousands of acres of land in the Cascade Mountains suited for recreation where no public camps exist and camps could be built without endangering public water supplies, and

Whereas, water pollution is a function of the number of people using an area, and it is essential that the number of people in the Green River Watershed be limited so as not to cause a situation which would force the City of Tacoma to build expensive filtration facilities, and

Whereas, Tacoma's Green River Watershed is in effect practically a wilderness area and after years of debate, the United States Congress recently passed a Wilderness Bill incorporating some nine million acres into a wilderness system, and

Whereas, even though the Izaak Walton League subscribes to and supports the concept of multiple use of our lands and forests, for the reasons given here, public camps and unrestricted access in the Green River Watershed are not needed,

Now, therefore be it resolved that the Puget Sound Chapter of the Izaak Walton League of America recommends that the status of Tacoma's Green River Watershed remain unchanged at this time.

Adopted September 25, 1964.

Exhibit 76

COPY

RESOLUTION NO. 18022

WHEREAS the City of Tacoma in 1914 entered into an agreement with the United States Secretary of Agriculture for the purpose of conserving and protecting the quality of the water available from land within the watershed, which agreement served as a basis for subsequent system development, and the City of Tacoma has for over 50 years through the purchase of other property and by cooperative agreements with the major landowners within the watershed been able to preserve through controlled land use the quality of water available from this Green River Watershed thereby requiring only simple chlorination to make it acceptable for municipal water supply, and

WHEREAS in order to protect the public health of its citizens, the City of Tacoma pursuant to State law has appropriated the water rights and defined a 148,000 acre watershed, known as the Green River Watershed, in the western slopes of the Cascade Mountains as a source for its municipal fresh water supply, and subsequently began construction of a diversion dam and a 43-mile long pipeline and to date has expended approximately $34,000,000 in the construction of these major transmission facilities and a distribution system, which source supplies in excess of 90% of the water need of the Tacoma metropolitan area, and

WHEREAS the Federal Government has recently expressed a desire and intention to open this municipal watershed to unrestricted access and recreational development, even though 32.3% of the State of Washington is already set aside and available for recreation, and there are 5,100 lakes, 109 rivers and 239 major creeks in addition to the Puget Sound and the Pacific Ocean coastal areas so available, and

WHEREAS all of the municipal watershed in the State of Washington represent less than one per cent of the land area of the State of Washington and these watershed areas are not needed for additional recreation lands, and

WHEREAS the Association of Washington Cities Watershed Committee on behalf of the cities of the State of Washington has unanimously supported the protection and preservation of existing areas devoted to municipal water supply purposes; Now, Therefore,

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF TACOMA:

COPY

That the Council of the City of Tacoma vigorously opposes the opening of Tacoma's Green River Municipal Watershed or the watersheds of any other municipality in the Pacific Northwest because of danger to the public health of the citizens of these communities in the absence of costly treatment facilities, and

BE IT FURTHER RESOLVED that a copy of this resolution be sent to the President of the United States, Secretary of Agriculture, Secretary of Army and all of the members of the Washington Delegation urging that proposals for unrestricted access and recreational development in Pacific Northwest municipal watershed areas be rejected as unnecessary and not responsive to local needs and that efforts be made instead to cooperate and encourage local program to protect and preserve the purity of the most basic of all natural resources - WATER!

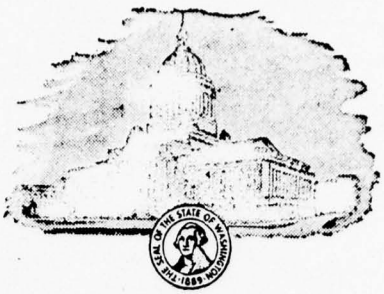
Adopted September 16, 1964

H. M. Tollefson
Mayor

Attest: Josephine Melton
City Clerk

Requested by the Public Utility Board
by Resolution No. U-2223

DON MILES
EWNTY-SECOND DISTRICT
ROUTE 6, BOX 149
OLYMPIA
RES. TEL.: 357-4183
BUS. TEL.: 352-9841



THIRTY-EIGHTH LEGISLATURE
1963-65

COMMITTEES

LICENSES, VICE CHAIRMAN
HIGHER EDUCATION
HIGHWAYS
JUDICIARY

House of Representatives

STATE OF WASHINGTON
OLYMPIA

October 12, 1964

Mr. John A. Richardson
Assistant Director
Department of Conservation
335 General Administration Bldg.
Olympia, Washington

