Chapter Four

THE ALASKA DISTRICT IN THE MID-SEVENTIES

In what directions is the Alaska District moving in the last quarter of the twentieth century? What work is it now doing and what tasks does it anticipate undertaking in the future? These are the fundamental questions with which this chapter is concerned.

From the vantage point of the mid-1970's, it is clear that the great age of military construction has passed. As we have seen, by the early 1960's the physical facilities for a permanent military establishment in Alaska were largely complete. As a consequence, since that period the District's role in military construction has largely consisted of the expansion, improvement, and normal maintenance of existing facilities.

This aspect of the District's mission can best be illustrated by a glance at the contents of a "Construction Progress Report" dated 31 December 1974. At that time, the District was supervising such projects as the alteration of command headquarters at Elmendorf AFB, and the modernization of barracks, the improvement of family housing, the development of Army Aviation facilities in support of the National Guard, all at Fort Richardson. Elsewhere the District was undertaking the construction of a composite building at Cape Newenham, solid waste disposal facilities at Galena and King Salmon, and the repair of the runway at Galena.[1]

At Indian Mountain AFS, the District was involved in the construction of fuel and water storage, an Airman's Service Club, recreation facilities, and a heavy maintenance shop. A new POL storage tank was under construction at Whittier while Eielson was receiving attention in the form of aircraft fuel storage and improvements to the flight operations facilities. Finally, no account of military construction would be complete without noting that the District was administering a large amount of construction on Shemya including aircraft control facilities, repair of the wharf, a transmitter building, and a complete new power system costing in excess of $2.4 million.[2]

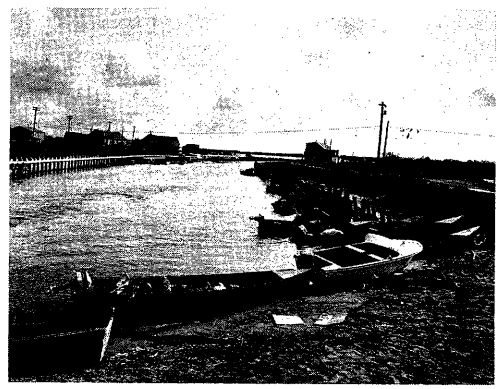
If the military construction mission is now more or less chiefly concerned with the improvement and maintenance of existing facilities, the civil works function of the District has become larger and more diversified.

Apart from flood control and navigation--the traditional emphases in the civil works program--the District was also involved in hydroelectric power development, flood plain management, beach and bank erosion control, and engineering consulting for other agencies, all in addition to its long-standing function as a regulatory agent for waterways. The remainder of the chapter explores this diverse mission in some detail.

NAVIGATION

Bethel is located about 400 air miles west of Anchorage and it lies approximately 65 miles from the Bering Sea mouth of the Kuskokwim River. The settlement has experienced steady growth over the period of its existence. In Alaska's first census (1880) the village was said to house 41 residents; by 1970, it had grown to 2,416. Large vessels from west coast ports of the lower 48 states move cargo to this city which serves as a transshipment point and trading center for a very large sector of the state. Air transport is used for emergency and perishable items as there is no road connection with the interior.

Several studies of Bethel have been made by Corps organizations. The most important is the Alaska District's *Interim Report #7* which describes Bethel's fundamental navigation problems. Ocean-going vessels using this port encounter three major shoals or bars on the trip up from the mouth of the river on the Bering Sea. A proposal for dredging the worst of these--Oscarville Bar at Mile 58--was found to be economically unjustified.[3] However, in 1970 a project was authorized for the development of a 7,700-foot-long small boat harbor and entrance channel to be created by deepening, widening, and straightening the upper 6,800 feet of Brown's Slough, a watercourse from the Kuskokwim that meanders around the city.[4]



Brown's Slough, 1968.

In 1971 the District purchased a hydraulic dredge to do the channel and harbor work and moved it to Bethel. Unfortunately the project then ran into difficulties. It was delayed first by the inability of the local authorities to deliver the necessary rights of way. Then a local election on the possible condemnation of some property involved in the project failed to pass. As a consequence, the project fell into a state of suspended animation. While it remains authorized, at the end of 1974, it came under consideration for deactivation.[5]

Humboldt Harbor took its name from the government schooner which

cruised this area of the Shumagin Islands in the Aleutians for the U.S. Coast and Geodetic Survey in the 1880's. The harbor services the residents of Sand Point, a community located on Popov Island about 560 miles southwest from Anchorage. In 1970 Congress authorized a project for the construction of a mooring basin of 16.6 acres with two breakwaters 600 and 1,050 feet long respectively; a 1,600-foot diversion dike, a 300-foot diversion channel; and an entrance channel 800 feet long and 150 feet wide. Under terms of the project about half of the basin development is to be handled by local interests. In the early stages of improvement the harbor will serve about 120 fishing vessels, ultimately it will accommodate about 230. [6]

Hoonah is located on the northeastern tip of Chichagof Island about 40 miles from Juneau. The Alaska District first undertook an examination of the area under the terms of the Rivers and Harbors Act of 1950. In 1952, the North Pacific Division published its assessment of the area's navigation needs in its *Interim Report #1*. Local interests had requested a small boat basin and a breakwater to protect it from the southwest storms. The Division Engineer did not believe the single breakwater would provide adequate protection from storm action, but the construction of a second breakwater would push the cost estimate well over a million dollars, making the total expense prohibitive at that time. [7]

In the spring of 1960, the Committees of Public Works in both the House and the Senate passed resolutions calling for a review of the situation at Hoonah. The Alaska District held a local public hearing in 1963 and reexamined the need for harbor improvement in the area in the light of Hoonah's potential status in southeastern Alaska's fishing industry. The District found that nearly 90 percent of the local employment was based on that industry in one way or another. Local growth had been steady and Hoonah's future was promising in

Sand Point's storm-tossed anchorage area -- site of new Humboldt Harbor.

