

Norm
Box 216

PETERSBURG

COMPREHENSIVE
DEVELOPMENT
PLAN

CITY OF PETERSBURG
COMPREHENSIVE DEVELOPMENT PLAN

SPRING, 1966

The Alaska State Housing Authority

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A C K N O W L E D G E M E N T S

The time and information contributed to this report by many individuals, industries and governmental agencies is gratefully acknowledged.

The Petersburg Press contributed the photographs used in this report.

Alaska STATE HOUSING AUTHORITY

E. N. Courtney
Acting Executive Director

The Honorable Lew M. Williams, Jr.
City Council and Citizens Advisory Committee
City of Petersburg
Petersburg, Alaska

Gentlemen:

In accordance with your request, we are pleased to submit herewith this report on the Comprehensive Development Plan for the City of Petersburg. The contents of this report are the culmination of a series of studies dealing with the past, present and future of your community. It is presented to you, and to the citizens of Petersburg, as a general guide for achieving a more efficient, convenient, safe and attractive community during the course of the City's future growth, development and change.

Petersburg, at the heart of Alaska's Tongass National Forest, is on the threshold of a period of rapid economic development and population growth. It is, therefore, more important now than ever before that the planning proposals contained in this report, arrived at in cooperation with your citizens and officials, be referred to whenever a question affecting community development, be it public or private, is concerned. The opportunity to build better communities based on sound planning is before you at this time. After working with the citizens and public officials of Petersburg we feel certain that this opportunity will be fulfilled.

We wish to express our sincere appreciation to all the public officials and private citizens whose wholehearted cooperation and assistance contributed greatly to this report.

William A. Egan, Governor, State of Alaska

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Albert R. Vacura, Chairman
George N. Hayes, First Vice Chairman
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Larry Carr, Member
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Respectfully,

ALASKA STATE HOUSING AUTHORITY


E. N. Courtney
Acting Executive Director

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INTRODUCTION

The purpose of planning is to make the City a more convenient and pleasant place in which to live. With very few exceptions cities are not planned before they are built. Instead, cities are generally the result of many private and often unrelated building and land improvement projects. The total pattern of land uses thus produced is not always the most satisfactory or desirable one for the general public. For example, an area may become fully developed without providing any land for a park or a school. The purpose of a comprehensive development plan is to evaluate the City at a particular point in time and to suggest the form of future development which would benefit the greatest number of people.

To be effective planning must be a continuing process. A comprehensive plan is based upon information available at the time the plan is made. However, in the future new developments may occur and the needs of the community may change. The plan must be revised to accommodate new information as it comes to light.

A comprehensive plan is for use by both public agencies and private individuals. Public agencies use the plan to direct the physical development of the City. By pointing out future needs for schools, streets and other public improvements the plan enables a community to acquire sites in advance of rising land costs.

By indicating the location of future public improvements the plan gives the private investor reliable information about future public investment just as the zoning ordinance indicates what can be done with private property. The plan is also useful to private parties because it contains an analysis of areas of economic potential and provides recommendations about the highest and best use of land.

COMMUNITY GOALS

The basic goals of the City of Petersburg are:

- I. To encourage economic growth;
- II. To create a community which is a more functional, pleasant and attractive place to live and visit.

Increased economic activity can benefit the community in many ways. However, economic growth makes new demands upon many elements of the community. School enrollments grow, housing needs expand, new space for commercial development is sought and demands for community services and facilities increase. Without planning to provide for these needs, economic growth may be achieved at the cost of the second goal.

Petersburg has recognized the needs created by growth, and the community has done an outstanding job of providing community facilities and services and of guiding its development to form an orderly and attractive community. It is a basic recommendation of the plan that the community preserve and build upon the excellent development pattern which has already been established. In addition, the following projects are recommended as effective means of attracting economic activity and providing for the present and future needs of the community:

1. Development of the hydro-electric plant at Thomas Bay to provide an abundant, less expensive power supply.
2. Development of the Crystal Lake water project which will provide water of excellent quality to the City and to the areas developing to the south of the City.
3. Construction of a bridge across Dry Straits to connect Petersburg with the mainland and continuation of the highway along the Stikine River, eventually connecting with the continental highway system.
4. Improvement and expansion of existing school facilities by:
 - a. Building new elementary school classrooms to accommodate the increasing school population;

- b. Building a junior high school;
 - c. Reservation of land for future school and park use.
5. Construction of a new municipal library.
 6. Development of a City park and a pedestrian walkway along the boat harbor.
 7. Construction of a swimming pool and a new gymnasium.
 8. Construction of a municipal jail facility.
 9. Expansion of hospital facilities to accommodate increasing population.
 10. Construction of a City garage and warehouse for storage of City equipment.
 11. Construction of a sewerage treatment plant to eliminate disposal of raw sewerage into Wrangell Narrows and development of a storm sewerage system to separate drainage from sanitary sewerage.
 12. Expansion of small boat harbor facilities to provide berthing and docking space for the expanding boat population.
 13. Improvement and extension of existing streets to provide access to new housing sites.
 14. Extension of utility lines to new housing sites.
 15. Development of a City-wide system of collector streets, including an alternate route behind Hammer Slough.
 16. Strengthening and expansion of the downtown commercial district.
 17. Development of a sanitary landfill project to eliminate dumping on the beach at Frederick Sound.
 18. Construction of a system of sidewalks with priority given to the streets which are most heavily used by school children.
 19. Paving of streets with curbs and gutters and installation of a batch plant.
 20. Construction of an airport and a heliport in conjunction with this facility.

NEXT STEPS

USE OF THE PLAN

The comprehensive plan is a reflection of both the long-term and the short-term goals of the City of Petersburg and therefore can serve as a valid guide for the community's future development. The plan's effectiveness depends upon the extent to which it is used as a reference when decisions affecting future development are being considered. The City and other public bodies should refer to the plan when zoning changes and new subdivisions are proposed and when new streets and public buildings are being planned. Private developers should be encouraged to use the plan when deciding where to locate new buildings and developments. Local civic improvement groups will also find the plan helpful when trying to locate their projects.

The plan outlines and relates the many different facets of community development. It attempts to evaluate present and probable future community problems and their relative significance to future development. As such, the plan is a source of recommendations for action for community improvement. Using the plan as a guide the City and State should develop the main system of highways and collector streets to provide a logical framework for private development. The plan and capital improvements program should be used as a basis for improving those facilities which will attract industrial development such as power, water and surface transportation.

THE SHORT-TERM DEVELOPMENT PLAN

The comprehensive plan is a plan for twenty years of community development and improvement. In order to implement the comprehensive plan it is essential to decide upon the priority of each necessary improvement and to develop a scheduled program of action. A program of immediate accomplishments to be achieved within the first six year period should be established.

In Petersburg there are eight projects which should be considered for the initial period of development. These projects would go a long way toward accomplishing the community's goals and

in carrying out the plan. It is recommended that priority be given to the following:

1. Adoption of a revised zoning ordinance to implement the comprehensive plan. Recommendations concerning necessary zoning revisions have been made as a part of this planning project. The City Council should consider these recommendations and initiate the required public hearings as soon as possible.
2. Continued development of the proposed Harbor Way Urban Renewal project. This project will:
 - a. Eliminate 40 percent of the dwelling units in poor condition within the City.
 - b. Eliminate a definite fire prone area adjacent to the business district.
 - c. Provide excellent land for future commercial development.
3. Construction of a new municipal jail facility. This project will eliminate the need to send local prisoners to Juneau for interment and will also provide adequate office space for the Police Department.
4. Construction of new elementary school classroom facilities. New classrooms are needed to provide space for the rapidly growing school-age population and eventually to replace the existing forty year old elementary school building.
5. Development of the Crystal Lake water project. The existing water supply is inadequate both in quantity and quality for the City's present needs. The new water project is needed to provide an abundant supply of excellent quality water to the existing population and to attract new industrial development to Petersburg.
6. Installation of a 1250 kilowatt generating unit. This unit to be installed with the present diesel plant and hydro facility will provide adequate power until the Thomas Bay power can be brought on line.
7. Construction of the first stage of the Thomas Bay hydro-electric power plant with an installed capacity of 10,000 kilowatts. This project will guarantee an adequate power source for many years. An adequate power supply will be a tremendous incentive for industry to locate in the Petersburg area.
8. Continuation of sewer and water lines, street construction and paving to accommodate the forecasted increases in population.



PETERSBURG TODAY

PETERSBURG TODAY

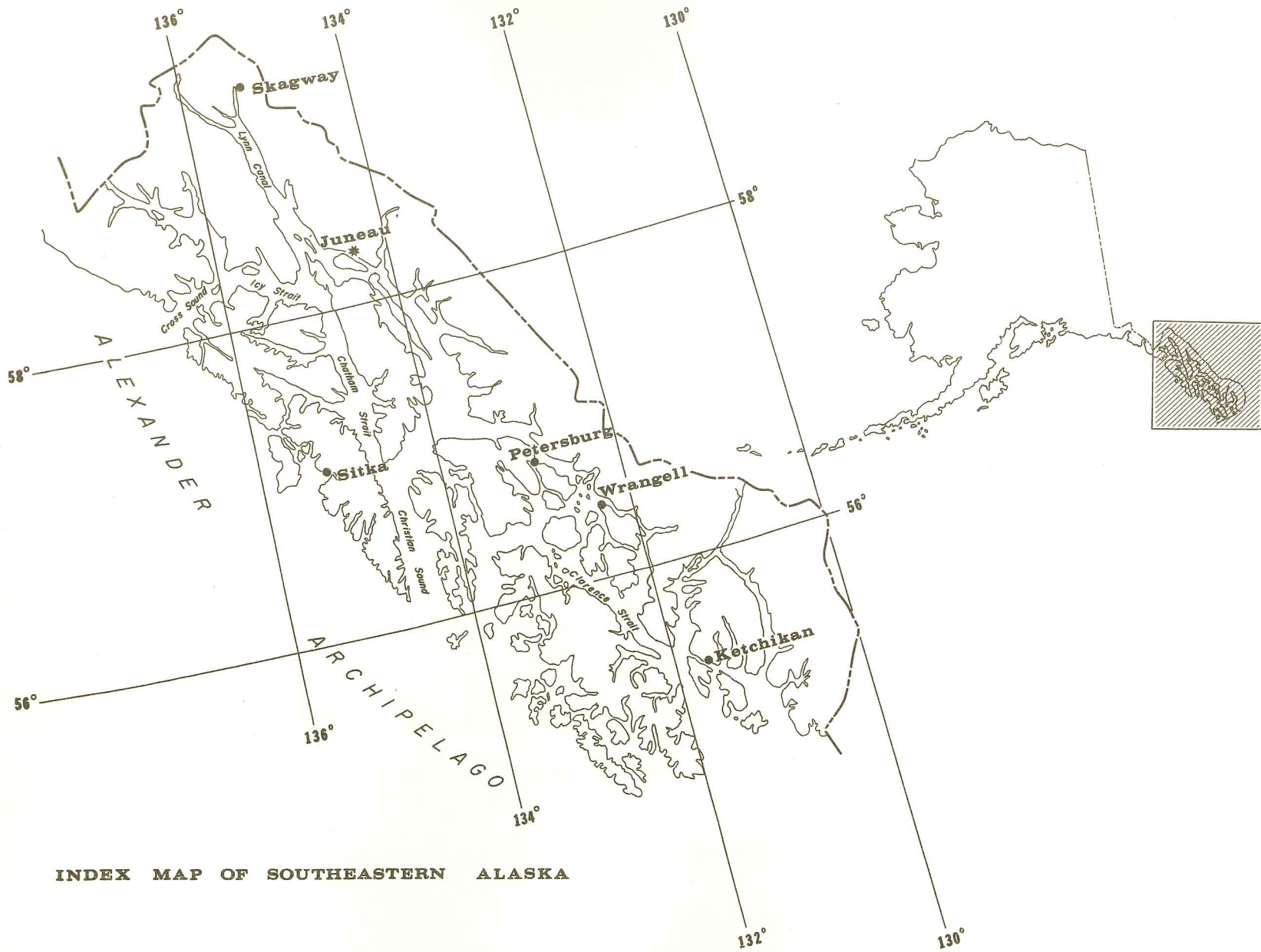
LOCATION

The City of Petersburg is located in the heart of Southeast Alaska on the northern tip of Mitkof Island at the entrance to Wrangell Narrows from Frederick Sound. The community faces west across the Narrows to the Lindenberg Peninsula of Kupreanof Island. The planning area is defined as Mitkof Island and the eastern shore of Kupreanof Island. Petersburg is sheltered from high winds to the south on Mitkof Island and to the west on Kupreanof Island by mountains rising to elevations of approximately 2,000 feet. Due to this protection, Wrangell Narrows provides a sheltered harbor for the fishing fleet at Petersburg.

Petersburg's central location in the heart of the Alaskan Panhandle should be a major factor in its future growth and development. The City's situation at the entrance to one of the few major natural gateways through the Coast Range plus the fact that it is roughly equidistant from the three major Southeast Alaskan cities (approximately 120 miles north of Ketchikan, 130 miles south of Juneau and 100 miles east of Sitka), will be of great advantage when a highway through the valleys of the Stikine and Iskut Rivers to Canada and the continental United States is constructed in the future.

Petersburg, Wrangell and Sitka are the three major communities in central Southeastern Alaska. Of the three, Wrangell and Petersburg are located within 45 water miles of each other on the main route of the Alaskan ferry, while Sitka is located more peripherally on the western edge of Southeastern Alaska.

Local site conditions and the community's orderly pattern of development will also be an asset in future development. Petersburg is located on one of the few relatively flat areas in the Southeast and, unlike most other cities in the area, the community has ample room for expansion. To date, enlightened management of the City has ensured its orderly development in a pattern which is generally functional and attractive.



INDEX MAP OF SOUTHEASTERN ALASKA

SIZE

With an estimated current population of about 1,800, Petersburg is the fourth largest city in Southeastern Alaska. This population estimate represents an increase of almost 20 percent over the 1960 census figure. The average 4 percent annual increase is slightly above growth rates experienced by the City from 1930 to 1960. Other commonly used indices of growth also speak for the economic health of the community.

TABLE 1
SELECTED GROWTH INDICES
PETERSBURG, ALASKA

	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>Percent Increase, 1960 to Latest Year</u>
Sales Tax Collected <u>1/</u>	\$ 91,641	\$ 97,940	\$ 109,162	\$ 115,301	\$ 124,257	\$ 127,503	+39.13
Motor Vehicle Registrations	365	378	458	517	647	653 <u>2/</u>	+85.42
Public School Attendance <u>3/</u>	422	472	522	560	564	-----	+33.64
Bank Deposits (in 000's of \$)	3,017	3,181	3,907	3,755	3,801	4,487	+48.71
Gross Receipts <u>4/</u> (in 000's of \$)	3,618	4,081	4,453	4,862	6,073	-----	+67.86

1/ City of Petersburg.

2/ Alaska Department of Revenue. Preliminary figures.

3/ Alaska Department of Education.

4/ Alaska Department of Revenue.

HISTORY

Although Petersburg was founded in 1897 by Peter Buschman who selected the site to build a small cannery and sawmill, the origins of modern Petersburg can be traced from 1905 when year-round settlement became the rule. The majority of these early settlers were of Norwegian origin, and to this day Petersburg is commonly referred to as "Little Norway".

Between 1910 and 1920 the basis of Petersburg's economy was established by the development of local plants for the processing of salmon, halibut and shrimp. This increased activity led to the construction of the first cold storage plant in 1920.

To promote orderly growth and accommodate this new industry the City was incorporated in 1910, and between that time and 1920, a substantial number of ordinances were enacted and basic community facilities were established. Taxes were levied, building and traffic regulations were established, and the community built its first jail, fire hall, electric power system, telephone lines, water system, hospital facilities and a permanent school. Also during this period the Bank of Petersburg and the Sons of Norway were founded.

It is notable that, unlike most other Alaskan fish processing plants which are owned and managed by outside firms, Petersburg's plants were established and are owned by local people. A much greater share of the income from locally owned plants has remained within the community to benefit its economy.

Since these beginnings, Petersburg has developed steadily. The period between World War II and the present time has seen the replacement of almost all the original facilities, some with volunteer labor. The fish processing industry has been expanded by the addition of new cold storage facilities and processing plants and the range of sea food products has been expanded considerably since 1945. A new hospital was constructed with volunteer labor. Boardwalks of past years were replaced by regular streets, many of the wood stave pipes were replaced with pipes of superior materials and other facilities have been upgraded.

The City adopted a Home Rule Charter in 1960. In the same year, a new municipal building was added and other future developments promise to follow the high standards established in the past.



NATURAL FEATURES

NATURAL FEATURES

PHYSICAL SETTING

Geologically, the Petersburg area, like the remainder of Southeast Alaska is young and unstable. The City and surrounding areas are largely underlain by folded and faulted metamorphic rocks of which graywacke and slate predominate. Petersburg is located within an area of high seismic activity liable to earthquakes causing major structural damage. The City's vulnerability to earthquake damage was taken into account in its adoption of the Uniform Building Code.

The present landscape owes much of its origin to the ice age when mountain glaciers carved U-shaped troughs from old V-shaped river valleys, and, by truncating spurs, created today's steep-sided mountains. Ice action on the upper levels of the mountains produced jagged crests and small lakes or tarns and other characteristic glacial forms. These features occur more dramatically on the nearby mainland area than on Mitkof or Kupreanof Islands, where the mountains are seldom in excess of 2,000 feet. Crystal Lake, the only large glacial lake on Mitkof Island, is presently used as the source of Petersburg's hydro-electric power, and will shortly be developed to supply the City's water needs.

In addition to changing the physical form of Southeast Alaska, glaciation removed the weathered mantle, leaving exposed bedrock in its place. Soils, where they occur, are generally thin and leached by heavy rainfall, and are unsuitable for agricultural use. Since the ice age, Mitkof Island has undergone substantial uplifting. The northern section of the island including the City area, was once a sub-marine platform. The leveling action of the sea has given the community a comparatively large amount of flat land upon which future expansion can take place.

Throughout Southeastern Alaska muskeg is common in low lying areas of poor drainage. Some of the thickest and most extensive muskeg deposits occur on Mitkof Island. Petersburg is situated on a large deposit which encompasses the entire marine platform area. Thicknesses of this muskeg vary with local drainage conditions, but generally average between 6 and 12 feet in depth, ranging between about 1.5 and 2 feet in the area between Main Street and Hammer Slough, 3 and 13 feet at the airport site, and between 8.5 and over 13 feet at the middle-income housing project site. Muskeg creates difficulties both in building and road construction. To gain firm

foundations it is necessary to drive building piles through into the underlying clay, and in road construction either to strip off the muskeg layers and backfill or to float the roadbed by putting 2 to 3 feet of crushed rock on top of the muskeg. Because modern construction methods can overcome the problems created by muskeg, all of the land within the City limits except for an insignificant amount in steep grades along the sloughs can be classed as buildable. However, those areas with better local drainage conditions make for more economical building construction.

CLIMATE

Petersburg has a maritime climate characterized by mild winters, cool summers and year-round rainfall. The physical barriers posed by the Coast Range and lesser ranges cause high rainfall totals throughout Southeastern Alaska, and Petersburg's annual average precipitation is 105 inches, varying between a high of over 17 inches in October and a low of between 4 and 5 inches in June. Snowfall is heavy and wet but seldom accumulates to a depth greater than 30 inches.

Temperatures are strongly influenced by the proximity of the sea as well as by geographic latitude. As a result of the sea's moderating influence, Petersburg's average temperature variation between the warmest (July) and the coldest (January) months is only 25.7°. Winter temperatures are typically between 20° and 35° and seldom dip below 0°, although temperatures as low as -19° have been recorded. On the other hand, summers are generally cool. The average temperature for July, for example, is only 55.8°.

For the most part, nearby mountains shield the City from high winds, the average wind speed being 5 miles per hour. Fog is relatively common, occurring for a limited duration on an average of about 145 days per year, generally in association with precipitation. The greatest number of hours of low visibility occur in the winter months when visibility is most often affected by snowfall.

VEGETATION

Dense forest covers most of Mitkof Island. However, in areas of poor drainage tall tree growth degenerates into scrub forest, shrubs and, eventually, to muskeg. With the exception of the land within the City limits of Petersburg and a coastal strip south of the City, Mitkof Island

TABLE 2

AVERAGE TEMPERATURES AND PRECIPITATION AT PETERSBURG

<u>Month</u>	<u>Temperature</u> ^{1/} °F	<u>Precipitation</u> ^{2/} Inches	<u>Snowfall</u> ^{3/} Inches	<u>No. of days over .01" Precipitation</u> ^{4/}
January	28.1	8.93	27.0	15
February	30.3	7.49	22.2	14
March	34.5	7.10	17.4	15
April	40.5	6.85	1.7	13
May	47.7	5.95	trace	14
June	53.4	4.59	trace	13
July	55.8	5.23	0	13
August	55.1	7.67	0	14
September	50.4	10.97	0	15
October	43.6	17.22	1.0	22
November	36.0	12.14	9.3	18
December	31.2	<u>11.06</u>	<u>21.8</u>	<u>20</u>
TOTAL	42.2 (average)	105.20	100.4	186

^{1/} 29-year record ^{2/} 28-31-year record ^{3/} 27-year record ^{4/} 6-7-year record

Source: United States Department of Commerce, Weather Bureau, Climatic Summary of the United States.., Alaska, 1965.

is within the Tongass National Forest. Tall trees are generally hemlock - Sitka spruce in mixed stands with small admixtures of western red cedar and Alaska cedar. Typical commercial stands near Petersburg are 70 percent hemlock and 30 percent spruce with minor proportions of cedar.

In the forest areas, shrubs occurring with the timber trees are predominantly huckleberry and blueberry, while mosses and ferns comprise the bulk of the ground cover. The muskeg areas are generally treeless and are covered mainly by sphagnum moss, sedges, rushes and low shrubs, although some isolated open stands of lodgepole pine, hemlock or cedar do occur.

Major vegetation types do not occur in clearly defined areas but intermingle greatly as a result of local variations in drainage and relief. Transition zones occur between forest and muskeg, forest and shoreline and at an elevation of 2,000 to 2,500 feet, which is the upper limit of dense forest growth. Between forest and muskeg is a zone of shrub growth composed mainly of alder thickets or willows, marking an area of relatively poor drainage. At the coast, forest typically gives way first to coastal shrub growth and finally to sedges and grasses, especially beach-rye grass, and other water loving plants. There is no true alpine vegetation on either Mitkof or Kupreanof Islands because elevations do not exceed 2,500 feet. However, at the upper levels of both islands, the dense forest gives way to scrubby forest and shrub growth.

WILDLIFE

The wildlife of any area is largely dependent on the vegetation available for its survival. Each type of vegetation supports a different type of wildlife, often on a seasonal basis. The region has a wealth of big game animals. Brown, grizzly and black bears and deer, typically inhabit the forest, although deer graze extensively on the muskeg and beach areas in winter and bears are found anywhere where berries and salmon are available. The area also has an abundance of small fur-bearing animals, including otter, beaver, squirrel, mink and ermine. Moose and mountain goat, while not found locally, are available for hunters on the nearby mainland areas.

Game birds include blue grouse and three species of ptarmigan as well as ducks and geese. Ptarmigan are typically found at the upper levels, the grouse is a forest dweller, while ducks and geese principally inhabit the shoreline and muskeg areas.