Dear Mr. Richardson:

I wish to acknowledge your kind invitation to attend the hearing being conducted by Task Force for Comprehensive Study, Puget Sound and Adjacent Waters on October 28, 1964, at Olympia, Washington. It now appears that I will be unable to attend that hearing. However, I would like to make a few comments in regard to the procedures of the Columbia Basin Inter-Agency Committee.

It is my understanding that the Departments of Fisheries and Game have not been made full partners in the comprehensive study. I seriously object to that fact, if true. It is vital that these Departments charged with full responsibility in the field of sport and game fish be given full and participating roles in the development of any comprehensive study relating to Puget Sound waters. I urge you to take immediate steps to install the Directors of those Departments as full members of the task force.

It is also a prime importance that the comprehensive study take into account the present study being carried out by the U.S. Army Engineers in regard to the Grays Harbor-Puget Sound

Canal. The Lower Puget Sound and Thurston County in particular have a great stake in the development of the Canal as well as other uses of our great water resources by industry and for recreation.

Yours truly,

DON MILES
State Representative
Twenty-Second District

DM/njt

cc: John A. Biggs, Dept. of Game
George E. Starlund, Dept of Fisheries
Associated Press

Route #1
Port Ludlow, Washington

October 16, 1964

RECEIVED
DEPARTMENT OF CONSERVATION
OCT 22 1964
A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

Mr. John A. Richardson
Assistant Director
Department of Conservation
335 General Administration Building
Olympia, Washington

Dear Mr. Richardson:

This letter is written in regards to water and related land resource needs of Jefferson County. The Jefferson County Soil and Water Conservation District board of supervisors feel that the following comments are pertinent to the welfare and development of our county.

One of the most striking needs of water at the present time is for potable water. Wells with sufficient water are almost impossible to develop and those that have been have too much iron. It is not economically practical to attempt to remove the iron. Several real estate development areas and communities are being held back because of this. The Chimacum-Hadlock area, while on a pipeline from Port Townsend, can have no more taps from the pipeline. Because of the nature of the soils, most springs cannot supply an adequate amount or safe source of water for future development. To meet these needs the great rivers of our county need to be tapped by pipelines to bring water to these areas.

The development of water is not only needed for domestic and municipal use but also for industrial expansion. With the present pipeline, there is barely enough water for the Crown-Zellerbach mill in Port Townsend. Future expansion and development in wood products will mean that even the present allocation to this mill will be inadequate. Other industries that want to build here cannot because there is no water for them.

The development of these rivers should also include hydropower and recreation. The Olympic Peninsula offers a vast array of opportunities for recreational development to be used by the intensively populated metropolitan areas of Seattle and Tacoma. Also within these river area developments, consideration should be given to winter sports to enhance this aspect of our local community life.

Along this vein of thought, there is a need for an overall integrated plan for the development of the present boat haven under construction to provide for the recreational aspects of the entire Kah Tai Lagoon area in Port Townsend. The increase in size of the boat haven will bring a need to provide transient boaters with a readily accessible recreational area as well as services and supplies for their boating and domiciliary needs. This should also include deepening of the remaining lake so it could support fish and other sport activities.

As our county progresses, more pressure will be put in to the need for water control on the Chimacum Creek. The demand on lands will make it imperative to develop the agricultural lands in the Chimacum Valley to their fullest capability. This will bring into action the Chimacum Watershed Project which is presently inoperative.