view of increasing catches from rich fishing grounds nearby.[8]

In 1970, the Alaska District recommended the construction of a small boat mooring basin of 15 acres, with three breakwaters totaling 2,790 feet in length and a 2,125-foot-long diversion dike to protect the harbor from ice. Under terms of the proposal, local interests would take care of initial basin dredging in a 6.8 acre area; the basin would then be served by a federally improved entrance channel 800 feet long, 150 feet wide, and 16 feet deep. Ultimately, the facility could accommodate 225 full time commercial vessels and 150 utility craft. At that time the total cost of the project was estimated to be around $3,713,000. Congress authorized the project in 1972 by which time the total cost estimate had risen to over $5 million. At the end of 1974, the project had not received final Congressional approval in the form of funding.[9]

Kake Harbor is located on Kupreanov Island about 95 miles southwest of Juneau. Its name comes from the Kake Indian tribe that has been living in the area for many years. Their main occupation centers on the fishing industry. In 1952, the North Pacific Division's *Interim Report #2* pointed out that the harbor could be improved but only at considerable expense. It noted that a basin could be provided by construction of two breakwaters, the southern one incorporating the remains of a jetty built by the Civilian Conservation Corps in 1940. At the same time the Division observed that a naturally sheltered area suitable for moorage existed at Portage Cove about 2.5 miles from Kake.[10]

In 1961, the Senate Committee on Public Works directed the Corps to review its earlier examination of Kake. This action resulted in a favorable report issued by the Alaska District in October 1967, a document that led directly to the current project. In that report, the Alaska District dismissed the Portage Cove alternative and concentrated on the original site. It recommended the construction of a small boat harbor protected by two breakwaters. The initial cost estimate was approximately $1.7 million, but by late 1974, it had risen to just over $5 million.[11]

FLOOD CONTROL

Chena River Lakes is by far the largest flood control project ever undertaken by the Alaska District. It is a project designed to protect Fairbanks and the adjacent army post (Fort Wainwright) from the ravages of flooding by the Chena and Tanana Rivers. Between 1905 and the 1967 disaster, Fairbanks suffered from severe flood damage no fewer than 14 times. It will be recalled that the Corps' initial response to this problem was the construction of the 3 mile long Moose Creek Butte Dike which stopped the flow of water from the Tanana via the Chena Slough into the main channel of the Chena.

During the war, the Army built its Cold Weather Testing Station here,

first called Ladd Field and now named Fort Wainwright. As this facility grew in addition to the expansion of the Fairbanks Community, more flood protection became necessary. At the close of the war the Corps recommended a diversion dam near Mile 20 on the Chena, with one abutment at Lakloey Hill and the other at Birch Hill, with a levee extending southwest from the dam to the Tanana. For 5 miles the levee would parallel a diversion channel to the right bank of the Tanana, then run 7 more miles parallel to the river until reaching the mouth of the Chena west of Fairbanks International Airport.

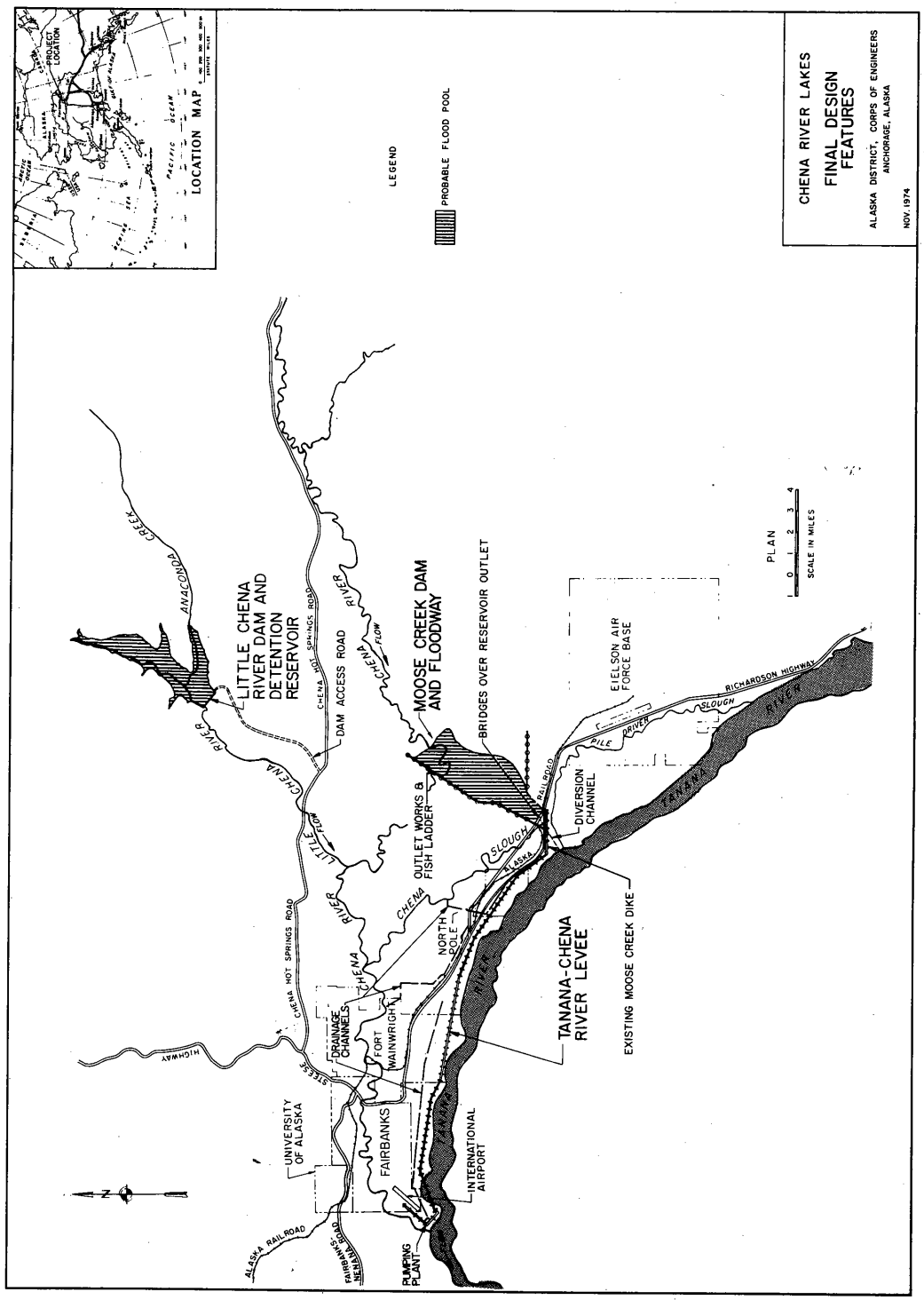
This proposal for protection of what was then Ladd Field and Fairbanks was incorporated in the North Pacific Division's *Interim Report #4* issued in 1951. [12] When this report and its recommendations finally arrived at the House of Representatives in 1955, the flood control project was estimated to cost $8,564,000. Of this amount, local interests were to supply $274,000 in cash at the outset, plus lands, easements, and rights of way valued at $370,000. Annual local contributions toward maintenance and operation of the improvement would come to $30,000 under the terms of the proposal.