REGIONAL TRANSPORTATION

REGIONAL TRANSPORTATION

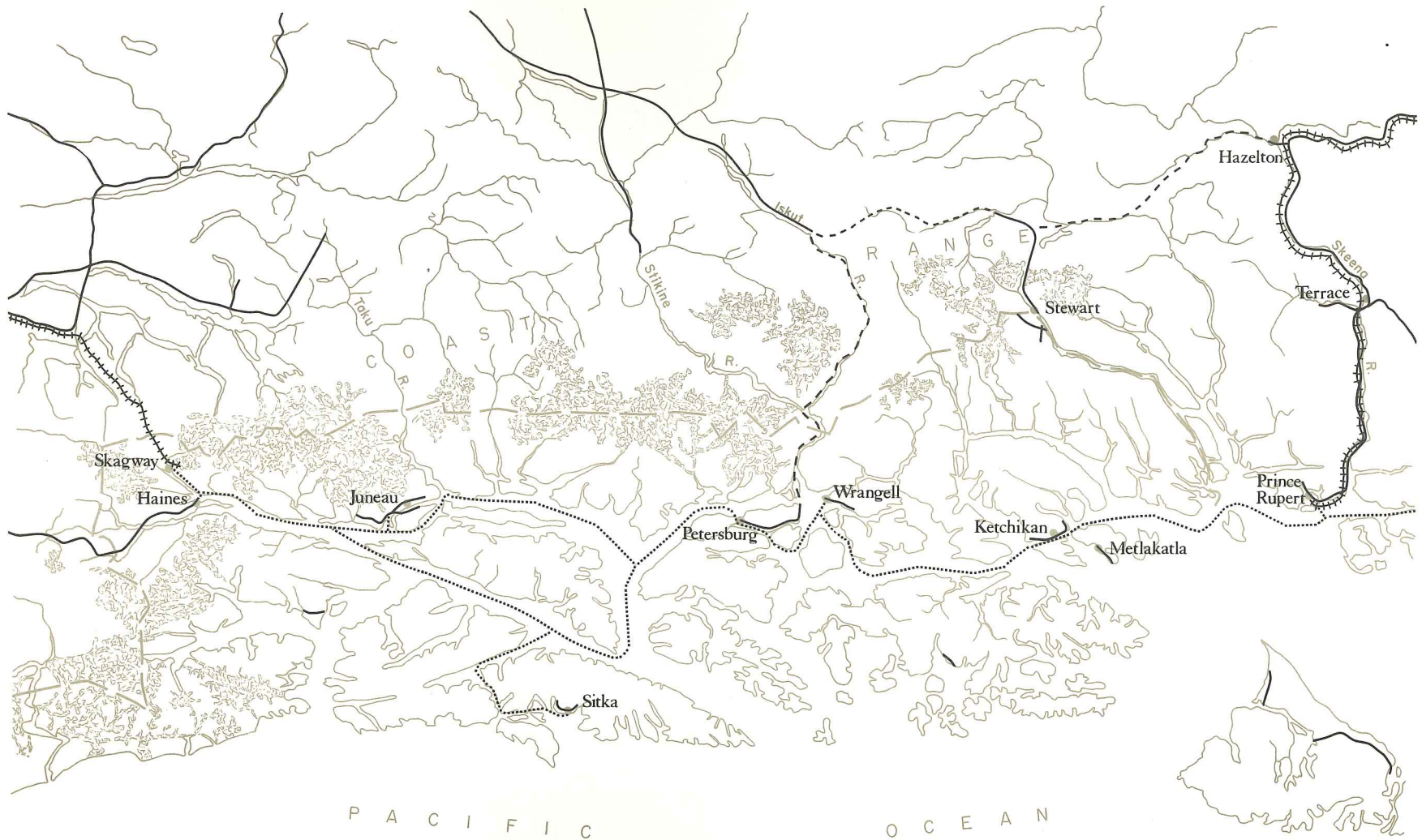
Until recently, Petersburg, like most other Southeast Alaskan cities, was extremely isolated by physical barriers. Its island location in the narrow mountainous Alaska Panhandle caused its seaward orientation and required complete reliance on seaplane and steamship services for its freight and passenger transportation needs.

Today, Petersburg's future transportation picture is bright. The marine highway ferry system is in operation and its expansion is imminent, an airfield for prop-jet services is programmed in the near future, and a highway link with Canada and the continental United States is planned. These projects, when completed, should modify the City's seaward orientation and contribute substantially to its future economic expansion.

REGIONAL HIGHWAYS

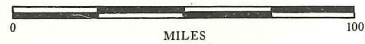
The most important factor in Petersburg's future development will be a road connection to the Canadian highway system. The Battelle Memorial Institute in its report Transport Requirements for the Growth of Northwest North America, studied possible highway routes leading inland from the Southeast Alaskan coast. Of these, a proposed route from Petersburg following the Stikine and Iskut River valleys to connect with the Watson Lake - Stewart Highway in interior British Columbia, offered the shortest, most central and least costly connection. This highway links with the Alaska Highway to the north and, by means of a future link to Terrace or Hazelton in Canada, would eventually connect with the Prince Rupert Highway.

A substantial portion of this proposed route has already been completed or is programmed for construction. On the Alaskan side of the border, the last ten miles of the Mitkof Highway running from Petersburg down the Blind River valley was completed in 1964 to Federal highway specifications. The portion from Fall Creek to the north end of this new construction is scheduled for widening by the State Department of Highways during its fiscal year of 1966-67. During the same period, a bridge connection to mainland Alaska over Dry Straits has been programmed. The remainder of the Alaskan section has been studied although it is not programmed



SOUTHEASTERN ALASKA

- Existing Highways
- - - Proposed Highways
- Ferry Routes



for construction prior to 1970.

On the Canadian side of the border, the Watson Lake - Stewart Highway is largely constructed, and the remaining portions have all been surveyed. The link from the Watson Lake - Stewart Highway to the Prince Rupert Highway has been widely discussed although no firm plans are yet available. Finally, programming of the Canadian portion of the Stikine-Iskut Highway will probably be advanced to facilitate development of vastly rich copper deposits which have been discovered at Galore Creek in the Stikine River area approximately 40 miles north of the lower reaches of the Iskut River. Production is scheduled to begin here after 1970, and, as it is likely that this copper will be shipped through the mouth of the Stikine, a road connection seems inevitable.

The impact of this land connection upon the economy of Petersburg should not be underestimated. When the entire system is completed, the trip from Petersburg to Hazelton will take approximately 10 hours via the Stikine-Iskut Highway as opposed to a minimum of 22 hours via the ferry and the highway from Prince Rupert to Hazelton. Petersburg will assume a function as a terminus similar to that of Prince Rupert and Haines, and the influx of tourist and commercial traffic will have a substantial impact on the City's economy.

WATER TRANSPORTATION

MARINE HIGHWAY SYSTEM

The Alaska State Ferry system was inaugurated in January, 1963 to provide a marine highway link between Prince Rupert, B.C., and Haines and Skagway, thereby connecting the Southeast Alaskan cities both to each other and to the highway and railhead connections existing at either end of the route. The degree of success of the ferry system has surpassed all expectations. Preliminary feasibility studies had shown that the system would be carrying about 46,000 passengers and 13,000 vehicles at the end of the fourth year of operation. However, in fact, during the first year of operation with the third ferry not delivered until June, the system carried some 83,975 passengers and 21,275 vehicles. Since then the rate of increase has been approximately 20 percent per year. This increase should be further stimulated by the inauguration in May, 1966 of a Canadian ferry connection from Kelsey Bay on north Vancouver Island to Prince Rupert. The possibility of adding extra vessels on the Southeast section of the route has already been considered and seems likely, although plans for this are not yet definite.

The system is heavily used by out-of-state tourists especially during the summer months. To tourists, especially older travelers, a trip via ferry offers an unusual holiday combining an inexpensive and leisurely excursion through spectacular scenery with an opportunity to visit Southeastern Alaska's historic and colorful communities. During the winter months, a time when the average tourist heads south rather than north, passenger volumes are lower, and service is less frequent.

Petersburg has been a regular port of call on the Southeast Marine Highway system since that service was inaugurated. During the summer months the ferries make six northbound and six southbound stops per week at Petersburg, decreasing to four stops each way during the off-season months. Although the City is not a major point for passenger or vehicular disembarkations, traffic has been increasing steadily, especially during the off-season.

STEAMSHIP SERVICES

The Alaska Steamship Company, operating out of Seattle, is the traditional carrier of freight and produce to and from Alaskan ports. Prior to 1954, the Company also provided regular passenger services. After the cessation of this service and until the inauguration of the ferry system in January, 1963, passenger traffic was limited to airlines and to luxury cruise ships traveling the Inside Passage of Southeast Alaska.

Petersburg was served once weekly by steamship until February, 1966, and according to the Company's Anchorage office, approximately 10,000 tons of goods were handled annually. The use of the Alaskan ferry to haul vans brought by steamship to Ketchikan and Juneau is enabling greater flexibility in scheduling shipments to and from Petersburg. Because of this alternative, the Company has reduced its direct service to Petersburg to a bi-weekly schedule.

At present, steamship service is hampered by inadequate pier facilities for loading and unloading heavy equipment and supplies in the City. However, Petersburg Fisheries, Inc., the Trading Union, the Public Dock and Petersburg Cold Storage have planned a joint dock to extend the present steamship dock along its entire length from the Petersburg Fisheries, Inc. to the Cold Storage wharves. This change would allow larger ships to pick up and deliver containerized or van shipments. It will also be an incentive to industrial developers and will promote a more efficient freight service.

AIR TRANSPORTATION

Since World War II, the airlines have increasingly become the major means of passenger transportation for Alaskans. With Alaska's vast distances air is often by far the fastest and, when time is included, the cheapest means of traveling between Alaskan communities. In the Southeast, the cost of establishing landing fields has until recently made seaplane services more practical than conventional aircraft.

Petersburg has been served by scheduled commercial aircraft since 1937. Present scheduled service consists of Alaska Coastal-Ellis Airlines seaplane flights to Juneau, Wrangell, Ketchikan, Sitka and Kake. From Juneau, Pacific Northern and Cordova Airlines have scheduled service to Anchorage with connections to major Alaskan cities and polar flights to the Orient and Europe. In addition, Wien Alaska Airlines offers scheduled service to Whitehorse and Fairbanks. From Annette Island via Ketchikan, scheduled jet service is available to Seattle and thence the major U. S. and world air routes. Local charter flights are also available from Petersburg via Coastal-Ellis and Lon's Flying Service.

The dependence of the Southeastern cities on seaplane services will be greatly diminished when the airfield construction program is completed. In Petersburg, plans call for construction of an airfield approximately 4,400 feet in length for land-based aircraft. Construction is scheduled for 1966-67, on a site adjacent to the southeast boundary of the City, which will allow direct road access into the central business district.

The completion of this facility should give Petersburg prop-jet service to the proposed Ketchikan airport, Juneau and Sitka. When the Wrangell field is completed, Wrangell will be served as a stop for planes en route to Ketchikan. Petersburg's new airfield with prop-jet service will bring Sitka within approximately 20 minutes, Juneau within 30 minutes and Ketchikan within approximately 45 minutes travel time and will make the City easily accessible to and from major world jet routes.

Sitka's airfield has recently been completed and is of a size which will be able to accommodate jet aircraft. It is probable that the community will soon be served by a Seattle to Anchorage flight. This flight will give Petersburg residents greater accessibility to north-south jet flights. Petersburg residents will also be provided with more convenient access to Anchorage when Pacific Northern Airlines converts its Juneau-Anchorage route to all-jet service in the spring of 1966.



POPULATION AND ECONOMY

ECONOMY AND POPULATION

PRESENT ECONOMY

COMPOSITION OF EMPLOYMENT

Unlike many larger and less isolated communities, Petersburg has a relatively simple, clear-cut economic base. Historically, the basis of the City's existence has been fishing and fish processing, although this has recently been supplemented by logging. Economic activity in these two commodity producing industries has served to bring money into Petersburg, thus supporting distributive industries dependent on money circulating within the community.

The Employment Security Division of the State Department of Labor extracted Petersburg figures from their Insured Employment and Federal Employment data, enabling an employment model to be constructed. These employment figures, shown in Table 3, cover all insured workers under the State employment security program, and Federal employees. Excluded from this tabulation were some fishermen, self-employed and family workers, domestics, nurses and other local government employees, and those engaged in hunting and trapping. A survey of employment in Petersburg by the Alaska State Housing Authority found that these figures closely reflected the total average full time employment in the City. Consequently, these figures were not modified, with the exception of local government employees, who were not covered.

Manufacturing employment, which includes fish processing, logging and the local lumber mill accounted for 41 percent of Petersburg's employment in 1964. Of the other industries in the commodity producing sector, the section on forestry, fisheries and non-classified establishments, which includes all insured fishermen, may actually be somewhat understated with only 8.5 percent of total employment in 1964. It may also be noted that there is a downward trend in this classification from 1961 to 1964. This is a reflection of the savings in manpower through the use of larger boats resulting in larger catches per man as well as the success of the individual seasons.

Construction has fallen off in 1964 because of the lack of a single large construction pro-

TABLE 3
PETERSBURG PLANNING AREA
1961 - 1964

	1961		1962			1963			1964		
	EMP.	%	EMP.	%	% Change	EMP.	%	% Change	EMP.	%	% Change
COMMODITY PRODUCING INDUSTRIES											
Mining	0		0			0			0		
Forestry, fisheries and non-classified establishments	69	13.0	80	13.0	15.9	60	10.1	-25.0	52	8.5	-13.3
Forestry											
Fishing											
Non-classifiable											
Manufacturing	198	37.4	223	36.1	12.6	209	35.2	- 6.3	251	41.0	20.1
Fish Processing											
Forest Products											
Other											
Construction	30	5.7	58	9.4	93.3	55	9.3	- 5.2	26	4.2	-52.7
<u>Total Commodity Producing</u>	297	56.0	361	58.5	21.5	324	54.6	-10.2	329	53.8	1.5
DISTRIBUTIVE INDUSTRIES											
Transportation and Communication	71	13.4	69	11.2	-2.8	72	12.1	4.3	64	10.5	-11.1
Trade	89	16.8	92	14.9	3.4	98	16.5	6.5	101	16.5	3.1
Wholesale											
Retail											
Finance, Insurance and Real Estate	7	1.3	8	1.3	14.2	8	1.3		8	1.3	
Services	17	3.2	19	3.1	11.8	19	3.2		23	3.8	21.0
<u>Total Distributive Industries</u>	184	34.7	188	30.5	2.2	197	33.2	4.8	196	32.0	- .5
GOVERNMENT	49	9.2	68	11.0	38.8	72	12.1	5.9	87	14.2	20.8
<u>Grand Total</u>	530	100 [±]	617	100 [±]	16.4	593	100 [±]	-3.9	612	100 [±]	3.2

Source: Alaska Department of Labor, Employment Security Division

ject, although the incidence of building permits for 1963 and 1964 was actually higher than in previous years. On the other hand, manufacturing employment has increased substantially over this four year period. This is due primarily to the logging activity taking place in the Petersburg area.

Other employment in the Petersburg area stems from the range of transportation, commercial and service activities that are combined to produce what is known as the distributive industries. This is so called because they distribute goods and services throughout the community and do not actually produce them. Some of these goods and services are exported as in sales to tourists and sales to other cities and logging camps in the region which serves to bring new money into the community. However, this is only a small part of the primary employment when compared to the commodity producing industries.

It can also be noted that while the distributive industries are holding reasonably stable relative to the commodity producing industries there has been a consistent growth in trade and service employment. On the other hand, government employment shows a trend of growth second only to industry during this four year period. This gain can also be attributed to the increased activity in the Tongass Forest.

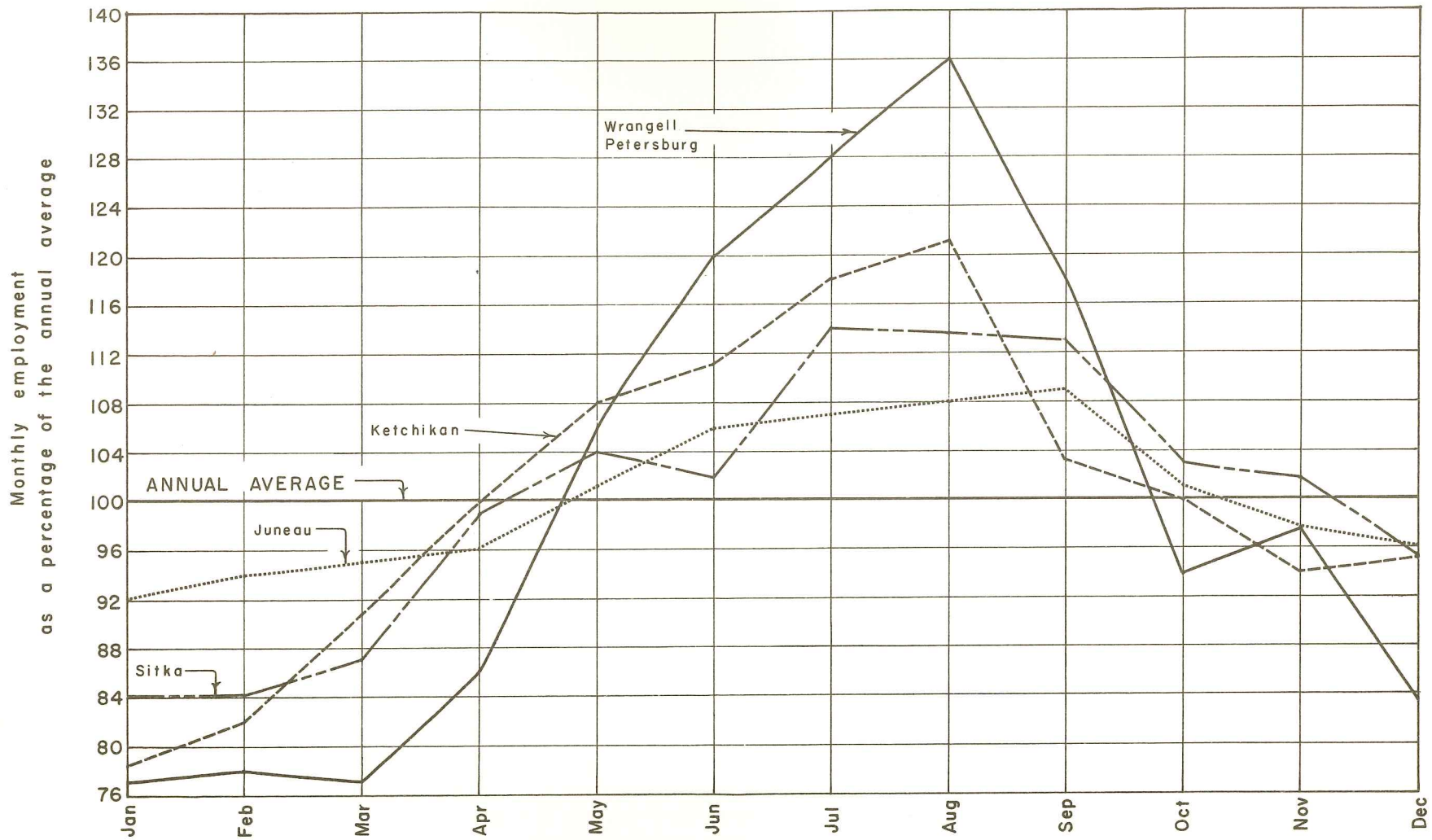
UNEMPLOYMENT AND SEASONALITY OF EMPLOYMENT

The Petersburg area is characteristic of Alaskan areas primarily engaged in fishing and fish processing. It has a high amount of seasonal variation, especially when compared with other major Southeastern areas. From the Workforce Estimates, 1964 provided by the Employment Security Division, monthly employment data was obtained. The employment data in this publication are estimates of all employment whether or not covered by the employment insurance program.

Monthly employment for the Wrangell-Petersburg Labor District along with other Southeastern districts plotted as a percentage of the annual average for 1964 is shown in Figure 1. The Wrangell-Petersburg District is higher in the summer and lower in the winter than the other major districts. Here again, the high and the low points illustrate the seasonality inherent in most Alaskan areas heavily engaged in fishing and fish processing. Some pressure especially at the bottom of this cycle is the result of the construction and logging unemployment during the extreme winter months.

Unemployment is low during the summer months, despite substantial gains in the total workforce and high in the winter months despite a reduction in the total workforce. Only 2.6 percent of

FIGURE 1



SEASONALITY OF NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
 SELECTED SOUTHEASTERN DISTRICTS 1964

Source: Alaska Dept. of Labor, Employment Security Division, Workforce Estimates, 1964

the total workforce was unemployed during the fishing season in September, 1964. However, during February of the same year 25 percent of the total workforce was unemployed. The low percentage of unemployment during the summer months compares favorably with most Alaskan areas. The low point for the State as a whole was in September also when 3.1 percent of the total workforce was unemployed. On the other hand, the highest percentage of unemployment recorded by the State was in February when 13.3 percent of the total workforce was unemployed.

The Wrangell-Petersburg Labor District exceeds the State percentage of unemployment by almost 100 percent during this month. Because of the seasonality of employment, the average annual unemployment rate in the Wrangell-Petersburg Labor District is 11.8 percent as opposed to 7.1 percent for the State, or this district had an unemployment rate that was 4.7 percent higher than the State. These figures do not serve to fully illustrate the degree to which Petersburg itself is affected in terms of seasonality and unemployment. Wrangell, whose dominant industries are engaged in wood processing, serves to reduce the severe cyclical fluctuations shown for this district.

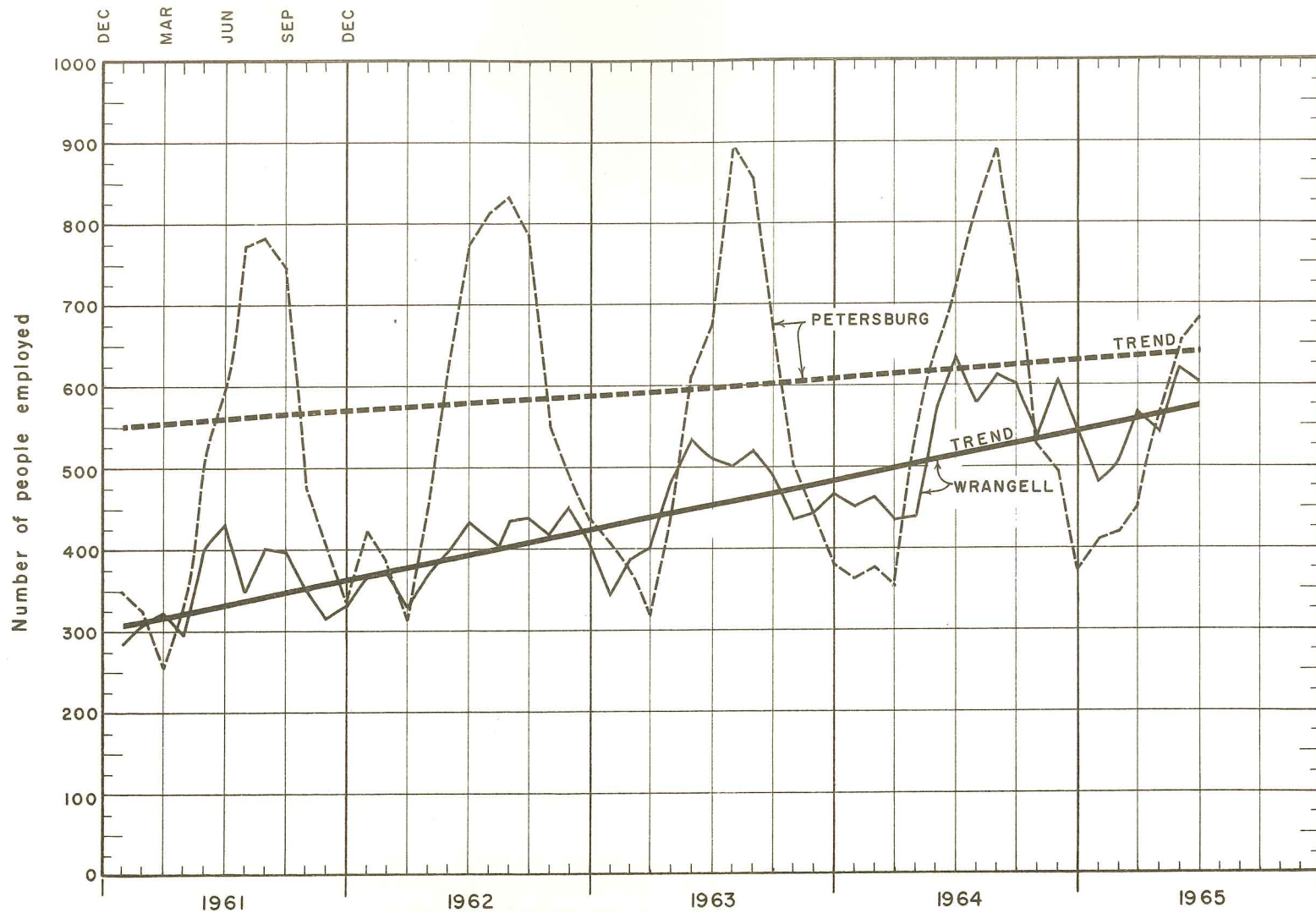
A special tabulation of employment from January 1961 to June 1965 of U. I. Insured Employment and Federal Employment by the Employment Security Division gives a reasonably accurate picture. Figure 2, which compares Wrangell and Petersburg total covered employment on a monthly basis, illustrates the greater seasonality in the Petersburg area. Wrangell, on the other hand, exhibits much less seasonality.

Although similar figures are not available from which to calculate the percentage of the total workforce unemployed for these two major portions of the district, it can be safely assumed that Petersburg's unemployment is overstated during the summer and understated during the winter as a result of being combined in the same district with Wrangell.

PRESENT TRENDS AND CHANGES

Employment in Petersburg has increased at a rate of a little over 4 percent per year from 1961-1964 (see Table 3). The major contributions to this increase were in the manufacturing and government industry groups and were directly related to activities in the Tongass Forest. Trade, transportation and services increased employment to service this activity. However, the two industry groups of forestry, fisheries and nonclassified establishments, and construction declined. There are indications that labor economies are being realized in the fisheries element of the industry group resulting in a limited reduction in employment. Const-

FIGURE 2



TOTAL U.I. INSURED EMPLOYMENT AND FEDERAL EMPLOYMENT
IN PETERSBURG AND WRANGELL PLANNING AREAS

Source: Alaska Dept. of Labor, Employment Security Division

duction employment, on the other hand, has fallen off because of the lack of a single large project.

Petersburg has a modest rate of growth especially when compared to Wrangell whose rate has been over 13 percent per year for the same period. A comparison of the employment growth in these two areas can be seen in Figure 2. The trend in Wrangell's employment is much steeper and the deviations from the trend less severe. However, it provides an example of the effect of the year round employment of forest products industries on a community. Petersburg is presently a community geographically situated and prepared to handle such an industry.