Industrial development should also be encouraged that would take advantage of our hardwood timber resources. Much of it is presently under-utilized. To encourage greater and better land use, markets need to be developed.

Sincerely yours,

Gus Erickson, Chairman
Jefferson County Soil & Water
Conservation District

Gus Erickson

WEST COAST TELEPHONE COMPANY

GENERAL OFFICES: EVERETT, WASHINGTON • AREA CODE 206 • ALPINE 9-2111

Everett, Washington
[illegible] 22, 1964

Task Force for the Puget Sound
and Adjacent Waters Study
c/o Mr. Robert Gedney, Co-chairman
U. S. Army Engineer District
1519 Alaskan Way South
Seattle, Washington 98134

Gentlemen:

Since our company provides communication services in a portion of your study area, we wish to express our interest in your Comprehensive Water Resources Study. Water is certainly one of the most important assets of the Puget Sound Area and we are glad to see that long range plans are being made for the most effective use of that asset.

We urge that your planning should recognize the need for balanced development to include:

1. Use of our water resources for industrial development in order to provide jobs and an expanding economy for our area. This use will include primarily (a) the industrial uses of water for such purposes as paper and pulp manufacturing, (b) use of water for transportation to include development of deep water industrial sites that tie in with rail and highway networks and (c) use of water for agriculture.

2. Recreational uses of our water resources. Assuming we do a good job in industrial development as outlined in "1" above, there will be (a) a need for more beaches and river areas designated for recreational use because of the greater number of people in our area and (b) the ability to pay for such recreational facilities.

3. Flood control. More land will become available for industrial development, residential use and agricultire if the flood threat can be eliminated.

Very truly yours,

Russell J. Loveland
President

Exhibit 80

537 West 6th
Port Angeles, Wash.
Oct. 22, 1964

Mr. John A. Richardson

Dept. of Conservation
355 General Adm. Bldg.
Olympia, Wash.

Dear Sir:

In answer to the request for our views on problems for study relative to Water Resourses of Puget Sound and Adjacent Waters, the members of Dry Creek Grange #646 went on record as supporting a study of the salmon spawning problem in the Elwha River. This has been a problem with much local backing for many years. The people of this region feel that if the Elwha had fish ladders,or some means of getting around the two Crown Zellerbach Dams and a way to prevent the fingerlings from going through the turbines on the way back to the Straits of Juan De Fuca ,this area would be one of the greatest fishing areas in Puget Sound.

The stumbling block to any of our moves to present the problem has been the fact that three different groups must cooperate on such a program. These three would be Crown Zellerbach, State Fisheries and Olympic National Park.

We are quite aware of the fact that this is an uphill struggle,but your study seemed to be a glimmer of hope to cut a little red tape and bring these three groups together with a single purpose in mind. No individual local organization seems to have enough power to get a nod of encouragement from any one of them. However as in many cases the local people feel they are right altho helpless to do much about it.

A Committee has been appointed from Clallam County Pomona Grange to further study this problem and present their case for your study on October 28,1964

Many of us have hiked up the Elwha Trail and have been really surprised at the size of the area drained and the large rivers and creeks entering at so many places. One just really has to see the territory to grasp what a wonderful salmon river the Elwha is.

We hope you will find time to give this matter your careful consideration.

Fraternally,

Richard E. Ellison
Richard Ellison- Master

Jerrine Main
Jerrine Main Secretary

Exhibit 81

Shelton, Wash.
Oct. 26, 1964

U.S. Army Engineer
1519 Alaskan Way South
Seattle, Wash.

COPY

Sirs:

I am much concerned about the water resources study that will be heard in Olympia on Oct. 28.

I would like to be there in person to say what I have in mind, but I realize too, it will be almost impossible for a lay person to be heard, so therefore, I will write my feelings, hoping it may get consideration.

