

be safely set for Alaska, and what amounts of money can be meritoriously expended in fire prevention, presuppression and suppression.

We also need to know the effects of fire on wildlife, stream control, water tables, watersheds, etc. As trained observers we sense the effect and appreciate some of the results, but a qualitative and quantitative knowledge is needed to firm our thinking. Multiple use of our domain lands can be improved when not only we of the Bureau of Land Management but also other federal agencies, and the public, are fully aware of the intricate co-relationships existing in a forest area.

5. Is artificial regeneration, through planting, necessary in specific forest areas which have been destroyed by fire, disease, insects, or windthrow? In this stage of Alaska's development we believe that Nature's truly remarkable recovery after disaster is ample insurance against forest paucity in the future. Planting is expensive but even now it may perhaps be shown that in local areas planting will in the long run be less expensive to the economy - through reducing the delay in starting a new forest crop, lessened losses by wind and water, better stabilization of streamflow, etc. Thus, our question is: is planting necessary; if so, when, where, and under what conditions.

6. Our Alaskan tree species are limited in number. Are there other species which can be successfully introduced which will, in time, broaden our forest base and provide greater market potentials in the future. We at present have two hybrids in Alaska which show remarkable grown characteristics. Why isn't their occurrence more frequent? Can we do anything towards increasing it? These are long range benefits, but we must plan now for Alaska's future.

7. Pulp and paper mills and chemical-pulp plants are potential great users of the domain timberlands. To interest these industries, with their heavy capital investments, we must be able to establish forest management units to support them. To do this will require a wealth of forest data, as mentioned earlier, plus data on power, transportation, and water supply. Extensive studies are needed in this entire field.

8. The paucity of our technical information may be illustrated when I say that we do not now know what logging practices should be encouraged, what type of slash disposal, or what standards of utilization. Since logging cannot be stopped until we find the answers, it may well be that we are encouraging or allowing serious damage to our timberlands under our present forest practice rules. For example, economics and practice have established the custom of selective cutting of our spruce areas. Yet it is our unfounded belief that by doing so we are encouraging windthrow and discouraging reproduction. We believe that clear-cutting in small areas - with due respect to aspect, topography, slope, etc. - is the practice which should be followed to assure successful natural regeneration. Birch has not been cut commercially to date but if we are successful in our efforts to establish a hardwood industry in the Cook Inlet region we must be assured, in the interests of a permanent industry, that

when the mature birch is cut it will be replaced by birch reproduction. It is our suspicion now that selectively cut birch stands will bring in spruce reproduction. We believe that clear cutting will be necessary to assure birch reproduction. We believe that some method of disturbing the moss cover will be necessary if quick regeneration is to be gained. We wonder if slash disposal by lopping and scattering is better than piling and burning, or vice versa.

I would like to add one more very basic problem - that of land tenure.

Our forests and rangelands are renewable resources requiring long term management. Best utilization and best local economy is achieved through establishing and maintaining permanent industries. Conversely, to assure permanent industries they must have continuously available resources. These industries cannot move from area to area as the forests are cut or as land becomes unavailable. We are thus faced with the problem of creating permanence of land tenure and resource. One of the tools that can be used is the classification of the land and its resources for their greatest and best use. Such classification must be competently performed and must recognize compatible and non-compatible land uses. Decisions must be made as to the best use, insofar as Alaska and the local area is concerned, and then the classification honored by all. This is truly a serious problem. For example, our prospective birch industry could be prevented from starting, or be subsequently stopped because the birch land is "homesteaded" out from under the sale.

This is a broad subject and one which needs expert knowledge to solve satisfactorily. It will be a matter of compromise of interests; the question is where and what is the zone of compromise.

I have by no means exhausted the problems facing the Bureau's Division of Forestry but hope that I have indicated some of their ramifications and our very urgent need for knowledge.

On my desk I keep an anonymous motto: "The proper measure of a man's age is the degree of pain with which he receives a new idea." I can assure you that there will be little pain to us in shifting our present practices and goals based on best guesses to those based on sound data.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
Bureau of Land Management

Bureau of Land Management Policy Relating to the Withdrawal and  
Maintenance of Recreational Areas

The public lands under the jurisdiction of the Bureau of Land Management aggregating nearly 480 million acres in the United States and Alaska, are managed in accordance with the principles of multiple-use in order to derive the maximum values for the public. Much of this area has recreational and aesthetic values. These lands are open to the public for hunting and fishing subject to the applicable Federal, state and territorial fish and game laws. They are also available for sight-seeing, picnicking, camping and other forms of outdoor recreation.

The Bureau recognizes recreation as an important land use. Through its planning and land classification activities, the Bureau is constantly endeavoring to place the lands best suited for recreation to that use. In general, such areas will fall into either of two broad categories, (1) those classified for lease and/or disposal and (2) those retained under the jurisdiction of the Federal government. Included in the first category are those lands subject to the Recreation Act of 1926, as amended and the Small Tract Act of 1938, as amended, for which established policies exist (CFR 43; 254, 257). This policy statement applies to lands falling in the second category.

Areas of public land endowed with outstanding aesthetic or recreational values the fullest realization and proper protection of which are attainable only at the exclusion of all other forms of use may, if in the public interest, be withdrawn from all types of entry. Since such single-purpose management is generally inconsistent with the Bureau policy of multiple-use, the administration of such areas may be transferred to other appropriate Federal agencies either by agreement or permanent transfer of jurisdiction.

Similar areas of unusual aesthetic or recreational values the enjoyment and protection of which will not be seriously impaired by other authorized uses, may be designated as recreational areas and retained under Bureau jurisdiction but will not be formally withdrawn. The installation of certain improvements by the Bureau to facilitate public use of such areas in the United States, will in effect constitute an appropriation as set forth in Section 101.20 of CFR 43. Furthermore, if necessary to the preservation of existing aesthetic or other values, restrictions on other authorized uses may be invoked, such as the reservation of forested strips around camp grounds, along streams and bordering roads. Designated recreational areas will receive the same degree of maintenance usually accorded other Bureau improvements on the public lands and within the limitations of available funds allocated

for that purpose.

Wherever practicable, the Bureau prefers to turn over the management of the recreational features of its lands to local sponsoring agencies having jurisdiction within the locality receiving the primary recreational benefits. In furtherance of this desire and to meet an increasing public demand, the Bureau is attempting to liberalize the provisions of the Recreation Act of 1926 by extending to non-profit organizations privileges now limited to states and political subdivisions. In the event local governmental units are unable to assume responsibilities for the management of recreational facilities and there are no other recreational opportunities available to the residents of the vicinity, the Bureau will administer the area. The same will apply to isolated and remote areas where local sponsorship is impractical or not available or where other uses of the area demand close supervision of recreation by the Bureau.





UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY  
DIVISION OF TERRITORIES AND ISLAND POSSESSIONS  
WASHINGTON 25, D. C.

JUL 12 1948

*9-11-99  
Alaska Field  
Staff Comm  
Adm. Gen.*

Memorandum

To: The Secretary

From: James P. Davis, Director (Sgd.) J.P.D.

Subject: Alaska Road Commission and Ex-Officio Commissioner for Alaska.

Attached hereto for your signature are several documents in connection with the Alaska Road Commission and the ex-officio Commissioner for Alaska.

1. On July 1, Order No. 2438 was issued, creating an Alaska Field Staff and Alaska Field Committee. It provided, among other things, that the Director of the Alaska Field Staff shall serve as ex-officio Commissioner for Alaska for the Interior Department. The position of ex-officio Commissioner for Alaska has been held by Governor Gruening since January 29, 1941, pursuant to a designation by the Secretary of the Interior on that date. Although the Director of the Alaska Field Staff has not yet been appointed, it seems desirable to notify Governor Gruening of the change in designation. Accordingly, a letter to the Governor has been prepared.
2. Order No. 585 of June 30, 1932, as amended by Order No. 605 of December 3, 1932, vested the authority formerly exercised by the board of road commissioners for Alaska in the ex-officio Commissioner for Alaska, and created the Alaska Road Commission. In view of the fact that arrangements have been made with the Department of the Army for the detail of Colonel Noyes, to head the Road Commission, jurisdiction over the Road Commission should no longer be vested in the ex-officio Commissioner for Alaska, but should be transferred to the Commissioner of Roads for Alaska, the position which Colonel Noyes will hold. There has therefore been prepared an order providing for administration of the Alaska Road Commission by the Commissioner of Roads for Alaska, and revoking the 1932 orders.
3. There is also attached a letter for your signature to Colonel Noyes, informing him in general of the objectives of the Alaska road program and directing him to report to the Secretary through the Director of the Division of Territories and Island Possessions.

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF TERRITORIES  
RECORDS SECTION

( Part 1)

ALASKA

COMMITTEES

ALASKA FIELD COMMITTEE

**IMPORTANT**

This file constitutes a part of the official records of the Office of Territories and should not be separated or papers withdrawn without express authority of the Director.

All files should be returned promptly to the Records Section.

Officials and employees will be held responsible for failure to observe these rules, which are necessary to protect the integrity of official records.

WILLIAM C. STRAND  
Director

INT.-DUP. SEC., WASH., D.C.

53023

Jul. 1, 1947  
to

ed. 27, 1954

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF TERRITORIES

FILED FILE COPY  
Surname:

Air Mail

Mr. Donald H. Goodman  
Chairman, Alaska Development Board  
Post Office Box 1615  
Anchorage, Alaska

AUG 18 1952

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Dear Don:

In accordance with your request that I send you views and opinions which I picked up on my recent tour to Alaska which might be worthy of consideration at the Mt. McKinley Park meeting, I offer the following:

1. That consideration be given to legislation which would set up a Territorial Park Board or similar body that could acquire for the Territory land to be used for roadside picnicking and park areas, Territorial or State parks, and other types of recreation areas. I think this is a very important item to be considered at this time if we are properly to develop roadside areas and scenic points for the benefit of Alaskans and our increasing number of tourist guests.

2. Along with the establishment of such a Board, I think consideration should be given to requesting the Territorial Legislature at its next session to provide funds for the development of turnouts, picnic and recreational areas along our highways in order that people may more safely turn off the roads when they wish to view the scenic beauty of a particular area, take pictures, picnic, fish, etc. The importance of establishing such facilities which should include fireplaces and picnic tables cannot be overemphasized. Indiscriminate picnicking and camping is frequently a cause of fires which destroy valuable areas of forests, natural cover and wildlife. To raise money for these purposes, consideration should be given to increasing the gasoline tax sufficiently to cover such items, as well as to provide access and farm type of roads that are the direct responsibility of the Territory.

3. Consideration might also be given to the advisability and desirability of establishing a truck tax which could help defray costs that occur from the excessive wear and tear on our road system by such equipment. A portion of such revenues could be devoted to providing turnoffs for truckers when they need to stop for repairs or if they wish to stop and rest. On my recent trip to Alaska I noticed on a number of occasions that the truck drivers had stopped on the road and curled up in the seat to sleep. Although they had selected points on the highway where they could readily be seen, parking of such heavy equipment directly on the road is a definite hazard. With our great increase in highway travel, greater consideration should be given to all phases of travel safety.

*Al-Committee Alaska Field Committee*

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4. Related to these items is that of establishing roadside facilities to include enclosures that people might use as required in rain or cold weather. What I have in mind is a rustic or log type of structure somewhat of the size used by the Yukon Territorial Government in the tourist cabins which that Government has provided at selected points along the Alaska Highway.

I suggest rustic or log cabins because I think it is important in considering the development of our tourist trade that we stick to features of this type that can be recognized as distinctly Alaskan. The properly constructed log cabin would be a neat, attractive, first-class type of facility which would be enjoyed by our tourist guests and which would provide a wonderful background for the pictures they would take and which, in turn, become great advertising factors in selling Alaska to more people planning vacations and tours. In addition to being a facility for the tourist, equally important, a well-constructed log house would be a wonderful roadside shelter for use in the winter when a person's automobile stalls or for any other reason when it would be needed for shelter purposes. A log cabin, once heated, can be kept heated very easily. Also, a log cabin commands respect, and is not as easily destroyed by carelessness as are board structures. Such shelters, I am sure, would also be used very frequently by Alaskan families desiring to get out both winter and summer for a family outing. I have no doubt that these cabins and other roadside facilities would be quite easily planned and suitably designed at reasonable prices if the Territorial Highway Engineer, Commissioner of Roads, National Park Service and Bureau of Land Management were given an opportunity to participate in the program.

5. Also related to the above, is the standardization and construction of suitable road signs and markers. Here again, I think serious consideration should be given to the rustic in order that Alaska can have distinct signs and road markers. In addition to being attractive, they would serve as a background for pictures that tourists, visitors and Alaskans would like to take as they tour the Territory. I suggest signs of the type recently developed by the Forestry Section of the Bureau of Land Management. I am sure Virgil Heath of that organization could be of great help to any committee working on this matter. The Forest Service has also developed attractive rustic signs which might be adaptable.

6. It seems that the McKinley meeting would be a suitable place for consideration of legislation which would set up some type of a zoning commission to take care of the numerous problems arising throughout Alaska over jurisdiction in areas of conflict between the incorporated cities or towns, school districts, public utilities districts, etc. This type of legislation might be a part of the park recommendations I mentioned earlier.

There are other types of legislation that I think should be considered as they have been mentioned from time to time over the last few years as causing trouble in the Territory's development. Drafts of such legislation, I believe, have been prepared. They can be obtained from the Alaska Development Board, I am certain, for consideration by the McKinley Park or any other Alaskan group should they wish to request legislative action on any or all of these matters.

7. Along with the above, I wonder if it wouldn't be timely for the Territory of Alaska to enact legislation that would modernize our licensing procedure for automobile drivers. I know that the Alaska drivers license is not recognized in many of the States. Since these licenses are not recognized, I can appreciate where cases might arise which could embarrass and prove expensive to Alaskan drivers when they visit in the States. Territorial legislation should also stipulate periodic and more thorough motor vehicle inspection than has been required in the past. I think as Alaska develops its tourist trade, it should be foremost in all factors which regulate and govern safe, pleasant driving on our highways.

While I have always been impressed with the scenic beauties and opportunities that exist in Alaska, I did not fully appreciate them until I had a chance to observe and review them in comparison to what they call scenic attractions and opportunities throughout the States. Since Alaska has so much to offer and we have such a large area, I think we should start a "Boosting the Territory" program which would exceed anything that Los Angeles or Texas has ever attempted to do in this field. No matter how far we went, I don't think we would be able to fully express the greatness and beauties of Alaska.

