

# **TWIN HILLS**

## **ADVISORY LAND USE PLAN**



**Municipal and Regional Assistance Division**

**Department of Community & Regional Affairs**

**May 1984**

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This plan has been prepared by the Municipal and Regional Assistance Division with assistance from the Twin Hills Traditional Council, Twin Hills Native Corporation, and the residents of Twin Hills.

Credits

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## I. INTRODUCTION

The purpose of this advisory land use plan is to assist the Village of Twin Hills through the Appropriate Village Entity (AVE) in: (1) planning for future community development; (2) identifying land to satisfy present and foreseeable future community needs; and (3) making decisions regarding which lands to request from the local village corporation for reconveyance through the Alaska Native Claims Settlement Act (ANCSA), Section 14(c)(3).

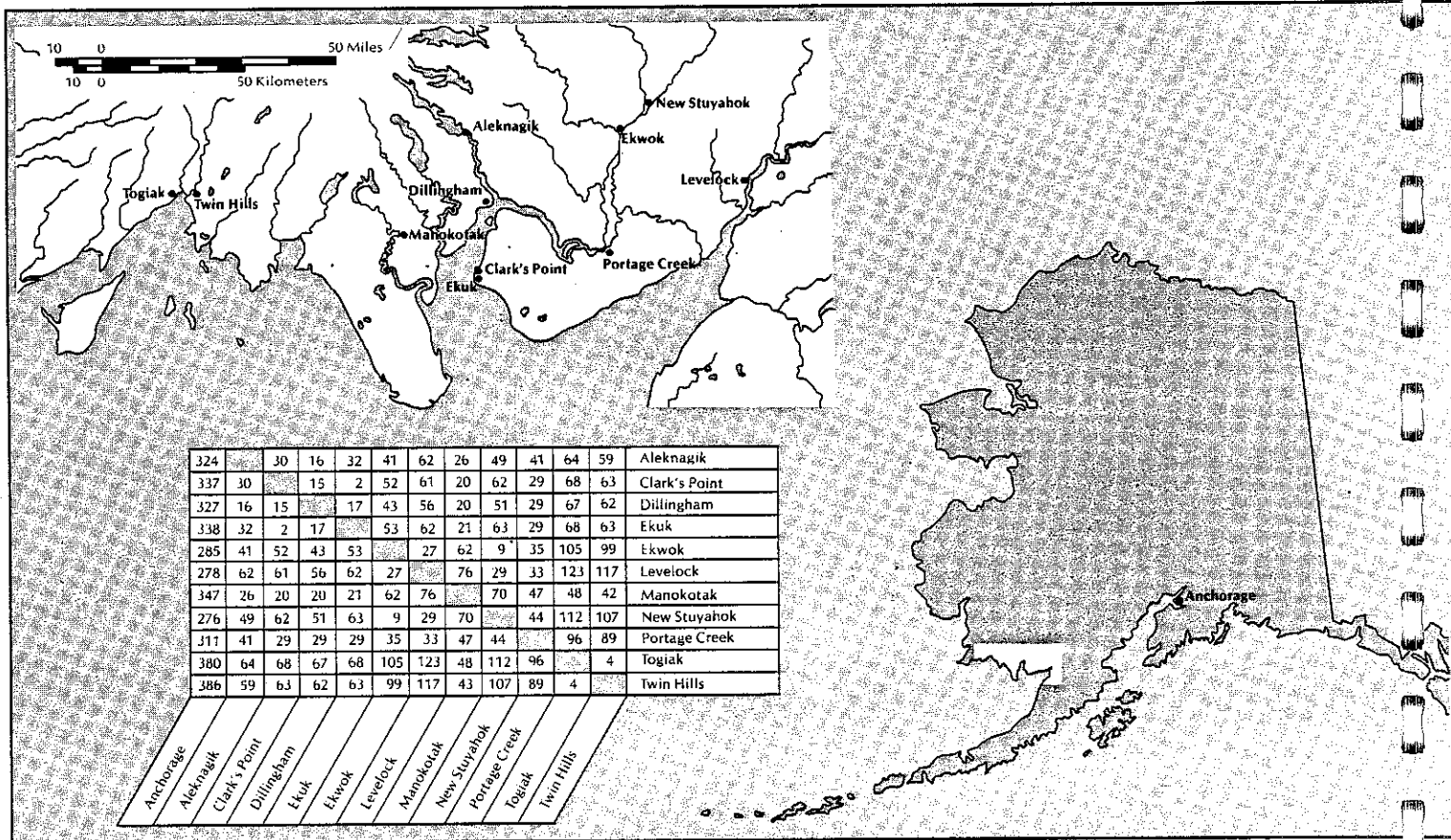
### History and Community Setting

Twin Hills, located at the base of two prominent hills and adjacent to the Twin Hills River, was established in 1965 following severe flooding of the Upper Togiak Bay area. The first three or four households moved from Togiak to avoid recurrent flooding. Some of the current residents of Twin Hills also migrated from Quinhagak, a small community on Kuskokwim Bay. The people of Twin Hills have strong cultural ties to the Yukon-Kuskokwim region since many of their ancestors migrated south to the Togiak area following the devastating influenza epidemic of 1918 - 1919.

The community of Twin Hills is located approximately 60 air miles from Dillingham. (See Map I-1.) As there are no roads connecting Twin Hills to surrounding communities, access is provided by airplane or boat. In the winter, snowmobiles are used for overland travel between villages.

# MAP I-1

## TWIN HILLS LOCATION AND DISTANCES BETWEEN BRISTOL BAY COMMUNITIES



Adapted from Twin Hills Community Profile,  
Alaska Department of Community and Regional  
Affairs, 1982.

## II. POPULATION AND ECONOMY

### Existing Population

Since the establishment of Twin Hills in 1965, the 1970 and 1980 U.S. Census counts have indicated a fairly stable population of 67 and 70 residents, respectively.<sup>1</sup> Subcategories of the 1980 Twin Hills population by race, sex and age groups is shown in the Table II - 1 below.