Here in this State of Washington we have had extensive Water Pollution to the extent that it is damaging to our skin and shellfish life in Puget Sound. I think pollution from all industries should be stopped when it reaches such proportions. It seems the State Govt. has not been able to cope with this situation .

This pulp pollution had completely wiped out the oyster industry in Oakland Bay, Little Skookum and Lotten Inlet, in the period from 1928 to 1957.

I think, that any industry establishing themselves in this state or any other state should be able to show that they have all pollution or other residue problems solved, rather than letting them continue to operate for many years while trying to solve the problem while operating as it will never be done.

Put a stop to the spraying with pesticides and secticides where there is danger of it getting into rivers and lakes, and into underground water from the use of strong detergents. Stop the spraying of beaches for to kill what is known as Ghost shrimp.

There is no use to undertake such a project unless it is done without fear, favor or personal bias, for if it is not done in all sincerity, then, let those at the head of this move forget it all, and wait for the end.

Sincerely,

Herbert G. Nelson

Rt. 1, Box 280
Shelton, Wash. 98584

Exhibit 82

PORT of TACOMA
PIERCE COUNTY, WASHINGTON, U. S. A. CABLE "PORTACOMA" TACOMA 1, WASHINGTON
P. O. BOX 1612 TACOMA, MARKET 7-6111 • SEATTLE, TAYLOR 4-0442

October 26, 1964

Colonel C. C. Holbrook
District Engineer
U.S. Army Corps of Engineers
1519 Alaskan Way South
Seattle, Washington 98134

Dear Colonel Holbrook:

In response to your notice of a public hearing scheduled for October 28 at Olympia concerning the "Comprehensive Water Resource Study, Puget Sound and Adjacent Waters," I would like to call your attention to two essential projects in this area.

One of the projects, I believe, is currently carried on your records as an active study project. This is a study to determine the desirability of Federal participation in the construction of a ship canal between the Ports of Tacoma and Seattle through the Puyallup-Kent Valley. This project would be jointly sponsored by the Ports of Seattle and Tacoma.

The second project, a feasibility study, is not active at the present time. This study would be to determine the desirability of Federal participation in the development of deep draft navigation in the mouth of the Nisqually River in an area known locally as the Nisqually Flats. The Commissioners of the Port of Tacoma feel it should be included in your

"Comprehensive Water Resource Study, Puget Sound and Adjacent Waters." This project would be jointly sponsored by the Ports of Olympia and Tacoma.

The growth of the Seattle-Tacoma-Olympia metropolitan area is seriously handicapped by the lack of deep water navigation facilities. Both large and small industries are desirous of moving into this area to take advantage of the abundance of natural resources, inexpensive power, available land areas and excellent labor market. The largest single factor deterring this movement is lack of deep draft navigation facilities adjacent to the available land.

We strongly urge the cooperation and support of the Corps of Engineers through incorporating these timely studies into your "Comprehensive Water Resource Study, Puget Sound and Adjacent Waters."

The Port of Tacoma is prepared to do its part as a local sponsor and share in both projects.

Sincerely,

Ernest L. Perry

ERNEST L. PERRY
General Manager

ELP/h

CITY HALL

City of Bremerton

WASHINGTON

OLYMPICS

239 FOURTH STREET

ENN K. JARSTAD
YOR AND COMMISSIONER
PUBLIC HEALTH AND SAFETY

STIN M. CLARK
MMISSIONER
FINANCE AND ACCOUNTING

FRED S. SCHONEMAN
COMMISSIONER
OF PUBLIC WORKS AND UTILITIES

E. H. T. McGOWAN
CITY CLERK
AND PURCHASING AGENT

October 28, 1964

Columbia Basin Inter-Agency Committee
Task Force For Comprehensive Study
Puget Sound And Adjacent Waters

Gentlemen:

The City of Bremerton has a vital stake in any planning for future utilization of water resources in Kitsap County or in adjoining areas where a supply exists which may feasibly be brought into the County. The Kitsap Peninsula and Bainbridge Island are notably poor in potable water resources so every possible consideration must be given to what is available to assure that the best over-all use is obtained. The City must plan for a continuing increase in consumer demand from a growing population within its expanding corporate limits as well as from an expanding service area outside the City which will grow as water becomes available through an enlarging City system or through the formation of water districts which might be supplied by the City. It has long been the policy of Bremerton to make water available to adjoining areas whenever and wherever practicable.