There are a large number of other things that I know will be brought up by those who plan to attend the meeting. I hope the following persons might be invited to attend this meeting, as well as a number of other Federal persons and Territorial officials interested in the problems up for consideration at this meeting: George Rogers, Chairman, Alaska Field Committee; A. F. Ghiglione, Commissioner of Roads, Alaska Road Commission; Donald R. Wilson, District Director, Alaska Public Works Program; B. Frank Reintzleman, Regional Forester; Joseph Morgan, District Manager, Bureau of Reclamation; all of Juneau, and Col. J. F. Johnson, General Manager, The Alaska Railroad; Lowell Puckett, Regional Administrator, Bureau of Land Management, and Virgil Heath of the Bureau of Land Management, all at Anchorage.

This meeting, I am sure, will produce a lot of good ideas that will lead to constructive action. If possible to do so, please send me minutes or a report of the meeting.

You will understand, I am sure, that these are more or less personal reactions picked up during my recent visit. They must not be regarded as a program or even as suggestions coming from the Department of the Interior.

It was nice to visit with you and I am looking forward to seeing you at the Joint Chambers of Commerce of the United States and Canada, Northwest Development Committee meeting in October.

Sincerely yours,

(Sgd.) Jos. T. Flakne

Jos. T. Flakne  
Chief, Alaska Division

cc George Revers, Ghiglione, Johnson, Don Wilson

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INTERIOR DEPT  
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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY  
ALASKA FIELD STAFF  
JUNEAU, ALASKA

Flake	277	11
Davis	80	175
Gooding	100	154

October 17, 1949

Mr. William E. Warne  
Assistant Secretary  
Department of the Interior  
Washington 25, D. C.

*Noted  
J.E.J.*

*9-1-99  
Adm.  
Gen.*

Dear Bill:

At the recent Field Committee meeting at McKinley Park a lengthy discussion took place of the overall relation of transportation to development in Alaska. This discussion was precipitated by Colonel Johnson as a result of what he regards as unfair competition based on our very extensive program of road building and subsidized road maintenance. Colonel Johnson has several ideas which he feels are worthwhile and which would help the Railroad maintain its position in the Territory.

As a result of the discussion that took place, the following recommendation was adopted unanimously by the Field Committee:

It is moved that the policy of the Alaska Railroad be to stimulate and promote the development and defense of Alaska; that in pursuance of this policy the rates of the Railroad be reduced so as to be comparable to continental rail rates; that the management of the Railroad feel no obligation to oppose the development of other and in varying degree competitive means of transportation which are beneficial to the economy and defense of Alaska; or feel no obligation to abandon existing vital services or subsidiaries because they show no profits; that in formulating this policy for the Railroad it be noted that eighty per cent of the Railroad's freight is government cargo and that operational profits represent essentially bookkeeping entries which actually signify the Federal Government's taking of its funds from one pocket and putting them in another. And that, therefore, while vigilant in behalf of economical and efficient administration and operation, it be the declared policy of the Department of the Interior to view the Alaska Railroad as an instrumentality of development and defense, and no more be required to establish the illusion of operating profits than is expected or required of the Richardson Highway or Fort Richardson, whose operation and maintenance are

*Alaska Shipping*

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annually recurring charges; and that the Department of the Interior henceforth seek the necessary appropriations and subsidies to make this policy effective.

It is the firm belief of the Field Committee that this policy was originally intended when the Railroad Act was passed by Congress and that it is a "must" if the Railroad is to carry out its fundamental role of development. The Field Committee urges that the Department support this point of view as an instrument of Railroad operating policy.

Sincerely yours,

(Sgd) Ken

Kenneth J. Kadow  
Director

cc: Mr. James P. Davis ✓  
Mr. Walton Seymour  
Colonel J. P. Johnson

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
Office of the Secretary  
Washington

Files  
4-1-49

Memorandum

To: Members of the Program Committee

From: Assistant Secretary Warne

Subject: Six-year Integrated Program for the Department of the Interior in Alaska, 1950-1955.



Attached hereto is a six-year report of the Alaska Field Committee covering fiscal years 1950-1955 inclusive, transmitted to the Secretary of the Interior by the Chairman of the Alaska Field Committee. This report is prepared in compliance with Section 4(a) of Order 2465, which provides that each field committee will formulate, revise continually, and each year report on its collective and recommended concept of a Department-wide long-range program adequate to meet the requirements of the region for which it is responsible.

This program report presents an analysis of the problems and needs of Alaska and proposes a program for the Department of the Interior to participate in, in meeting these needs through wise management and development of the region's resources.

In your review of the report it is suggested that you consider the extent to which it presents a balanced program of the Department's activities in the region. As you know, the field committee was instructed to present its program in the light of the needs of the region without regard to current levels of appropriation or budget ceilings. You are requested to present your comments on the report to the Chairman of the Program Committee by August 26, 1949. The report and your comments will be considered at a meeting of the Program Committee which will be held on September 7, 1949.

The report is to be used in the meantime as a guide in preparing 1951 budget estimates of the Department applicable to Alaska.

*William S. Warne*

Assistant Secretary

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A SIX YEAR INTEGRATED PROGRAM  
FOR THE  
DEPARTMENT OF THE INTERIOR  
IN  
ALASKA  
1950 ---- 1955

REPORT TO: THE SECRETARY OF THE INTERIOR

BY THE: ALASKA FIELD COMMITTEE - JULY 1949  
Governor Ernest Gruening  
John R. Noyes, Alaska Road Commission  
J. P. Johnson, The Alaska Railroad  
Don C. Foster, Alaska Native Service  
Lowell M. Puckett, Bureau of Land Management  
G. D. Jermain, Bureau of Mines  
Joseph M. Morgan, Bureau of Reclamation  
Clarence J. Rhode, Fish & Wildlife Service  
John C. Reed, Geological Survey  
Alfred C. Kuehl, National Park Service  
Kenneth J. Kadow, Chairman

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July 15, 1949

Hon. J. A. Krug  
Secretary of the Interior  
Washington, D. C.

My dear Mr. Secretary:

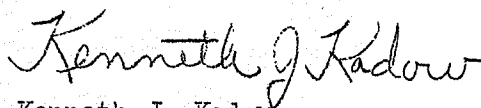
I transmit herewith the six-year report of the Alaska Field Committee covering fiscal years 1950 to 1955, inclusive.

This report represents an integration of plans for the several bureaus of our Department, as well as plans of some other government agencies which are closely related.

Unfortunately, not all agencies participating in this report have approached their specific problems with the same insight and planning outlook. As a result, the report is, in my opinion, out of balance as an overall development plan. A concerted effort has been made by this office to encourage those bureaus which have been unduly conservative in their outlook, and to tone down those which appeared over-optimistic. We have not, however, been entirely successful in this endeavor. It is also acknowledged that many of the plans proposed herein are not as thoroughly documented or substantiated economically as would generally be the case in a report of this nature. This has arisen from the fact that reliable basic data in many lines of development work are not available. It is hoped that concentrated endeavor by the Committee as a whole will improve this weakness as the Committee's work continues.

In spite of the above shortcomings, it is my firm belief that a good foundation has been laid for a well rounded economic and social development program in Alaska.

Sincerely yours,



Kenneth J. Kadow  
Chairman  
Alaska Field Committee

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## I. INTRODUCTION

The unstable political condition of the world and the critical shortage within the continental United States of many heretofore abundant natural resources have focused attention once more of both business and government upon Alaska, the only remaining large, undeveloped frontier under the American flag.

Although the military significance of Alaska in the defense of the continental United States has long been realized, only now is a program of definite action under way to secure this vast, undeveloped frontier. Likewise, only recently have the military and civilian leaders of the government appreciated thoroughly that an undeveloped land area is vastly more difficult to defend than is a well developed one. In other words, the rapid and orderly development of the civilian economy of Alaska is not only important because of its possible impact upon our national economy and well-being but also because of its direct bearing on the military security of the nation.

Specialists of the government and private industry have known for many years of some of the huge, untapped resources of Alaska, but even today any real concepts as to the actual quantity and quality of these resources, with very few exceptions, are at best only a guess.

The great change in the abundance of our natural resources, brought about by their accelerated use during World War II and our post-war economy with the resultant high prices now being paid for these resources, has made many projects in Alaska heretofore impractical of real significance to our nation. However, because of the tremendous size of Alaska and the exceptional high cost of production that exists there at the present time, any large scale development program must, of necessity, be accomplished through team-work between Federal and Territorial governments on the one hand and private citizens and investors on the other.

The program herein presented is intended to develop a pattern for this partnership which will prove of the greatest possible value to the nation as a whole, as well as to the private citizens who directly or indirectly become a part of the Alaska program.

Obviously, Alaska can and will prosper in direct proportion to the economic and social well-being of the continental United States. Therefore, in order that all concerned with this great enterprise can appreciate in proper perspective the social and economic forces that are operating to the end of developing Alaska, a few generalizations as they exist today, and as they are likely to exist in the foreseeable future, are worthy of our immediate consideration.

## II. NATIONAL OUTLOOK

### A. Population Growth 1/

Population forecasts of the United States Department of Commerce covering the period from 1945-1975 indicate that by 1950 the population of the United States will be 147,986,000 people. This will represent an increase of 16,316,725 people over the population of 1940. By 1960 the population of the United States is expected to be approximately 156,000,000 and by 1970 it is expected to be between 162,880,000 and 165,929,000. It is expected that the

present trend will continue with greater increases of population in the western and southern portions of the United States than in the eastern. Furthermore, it is reasonable to expect that as we return to economic normalcy within the continental United States, the opportunities for settlement in Alaska will be proportionately better than those existing in the more highly competitive society of the United States. Later facts herein presented will tend to support this contention.

B. Labor Force 2/

The total labor force has continued to rise since 1946 at which time it was 60.8 million; in 1947 it was 61.6 million and in 1948 it was 62.5 million. If this trend continues, the labor force by 1960 can be expected to be in the neighborhood of 65 million. The exact degree of unemployment in this labor force is, of course, unforeseeable with any high degree of accuracy, but barring any unusual economic disturbance, such as war or depression, unemployment may be expected to level off at about 3,000,000 to 4,000,000 as the national economy becomes more normal. The tendency of this unemployment will probably show a slightly larger percentage in the Pacific Coast States than in other parts of the country. This will be due largely to the fact that the population of this region is increasing more rapidly than the national population because of the high immigration there. This population increase is running ahead of the change from latent to actual economic developments in this region.

C. National Product and Income 3/

The gross national product was recently as high as \$250,000,000,000 a year as compared to \$100,000,000,000 in 1940 and may be expected to reach \$285,000,000,000 to \$300,000,000,000 by 1960. Converting these figures into a "constant dollar", it would amount to about \$140,000,000,000 as compared to 1940 and \$160,000,000,000 by 1960. This is a conservative estimate of the future gross national product. Many qualified authorities expect it to increase from one-third to two-thirds over the present within the next decade. Some elements of the national product are rising and will probably continue to rise materially above the gross national product in general because of shortages and special problems involved. In this category are many minerals, mineral fuel, transportation, electric light and power, and some categories of manufactured and capital goods. As may be expected, large fluctuations in the gross national product directly affect national income and per capita income. With a national readjustment under way, the rising trend of salaries and wages cannot be expected to continue, but instead may be expected to adjust itself slightly downward. Since the per capita income of the Pacific Coast for the past few years has been higher than the national level, a greater downward adjustment may be expected in this area since industrialization of the area has not kept pace with immigration.

The Interior Department's program has had and will continue to have a very vital function in maintaining the gross national product. We must speed up the development of general utilities essential to the continued vital services of the national economy and the individual. We must intensify our search for resources, especially those in short supply. We must, in every way possible, encourage and assist in developing the proper balance between the production of raw materials and their industrialization. This is particularly true in

those regions which are situated geographically so as to render additional justification for integrated programing, such as Alaska. In all of our planning for the full utilization of our natural and human resources, we must always keep foremost in our minds the necessary measures of conservation which will, in so far as possible, keep our resources as a never-ending asset.

D. Land Resources 4/

The continental United States comprises 1,905,000,000 acres. Roughly 1,754,000,000 acres of the total area are devoted to agricultural use. Of the 1,754,000,000 acres, 450,000,000 acres are crop land, 608,000,000 are pasture and non-forestry range land, and 624,000,000 acres are forest areas. Of the 450,000,000 acres now being used for crops, about 61,000,000 are so steep, eroded or of such low fertility that they should be devoted to grass or trees. This is the broad pattern of land use in the United States after a century and a half of rapid expansion. Practically speaking, our land resources are under our feet today. The days when new fertile land (within the United States) was available for the asking and extensive new forests lay ahead are behind us. Perhaps as much as 80,000,000 acres could be converted to crop use by irrigation, drainage and conversion from grass and trees. That is about as far as the nation's crop acreage possibilities can be stretched.

Since 1940, per capita food consumption has increased by 18%. With the lowering of prices and an increase in living standards, per capita consumption will increase further. As an additional consideration of our national land use problem, from 7 to 15% of our total United States food production is exported. In the opinion of top-flight agricultural experts, we are actually short of good land now and unless drastic, far-reaching policies to stop the continual "mining" of our soils are instigated, the United States may soon find itself in the position of not being able to produce sufficient food for its own population. This, of course, does not take into consideration those fairly numerous food crops which cannot be produced except in other climates of the world and are, therefore, now being imported.

If well managed, the United States has plenty of forest lands to grow all the timber products it needs with a margin for unavoidable losses, new uses, export, and national security; and, at the same time, to furnish in good measure the other forest benefits of watershed protection, forest range, forest recreation, and wildlife habitat. However, our forests are not now in condition to meet the challenge. We are, at the present time, cutting between 50,000,000,000 to 55,000,000,000 board feet (plus natural losses) whereas the annual growth is computed at 35,000,000,000 board feet. A continuation of the present rate of timber cutting without adequate forest management practices will mean a depletion of our forest capital assets. The nation must not be misled by statements of near balance between cubic foot drain and growth for all timber including trees below saw timber size, because 80% of the drain is in saw timber, particularly soft wood, whereas much of the growth is in small, low-grade trees and inferior hardwood. The nation's need for saw timber products greatly exceeds present cut, yet saw timber is in excess of annual growth. Nor can we rely to any great extent on imports because there is a world shortage of timber especially of soft woods for construction, and of low cost sources of timber for pulp. For example, last year 82.8% of the newsprint used in the United States was imported and judging from present outlook, this import will continue to increase.

Another point of real national significance concerning our land resource is the fact that the range lands west of the Great Plains are among the most depleted of the nation's resources. The productivity of vast areas is less than half what it ought to be. Most of this depletion began in the day of the unregulated use of the open range, but subsequent continued over-stocking of both private and public lands has prevented recovery. The public interest in range lands extends far beyond their value for the grazing of domestic livestock. If this were the only concern, they might not justify any very large public expenditure to restore and maintain them. However, they make up a very large part of the watersheds of the streams in which flow life-giving waters. Not only do they yield a considerable part of the water supply, but when left to deteriorate and erode excessively, they contribute to damaging floods and are the source of the most abnormal load of sediment that is gradually choking many of the streams and filling many of the storage reservoirs. Another major public interest is the value of range lands for wildlife, hunting and fishing and other forms of outdoor recreation.