Congress authorized this program of improvements in the Flood Control Act of 1958. Over the next four years about $180,000 was spent on preparatory studies. By the end of that period it became apparent that the structures envisioned in the earlier plan fell within an area that was becoming developed and more populated. The project needed a review involving relocation of the proposed structures and an increase in the scope of the design in order to protect a greater area.

It then came to light that the City of Fairbanks could not make assessments outside city limits for the contribution by local interests. Moreover, there was no other local authority that could make up the slack. This problem worked to delay the project and was not solved until 1964 when the North Star Borough was created.

After the District reviewed and replanned the project in 1962, it announced that the total cost estimate had risen to about $30 million. In 1964, Chief of Engineers recommended a modification of the project to include a 3-mile-long earthfill dam with spillway and control tunnel at river mile 52. In addition, the levee was to be extended from 12 to 19.5 miles. This dam would produce a reservoir 7 miles long over a 25-square-mile area. These changes brought the total cost estimate up to approximately $40 million. [13]

Public hearings on the revised program scheduled for the summer of 1967 were interrupted by the disastrous flood of that year. When the hearings were finally held in October 1967, the public was informed of the full dimensions of the flood control project including some revisions added in view of the recent disaster. A large retaining dam would be built on


CHENA RIVER LAKES
FINAL DESIGN FEATURES
ALASKA DISTRICT, CORPS OF ENGINEERS
ANCHORAGE, ALASKA
NOV. 1974
LEGEND
PROBABLE FLOOD POOL
LOCATION MAP
PLAN
SCALE IN MILES
LITTLE CHENA RIVER DAM AND DETENTION RESERVOIR
MOOSE CREEK DAM AND FLOODWAY
BRIDGES OVER RESERVOIR OUTLET
DAM ACCESS ROAD
CHENA HOT SPRINGS ROAD
OUTLET WORKS & FISH LADDER
DIVERSION CHANNEL
TANANA-CHENA RIVER LEVEE
EXISTING MOOSE CREEK DIKE
EIELSON AIR FORCE BASE
RICHARDSON HIGHWAY
UNIVERSITY OF ALASKA
FAIRBANKS
FORT WAINWRIGHT
INTERNATIONAL AIRPORT
PUMPING PLANT
ALASKA RAILROAD
FAIRBANKS-NENANA ROAD
DRAINAGE CHANNELS
NORTH POLE
CHENA RIVER
TANANA RIVER
SLOUGH
PILE DRIVER SLOUGH
ANACONDA CREEK
RIVER
LITTLE CHENA FLOW
CHENA FLOW
HIGHWAY
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the main stem of the Chena at river Mile 28. The lake thus formed would become a visitor attraction and recreational asset, ideal for boating, fishing, and wildlife enhancement. It and the smaller detention reservoir, on the little Chena 11 miles upstream from its junction with the main stream, would provide water storage and flood control in addition to service as a source of a better water supply.

A levee 27 miles long, including modification of the old Moose Creek Butte Dike, would extend along the right bank of the Tanana to its confluence with the Chena, then up that river to the vicinity of University Avenue in the city. Ditches, ponding areas, and a pumping station were all part of that plan which was estimated to cost about $118 million.[14]

Congress authorized the completely revised project in 1968 and the District began extensive preparations for execution of the design. It was subsequently determined that an alternative downstream site would provide the desired flood protection at a smaller cost and with fewer adverse effects on the environment. In place of the impounding dam at Mile 28, the project now involves a 7-mile-long dam running from the Tanana northward to the foothills, crossing the Chena about 17 miles east of Fairbanks. This dam, which is not impervious, will restrain heavy flood waters by the operation of gates in a concrete outlet structure. This arrangement will not create a reservoir, but it is planned to leave a large borrow pit on the downstream side of the dam as the site of a future recreation lake for development by local interests.