There is every reason to believe that this City and the surrounding areas will experience an accelerated residential growth in the near future. The enormous population explosion on the east side of Puget Sound in King and Snohomish Counties has pushed residential construction farther and farther away from places of employment in business and industry. More time-consuming and hazardous travel over clogged traffic arteries is required of residents in newly developing areas. These conditions make Bremerton, Bainbridge Island and the Kitsap Peninsula more attractive locations to potential commutors employed in Seattle and their number is increasing each year. The long promised improvements in ferry boat facilities and service and the eventual bridging of the sound are certain to accelerate the movement to the west for residential settlement. There are many miles of waterfront and thousands of acres of highly desirable property as yet undeveloped. Growth in these areas, including Bainbridge Island, has been severely retarded by lack of adequate water sources. Many of them can be opened up to early use by comprehensive expansion of the Bremerton water system.

In addition to the increased demand certain to develop from population growth, there is the necessity of maintaining an adequate supply for the Puget Sound Naval Shipyard during periods of national emergency. The requirements of this tremendously vital facility fluctuate considerably even during normal times when one ship coming in for overhaul can add 3000 to the City population. In time of war the demand increases sharply from the normal 33% to 35% of total consumption of the system. During World War II from 1942 - 1946 the PSNS use of water was 55% to 60% of total production. During the Korean War from 1950 - 1953 it was 51%.

These factors all point to the Bremerton water system becoming the nucleus for a metropolitan water supply to serve a greatly expanded area. Preliminary plans have been made to provide for the increasing demands as they develop.

The existing water system of the City of Bremerton utilizes the supply available from all the usable sources most advantageously located for development. These include Union River, Anderson Creek, Gorst Creek and seven flowing artesian wells along Anderson Creek on the south side of Sinclair Inlet.

Union River has been the backbone of the supply system since 1956 when an impounding dam was completed creating a reservoir capable of storing 1375 MG. This lake must be filled during the winter and spring months when the run-off is heavy as the river flow drops off as low as 0.3 MGD during the low-water months. During these extremes, stored water must be released to supplement streams flow for the maintenance of fish life below the dam. Water from this source reaches the City by gravity through four miles of transmission mains. Under normal operating conditions about 80% of the water used comes from Union River. Present transmission mains limit this use however to about 10 M.G.D.

Anderson Creek and artesian flow from the wells supply the other 20% of normal usage. Flow of the creek and six of the wells is concentrated in a common basin before being pumped into the system. Together they are capable of sustaining a flow of about 2 M.G.D. During peak demand periods this flow can be increased by deep well pumping to 5 M.G.D. A seventh well flows about 0.4 M.G.D. and can be pumped to 1.4 M.G.D.

Gorst Creek is kept as a stand-by supply for peak demands and for periods when the Union River supply must be shut down because of temporarily high turbidity or for maintenance or construction operations. It sustains a flow of 4 to 5 M.G.D. during low water months.

The available supply from all sources then, is about 13 M.G.D. from all sources under normal conditions, with an increase of 9 M.G.D. possible for limited periods with additional pumping. The present average use is about 7 M.G.D. although extremes have been reached during hot weather when more than 16 M.G.D. were consumed.

In 1964 an estimated population of 45,000 is being served of which 33,000 are within the City Limits. The 1963 report of the Puget Sound Governmental Conference projects a 1980 population of 47,800 in Bremerton Planning Area. When related to the present population served, this would indicate an increase of 55% by 1980. Assuming a static condition in the P.S.N.S., an additional 3 M.G.D., or a total of 10 M.G.D. will be needed to satisfy the normal demand alone.