Thus, we see that although many steps may be taken to increase the productivity and utilization of lands in the continental United States, the rich lands for homesteading and other development uses are gone and new lands for settlement can be found only through large expenditures and unified reclamation programs on the part of government. This is not the situation in Alaska where several million acres of land are still available for homesteading and settlement in varying degrees of suitability.

#### E. Mineral Resources 5/

As a direct result of two world wars and a tremendous increase in the gross national product, our eminent position as a "have" nation is threatened in regard to a number of the principal mineral resources needed for our economy. While we have always been importers of certain mineral products such as tin, manganese, chromium, and nickel, we have been generally self-contained in the broad field of minerals. Our present national requirements have grown to astronomical figures as may be illustrated by the 1947 production of iron ore at 93,000,000 long tons, 16,000,000 short tons of salt (sodium chloride), 9,000,000 tons of phosphate rock for fertilizer, 863,000 short tons of copper produced from domestic ores, 380,000 tons of lead produced from domestic ores, 688,000,000 million net tons of coal and 1,856,000,000 barrels of petroleum. As high as these figures are, it must be remembered that the next decade will undoubtedly bring considerable increases in our total national product with its corresponding increased drain on all of our resources. This problem is one of the most important that faces America today. There is serious doubt in the minds of many qualified experts of our ability to produce or acquire raw materials at the rate necessary to maintain our national product, income, and security.

On the next page is presented the relative self-sufficiency of some minerals in the United States. With few exceptions, the minerals listed are known to occur in Alaska, some in quantities which are or may be amenable to economic development.

<u>Commodity</u>	<u>Percentage of 1946 Requirements Produced Domestically</u>
Corundum	0
Diamonds (Industrial)	0
Monazite	0
Quartz Crystals (Radio Grade)	0
Tin	0
Nickel	0.4
Chromite	1
Asbestos	3
Cobalt	10
Platinum	10
Manganese	13
Graphite	15
Antimony	21
Arsenic	37
Cadmium	47
Copper	55
Bauxite	57
Bismuth	57
Vanadium	62
Zinc	63
Ilmenite	70
Lead	72
Tungsten	72
Gypsum	80
Mercury	80
Fluorspar	92

#### F. Power

Our national power plant is run primarily by electricity, petroleum, gas and coal.

The power producing potentials of our reserves of coal, oil shales and swiftly flowing rivers are sufficient for many years ahead. The immediate job is to provide enough capital to tap these resources on an efficient basis.

In the next decade oil and gas needs may advance from one-third to one-half. Coal requirements will rise slowly until a depletion of gas and oil reserves induces a switch to manufacture of gas and synthetic liquid fuel from coal. At the present time about one-half of our national heat and energy comes from coal of which America has a tremendous reserve.

Approximately 30% of the electric power capacity in the United States is in hydroelectric installations. Because of the inexhaustibility of this resource, its importance is greater than indicated. Its substitution for fuel-fired sources of energy makes the expendable sources available for other important uses. In 1946 we were using 275,000,000,000 kilowatt hours of electrical energy. Because of the ever-increasing new uses and the expanded market for old uses, the demand for electrical energy is expected to reach as much as 375,000,000,000 kilowatt hours by 1952. In order to meet the ever-growing electrical power demand, we should plan to double our present power



capacity within the next decade. Some of the low cost hydroelectric potentials of Alaska as compared to other available sources in the northern hemisphere offer particular promise as developmental sites.

#### G. Fish and Wildlife

The fish resources of the nation are apparently in no immediate danger of extinction although certain highly prized commercial species are rapidly becoming depleted, and positive conservation methods must be employed to save them. It is estimated that the fishery products could be greatly increased through the proper utilization of waste fish and parts thereof now being destroyed by present fishing and manufacturing methods. It is also estimated that great untapped fish resources are available in some of the more remote waters not usually frequented by fishermen. At the present time United States fisheries produce 4,000,000,000 to 5,000,000,000 pounds annually of protein foods, vitamin oil, animal feeds, and other valuable by-products.

Wildlife, in addition to providing recreation, provides furs for clothing, and meat and fowl for food. As in the case of fish, certain species of animals and birds have been "over-worked", whereas the wildlife situation as a whole has considerably improved over that of 1930. Because of neglect, the United States is not beginning to realize what it might if proper care were given to many of its fur-bearing animals and animal refuges. It has been demonstrated in wildlife refuges that properly located water impoundments are turning relatively worthless land into reservoirs of production. Under a multiple-use development, they are providing habitat for water fowl and fur-bearing animals and at the same time raising and maintaining water tables. In addition, upland game species find drinking water and cover, and fish are usually benefited. With proper long-range policy, it should be possible for Alaska to continue and even improve its contributions to our national economy in the field of fish and wildlife. The Territory has many unique species of fish and wildlife found nowhere else under the American flag.

#### H. Recreation

One of the most valuable of our many assets from the standpoint of our social well-being is our national recreation resource. With the ever improved and increasing road, rail, water and air transportation systems and a constantly increasing income, Mr. America and his family is literally on the move. The recreational desires of a progressive people cannot be satisfied with what a single government agency may provide. One citizen may find recreation in the inspection of various projects and activities such as huge engineering works. Another will enjoy observing natural phenomenon and beautiful scenery. Still other want physical recreation in the usual sense of that term. In this concept, lands held for public parks and monuments appear as a sub-division, and a highly important one, of the lands that can contribute, in a greater or lesser degree, to recreational satisfaction.

In addition to the social well-being derived from recreation, a more readily recognizable value is economic, for recreational areas such as our national and state parks play a significant part in our local, regional, and national economy. It affects practically every phase of industrial production from steel to the cotton picker, from farms to the airplanes, from artistic

and intellectual outlets to sports events. All programs for the development and utilization of the natural resources must include preservation and conservation of the recreational resources if the Territory is to obtain full benefit of its potentialities.

#### I. National Security

With the world divided into two camps, re-armament and the securing of our frontiers has become one of the most important functions of the Federal government. Over \$20,000,000,000 was appropriated by the 81st Congress for items which directly or indirectly bore upon the security of our nation such as the Atlantic Pact, the Economic Cooperation Administration, and our national military establishment. There is no reason to suppose that the ideological pressures that have separated the world into these two camps will let up appreciably in the foreseeable future. From a strictly military point of view as it relates to our over-all national security, Alaska takes on tremendous strategic importance. There is very little doubt that an area the size of Alaska, inadequately populated and defended, is more of a security hazard than an asset. Realization of this fact has had a tremendous impetus on the desirability and necessity of developing the Territory without further delay. Only a few Alaskan air bases in enemy hands would place most American cities with striking distance. The recapitulation of these facts is made at this time only to emphasize the importance of the Territory and its possible role in any future conflicts. If the Territory were properly developed with sizable well-populated cities and rural areas with an integrated self-sufficient economy, the chances of its successful invasion and subsequent use by the enemy would be greatly reduced. With the above facts ever present, civilian and military officials are doing everything possible to bring about rapid and orderly development of Alaska as a high priority item of general national security.

### III. ALASKA'S DEVELOPMENT PROBLEMS

Under our political and economic system it is a cardinal economic fact that both land settlement and resource development will take place through private initiative providing such activities when developed are competitive at least on the American market. Generally speaking, Alaska has not developed extensively to date because its business and settlement opportunities as they exist are not sufficient to meet American and world competition. In some lines these opportunities cannot be expected to remain competitive unless some of the factors creating unusually high costs in the Territory can be removed. For the most part they can be removed only through long-range integrated planning by local and Federal government and complete cooperation between government and private industry.

A brief statement of the principal problems existing in the path of rapid development for Alaska seems advisable. Some have already been mentioned, but all will be summarized herewith since they are closely related, each having a direct or indirect bearing on the other.

2  
All forms of transportation to and within Alaska are inadequate for its full development. The Alaska Railroad must be improved. Many new roads are needed and existing ones must be improved. Seaports are inadequate to feed the railroads and roads. Boat service to most parts of the Territory is inadequate and very expensive. Air service is limited by facilities for landing and servicing planes although in much of the area it is the only feasible means of transportation.

Ocean and rail transportation rates are at the present time among the highest in the world. The great size of the Territory and the long distances between small settlements make communications between them additionally difficult and costly. Steps to reduce some of these costs are planned and in some cases are already underway.

Wong  
There is a very critical shortage of risk and development capital. The small amounts existing in the Territory are closely controlled and used. Interest rates are high. At the present time Federal agencies with the power to loan money for various development purposes either do not have proper legislation or have not seen fit to extend their benefits to the Territory on suitable terms. This important bottleneck must be broken if the program hereinafter outlined is to result in the Territory's actual development.

2  
Development of agriculture has not kept pace with other developments; hence, food costs are very high. Along with production problems, the marketing of agricultural produce is an obstacle that must be solved if agriculture in the Territory is to expand.

2  
There is a critical lack of housing throughout the Territory and a great majority of the housing that does exist is sub-standard. Because of the difference in cost and the unavailability of money from local banks, the excellent provisions of the Federal Housing Administration have been non-operative in the Territory until now. Legislation was obtained in the 81st Congress that should solve these problems. Extensive construction is expected to result.

High cost or lack of power has hindered development in most parts of Alaska.

Because of the seasonal character of most of Alaska's present industries, as well as the lack of housing, there is always a shortage of skilled laborers in the Territory. This necessitates bringing laborers in for seasonal jobs with the resultant high costs of transporting and maintaining them in the Territory. These costs, added to the wages paid, make many categories of skilled labor very expensive in the Territory. Especially is this true since many of the skilled laborers who come insist upon working as many or more overtime hours at premium pay as they do regular pay. In spite of these considerations, the laborer in Alaska is no better off than his stateside brethren. In some parts of Alaska the long cold winters have the effect of limiting the economically feasible working season for many types of labor to as little as five months.

The problem of native claims to lands and resources is hindering development and threatening the welfare of the Territory. It must be settled as soon as possible.

All these factors combined create high construction and production costs and a cost of living varying from 30 to 75% above that of the Seattle area. These costs, in turn, discourage capital investment on the one hand and the permanent settlement of people on the other.

The six-year program herewith presented is intended to point the way to the liquidation of these problems and the rapid and orderly development of the Territory.

#### IV. AN INTEGRATED DEVELOPMENT PROGRAM FOR ALASKA

To those who know Alaska, the challenge of its development is both stimulating and frightening. While the opportunities are generally recognized as very great, so are the problems. The fact that Alaska has not developed a typically integrated frontier economy in the past is adequate proof that the problems in some lines of endeavor are not easily conquered by people of small or reasonable means. A few of the more conspicuous opportunities have been exploited by groups with large capital assets behind them. As is so often the case under such circumstances, these interests have not seen fit, generally speaking, to concern themselves with the Territory's development problems, except those pertaining directly to their own limited interests. In fact, these interests have, up until the 1949 session of the Territorial Legislature, been able to successfully block all attempts in the past by the Territory to secure adequate tax revenue for development. Because of the lack of revenues on the part of the Territorial government, it has been unable to render many of the services and functions commonly rendered by State governments. This situation has now been altered, and in the future many local government services may be expected to improve. However, until Alaska receives statehood, it cannot be expected to meet all the normal obligations of a state since it is deprived of proper representation in the Federal scheme of things. The Department and the President are committed to do all in their power to help Alaska obtain statehood.

The great need for an efficient, integrated and consolidated Federal government program in Alaska has long been apparent to Alaskans. Likewise, it has been recognized by the Department of the Interior. The formation of the Alaska Field Staff and the Alaska Field Committee are positive steps taken by the Department

to alleviate this situation. Many excellent results have already been obtained and others are on the way. Likewise, several pieces of legislation for the benefit of Alaska's development have been proposed, and some of them have already been passed by the 81st Congress. Exclusive of military administration and personnel, the Federal government has appropriated \$152,000,000 for its 1949 Alaska program of which more than \$69,000,000 is for the Interior Department.

Some of the broader policy considerations regarding the Department's Alaska development program have already been touched upon under "Introduction" of this report. These broad statements will not be recapitulated here but instead will be reduced to terse, direct statements of basic objectives which are as follows:

Settlement of Alaska in a rapid, orderly manner for the purpose of contributing to the over-all national economy and security.

Development of a sound, well-integrated competitive Alaskan economy as rapidly as possible.

Reduction of costs of all types to competitive stateside levels as rapidly as possible.

Rehabilitation of Alaska's natives with their assimilation in the white man's economy or the development of one of their own. Early resolution of the native claims problem.

Discovery, appraisal and development of Alaska's natural resources as rapidly as practical, particularly those items in short supply in the United States that would complement our total national output, assist in the Territory's self-sufficiency, or have a direct bearing on the national security.

Proper management and conservation of the Territory's natural resources to provide their maximum utility to the nation.

Coordination of the Federal government activities in the Territory, especially those of the Interior Department.

Assistance to the Secretary of the Interior in developing his over-all, long-range Interior Department policies, especially as they relate to Alaska.

It should be recognized that, with few exceptions, all large-scale development programs must be mutual responsibilities to be borne by government, private capital and citizens alike. While this is true of all large-scale developments, it applies more emphatically to Alaska than to any other area under the jurisdiction of the American flag. The job simply cannot be done in Alaska without the proper team-work between government and private interests, unless the basic pattern of our economy is changed, because of the many obstacles indicated under Part III of this report. Local and Federal governments will have to play a greater role for the next decade or two in Alaska's development than will be the case once the program gets well under way. Large investments by government in recognized government services must of necessity precede extensive settlement or investment by private individuals. Once these services are made available, settlement and development opportunities will become conspicuous and attractive. The program herein proposed is largely government in nature, but the



avenues of close participation by private capital and individuals will be pointed out. A guiding principal in Alaska's development will be to encourage private capital wherever and whenever possible consistent with the public interest.

A. Population

1. Estimates of Growth and Ultimate Potentials

Although Alaska has been part of the United States since 1867, little has been done to develop it. There are at present between 95,000 and 100,000 people living here. Of this amount about two-thirds are white and the other one-third native.

There is a great deal of speculation as to how many people Alaska can eventually support. This, like every other question when the answers are unknown, is highly speculative, but comparing it to other countries with similar climates and resources, the potentials are quite large.

Even though the long-range potential population of Alaska is unknown, but may be great, the Department's anticipated population increase for the Territory during the next decade is modest. The goals set for the next ten years are to triple the present population, thus raising it to about 300,000. All the plans set forth in the following six-year program regarding the development of public facilities and services have this population goal in mind. However, with slight additions to this program when completed, and reasonable investment by private capital, the program herein outlined could easily support 500,000 people.