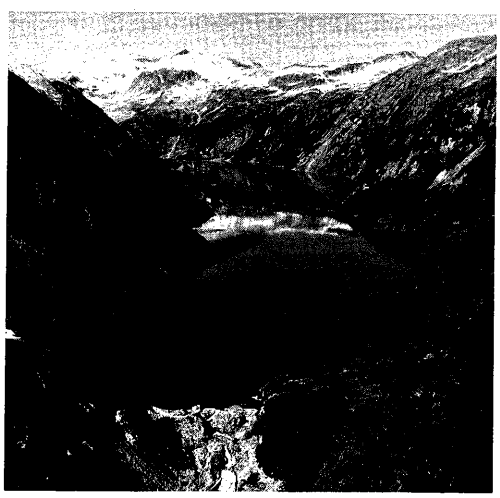
By the end of 1974, the first phase of the Tanana/Chena River levee had been completed and much of the dam foundation work was finished. At that time it was expected that the whole project would be finished sometime in 1979.[15]

HYDROELECTRIC POWER

The District's Snettisham hydroelectric power project is located near Juneau in southeastern Alaska, an area where rugged terrain and abundant rainfall afford numerous opportunities for economical development of this source of energy. The North Pacific Division, in preparation for its *Interim Report #1* (published 1952), investigated some 83 potential sites for water power in the general area of southeastern Alaska. Of the twelve most promising, two comprise the current Snettisham project--Long Lake and Crater Lake. At that time, however, the Division Engineer did not recommend the Federal development of any hydroelectric projects in the region. He believed that additional low-cost power necessary for the growth and expansion of the economy could be provided by local and municipal interests.[16]

In July 1959 the Bureau of Reclamation presented to Congress a feasibility study in which was contained a proposed plan for a single-purpose

hydroelectric power project costing about $40 million. The plan centered on the development of Crater and Long Lakes, the sites identified in the Division Engineer's 1952 report. Water would be drawn from these lakes into a surge tank, then to a powerplant located at tidewater. Here three 16,000 KW turbine generators would produce power which could be delivered via 38.7 miles of transmission line to Juneau for sale. The Bureau based its estimate of financial feasibility of the project on the expected use, beginning in 1963, of a large quantity of energy by a proposed $56 million pulp mill to be constructed on Douglas Island by the Georgia-Pacific Alaska Company. The Bureau's District manager recommended approval of the development plan, conditional upon confirmation that the paper company would build a plant and contract for project power to run it. [17]



Long Lake, Snettisham project.

Unfortunately, about the time Congress received the Bureau's report, the Georgia-Pacific Alaska Company announced they had abandoned their plans to build the proposed newsprint mill. This forced a reappraisal of the Bureau's initial recommendation. Ultimately, the Bureau recommended going ahead with the project in three stages to meet gradually increasing energy needs. Under this scheme, one 20,000 KW generator would be initially installed, to be followed by two others of similar size as the need became apparent. The most interesting feature of the project was the lack of a dam; large waterways would tap the two alpine lakes, sending the flow through tunnels to the tidewater powerplant. [18]

Early in 1962, Senator E.L. Bartlett announced an agreement under which the Corps of Engineers would do the construction if the plan went through while the Bureau of Reclamation would assume responsibility for operation and maintenance of the facility as it came into production. [19] Congress authorized the Snettisham project in the Flood Control Act of 1962.

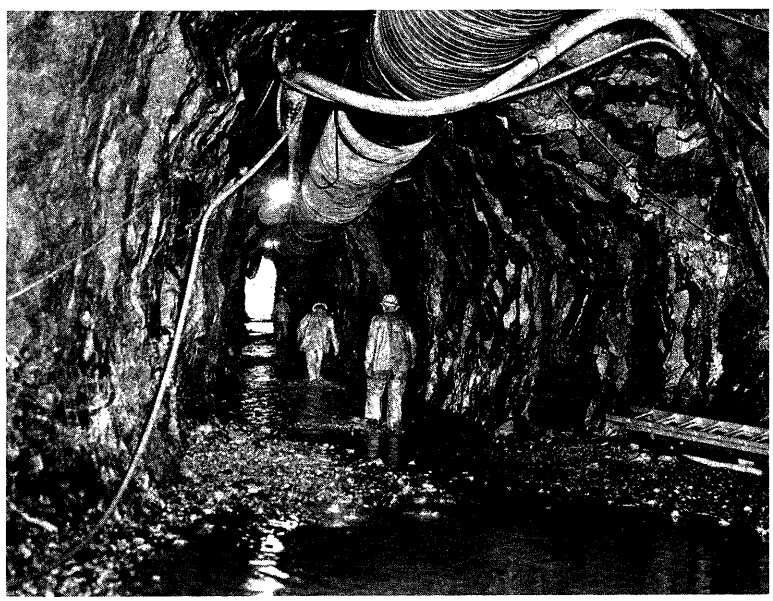
The Army requested a land withdrawal of nearly 25,000 acres in the fall of 1963 and exploratory drilling began the following summer. In 1965 the District Engineer announced several changes to the project, among them the addition of a concrete gravity dam at the Long Lake outlet to raise the level of the lake about 80 feet for greater water storage. Moreover, the staging of the project was altered to allow a first increment of two generators to produce 43,700 KW and a second to deliver 23,300 KW. [20]

In January 1966, the Chief of Engineers recommended to the Congress that $2.4 million be appropriated to start construction on the project. Initially, however, only $750,000 was forthcoming in the fall of that year. In 1967 more funds became available and a $7 million contract awarded in June produced a dock and boat basin, an airstrip, 3½ miles of access roads, the lake water diversion tunnel, a construction camp, and Alaska District Resident Engineer facilities. [21]