For a number of years there has been sporadic interest from certain groups on Bainbridge Island, in the possibility of securing a supply of water from the Bremerton system. Preliminary engineering reports indicate that this is the most feasible plan for the Island. The Kitsap County P.U.D. has contracted with an engineering firm for a comprehensive study of water resources in the County which is now underway. The study will include the Bainbridge Island problem and it is highly probable that a recommendation will be made to begin negotiations. If the Bainbridge interests decide to take water from Bremerton, an additional demand of 4 M.G.D. can be anticipated in the near future.

When these potentials are considered, it appears likely an estimated average demand of 14 M.G.D. by 1980 would be conservative, with peak demands running as high as 30 M.G.D. The present system would not be able to meet such demands.

In anticipation of these developments, the City of Bremerton has filed applications for water rights on other Kitsap County streams to the west of Union River and on the Hamma Hamma River and Jefferson Creek on the Olympic Peninsula. A listing of these applications follows: (It should be noted that these are applications only and that the rights have not been perfected. Applications have also been filed for storage reservoir sites at Jefferson Lake and at Elk Lake.)

Application Number	Location	Amount
9717	Tahuya River	20 c.f.s.
9718	Mission Creek	5 c.f.s.
12764	Hamma Hamma River	100 c.f.s.
14400	Jefferson Creek	50 c.f.s.
14479	Jefferson Lake	6000 a.f.
14480	Elk Lake	4000 a.f.

Development of these new sources in Kitsap County will be more costly than those so far undertaken but there is no alternative unless extensive new sources of ground water are discovered before additional development becomes necessary. Exploratory work in test well drilling is being carried out at the present time. When sufficient new demands are established, the anticipated returns will justify the capital investment required.

It is recognized that the Hamma Hamma - Jefferson project would be tremendously expensive and that its financing would probably require the formation of a metropolition water district. The large volume of water available however, will justify the costs of transmission when a sufficiently large consumer demand has developed. This single source could sustain development of the entire County for many years to come.

It should be pointed out that the watershed areas surrounding potable surface water sources should be protected from the polution dangers associated with trespass and multiple use wherever this is possible. Highly expensive filteration and treatment facilities will be required where multiple use is permitted or is mandatory.

Respectfully submitted,

FRED S. SCHONEMAN
Commissioner of Public Works & Utilities

EVERETT G. HUMBLE
Water Department Superintendent

FS
EGH:jc

The Mountaineers

Seattle, Washington 98111

P. O. BOX 122

BRANCHES AT TACOMA, EVERETT AND OLYMPIA

Olympia, Washington
November 15, 1964

Mr. John Richardson, Co-Chairman
Comprehensive Water Resources Development
for Puget Sound and Adjacent Waters
Department of Conservation
Olympia, Washington

Dear Mr. Richardson:

In order to make the appeal of Wilderness groups competitive with industrial needs for water we've tried to compute recreational values in monetary amounts. We talk about the millions of dollars spent on recreational equipment, on gas, on trailers, camping goods, mountaineering equipment, living expenses for tourists while living in Washington and expenses for traveling to our State. However the health and well-being of our citizens, here in Washington and those many people from other states who come here for the feeling of renewal that comes from participating in the outdoor experience cannot be measured in dollars and cents.

There is less and less land in its natural state available for the enjoyment of our people. There will be more and more people - an estimated 23 million people be 2000 - and even less and less land. Once this land has been used for logging or industrial uses it will no longer be available for recreational uses. We must make provisions today to preserve these areas. Tomorrow is too late.

The Mountaineers number 2000. There are thousads of others in other recreational groups in Washington and in other states who plan outings to Washington because it is about the last state with large areas of wild, relatively untouched land.

It is hoped that the Puget Sound study will take into consideration the needs of our citizens for wild space in the North Cascades area, Cascade and Olympic Peninsula as well as needs for other recreational uses.