2. Labor Force

The permanent labor force in the Territory as of 1948 was approximately 25,000 persons covered by Social Security. This does not include the agricultural workers or employees of Federal, Territorial or City governments, which force is estimated at 10,000. In addition to the permanent labor force in the Territory, there are approximately 20,000 migratory workers needed annually. The bulk of these are in the canning and construction industries. Practically all migratory labor is hired through Seattle channels and comes from the Northwestern part of the United States, including California.

At the present time, wage scales for skilled laborers are practically the same in the Territory as for the Seattle area except that most skilled laborers during the working season work longer shifts and accordingly receive a large portion of their salary at premium scales. Some typical hourly wage scales paid in the Territory are as follows: carpenters, \$1.74 to \$2.75; sheetmetal workers, \$1.92 to \$3.00; bricklayers, \$2.00 to \$3.00; electricians, \$1.92 to \$3.00; auto mechanics, \$2.00 to \$2.75; plumbers, \$1.90 to \$3.00; equipment operators, \$1.65 to \$2.80; cooks, \$1.40 to \$1.75; longshoremen, \$2.14 to \$3.21; and stenographers, \$225 to \$300 monthly. New construction labor costs are higher than maintenance labor costs as a result of contract differentials.

*Have not considered  
real Post War conditions*



As national unemployment increases in the United States, the availability of migratory and permanent labor in the Territory may be expected to increase. Especially is this true if the overall development program for the Territory is vigorously executed, if homesteading opportunities are plentiful, and if industries are established that will permit year-round employment rather than seasonal as at present. It will be important from the standpoint of permanent settlement to find some answer to the present discrimination practiced toward the free lance laborer. Settlement in Alaska without some source of income or financial support in the early stages is practically an impossibility for the average individual. As a matter of basic policy, the Department should do everything in its power to encourage the settlement of skilled labor in Alaska.

## B. Transportation

The orderly economic development of Alaska depends to a large degree on efficient, low-cost shipping and other transport media. Present high costs of transportation need not be considered an insurmountable development obstacle. New industries utilizing territorial raw materials can provide backhaul cargoes for both rail and ocean shipping. Such cargoes could materially influence the entire rate structure. Improvements already underway and others contemplated for the six-year program will materially reduce the cost of rail and road transportation within the Territory. It is also expected that competition in ocean shipping, as well as enactment of a definite long-range policy by the Department of the Interior, the Maritime Commission, labor unions and ship owners will have a direct and favorable bearing on Alaskan ocean rates. Because of its geographical position, Alaska is fast becoming the aerial crossroads of the world. As competition in this field becomes keener, it may be expected that substantial reductions in air rates will follow. A general outline of proposed departmental action in the field of transportation follows:

### 1. Railroad

The Alaska Railroad, government owned and operated, is committed to the social and economic development of the Territory and the support of the military establishment responsible for its defense.

The Railroad serves the Interior from tidewater at Seward and Whittier through the Kenai Peninsula to Fairbanks with branches to the Matanuska Valley, the Suntrana coal fields, and Camp Elielson adjacent to Fairbanks, a total of 530 miles.

The operating objective of the Railroad has been one of self-support through earned revenues. This objective is unattainable without excessive freight and passenger rates until the Railroad has been completely rehabilitated. Only through comprehensive modernization can the Alaska Railroad reduce operating costs that will produce transportation service at rates conducive to territorial development.

The long-range program of the Railroad envisions two phases of rehabilitation defined as immediate, indispensable necessities, and progressive technical improvements. The first comprises modernization of roadway

and related structures and equipment. The latter contemplates augmentation of the first phase with major innovations of expansion and terminal changes. The results expected are a gradual reduction in rates commensurate with advancement of the immediate indispensable requisites attended by accelerated service and the eventual establishment of rate levels comparable to stateside bases. The program in phases, as well as entirety, is contingent upon appropriated funds. Throughout the rehabilitation, during which gradual improvements will be made, the Railroad will intensify its development program to establish industries that will benefit by better transportation at progressively lowered rates.

For advanced planning purposes a resume and estimated budget have been prepared for the ensuing six years.

#### Fiscal Year 1950

Improvement of Anchorage terminal facilities, erection of material warehouse, power and heating plant and distribution system to supply shop and other facilities. These additions will enable better handling of supplies, increase terminal train movement efficiency and expedite equipment repairs. It is estimated that this will cost \$7,000,000 over a period of two working seasons.

Line points will be greatly improved by remodeling of locomotive sheds and mechanical facilities at Whittier, Portage, Willow, Palmer, Curry, Healy, and Nenana at an estimated cost of \$4,000,000.

Four additional major structures and six large bridges are contemplated for 1950 at a combined cost of \$5,385,000.

The Railroad communication system will be improved by the construction of a telephone and telegraph headquarters building in Anchorage for housing equipment, making repairs and broadcasting. A copper wire circuit will be installed for long distance service between Anchorage and Nenana. Approximately 60% will be finished in fiscal 1950 at a cost of \$60,000. Revision of pole and cable circuits to conform with the Anchorage terminal changes, expansion of mobile and fixed radio stations, teletype repeater equipment at Anchorage and line points will total \$112,000.

Track and roadway construction will represent important progressive improvements. One hundred fourteen miles of bank widening and laying of 100 miles of new rail will be accomplished. The cost will be \$15,500,000. (This includes a major portion of the Railroad relocation in the Turnagain Arm Highway project.)

#### Fiscal Year 1951

Roadway and track improvement for 1951 will comprise approximately 100 miles of new work in addition to that likely to be unaccomplished in 1950 through lack of funds at a cost of \$6,500,000.

New rolling stock by conversion from troop sleepers to power cars will augment equipment at a cost of \$50,000.

Continued improvement of communications to expedite train movements by installation of block signal systems between Whittier and Moraine, expansion of mobile radio units, dispatching circuits and pole line relocations will total \$115,000.

The building structure program for 1951 will include completion of units started in 1950 and curtailed by time element or appropriations reduction. The cost of bridges and trestles will amount to \$1,702,000 and of buildings to \$700,000.

#### Fiscal Year 1952

Approximately 75 miles of track and roadway construction will be undertaken. Sidings and auxiliary tracks will be lengthened and improved. This work should conclude the immediate essential track program and produce operating economies to permit important reductions in rate bases at a cost of approximately \$7,000,000.

To better serve the Military, the Railroad plans to bring to the standard of its improved plant the Army-built line from Fairbanks to Camp Eielson, a distance of 26 miles. The cost is estimated at \$400,000.

Equipment expansion is planned for 1952 by the addition of 25 track cars and application of four-wheel locomotive trucks at a cost of \$157,500.

Communications and signals will be further modernized by installing a block signal system from Anchorage to Whittier, two miles of cable between Anchorage and Portage, and amplified intercommunicating equipment in the Anchorage terminal at a cost of \$135,000.

Planned for 1952 is the renewal of the Matanuska and Nenana river bridges to reduce flood hazards at an estimated cost of \$2,500,000.

#### Fiscal Year 1953

This year should show impressive signs of development in the railbelt resulting from rehabilitation. It is anticipated that the proposed cement plant will be in operation and require an expenditure of \$153,000 to provide terminal and plant transportation facilities.

It is also believed that increased industry and population in the railbelt will require additional communications. To provide them, the Railroad has plans for small unattended dial exchanges for the McKinley Park and Healy areas which are expected to cost \$45,000 and are designed to be self-amortizing.

At this period of rehabilitation the Railroad hopes to improve the Nenana terminal facilities with an alternate line, <sup>this is</sup> approaching the Tanana River bridge. Since in the discussion stage and contingent upon coordination with District Engineers, Rivers and Harbors, no cost has been estimated at this time.

A major project and one that can change the entire complexion of Railroad operation is the proposed midway terminal to be constructed

between Anchorage and Fairbanks. Plans require a new community with all facilities for Railroad operation and accommodations for housing and feeding of employees. Such a terminal means elimination of excessive operating costs presently required by multiple crew changes. The estimated cost of this project is \$10,000,000.

To serve the increased railbelt activities in 1953, additional rolling stock will be required. Flat cars, dump cars, etc. will aggregate \$1,000,000

#### Fiscal Year 1954

In fiscal year 1954 the Railroad anticipates important phases of progressive technical improvement. Surveys are planned for extension of the line to Rampart on the Yukon River. This should determine the feasibility of settlement and economic development as well as the practicality of extended rail service to replace boats on the Tanana River. The survey is expected to cost \$100,000.

Communications for on-line points are to be enlarged this year. Ultra-high frequency radio channels to by-pass snow slide areas and installation of radio net replacements will total \$85,000.

Advanced equipment changes on Diesel locomotives will cost approximately \$50,000.

#### Fiscal Year 1955

Looking further toward development and expansion, the Railroad is contemplating important surveys.

After restoration of the Fairbanks-Eielson line to over-all standard condition, it is planned to survey a line to connect Eielson with the Big Delta Army Post. This connection would place the Railroad at a convenient junction with the Alaska and Richardson Highways, thus completing a logical network and contributing to the development of surrounding territory. This would also provide an important link in a possible rail connection to Whitehorse. Cost of the survey is estimated at \$150,000.

With continued growth of the railbelt, it is felt that 1955 will see the need for new streamlined Diesel passenger equipment, improved roller bearing units for 40 additional coaches, and 12 Diesel locomotives with 12 helper units at a cost of \$2,880,000.

Should rail service be extended to Big Delta and Rampart, a correlated communications system will be required. Such expansion is estimated to cost \$140,000 if installed with the help of the Alaska Communications System.

## 2. Roads and Ferry

A first-class road system is indispensable to the rapid, orderly settlement and development of Alaska. Since the first road was built in 1904, a main road system of 1740 miles has been constructed which connects south central Alaska, including the cities of Fairbanks, Anchorage, and Valdez, with the United States through Canada, via the Alaska Highway. The most important main roads of this system in Alaska are being improved with a hard bituminous surface. Other improvements of location and construction are expected to place this main system of roads in thoroughly good condition within a six-year period. The improvements proposed to be made by the Alaska Road Commission are listed in the attached table on page 19.

In addition to the main system, there are about 1000 miles of disconnected roads extending from railroads or navigable waters to isolated mining camps and similar developments. These isolated roads should be connected with the main system where possible and further expansion should be made. Extension of roads into new regions of the Territory is an essential for its rapid settlement and further development. Of particular importance is the extension of roads into the Kenai Peninsula, which is now being rapidly settled. The new roads proposed for construction by the Alaska Road Commission are shown in the table. They include connection of Mt. McKinley National Park with the main road system. Proper planning for new roads involves an advanced determination of the most desirable areas for settlement. Studies now under way of settlement areas or large scale capital investments may alter the plan somewhat.

Southeastern Alaska is served by a magnificent system of natural navigable waterways. This system consists of deep ocean fiords lying between and penetrating the great mountain systems of the southeast coast. It is an extension northward of the famed inland passage route to Alaska which stretches with scarcely any interruption for 1000 miles from Seattle and Vancouver to Haines and Skagway. The towering mountains prevent the building of through roads in this area except at an enormous cost. The developed areas of southeast Alaska can, however, be connected with through roads and railroads by car ferries extending between Haines and Skagway at the northern end, via Juneau and Ketchikan to Prince Rupert, British Columbia, Canada, south of the southern end. Roads and railroads now extend from these places into the interior of Alaska on the north and to the United States on the south. A car ferry system would probably have to be started as a federal project, though it would be sold to private operators when it later became self-liquidating, as seems probable. Short extensions of roads in southeastern Alaska may be justified to serve definite development purposes and even to connect some southeastern Alaskan towns with the Alaska Highway through Canada.

A report by the Alaska Road Commission is being submitted on the feasibility, practicability, <sup>and</sup> cost of a car ferry system for southeastern Alaska. Such a system would cost \$8,500,000, including two new steel ocean-going ferry boats at \$3,000,000 apiece; shore improvements to cost \$1,000,000; and a revolving fund of \$1,000,000 to be used for

operating expenses, together with \$500,000 for incidentals and contingencies. This report is being submitted separately to the Secretary of the Interior for the action of the Department. The estimates are included in the table. It is possible that part of these funds may be recovered from contributions of other agencies and local interests or from operating profits.

Most of southeastern Alaska and part of the Kenai Peninsula are covered with National Forests. Roads in the National Forest areas are constructed by the Public Roads Administration (not by the Alaska Road Commission) and work thereon is not included in the attached table. Extension and improvement of National Forest roads should keep pace with the development of the main road system. The Glacier Highway, now extending 28 miles north from Juneau, should be extended to Berner's Bay and blacktopped, at an estimated cost of \$1,000,000 so as to shorten the car ferry haul, and open a new district to settlement. Also the road from Anchorage to Seward, largely lying in the Chugach National Forest, should be rebuilt and blacktopped. It is estimated this will cost \$7,000,000. Other short extensions should be made as indicated in the preceding paragraph. In aggregate they would total about \$3,000,000. None of these items are included in the Alaska Road Commission budget, but all are listed as items to be supported by the Interior Department as needs of other agencies.

Several important roads in western Canada are directly tributary to the roads of Alaska. Thus, 1200 miles of the Alaska Highway lies in Canada and this road with its approaches in Alberta and British Columbia is the only overland route of access to Alaska. The road from Haines in southeastern Alaska to the interior of Alaska passes through Canada for 317 miles. The road in British Columbia extending to the seaport of Prince Rupert is an essential connection of the car ferry service. The development of these roads concurrently with those in Alaska is essential to the welfare of northwest Canada and Alaska, which thus form a single economic unit. Since the benefits of the Haines Road accrue largely to Alaska, consideration should be given to the improvement by the United States of this road at an estimated cost of \$18,000,000. Free right-of-way without restriction over this road should be provided by Canada to the United States in return for its improvement. Aside from this, improvements of the roads in Canada should be made by the Canadians, as Canadian interest is dominant. Such improvements should include blacktopping the Alaska Highway and its approaches from Edmonton and Vancouver, blacktopping the road to Prince Rupert, and building a road from the Alaska Highway to Taku Inlet near Juneau. This last road would require United States cooperation through the Public Roads Administration. No cost estimates of the Canadian improvements listed in this paragraph have been made.

The plan for Alaska roads would, therefore, include the following main features:

Improvement and extension of the interior road system of Alaska as described in the table. ✓



Improvement of the road from Haines to central Alaska, and of the seaport of Haines, to be performed by the United States.

Improvement of the remainder of the Alaska Highway in Canada, to be performed by the Canadians.

Provision of suitable improved approach roads in southern Canada to connect with the Alaska Highway and the road to Prince Rupert, to be performed by the Canadians.

Establishment of a car ferry for automobiles and trucks extending from Haines and Skagway through southeastern Alaska to Prince Rupert, British Columbia, Canada, supplemented by such local roads in southeastern Alaska and Canada as would serve the cities of southeastern Alaska.