SOURCES OF ECONOMIC GROWTH

FISHING AND FISH PROCESSING

Present

One of Petersburg's greatest assets in the fishing and fish products industry is top flight management personnel and an experienced and efficient labor force. The management is knowledgeable, imaginative and flexible. This has undoubtedly served to maintain Petersburg as one of the prime fishing ports in Alaska. The experienced labor force, on the other hand, is efficient and maintains a friendly and cooperative relationship with management, resulting in efficient production and a continued high level of employment.

Approximately 180 fishing boats fish from Petersburg during the height of the season, supplying principally the Petersburg Cold Storage, Petersburg Fisheries, Inc., Kayler-Dahl Fish Company, Alaska Glacier Seafood Company and Petersburg Processors, Inc. Salmon and halibut are the principal species caught and processed in Petersburg. However, Dungeness crab and various types of shrimp are also important products and serve to provide employment for most of the year. Other seafood taken includes sablefish, herring, king crab, sole and flounder.

A variety of fish products are produced in Petersburg. Halibut is frozen whole, filleted, and produced in fletches. Salmon is canned in various sizes, frozen and mild cured. The salmon eggs are taken for Russian and Japanese-style caviar. The heads are used for crab bait and the tails are used for halibut bait. Dungeness and king crab are processed in a

fresh or frozen form. Herring is generally processed for bait, but herring eggs are packed with kelp as a product for the Japanese market; and a variety of shrimp is usually put up in a cold pack. This fishing for a variety of seafoods and their processing has promoted a high utilization of the total catch, a lengthening of the season, and a reasonable stability in fishing and fish processing employment, when compared with other Alaskan cities where fishing and fish processing are equally dominant.

From the founding of the first cannery in Petersburg at the turn of the century until the present day, fishing and fish processing have been the mainstay of Petersburg's economy. Despite the presence of a sawmill and logging operation in the area, Petersburg's fishing and fish processing represents the dominant basic industry both in terms of employment and value of product produced. As in the rest of Alaska, salmon has been the principal fish caught both in terms of quantity and value. The more valuable red salmon was long ago exploited and greatly reduced in numbers. Today, in the Wrangell-Petersburg District, the pink salmon are the dominant species accounting for 59.3 percent of the canned salmon pack as an average from 1938 through 1964. During this same period 27.8 percent chum, 7.2 percent red, 5.6 percent coho and .1 percent king salmon were taken.

However, a look at the salmon industry since World War II (see Table 4), shows a decline in canned salmon consumption at a rate of .05 pounds per person per year. In terms of the overall population, this is substantial. In fact, it indicates that canned salmon is not holding its position relative to the country's increase in population. On the other hand, it should be noted that canned tuna has experienced considerable growth relative to salmon. Between 1947 and 1961, the consumption of canned tuna had grown at a rate of .08 pounds per person per year.

The demand for canned salmon has been shifted upward and to the left since World War II when the price-value relationship is considered (see Figure 3). The effect of this shifting demand has been the tendency to pay a lower price per case when there is a large total pack and to pay a higher price per case when the pack is small. In the 1930-1940 period, regardless of the volume of production, the price remained reasonably the same per case and the total salmon production was readily consumed. There was a temporary restriction placed on salmon during World War II when most of the pack was made available to the military. Many people in the salmon industry attribute this change in the consumption patterns and thereby the change in the demand characteristics for salmon to this restriction. However, the production of salmon has been declining (see Figure 3). This does not assist the industry in competing with other protein resources such as beef and poultry (see Table 5).

TABLE 4
PER CAPITA CONSUMPTION OF FISH
PRODUCTS, UNITED STATES,
1946-1964

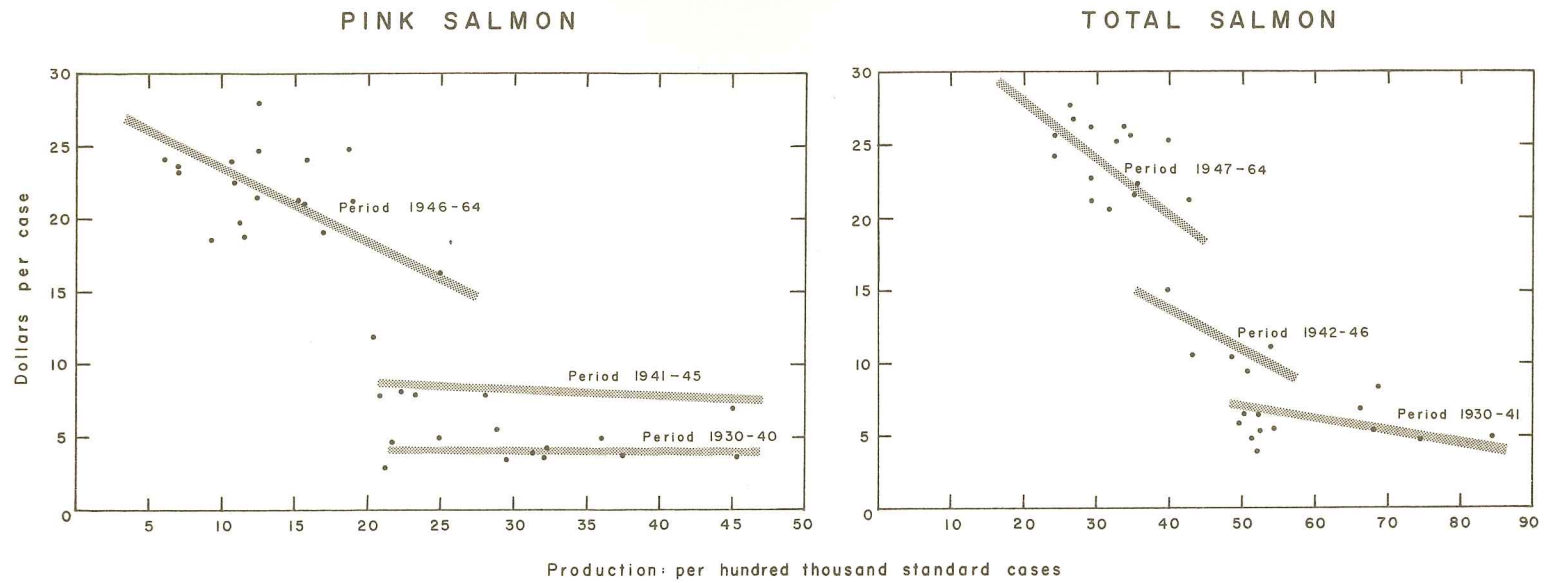
Year	Fresh and Frozen			Canned					Cured	Total all Fish	
	Fish	Shell- fish	Total	Salmon	Sardines (Pilchards and Herring) (pounds)	Tuna	Shell- fish	Other			Total
1946	4.1	1.6	5.7	1.2	.8	.7	.4	.6	3.7	.7	10.1
1947	4.0	1.6	5.6	1.3	.8	.8	.2	.5	3.6	.6	9.8
1948	4.2	1.6	5.8	1.6	1.1	.9	.3	.5	4.4	.6	10.8
1949	4.1	1.5	5.6	1.6	1.1	.9	.3	.5	4.4	.7	10.7
1950	4.6	1.6	6.2	1.4	1.3	1.1	.4	.6	4.8	.7	11.7
1951	4.6	1.7	6.3	1.4	.8	1.2	.4	.5	4.3	.7	11.3
1952	4.6	1.7	6.3	1.4	.4	1.3	.3	.8	4.2	.6	11.1
1953	4.7	1.7	6.4	1.3	.6	1.4	.4	.5	4.2	.7	11.3
1954	4.7	1.7	6.4	1.1	.7	1.4	.4	.6	4.2	.7	11.3
1955	4.2	1.7	5.9	1.0	.5	1.4	.4	.5	3.8	.6	10.3
1956	4.2	1.7	5.9	1.1	.3	1.6	.4	.5	3.9	.6	10.4
1957	3.9	1.7	5.6	1.0	.4	1.6	.4	.6	4.0	.6	10.2
1958	3.8	1.6	5.4	1.1	.6	1.8	.4	.4	4.3	.6	10.3
1959	4.3	1.8	6.1	.9	.6	1.9	.5	.5	4.4	.6	11.1
1960	4.3	1.9	6.2	.7	.5	2.0	.4	.5	4.1	.5	10.8
1961	3.9	2.0	5.9	.8	.5	2.1	.4	.5	4.3	.5	10.7
1962	3.8	1.9	5.8	.9	.3	2.1	.4	.6	4.3	.5	10.6
1963	N.A.	N.A.	5.7	.9	.4	2.0	.5	.6	4.4	.5	10.6
1964 ^{1/}	N.A.	N.A.	5.9	.7	.4	2.1	.5	.5	4.2	.5	10.6

^{1/} Preliminary

Sources: Supplement for 1962 to Agriculture Handbook No. 62, ERS, USDA, October 1963.

United States Department of the Interior, Fish and Wildlife Service, Fisheries of the United States, 1964, April 1965.

FIGURE 3



VOLUME-PRICE RELATIONSHIPS, ALASKA CANNED SALMON

1930-1964

Source: Pacific Fisherman, Yearbook Number, Vol. 63, No. 2, January 1965

TABLE 5

PER CAPITA CONSUMPTION OF SELECTED FOOD PRODUCTS
WITH PROJECTIONS TO 1985

(Pounds)

	<u>1946</u>	<u>1960</u>	<u>1985</u>
Lamb and Veal	16.7	11.0	14
Beef	61.6	85.2	103
Pork	75.8	65.3	70
Poultry	23.1	34.6	40
Fish	10.6	10.5	10
Salmon	1.2	.7	

Source: Hans H. Landsberg, Leonard L. Fischman, and Joseph L. Fisher, Resources in America's Future, The Johns Hopkins Press, Baltimore, 1962.

A Fish and Wildlife Service study of consumer characteristics in 1956, indicated that the primary areas of salmon consumption were in the rural areas of the Midwest and South among large families and with homemakers over 55. There were also indications that the per capita consumption of canned salmon does not increase in proportion to increases in per capita income. Furthermore, there has been an imbalance between production and consumption which has existed in this industry since World War II, despite the decreased production. Inventories have been carried over to the following year, advertising allowances have been offered and, as previously pointed out, prices have become sluggish during years of large packs. The placing of pink salmon on the surplus canned fisheries products list of the recently enacted Foreign Aid Bill 1/ emphasized the plight of salmon.

1/ Wall Street Journal, Vol. XLIV, No. 74, January 28, 1964, p. 1.

Halibut has in the past injected some degree of stability into the fish production of Alaska. Management of this resource by the International Pacific Halibut Commission has proved extremely effective in providing a reasonably stable harvest. However, pressures have been put on this resource. The current difficulty halibut has experienced is believed to have been caused by too rapid exploitation in view of the known catches of the Soviet and Japanese fleets in connection with their trawling and longlining, primarily for other species. ^{1/} Since most of the decrease in the catch was in the Bering Sea area, this did not noticeably affect arrivals at Petersburg (see Figure 4).

The shortage of Dungeness crab in Washington and Oregon has contributed substantially to Petersburg's crab fishing industry. The demand has increased to such an extent that large quantities of freshly cooked Alaskan Dungeness crab were flown regularly to points throughout the United States. Indications are that a substantial supply will not be forthcoming from the Lower 48 for some time. Although there has been a recent price decline in the market, the demand in the long run seems threatened only by the supply available.

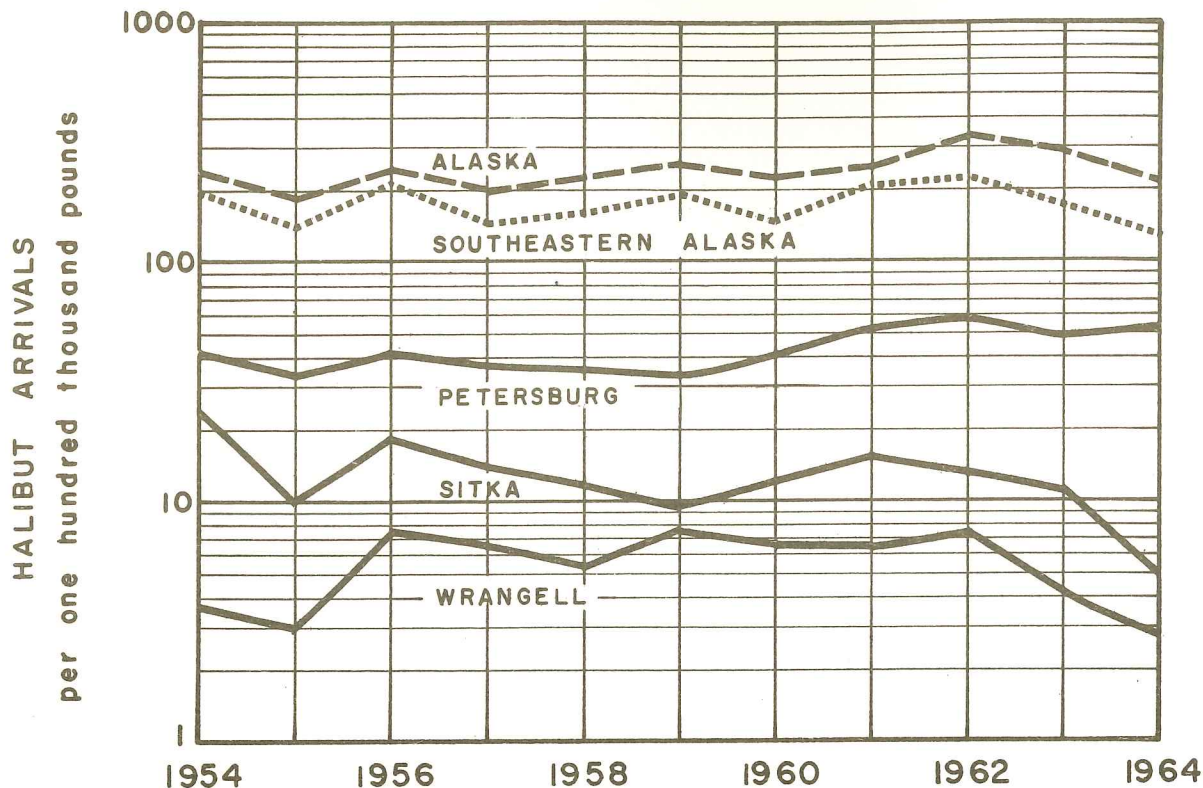
King crab is also taken and processed in reasonably limited amounts in Petersburg. The demand for king crab continues to increase as new markets are developed. Although some king crab is taken along the coast of Southeast Alaska, the potential of the resource is not well known in this area. Further, continued success in Kodiak and off the Aleutian Chain will not help exploratory fishing in this area.

Shrimp has had limited success in Alaska outside the Wrangell-Petersburg area. The hand-picked shrimp of this area are a prime cocktail shrimp and continue to succeed in a highly competitive market. Since this product can be fished and processed during most of the year, it provides another element of stability in the highly fluctuating labor market of fishing and fish processing.

Shellfish as a whole have managed to remain a rather stable element in the national consumption of fish products as evidenced in Table 4, and judging by the Alaskan experience in the marketing of their excellent shellfish products, the market may be increasing. Processing of other fisheries products such as herring, herring eggs and kelp, salmon eggs, sablefish, sole and flounder serve to diversify the individual fishing plants and take advantage of demands for individual products as they become available.

^{1/} Pacific Fisherman Yearbook Number, 1965, p. 133.

FIGURE 4



HALIBUT ARRIVALS AS
A PERCENTAGE
OF ALASKAN TOTALS

1954	.016	.180	.104
1955	.015	.176	.054
1956	.030	.174	.074
1957	.033	.186	.068
1958	.023	.157	.053
1959	.029	.128	.037
1960	.028	.169	.052
1961	.026	.205	.059
1962	.033	.180	.040
1963	.029	.138	.042
1964	.012	.194	.021

WRANGELL

PETERSBURG

SITKA

HALIBUT ARRIVALS
ALASKA AND SELECTED SOUTHEASTERN ALASKA PORTS

Source: Pacific Fisherman, Yearbook Number, Vol. 63, No. 2, Jan. 1965

Recent Activity

Energy is now being expended on improved product handling. Barging the salmon for canning and freezing, thereby bypassing the scows and obtaining a fresher fish, and therefore improving the quality will start in 1966. New equipment is being put in plants to produce a higher quality product.

Some of the plants are considering better utilization and enlargement of sites to enable more efficient staging operations, especially with regard to transportation. The largest of these developments is a joint dock planned by Petersburg Cold Storage, the Trading Union, the Public Dock and Petersburg Fisheries, Inc. The docks are to be joined, thus providing one large docking and staging area capable of on and off loading of vans for the shipment of fish products and receiving supplies. Also, paletizing has taken place for easier handling of products.

Besides the improved handling of salmon and other products, an attempt has been made to put up salmon in 1/2 lb. cans or smaller amounts in the largest practicable quantity. Some study has also been given to utilizing pink salmon heads as cat food. There appears to be a possibility of this, provided there is adequate differentiation of product and advertising. The day when halibut will be given processing beyond the fletches is being prepared for. The cutting and packaging of fish would offer Petersburg substantial employment opportunity. Also, experimentation with extracting crab and shrimp from their shells by machine is taking place at the local level, and new equipment such as fish headers are now in use.

On the fishing side, larger boats are being put into use. New boats in the fleet are running between 40,000 and 70,000 lbs. with crews of 4 to 5. These boats can range further with a larger capacity, enabling the individual fisherman to realize a greater catch per unit of gear.

The Future

At present, food is the largest single item in the American family budget. It requires approximately one fifth of all consumer expenditures after taxes. Furthermore, people are buying a greater variety and more expensive food than at any previous time. They are demanding less weight and calorie value because of the decreased physical labor requirement, and this promises to continue at least at a constant rate in the future.

The per capita consumption of fish has ranged around 10 lbs. per person per year since 1909 (see Table 4). It has remained very stable despite the fall in the total food consumption by weight. Resources in America's Future estimates that the consumption of fish will continue

to border about 10 lbs. per person per year through the year 2000, while the total intake in terms of total food consumption by weight is forecast to level off. If these projections were to be realized, then added demand for seafood products would be directly tied to population growth. In terms of percentages of personal consumption expenditures, the population of the United States has been spending less and less proportionately on food and soft beverages. In 1950, 24.3 percent; in 1955, 23.0 percent; in 1960, 21.3 percent; and it is forecast that by 1985 consumption will fall to a point between 17.8 and 16.4 percent. However, as an absolute amount in terms of 1960 dollars, expenditures per capita for food and soft beverages are increasing. In 1950, for the U. S. as a whole, \$363 per person was expended; in 1955 it rose to \$384; and in 1960 it reached \$390. Expenditures are forecast to be between \$481 and \$539 by 1985 for a population forecast to be between 265 and 275 million by that date.

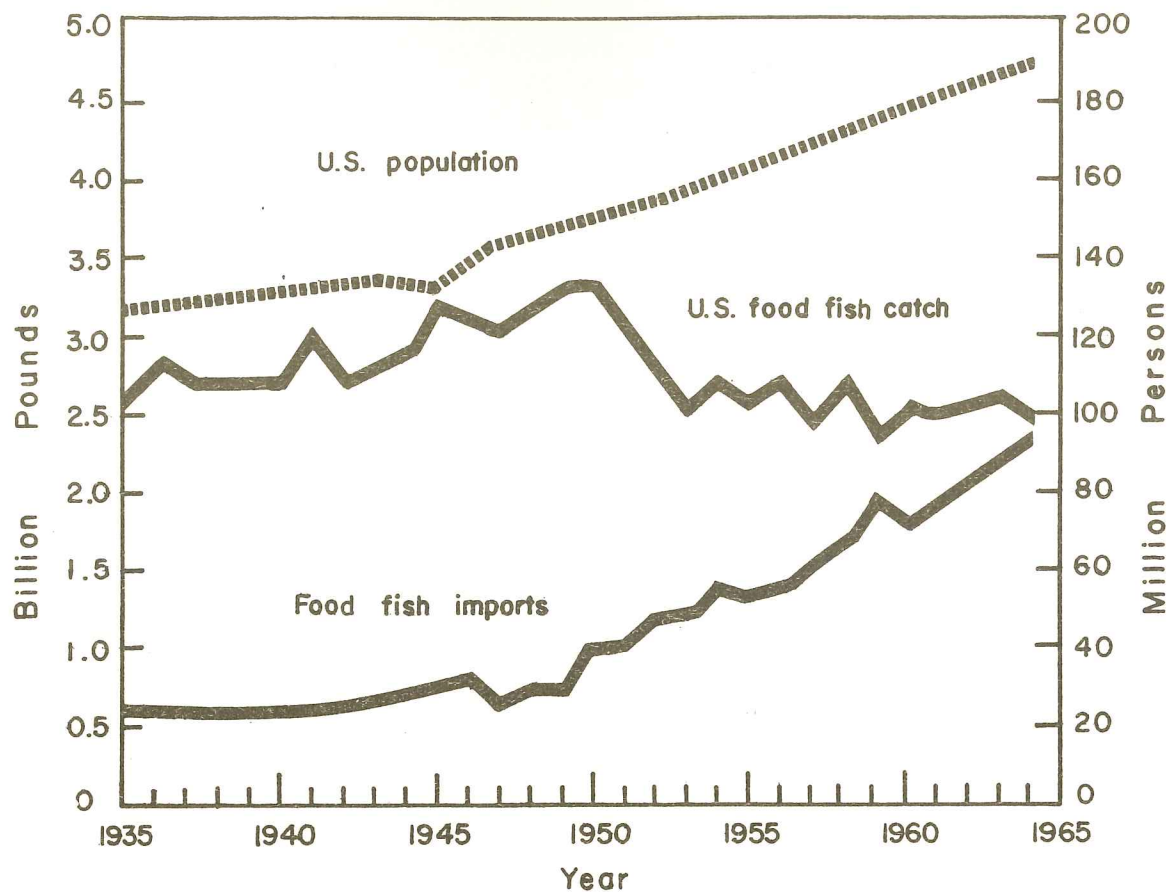
Indications are that the Alaskan and Petersburg fishing and fish processing industry will face an expanding market, but a market of consumers desiring products of quality. Foreign competition will be encountered but also so will foreign markets with lessening wage differentials and increasing standards of living. They will be bidding for quality seafood products of which Petersburg has its share.

Under the conditions of increased population, higher levels of income and standards of living, and increased demand for protein on a world basis, the long run markets for the quality seafoods caught and processed in Petersburg appear extremely good if there is suitable quality emphasis and control, plus advertising to carry the message.

Bottom fish are an unexploited Alaskan resource of high quality that could offer year round employment. An Alaskan plant would have to guarantee a high quality product of dependable supply at competitive prices. Competition could come not only from the bottom fisheries in the Lower 48 but from foreign producers. With the advent of blocks and fillets, the U. S. producers have been outstripped and a huge new market for large scale foreign producers has been provided (see Figure 5). However, the costs of foreign producers are rising somewhat faster than those in the U. S. The principal advantage of the foreign producer at present is in lower wages, a vertically integrated industry that has a very efficient operation and in most cases an industry subsidized by its respective government.

To compete, the bottom fishing organization must be of sufficient scale and effective structure to permit efficient production. Concentration would have to be on frozen fillets and individual quick frozen until such time as dry freeze, "vac-pac" or irradiation takes place. These processes, when in full operation within the industry, will serve to change it in their turn. In any case, automation in the form of mechanical filleters and similar machinery is a must to be competitive.

FIGURE 5



RELATIONSHIP OF UNITED STATES POPULATION TO FOOD FISH CATCH
AND IMPORTS, 1935 - 1964

Source: Charles H. Lyle, "Fisheries of the United States, 1964", C.F.S. No. 3800,
BCF, F&WS, USDI, April 1965, p. 31

The best markets for bottom fish seem to be the Midwest, Pacific Coast and Southwest respectively. The Pacific Coast market has always been convenient and through this market the rest of the country has been provided with Alaskan fisheries products. However, the opening of the Stikine Highway up the Stikine and Iskut Rivers with a connection to the Watson Lake - Stewart Highway to Hazelton, offers the possibility in the future of economically bypassing Seattle markets and delivering directly to the Midwest by road. Regardless of the speed of the road development, favorable rates by water or over the ferry system by truck should be available to service the same market. Another market that would assist would be the inclusion on the Defense Subsistence Supply Agency list.

In summary, bottom fishing would be a completely new industry in Alaska with many unknowns and their attendant problems. However, the prior absence of this industry could prove a distinct advantage. Traditional methods would not be imposed by small scale vested interests. It is possible to institute technological and operational improvements which could make the proposed bottom fishing industry as efficient as foreign producers. Harvesting and processing would have to become increasingly vertical in structure. Larger vessels with more modern devices for handling and storing fish and processing plants that are fully automated producing an easy to heat, easy to serve product would be a necessity.

In conclusion the Wolf Management Services' study of a proposed Alaska bottom fish industry stated:

"Researchers found wide interest among midwestern processors in assuring a reliable source of supply of high quality fish. If by arrangement with a processor a regular market channel could be developed, investment in vessels and shore plant might then become feasible and profitable."