TABLE II - 1

#### COMPONENTS OF TWIN HILLS POPULATION, 1980

<u>Total</u>	<u>Native</u>	<u>Male</u>	<u>Female</u>	<u>Under 5 yrs</u>	<u>5-17 yrs</u>	<u>18-64 yrs</u>
70	67	34	33	4	20	38
<u>65 and Over</u>	<u>Median Age</u>	<u>Persons/Household</u>				
5	23.8	4.13				

Source: U.S. Bureau of the Census, 1980

Although the total number of residents within Twin Hills has remained fairly constant, variation does occur on a seasonal basis. During the summer months, approximately thirty additional persons in-migrate to the village to participate in commercial fishing and subsistence activities.

#### Future Population

Based on past population trends and economic growth projections for the area, the Twin Hills population will likely increase at a gradual rate. According to the Bristol Bay Cooperative Management Plan (BBCMP)<sup>2</sup>, the Twin Hills population is projected to increase at an average rate of 1.9% per year, due primarily to spillover population growth from Togiak. Without this spillover growth, the projected growth rate for Twin Hills, based on historical trends, would be estimated at 0.4% per year.<sup>3</sup> Using a 1.9% annual growth rate, the population of Twin Hills to year 2000 would result in 103 residents (See Table II-2).

TABLE II-2

## PROJECTED TWIN HILLS POPULATION TO YEAR

2,000 BASED ON A 1.9%/YEAR GROWTH RATE

Date	1980	1985	1990	1995	2000
Population	70	77	85	93	103

Source: Adapted from "Economic, Subsistence, and Sociocultural Projections in the Bristol Bay Region," Table III.5, Page III-14

Existing Economy

The cash economy in Twin Hills is based primarily on commercial fishing and employment in public service jobs. Approximately twenty residents earn some level of income by selling salmon to either the Togiak Fisheries cannery (located south of Twin Hills) or the Kachemak Seafoods cannery (located in Togiak). A few residents are also involved in commercial herring fishing. Public service jobs employ twelve residents either on a full-time seasonal or part-time basis. Employers for public service jobs include: Village of Twin Hills, Southwest Region Schools, U.S. Postal Service, State of Alaska, Bristol Bay Native Association, and Bristol Bay Health Corporation.