Sincerely,

Amy Bell

Amy Bell, Chairman
Conservation Committee, Olympia Branch

Exhibit 85

Soil and Water Conservation District

249

506 River Road • P. O. Box ~~270~~ • Puyallup, Washington • Phone: THornwall 5-553
98371

Mr. Ray Skrinde
Corps of Engineers
1519 South Alaskan Way
Seattle, Washington

December 2, 1964

Dear Mr. Skrinde:

Attached are duplicates of the orginal material which we sent to the River Basin Hearing group on October 28,1964, however we neglected to send a letter of transmittal.

Attached are the following:

1. Puyallup River----------149,580 acres
2. Ohop Creek---------- 28,500 "
3. Wapato Creek---------- 11,059 "
4. South Prairie Creek---------- 55,353 "
5. Eylebos Creek---------- 8,230 "
6. Brightman - Horn Creeks

We hope that these duplicates will enable you to incorporate this data into the official record.

Sincerly,

Elmer D. Larson

Elmer D. Larson
Chm. Pierce County SWCD Board

cc: Merle R. Britton,SCS,Seattle
Lew Kehne,SCS,Spokane

Exhibit 86

Prepared by Pierce County SWCD for River Basin Hearing, October 28, 1964

Puyallup River -- 149,580 Acres

20,000 people live in the damage area. There are 210 farms in this area. There are 11,520 acres in this area of which 6,400 acres are cropland. Much of this is Class II land, intensively farmed to bulbs, vegetable crops, berries, rhubarb, hay and pasture and misc. crops. 50% of this land is presently irrigated, for maximum utilization the remainder should be irrigated. A lot of this land has been drained, tho much drainage remains to be done.

Much has been done to improve flooding and damage on this river, Mud Mountain dam on the Stuck river, improved works at Electron, straightening and diking of the lower portion of the river and improved forest management in the upper portion of the watershed, also rock riprap has been applied to much of the banks.

A problem presently being handled by the King and Pierce Counties (Flood Control Departments) cooperating together is the continual deposition and build-up of the river channel. There appears to be danger of the channel building up to where flood waters may seep through or overtop existing dikes, and flood adjacent farm lands. This condition is estimated to exist for a distance of 14 miles on the Puyallup river and a similar condition exists for a distance of an estimated 7 miles on the Carbon river.

There is also an apparent deposition problem in Lake Tapps. This is water taken from the White river, flumed into Lake Tapps, and out of Lake Tapps into the Stuck river, which then flows into the Puyallup river.

Land treatment needed to reduce this deposition:

1. Conservation forest management estimated to be needed on 30% of the forested area.

2. Reforestation, estimated to be needed on 50% of forest lands in area.

3. Construction of small dams and ponds.

4. Improved pasture management on 50% of the area in the watershed presently in pasture.

5. Seeding of winter cover crops on land being used for cultivated crops.

6. 10% more streambank protection and diking estimated to be needed.

# # # # #

Incl 1,
Exhibit 86

Prepared by Pierce County SWCD for River Basin Hearing, October 28, 1964

Ohop Creek -- 28,500 Acres

Application for watershed assistance made on January 28, 1955.
State Department of Conservation approved application March 29, 1955
Field examination had been completed December 14, 1954.

There has been insufficient local interest shown to date for a work plan to be developed or even a preliminary investigation made by SCS.

According to estimates developed by SCS in a reconnaissance inventory, there are 24 farms and about 100 people living in the damage area. The farmers own about 1,000 acres of which 700 acres is cropland. This is hay and pasture land yielding 3 tons per acre annually.

Main problems appear to be:

1. Flooding
2. Sediment deposition
3. Scouring
4. Ponding of water
5. Stream meandering

Trearment needed:

1. Flood channel development
2. Drainage outlets
3. Open and closed drains
4. Some streambank protection.

Flooding occurs (to some extent) annually. This is caused by inadequate outlet and by streamflow exceeding channel capacity.