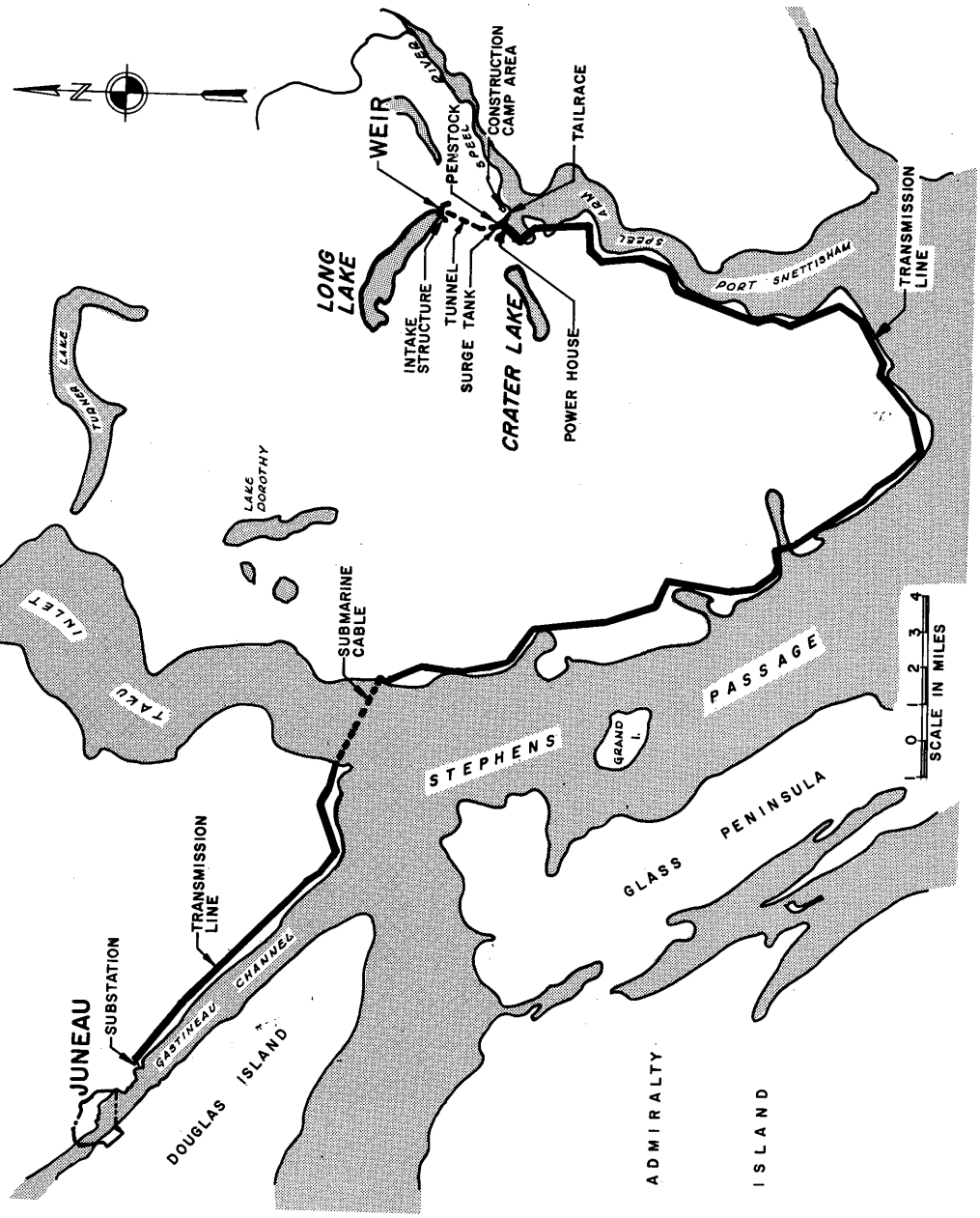
On the recommendation of a Norwegian consulting firm retained by the Corps for their expertise in tunnelling, the District determined late in 1967 that $2 million might be saved by eliminating the concrete lining of the Long Lake tunnel. In that same year, the District explored and recommended construction of a unique facility--an underground powerhouse. When finally adopted for the project this feature made the Snettisham project a prototype for the Corps. [22]

Tragedy struck the project in 1967 when a helicopter flying over the construction site was "shot down" by a rock blast. The pilot was killed by the crash. A month later a second helicopter struck the ground between the base camp and the damsite taking the lives of five persons including a geologist working for the Alaska District--William Binkley. [23]

Early in 1970, the District opened bids on the main contract and received only two. They were both too high (approximately $32 million as against the Corps' expectation of $23 million) and were rejected. This difficulty led to a reevaluation of the project in search of ways to cut costs. The District readvertised for bids and in May 1970 awarded the main con-



Power tunnel through the mountain.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WEIR
PENSTOCK
CONSTRUCTION CAMP AREA
TAILRACE
LONG LAKE
INTAKE STRUCTURE
TUNNEL
SURGE TANK
CRATER LAKE
POWER HOUSE
PORT SNETTISHAM
TRANSMISSION LINE
LAKE DOROTHY
SUBMARINE CABLE
INLET
TAKU
STEPHENS PASSAGE
GRAND I.
GLASS PENINSULA
SCALE IN MILES
0 1 2 3 4
JUNEAU
SUBSTATION
TRANSMISSION LINE
GASTINEAU CHANNEL
DOUGLAS ISLAND
ADMIRALTY ISLAND

tract in the amount of nearly $20 million. That cost covered exploratory drilling, and excavations for the powerhouse, power tunnel, surge tank, and the penstock. At the same time, work was continued on the switchyard site, the weir and intake structure, the power distribution system, and the tailrace channel.

In April 1971, the District awarded a $3,705,000 contract for completion of the underground power house and the installation of related equipment. Still more revision to the project was undertaken as the District announced at the end of FY 1971 that the plan to dam Long Lake had been deferred in favor of tapping water from the natural lake levels. [24]

Two years later, in 1973, the first stage of the project was completed and the initial generators brought into service, delivering 46,700 KW to the Juneau area. In late 1974, the District anticipated that the second stage of the project, which involves the tapping of Crater Lake, the second of the two original sites, might be operational in 1979. The development of this second stage has been affected by the 1974 referendum vote to relocate the state capital to a more central area in Alaska. The impact of this projected relocation on Juneau's future energy needs was not clear at the end of 1974.