In addition to public service or commercial fishing jobs, a number of construction jobs are usually available during the period of August-October for

village projects, depending on grant funds received during the year. One such project which has employed from 10-20 workers during three construction seasons is the Cannery Road project. One other supplemental source of income for approximately 10-20 residents is the selling of handicrafts such as grass baskets, skin dolls, mukluks, slippers, and Eskimo yo-yos.

A summary of employment in Twin Hills for 1983 is given in Table II-3 below.

TABLE II-3

EMPLOYMENT IN TWIN HILLS, 1983

<u>Job Category</u>	<u>Number of Jobs</u>	<u>Status/Duration</u>
I. Public Service	6 <u>6</u> 12	full-time, seasonal, part-time, either seasonal or all-year
II. Trade and Private	1 $\frac{1}{2}$ 2	full-time, seasonal, part-time, all-year
III. Fisheries	15-20	seasonal
IV. Construction	10	contract basis, seasonal
X. Trapping and Cottage Crafts	10-20	seasonal

---

Source: Village of Twin Hills, 1983

The entire Twin Hills community depends heavily on subsistence activities for various food sources. People range a great distance to obtain subsistence resources and a special relationship of exchange exists between villages for certain items. During the summer months, nearly all residents of Twin Hills participate in fishing activity whether for subsistence or for income. As a result, full-time jobs in the village are actually worked for nine months. A few part-time jobs such as health aide or postal worker are handled on a year-round basis.

#### Future Economy

According to projections given within the BBCMP, economic activities in Togiak will have an effect on the economy and population of Twin Hills. The BBCMP estimates that Togiak's strong historical growth pattern\*, involvement in an expanding herring fishery, and emerging role of sub-regional center will likely cause some spillover population growth into Twin Hills.<sup>4</sup> Other regional factors which could affect economic and population growth in the overall Bristol Bay area include: State and municipal land disposals; oil and gas development; mineral development; regional electrification; and bottomfish industry development<sup>5</sup>. Since none of these activities are projected to occur in the immediate vicinity of Twin Hills, they are not likely

\* The Togiak population increased from 220 to 470 residents from 1960 - 1980 (U.S. Bureau of the Census).

to have a major effect on the economy of the community. Depending on grant funds received or projects undertaken by the Village Council, construction and maintenance jobs may be available in Twin Hills in the future. Projects anticipated by the village council in 1983 and 1984 include: 1) completion of Cannery Road project; 2) construction of storage/maintenance building; 3) installation of bulk fuel storage tanks; and 4) construction of generator building.

### III. NATURAL FEATURES AFFECTING DEVELOPMENT

#### Climate

The village of Twin Hills is located in a climatic transition zone. The primary influence is maritime, however the Arctic climate of Interior Alaska also affects the Bristol Bay coastal region. The area is characterized by cloudy skies, mild temperatures, and moderately heavy precipitation.

Coastal areas such as the location of Twin Hills are often subjected to periods of high winds. These winds, which can average 25 to 35 miles per hour (mph), can continue for days or weeks at a time. Winds of 60 to 70 mph are not uncommon and occur primarily during June through November. Prevailing winds are from the north and north-east from October through March, and from the south and west during April through September. The occurrence of strong crosswinds has prompted the Twin Hills Village Council to propose an airport crosswind runway project as a high priority for State and/or federal funding.

#### Geology and Soils:

The geology of the Twin Hills area is made up primarily of outwash deposits and moraines from former glacial and river activity in the area. Two hills which rise 291 feet and 427 feet are prominent features of the area.