The road system and car ferries proposed in addition to existing steamship facilities would provide three alternate routes of access to Alaska by motor vehicle. The first lies inland from Montana or Washington via Dawson Creek, British Columbia, over the Alaska Highway to Alaska. The second follows car ferries or boats along the inland waterways of southeastern Alaska and thence overland via Haines. The third will be provided by boats from the United States ports to Valdez or Seward, Alaska, and thence inland over Alaska roads. There would thus be provided three great loops of unequalled scenic attractions for motorists combining the beauty of the inland mountains and valleys with that of the beautiful inside passage route with its fiords, glaciers, and forests. Within Alaska itself year-round communication would be provided with Anchorage, Fairbanks and Juneau, and other principal inhabited centers as well as summer communications to Mt. McKinley National Park. In addition to giving a tremendous impetus to the permanent development in the Territory such a road system would result in an immense increase in the tourist business as well as providing dependable year-round routes for motor vehicles concerned with the movement of passengers and commodities to and from Alaska.

At the present time there is no American customs and immigration station at the Alaska-Yukon border on the Alaska Highway, the station being at Tok Junction, 97 miles inland. It is recommended that the customs and immigration station be moved to the border, in which case the Territory of Alaska could place a weighing station and a highway patrolman there to see that incoming motor vehicles comply with weight and other regulations so as to protect the roads. A post office is also stated to be needed at this point. One building could probably house all of these facilities and effect economy through combining personnel and facilities.

Alaska Road Commission Six-Year Road Construction Program  
Commencing with Fiscal Year 1950 - Working Season 1950

<u>Priority</u>	<u>Project</u>	<u>Construction Period (F.Y.)</u>	<u>Estimated Cost</u>
1	Turnagain Arm Road, Construction	1950, 1951	\$ 9,000,000
2	Asphalt Surfacing Program:		
	Richardson Highway	1950, 1951, 1952	21,619,000
	Glenn Highway	1950, 1951	8,145,000
	Alaska Highway (U.S. portion only)	1950, 1952	6,430,000
	Haines Highway (U. S. portion only)	1950	2,050,000
	Anchorage - Spenard	1950	175,000
	Fairbanks - College	1950	190,000
	Tok Cutoff	1951, 1952	4,080,000
	Anchorage - Indian	1953	1,000,000
3	Kenai Lake - Homer Road	1950, 1951	1,481,250
4	Tok Cutoff Road, Reconstruction	1950, 1951	2,580,000
5	Eagle - Forty Mile - Alaska Highway	1950, 1951, 1952	1,915,000
6	Fairbanks - Livengood Road Reconstruction	1950	170,400
7	Shop and Office Building Fairbanks	1950	50,000
8	Local Farm and Industrial Roads	1950, 1951, 1952, 1953, 1954, 1955	2,800,000
9	Richardson Highway - McKinley Park	1950, 1951, 1952, 1953	5,900,000
10	Shop Building, Glennallen	1950	300,000
11	Residential Housing, Anchorage, Fairbanks, Glennallen	1950	200,000
12	Asphalt Surfacing, Tok Cutoff (Included under Priority 2)		
13	Car Ferries, Southeastern Alaska	1951, 1952	8,500,000*
14	Fairbanks to Chena Hot Springs Road	1951, 1952	1,920,000

<u>Priority</u>	<u>Project</u>	<u>Construction Period (F.Y.)</u>	<u>Estimated Cost</u>
15	Chena Slough Bridge	1951	400,000
16	Nome to Solomon Road	1951, 1952	1,140,000
17	Golovin to White Mountain Road	1951, 1952	750,000
18	Annette Island Road	1951, 1952	780,000
19	Asphalt Surfacing Turnagain Arm Road - Anchorage to Mile 58 only	1952, 1953	1,836,000
20	Cordova to Chitina Road (ARC cost only)	1952, 1953, 1954, 1955	3,367,000
21	Manley Hot Springs - Livengood Road	1953, 1954, 1955	2,600,000
22	Nome to Teller Road	1953, 1954	1,200,000
23	Ruby - Poorman - Ophir Improvement and Extension	1953, 1954, 1955	3,940,000
24	Georgetown - Flat Road	1955	1,250,000
25	Paxson's - Slate Creek Road	1955	900,000
26	Snag Point - Aleknagik Lake Road	1955	450,000
30	Improvement of Existing Roads and Bridges	1953, 1954, 1955	7,500,000
31	Roads to Industrial Projects	1953, 1954, 1955	<u>9,000,000</u>
		Total Construction.....	\$113,618,650
	Maintenance	1950, 1951, 1952, 1953, 1954, 1955	23,841,300
	Surveys	1950, 1951, 1952, 1953, 1954, 1955	<u>1,900,300</u>
		TOTAL.....	\$139,360,250

\*To be reduced by National Defense and local contribution.

All costs given are ARC costs only, and do not include territorial contributions or portions of roads properly chargeable to the Public Roads Administration

No costs are shown later than 1955

RG 126, Off. of Territories  
E.3, Central Files, 1951-71  
Box 92

### 3. Water

The high cost of ocean freight service has had a throttling effect on every sort of Alaskan development. Consideration of long-range development programs for the Territory must include ocean shipping and requires assurance of reasonable rates for an extended period of time.

While monopolistic practices have existed to the serious detriment of the Territory, it should be recognized that Alaskan shipping is also beset by high cost conditions - seasonal trade, one-way payloads, limited all-weather ports, inadequate port facilities, high marine insurance rates and a difficult labor situation.

By reason of its seasonal activities most trade moves during the summer months. This requires a maximum number of ships for a relatively short time which are then useless for the balance of the year. New agreements on the part of the Maritime Commission have partially solved this difficulty.

One-way payloads must bear the round-trip costs of shipping. Major loads are handled for the government whose Alaskan activities create no return cargo. Development of Alaskan industry will reduce this factor as exports from the Territory grow. Also ship cargoes are now handled on a small-package, rural-delivery basis to many small ports. The development of distribution and trans-shipment facilities within the Territory will help to end this.

The number of suitable ports in Alaska is limited both by weather and available facilities as well as by the fact that some are used entirely by the Military.

Marine insurance rates are exorbitant and in some instances so high as to exceed the value of available cargo thus further reducing the possibility of obtaining payloads. Adjustment of insurance rates which is bound to come from installation of radar and other navigation aids will assist in correcting this factor.

While labor costs are high and strikes frequent other factors such as small-package shipments, no return cargo, scattered ports, and insurance are equally important as cost elements. There has been a lack of uniformity in rules and the arbitrary interpretation of these rules relating to penalty cargoes.

Lack of effective competition has been a large factor in keeping costs high. Over the years many shipping companies have entered the Alaska trade. Today only one major American company provides regular service to the Territory. It is obvious that the trade is not attractive to ship operators. The present major operator has earned substantial profits. Yet a general reduction in rates, while necessary to territorial growth, would discourage competition unless other help is provided.

The solution of this dilemma seems to lie in some form of reduction of both capital cost of vessels used in the trade as well as reduction in

the auxiliary costs of insurance, handling, stevedoring, etc. Subject to strict control of profits of all private companies engaged in the trade, it appears that the Federal government must provide vessels for either the total trade or for that portion which is needed for development purposes in the broadest sense. These vessels should be available on charter or purchase at nominal sums so long as they are used exclusively in the Alaskan trade or for Alaskan development purposes. After careful study of Alaska's total shipping needs, competition should be encouraged in order to provide a normal free enterprise method of insuring vigorous and efficient conduct of the shipping business and to maintain a constant downward pressure on freight rates. Likewise, some method must be found to hold at a minimum or prevent the all too frequent maritime strikes which have had a very harmful effect on Alaska's economy and cost of living to date.

#### 4. Air

Throughout great portions of the Territory there is still no other means of communication than the airplane. Planes in Alaska have taken the place of horses and other primitive means of transportation which were used to develop the continental United States. Actually transportation switched quite suddenly from the dog team and poling boat to the airplane with no intermediate step. Vast distances and almost total lack of highways or railroads throughout the interior of Alaska will require dependence on air travel in the foreseeable future.

More per capita use is made of planes in Alaska than anywhere else in the world. Equipment, food stuffs, personnel, and all other items go by air to a large proportion of the mining camps and outlying settlements throughout the Territory.

The program of the Civil Aeronautics Administration started about 1939 in the building of airway facilities, landing strips, and other aids to navigation which made possible the utilization of large ships and scheduled instrument flights. During the war much impetus was given to the building of additional facilities and scheduled air transport is now available to all of the principal towns. Non-scheduled operations, using surplus military transports with 3 to 10 payloads, have drastically reduced commodity freight rates to many areas, but have also developed a patchwork of rates which vary considerably from area to area and from season to season. There no longer remains any uniformity such as existed prior to the war. Scheduled carriers, in some instances, have reduced rates on a competitive basis with the non-scheduled operations, which have brought about such situations as we find between Seattle and Anchorage where the scheduled fare is the same as the rate charged from Seattle to Juneau or from Juneau to Anchorage. At the present time it costs less to ship freight from Seattle to Anchorage than from Seattle to Juneau or from Juneau to Anchorage. In other words, rates have been greatly reduced principally where competition is the keenest.

There are still many areas where scheduled air transportation is impossible due to lack of facilities and where rates are prohibitive in so far as any large scale development is concerned. Urgently needed

is an increase in the type of airports which can be utilized by large planes thereby reducing drastically the cost per pound of air transport. When it is realized there is no other means of communication in large segments of the Territory, the importance of providing facilities to reduce air freight rates is self-evident. No appreciable further reduction can be made with present facilities.

Wherever scheduled instrument flight is possible, there is no place in the Territory now farther than 24 hours from the national capitol nor more than 12 hours from the Pacific Northwest. This has made it possible for suppliers in Alaska to carry smaller inventories of expensive and slow moving but highly critical items such as mining machinery parts and supplies. This has been a boon to small and large industries in preventing costly breakdowns.

Many communities have built around airport sites constructed during the past few years, and it is reasonable to believe settlement will be accelerated in proportion to the air facilities which are planned over the next few years. Further planning by the Civil Aeronautics Administration hinges around newly developed radio navigation aids and communication services which will assist civil aviation as well as provide modern airways for military traffic operating in this strategic area. Expansion is planned of present airways and airway facilities to open additional areas for development by homesteaders and miners. Construction of additional services for the traveling public in the form of lodgings, eating places and gas facilities is one of the major needs. The International Airport at Anchorage is planned to be fully developed within the next six years. This is also true of the Fairbanks airport. These fields will provide terminal facilities for international air routes, allowing the Territory to benefit in world-wide trade, and, of course, giving a great boost to the international tourist trade.

Operating under the Federal Aid Airport Program and through various Civil Aeronautics Administration projects, the Civil Aeronautics Administration is planning new fields in outlying localities. No definite information is available as to the extent of these plans, but the Committee feels the most pressing need now is for better facilities in the outlying areas to provide for essential development. In years to come highways and railroads may be built, but for a long time to come air transport will continue to be the only practical means of communication.



C. Development and Conservation of Alaska's Resources

One of the principal functions of the Interior Department is to make certain that our store of natural resources are developed wisely, taking into consideration their fullest possible use for the over-all good of the nation as well as all necessary measures to assure their conservation and proper management. The following recommendations have used this consideration as a guiding principle.

1. Basic Data

In considering the development potentials of any undeveloped area such as Alaska and in planning its development in an orderly effective manner, basic information must be gathered and carefully studied. Such basic information includes topographic mapping, stream gaging, soil studies, agricultural crop and animal industry potentials, irrigation possibilities, type and distribution of mineral resources, timber cruising, etc. Several agencies of government are responsible for collecting such data.

Agricultural research is one of the most vitally needed functions in the settlement of Alaska's lands. An integrated program of research is already under way between the Agricultural Research Administration of the Department of Agriculture and the University of Alaska. According to present plans of the Department of Agriculture, \$675,000 will be put into the program in 1950 by them and \$117,000 by the University of Alaska, part of which comes from Federal funds to land grant colleges. An estimate of their future needs is given in the budget.

In addition to this cooperative program, detailed studies and research by the Soil Conservation Service are contemplated in connection with the detailed study of land classification, land use capability studies, and the instigation of soil conservation practices. Likewise, the Bureau of Agricultural Economics contemplates increased activity in the study of agricultural markets. All of these programs should be supported to the fullest by the Interior Department as needed functions to the overall settlement program.

Excepting the National Forests, very little is known of the extent or value of the forests on the public domain in Alaska. The Bureau of Land Management plans to cruise several of the most promising areas during the next six years to determine their development possibilities.

Multi-purpose investigations for power, irrigation, drainage, municipal and industrial water supply, flood control and recreation will continue by the Bureau of Reclamation to aid in the rapid, orderly development and settlement of Alaska. There is a definite possibility of improving crop production and land use by these efforts.

The Geological Survey's six-year program, as now visualized, is given in detail for 1950, in general terms thereafter. The Geological Survey's budget estimates have been increased to permit the collection and interpretation of the basic information needed to carry out the overall six-year program. These estimates are given in the budget table at the end of this report. The items listed include only those to be

appropriated directly to the Geological Survey and do not include funds to be transferred from other agencies. In the past such funds have been a substantial part of the total available for the Survey's work in Alaska.

The work of the Geological Survey has been an important factor in the development of Alaska although thus far only a small part of the needed geologic work has been done. The best index to geological accomplishment is furnished by the extent and character of geologic map coverage; inasmuch as essentially all enterprises leading to the appraisal, development, and utilization of natural resources require adequate geologic maps as a first step. Only 0.3 per cent of the Territory has been mapped on scales adequate to permit any detailed analyses of geological features that pertain to mineral exploration or to other economic or military problems; and only 3.2 per cent on a scale adequate to permit even semi-detailed analysis of such features. About 45 per cent of Alaska has been covered by exploratory mapping. Although this type of mapping is an extremely valuable means of obtaining a crude glance at the geological features of unknown terrain, it does not provide enough information to serve present-day needs for critical analyses.

The chief contribution of geology to the economy and general development of Alaska has been in the search for and appraisal of mineral resources. Mining is the only major industry of Alaska whose ultimate limit of expansion, as determined by resources available, is still essentially unknown. Furthermore, mining, as determined by the rates of discovery and development of new mineral resources, is destined to be a leading factor in determining the rate of development in the next several decades. Precious metals, copper, and coal have been the leading mineral commodities in the past; more recently, others have been added to the list. This is a normal progression. A large output of gold during pioneer days followed by a correspondingly large output of other minerals having less value per unit of weight has been the usual sequence of mining events in the development of most virgin territories. Alaska may be expected to follow this pattern. Consequently, reasonable foresight dictates that adequate geologic maps and reports be prepared in order to appraise the mineral potential of the Territory.