The Alaska District is also involved in a second hydroelectric project, the ultimate fate of which was still uncertain in late 1974. Bradley Lake lies about 100 air miles south of Anchorage and about 25 miles northeast of Homer. An initial field reconnaissance was made in 1954 to determine the hydroelectric potential of the site. The U.S. Geological Survey mapped it and reported on its geology and water resources. In 1959 a geological reconnaissance was performed to check foundation possibilities for a dam and to learn the availability of construction materials. In 1960, the Alaska District published a review of its *Interim Report #2* in which it repeated its view that the Cook Inlet area was the most dynamic area of Alaska in terms of economic growth. In examining the sources of potential power in the region, it identified Bradley Lake as having the best potential in terms of benefit to cost ratio. In addition, the Fish and Wildlife Service believed the Bradley project would have the least detrimental effects on fish and game. [25]

The District's design included the construction of a small 150-foot-high rockfill dam that would raise the surface of the lake about 100 feet. The controlled water would pass through an 11-foot concrete lined power tunnel (about 2½ miles long) to a surge tank. An 8-foot steel penstock would then carry the water down to a powerhouse located at tidewater. There, three generators capable of producing 64,000 kilowatts would be installed. The plan also called for the diversion of the north fork of the Bradley River and the Nuka River into the lake drainage, thereby increasing the volume of stored water. [26]

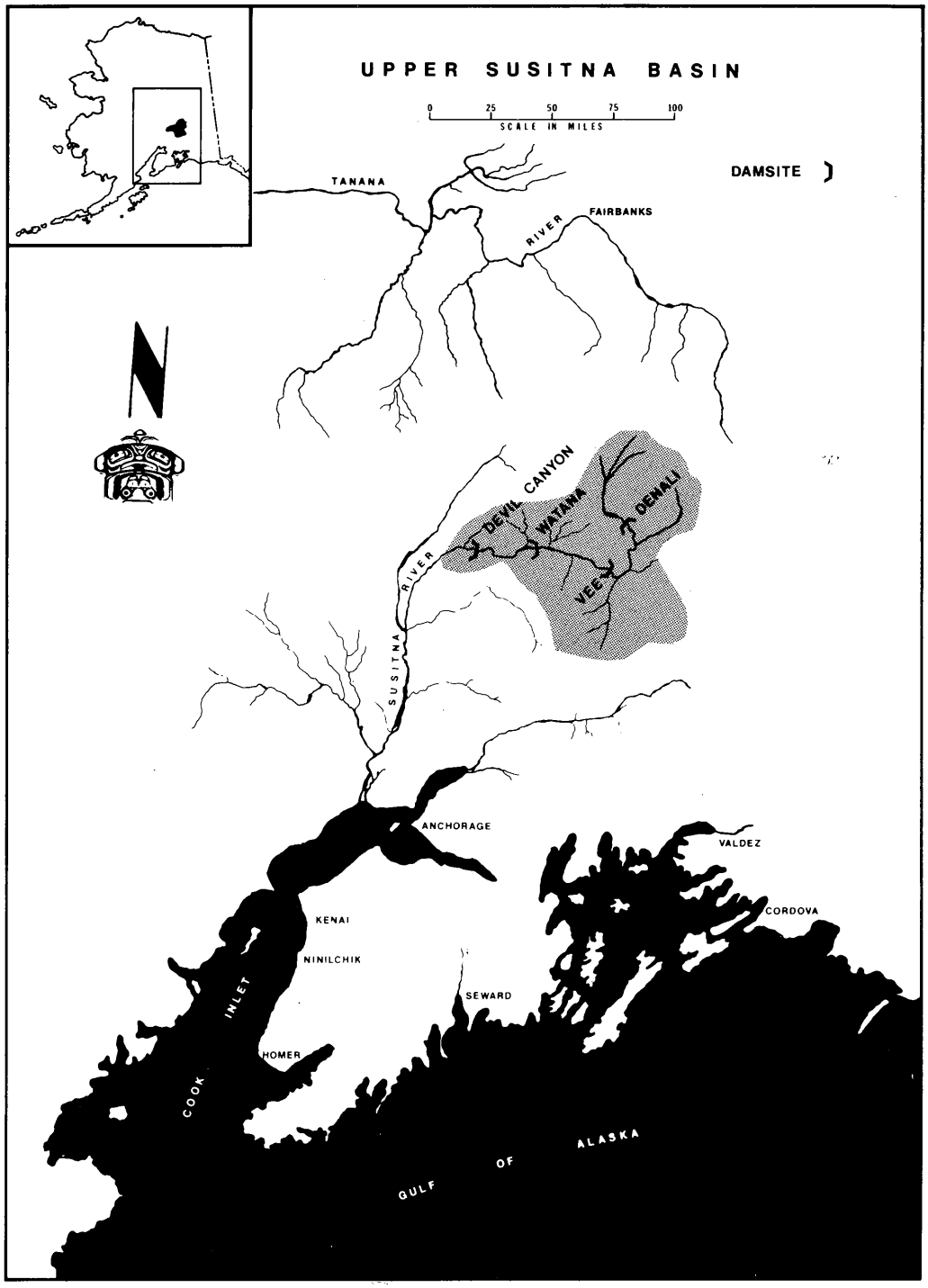
The proposal was approved by the Board of Engineers for Rivers and Harbors early in 1961. In March 1962, the Secretary of the Army endorsed it, and Alaska Senators Ernest Gruening and E.L. Bartlett introduced a bill requesting congressional approval of the project. In his letter accompanying the transmittal of the District's *Review of Interim Report #2* to Congress, the Secretary of the Army recommended that construction be undertaken by the Army and ultimate operation and maintenance be assigned to the Department of the Interior. It was believed that the project would cost about $45.8 million.[27]

While the project awaited funding, the Interior Department reported that it had been monitoring the power supply and marketing situation in the Anchorage-Kenai Peninsula area. It observed that the increasing use of natural gas for thermal generation had reduced power costs and concluded that the Bradley Lake project should be restudied to determine if current circumstances still warranted its construction.