Soils in the vicinity of Twin Hills are predominantly organics and peat overlying a wet, brown silt. Both are highly frost-susceptible. The village, however, is located on a river gravel deposit in excess of 20 feet thick. There are also scattered lenses and pockets of sand and gravel near the village, occurring as highly modified morainal material and river bar and bank deposits. Flat, low lying areas and small depressions are occupied by highly organic soils of varying thickness. They are always wet, with the water table at or near the surface.

Several potential sources of sand and gravel exist in close proximity to Twin Hills. The largest and most readily available deposits of sand and gravel occur as riverbank deposits and as nearby point bar accumulations. Also, limited quantities of gravel can be found in the morainal deposits which dot the area. Scattered permafrost is common in the area, but no specific data is available for Twin Hills.

#### Topography:

In the immediate vicinity of Twin Hills the topography is primarily flat and tundra/muskeg-covered, dotted with irregularly shaped moraine knolls and ridges. The residential portion of the village generally ranges from 20 to 30 feet in elevation, and the airstrip sits atop a bluff from approximately 55 feet to 80 feet in elevation. Steep slope areas in Twin Hills include the area immediately west of the airstrip and the riverbank area on the northern portion of the townsite (See Pocket Map #3). A number of former gravel extraction sites within the townsite also have relatively steep sides.

Fish and Wildlife Habitat Areas:

In the summer, the Bristol Bay area supports prolific runs of all five species of Pacific Salmon. Sockeye or red salmon are the most abundant and the most commercially significant for Bristol Bay fishermen. In Togiak Bay, a late silver salmon run attracts fishermen from throughout the Bristol Bay area. Togiak Bay is also a site of a large-scale commercial herring fishery. Spawning and migration vary between species of salmon and for herring, however, most major spawning runs take place within the period of May to September. Other anadromous fish such as the arctic char and steelhead trout, and various freshwater fish are abundant in the Twin Hills area.

The intertidal beaches support polychaetes, softshell clams, cockles, and razor clams. Marine fish such as the boreal smelt and capeline spawn along the shore to Togiak Bay.

The Twin Hills area supports a large and diverse population of small mammals. Beaver and muskrat inhabit the protected vegetated wetlands which border salt marshes, streams and lakes of the area. The region also sustains red fox, mink, land otter, ground squirrel, weasel, and porcupine among others. All of these mammals make use of abundant water/wetland areas.

The area surrounding Twin Hills also supports several species of large mammals. Both brown and a few black bear can be found near the village and moose occur in moderate numbers throughout the region. Wolves also

range throughout the area, but do not occur in large numbers.

Togiak Bay, Togiak River and associated mud flats and wetlands areas provide essential habitat for waterfowl and shorebirds during their spring and fall migrations. Peak migrations usually occur during the first week of May.

### Vegetation

The vegetation surrounding the village of Twin Hills is predominantly moist tundra, wet tundra and coastal marsh. Mosses, lichens, sedges and grasses form a moist mat where other plants grow. Small crowberry, dwarf birch, blueberry, cotton grass and rushes are all common to the area. Along the beaches of Togiak Bay/River, beach rye grass, wild spinach, wild celery, beach pea, sea beach, sandwort, and common oyster leaf are all prevalent. In summer months, the area supports a large variety of blooming wildflowers.

### Physical Hazards

There are no major physical hazards affecting Twin Hills, however, erosion and flooding do occur in some areas within the federal townsite (Pocket Map #3). During high water periods in the Twin Hills River (primarily in the fall), flooding occurs in several areas within the unsubdivided townsite. Also during high water periods, erosion has occurred at the steep riverbank areas located on the northern edge of the townsite. Residents of Twin Hills have indicated that the rate of erosion is not significant since large rocks

situated at the toe of the bluffs have kept the erosion in check. Village fishing boats, stored at the top of the bluffs, are lowered and raised on the riverbank. This activity has tended to speed the erosion process somewhat.