Topographic surveys: Alaska needs a better, more adequate series of maps on larger, more uniform scales. This need stems from a variety of sources, all of which can be aided greatly by the topographic maps that the program would produce. Major considerations include the significant geographic position of Alaska, transportation problems, development of mineral resources, water resources development, studies of glaciers, volcanoes, and permanently frozen ground, and the opening of the Territory to widespread settlement. The settlers will best be able to effect the most efficient development of Alaska if adequate topographic maps are available. With these they can locate more favorable settlement areas, with opportunity to appraise water supply possibilities, sources of fuel, proximity of transportation, and all the ramifications of planning settlement. The program will be a long step toward the fruition of the economic development of Alaska, and on the basis of accomplishments expected, it will be possible to expand in time the

Alaska mapping program at a rate sufficient to provide standard large-scale maps of the more critical areas.

The mapping program is expected to assure virtual completion of the series of maps at 1:250,000 scale (four miles to the inch). In addition, sufficient basic ground control would be established to permit an extension of mapping at the larger standard scale of approximately one mile to the inch. Primary concentration will be on the 1:250,000 scale mapping in order to utilize existing aerial photography and source material. Standard specification vertical aerial photography is now being obtained and during fiscal year 1950 more of the larger scale, mile to the inch, mapping can be performed to meet the particular needs of map users. This will include the mapping of the strategic areas required for national defense, the more populated areas of Alaska, and selected areas of economic importance.

Water resources investigations: The Alaska stream gaging program includes investigations of the quantity, availability and utility of surface waters, ground waters, the chemical quality of each, and the sediment content of streams. Knowledge of the availability, quality, and fluctuations of water is essential to sound and stable mining, agricultural, industrial, and power and water supply development. Such information is of paramount importance in the growth and development of towns and cities. Water facts are needed in connection with the development and expansion and operation of municipal, industrial, and military installations, including highways and airfields. The experience of recent years has shown the need for water information for defense and development purposes at many places throughout the Territory.

The results of investigations already made provide a firm basis for development of additional reconnaissance surveys in regions where new water supply problems have appeared or have become urgent. The surface, ground, and quality of water programs are to be extended gradually to other parts of Alaska and are to include more intensive investigations in areas of critical supply, especially for domestic and industrial purposes.

The chemical qualities of surface and ground water supplies in areas of special interest will be studied with reference to utilization of these supplies for domestic and industrial purposes. Data on the suspended sediment loads of many streams are needed in connection with water-power and reservoir development studies because of reservoir silting and the erosional effects of fine glacial sediments on turbines.

Land classification and mineral leasing: Numerous public land areas in Alaska are known or believed to be valuable for minerals, water-power, and water storage. The Geological Survey is responsible for the classification of the public lands as to their mineral potentialities and their water-power and storage value. This is a continuing highly specialized task of office and field investigations necessary to determine the usefulness for development of lands owned or controlled by the Federal government. The Survey's land classification plans for Alaska will be carefully integrated with those of other participating bureaus.

As to minerals, the Homer area on the Kenai Peninsula is receiving first consideration particularly with respect to its coal values. Mineral classification in other areas will be performed as the more pressing needs dictate.

Areas not too remote for early utilization in the expected settlement of the Territory merit immediate detailed investigations as to water and power. A few streams have already been studied and the work is planned for continuation and necessary expansion. In addition, hydraulic engineers will be employed on reconnaissance work examining dam sites and recommending future surveys. Geologists will make field investigations of the geologic conditions at proposed dam sites.

Included in the Survey's six-year program is provision for the supervision of mineral leases on federal lands. This is a normal Geological Survey responsibility.

#### Program for Fiscal Year 1950

The overall program of the Geological Survey for the fiscal year 1950 is briefly summarized below.

**Geologic surveys and investigations of mineral resources:** The geologic program in the summer of 1949 will include studies of petroleum resources, permafrost (permanently frozen ground), nonmetallic, coal, and metallic deposits, and investigations in the Aleutian Islands. Petroleum studies will be continued in the Katalla-Yakataga area, on the Alaska Peninsula and in northern Alaska. Permafrost work will be done in a number of areas, especially where needed by the military services and by special civilian agencies. The work on nonmetallic deposits will be concentrated in the Alaska Railroad belt where construction materials are at a premium. Coal investigations will be focused largely on the Kenai Peninsula and in the Nenana field. Metallic resources will be studied especially in southeastern Alaska, in the Railroad belt, and in the Kuskokwim region. The Aleutian studies will be of a general nature but will emphasize volcanic and seismic (earthquake) conditions.

**Topographic surveys:** In addition to the large task of office compilation of maps from aerial photographs, which for Alaska is done in the Survey's establishment at Denver, the necessary field surveys for vertical and horizontal control and other necessary information will be carried on in fiscal year 1950 along the Glenn Highway and Tok Cutoff, in the Juneau area, in the vicinity of Ketchikan, on Prince of Wales Island, Kodiak Island, and perhaps in one or two other localities still to be selected.

Mapping along the highways is consistent with the Survey's plan for covering the main transportation routes and areas likely to be available for and susceptible to settlement and also is in the strategic area as defined by the National Military Establishment. The Juneau area is of general interest and of specific interest with regards to mineral resources. The Ketchikan and Prince of Wales Island areas are of special interest because the forest resources are under consideration as a source of pulp timber. The Kodiak Island mapping will have general interest and also is designed to complete mapping started there previously.

Altogether about 20 topographic field parties are planned.

Water resources investigations: The program of water resources investigations planned for 1950 represents an orderly extension of the work in progress. Studies will be made principally in interior, southcentral, and southeastern Alaska where present needs for information are greatest. It is planned to continue the operation of 50 gaging stations and additional stations will be constructed and maintained. Miscellaneous gagings will be made at 40 or more sites where some information is badly needed. Because the surface water program is now reasonably well established, funds to be allocated to this activity will be slightly reduced in order that more funds can be made available to get the quality of water program underway.

Ground water investigations will include expansion of studies in the Matanuska Valley and the Anchorage area and may include studies near Dunbar. Current studies at Fairbanks will be continued and possibly completed. Reconnaissance studies in connection with investigation and development of municipal water supplies for Alaskan communities is an important part of the ground water program.

For the quality of water work, the establishment of a laboratory in the Territory is a requirement to assure satisfactory collection and analysis of data, and such a laboratory is being set up and equipped at Palmer.

Land classification and mineral leasing: Because of the limited funds available, it is expected that mineral land classification will have to be largely or entirely confined to coal land classification in the Homer area on the Kenai Peninsula.

Water and power classification is expected to be carried out through field studies as follows in the 1949 field season (fiscal 1950):

- Completion of a survey of Ship Creek near Anchorage.
- Two dam site surveys on Eagle River near Anchorage.
- Surveys on Scenery Cove Creek and Scenery Cove Lake and on Ruth Creek in the Thomas Bay area near Petersburg.
- Dam site surveys at outlets of Grant Lake and Ptarmigan Lake near Seward and possibly mapping of the same creeks from lakes to mouths.

The mineral leasing work, which is now confined to the supervision of coal leases, will be carried on as required by activities on the leases.

Program for the fiscal years 1951-1955: The general pattern of the Geological Survey's program for this period cannot be detailed this far in advance. The needs for basic information change constantly and the Survey must adjust detailed activities to meet current needs. The broad pattern of work will continue on an accelerated basis but specific



activities will change from year to year. The proposed establishment of a pulp mill, the opening of a new mineral district, dam site and reservoir investigations, road construction into new territory, a new airfield, the changing list of strategic materials are examples of the sort of factors which will determine each year's detailed program.

## 2. Land Resources

Few people realize the size of Alaska. It is approximately one-fifth the size of the continental United States, with a total of 571,000 square miles of land. Of this amount, the United States government holds title to 99-1/3 per cent as compared to 24 per cent of the 48 states. The statistical abstract of the United States for 1947 shows that of Alaska's total land area of 365,481,600 acres, exclusive of the acreage of inland bodies of water, 354,995,705 acres are controlled by the Federal government. Of this total 309,710,394 acres are administered by the Department of the Interior. According to figures supplied by the Bureau of Land Management, there are 265,000,000 acres of vacant, unappropriated and unreserved public lands. It is impossible at the present time for anyone to say with any degree of accuracy what percentage of this vast land area is usable for general agricultural purposes. We do know that the tremendous areas of tundra in the north are of very little commercial value except for the wildlife they may produce, including the possibility of the commercial production of reindeer. Likewise, a very sizable portion of Alaska is rugged country which does not support any growth of commercial value except feeding grounds for mountain goats and a few other species of wildlife. However, these areas have mineral possibilities and are of tremendous value as watersheds and power development sites. It has been "guestimated" by competent authorities that there are approximately 8,000,000 acres of land in Alaska suitable for food production. There seems to be general agreement that of the total acreage suitable for agriculture, at least 2,000,000 acres are of value for intensive cropping. At the present time only 14,000 to 15,000 acres are under cultivation, producing such crops as oats, barley, potatoes, clover, peas, carrots, rutabagas, cabbage and other hardy vegetables and bush fruits. A rather small livestock industry includes dairy and beef cattle, sheep, hogs, horses and chickens. All of these activities can be expanded and, in some parts of the Territory, hardy tree fruits should do well. Some are being tried now at Anchorage and Palmer.

In southeast Alaska the bulk of the land area is administered by the Agriculture Department and supports a dense growth of hemlock, spruce and cedars especially usable as pulp. The Agriculture Department has estimated that there are approximately 1,000,000,000 board feet of commercial timber ready for the fellers' axe each year in this area alone. It has been estimated that six modern pulp mills of 500 tons daily capacity could operate in the area, creating between 15,000 and 17,000 new jobs with a population increase of at least 50,000 persons.

This is especially significant since the bulk of the pulp used in the United States is imported. Alaska could produce between 20 to 25 per cent of the total annual United States requirements. Other potentials from Alaska's forests, including those further north, are saw timber, building materials, log housing, furniture and many other wood products in quantities sufficient for Alaska's own needs. It should also support a wood preservation plant for the treated timbers used in Alaska. All the above stated use potentials take into consideration proper conservation and management methods to permit the use of Alaska's forests in perpetuity.

Pursuant to the national interest in the advancement of the Alaskan frontier, a program to facilitate the use, development and conservation of Federal public lands and their resources in Alaska is herein presented.

The Bureau of Land Management has been seriously handicapped in carrying out its assigned functions in Alaska because of the lack of funds. Its work is so important to public and private development that a special effort by the Department must be made to see that funds for its work are forthcoming. It is expected that appropriations will be sufficiently increased on an emergency basis to permit a liquidation of the present huge backlog of public land survey activities within the next two years. It is also expected that some new laws will be enacted in the 81st Congress that will permit more suitable methods of land disposal than now exist affecting, primarily, group settlement of land and the acquisition of land by purchase for individuals, corporations, etc.

Each year basic information regarding the physical and economic conditions affecting land use possibilities in Alaska is obtained. The primary information resulting from these inventories is used in the guidance of settlement and development activities.

The Department has determined that detailed reconnaissance land classification surveys should be made first within the two principal agricultural and industrial areas of Alaska, the Upper Cook Inlet Basin and the Tanana Valley, with some work in the areas near Homer and Kodiak. Land classification surveys have been previously accomplished in the Upper Cook Inlet Basin in the Anchorage Area, the western lowlands of the Kenai Peninsula, and the Wasilla-Goose Bay Region. Reports and maps concerning these areas have or will soon be published. In the Tanana Valley, land classification surveys were accomplished during the 1948 field season in the Big Delta area, the Salcha River region, and in the Nenana to Fairbanks rail belt. Maps and reports resulting from these investigations should soon be available. An area reconnaissance survey was completed in the Haines area last fall, the report of which is in process of compilation.

Given below is a list of areas in which further detailed reconnaissance classification surveys will be conducted. For each of these areas the estimated acreage and type of land use studies is indicated. Under type of examination the following symbols represent the land classification groups: Farming Land (L), Range (R), Timber (T), Shore Space (S), Small Tracts (C) and Public Service Sites (P).

Anticipated Surveys and Investigations  
Detailed Reconnaissance, Land Classifications

Fiscal Year 1950

<u>Name of Area</u>	<u>Type of Examination</u>	<u>Estimated Acreage</u>
Kodiak Island (East from head of Kizhuyak Bay to head of Ugak Bay)	R-S-T-L-C-P	200,000 acres
Caribou Hills	R-T	75,000 acres
Central Cooper River Basin	L-T-R-S-C-P	200,000 acres
Lower Stikine River Valley	L-T-S-C	20,000 acres
Forty Mile Country	T-L-C-P	200,000 acres
Eagle River to Birchwood	L-C-P-R-T	50,000 acres

Tentative Program Fiscal Year 1951

Rex Dome, Wood River and Healy Region	R-T-L-P	500,000 acres
Lower Susitna Valley and Little Susitna Basin	L-T-S-P-C	50,000 acres
Yentna and Skwentna Valley	L-T-S-P-C	65,000 acres
Talkeetna Mountain Range (South slope)	R	350,000 acres
Fort Yukon	L-T-C-P	10,000 acres
Rampart	L-T-C-P	10,000 acres
Tanana	L-T-C-P	10,000 acres
Ruby	L-T-C-P	5,000 acres
Nulato	L-T-C-P	5,000 acres
Galena	L-T-C-P	5,000 acres
Unalakleet	L-T-C-P	5,000 acres
Taiya River Valley	L-T-R-S-C-P	20,000 acres

Tentative Program Fiscal Year 1952

<u>Name of Area</u>	<u>Type of Examination</u>	<u>Estimated Acreage</u>
Upper Yukon Valley	T-L-R	?
Lower Yukon Valley	T-L-R	?
Porcupine Valley	T-L-R	?
Upper Copper River Basin and Chistochina River Valley	L-T-R-P	100,000 acres
Dillingham	L-T-C-P	10,000 acres
Aleknagik	L-T-C-P	10,000 acres
Togiak	L-T-C-P	10,000 acres
Aniak	L-T-C-P	10,000 acres
Ophir	L-T-C-P	10,000 acres
Tarotna	L-T-C-P	10,000 acres
Medfra	L-T-C-P	10,000 acres
Lake Minchumina	L-T-C-P	10,000 acres

Tentative Program Fiscal Year 1953

Bristol Bay Region	T-L-R-P	?
Kuskokwim	T-R-L-P	?
Iliamna Lake and Lake Clark Region	T-L-C-P	200,000 acres

Tentative Program Fiscal Year 1954

Alaska Peninsula and Aleutian Islands	R	?
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Tentative Program Fiscal Year 1955

Ketchumstock Flats	R-T-L	200,000 acres
Nabesna Chisana and Beaver Creek Watersheds	R-T	500,000 acres
Donnelly Dome Area	R	200,000 acres

Most of Alaska consists of rugged mountains, broad plateaus, extensive tundra plains, swampy stream valleys, sandy and gravelly outwash plains, and other land forms where either soil or climate, or both, are unfavorable for intensive settlement and development. Areas with physical conditions which invite intensive land utilization are for the most part small and scattered. Reconnaissance surveys are necessary to determine the areas which are suitable for settlement, particularly in those parts of Alaska, including the northern portion, where there are important aggregates of people as a result of military installations, fishing, lumbering, or transportation activities, or where road construction is providing access to new fertile agricultural areas. The areas considered worthy of reconnaissance based on present information are as follows:

Reconnaissance Surveys

(Lead to the selection of some areas  
for subsequent detailed reconnaissance classification)

1950 Program

<u>Name of Area</u>	<u>Estimated Acreage</u>
Lower Susitna River Region	250,000 acres
Yentna and Skwentna Valleys	200,000 acres

Tentative 1951 Program

Upper Yukon	800,000 acres
Lower Yukon	1,000,000 acres
Porcupine Valley	600,000 acres

Tentative 1952 Program

Bristol Bay Region	800,000 acres
Kuskokwim River Valley	900,000 acres

Tentative 1953 Program

Alaska Peninsula and Aleutian Islands	1,000,000 acres
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Tentative 1954 Program

Ketchumstock Flats	750,000 acres
Nabesna Chisana and Beaver Creek Watersheds	500,000 acres

No program suggested as yet for 1955.