Since the last census, average yearly employment in fishing and fish processing has ranged roughly between 200 and 250 persons. The salmon season extends from June to September with Dungeness crab capable of being taken from March to November. The two seasons conflict but a shift is made from crab to salmon in some of the plants during the height of the salmon season. Shrimp is capable of being fished the year round, weather permitting. The utilization of this range of fisheries products permits a year round operation with the exception of the more severe winter months. However, to maintain reasonably stable year round employment in Petersburg's fishing industry it would require entry into bottom fishing at an appropriate scale.

It is forecast that in both fishing and fish processing combined, employment will fluctuate around current levels. Refinement of the products, increased diversification, and emphasis

on quality, which normally require additional employment, will be overcome by technological advances in the industry and increased catches per man with larger improved equipment. If a bottom fishing industry should be established in Petersburg, it is estimated that an additional 100 to 250 full time employees would be added by 1985. A concerted continuous effort should be made to obtain a federal demonstration grant for the establishment of a pilot plant for a bottom fishing operation.

Calculations to determine the maximum total employment in both 1975 and 1985 assumed the establishment of a bottom fishing industry. However, in an attempt to be conservative, the "most probable" estimates of employment disregarded the establishment of a bottom fishing industry.

WOOD PROCESSING

Logging and wood processing will give added strength to Petersburg's economy in the future. At present between 200 and 250 loggers operate in the Petersburg trading area. Though the community's economy benefits by providing goods and services to most of this outlying employment, only about 45 percent of these loggers actually live in Petersburg. The Mitkof Lumber Company, the one mill in Petersburg, saws cedar for boats, fish boxes, home building and other local uses. The mill requires only a small portion of the logs cut in the Petersburg-Wrangell Working Circle, and most of the logging out of Petersburg supplies the two sawmills at Wrangell and the pulp mill at Sitka.

It is highly probable that in the near future a new mill or mills will locate in Petersburg. Several factors support this prediction. Petersburg is located with good accessibility to two new timber sale areas in Southeastern Alaska. By April, 1966 the Forest Service will sell 250 million board feet of timber in the Hamilton Bay area, a region which has an unusually high proportion of high quality timber suitable in producing lumber and veneer.

To the north of Petersburg, in the Juneau Working Circle, the Forest Service has just completed the largest timber sale in the history of forest development in Alaska. In December, 1965 the St. Regis Paper Company of New York purchased the right to cut 8750 million board feet of timber over the next 50 years. The company will establish the third major pulp mill in Southeastern Alaska. This mill will be at least as large and probably larger than the mills at Sitka and Ketchikan. A mill of this size would directly employ about 675 persons at the mill and as contract loggers.

There is some possibility that this new pulp mill will locate in Petersburg. The community has several outstanding advantages which will enter into the company's choice of a site. Most important, within the planning period Petersburg will probably be connected by road to the continental highway system. This link will permit economies in transportation costs both for the mill itself and for employees living in Petersburg. A second advantage of Petersburg as a pulp mill location is the fact that the community is centrally located in relation to logging activities throughout Southeastern Alaska, as well as being adjacent to the new sale area. This feature would put a mill in an advantageous position for purchasing logs from independent companies in the surrounding area and also would facilitate exchange of logs with sawmills in Wrangell. In addition, Petersburg has a more than ample supply of inexpensive City-owned land for home building and is pursuing an aggressive development program, which includes improvement of schools, recreational facilities, water and power supplies.

At the time of this writing there is a great amount of speculation as to where the St. Regis Paper Company will locate. The Juneau-Douglas area and Yakutat have also been proposed as possible sites. Of the three communities, Juneau-Douglas is generally considered to be the most probable location, principally because of the scale of its existing facilities. However, from a long run standpoint, Petersburg is perhaps the best location.

In the interests of conservatism, the population prediction in this report was based on the assumption that the pulp mill will not locate in Petersburg. Should this assumption prove false and the mill locate in Petersburg, the employment prediction in this report should be revised upward by 1,075 jobs, 675 of which will be at mill employment and contract loggers. The population estimates should be revised upward by about 3,000 persons. 1/

Even if the third pulp mill is located in the Juneau-Douglas area and not in Petersburg, the economic benefits to Petersburg will still be substantial. The new pulp mill will probably double the logging in the North Tongass. Since Petersburg is directly to the north of a large section of the new sale area and since the new mill will probably purchase a portion of its log requirement from independent companies operating outside the sale area, logging based in Petersburg will be substantially increased after the mill starts operating in 1971.

1/ This prediction is based on the assumption that the mill will be of a size utilizing between 175 million and 200 million board feet annually. Growth experience in both Sitka and Ketchikan was used to estimate direct and indirect employment and total population which would result from the mill.

It is forecast that loggers operating out of Petersburg will be increased by 80 to 100 as a result of the establishment of the new mill.

As another direct benefit to Petersburg's economy, the new pulp mill, even though it may be located in the Juneau-Douglas area, should encourage the establishment of a sawmill and/or a peeler plant at Petersburg. Logging for the new pulp mill will greatly increase the supply of high quality logs which are available in the region. Under the U. S. Forest Service regulations all logs in a stand, whether suitable for pulp or timber, must be taken when an area is cut and the highest and best use be made of the timber. For this reason lumber and pulp mills in Southeastern Alaska exchange and sell logs so that saw timber may be put to its most profitable use. Thus increases in logging for pulp companies have the effect of increasing the supply of saw logs which may be obtained by sawmills and veneer plants.

The timber sale near Kake in the Hamilton Bay area which is planned by April, 1966 will also be an incentive to the establishment of sawmills and veneer mills in Southeastern Alaska and particularly to nearby Petersburg. Timber in this area is reported to have an unusually high proportion of logs which are suitable for the production of nonfibrous products. On an overall basis, between 20 and 25 percent of the timber in the commercial forest of the North Tongass is suitable for use in sawmills and as peeler stock. Forest Service bureau grade statistics indicate that between 1959 and 1963 an average of 32 percent of the spruce logs cut in the North Tongass were suitable for saw milling and about 11 percent of the hemlock was of a grade suitable for use as peeler stock. About 70 percent of the timber in the Petersburg-Wrangell district is hemlock and about 30 percent is spruce.

Recently several companies have shown an active interest in establishing mills for nonfibrous wood products in Southeastern Alaska. A shipment of logs was sent to veneer plants in Washington where tests will determine the quality of Alaskan logs in peeling operations. In addition, several out-of-state operators have been inspecting the timber in the Hamilton Bay area.

As stated previously, in the interest of conservatism, the employment and population predictions have been based on the assumption that the third pulp mill will not locate in Petersburg. Given this assumption, future employment increases in wood processing industries in Petersburg will be caused by a combination of growth in local logging employment and by employment in new lumber and veneer mills locating in Petersburg. It is forecast that by 1985 between 50 and 130 new mill employees will be added to the community and that local logging will have increased by 80 to 100 jobs. Much of this increase is expected to occur within the next decade. For the purpose of estimating employment it was assumed that one lumber or veneer mill with attendant logging operations would locate in the Petersburg area before 1975 and that an additional lumber or veneer mill would be present before 1985.

TABLE 6
 FOREST INVENTORY
PETERSBURG-WRANGELL WORKING CIRCLE

Approximate Acreage in National Forest:	3,286,600
Accessible commercial forest land:	739,600
Inaccessible commercial forest land:	289,600 <u>1/</u>
 Volume in Thousands of Board Feet:	
Accessible commercial forest land:	23,299,564
Inaccessible commercial forest land:	9,801,207
 Annual Allowable Cut: (Millions of Board Feet)	
Accessible commercial forest land:	201,000
Inaccessible commercial forest land:	83,000
 Sustained Yield Capacity: (Millions of Board Feet)	
Accessible commercial forest land:	357,920
Inaccessible commercial forest land:	149,140

1/ The accessible and inaccessible land does not equal total land in National Forest because there is some non-forest and non-commercial forest land.

Source: United States Forest Service, Division of Timber Management, Juneau, Alaska.

TABLE 7

PRESENT AND PREDICTED LOCAL UTILIZATION OF TIMBER
PETERSBURG - WRANGELL WORKING CIRCLE

	Millions of Board Feet
	<hr/>
Approximate Present Utilization	
Pulp	60,000
Lumber	50,000
Probable Future Utilization 1970	
Pulp	70,000
Lumber	60,000
1980	
Pulp	100,000
Lumber	100,000

Source: United States Forest Service, Division of Timber Management, Juneau, Alaska.

MINERAL EXPLORATION AND DEVELOPMENT

Though there are no known mineral deposits of commercial value in the immediate vicinity of Petersburg, several of the outlying mineral deposits will have an economic impact upon the community. By far the most important among these are the massive copper deposits in British Columbia at Galore Creek near the junction of the Iskut and Stikine Rivers. Exploration and preliminary development planning at the Canadian site has already created approximately 250 jobs in the Stikine River area. Wrangell, which is closer to the mouth of the Stikine, is presently benefitting from the increased use of its transportation and service facilities, with Petersburg serving as an alternate depot.

This potential operation is of a magnitude which will support a new town at the location of the mining and smelting operation. Though no definitive information on the size and quality of the deposit has been released, some unofficial statements report that there is as much as 100,000,000 tons of ore averaging 2 percent copper. Other statements report 500,000,000 tons of ore with an average of 1.5 percent of copper. It has been predicted that operations at these deposits will employ about 700 mine workers and 200 smelting plant workers annually. Though this estimate is preliminary, it is an indication that the mine and smelting plant will accelerate the population of the surrounding region. If 900 persons are directly employed, the operation would eventually add about 540 secondary employees in trade, services and other occupations and, together, these increases in employment would bring a new population of approximately 3,600 into the region.

There has been much speculation concerning transportation from the mine site. A narrow gauge railroad along the southern bank of the Stikine to a deep water port on Crittenden Creek is a possibility, as is trucking along the proposed Stikine Highway either on the Wrangell spur to Crittenden Creek or to the southern part of Mitkof Island. If a port were established along the southern part of Mitkof Island, Petersburg would be the primary center of trade and service used by employees at the port. If, instead, the shipments are through Crittenden Creek, Petersburg will still receive some economic benefit from increased trade and service needs generated by this major operation.

A deposit of barite is located on Castle Island on the Duncan Canal 15 miles southwest of Petersburg. Reserves are an estimated 30,000 to 50,000 tons above high tide. The commercial value of this tideland deposit is enhanced by its easy accessibility by water. Barite is valuable as an input in oil well drilling operations, and with the rapidly expanding drilling in south central Alaska, the commercial attractiveness of this deposit has reached the point where mining is feasible. The Alaska Barite Company of Tacoma, Washington has resumed mining operations, with the first shipment to the Alaskan oil fields scheduled for August, 1966.

Projection of mineral development in an area is highly speculative and forecasting employment and population resulting in Petersburg on the basis of such projections is equally hazardous. It is forecast that mining employment will not reside in Petersburg. However, mining employees in the vicinity of Petersburg, who will use this City as their principal source of trade, transportation and services, are forecast to be between 30 and 120 by 1985.

TOURISM

The future Stikine-Iskut Highway linking Petersburg with the continental network of highways will dramatically change the amount and type of tourist travel through Petersburg. Since this highway will probably be the only land route into central Southeastern Alaska, completion will make Petersburg a major terminal for persons embarking on and debarking from the Alaskan Ferry System. Petersburg will assume a function as a terminus similar to that of Prince Rupert and Haines.

As is shown on the map of regional transportation, the highway to Petersburg will connect with the Alaska Highway and, in the long run, will connect with the highway from Hazelton to southern British Columbia and the West Coast. This new route will permit much greater variety, flexibility and convenience in travel through Southeastern Alaska. For instance, tourists from British Columbia and the West Coast will be able to take a short circular trip traveling through Prince Rupert and Petersburg by ferry and back by land on the new highway through Hazelton and southern British Columbia. As an alternate, the tourist could travel to Petersburg on the ferry and then drive to the Alaska Highway and take the longer route either to Alaska or back to the main part of the United States. With the connection to Hazelton, persons traveling north or south via the ferry and highway will be able to shorten the time spent in traveling by using Petersburg rather than Prince Rupert as the southern terminal of their ferry trip and by spending a greater proportion of their traveling time on the road. The trip from Petersburg to Hazelton would take approximately 10 hours via the Stikine-Iskut Highway as opposed to a minimum of 22 hours via the ferry and the highway from Prince Rupert to Hazelton.

A second change in the region's transportation routes which will have a major impact upon tourism in Petersburg will be the opening of British Columbia's Kelsey Bay-Prince Rupert ferry route linking Prince Rupert with Kelsey Bay on northern Vancouver Island. This ferry will make one one-way trip per day between Kelsey Bay and Prince Rupert taking 18 hours for the run. By providing a luxury ferry service connecting with the Seattle, Vancouver and Victoria areas, this new system will inevitably accelerate the use of the Alaskan ferry sys-

tem and, hence, will strengthen the economic impact of tourism in Petersburg and other Southeastern communities.

The use of these two new major routes from British Columbia to Southeastern Alaska will be intensified by the fact that Canadian tourism in Alaska is expanding rapidly. Between 1963 and 1964 the proportion of Canadian tourists in Alaska increased from 5 to 15 percent. Not only is Canadian tourism being accelerated by greater prosperity and leisure, but the new Trans-Canada Highway is attracting Canadian tourists to British Columbia and, hence, to Alaska.

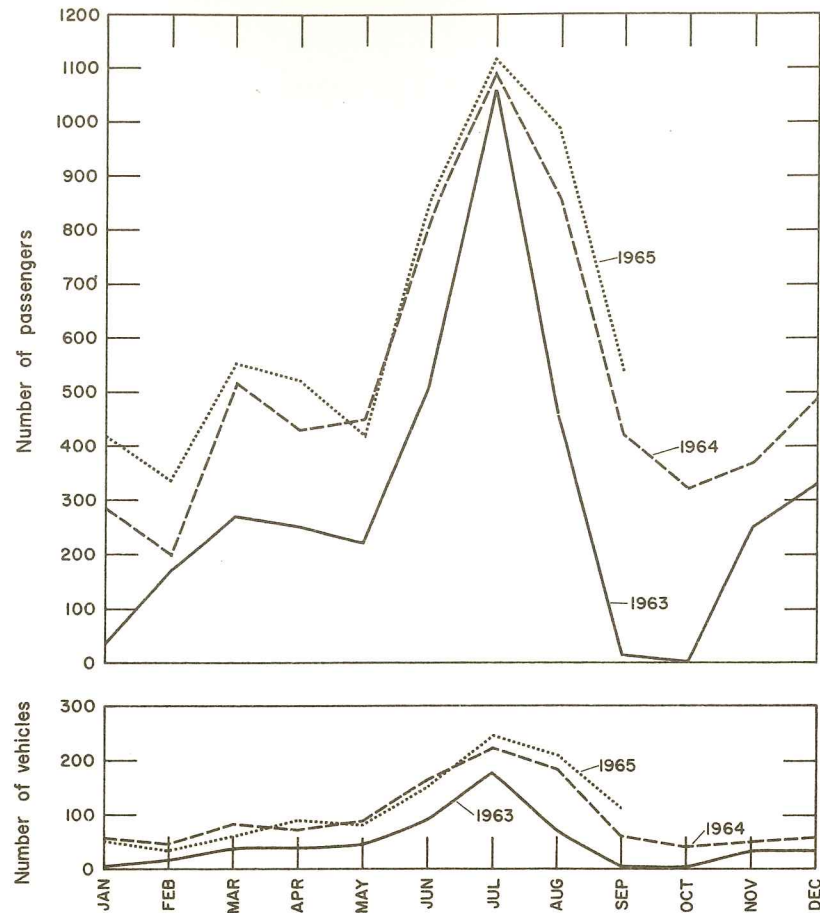
Because of these changes which are forthcoming in the region's pattern of transportation and because of a continuing rapid increase in tourism in Alaska, it is forecast that tourism will be a major source of economic growth in Petersburg. On a nationwide basis the recent increase of tourism has been nothing less than phenomenal and, because of tourism, a new dimension has been added to the economy of many areas. Increases in disposable income, population and leisure time together with the greater ease of transportation and the increase in the proportion of older retired persons, have acted together to create a booming national tourist industry. Demand has been particularly strong for those types of recreational facilities such as national parks and forests in which the natural landscape is a predominant attraction. Resources for the Future estimated, in a recent study of the future uses of America's resources, that by the year 2000 visits to such areas will be thirteen times the present level.

Since Alaska is rich in natural beauty and wildlife and in opportunities for sport fishing and hunting, it stands to realize large benefits to its economy from tourism. The Southeastern ferry which offers a unique and leisurely means of travel is a tourist attraction in itself.

Projections of the role of tourism in Alaska's economy are agreed in their optimism. The Division of State Planning has predicted that tourism in Alaska will have attained a level by 1980 that will directly add 14,600 new jobs to the economy. The University of Alaska in a study by the Institute of Business, Economic and Government Research forecast that tourists visiting Alaska will increase from 75,000 in 1964 to approximately 450,000 by 1975 and 650,000 by 1980.

During the recent past Petersburg has been participating in this tourist increase. The total number of ferry passengers disembarking in Petersburg was 73 percent higher in 1964 than in 1963. Also significant is the fact that since the inception of ferry service, there has been an increase in the usage of the ferry in the off-season months of winter, spring and fall (see Figure 6).

FIGURE 6



NUMBER OF PASSENGERS AND VEHICLES
DISEMBARKING FROM ALASKA FERRY SYSTEM
AT PETERSBURG
1963-1965

Source: Alaska Department of Public Works, Division of Marine Transportation

TABLE 8

ALASKA FERRY SYSTEM PASSENGERS DISEMBARKING AT PETERSBURG

	<u>1963</u>	<u>1964</u>	<u>1965</u>
May	220	455	420
June	516	820	857
July	1060	1094 <u>1/</u>	1118
August	454	780 <u>1/</u>	986
September	8	420 <u>1/</u>	540 <u>2/</u>

1/ Distribution of three month total estimated by Alaska State Housing Authority.

2/ Estimated from partial information.

Source: Alaska Department of Public Works, Division of Marine Transportation.

TABLE 9

USAGE OF SOUTHEASTERN SYSTEM
1964

	<u>Prince Rupert</u>	<u>Ketchikan</u>	<u>Wrangell</u>	<u>Petersburg</u>	<u>Sitka</u>	<u>Juneau</u>	<u>Haines</u>	<u>Skagway</u>
Passengers on	20,679	15,180	4,734	6,004	4,876	21,831	18,370	10,183
Passengers off	21,971	14,787	4,785	6,189	4,731	23,085	15,534	10,275
Vehicles on	4,978	2,873	679	962	810	4,701	5,007	1,275
Vehicles off	5,059	2,989	869	1,117	1,054	4,891	4,080	1,325

Source: Traffic Quarterly, Volume XIX, No. 3, July 1965, p. 368.

Petersburg's attraction for tourists lies in its spectacular surrounding scenery, its charm as an unusually well kept and well ordered fishing village and in the excellent opportunities for camping and sport fishing and hunting which are readily available. The surrounding woods and mountains abound in deer, brown and black bear, moose and goats, while some of the world's best bird hunting is available on the flats of the nearby Stikine River. Halibut and salmon provide excellent fishing and clams are abundant. At some times of the year Dolly Varden and cutthroat trout may be caught. Charter trips are available to nearby fiords and glaciers and to areas rich in seal, whale and other marine wildlife. Le Conte Glacier near Petersburg is located farther south than any other active glacier on the North American continent. Under its policy of multiple use development, the U. S. Forest Service has provided several camp grounds and picnic and recreation areas in places of outstanding scenery and recreational value. Visitors can tour interesting crab, shrimp, halibut and salmon processing plants or inspect an experimental fur farm on the outskirts of Petersburg.

The major changes which are forthcoming in Southeast Alaska's pattern of transportation will not only cause overall increases in tourism but will also increase Petersburg's share. As shown in Table 9, Petersburg presently receives a minor share of the traffic brought into the region by the ferry. However, by 1975 after the completion of the Stikine-Iskut Highway linking with the Alaska Highway, it is projected that 13 percent of Alaskan tourists will visit Petersburg. By 1985, after the link to Hazelton is completed, about a quarter of all Alaskan tourists should pass through Petersburg. A translation of this forecast into new employees indicates that tourism will directly add about 10 new employees to Petersburg's economy by 1975 and an additional 35 new employees should be added by 1985.

PEAT

The processing of peat is an economic possibility which should be investigated in the Petersburg area. Wolf Management Services in their report Investment Opportunities in Southeast Alaska, suggested that a peat processing mill run as a seasonal operation might be feasible in this area, on the basis of the apparently abundant local supply of peat moss and the large amounts imported into the United States, principally from Canada, but also from Germany, Sweden and the Netherlands.

Peat improves the water-holding capacity of most soils and gives better physical structure to fine soils. Consequently, it is used extensively by commercial nursery operators, especially for specialty crops, and by home owners for general soil improvement purposes.

The peat in the vicinity of Petersburg is acid in character. Acidic peats are used either to improve the growth of acid-loving plants, or they can be neutralized with ground limestone for more normal plant demands. It was suggested that berry cultivation might be practised in association with a peat processing industry in this area. Cranberries and blueberries could be planted in the lower peat strata after the top section had been removed for processing, which would broaden the scope of the proposed industry.

However, there is much research to be done with regard to market demands for this type of peat, the size of the local supply and its quality. Good transportation facilities are vital for such an industry. Major domestic producers are Michigan, Indiana, California and Washington, which have an initial advantage of being much closer to the market. A peat processing industry is not forecast to develop in this area before the close of the planning period, but should be kept in mind as a possible future resource.

MINK

The Petersburg area is particularly well suited to the establishment of fishery-related industries. Its attractiveness lies in the wide range of fishery products manufactured locally, and in a fishing season ranking as one of the longest in Alaska. A mink food processing industry in association with a mink raising industry could benefit from Petersburg's locational advantages.

The presence of the Experimental Fur Station approximately 8 miles south of Petersburg on Mitkof Highway, makes a mink industry additionally attractive for this area. The Station was established here in 1937, and is now primarily concerned with mink research and breeding. Although its future is somewhat uncertain, due to the anticipated withdrawal of Federal support in June of 1966, its personnel could be of enormous assistance in developing a mink industry in the Petersburg area.

The establishment of a modern plant for the production of mink in the Petersburg area was recommended by the Governor's Report on the Findings of his Alaska Fish Industry Modernization Task Force, in November, 1965. Mink production can be a highly lucrative industry provided that operating costs are kept in check by automation and production is of a sufficient volume. Because a modern automated plant is essential, it is not recommended that a mink production operation use the present Experimental Fur Station facility, even if it were vacated. Location in this vicinity, however, would be desirable as mink raising is not compatible with urban uses.

Close cooperation with the fish processing industry is essential for the success of a local mink raising industry. Fish products would comprise the main mink food ingredient, and the two industries have proved to be compatible in other areas. In the Petersburg area, close cooperation would be essential to keep down costs, as supplementary mink food supplies must be brought in from outside, while the fisheries industry would benefit from another element being added to its operations. Such an industry, if established near Petersburg, could serve as a model for future mink operations elsewhere in the State. The mink industry has been in decline in Alaska since the close of the trapping era. A successful operation in the Petersburg area could reverse that trend. However, employment in this industry group was not forecast to rise above that level presently maintained at the Experimental Fur Station during the planning period.

REGIONAL SHOPPING

Petersburg will strengthen its position as a regional shopping center for central Southeast Alaska. Besides the more obvious resource based industries and tourism, the purchase of goods and services from local enterprises will have a substantial impact on the economy of Petersburg. Petersburg's market will include shoppers as far west as Kake, extend north to Admiralty Island, reach to the east up the Stikine River and include Wrangell to the south. However, direct competition will be encountered with Wrangell for a good portion of this market which will develop rapidly as a result of the Juneau timber sale and the proposed sale at Hamilton Bay.

In regard to the timber sale areas, this City is geographically in an advantageous position. Also because of a logical development pattern, Petersburg has been able to maintain a concentrated shopping core which by Alaskan standards offers a reasonable degree of specialization and quality in goods and services offered. Another important factor in Petersburg's development is that although they have had fires in the shopping area, they have not in recent history had a fire that has destroyed a substantial portion of this area as has been the case in other Southeastern communities.

The majority of trade and service exports presently contributing to Petersburg's economic base are the transient fishing fleet, the logging camps in the Petersburg-Wrangell Working Circle and occasional shoppers from Wrangell and Kake. With the expansion of trade and services in Alaska, expenditures in this sector of the economy should be more than doubled by 1985, and with the proposed location of wood processing industries, logging camps and mining in the Petersburg area, it is forecast that approximately 20 employees will be added to the

basic sector of the Petersburg economy by 1975 and approximately 40 added by 1985.

FUTURE EMPLOYMENT AND POPULATION

METHODS OF FORECASTING

The Petersburg planning area which is defined as Mitkof Island and the eastern shore of Kupreanof Island is not well suited to two commonly used methods of population forecasting, yet well suited to a third. Past growth trends and rates of natural increase and migration are little indication of future growth in the Petersburg area. Petersburg's economy in the past has been based upon one major industry rather than a complex of smaller activities and employment and population has changed in the past relative to the general level of the fishing industry. Between 1909 and 1929, Petersburg's population grew at more than 6 percent per year. From this period until 1950, the rate of growth was 1.4 percent per year, and during the next decade, Petersburg's population began to decline at a rate approaching 1 percent per year. However, the entry of logging operations had its impact from 1960 to 1965, and it is estimated that since the last U. S. census, the Petersburg area has been increasing in population at more than 3 percent per year, resulting in a 1965 population of approximately 1,800. The entry of a wood processing mill will produce more drastic increases in Petersburg's population than can be forecast as a result of any gradual or continuing trend.