Steep Banks of the Twin Hills River

#### IV. EXISTING LAND OWNERSHIP

This section discusses land ownership and status in the vicinity of Twin Hills.

Pocket Maps #1 and #2 illustrate land ownership for the regional and townsite areas, respectively.

##### Federal Townsite

Twin Hills has a federal townsite, USS 5580 (see accompanying section "Twin Hills Land Documents".) The survey for the 147.04 acre townsite was approved on August 6, 1975. The townsite patent was accepted by the BLM Townsite Trustee on September 17, 1976. The trustee, in turn, has since deeded occupied parcels to fourteen residents who had improvements on the lots as of August 6, 1975<sup>1</sup>. A few additional residents could still qualify for deeds to lots (in compliance with above conditions) but have not yet filed applications. The trustee can also issue permits to the village council for unoccupied lots or un subdivided areas of the townsite to be used for public purposes. The trustee has issued such a permit to the village council for a generator site (Lot 9, Block 8). To obtain a permit, the village council must pass a resolution which describes the land that is needed; specifies the public purpose(s) involved; and requests approval by the trustee. The resolution is then forwarded to the townsite trustee for his consideration. For a permit to be issued for a public use within the subdivided or un subdivided

townsite area, the townsite trustee also recommends that a resolution of concurrence be obtained from the village corporation.<sup>2</sup>

In 1977, an 8.05 acre parcel within the townsite was deeded to the State of Alaska for school purposes. Title to all remaining lands within the townsite, other than the lands described above, remains with the townsite trustee.

The status of lands within federal townsites has been made particularly confusing with the passage of the Federal Land Policy and Management Act (FLPMA) in 1976, the filing of the Aleknagik Case in 1977, and the Unalaska case in 1981. The Federal Land Policy and Management Act rescinded the Townsite Act. The Bureau of Land Management has determined that the repeal of the Townsite Act restricts the townsite trustee from issuing deeds to subdivided townsite lots unless applicants had improvements on the lot(s) prior to the survey approval date. The Bureau of Land Management's interpretation of FLPMA also served to end new settlement in the unsubdivided portion of townsites. In the Aleknagik Case, the plaintiffs contend that federal townsite lands which are unsubdivided and unoccupied as of December 18, 1971 (date of ANCSA) should be made available for selection by the applicable village corporation. The Unalaska Case expands the issue to include land that was subdivided and unoccupied as of the date of ANCSA.

Although the above circumstances serve to make land decisions difficult, a number of options do exist

that the village may consider, particularly when attempting to make land available for residential use. This topic is further discussed within "Housing and Residential Land Use" (Section VI).

#### Airport Property

Bordering the townsite boundary on the east is a 106.2 acre tract containing the Twin Hills airstrip. In 1973, the Department of Transportation and Public Facilities (DOT/PF) obtained a lease for this tract from the federal government (see accompanying section: "Twin Hills Land Documents"). During the same year, DOT/PF began construction of the runway and access road. When the Twin Hills Native Corporation received their interim conveyance in 1978, the conveyance was made subject to the lease issued to DOT/PF. The lease to DOT/PF is scheduled to expire in 1993.

#### Village Corporation Lands

Pursuant to the Alaska Native Claims Settlement Act, the Twin Hills Native Corporation was entitled to select 69,120 acres of federal land (equivalent to 3 townships). As part of their entitlement, the village corporation received an interim conveyance of 65,906 acres on January 13, 1978 (See accompanying section - "Twin Hills Land Documents"). A patent will be issued after the boundary description is confirmed by surveys. The Twin Hills Native Corporation owns surface rights to the land, while the regional corporation, Bristol Bay Native Corporation, owns subsurface rights.

Lands within a federal townsite, such as the Twin Hills Townsite, were not available for selection by the village corporation. Therefore, lands within the federal townsite have not been conveyed to the village corporation. As discussed earlier, the Aleknagik and Unalaska cases could change the status of land within federal townsites.