In 1966, the District began the process of reviewing the Bradley project. In the same year the Department of the Interior placed an order in the Federal Register withdrawing just over 38,000 acres for the project. By 1970, the cost estimate for the scheme had risen to just over $84.2 million, a situation which called for still further review. In 1972 the Federal Power Commission began the process of examining the potential market for hydroelectric power in the region. The future of the Bradley Lake project will ultimately depend on the extent to which the demand for power is increased by economic growth in the Anchorage and the Railbelt area.[28]

Apart from the study of the Federal Power Commission, the District is currently involved in two large scale surveys of power needs and resources of its own. The first concentrates on southeastern Alaska, especially the communities of Sitka, Petersburg, and Ketchikan. The second centers on the Railbelt area and is concerned with the possible development of a hydroelectric system on the upper Susitna River.

The U.S. Bureau of Reclamation first prepared a feasibility report in 1961 on a hydroelectric project for the Railbelt to be located at Devil Canyon on the upper Susitna just above Gold Creek. In 1972, the Senate Public Works Committee authorized the District to develop a comprehensive study of this and other hydropower options in the area. There are over 40 hydropower possible sites under examination; of these, six options involving various combinations of the Devil Canyon site and three other sites on the upper Susitna (Watana, Vee, and Denali) are receiving the closest scrutiny. The smallest project, a single dam at Devil Canyon, would create a lake having a surface area of just over 7500 acres. The stored water would generate about .9 billion KW. The largest project, a combination of the four damsites, would flood over 81,000


UPPER SUSITNA BASIN
0 25 50 75 100
SCALE IN MILES
DAMSITE
TANANA
RIVER
FAIRBANKS
DEVIL CANYON
WATANA
DENALI
VEE
SUSITNA RIVER
ANCHORAGE
VALDEZ
CORDOVA
KENAI
NINILCHIK
SEWARD
HOMER
COOK INLET
GULF OF ALASKA

surface acres and be capable of generating 6.2 billion KW.[29]

The District has begun its study of these options with a series of public meetings held in 1974 with a view to generating the fullest possible public discussion and participation in the examination and development of this hydroelectric proposal. In addition, the District has employed an architect-engineer firm to develop a full inventory of the recreational, environmental, and aesthetic dimensions of the Susitna River. This report, which will contain information very similar to that found in Environmental Impact Statements, will be an important aid in any final decision on the merits of these projects.

FLOOD PLAIN INFORMATION

An important service performed by the Alaska District with increasing intensity beginning in the mid-sixties has been the study of flood patterns and potentials with a view to aiding communities and property owners who are occupying or developing flood plain areas. The function of the District's staff involved in these operations is to devise methods for reducing damages caused by flooding as well as the installation and operation of warning systems in the field.

In 1967 the President issued an executive order that stated, in effect, that no Federal funds would be spent for any construction or improvement unless the proposed project had been evaluated in the light of potential flood hazards. This set in motion ongoing requests for flood plain information from a number of Alaskan local governments. In response to these requests the Alaska District has generated Flood Plain Information Reports. These documents provide a record of past flooding in a given area and deals with the potential for future flooding as well. In addition, they examine the range of damage that might occur from floods of varying severity. Between 1967 and 1975 the District has undertaken no fewer than 25 of these extremely important studies touching areas largely concentrated in southeastern and southcentral Alaska.[30]

The District also produces Flood Insurance Studies, documents which are closely related to Flood Plain Information Reports. These provide detailed information which aids the administration of the Federal Flood Insurance Program under which insurance companies (with Government subsidies) may offer flood insurance to the public and to local governments at reduced rates. These documents are also used by the U.S. Housing and Urban Development Administration. By the end of FY 1975, the Alaska District had completed 12 of these studies in the 22 areas where the Federal Insurance Administration had requested information.[31]

One of the most interesting District achievements in this area has been the development of a telemetric flood early warning system. This system,

one of the first applications of integrated circuitry in stream data gathering, was devised by the Alaska District in cooperation with the Weather Bureau and the U.S. Geological Survey. The project was undertaken not long after the disastrous 1967 flood in Fairbanks. In its final form it consisted of sensing devices established to monitor stream conditions at remote locations. These devices transmit signals to a network control station which in its turn feeds information through several teleprinters. The Alaska District announced the implementation of this system in August 1969, noting at the time that the system was a pilot project for networks established in two other states.[32]

PROJECTS UNDER STUDY

What projects were under consideration for development by the Alaska District in 1975? To begin with, the District is at work on studies involving further improvement of projects whose initial phases were completed earlier in the Corps' civil works program in Alaska. For example, in southeastern Alaska, the District is examining navigation conditions and commercial traffic in the Wrangell Narrows and Dry Straits areas. This study also includes a survey of Turn Point, a potential channel improvement located near Petersburg. The District is continuing to search for methods to solve the shoaling problem in Gastineau Channel, in addition to examining the possibility of enlarging the mooring area in Wrangell Harbor, expanding Haines Harbor and providing it with breakwater protection, and expanding the Bar Point Harbor at Ketchikan.[33]

The District is also very active in studying navigation problems in the Cook Inlet region. It is surveying the possibility of improving the existing small boat harbors at Ninilchik and Seldovia in addition to examining the potential for a deep draft harbor at Kenai. The problem of shoaling in Cook Inlet is receiving very close attention from the Corps in view of the very important, large, and expanding commercial traffic now using the Port of Anchorage.[34]

On Kodiak Island the District is studying the possibility of providing additional moorage for commercial fishing boats at or near the city of Kodiak. In addition, it is exploring the construction of a protective breakwater for a small boat harbor and cargo dock for Port Lions, the village built by Lions International for the former residents of Afognak who were displaced by the savage destruction wrought on their old village by a seismic sea wave following the 1964 earthquake.[35]

Elsewhere, perhaps the most fascinating navigation study the Corps is currently engaged in is the search for an area in which to develop a suitable deep-draft harbor in northwest Alaska. This study has been stimulated by the discovery and development of oil on Alaska's North Slope. Among the areas under consideration are Cape Nome (and vicinity) and Port Clarence

Inlet. It almost goes without saying that such a harbor or harbors has considerable importance for the future development of mineral resources in northern and western Alaska.[36]

The Metropolitan Anchorage Urban Study is Alaska's version of a very new kind of civil project for the Corps. This type of work began in 1970 when Congress authorized the Corps to take up the study of wastewater treatment in a number of urban areas. This work formed the basis of the Corps' Urban Studies program initiated in 1972. The program includes not only the examination of wastewater treatment but the whole range of water resources management involved in urban areas including flood control where applicable.