By the second method, the planning area is related to the larger region, and growth of the planning area is projected on the basis of the entire region. This method was rejected on the basis of Petersburg's strong differences from the economy of the Southeast region as a whole.

A third method of forecasting is well suited to Petersburg's individual characteristics. By this method major segments of employment in the area are studied on an individual basis and probable increases in each segment are forecast. From total forecast employment, predictions of future population are made by the use of a ratio between employment and population. Petersburg is well suited to this method because the few major employment sectors makes it possible to conduct a detailed analysis and forecast of each.

FUTURE EMPLOYMENT

The first step in forecasting future employment and population is to estimate the present amount of employment which depends upon funds coming from outside the local trade area. Because the Petersburg planning area is not a self sufficient area, it must import goods and services, and in order to pay for these, Petersburg must sell goods and services outside the local area. Hence, employment in export industries that bring money into the area from outside is, in a sense, the life-blood of the community's economy. It is this employment which provides the basis upon which other economic activities may be founded. The people whose work brings income from outside the local area are said to be basic, or primary employees.

Petersburg's basic employment is largely from industries involved with fish and timber. For practical purposes, all of fish and timber products are considered to be sold outside the local area, since only a negligible percentage would be retained for local use. Trade, transportation and services contribute to a lesser degree to the basic employment through tourism, regional shopping and similar activities.

From an analysis of Petersburg's economy, it was found that growth in logging and wood processing industries will provide almost 70 percent of the new basic employment by 1975. Close to 15 percent of new basic employment will be added by transportation, trade and services. Government employment, related principally to forest products, will contribute an added 8.5 percent (see Table 10).

Employment which provides goods and services to people within the community and which depends upon money circulating within the community is called secondary employment. Because there is a reasonably consistent ratio between basic and secondary employment during various stages of development, it is possible to use the forecast of basic employment and estimate secondary employment and, therefore, total employment. Generally older communities of a larger scale have a higher amount of secondary employment relative to primary employment than the smaller, developing communities. The current median national ratio between basic and secondary employment is about 1.0 to 1.5. In small isolated communities like Petersburg, the ratio usually approaches 1.0 to 1.0. However, when growth in basic industry occurs, there tends to be a lag in secondary employment. Presently Petersburg's ratio was found to be 1.0 to .6, but it is forecast that this ratio will be only 1.0 to .7 by 1985, because of sustained growth in basic industry.

There is a great range of possibilities in Petersburg's employment prospects. Besides the common assumption that there will be no major wars, natural catastrophes or severe reversals of past economic trends, the basic assumptions included in the "most probable" forecast were:

TABLE 10
ESTIMATED TOTAL, PRIMARY AND SECONDARY EMPLOYMENT DISTRIBUTION
PETERSBURG PLANNING AREA - 1964, 1975 AND 1985

	1964					1975					1985								
	Total Employment No.	Distribution	Primary %	Primary Employment	Secondary Employment	Total Employment Min.	Max.	Primary %	Total	Most Probable Distribution	Employment Primary No.	Secondary No.	Total Employment Min.	Max.	Primary %	Total	Most Probable Distribution	Primary No.	Secondary No.
COMMODITY PRODUCING INDUSTRIES																			
Mining	0					0			0				0			0			
Forestry, fisheries and non-classified establishments	52	8.5	100	52		50	200	100	55	5.9	55		50	200	100	55	4.3	55	
Forestry																			
Fishing																			
Non-classifiable																			
Manufacturing	251	41.0	100	251		325	450	100	390	41.9	390		350	550	100	475	37.4	475	
Fish Processing																			
Forest Products																			
Other																			
Construction	26	4.2			26	50	150	20	60	6.4	12	48	50	150	20	70	5.5	14	56
DISTRIBUTIVE INDUSTRIES																			
Transportation and Communication	64	10.5	20	13	51	70	125	25	75	8.0	19	56	75	150	30	100	7.9	30	70
Trade	101	16.5	15	15	86	125	350	20	155	16.7	31	124	200	500	20	250	19.7	50	200
Wholesale																			
Retail																			
Finance, Insurance and Real Estate	8	1.3	10	1	7	15	50	10	15	1.6	2	13	25	100	15	30	2.3	4	26
Services	23	3.8	15	3	20	35	150	20	60	6.4	9	51	100	300	20	140	11.0	28	112
GOVERNMENT	87	14.2	50	43	44	100	150	50	120	12.9	60	60	125	250	50	150	11.8	75	75
<u>Grand Total</u>	612	100%		378	234	770	1625		930	100%	578	352	975	2125		1270	100%	731	539

source: Alaska State Housing Authority

1. Future logging employment in the Petersburg-Wrangell and Juneau Working Circles would in part be serviced and in part reside in the Petersburg area.
2. Future wood processing mills will locate in the Petersburg area as a result of the recent timber sales.
3. Before 1985, the Stikine Highway will be completed with a connection to Hazelton.
4. The projection of future tourism by the Division of State Planning and the University of Alaska will prove reasonably valid and that Petersburg will continue to attract a proportionate share.

The proposed pulp mill was not included in this forecast. However, in calculating the maximum employment in 1985, secondary wood processing and bottom fishing were included in the employment model. The "most probable" employment, shown in Table 11, was derived based upon the assumptions outlined above.

TABLE 11
FORECAST OF EMPLOYMENT
PETERSBURG PLANNING AREA
1964 - 1985

	<u>1964</u>	<u>1975</u>	<u>1985</u>
Basic Employment	378	578	731
Ratio	1:.6	1:.6	1:.7
Secondary Employment	234	352	539
TOTAL EMPLOYMENT	612	930	1270

PAST POPULATION TRENDS

Prior to the founding of the City just before the turn of the twentieth century, the Petersburg planning area was largely uninhabited, except for a few scattered Tlingit Indian settle-

ments. With the establishment of Petersburg as a permanent settlement, in-migration of natives from these outlying villages occurred, and although numerically a small group, they formed 25 percent of the City's population in 1910. This percentage has since declined, due to increased non-native activity in the area.

The establishment of a small salmon cannery and sawmill sparked the City's initial development, and between 1900 and 1910, Petersburg's population jumped from 26 to 585 persons. Expansion and consolidation of the basic industry led to further rapid population increases until the end of the 1920's, and by 1929, the Petersburg area's population had risen to a total of 1,297, representing over 80 percent of the 1960 figure. Between 1910 and 1929, Petersburg's population increased almost 122 percent, at a time when Alaska's population as a whole was in decline, especially the central and interior areas, which lost almost 40 percent of their population during this period.

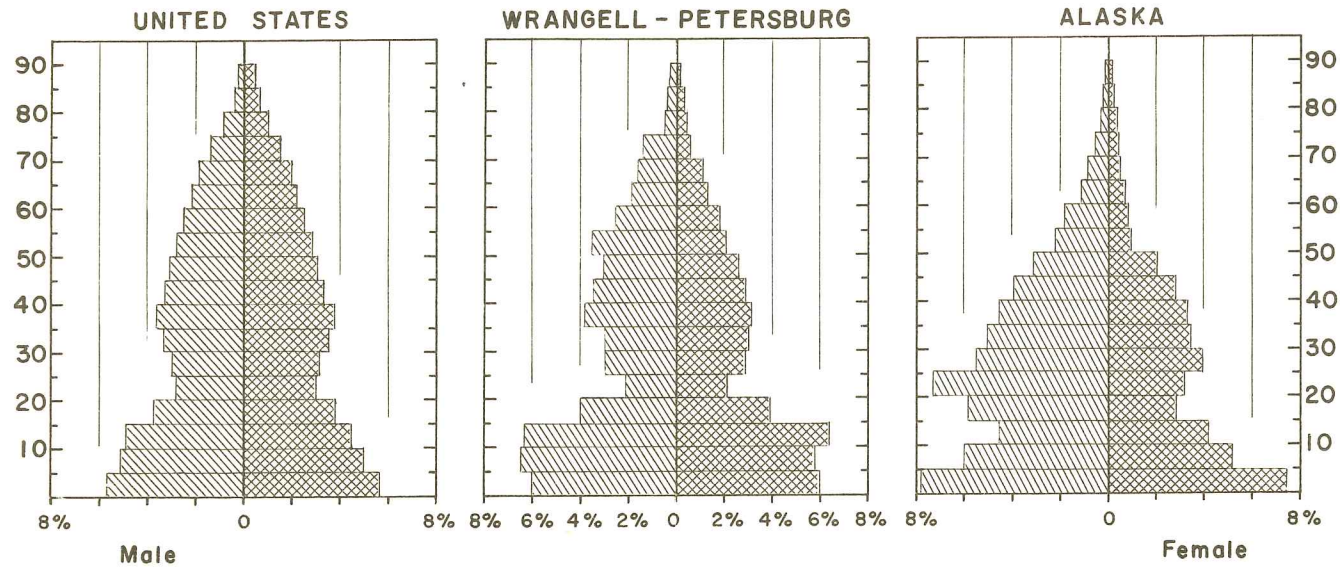
Since 1929, however, Petersburg's population has increased at a much slower rate, due largely to its heavy dependence on a resource offering only a limited growth in employment. Although the Depression years saw a nationwide drop in the birth rate, Petersburg had a gradual population increase which persisted until 1950, but between 1950 and 1960, an annual average decrease of almost 1 percent was registered.

PRESENT POPULATION

The population of Petersburg is both relatively stable and permanent. While the rate of population increase has been slow since the close of the 1920's, the City has never been the victim of the spectacular increases followed by equally spectacular decreases in population characteristic of many Alaskan communities. Rather, the well-managed fishing and fish processing industry on which Petersburg's economy rests, has encouraged over the years the continuance of a permanent core of population. The resulting population composition is consequently more mature, and closer to national than Alaskan norms. These relationships can be seen in Figure 7, which compares the population composition of the Wrangell-Petersburg District with that of Alaska and the United States as a whole.

While Petersburg's population composition is relatively mature by Alaskan standards, it does exhibit to a lesser degree several typical Alaskan characteristics. In Petersburg, males outnumber females and constitute between 53 and 54 percent of the total population. However, this percentage is lower than the State average, and does not approach the extreme disparities encountered in many Alaskan cities. Similarly, the high proportion of both males and females of school age and younger is typically an Alaskan phenomenon.

FIGURE 7



COMPOSITION OF POPULATION

Source: U.S. Census - 1960

The relatively small 20-25 age group reflects the limited employment opportunities for young persons presently available in this area, probably accentuated by the exodus of college students. That this group, especially the male sector, is unusually well represented in Alaska as a whole reflects not only differences in employment opportunities, but also the large number of military personnel stationed elsewhere in the State.

The proportions of middle-aged and older persons in the Wrangell-Petersburg District are very close to the national norm, indicating, together with the relatively normal proportions of other age groups, that Petersburg has a relatively stable and permanent population, many of whom have and will continue to make the City their lifetime home.

MAIN COMPONENTS OF POPULATION CHANGE

The dissimilar growth trends of Indian and white population sectors in Alaska have traditionally been the result of somewhat different circumstances. In the Petersburg area, the native population, after an initial drop between 1880 and 1890, increased at an almost constant rate until 1930, by which time the 1880 population level was once again reached. Since 1930, however, the Indian population in this area has remained almost constant, reflecting their difficulties in adapting to a new way of life. The major component of growth of the European-descended population on the other hand, has been in-migration following expanded economic opportunities.

Population has moved from the small outlying settlements to the larger towns. Although Petersburg's immediate hinterland has never supported a large population, Petersburg, Wrangell and the predominantly native community of Kake are now the only settlements with over 25 persons in the Wrangell-Petersburg District.

Although fishing and fish processing has been the major source of growth in the Petersburg area, the logging industry has also played its part since the early days, when a small sawmill was established. As previously emphasized, the major growth from this source lies in the near future with the recent timber sales in the Tongass National Forest, which will promote both increased and year round employment opportunities.

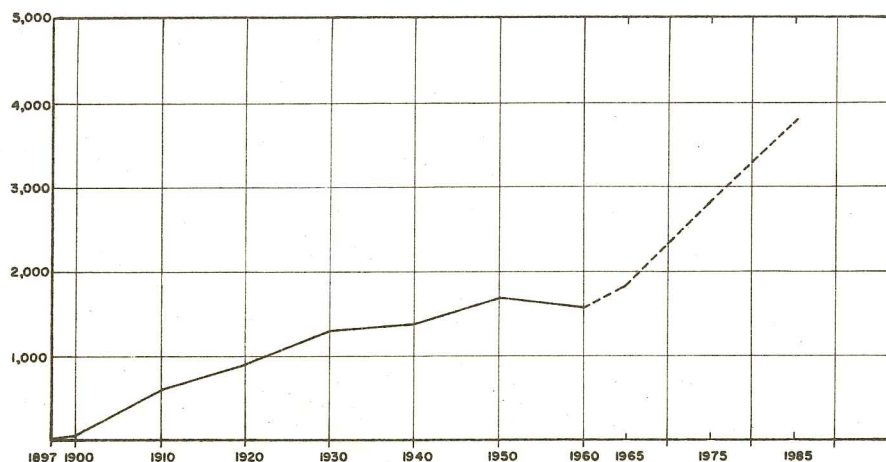
The forecast employment opportunities in the Petersburg area cannot be met by local natural population increase, and as a result, population from the Lower 48 and other areas in Southeast Alaska will be attracted to Petersburg.

FUTURE POPULATION

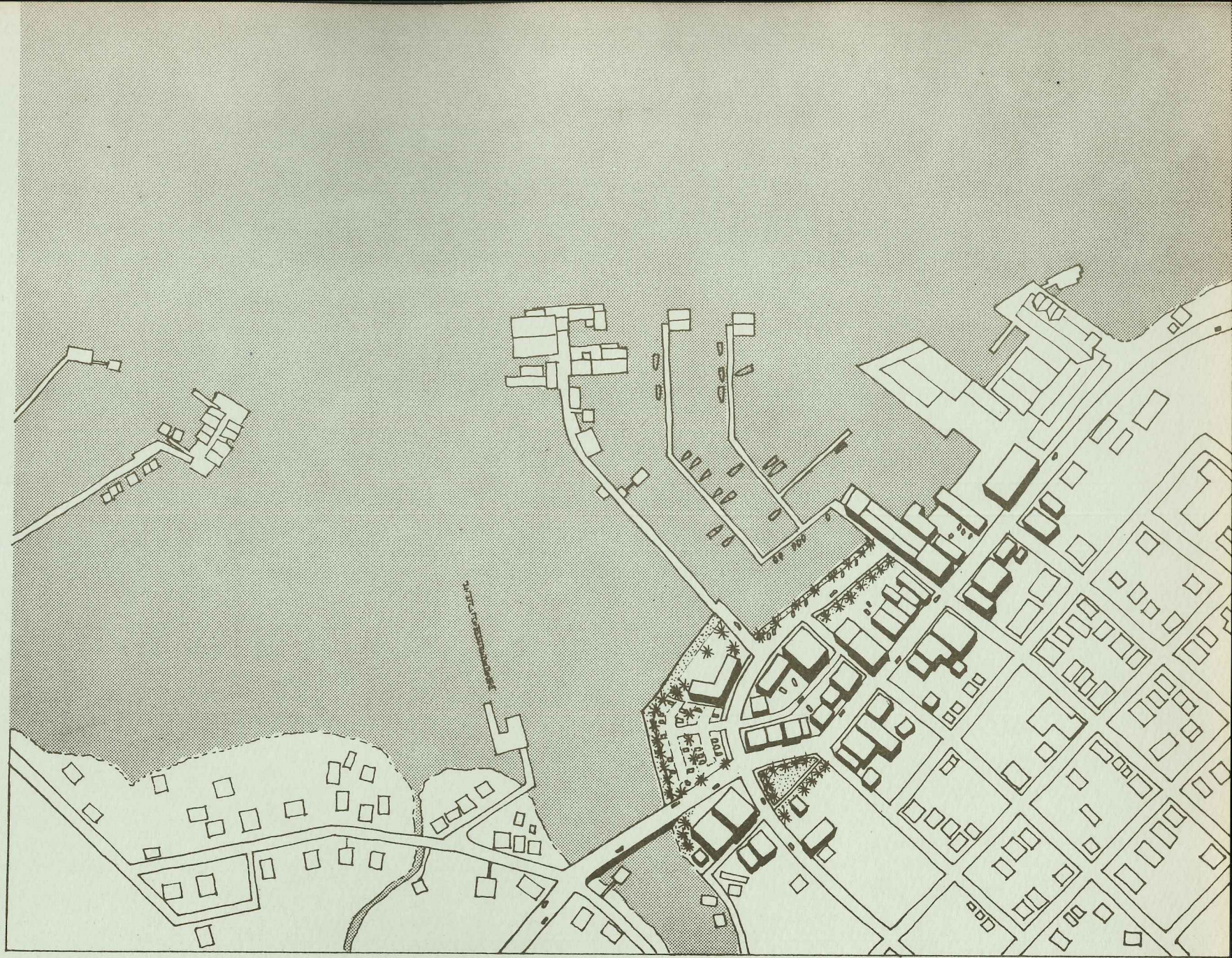
From the forecast of employment, future population may be estimated. Currently, there are approximately 3 people for every job in the Petersburg area. Because the population characteristics inherent in the industries forecasted to grow are little different from those that now compose Petersburg, it is assumed that this ratio will remain constant in the future. On this basis it is predicted that by 1975 the population of the Petersburg area will be approximately 2,800, and by 1985, it will range between 3,000 and 6,400, with the "most probable" population estimated to be approximately 3,800 (see Figure 8).

The "most probable" forecast is conservative. It is intended to show the impact of development which should naturally accrue to the City of Petersburg. However, Petersburg is as well prepared as any city in Southeast Alaska to accommodate development, and with fortuitous public and private decisions relative to location, the population could exceed 3,800 by 1975. The following plan and the accompanying capital improvements program are intended to show what must be prepared for to accommodate this "most probable" figure.

FIGURE 8



POPULATION 1897 - 1960, with FORECAST TO 1985
PETERSBURG, ALASKA



COMPREHENSIVE LAND USE PLAN

COMPREHENSIVE LAND USE PLAN

Petersburg is one of the few Alaskan cities which has maintained and promoted orderly growth. This City is a direct reflection of its basic function of providing fish products to the nation. As such, it is oriented around its basic industry which, by necessity, occupies the waterfront. The concentrated commercial area is behind the waterfront adjacent to the industrial area with the residential area fanning out from this concentration. The residential area is buffered from the commercial area by service and public uses and by a change in grade. Adjacent to the shopping area is the governmental center.

The City of Petersburg owns most of the vacant land bordering the developed area of the City. Through the City's prudent disposition, zoning and subdivision of this vacant land, Petersburg has been able to maintain orderly development. However, economic development and resulting increased population will place a greater demand upon Petersburg for developable land during the next generation than has been realized in the City to date.

A tabulation of Petersburg's land use shows that presently 155.9 acres of land and 41.9 acres of tideland are in use, resulting in a total developed area of 197.8 acres (see Table 12). It is forecast, that by 1975, Petersburg will have a total of 558.0 acres of land and tideland in use. The airport reserve, as defined by the 100 decibel jet limit of tolerable aircraft noise level, will consume another 362.0 acres. In 1985, the total land and tideland in use is forecast to approximate 615 acres (see Table 13).

COMMERCIAL DEVELOPMENT

EXISTING COMMERCIAL PATTERNS








Because of Petersburg's strong orientation toward the sea, the City's commercial district developed next to the waterfront adjacent to the public wharf and boat harbor. Before 1937 all transportation to and from Petersburg was by water and since that date shipping by water has

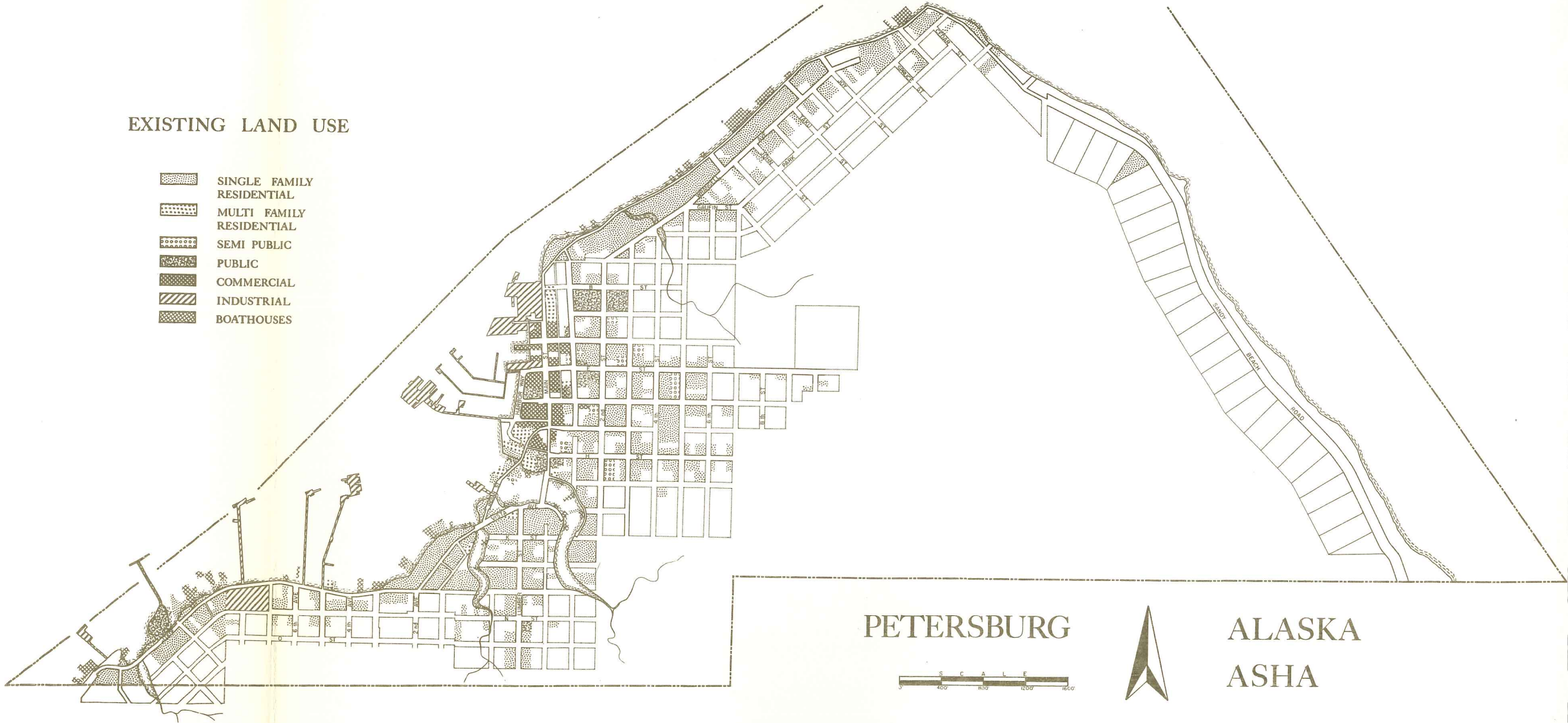
TABLE 12
EXISTING LAND USE
CITY OF PETERSBURG, ALASKA
1965

Land Use	Land	% of Total Developed Land	% of Total Land	Tideland Area	% of Total Developed Tidelands	% of Total Tideland Area	Land & Tideland Area	% of Total Developed	% of Total Area
Residential									
1 & 2 family	84.0	53.9	9.9	1.8	4.3	3.2	85.8	43.4	9.5
Multi-family	2.1	1.3	0.2	0.2	.5	.4	2.3	1.2	.2
Trailers	1.7	1.1	0.2	0	0	0	1.7	.8	.2
Boathouses	0	0	0	4.7	11.2	8.4	4.7	2.4	.5
Commercial	5.3	3.4	0.6	0	0	0	5.3	2.7	.6
Industrial	3.6	2.3	0.4	20.7	49.4	37.0	24.3	12.3	2.7
Public-Total	8.2	5.2	1.0	14.5	34.6	25.9	22.7	11.5	2.5
Schools	(2.1)	(1.3)	(0.2)	(0)		(0)	(2.1)	(1.1)	(.2)
Parks	(0)	(0)	(0)	(0)		(0)	(0)	(0)	(0)
Other Public	(2.7)	(1.7)	(0.3)	(14.5)	(34.6)	(25.9)	(17.2)	(8.7)	(1.9)
Semi-Public	(3.4)	(2.2)	(0.4)	(0)			(3.4)	(1.7)	(.4)
Streets	51.0	32.7	6.0	0	0	0	51.0	25.8	5.6
Vacant	693.1		81.6	14.1		25.2	707.2		78.1
Airport reserve	(362.0)		(42.7)				(362.0)		(40.0)
Other	(631.1)		(38.9)				(345.2)		(38.1)
<u>Total Developed</u>	155.9	100.0±	18.4	41.9	100.0±	74.8	197.8	100±	21.9
<u>Total Developable Area</u>	849.0		100.0±	56.0		100.0±	905.0		100.0±
Water Area (excluding tidelands)							<u>373.0</u>		
<u>Total Gross Area</u> (Acres)							1283.0		