#### ANCSA 14(c) Claims

Section 14(c) of the Alaska Native Claims Settlement Act (ANCSA) requires village corporations to reconvey certain lands they received under ANCSA, as discussed below.

Under ANCSA 14(c)(1), the village corporation must reconvey title to the surface estate of tracts of land occupied or used by Native or non-Native individuals as primary place of residence or business, or a subsistence campsite as of December 18, 1971. A 14(c)(1) claim has been filed for the Togiak Cannery but the boundaries of the claim have yet to be determined. No other known 14(c)(1) claims have been filed within the immediate vicinity of Twin Hills.

Section 14(c)(2) of ANCSA allows claims to be made by non-profit organizations such as churches. No known 14(c)(2) claims have been filed within the immediate vicinity of Twin Hills.

Under ANCSA Section 14(c)(3), the village corporation must reconvey improved community lands in addition to lands for expansion, rights of way, and other

foreseeable community needs. The reconveyance shall be at least 1,280 acres unless the community and village corporation agree in writing upon a lesser amount. In unincorporated communities such as Twin Hills, the 14(c)(3) land is conveyed to the State of Alaska to be held in trust for the future city. While in trust with the State, the land is administered and managed through the Municipal Lands Trustee Program. Identification of potential 14(c)(3) lands in Twin Hills and recommendations for reconveyance are discussed in Section VII of this plan.

Under ANCSA Section 14(c)(4), the village corporation must reconvey lands which were being used for airport purposes prior to December 18, 1971. Since the Twin Hills airport was not built prior to ANCSA, this reconveyance is not applicable.

#### Native Allotments

Under the Alaska Native Allotment Act of 1906, the Secretary of the Interior could allot up to 160 acres of land to individual Natives, provided the claimant could prove 5 years of continuous use and occupancy. The Alaska Native Allotment Act was repealed with the passage of ANCSA. No applications for allotments have been accepted by the Bureau of Land Management (BLM) since December 18, 1971, but many applications filed prior to that date are still being processed.

There are five Native allotments in the vicinity of Twin Hills, totalling approximately 840 acres (see Pocket Map #1).

V. COMMUNITY FACILITIES AND SERVICES - INVENTORY AND ANALYSIS

Introduction - Local Government and Other Providers of Community Facilities and Services

Twin Hills is an unincorporated community. Local decisions are made by a five member traditional council which has been recognized by the Bureau of Indian Affairs (BIA) as the traditional governing body of the community. The traditional council is eligible to participate in a variety of State and federal programs, including State and federal revenue sharing, State Rural Development Assistance (RDA) and Bulk Fuel grants, State Aid to Unincorporated Communities, and other community development and social service programs.

The Twin Hills Traditional Council has also been recognized by the Municipal Lands Trustee (MLT) Program as the "Appropriate Village Entity" (AVE) to assist in making recommendations and decisions regarding 14(c)(3) lands. The Municipal Lands Trustee must consult with the AVE on matters concerning the identification and management of lands conveyed to the State in trust for the future city under Section 14(c)(3) of ANCSA.

In the Bristol Bay region, a number of health and social service programs are administered by regional organizations which are headquartered in Dillingham. These organizations include: Bristol Bay Native

Association, Bristol Bay Area Health Corporation and Bristol Bay Housing Authority. Funding and assistance for community services and facilities are also provided by State and federal agencies.

Following is a description of existing community facilities and services within Twin Hills. An analysis is also given of the capability of each service or facility to meet the existing and projected future population of the village.

#### Health Care

Health and social services are provided to Twin Hills residents at a health clinic which is owned by the village, leased by the U.S. Public Health Service (PHS), and staffed by the Bristol Bay Area Health Corporation (BBAHC). The clinic, constructed in 1975 or 1976, is in excellent condition and includes a radio room, waiting room, bathroom and one examination room. The health clinic is equipped with a citizens band radio for local communication and a single-sideband radio which the health aides use to contact the Bristol Bay Area Service Unit (a hospital located 6 miles from downtown Dillingham at Kanakanak). A part-time janitor maintains the clinic.