In 1974, Congress authorized the District to undertake an Urban Study in the Kenai, Matanuska, and Greater Anchorage Boroughs. In the early phase of the work now under way, the District is concentrating on the greater Anchorage area. In addition to securing its own data, the Corps program is intended to gather and unify data already collected by other local authorities with a view to generating a study that will put water resource management on a regional basis. At this fairly early state (late 1974), it is anticipated that the final document will be ready sometime in 1978.[37]

By far the most important project investigation currently underway is the previously mentioned Southcentral Railbelt Area Hydroelectric Power study (see section on Hydropower). This study, which had its origins in a Senate Public Works Committee Resolution of 1972, is intended to be completed in two phases involving an interim and a final report. The fundamental conclusions reached in the Interim Report released in 1975 favored the construction of two dams at Devil Canyon and Watana on the upper Susitna River. In addition to continuing refinement of this proposal, the District is carrying forward the examination of other potential hydropower sites in the Railbelt area. This second phase in the total study is expected to be completed sometime in 1978 or 1979. These studies and any authorized projects that may result from them will be extremely important in the continuing economic development of this area of Alaska.[38]

To sum up, as the District looks ahead from the vantage point of the mid-seventies, it will continue to expand, improve, and maintain those works laid down in the past under its previous civil and military works programs. The new and expanding missions of the Corps in Alaska will be tied to the dramatic new dimensions of the Alaskan economy, especially the continued development of the vast mineral resources of the region. In addition, the population growth which invariably accompanies economic expansion will continue to draw the District into missions involving the development of adequate water resources management for the urban areas that seem to be such a new and important part of Alaska's future.

Footnotes for Chapter Four

1. "Construction Progress Report as of 31 December, 1974," in files of Construction Branch, Alaska District.

2. *Ibid.*

3. *House Document 211*, 88th Congress, 2nd Session, 1964, pp. 114-18.

4. *ARCE*, 1970, pp. 1200-01.

5. USACE, North Pacific Division, *Water Resources Development by U.S. Army Corps of Engineers in Alaska*, (1975), p. 35.

6. *House Document 393,* 91st Congress, 2nd Session, 1970; *ARCE*, 1970, pp. 40-4, 40-17.

7. *House Document 501*, 83rd Congress, 2nd Session, 1954, p. 80.

8. *House Document 200*, 92nd Congress, 2nd Session, 1972.

9. USACE, North Pacific Division, *Water Resources Development . . .*, p. 41.

10. *House Document 501*, 83rd Congress, 2nd Session, 1954, p. 82; *Senate Document 70*, 90th Congress, 2nd Session, 1968. (The second document is the District's report on Kake).

11. USACE, North Pacific Division, *Water Resources Development . . .*, p. 42.

12. *House Document 137*, 84th Congress, 1st Session, 1955, pp. 59-66.

13. *ARCE*, 1963, p. 1768; *ARCE*, 1964, p. 1607.

14. USACE, Alaska District, "Review of Report: Tanana River Basin on Fairbanks Flood Control," (Transcript of Public Hearing, 20 Oct 67), pp. 5-9.

15. Mary Clare Langan, "Chena Work Ahead of Schedule," *Alaska Industry,* (September 1974), pp. 38-39.

16. *House Document 501*, 83rd Congress, 2nd Session, 1954, pp. 114-15.

17. *House Document 40*, 87th Congress, 1st Session, 1961, pp. 49-55, 61-62.

18. U.S. Department of the Interior, Bureau of Reclamation, "Reappraisal of the Crater-Long Lakes Division Snettisham Project, Alaska," (Juneau, 1961), pp. 10-12.

19. *Alaska Daily Empire*, 6 Apr 62. In Alaska, the Bureau's agency is the Alaska Power Administration.

20. *ARCE*, 1966, p. 1682) USACE, Alaska District, News Release 4982, 28 Sep 65.

21. *ARCE*, 1968, pp. 1231-32.

22. *Juneau Alaska Empire*, 9 Nov 67.

23. *Anchorage Daily News*, 6 Oct 67; *Juneau Alaska Empire,* 24 Nov 67.

24. *ARCE*, 1970, pp. 1206-07; *ARCE*, 1971, p. 1266.

25. *House Document 455*, 87th Congress, 2nd Session, 1962, pp. 36-53, 55-59.

26. *Ibid.*, pp. 46-49.

27. *Ibid.*, pp. vii, 49.

28. *ARCE*, 1970, p. 1207; *ARCE*, 1973, pp. 40-12, 40-13. By 1973 the cost estimate had risen to $152 million.

29. USACE, Alaska District, *Southcentral Railbelt Area Hydroelectric Power Study*, (Anchorage, 1975), pp. 13-23.

30. USACE, NPD, *Water Resources Development . . .*, p. 46.

31. *Ibid.*

32. Carlton H. Gray, "Alaska Telemetering Network for the Corps of Engineers and the U.S. Weather Bureau," Paper presented to the Western Snow Conference, April 1968.

33. USACE, NPD, *Water Resources Development . . .*, pp. 48-9.

34. *Ibid.*

35. *Ibid.*

36. *Ibid.*

37. USACE, Alaska District, "Metropolitan Anchorage Urban Study," (Anchorage 1975). (A public information pamphlet)

38. USACE, Alaska District, *Southcentral Railbelt Area Hydroelectric Power Study*, (Anchorage, 1975).