Source: Alaska State Housing Authority

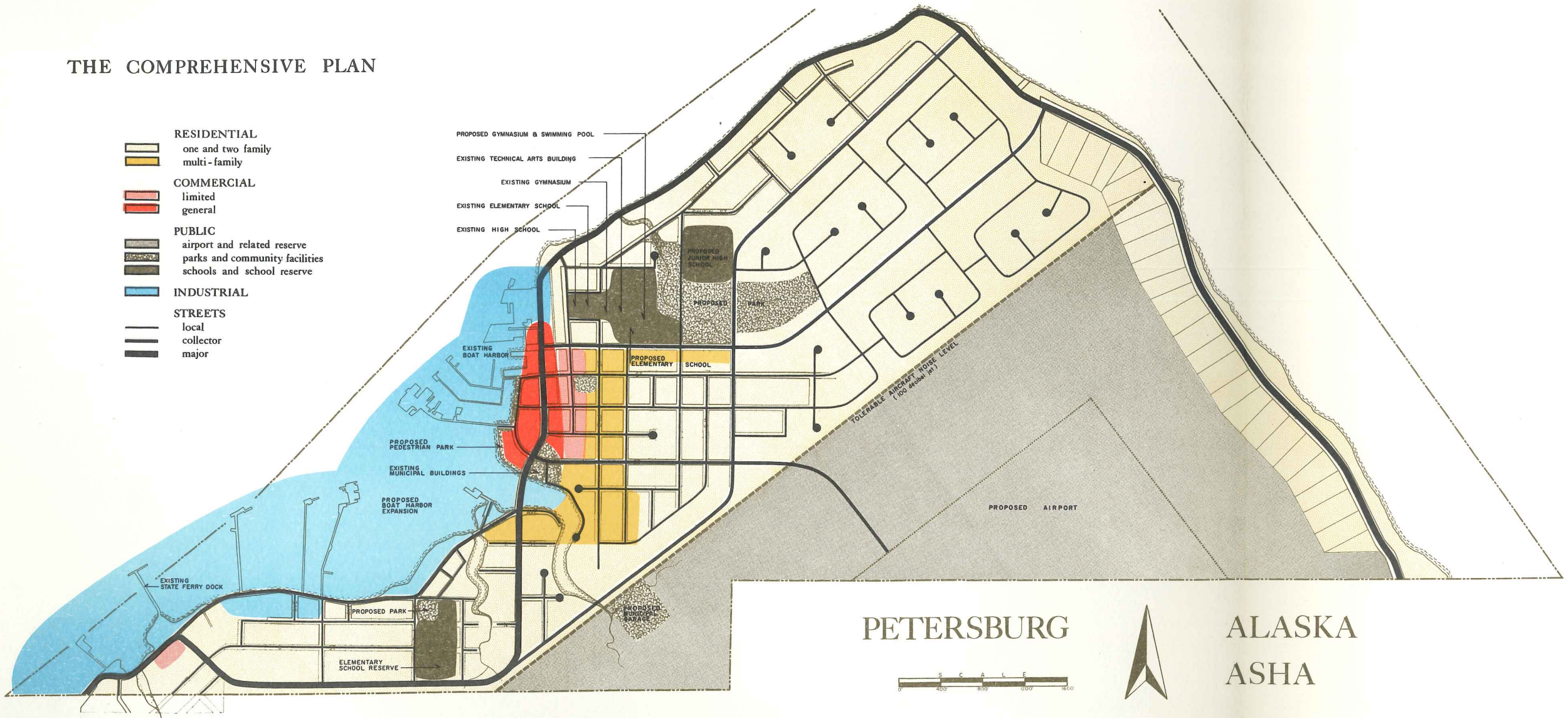
EXISTING LAND USE

-  SINGLE FAMILY RESIDENTIAL
-  MULTI FAMILY RESIDENTIAL
-  SEMI PUBLIC
-  PUBLIC
-  COMMERCIAL
-  INDUSTRIAL
-  BOATHOUSES



THE COMPREHENSIVE PLAN

- RESIDENTIAL**
 - one and two family
 - multi-family
- COMMERCIAL**
 - limited
 - general
- PUBLIC**
 - airport and related reserve
 - parks and community facilities
 - schools and school reserve
- INDUSTRIAL**
- STREETS**
 - local
 - collector
 - major



PETERSBURG

ALASKA

ASHA



TABLE 13
 LAND USE FORECAST TO 1975 & 1985
 CITY OF PETERSBURG, ALASKA

<u>Land Use (including tidelands)</u> (In Acres)	<u>1965</u>	<u>1975</u>	<u>1985</u>
Residential (including boathouses)	94.5	130.0	165.0
Commercial	5.3	7.0	13.0
Industrial	24.3	29.0	35.0
Public	22.7	392.0	402.0
Airport	(0)	(362.0)	(362.0)
Other	<u>(22.7)</u>	<u>(30.0)</u>	<u>(40.0)</u>
TOTAL	145.3	558.0	615.0

Source: Alaska State Housing Authority

continued to be the principal means of freight transportation. In addition, one of the main functions of Petersburg's commercial area has been to supply the fishing fleet. These reasons for keeping the City's commercial center close to the waterfront will also exist in the future and have been taken into account in the plan for future commercial development.

A strong central commercial area is a definite asset to a small community. Close competition between businesses encourages a greater variety in the kind of product offered to the consumer, and in the long run, a concentration of commercial uses promotes specialty shops. Ultimately these effects work to the benefit of both the retailer and the consumer because when a wider range of goods is available locally, a smaller proportion of the consumer's dollar goes to outside mail order purchases.

Petersburg's downtown has an excellent variety of goods and services to offer and the clustering of retail and service activities in this single area has promoted many specialty shops not found in cities of comparable size. The downtown is also convenient for its citizens. A variety of errands can be accomplished on the same trip. The shopping area is adjacent to the major sources of employment, the large canneries and the boat harbor, thus enabling shopping trips to or from work.

Petersburg presently has 5.3 acres of commercial land use representing 3.4 percent of the total developed area. This percentage is close to the average amount in United States cities. Often smaller cities of a size similar to Petersburg have a higher than average proportion of commercial land use because of the lack of concentrated development. Petersburg's "normal" proportion of commercial space may be attributed to its compact downtown shopping area.

On this 5.3 acres of commercial land, there are 3.0 acres of floor space associated with the commercial area. Included in this calculation are retail, service, all office and transient facility areas in an attempt to make a reasonably accurate forecast of space requirements in the downtown area.

A more detailed analysis was made of the larger retailing sector (see Table 14). Generally it was found that employees per square foot are reasonably consistent with the nation as a whole. However, a much greater portion of this floor space is devoted to storage and to a lesser extent, associated offices.

On the other hand, sales per square foot, even when net floor space is used, is in most instances far below what is demanded for most retail enterprises in the Lower 48. The total for all retailing in Petersburg is \$61.00 per square foot of net sales area, compared with retailing below, which requires two to three times this figure. However, the forecasted increased scale of the City along with expected increases in disposable income per person should enable the total retail sector to range around \$100.00 per square foot by 1985. The small scale of most Alaskan cities and the inventory and service to be provided at this scale tends to be responsible for this low sales per square foot figure. As a community grows, however, it enables existing enterprises to meet some increased demand without increasing existing floor space or existing employment, thus creating what can be referred to as excess capacity. This excess capacity was taken into account when the forecast of future space needs for the retail segment was made.

Services, offices and transient housing were forecast, as was retailing, by obtaining the gross area and employment for each particular enterprise. The gross floor area per employee was computed, evaluated in regard to present and proposed development, and standards were

TABLE 14
 RETAIL SPACE, EMPLOYMENT, & SALES INVENTORY
 PETERSBURG, ALASKA, 1965

<u>Kind of Business</u>	<u>Net Retail Area</u> (Sq.ft.)	<u>Gross Retail Area</u> (Sq.ft.)	<u>Employees</u> (No.)	<u>Sales</u> (\$)	<u>Gross Area / Employee</u> (Sq.ft.)	<u>Sales / Employee</u> (\$)	<u>Sales / Net Retail Sq. ft.</u> (\$)	<u>Sales / Gross Retail Sq. ft.</u> (\$)
<u>Convenience Goods</u>								
Drugs, Grocery and Other Foods ^{1/}	10,750	22,200	28	1,169,100	793	41,754	109	53
Liquor	1,100	2,500	8	159,500	312	19,938	145	64
Hardware, Filling Stations and Associated Uses ^{1/}	7,000	18,500	18	297,900	1,028	16,550	42	16
<u>Total Convenience Goods</u>	<u>18,850</u>	<u>43,200</u>	<u>54</u>	<u>1,626,500</u>	<u>800</u>	<u>30,120</u>	<u>86</u>	<u>38</u>
<u>Primary Shoppers' Goods</u>								
Apparel and Shoes ^{1/}	6,300	8,700	7.5	185,100	1,160	24,680	29	21
Variety and Other ^{1/}	6,200	9,850	6.5	168,400	1,515	25,908	27	17
<u>Secondary Shoppers' Goods</u>								
Furniture, Household Appliances and Furnishings	4,950	11,650	7	241,800	1,664	34,543	49	21
Eating and Drinking Establishments	6,100	7,600	26	356,200	292	13,700	58	47
<u>Total Shoppers' Goods</u>	<u>23,550</u>	<u>37,800</u>	<u>47</u>	<u>951,500</u>	<u>804</u>	<u>20,246</u>	<u>40</u>	<u>25</u>
<u>Total Retail Goods</u>	<u>42,400</u>	<u>81,000</u>	<u>101</u>	<u>2,578,000</u>	<u>802</u>	<u>25,525</u>	<u>61</u>	<u>32</u>

^{1/} Kinds of business combined to avoid disclosure.

Source: Alaska State Housing Authority Survey and City of Petersburg.

established. Space per employee was then related to the employment forecast for each particular kind of business (see Table 15).

It should be noted that this gross area per employee does not remain constant to 1985. For example, space required per employee in total convenience goods is forecast to decline from 800 to 750. This is based principally on the assumption that Southeastern trucking companies operating over the ferry system will be able to offer faster and more frequent service from the Lower 48 to Petersburg, thereby reducing the need for storage space.

In calculating the total acreage required for commercial, office and transient housing, it was forecast that a 1 to 1 parking ratio would be required for future development. For each acre of floor space added, an acre of parking will be needed. This is an extremely low ratio. It is based on compact community development with some continued walk to shop traffic and the recorded low level of current off street parking, although vacant land usable for off street parking is available in some instances. If all parking space in the downtown area is counted, there are 180 parking spaces. However, it was observed that approximately 40 unmetered on-street spaces on Main Street and adjoining side streets were most demanded by customers. Another random 40 spaces were in use, principally for all day off street parking. There is a definite need for more off street parking especially during the summer tourist season. The trucking which will in part replace steamship services will also require space. Additional building in the downtown area, especially in the proposed urban renewal area, should be accompanied by at least an equal amount of space devoted to parking, as well as an ample provision of parking for the City Hall complex.

The trend toward scattering of commercial development has begun. Petersburg has been able to limit commercial activity to a single area because the docks were its single source of supply. This situation has started to change, however, with related effects. The State Ferry dock built at the south end of the City generates a need for certain kinds of commercial activity. The City Zoning Ordinance has recently been changed to acknowledge this fact. The proposed highway connection to the mainland will have an even stronger effect.

THE PLAN FOR COMMERCIAL DEVELOPMENT

General Commercial Development

The plan for future land use recommends that the City of Petersburg retain a single concentrated area of general commercial development. The number of people dependent upon Peters-

TABLE 15
 COMMERCIAL, OFFICE & TRANSIENT FACILITIES WITH FORECASTS TO 1975 AND 1985
 PETERSBURG, ALASKA

Kind of Business	1965			1975			1985		
	Gross sq.ft.	Employment	Gross sq.ft. / Employee	Gross sq.ft.	Employment	Gross sq.ft. / Employee	Gross sq.ft.	Employment	Gross sq.ft. / Employee
<u>Convenience Goods Total</u>	43,200	54	800	58,500	78	750	82,500	110	750
Drugs	4,250								
Grocery and Other Food	17,950								
Liquor	2,500								
Service Stations & Accessories	1,800								
Hardware	16,700								
<u>Primary Shoppers Goods Total</u>	18,550	14	1,325	22,500	25	900	52,000	65	800
Apparel	7,450								
Shoes	1,250								
Variety	8,600								
Other	1,250								
<u>Secondary Shoppers Goods Total</u>	19,250	33	583	28,600	52	550	41,250	75	550
Furniture, Appliances, and Household Goods	11,650								
Eating and Drinking Establishments	7,600								
<u>Service Total</u>	14,000	26	538	31,800	67	475	60,000	150	400
Professional	4,150								
Personal	4,750								
Other ^{1/}	5,100								
<u>Office Total</u>	13,200	24	550	33,500	67	500	46,750	85	550
Governmental Services	11,700								
Other	1,500								
<u>Transient Facilities Total</u>	17,500	5	3,500	24,500	8	3,500	42,000	12	3,500
<u>Usable Vacant Total</u>	5,750	-		5,000	-		8,500	-	
Commercial	1,950								
Office	3,800								
<u>Grand Total</u>	131,450			204,400			333,000		
	3.0 Acres			4.1 Acres			6.7 Acres		
Present commercial, office and transient facilities land area including parking and assuming 1 : 1 parking ratio for all added space	5.3 Acres			7.5 Acres			12.7 Acres		

^{1/} Transportation sales offices included in Services

Source: Alaska State Housing Authority

burg's commercial district will not increase sufficiently in the next twenty years to support a second major shopping area. Therefore, future commercial development should occur in or near the existing downtown area in order to reinforce the existing advantages of the compact commercial district. One of these advantages is the continued convenience for Petersburg citizens as well as for tourists who typically like to walk through the downtown. In addition, the increased competition will result in a greater choice of goods as well as a greater number of specialty goods and services. A dynamic downtown district is attractive because it is lively and interesting.

In the immediate future, the need for commercial space can be met by developing and improving vacant land and buildings in the present downtown area. This will improve the continuity and the appearance of the shopping district. The vacant land with frontage on Harbor Way has a unique feature, a view of the boat harbor and Wrangell Narrows. Where possible this land should be developed to take advantage of the view. The scenic boat harbor is one of Petersburg's main tourist attractions, therefore, much of the development should be tourist oriented. For example, this is the ideal location for a restaurant designed to take advantage of the view. A pedestrian walkway is proposed along the edge of Harbor Way to extend around the proposed Harbor Way Urban Renewal project in the Indian Street area. This would improve the appearance of the area and increase the attraction for tourists.

Additional commercial land will be needed in the future. The Indian Street area is the most logical location for expansion of the commercial district. Wrangell Narrows eliminates the possibility of expansion to the west. Expansion to the north is restricted by topography and industrial development. Expansion of the central business district to the east is hindered by a reasonably sharp grade change which separates Main Street from First Street. In addition, many commercial uses would not be suitable to the First Street area as it borders on a residential district and is also near the hospital and schools. The Indian Street area is a natural extension of the Main Street area and there is no separating grade change. The existing street pattern will be altered by the new highway and the proposed urban renewal project, creating large commercial lots. Off street parking space should be provided in this area to meet needs which are forecasted within the planning period.

Limited Commercial Development

Two areas in Petersburg are recommended for limited commercial development. The First Street area is the largest and most significant. Limited commercial development in this area would serve as a barrier between the downtown business district and the residential district. Quiet commercial uses such as office space and motels are recommended for this area. Semi-public

uses such as civic clubs are also recommended. The second area of limited commercial development is located opposite the State Ferry terminal. This area will provide services to tourists and ferry passengers. Suggested uses are motels and associated restaurants and tourist-oriented shops. This area should be limited in size and function to those uses required by the ferry service and tourist trade.

INDUSTRIAL DEVELOPMENT

EXISTING INDUSTRIAL DEVELOPMENT

Industrial land uses in Petersburg are water-related. Such uses are primarily related to the fishing industry and are generally involved in either fish processing or boat building and repair. Because many of these industries have structures on tidelands over water, only 3.6 acres of land are in industrial use. On the other hand, 20.7 acres of tidelands are occupied by industrial structures. The greatest concentration of industry is along the Main Street waterfront close to the boat harbor and public dock.

The existing industrial development in Petersburg has many locational advantages. It is close to the labor supply, and employees can be assembled for work in a matter of minutes by telephone or plant whistle. This convenience of living close to work also eliminates the need for large parking areas at the plant. In addition, Petersburg's industrial development is close to the public steamer dock and boat harbor, a factor which reduces the need for shifting industrial supplies and products long distances within the community. Industrial land in Petersburg is on the principal highway, which makes trucking of goods reasonably convenient. Since existing industrial land is close to the commercial area, it is possible for employees to shop directly upon leaving the plant. Industrial development is also close to equipment supply houses and an adequate supply of water and power is provided by the City of Petersburg.

There are, however, some disadvantages to existing industrial location in Petersburg. The present development allows little space on the main highway for on and off loading and for admittance of trucks to the plants. This causes undesirable traffic congestion. New plants and additions to existing plants will be extremely expensive as they will have to be developed on piling over the water. Because of the scarcity of vacant land near the industrial buildings, there is little staging area for containerized or van shipping. In addition, in some cases industrial buildings on Main Street serve to break the continuity of the downtown shopping area.

FUTURE INDUSTRIAL SPACE NEEDS

In Petersburg, it is essential that most industrial land be on the waterfront. Not only must most supplies be shipped in by water and the finished product shipped out, but industrial wastes must be disposed of by dumping into a barge, treating or filtering the wastes before discarding them into the water. Most industries will also require a sheltered area, preferably a bay where logs can be stored or small boats can be anchored before being unloaded at the plant.

Depth is needed between the principal road and the waterfront. Both refrigerated trucking and containerized shipping require sufficient area so that the containers can be easily shifted and arranged for efficient transport. This orderly staging facility may eliminate the need for much of the warehousing space now required by the existing industries. Convenient road access is also a necessary feature of a good industrial location in Petersburg because there is often a need for ready access to related industries, service facilities and the ferry system. In addition, the total site area must be large enough to accommodate not only the original development of the potential industry, but its expansion and related industries that would logically locate adjacent to the principal industry.

Industries which are typical of the area have three basic site requirements. The land, itself, should be almost level preferably with less than a 5 percent slope. It should be able to support a structure containing heavy equipment or else piling or other foundation improvements should be installed. Finally, sufficient drainage is important. If natural drainage is insufficient, then storm sewers will need to be installed.

Both wood processing and fish processing industries require large quantities of fresh water. Assurance of an adequate water supply is essential to future development. In addition, draw down levels must be sufficient for fire fighting. Industrial power requirements are considerable. Therefore, it is vital that Petersburg has the electrical power needed to meet peak loads. The City and all industries must maintain a close relationship regarding future development plans, so that adequate utility services for industrial expansion can be provided.

THE PLAN FOR INDUSTRIAL DEVELOPMENT

Within the City limits of Petersburg, there is no vacant land which fulfills the requirements of large scale industrial development, such as the wood processing plants predicted for this area. Most industrial land within the City will be used for the expansion of existing industries and for the service industries which will develop to support the new primary industries.

Future large scale industrial development will occur elsewhere on Mitkof Island. Industries which require deep water shipping will find suitable locations on Frederick Sound. Some industrial locations exist to the south of Petersburg where there is sufficient land area between Wrangell Narrows and the Mitkof Highway for efficient operation. Sites on Wrangell Narrows are generally appropriate for industries which use barges for transporting the finished product. However, if the City of Petersburg is to supply these proposed industries with needed services, it would seem reasonable that it annex Mitkof Island so that new industry could share the burden of providing these services.

RESIDENTIAL DEVELOPMENT

EXISTING RESIDENTIAL DEVELOPMENT

The City of Petersburg has 543 housing units, 24 in trailers and 519 units in 454 permanent structures. Of the latter, there are 92 apartments in 30 structures, 6 housing units in 3 duplexes, and the remaining 421 units are single family houses.

TABLE 16

HOUSING INVENTORY

<u>Type of Unit</u>	<u>No. of Units</u>	<u>Percent of Total</u>	<u>Land in Acres</u>
Single family	421	77.5	85.5
Duplex	6	1.1	0.3
Apartment	92	16.9	2.3
Trailer	<u>24</u>	<u>4.5</u>	<u>1.7</u>
TOTAL	543	100.0	89.8

Source: Alaska State Housing Authority

All of the apartment units are in or near the downtown area and about one half of them are in the proposed urban renewal project area. Many apartments are in multiple use structures, i.e. a part of the building is in another use.

Single family houses are concentrated in the seven blocks to the east of the business area and along the coast to the north and south. In general, residential development is reasonably compact, the result of logical growth forced by the necessity to build near an existing road. For this reason, Petersburg has avoided haphazard, spotty development. In the future as in the past, Petersburg can control its own expansion by controlling new road building along with the disposition of City owned lands..

Of a total of 519 residential buildings in Petersburg, 153 are in above average or good condition, 155 are in average condition and 139 are in below average or poor condition. In terms of housing units, there are 156 units in good condition, 172 in average condition and 191 units in below average or poor condition.

TABLE 17

CONDITION OF RESIDENTIAL STRUCTURES

<u>Condition</u>	<u>No. of Buildings</u>	<u>Percent of Total</u>	<u>No. of Housing Units</u>	<u>Percent of Total</u>
Good	153	33.7	156	30.0
Average	155	34.1	172	33.1
Below Average	61	13.4	67	12.9
Poor	<u>85</u>	<u>18.7</u>	<u>124</u>	<u>23.9</u>
TOTAL	454	100.0	519	100.0

Source: Alaska State Housing Authority

These figures indicate a rather high percentage of housing units in buildings of poor condition. However, Petersburg has already begun to solve this problem with an urban renewal project which, when approved, will remove about 40 percent of the units in poor condition.

Two groups of new housing are being planned and built to replace the housing units to be removed by the proposed Harbor Way Urban Renewal project. Twenty four apartment units of middle-income housing are presently being built in the vicinity of "I" Street and Third Street. In addition, 12 units of low-income public housing will be built in the same area this year.

NEIGHBORHOOD ANALYSIS

There are three distinct areas of residential development in Petersburg. The area south of "J" Street is separated from the rest of the City by Hammer Slough. The second residential district extends from the Slough or "J" Street to the schools on "B" Street. The third and most recently developed area lies north of the schools.

Area South of "J" Street

In the neighborhood south of "J" Street along Hammer Slough, which includes all structures west to Wrangell Narrows and south to the City limits, there are 15 trailers and 171 permanent housing units in 163 buildings. Excluding the trailers, the density of this area is 2.14 housing units per acre. Although this is a very low residential density, it is the highest within the City of Petersburg. About 42 percent of the structures in this area are in below average or poor condition which is also the highest for the City.

In the area south of "J" Street, adjacent to Hammer Slough, there are 26 buildings without connections to the City sewer system, 5 without connection to the City water system and 16 without road access. This area is the most distant from the schools and adjoining playground and has no parks or other community facilities.

The bulk of the housing stock in this area is located along the banks of two sloughs. This housing is generally old since this was one of the first areas settled in Petersburg, and it has proved difficult to service with sewers, water and streets, because of the steep banks of the sloughs. For these reasons, most of the below average and poor structures south of "J" Street are to be found in the vicinity of the sloughs.

The remainder of this area is the gentle slope from the City boundary north to Wrangell Narrows. Residential development, primarily along Wrangell Narrows and Mitkof Highway, is less dense than in the slough area. This is the only area of the City where residential development is interspersed with industrial uses.

Area Between "B" and "J" Street

There are 152 houses in this 86.5 acre residential area, which is generally located between the schools and Hammer Slough. The density of this area is 1.76 housing units per acre with about 69.7 percent of the houses in average or better condition and about 30.3 percent in below average or poor condition. The greatest concentration of below average housing in this area is at the western end of "G" and "H" Streets.

Most of the houses between "B" and "J" Street are connected to the City sewer and water systems and face an existing street. Six houses do not connect to the City sewer, 4 do not have street access and 1 has no City water.