The village health aide program and other health-related services are provided by the Bristol Bay Area Health Corporation, a public, non-profit corporation. The village is served by one primary health aide, who works 6 hours during the day and is on call for emergencies at all other times. The village also has one alternate health aide.

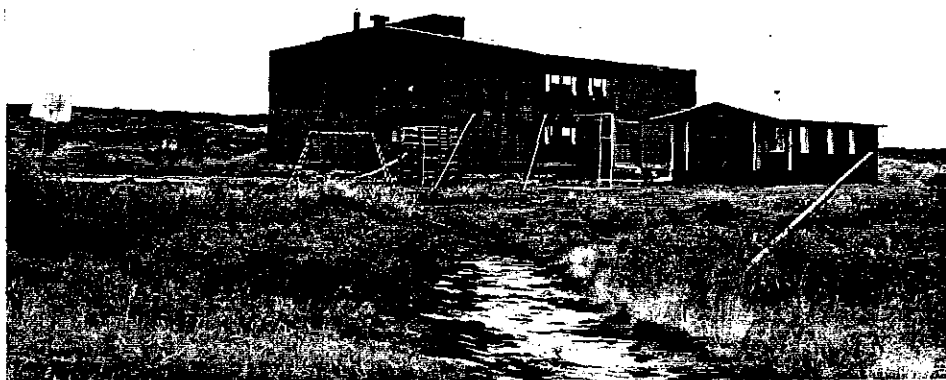
According to BBAHC, the health care facilities and staff within Twin Hills are adequate to meet the needs of the existing population as well as the projected population of the community to year 1990.<sup>1</sup>

### Schools

The Twin Hills School is operated by Southwest Region Schools. The school was built in 1977 and includes 3 multi-purpose rooms. In 1983, one full-time teacher and one part-time bilingual teacher taught a total of ten students in grades kindergarten through eight. It is anticipated by Southwest Region Schools that by school year 1984, at least six students will enroll in the Twin Hills school and another three students will be ready to enter a high school program. The Southwest Region School Board and the Twin Hills Village Council recommend to the State Department of Education (D.O.E.) whether or not a high school program will be established within the community in a given year. In the past, Twin Hills high school students have travelled to other communities such as Togiak in order to pursue high school coursework.

According to D.O.E. standards (June, 1983), the Twin Hills school facility could accommodate a maximum of 46 students. Another D.O.E. standard suggests that a minimum land area of six acres is necessary to support a small high school (10-30 students).<sup>2</sup> In comparing the above standards against the existing

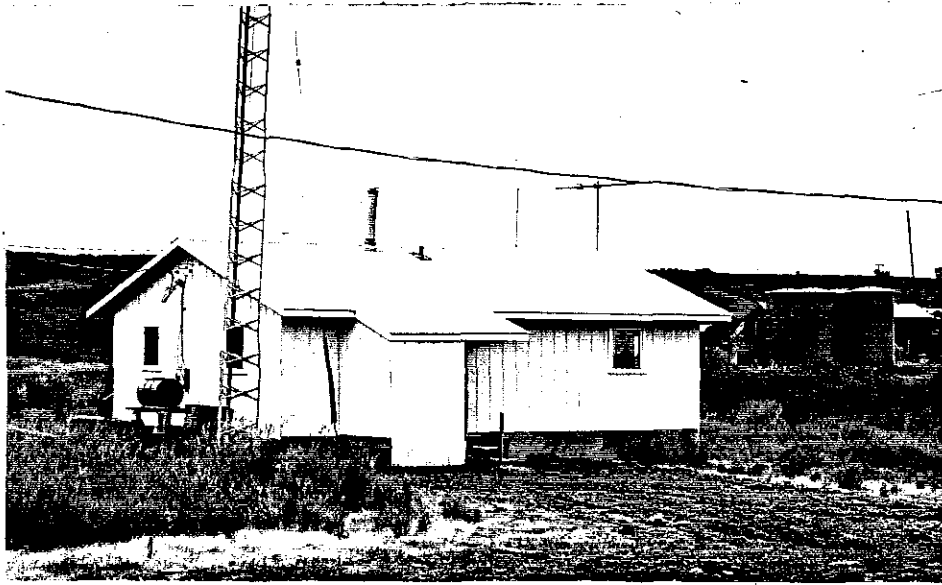
Twin Hills school building and acreage of Block 11 (U.S.S. 5580), it is evident that these facilities should be sufficient to meet the year 1990 population of the community.