In the preliminary reconnaissance surveys, it is planned to conduct detailed surveys at selected community areas in the region and then generally reconnoiter the surrounding country to determine whether there are areas which warrant subsequent detailed land classification.

The new highways constructed during the war opened up additional territory and some of this land is being settled improperly. Other lands have been withdrawn in anticipation of classification and surveys looking to their opening for settlement under the Public Land Laws. The Alaska Road Commission has under consideration the construction of new roads in various parts of the Territory. Surveys along these roads will be necessary to provide a basis for settling and developing the adjacent land. Land classification surveys, if conducted prior to the construction of such roads, would be very valuable in the selection of the most economically suitable location of such highways. Classification surveys and investigations leading to orderly settlement and preservation of scenic values along all highways planned are as follows:



1950 Fiscal Year

Land use studies along present through highways of Alaska, including the Anchorage to Seward Highway now under construction.

1951 Fiscal Year

Studies along the proposed Paxson to Cantwell Highway.

1952 Fiscal Year

Studies for the proposed highway from Fairbanks to McKinley Park, especially from Nenana to McKinley Park.

1953 Fiscal Year

Studies along the proposed road from Kantishna to McGrath.

1954 Fiscal Year

Land use studies along the proposed Cordova to Chitina Highway.

1955 Fiscal Year

If the present interest in the international railroad between Alaska and the United States continues, land use studies to locate the most economical route of this railroad will be needed and are proposed during this period.

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It is contemplated that joint surveys by the Forest Service of the Agriculture Department and the Bureau of Land Management will begin this summer to determine areas within the National Forests suitable for homesteads, home sites, cabin sites, business sites, trade and manufacturing sites and other types with the view of eliminating such areas from the forests and opening them to settlement. The specific tracts of land for elimination and classification during the next six-year period have not been determined, but it is contemplated that the first survey will take place this summer near Ketchikan. It is expected that a considerable amount of joint classification work will be required in southeastern Alaska each year as industrial development plans proceed.

As the effect of eighty rod shore space reservations between claims has been to withhold from entry a large amount of land desirable for settlement, the Department has launched a particularly active program to restore those areas along navigable waters that are not suitable for wharfage purposes. This is being accomplished by a study on the ground by field parties and actual promulgation of the restoration orders in the field through authority delegated by the Secretary. Shore space investigations are contemplated as follows:

In Fiscal Year 1950

Cook Inlet (parts of the Kenai Peninsula and the rivers thereon)  
Kachemak Bay (west side and the rivers thereon)  
Knik Arm and the rivers thereon  
Turnagain Arm (outside of Chughach National Forest)  
Kodiak Island and the rivers thereon  
Chena River and its tributaries  
Salcha River and its tributaries  
Goodpasture River and its tributaries

In Fiscal Year 1951

Cook Inlet (western shore south to Iliamna Bay and the rivers thereon)

In Fiscal Year 1952

Bristol Bay (Ugaskik to Cape Constantine including Kvichak Bay to  
Wushagak Bay including the rivers thereon)

In Fiscal Year 1953

Good News Bay, Kuskokwim Bay, and lower Kuskokwim River including all  
navigable tributaries

In Fiscal Year 1954

Tanana River and its tributaries not previously investigated

In Fiscal Year 1955

Copper River and its tributaries not previously investigated

The Department has adopted the policy of withdrawing potentially important town sites with the concept of laying out plans for the town so it will eventually result in an orderly, modern development. Unfortunately, funds for these surveys and plans have not been available, but it is contemplated that such funds will be available beginning with the 1950 budget. If they are not, it is recommended that town sites under pressure for development should be returned to entry and made available for settlement on the most suitable basis possible. Contemplated town site surveys are as follows:

For 1950 Fiscal Year

Big Delta, Tok Junction, Glen Allen, Kenai, Ninilchik and a few undetermined areas in southeast Alaska

For 1951 Fiscal Year

Town sites in southeast Alaska communities plus town sites of secondary importance along the Alaska Highway and the rail belt.

For Fiscal Years 1952-1955 Inclusive

Town sites will be selected in settlement and development areas as indicated by the Department including some along proposed new roads and the rail belt.

Examination, classification, and appraisal surveys of lands suitable for lease and sale as small tracts for home sites, cabin sites, camp sites, recreation sites, health sites, and business sites in many areas of the Territory are planned during the next six years. The small tract program will be left very flexible to permit adjustment to actual needs as they arise. Recent surveys in the vicinity of Anchorage will provide approximately 700 small tracts varying in size from 1-1/4 to 5 acres. Similarly, small tracts have been surveyed for Tok Junction and Big Delta, as well as Paxson and Summitt Lakes, Big Lake and Point McKenzie. If the town site plan materializes, additional small tracts will not be available at Tok Junction and Big Delta until the town site surveys are complete.

Pre-settlement surveys were begun in 1948 by the Bureau of Land Management in cooperation with the Soil Conservation Service, in both the Kenai-Kasilof and Dunbar areas. The area north of Fritz Creek in the vicinity of Homer has first priority after the Kenai-Kasilof area is completed. Other areas to be surveyed for group settlement purposes are the Ninilchik and Chena Valley regions.

It is expected that cooperative land planning and classification activity will be required for several years in connection with group settlement plans. If contemplated staff and budget are realized, approximately 850,000 acres should be classified annually from fiscal years 1950 to 1955. If legislation pending before Congress concerning group settlement is passed, this legislation should produce several well-organized agricultural communities during the next six years. If the legislation does not pass, the Department should return the land to public entry as soon as the surveys have been completed, making available classification information to all potential settlers.

The function of examination and classification of lands is to examine and, in some instances, classify the land embraced in pending land applications or entries, whether they are for temporary use or eventual acquisition of the land, and to secure full compliance by the occupants with the Public Land Laws governing disposal, management and protection of the public domain. This phase of the Bureau of Land Management's program seeks to promote both beneficial and stable use of the Federal public domain in Alaska. In connection with the examinations, an effort

is always made to reconcile conflicting claims, if such exist, for the public land and reconcile different uses so that each can be promoted to the fullest.

The great postwar increase in interest in vacant public lands in Alaska has more than doubled the case load which requires field investigations. Field examinations are required with respect to homesteads, home sites, trade and manufacturing sites, headquarters sites, and other forms of public land entries; and with mineral claims, trespass on public lands, reservation of lands, native land rights, and a variety of other matters under the public laws. On June 30, 1948, the backlog had reached 1066 cases, a gain of 61 per cent during fiscal year 1948, and 111 per cent over the same date two years before. Prompt attention must be given to this work since on it depends in large part the time required to secure title to the land, to lease land, to purchase land, or to complete public land actions in which other governmental agencies and the public are directly interested.

As has already been indicated the great backlog of cases ready for examination, as well as town site and settlement surveys, is one of the biggest problems that faces the Department in Alaska at the present time. If the funds requested in a special budget hearing are granted for fiscal 1950 and 1951, the entire backlog of this very important work will be liquidated within two years and then funds granted in the regular budget can probably keep the work current with demand. The appropriations asked for by special request, plus those of the normal budget, should permit eight to ten complete survey crews. Once the backlog is liquidated, five survey crews should be sufficient to keep up with current entry survey demands as well as continue the broader operations of surveying the public domain herein discussed.

The Bureau of Land Management and the United States Department of Agriculture administer between them the forested public lands of Alaska. It has been estimated that 125,000,000 acres are under the jurisdiction of the Bureau of Land Management and that a little less than 21,000,000 acres are divided into the Tongass National Forest of southeast Alaska with 16,000,000 acres, and the Chugach National Forest in the Prince William Sound region. The former is estimated to have 87,500,000,000 board feet of marketable timber composed of Western Hemlock, Sitka Spruce, Western Red Cedar, and Alaska Cedar. The Chugach National Forest is composed of Western Hemlock, Sitka Spruce, White Spruce, Cottonwood and White Birch, and has an estimated 6,260,000,000 board feet of marketable timber.

Because of the relatively mild climate in the National Forest areas and the heavy rainfall, the forest growth is very lush and the majority of trees are from two to four feet in diameter and from 80 to 140 feet high. The forests under the jurisdiction of the Bureau of Land Management are composed mostly of White Spruce and Birch, with a scattering of Balsam, Aspen, Poplar and Tamarack. These forests are

very different in all respects from those of the coastal region. The trees seldom exceed twenty-four inches in size with the great bulk of them running nine to twelve inches and present a general impression of scrub growth. While certain selected areas are outstandingly good as a whole, these forests do not begin to have the commercial value of those in southeast Alaska and in the Prince William Sound region. It has been estimated that there are 910,000,000 cords of marketable timber in interior Alaska.

At the present time, about 59,000,000 board feet of saw timber is harvested in Alaska per year, the bulk of which is used there. The possibilities for a well diversified forest products industry exists in Alaska but cannot easily be realized because of the many obstacles which must be overcome. As a matter of fact, some companies find it desirable to get their logs in Alaska, ship them to the Puget Sound area, convert them to lumber, and return the lumber to Alaska to use rather than manufacture it in the Territory. This is largely a function of the existing intra-port shipping rates within the Territory. It costs about the same to take a product from Juneau to Anchorage as it does to take it from Juneau to Seattle and then to Anchorage. The value of finished lumber products imported into the Territory of Alaska exceeds the exported raw materials by more than ten to one. Projects of specific value in the six-year program having to do with forest products are discussed on pp. 65-66. At this point it should suffice to say that all the pulp mill opportunities are in the forests administered by the Agriculture Department.

The purpose of this particular section of the report is primarily to indicate the needs and plans for the administration of the forests in the public domain which have been badly neglected by the Federal government in the past. At the present time, their management is confined to two forest districts, Anchorage District No. 1 and Fairbanks District No. 2. However, Alaska is divided into six forest districts, not to mention those areas under the jurisdiction of the Department of Agriculture. As quickly as funds and personnel are available, the remaining four districts should be activated. Fires which annually destroy large areas of timber land and wildlife habitat occur, and because of the great distances involved and the lack of immediate detection, cannot be given adequate attention.

Before proper administration can be expected, it will be necessary to make living accommodations available to the needed personnel and their families. More frequently than otherwise, they will be stationed in areas where suitable homes are not available for rent.

If an intelligent, long-range plan is to exist, the innumerable resources of the land must be inventoried and classified as to use potentials just as soon as possible. The growing of timber is a long-term project. It requires years to discover an error. It requires many more to correct one. A lack of resource inventory in the forests already



accessible for immediate use has contributed greatly to their lack of proper development. The taking of aerial photographs will facilitate the job, especially in the extensive inventory. Field parties will have to make spot checks over the entire area in order to correlate the findings of the office force which interprets the photographs and that which is actually found by field checks. The timbered areas of interior Alaska must be inventoried before an intelligent program of sustained yield management can be evolved. Likewise, the effectiveness of protection must be extended to the now remote areas. Fire control, during the eight years it has been in effect, has lowered the annual area burned over. In 1940, 4,500,000 acres were burned; 3,700,000 were burned in 1941. Since that time, the area has been less than 1,500,000/ acres. It can be seen that even nominal protection is having its favorable effects. Before protection was instigated in 1940, there were years when it was estimated that at least 8,000,000 acres of land were burned over. In the past fifty years, the area burned over adds up to a staggering total. Some of it has been burned over repeatedly and its productiveness ruined for years to come. As Alaska becomes more populated, it can be expected that protection must become more intensive to offset the new hazards brought about by the inhabitants.

### 3. Agriculture and Settlement

The settlement of Alaska's agricultural land is one of the very important factors in the development of a long-range, balanced economy. It is also an objective in the direct national interest in that it provides a firm foundation of permanent residence for national security and resource development. No one thoroughly familiar with Alaska's agricultural potential claims that Alaska could be self-sufficient. It is definitely possible, however, for it to greatly broaden its present agricultural base, thus becoming much more self-sufficient than at the present time.

In the continental United States it has been determined that to maintain one mature individual requires two acres of crop land and one acre of land from which the agricultural products are industrialized. Assuming that the amount of land necessary to maintain an individual in Alaska was double that of the continental United States because of shorter seasons and that none was used for industry, the present population of approximately 100,000 people would, therefore, require 400,000 acres in cultivation. At the present time there are 14,000 to 15,000 acres under cultivation, producing primarily vegetable and forage crops. There is a small livestock industry but aside from dairy and poultry, it is of no real significance. As these very low acreage figures testify, agricultural settlement in the past has been very slow and unusually hazardous. In addition to the usual headaches of an agricultural frontier, such as poor transportation and a lack of capital, Alaskans are faced with untimely frosts, huge ice masses in the soil of some areas which causes large sink holes to occur once the land is cultivated, unsatisfactory market facilities and connections, unusually

high costs of clearing land, farm labor, and money requirements for commercial farming. In order to reduce the hazards of land settlement in Alaska and to make certain that all logical assistance is given to insure the success of any farmer or group of farmers, the Department of the Interior, in cooperation with the Department of Agriculture, is developing a land settlement program for Alaska. Some of the most likely development areas have been withdrawn from public entry and are being surveyed and classified by the Bureau of Land Management and by the Department of Agriculture. For the last two summers these agencies have been making detailed land use studies of the Kenai-Kasilof and Dunbar areas. Roads are presently being constructed in the Kenai-Kasilof area, and according to present plans this area should be open for settlement some time during the 1950 calendar year.