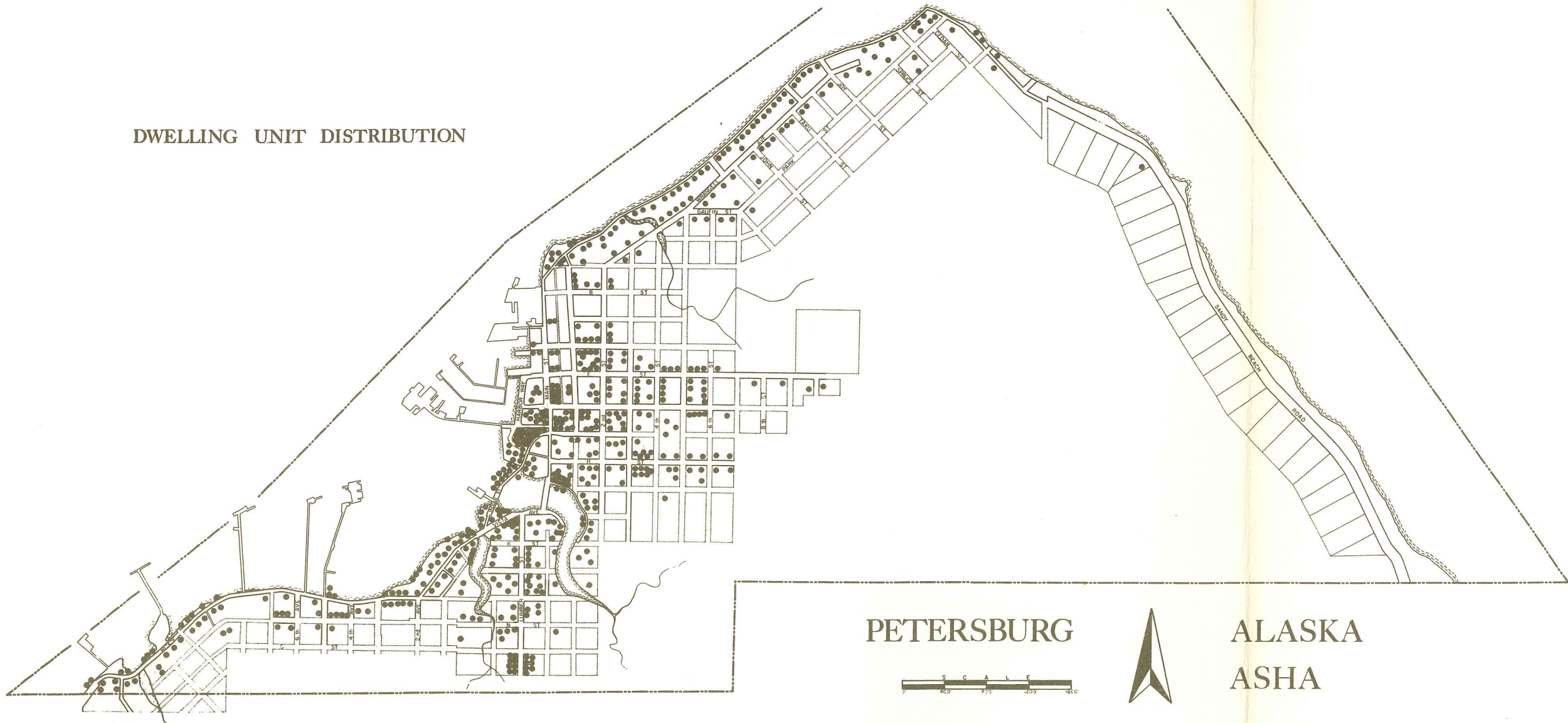
Within this area are most of the City's community facilities, including the hospital, schools, churches and clubs. This fact, plus the proximity of the downtown, makes this the most convenient residential area of the City.

Area North of "B" Street

In the area north of the schools to Frederick Sound there are 108 houses. About 93 percent of these buildings are in average or better condition, and many of these homes are relatively new. Residential development in this area is located principally along Front Street and Wrangell Avenue with less concentrated development along Sandy Beach Road. The density of this area is presently only 1.06 housing units per acre.

With the exception of the boathouses, which are principally an accessory residential use, a small farm and the City dump site on Sandy Beach Road, all developed land in this area is in single family residential use. All but 4 houses in this area are connected to City water and face on an existing street. Almost all of these structures are on the sewer system, with the exception of the newly developed housing along Sandy Beach Road. As this area is on the northern end of the island, many of the homes have good views of the Sound and the mainland.

DWELLING UNIT DISTRIBUTION



PETERSBURG

ALASKA
ASHA



TABLE 18

CONDITION OF RESIDENTIAL STRUCTURES BY NEIGHBORHOOD

<u>Condition</u>	<u>Single - Family</u>			<u>Multi- Family</u> ^{1/}	<u>Total</u>
	<u>North of "B" Street</u>	<u>"B" Street to "J" Street</u>	<u>South of "J" Street</u>		
Good	73	62	17	1	153
Average	27	44	77	7	155
Below Average	2	25	31	3	61
Poor	<u>6</u>	<u>21</u>	<u>36</u>	<u>22</u>	<u>85</u>
TOTAL	108	152	161	33	454

^{1/} Only one structure outside the central commercial area

Source: Alaska State Housing Authority

FUTURE NEEDS FOR HOUSING

In general the existing housing stock in Petersburg compares favorably with the housing stock of other Alaskan cities. However, there is an acute shortage of available housing units in Petersburg. According to the 1960 U. S. Census of Housing the vacancy rate was less than 1.5 percent which is far below what is considered a reasonable vacancy rate of 5 percent. Local sources indicated that the demand for housing was at least as great in 1965 as it was in 1960.

It is predicted that the population of Petersburg in 1975 will be 2,800 people. Approximately 400 additional housing units will be needed to provide housing for the increase in population with an acceptable vacancy rate of 5 percent. This means that approximately 40 additional housing units will be needed every year. Based on a 1985 population of 3,800, slightly over 400 more units will have to be added to the housing stock between 1975 and 1985.

Although the present trend in Petersburg has been to owner-occupied single family houses, future needs generated by increased industrial employment will encourage the building of more multi-family structures. The provision of attractive, well-built apartments can further increase the demand for this type of housing.

THE PLAN FOR RESIDENTIAL DEVELOPMENT

In the past, residential development in Petersburg has occurred slowly and has followed a logical pattern. Through ownership of most of the undeveloped residential land, the City has been able to prevent uneconomical, scattered development. The forecast for future housing needs indicates an increased rate of residential construction in the immediate future. To ensure continued logical, economical development the City should subdivide its respective residential areas within the framework of the Comprehensive Plan.

A long-term program for construction of local streets, sewer and water lines and other residential utility services can be developed. In areas where community sewer and water services will be available, lot sizes between 7,000 and 9,000 square feet are recommended. Equitable utility assessments on lots much larger than this are usually more than the property owner cares to pay for the service.

If, in the future, areas outside the present City limits are annexed to the City, private land owners may want to subdivide land for residential development. The City should have a set of standards in the form of a subdivision ordinance to which new subdivisions must conform. In areas where community sewer and water services cannot be provided, the minimum recommended lot

size should be 15,000 square feet. Public health laws require at least 100 feet between a well and a septic tank, and to meet this requirement minimum lot dimensions of 100 feet by 150 feet are necessary.

With the construction of the new airport in the southeastern part of the City, a portion of the City will become unusable for residential development. The jet noise level beyond an intensity of 100 decibels makes residential development within this area undesirable (see Land Use Plan). However, with advances in noise abatement in the field of aviation, this area will undoubtedly be reduced in size within the planning period.

Area South of "J" Street

Two types of residential development are proposed for this neighborhood. Because of its convenience to the business district, the northern end of Lumber Street is a good location for future multi-family residential development. Structures containing four to six housing units would be ideal in this area. Along the southern boundary of the City it is recommended that vacant land be resubdivided to create large super blocks and to eliminate unnecessary cross streets. One and two family structures would be well suited to this area. Further development in the slough areas should be discouraged until utilities can be provided.

A municipal park is planned for the approximate center of this neighborhood to provide recreation space while an adjacent elementary school reserve is proposed to accommodate future development in this area.

Area Between "B" and "J" Street

The district between "B" Street and "J" Street contains the most promising area for multi-family development in the City. With limited commercial development occurring on First Street, the blocks between First Street and Fourth Street provide an excellent location for higher density residential development. This is the most convenient living area in the City as it is close to the shopping district and to much of the industrial area as well as to most community facilities. The conveniences offered by this area will attract potential apartment dwellers, typically single people and couples without children. In the vicinity of the schools some vacant land is also recommended for multi-family use.

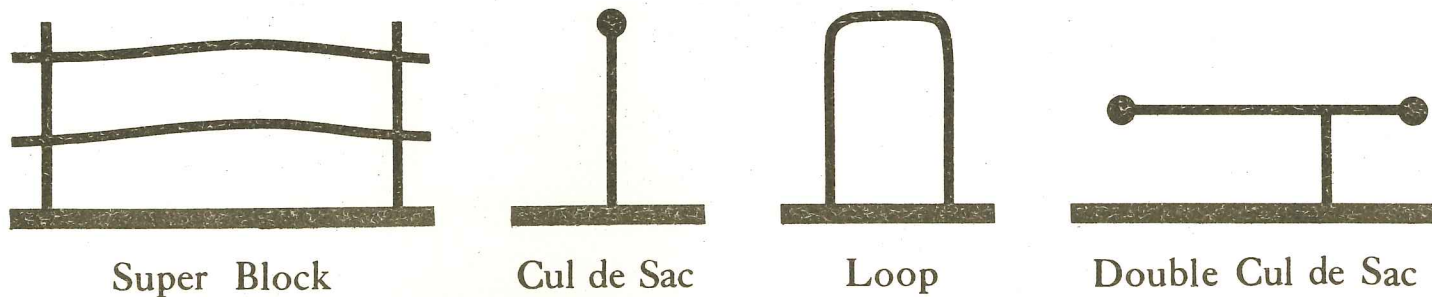
Development of one and two family dwellings is recommended for the eastern half of this residential section. The development plan proposes eliminating several platted but unimproved

streets to create super blocks and the development of looped and dead-end streets where possible. This combination of street systems will provide a greater number of housing sites and prevent the development of unnecessary public utilities and streets.

Area North of "B" Street

Most of the land north of "B" Street is undeveloped and unplatted. It is projected that this area of approximately 150 acres, when serviced by sewer and water, would support a population of 2,700 if developed at a density of six housing units per acre. It is recommended that this area be reserved for single and two family residences on lots of between 7,000 and 9,000 square feet. As the owner of almost all the vacant unplatted land in this area, the City of Petersburg is in an excellent position to assure its good development. It is recommended that the City adopt a plan for local residential streets in the area which will discourage through traffic and provide a maximum number of residential lots. The following sketch is an example of the types of road patterns which would accomplish these objectives.

FIGURE 9



ANNEXATION

Mitkof Island is a physical, social and economic unit. It is recommended that it be governed on the local level as a single unit, with resulting benefits both to the City of Petersburg and the remainder of the island. To accomplish this end, annexation is the logical step.

There seems little doubt that in the near future the State will be forced to tax the unorganized borough, at least, to the extent of basic school support. Since Mitkof Island is in the unorganized borough, it will be subject to this taxation. A bill is presently pending at the State level to tax the unorganized borough, with the exception of First Class cities, 3 1/2 mills for basic school support. Construction and debt service would not be supported by this levy, but there is the possibility of these being included in future additions to this mill rate or being supported by a sales tax.

Assessment would probably be made by the State Assessor or the State Department of Revenue, and taxes would go directly into the State General Fund - Unorganized Borough Account or a similar account. There would be no local option on how this money would be spent, other than the knowledge that it would be spent for basic school support. In addition, it is possible to maintain more efficient assessment and collection at the local level; thus enabling a better return on the tax dollar. Furthermore, industry which will locate in the Petersburg area will undoubtedly locate on Mitkof Island outside the present City limits.

It is, therefore, recommended that the City of Petersburg and the individuals living on the remainder of Mitkof Island seriously consider annexation. From the City's standpoint, annexation will result at first in a modest increase in the tax base, but there should be a substantial increase as industry moves into the area. For those outside the City, it will mean a voice in the local government, and a higher level of services provided. Future industry locating on Mitkof Island, although demanding services, will assist in sharing the tax burden. Annexation of Mitkof Island will permit a more logical extension of services and will promote a more effective utilization of land through land use controls.



COMMUNITY FACILITIES PLAN

COMMUNITY FACILITIES PLAN

CIVIC AND GOVERNMENTAL BUILDINGS

MUNICIPAL BUILDING

Petersburg's Municipal Building houses the City Manager's office, the police department, the council chambers, the public library, the tax assessor's office, the public health office and the fire department. Its well located position at the south end of Main Street is convenient for both shoppers and workers. The structure, built in 1960, is in good condition and has a useful life of approximately forty years.

PUBLIC LIBRARY

The City's public library is presently housed in the Municipal Building and operates on a part-time basis. Because the space it now occupies will be needed for firemen's living quarters and offices, a new library is scheduled to be built in 1968. It is recommended that the new facility be located adjacent to the Main Street shopping area where it will continue to be convenient for Petersburg citizens.

FIRE DEPARTMENT

Petersburg's fire station, located in the Municipal Building, is adjacent to the most highly developed section of the City, and is also convenient to the more remote areas to the north and south. The City Fire Department operates three fire trucks. One, a pumper rated at 1,000 gallons per minute, was purchased in 1964, and the purchase of another pumper is scheduled for 1967. In addition, the City owns a jeep-pumper for use outside the City limits for fire fighting and for civil defense purposes.

The station is manned by thirty volunteer firemen who answer calls both inside and outside the City limits. There are several boat fires and bush fires each year, but otherwise there is no

high incidence of fire in any area of the City. However, the old crowded frame structures of Indian Street create an area of high potential risk.

In the future, the Fire Department will have a full-time professional staff which will require living quarters in the Municipal Building. This space will become available when the public library is moved into a new building.

POLICE DEPARTMENT

The City of Petersburg has had local law enforcement since 1910. The present police force is made up of a police captain, two patrolmen and a harbor master. For cases on Mitkof Island, the City force assists the State police, but the State alone provides police services to West Petersburg. As the police headquarters in the Municipal Building is inadequate in size, new and larger quarters will be needed.

JAIL FACILITIES

Because the existing building has been condemned, the City has no operating jail facilities. A bond issue for construction of a new jail facility has twice been brought to the voters and twice been defeated. It is proposed that Petersburg build a new jail and police headquarters as soon as possible to provide necessary cell space for prisoners and needed office space for the police force, and that it be located in the area adjacent to the Municipal Building.

THE CITY GARAGE

The old City garage and equipment storage building was recently razed to accommodate a structure housing the new diesel power unit adjacent to the existing power building. Although the exact location for a new City garage has not yet been determined, it is recommended that it be located in the valley at the source of Hammer Slough along the proposed Lumber Street - 7th Street connection, within the airport reserve. This location will enable easy access over major thoroughfares to all sections of the City. It will also provide speedy access to the Fire Station by way of Lumber and "H" Streets for the public works employees, who form the nucleus of the volunteer Fire Department.

THE HOSPITAL

The existing 24-bed hospital was built in 1955 almost entirely with volunteer labor, and is a pleasant one story building in good condition. This facility, which serves Petersburg, Wrangell and adjacent areas, maintains a reasonable patient load in relation to its capacity. The City also operates an ambulance which was purchased in 1964.

Petersburg's growing population and the high incidence of hospitalization associated with forest products industries will require larger hospital facilities. When the building is enlarged, several changes should be made to increase the efficiency of the existing structure. Storage space should be increased, several private rooms, as well as better facilities for long-term care of old people should be installed, and in some cases, the arrangement of existing spaces should be changed.

Federal funds are available through the State for hospital expansion and remodeling. These funds have been committed to other Alaskan cities for the next few years. However, if Petersburg can submit its plans, Hill-Harris funds will be available for construction to take place in 1967. Otherwise, deferment to 1972 is foreseen.

SCHOOLS

EXISTING SCHOOLS

As provided by Alaska law, the City of Petersburg is also a school district which is responsible for providing school buildings and other items of capital outlay, as well as the local share of the school operating budget. School affairs are governed by a locally elected school board of five members. The Petersburg school district also serves children outside the City limits under a program by which the State reimburses the school district for the cost of services to these students. The State also provides transportation for pupils living beyond walking distance of the school, which includes boat service for students from West Petersburg.

The Elementary School

Petersburg's elementary school presently houses the kindergarten through the seventh grade,

while the eighth grade classes are held in the high school building although they are classed administratively with the elementary school. At the end of the 1964 school year, average daily membership for grades kindergarten through eighth was 424 students, with 18 classes being held in 17 classrooms, as two half-day kindergarten classes are held. This resulted in an average of 23.6 students per classroom, which is within the City's standard of 25 elementary students per classroom.

The site area of the elementary school is little more than 1/2 an acre (24,000 square feet). About 18,000 square feet are available for play space, of which 2,400 square feet are protected from snow and rain by a shed roof. The elementary school building, dating from 1924, is now inadequate both in size and design. Its useful life is essentially over, although, if absolutely necessary, it could be used for another five years.

The High School

The average daily membership for grades nine through twelve was 136 at the end of the 1964 school year. The high school students were taught in 10 classrooms, and thus the average number of students per classroom was 13.6. Petersburg's standard for high school students is 14 students per classroom, which is extremely low when compared with a common high school standard of 25-30 students per classroom. Nevertheless, a very small high school must offer a variety of courses if it is to be accredited and have a full program for the students, which explains the low ratio of students to classrooms. In the 1964-65 school year, a classroom was set up in the high school basement so that an additional course could be offered.

Recreational facilities for the high school include one softball field and a small gymnasium, which was built in 1930. The total area of outdoor recreation space is about 30,000 square feet. The existing high school building, built in 1953, is adequate now for grades eight through twelve. Because grade eight, and eventually grade nine, will be drawn off into a separate facility, the high school will be adequate for grades ten through twelve, in terms of size, until well past 1980 and possibly until 1990.

Technical Arts Building

A much needed technical arts building with forty stations was added to the school complex in 1965. It houses facilities for woodworking, ceramics, welding and other forms of the technical arts.

FUTURE SCHOOLS

Future School Enrollment

Future school enrollment in Petersburg was projected as a percentage of the predicted total future population. Past ratios of school population to total population have averaged about 27 percent since 1950 and about 30 percent since 1958. Using these two figures as a probable low and a probable high, a range of future school enrollments was predicted. When compared with Anchorage, Seattle or Portland, where figures range from 21.9 to 23.7 percent, Petersburg's 27 to 30 percent is a rather high proportion of total population. However, all of the other major cities in Southeast Alaska fall within this range (see Table 19).

TABLE 19

PAST RATIOS OF SCHOOL POPULATION TO TOTAL POPULATION

	<u>Total Population of Petersburg, West Petersburg</u>	<u>School Population</u>	<u>Percentage School Population to Total Population</u>
1929	1297 <u>1/</u>	245 <u>4/</u>	18.9
1939	1373 <u>1/</u>	300 <u>4/</u>	21.8
1950	1679 <u>1/</u>	327 <u>4/</u>	19.5
1958	1600 <u>2/</u>	447 <u>5/</u>	27.9
1960	1528 <u>1/</u>	462 <u>5/</u>	30.2
1965	1800 <u>3/</u>	564 <u>6/</u>	31.3

1/ U. S. Census.

2/ Rogers, G.W., Alaska in Transition: the Southeast Region, Baltimore, Johns Hopkins Press, 1960.

3/ City of Petersburg.

4/ Total Membership

5/ Year End Enrollment

6/ Third Quarter Attendance

TABLE 20
PUBLIC SCHOOL ENROLLMENT PROJECTIONS

<u>Past Experience</u>	<u>Total Number of Students</u>		<u>Kindergarten - 6</u>		<u>7 - 8</u>		<u>9 - 12</u>					
			<u>Number of Students</u>	<u>Percent of Total</u>	<u>Number of Students</u>	<u>Percent of Total</u>	<u>Number of Students</u>	<u>Percent of Total</u>				
1961	460		293	63.7	68	14.8	99	21.5				
1965	564		317	56.2	110	19.5	137	24.3				
<u>Projections</u>	<u>Low</u>	<u>High</u>	<u>Low</u>	<u>High</u>	<u>Low</u>	<u>High</u>	<u>Low</u>	<u>High</u>				
1970	621	- 690	373	- 414	60.0		105	- 117	17.0	143	- 159	23.0
1975	756	- 840	454	- 504	60.0		128	- 143	17.0	174	- 193	23.0
1980	891	- 990	535	- 594	60.0		151	- 168	17.0	205	- 228	23.0
1985	1026	- 1140	616	- 684	60.0		174	- 194	17.0	236	- 262	23.0

Source: Alaska State Housing Authority

A new lumber or veneer mill may bring many single individuals into the community initially, and thus it could serve to increase the total population without adding substantially to the school population. Therefore, it is possible that before 1975 the predicted low figure of 756 students will be the more accurate one. After 1975, the ratio may rise again as the population composition changes resulting in the 1985 high figure of 1140 students (see Table 20).

Future Classroom Needs

In 1965, Petersburg had a total of 28 classrooms, 12 in good condition and 16 in fair to poor condition. Before 1985, the City will need to build between 19 and 22 additional classrooms as well as replace the existing 16 classrooms in fair to poor condition. Thus, a total of 35 to 38 new classrooms will be needed before 1985. Plans have already been made by the City of Petersburg to build a new 24 classroom elementary school in 1968. The new facility will provide excellent classroom space for the elementary grades, as well as make it possible to abandon the old elementary school as a classroom facility before 1970 (see Table 21).

TABLE 21
FUTURE CLASSROOM NEEDS

<u>Grade Unit</u>	<u>Pupils per Classroom</u>	<u>Total Classrooms Required</u>							
		<u>1970</u>		<u>1975</u>		<u>1980</u>		<u>1985</u>	
		Low	High	Low	High	Low	High	Low	High
K - 6	26	14	16	18	20	21	23	24	26
7 - 8	24	4	5	6		7		8	
9 - 12	16	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
TOTAL		27	31	35	38	41	44	47	50

Source: Alaska State Housing Authority

Soon after 1975 both the high school and the new elementary school will begin to be crowded. To prevent overcrowding in both buildings, it is recommended that a junior high school be built. About 12 classrooms could accommodate the predicted seventh to ninth grade enrollment until 1985.

Future Site Requirements

If national standards for school sites are applied to the predicted school populations, Petersburg should have about 37 acres of developed school site area in 1985. However, if the rainy climate and the difficulties and prohibitive expense of developing muskeg areas are considered, it would appear that the national standards are unrealistic for Petersburg's situation. It is recommended that a feasible standard of 5 acres per school be used when constructing new schools and when upgrading old ones. Using this standard, about 15 acres should be in use in 1985, with 5 acres in reserve for a future elementary school.

Future School Recreation

With the construction of the new gymnasium and swimming pool, the new elementary school and the junior high school, very little land will be available for outdoor recreation near the high school. As there is only one existing ball field, new ball fields and courts will have to be developed for the junior high school, regardless of where it is located. Therefore it is recommended that the junior high school be sited near the existing high school so that both schools can use the same playing fields. While it will not be needed until 1975, there is an immediate need for ball fields and courts. It is suggested that site plans for the new school determining where the fields should be placed, be developed in the immediate future, and that some of the fields be constructed before 1975.

At the elementary school level, covered outdoor play areas provide the best solution to the problem of outdoor recreation in a mild but very wet climate. It is recommended that covered space at least twice the size of the existing area be provided with the new elementary school.

Plans are being made to expand Petersburg's recreation facilities with a new larger gymnasium and a swimming pool as a part of the plans for the new elementary school. Construction of both facilities is planned for 1968. Facilities for teaching swimming are especially important in a community that earns its living from the sea, but where natural waters are too cold to develop this skill.

UNIVERSITY EXTENSION

At present, Petersburg has no higher education facilities. It is recommended that the City encourage the University of Alaska to locate an extension facility here, offering courses in fishing and forestry, to promote higher skills in established and growing industries. A logical location for such a facility would be in the vicinity of the Municipal Building.

PARKS

A municipal park is recommended to be developed at the corner of Mitkof Highway and Vista Avenue in 1968 to improve the appearance of the City for its citizens and visitors, and provide much needed recreation space in this area.

It is also recommended that another park be created by acquiring and continuing to reserve land on both sides of the stream running behind the existing schools site. Development of a nature trail alongside the stream is suggested. Part of this land should be left to develop naturally, while some should be improved for use as picnic sites.

Further, it is recommended that a walk be developed along Harbor Way and continue along the breakwater to the extension of Main Street, within the proposed urban renewal area. In addition, a small portion of this area should be set aside for a downtown park.

UTILITIES

REFUSE DISPOSAL

The existing City dump is a beach site on Sandy Beach Road. However, the City has recently leased a site for a sanitary landfill about three quarters of a mile from the City beyond Sandy Beach Road. This will eliminate not only the unsightliness of the present dump, but also the refuse floating in Frederick Sound.

Petersburg contracts for refuse pick-up within the City limits. Service is twice a week in residential areas and every other day in the business section, which has proved adequate. The contractor has one dump-type truck, but he is planning the purchase of a packer-type truck which will provide a more tidy service, especially during windy periods.