# # # # #

Incl 2,
Exhibit 86

Prepared by Pierce County SWCD for River Basin Hearing, October 28, 1964

Wapato Creek -- 11,059 Acres

Population 6,385 of which 3,385 are estimated to live in the damage area. There are 50 farms in the damaged area with 6,600 acres being in the damaged area, of which 1,440 acres are cropland. This cropland is mostly Class II land. Estimated land use is as follows:

30% Hay and pasture
10% Bulbs
20% Berries
20% Vegetable crops
10% Rhubarb
10% Misc.

Biggest problem is insufficient drainage and a resultant high water table.

Possible solutions:

1. Deepening and enlarging the channel of Wapato Creek, thereby providing better outlets for individual farm drainage which would lower the existing high water table.

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Incl 3,
Exhibit 86

Prepared by Pierce County SWCD for River Basin Hearing, October 28, 1964

South Prairie Creek -- 55,353 Acres

Estimated to be 25 farms in area being damaged, and on about 1,000 acres of which 500 are cropland. This is in hay and pasture, yielding 3 to 4 tons per acre annually.

Most of this farm land needs drainage. Some is being irrigated, for maximum production it should all be irrigated.

This creek floods on the average of twice per year, for an average duration of 24 hours. Damage is mostly from debris deposition and water ponding. There is some cutting and erosion of the streambank.

Land treatment for watershed protection:

1. Reforestation of 50% of the forested area of the watershed.
2. Conservation forest management of 40% of forested area.
3. Construction of small dams and ponds.
4. Improved pasture management on 50% of land area that is presently in pasture.
5. 50% of streambank needs protection by rock riprap and/or diking.
6. 50% of channel needs clearance and enlargement.
   (Items 5 and 6 are needed for a distance of an estimated 7 miles)

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Incl 4,
Exhibit 86

Prepared by Pierce County SWCD for River Basin Hearing, October 28, 1964

Hylebos Creek -- 8,230 Acres

Estimated to be 30 farms in the area being damaged, and about 2,000 acres in this area of which 700 are cropland. Population within the watershed is estimated at 6,000 with about 1,200 living in the damage area.

About 75% of the farm land is hay and pasture, and the other 25% is in vegetable crops.

Problems are annual flooding and drainage is needed, but there are insufficient outlets.

Estimated land treatment and practices needed:

1. 70% of channel needs deepening and enlarging.
2. 60% of channel needs diking.
3. Flood and/or tidegate and pumping plant needs to be installed.
4. Sanitation controls (presently needed) septic tanks overflow every winter.
5. Critical area plantings - Highway borrow pits, etc., in King County.

Much of the problem appears to have originated in King County when the Tacoma-Seattle Freeway was constructed. Borrow pits and home sites have been left unprotected from erosion, causing Hylebos Creek channel to fill with sediment to the extent that there is no outlet for individual farm drainage. This has apparently caused the water table to rise, creating many problems.

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Incl 5,
Exhibit 86

Prepared by Pierce County SWCD for River Basin Hearing, October 28, 1964

Brightman-Horn Creeks

Apparently many absentee landowners in this area, along with inactive and part-time farmers, cause the lack of maintenance of existing drainage ditches. Creek channels are grown up with brush and clogged with debris. Insufficient outlets, need for drainage and winter flooding are the big problems.

Non-interested (uncooperative) landowners appear to be one of the biggest problems to establishing effective drainage.

There is also the problem of a very low (almost non-existant) divide between these two watersheds which apparently has caused friction between landowners when water has drained from one watershed into another. The State owns the land on which this low divide exists.

Possible solutions would appear to be:

1. Clear a strip of land and construct a long low fill across the State land to prevent waters from Brightman Creek from going into Horn Creek drainage.
2. Deepen and enlarge both Brightman and Horn Creek channels.
3. Install individual farm drainage as needed.

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Incl 6,
Exhibit 86