Settlement legislation is under consideration by the Congress which recognizes the many problems facing the Alaskan farmer. The motivating consideration behind this legislation is a firm belief in the fact that modern Americans will not pioneer in the same sense that their great grandfathers did. In order to reduce some of the hazards and problems, the Department intends to form settlement nuclei of fifty to one hundred families in each of the settlement areas it opens up. It will put satisfactory roads in at the beginning of the project to permit the farmers' immediate satisfactory outlets for their crops. The Interior and Agriculture Departments, with present and expanded authorities, will make credit available for the very expensive land clearing operations, as well as needed farm installations. The over-all six year plan will include bringing electricity, roads, docks, wharves and schools to these areas and any other modern developments which are characteristically a normal part of American living. The Agriculture Department will make a detailed market analysis and plan to aid in selling Alaskan grown crops. The over-all plan does not envision wholesale subsidy in order to open up new settlement areas. Very careful studies are now being made by the Departments of Agriculture and Interior in order to avoid the pitfalls of early Alaskan settlement and to make sure that those participating in the scheme have a fair knowledge of agriculture and are generally regarded as good settlers. The Department hopes to be able to open up at least three settlement areas during the six-year period.

#### 4. Mineral Resources

Deposits of many of the minerals now in short supply are known to exist in Alaska. However, in general, the potentialities of the Territory in regard to these and other minerals present in Alaska are not adequately known. Exploration and development, in most instances, have little more than scratched the surface, although the resources of Alaska in some minerals are known to be large. Even the geologic environments in Alaska have been determined so incompletely that the factual groundwork on which appraisal of mineral resources must depend is as yet decidedly fragmentary.

A thorough appraisal of Alaska's mineral resources is long overdue and is a definite part of the Department's Alaska program. Mining has long ranked as Alaska's second industry in terms of new wealth produced, and gold has been the principal mineral mined. It is anticipated that the importance of other minerals relative to gold will increase in the future. Some development possibilities in the field of minerals are limestone, shale and clay, zinc, mercury, nickel, antimony, tin, tungsten, and iron.

Of special benefit to the development of Alaska would be the increased mining of minerals related to the building trades industry, such as limestone and clay or shale for cement, brick and tile. Such building materials are at the present time very expensive in Alaska because of their high shipping cost. However, because of their stability and insulating and fire resistant qualities, they are of special value as building materials for construction in northern climates. They should be produced locally, if possible.

The petroleum possibilities of Alaska are very inadequately known. At the present time, the Navy Department is conducting an extensive petroleum exploration program in northern Alaska in Naval Petroleum Reserve No. 4. Less ambitious investigations are under way in the possible petroleum provinces along the Gulf of Alaska between Yukataga and Katalla and on the Alaska Peninsula westward from Chinitna Bay to Wide Bay. It seems possible that the petroleum resources of Alaska may eventually prove to be substantial.

Coal is virtually the only mineral material now mined in Alaska and consumed exclusively within the Territory. The coal resources of Alaska are very large. Much of the coal is of relatively low rank, lignitic or sub-bituminous, and much of it is in isolated areas where its use will probably be limited for many years to local requirements. However, the railroad belt includes two of the major coal fields of the Territory, the Matanuska field and the Nenana field, from which come most of the coal now mined in Alaska. The possibility of making liquid fuel from coal in Alaska is now being studied.

Alaska produces very substantial amounts of the platinum group metals through placer mining and is the most important source of domestically produced platinum. Significant deposits of high grade chromite occur on the Kenai Peninsula, but they are not believed to be large enough to affect very much the nation's dependence on foreign chromite. Mercury deposits are scattered over a considerable region in the Kuskokwim Valley and may become important producers. Antimony is associated with mercury and is also found in many other deposits at various places. Small tungsten deposits are present in several areas including the Seward Peninsula, the Fairbanks vicinity, and southeastern Alaska. Copper deposits are widespread, but the high-grade Kennecott deposits

have been exhausted. The zinc resources in several areas and the nickel at Admiralty and Yakobi Islands offer some promise of future importance, as do also the tin deposits on the Seward Peninsula.

With the development of more and cheaper transportation facilities, cheaper power, a more assured supply of labor, and other factors, it is expected that Alaska's mineral industry will expand greatly in size and in variety. The stringent financing regulations, the lack of risk capital, and the lack of stable markets are some of the factors retarding Alaskan mineral development. In the absence of risk capital, investigation of individual mineral deposits will be undertaken only to the point of securing basic information as to their value and extent so as to make them attractive for continued study by private investors.

To help bring this about the Geological Survey and the Bureau of Mines, together with the Territorial Department of Mines, are active in their respective fields. The program of the Geological Survey is set forth in the earlier section of this report on "Basic Data" and the program of the Bureau of Mines follows:

#### Fiscal Year 1950

Increased production of coal is needed in Alaska for the Army, industry and domestic consumption. Coal requirements in Alaska are estimated for the calendar year 1949 at 496,000 tons. A shortage of 80,000 tons is expected according to present estimates. The fuel oil which must be shipped into Alaska is in short supply. With more conversion from oil to coal, additional burdens will be placed on the coal mining industry, and the need for the development of a large mineable reserve of bituminous coal is urgent at present and may be greater in 1950.

Realizing the necessity for the development of mines in the Matanuska field to replace the tonnage lost through depletion of the Evan Jones Mine, an investigation by diamond drilling in the area south and west of the Evan Jones Mine is to be undertaken.

Diamond drilling and sampling will be continued on basic commodities in the progressive expansion program for Alaska which will include the materials of construction such as cement, brick, aggregate, and plaster. It is proposed to meet and anticipate the problems of Alaskan supply of the non-metallic raw materials required through the investigation of local resources. This will require the drilling and evolution of local sources of supply to delineate suitable sources and reserves.

Attention will be concentrated on availability and suitability of limestone, shale or clay resources along the railroad belt for the ultimate purpose of erecting a cement plant.

Examination of mineral deposits will be concentrated largely in south-eastern Alaska with special emphasis to be placed on the mineral deposits in the Haines-Skagway area. This survey is the collection of basic mineral data so that orderly planning can be done at some future time.

The practical approach to the exploitation of mineral deposits is the program of investigating individual mineral deposits through initial diamond drilling and sampling. Deposits are evaluated as to grade and size and the results made known to the public. Specific deposits tentatively selected for 1950 for detailed investigation are as follows:

Kasna Creek Copper: An outcrop 1700 feet long and 50 feet wide, containing chalcopyrite and hematite occurs on the property. Large reserves of copper ore may be developed at this project.

Ground Hog Basin - Lead-Zinc: Tabular replacement deposits occur in a mineralized area seven and a half miles long. An area of better than average grade has been selected for drilling.

Millet Copper - Iliamna Lake: A deposit similar to Kasna Creek in size and grade is indicated. The development of two copper deposits such as Millet and Kasna Creek in the same area may lead to their active exploitation.

Haines Iron: Preliminary survey indicates a large, low grade iron deposit in which interest is shown by private capital. The preliminary investigation will include sampling to determine the grade. Due to the demand for iron ore by Japan, the development of an iron deposit in Alaska to supply that demand is warranted.

Moth Bay Zinc:- Southeastern Alaska: A small, high-grade lead-zinc deposit will be investigated which shows promise for exploitation if sufficient reserves of ore are established.

Admiralty and Yakobi Islands: Large deposits of low-grade nickel and copper are indicated. These will be studied and if found sufficiently interesting will be drilled at a later date.

The economic studies for fiscal 1950 include the canvass of gold, silver, copper, lead and zinc producers for output statistics and the subsequent preparation of the chapter, "The Mineral Industry of Alaska" for the Minerals Yearbook. Field work will include a start on an over-all program of visits to all operating mines in each district in the Territory. An economic study of the market for cement in the railroad belt will be undertaken.



The statistical program is to be expanded to include canvassing of producers of all metals and non-metals. A study of transportation problems as related to mining in the Territory will be undertaken if time permits.

The training program and field inspections on health and safety will continue.

#### Fiscal Years 1951-1955

It is expected that the above years will be of great importance to the expansion of Alaska's mineral industry. Development of large, cheap hydro-electric power and a pulp industry will do much to encourage and aid mining. Basic data are still lacking for an orderly program of mineral development; therefore, detailed work plans cannot be given beyond 1950. However, in general, two specific areas will be given priority as follows:

Railroad Belt: Because of good transportation facilities, the rail belt will be thoroughly explored for all mineral industry possibilities. The bituminous coal reserves are principally at Matanuska, Nenana, and the Bering River fields. The Matanuska and Nenana fields have provided most of the indigenous bituminous coal used in Alaska. However, these beds are highly pitched and faulted. Exploration and development of new deposits are quite beyond the means of local private industry. For these reasons, work will continue to develop reserves of good coal to augment present known supplies.

Studies and investigations will continue toward the establishment of a plant to make synthetic liquid fuel from low-grade coal, as well as low temperature carbonization of sub-bituminous coal and briquetting residues to make a stable solid fuel and fuel oil.

Drilling and sampling will continue on non-metallic raw materials necessary to establish a building materials industry in Alaska.

Southeast Alaska: The probability of establishing a large hydro-electric power plant at Taiya justifies immediate consideration of the possibility of establishing metallurgical industries in aluminum, copper, lead, zinc, iron, nickel, and titanium throughout the Haines-Skagway area. Detailed studies, begun in 1950 in this area, will be continued with deposits of critical and strategic minerals given special consideration. Mineral deposits in other parts of southeast Alaska will be investigated as rapidly as fundamental data are supplied which justifies such investigation. The program of the Bureau of Mines is being stepped up in anticipation of increased

demand for detailed facts in line with the general six-year development program.

Miscellaneous Activities: These will take place in other parts of the Territory whenever and wherever basic data justifies them. The economic possibilities of graphite, tin, and asbestos will continue to receive attention. Likewise, the exploration and drilling for petroleum by the Geological Survey and the Navy Department is expected to continue at an accelerated rate. The Bureau of Mines will cooperate in this work wherever desirable. Limited investigations of the Bering River coal deposits are planned.

It is expected that metal economics and statistics will become of increasing importance in the development of the Territory's mineral possibilities. A great deal of statistical research remains to be done on basic data already available in the files of the Bureau of Mines and the Geological Survey. Plans call for assembling these data in an effort to correlate them and stimulate specific development possibilities. Preliminary drilling and market studies will undoubtedly be necessary steps to the establishment of several mining activities important to the over-all development of Alaska.

The health and safety activities will be expanded to meet the anticipated needs of an accelerated mining program in Alaska.

Examination of Federal lands now withheld from prospecting will continue to determine whether they hold sufficient promise as potential producers of minerals to warrant their being re-opened to entry.

In the fields of mining and metallurgical technology, research will be intensified on appraisal of existing methods of ore extraction and beneficiation pointing to more efficient methods and conservation.

The Territorial Department of Mines has a small field staff to examine and appraise various mining claims, to enforce safety measures, and to supply prospectors with assays. This work will be expanded as funds permit. New facilities for three branches are contemplated. When the new Bureau of Mines laboratory is completed in 1950, it will supplement the territorial assay service which is now inadequate for the Territory's needs.

## 5. Power

Preliminary studies of water power potentials in Alaska were made in 1911 by the Geological Survey. In 1949, the Bureau of Reclamation started more detailed investigations of Alaska's water resources for multi-purpose uses, especially power. Several reconnaissance investigations, together with studies of individual power projects, have progressed sufficiently to outline probable investigation and construction of projects for the next several years. Individual projects will be submitted for Departmental and Congressional action as rapidly as they can be justified and funds will permit.

Ample low-cost power is a prerequisite to the development of a mature and balanced economy. It is a magnet which attracts industry, business, and people. Power is wealth. With roaring rivers that can produce more than 50,000,000,000 kilowatt-hours a year, nature has provided Alaska with all the low-cost power potentials it needs for full development. On the basis of estimated comparative costs, Alaska has several of the finest hydroelectric power potentials yet undeveloped on the North American continent. Based on reconnaissance data, it has been estimated that blocks of power as large as 10,000,000,000 and 15,000,000,000 kilowatt-hours annually could be produced for three mills or less per kilowatt-hour. When the present power outlook in the continental United States is compared to the power outlook in Alaska on the basis of power costs, Alaska's potentials become particularly attractive, and should definitely be listed among the nation's most valuable undeveloped assets. Their immediate development would start in motion a great variety of industrial projects and would aid materially in rounding out the economic base of the Territory.

There is at the present time no accurate inventory of installed electric power capacity in the Territory, but it has been estimated as being 32,000 kilowatts of hydroelectric power capacity and 45,000 kilowatts of coal and oil-fired steam and Diesel plants. Assuming these figures to be fairly accurate, Alaska would have a total installed capacity of 77,000 kilowatts. With the exception of a few southeastern Alaskan towns, the supply of power has been totally inadequate to meet the needs of the Territory.

The low calorific value of most Alaska coal and its relatively high cost when stockpiled and used for electric production, as a rule, makes this source of power considerably more costly than hydroelectric sources. Likewise, fuel oil supplies in the Territory are at present entirely dependent upon overseas shipment which makes it expensive. Also, this Alaskan demand for oil further drains petroleum reserves of the United States. Hydroelectric power is in most instances the cheapest power source in Alaska.

Although the need for power in Alaska is very great, no spectacular development of this tremendous resource may be expected. Field surveys and investigation of projects must necessarily precede actual construction of projects. Once actual construction of a few power projects is under way, the power program will undoubtedly gather momentum and help lead the over-all development of the Territory. In a power-hungry world, Alaska's potentials will act as a magnet to motivate mass migration of industries and people to the Territory. In considering the potential power market in Alaska, consumer classes have been grouped as domestic, commercial, farm, mining, pulp mill, other industry consumers including transportation, and military. The following comments concerning each of these markets seem pertinent and significant. For the domestic market it has been estimated that from 15,000 to 20,000 kilowatt-hours a year of electricity would be used in an all-electric Alaskan home if it were available at prices thought possible. At the present time many homes, where electricity is available, use 4,300 kilowatt-hours annually. It is hoped to increase the average use to 7,500 kilowatt hours annually by 1958. Commercial establishments in Alaska are already large users of electricity and most of them would increase their usage if local supplies were available. The Rural Electrification Administration has a program for bringing electricity to Alaska's rural areas. With an adequate source of low-cost power, it has been estimated that each farm will use at least 10,000 kilowatt-hours annually. The future industrial users of electricity in Alaska are too diverse and numerous to mention specifically. However, they have been an important consideration in determining the specific projects for the six-year program.

Although the over-all outlook for power utilization in mining is not as impressive as some other uses, it nevertheless constitutes a very important power use potential for specific projects. Several of Alaska's hydroelectric power sites offer distinct possibilities for immediate, economically competitive development of electrothermal and electrochemical industries. The paper pulp potentials of southeast Alaska offer another sizable industrial use for electrical energy. Each of the six contemplated pulp mills should eventually be responsible for thousands of new homes and several related industries, resulting in increased power needs. The cold winters in interior Alaska may definitely justify the eventual electrification of the Alaska Railroad. This possibility, however, is not being considered for the immediate future. The military needs for power are very sizable and of sufficient importance to the military defense of the Territory that some projects might be planned with military security as an important feature of their design.

For the immediate future, the Bureau of Reclamation proposes that the investigations of water resources for power and multi-purpose benefits