SEWERS

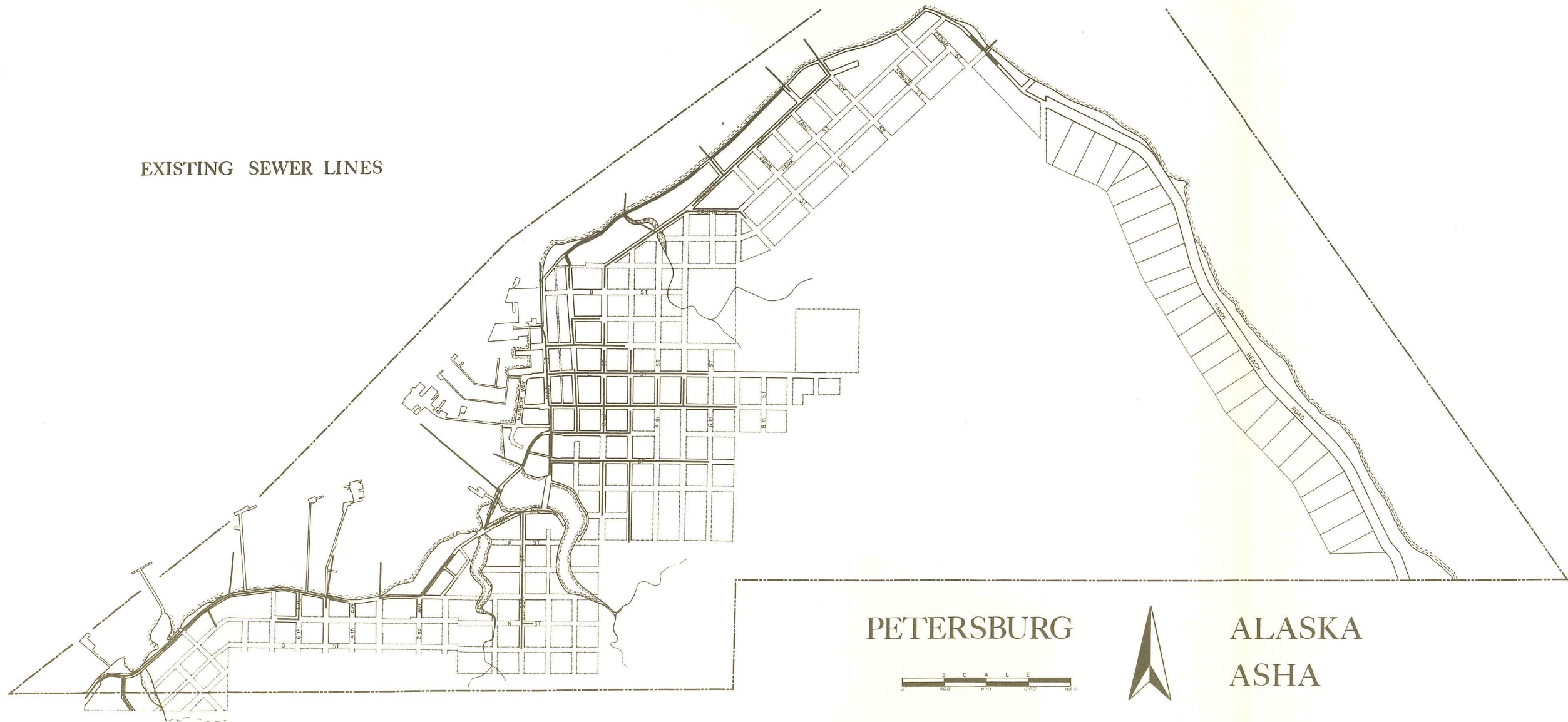
Petersburg has had a public sewer system since 1916. The existing gravity system presently serves almost all of the buildings within the City limits and a few outside along Mitkof Highway to the south. There are nine separate outfalls dumping untreated sewerage into Wrangell Narrows. However, 40 percent of the entire system is connected to the single outfall at the north end of Main Street. Unfortunately, Petersburg has no separate storm sewer system. Catch basins on Main Street drain into the sanitary sewer. In the spring, sand from these catch basins tends to clog the sewer, producing a potentially dangerous health problem and the City has recently purchased a piece of equipment to temporarily alleviate this situation.

However, in conformance with new federal laws regarding pollution of interstate or navigable waters, treatment of sanitary sewerage prior to disposal in the Narrows must be provided. Storm sewerage which is not polluted need not be treated before disposal. Therefore, a separate storm sewer system should be installed in the business area. Advance planning for the sewerage treatment plant and the storm sewerage system should be undertaken immediately using federal grants which are available for this purpose. When plans are completed, it is recommended that the City apply for federal grants available under the Water Pollution Control Program and the Public Works and Economic Development Act of 1965 to assist in the construction of this facility.

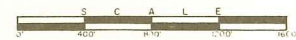
TELEPHONE

Petersburg's telephone service is provided by a subsidiary of General Telephone Company. There are 580 connected telephones in the City of Petersburg and along Mitkof Highway as far as the Experimental Fur Farm. The existing system is adequate and can provide 1,000 telephones without having to be revised or expanded.

EXISTING SEWER LINES

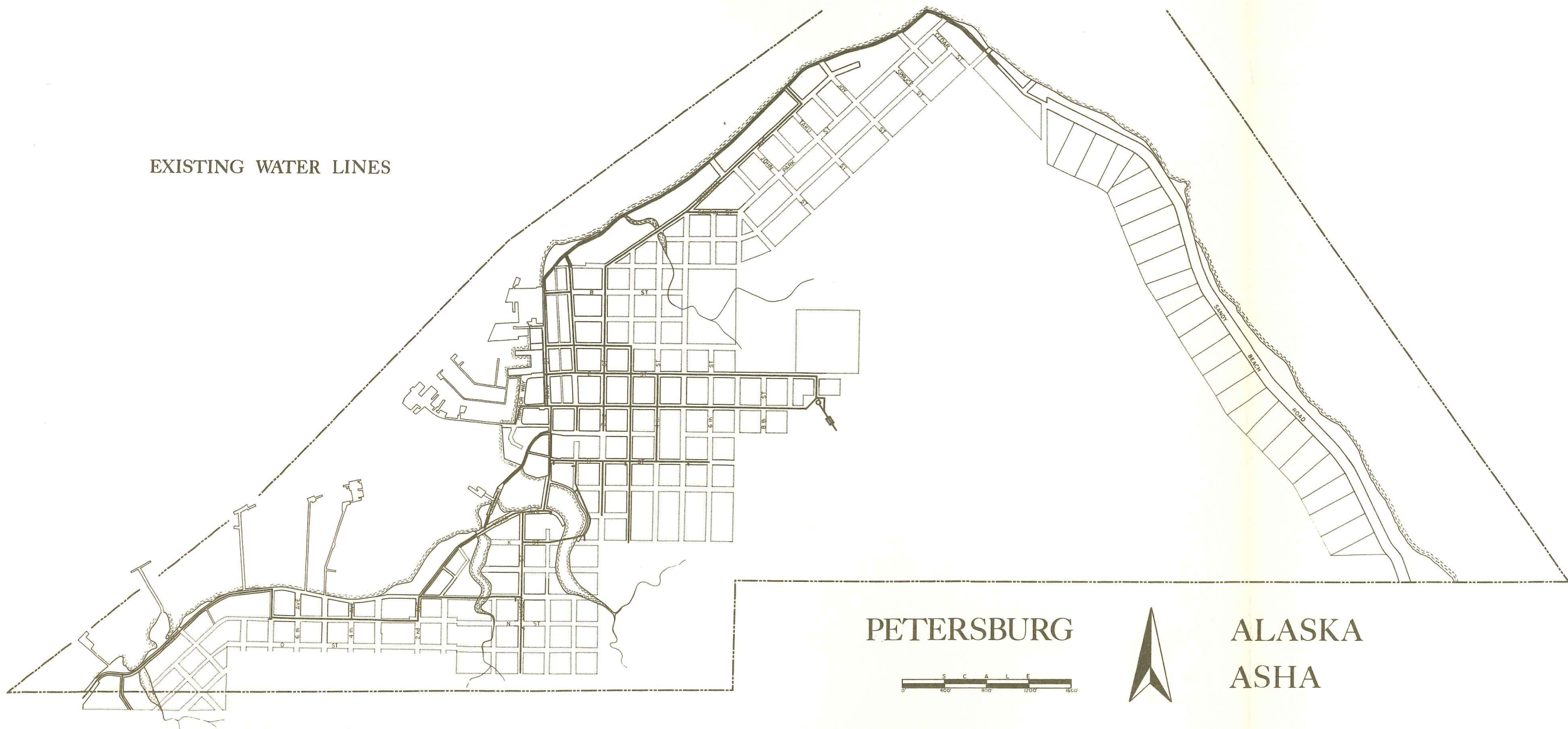


PETERSBURG



ALASKA
ASHA

EXISTING WATER LINES



PETERSBURG

ALASKA
ASHA



WATER

There is public water service along almost every improved street within the City limits. In 1952 the storage capacity of the City's water source was increased by the construction of a reservoir. The storage capacity of this reservoir is 6,450,000 gallons, which only amounts to a total of four days supply for the City. Water is piped from the dam to a 100,000 gallon storage tank through a 12 and 14 inch wood stave gravity line and is then chlorinated before entering the distribution system. However, a long dry spell in 1965 reduced the reservoir level to less than 1,000,000 gallons producing water of poor quality and creating a danger in regard to fire protection.

In order to improve the quality and quantity of the water supply, Petersburg plans to pipe water to the City from Crystal Lake. The existing water supply is inadequate for Petersburg's needs. Storage capacity and pressure are insufficient for proper fire protection, and the color, taste and odor which the water acquires in the muskeg is undesirable. When developed, the Crystal Lake source will be able to supply the water needs along the highway south of the City as well as within the City. The water itself is of excellent quality being completely free of muskeg, and will require little treatment. Plans have been made for a 16 inch line from Crystal Lake to a 1,750,000 gallon storage tank within the City, which is scheduled for construction in 1967.

ELECTRICITY

Petersburg's present 2,300 volt power system has a total peaking capacity of 3,250 kilowatts, of which 1,650 kilowatts are diesel generated and 1,600 kilowatts are hydro generated. The City's power needs are increasing rapidly. Annual peak demand on the system has risen from 950 kilowatts in 1955, to 1,220 kilowatts in 1960 and to 1,900 kilowatts in 1964, representing an 8 percent annual growth in demand. As stated by the Stearns-Roger Corporation, in a recent study of the City's power resources:

"Isolated power companies must maintain firm power generating capacity equal to or greater than their peak demands to insure uninterrupted service. The firm capacity of a system is the capacity of all units in the system, less the largest unit. This provides for generation during times when any one unit may be out of service for maintenance and repairs."

The City's present firm power capacity is only 1,600 units, an amount which is already exceeded by the peak demand. Thus, the City is extremely vulnerable to power outage. Installation of a

new 1,250 kilowatt diesel unit is planned in the near future. This will raise the firm capacity of the system to 2,900 kilowatts and the total capacity to 4,500 kilowatts. Nevertheless, if Petersburg is to meet long range needs and to compete successfully with other communities for the industry which will determine its growth, it is essential that a larger and less costly source of power be developed. Diesel generation of power costs about 20 mills per kilowatt hour in Southeastern communities, whereas the cost of generation from a hydro project should be more than a third less.

Following the recommendation of the Stearns-Roger Corporation, the City of Petersburg is studying methods of financing a hydro-electric plant at Thomas Bay utilizing the Swan Lake drainage basin. The project will have an ultimate total peaking capacity of 38,000 kilowatts. The first phase of construction will produce 10,000 kilowatts, and is scheduled to be on line in 1969. This much needed facility will accommodate industrial growth in the area, as well as increased demand by residential users. As a step towards achieving the economic growth of a large region of central Southeastern Alaska, the project deserves the support of the State and the Federal government.

HARBOR FACILITIES

The existing harbor and port facilities in Petersburg are the result of three separate harbor improvement projects by the United States Army Corps of Engineers. In 1937, the Corps of Engineers dredged; (a) a small boat basin 11 feet deep between the Trading Union Wharf and Citizens Wharf, (b) approaches to the existing wharves to a depth of 24 feet and, (c) a short channel 40 feet wide and 8 feet deep to the south of the Forest Service float. In 1945, an area of about 135,000 square feet adjacent to the small boat basin was dredged to a depth of 11 feet, and in 1954 the outer one third of the boat basin was dredged to a depth of 15 feet to accommodate larger vessels. The resulting harbor facility now provides berthing and mooring space for 180 boats.

The United States Army Corps of Engineers completed field surveys in 1961 to determine the possibility of expanding the boat harbor to the south. The present fishing fleet is larger than can be accommodated in the existing boat harbor, and future expansion of the fleet will require additional docking space. It is recommended that Petersburg initiate construction of new harbor facilities as a part of its program for industrial development.



STREET PLAN

STREETS PLAN

EXISTING STREETS

When describing street systems it is helpful to first classify streets according to their primary function:

Major Thoroughfare - A street which extends across the entire City and connects outlying areas to the City.

Collector Street - A street which connects different areas of the City and feeds into the major thoroughfare.

Local Street - A street which provides access to individual properties and feeds into the collector streets.

Petersburg has one major thoroughfare, made up of Mitkof Highway, Main Street - Hogue Alley, Front Street and Sandy Beach Road. It connects the downtown area, which generates the most traffic, with the seaplane turnaround, the ferry terminal and other points to the southwest and with the quarry and Sandy Beach to the north. The road is paved with concrete along most of Main Street - Hogue Alley and is gravel surfaced throughout the rest of its length. However, the driving surface is too narrow for a major thoroughfare in most areas. The Front Street area is so narrow that trucks must be diverted past the schools and along Wrangell Avenue.

At present, there is no true system of collector streets, although First Street, "E" Street and "F" Street serve as collectors for part of their length, while most existing local streets either connect directly with the major thoroughfare or are dead-ended.

With the exception of concrete surfaced Main Street - Hogue Alley, all improved streets in Petersburg are gravel surfaced. The gravel comes from the City-owned quarry and rock crusher at the end of Sandy Beach Road. These streets are in good condition, although quite dusty in the summer months. In addition, there are two surviving board streets, one along Hammer Slough, in need of repair, and the other a part of Indian Street.

Sidewalks have been installed along Main Street - Hogue Alley and also around the school block, and a pedestrian walk was added to the Hogue Alley bridge in 1965. Construction of a system of sidewalks should be started with priority given to connecting the schools block with Main Street - Hogue Alley and the area south of Hammer Slough.

Most of the subdivided portion of Petersburg is laid out in a rectangular gridiron pattern which was the accepted method of subdivision in the early part of this century. However, only a small part of this area has actually been developed with streets and structures, and through resubdivision it is a relatively simple matter to change the street pattern in the undeveloped area.

It is strongly recommended that the City initiate resubdivision in this undeveloped area to modify the gridiron pattern. Experience in other cities has proved that the gridiron street pattern has numerous disadvantages. Instead of providing collector streets, major thoroughfares and local streets, the grid system assumes that each street will carry an equal amount of traffic. In reality, some streets become more heavily traveled than others, and eventually the City has to resort to expensive street widening and realignment, or else a system of one-way streets becomes necessary. An even stronger disadvantage of the grid system is that it inevitably feeds through traffic into residential neighborhoods and past schools and hospitals where noise is undesirable. Because every corner on a grid is a four-way intersection, the system slows traffic and maximizes the chances for vehicular and pedestrian accidents.

The changes shown in the comprehensive plan can largely be accomplished through partial street vacation under the resubdivision procedures. These changes would funnel through traffic onto several main collector streets, and, where possible, would create dead-ended or looped local residential streets. These changes would have the twofold advantage of allowing more efficient traffic flow and of making future residential areas better environments for both children and adults. In addition, streets which are unnecessary for access or traffic circulation would be eliminated, resulting in economies to the City in not having to develop and maintain unnecessary roads and by returning property to the tax rolls.

FUTURE STREETS

MAJOR THOROUGHFARES

The State Department of Highways plans to continue Mitkof Highway through the City. The several tentative routes which have been proposed skirt the settled area of the City and follow the plat-

ted Seventh and "A" Streets to Sandy Beach Road. The purpose of a major thoroughfare is to transport traffic to and from major destination points. As the destination of most traffic on the north end of Mitkof Island is downtown Petersburg, a bypass would only force traffic to reach its downtown destination by filtering through the residential areas of the City. Instead, it is recommended that the State Highway follow a route from the Ferry Terminal along "P" Street to the south end of Lumber Street, across Hammer Slough from Lumber Street to behind the Municipal Building, and then along Main Street and Front Street to Sandy Beach Road. This route will provide better access to Petersburg's business district, and the new bridge across Hammer Slough will eliminate the need for costly maintenance of the two existing wooden bridges, which are recommended to be removed. It is further recommended that wherever possible an 80 foot right-of-way be maintained for this major thoroughfare.

COLLECTOR STREETS

The proposed system of collector streets in Petersburg is designed to serve both the existing developed areas and those which will develop in the future. Since almost all of the land over which this system will be developed is in City ownership, the City is in a position to implement this collector system as City-owned property is sold and built upon, or as needs otherwise dictate, without the costly acquisition of private property. It is recommended that priority be given to the development and upgrading of those collectors in the developed area and to replatting those in undeveloped areas to a standard of 60 foot rights-of-way.

A portion of the present major thoroughfare, from the ferry terminal to the new Main Street bridge across Hammer Slough, is recommended to be maintained as a collector street. In this capacity, it will adequately service the demands of both the waterfront industrial area and local residential area.

On the north side of the new Main Street bridge, "H" Street will become a major north-south collector linking the governmental center and the commercial area with the airport facility. In this capacity, it will also provide direct access for fire fighting equipment and post office vehicles to the airport.

The other major east-west collector will be "D" Street. "D" Street will be extended from the major thoroughfare, Main Street, beyond the presently platted Eighth Street, and continued northeast to connect with Sandy Beach Road.

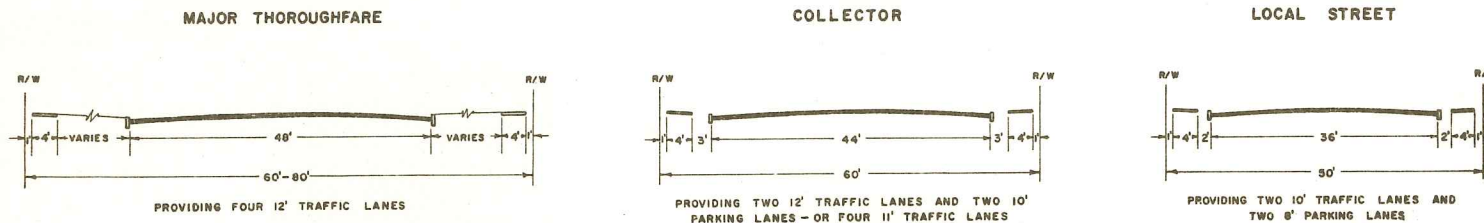
The final major collector will run from the south end of Lumber Street behind Hammer Slough to Seventh Street and follow Seventh Street intersecting with the "H" and "D" Street collectors and then follow Lake Street to Sandy Beach Road. This will link the Mitkof-Stikine Highway with the airport facility, and also provide easy access to the school complex and to Sandy Beach. It will also provide an alternate north-south route, which is important for reasons of safety and civil defense should there be obstruction of the new Main Street bridge.

The plan for future streets locates collector streets so that they will provide direct and convenient access from residential areas to the major thoroughfare and principal points of destination within Petersburg, such as the business district, the schools, the industries, the airport and the ferry terminal.

LOCAL STREETS

Local streets should be designed and located to provide convenient access to private property without encouraging unnecessary through traffic. Short dead-end streets and loop streets are especially effective in discouraging this. The City should develop local streets off the major collectors adjacent to present development and only as electricity, sewer and water are available. It is further recommended that the present 50 foot right-of-way be maintained for local streets.

FIGURE 10



STREET DESIGN STANDARDS



URBAN RENEWAL

THE URBAN RENEWAL PLAN

In almost every city in this country there is at least one area which for numerous reasons has not renewed itself. These blighted areas have a retarding influence on cities. Desirable development is discouraged within such areas and often other development is forced to occur at inappropriate locations. For these reasons areas which are blighted are likely to become major obstacles to the implementation of a comprehensive plan. In Petersburg, the Indian Street area has become just this sort of liability.

Blight in Indian Street is the result of several factors acting in combination. One of the most obvious factors is the age and condition of the structures. For the most part, the area is developed in multi-storied wooden frame structures which are in need of numerous major repairs. Generally the cost of the repairs required to bring these buildings up to community standards would far outweigh the value of the structures. In addition, most of the wooden structures are highly fire prone, and such a concentrated hazard not only jeopardizes its inhabitants but poses a threat to a large segment of the City. The obsolete street pattern which is inadequate to serve the adjacent land area is an area-wide problem affecting the entire City. Parts of this area have been partially filled recently, but without sufficient street access this land cannot be fully utilized.

The Indian Street area is the most logical location for expansion of the central commercial district, as discussed in the Plan for Future Commercial Development. However, the existing deteriorated structures have discouraged the location of commercial establishments within the area. Moreover, the existing street pattern is not continuous with Main Street. Shops locating on the present Indian Street would not be visible from the main thoroughfare and would, therefore, be at a disadvantage in attracting customers.

The problems of the Indian Street area cannot be solved by the individual private land owners. Private rehabilitation of the individual structures is not economically possible. In addition, private individuals do not have the power to alter the non-functional street pattern. The ordinary means of city government such as zoning and code enforcement are largely preventative in nature and are not capable of eliminating blight once it has become widespread in an area. Realizing the need for redevelopment, the City of Petersburg has initiated the Harbor Way Urban Renewal project in the Indian Street area.

The proposed Harbor Way Urban Renewal Plan has been designed as a solution to the problems of the Indian Street area. The plan recommends that the new Mitkof-Stikine Highway be brought through the project area behind the Municipal Building and connect with the widened Main Street. To provide street access to the recently filled areas it is proposed to extend Harbor Way through the project area to connect with the new Mitkof-Stikine Highway adjacent to the Municipal Building. This street plan will form a more functional subdivision of the land area within the project. The Municipal Building will be provided with a more generous site, which will allow for future expansion of municipal facilities and for more adequate parking area. Commercial lots with frontage either on Main Street or Harbor Way will also be created and a pedestrian walkway along the waterfront is proposed to enhance the appearance of the area and to provide public access to the water and the view.



CARRYING OUT THE PLAN

CARRYING OUT THE PLAN

ADMINISTRATIVE PROGRAMS

The City of Petersburg owns almost all of the undeveloped land within the City boundaries. Hence, it can ensure orderly development by platting streets and reserving land for public use before selling lots to private individuals. The City should continue its policy of selling lots only when streets and utilities are available.

The City of Petersburg is currently using several Federal programs to help with its development. The proposed urban renewal project near the downtown area will eliminate a blighted area of the City and provide excellent new commercial land. Federal programs are also being used to help relieve the critical housing shortage.

There are many different Federally aided programs which are available to Petersburg for improvement of its community facilities. All available funds should be used in the development and improvement of the City for its citizens.

CAPITAL IMPROVEMENTS PROGRAM

The Capital Improvements Program is an ordered, long-term schedule for acquiring or building public facilities needed by a community. The scheduling of the projects is determined by the order of need and by the ability of the community to pay for these improvements. Federal and State aid, which is available for special projects, is also considered as a part of the community's financial capacity. A Capital Improvements Program for the six year period 1966-1967 through 1971-1972 has been prepared for the City of Petersburg as a part of this comprehensive plan.

ZONING

As the primary means of regulating the use of private land, zoning is one of the most effective devices for implementing the comprehensive land use plan. The purpose of zoning is to ensure the orderly growth of the community and to protect property values by designating the appropriate areas of the City for the development of each legitimate land use. Within each area or zone, restrictions governing land use, density, land coverage and height of structures are applied uniformly.

The basic land use categories for zoning are residential, commercial and industrial. The purpose of zoning in a residential area is to ensure a quiet, pleasant environment with a certain amount of privacy. Therefore, it is necessary to prevent the intrusion of incompatible land uses, especially those which generate traffic, noise, and other nuisances. Yard requirements ensure adequate light, air and open space. Limitations on density hold development at a level which can be properly served by schools, utilities and other public facilities.

Commercial land use requires a relatively small proportion of the City's developed area, usually about 4 to 5 percent. It is important not to zone too large an area for commercial development. Contrary to what is generally assumed, overzoning for commercial use does not stimulate development but rather tends to scatter and dissipate commercial activity. The area zoned for commercial use should be no greater than the projected need for commercial land. The land needs of industry are just as specific as those of residences and commerce. Prime industrial land should be protected from development by other uses.

The zoning ordinance should reflect both the existing character of the community as well as the community objectives outlined in the comprehensive plan. Because Petersburg's present zoning ordinance was enacted before the comprehensive plan was developed, it is important that the zoning ordinance now be updated to be consistent with the objectives of the plan.

SUBDIVISION REGULATIONS

Subdivision regulations provide the City with a method of preventing unwise development of open land. Private developers may or may not consider the relationship of their development to surrounding areas. However, once land is subdivided and streets are established, changes are very difficult and costly. A subdivision ordinance ensures that development will conform to the over-

all plan for the City, that new streets will be adequate and that utility easements will be provided.

MAPPED STREET ORDINANCE

The City of Petersburg presently owns all of the unplatted land within the City limits. Hence, a mapped street act is not essential immediately. If Petersburg annexes land which it does not own, a mapped street act will be needed. The City of Petersburg receives its authority to regulate street development from the Alaska State Statutes. This grant of authority permits the City to pass a Mapped Street Ordinance to regulate street location and prevent building in proposed rights-of-way. The first step is to prepare a street plan showing the approximate location of present and future streets, which is adopted by the City Council as the Official Street Map. Plats showing the exact location of proposed streets should then be prepared and adopted as part of the Official Street Map. Once the exact location of a proposed street is established, building within the right-of-way is prohibited, although land must be purchased from private owners before the street can be built.

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