Twin Hills School (photo courtesy of DOWL Engineers)

#### Community Hall

The community hall is used primarily for village council office space and community meetings. According to residents, the present building is too small to adequately handle more than one community activity concurrently. A need exists for a larger building to accommodate community meetings, cultural activities, recreation, and village office space.



Twin Hills Health Clinic (photo courtesy of DOWL Engineers)

#### Village Garage/Workshop

The village garage/workshop is used to store tools and equipment owned by the village and for minor maintenance and repair activities. The capacity of the garage/workshop is adequate for the level of use it receives. A village-owned grader and backhoe are too large to be housed in the garage and are stored outside. A new storage and maintenance building was constructed in 1983 to house the grader. The village council has also expressed the need for a dump truck for local road maintenance and upcoming village projects.

### Solid Waste Disposal

Solid waste in Twin Hills is disposed of in a dump site which has been in use since the mid-1970's. The site used is a small lake in the unsurveyed portion of the federal townsite. Disposal at the site is the responsibility of individual residents. The capacity of this site should be adequate to the year 1990. If it is found that the existing site is polluting groundwater resources the village council will attempt to locate another disposal area.

### Communications

Alascom, Inc., provides long-distance satellite telephone service via a radio link with Togiak. During 1983, local telephone exchange service was completed for Twin Hills by United Utilities. A building containing switching equipment for this service is located adjacent to the community hall.<sup>3</sup>

Television in Twin Hills is received via satellite from Togiak. The major radio station received is KDLG out of Dillingham.

The "Bristol Bay Times," published once or twice monthly in Dillingham, and the "Tundra Times," published weekly in Anchorage, are the primary newspapers received by most Twin Hills residents.

Mail is delivered to a U.S. Postal Service worker in Twin Hills throughout each week.

### Transportation

Twin Hills is primarily accessible by air and water. There are no roads connecting Twin Hills to other communities. During the winter months, trails across the tundra are used for snowmobile travel between villages. Residents can travel east to Manokotak in 2-3 hours, or to Dillingham in 3-4 hours by this mode. Togiak, located approximately four miles west of Twin Hills, can be reached by snowmobile in less than one half-hour. In the summer, travel to Togiak by skiff is common.

### Airport

Air transportation is the primary method of passenger travel to and from the village, and most cargo is also moved by air. Regularly scheduled mail runs are also available for passenger service in most instances. Other operators are available for air taxi and charter service. All air carriers are based in Dillingham.

The gravel airstrip at Twin Hills, constructed by the Alaska Department of Transportation and Public Facilities (DOT/PF) in 1973, is 90 feet wide and 2,000 feet long. A runway apron (125 ft x 200 feet) and access road were built by DOT/PF in conjunction with the runway. As described earlier, the airport is situated on a 106.2 acre site which is being leased by DOT/PF. According to DOT/PF<sup>4</sup>, the State has plans to eventually extend the runway to a total of 2,500 feet in length and to 100 feet in width. The village council has also proposed that a

cross-wind runway be built to increase safety and reliability of air travel during periods of strong crosswinds. The existing runway has also been identified as needing improvement since large rocks on the runway surface have been damaging to aircraft. The above airport improvement needs are documented within the Bristol Bay/Upper Kuskokwim Area Transportation Needs Assessment Report (DOT/PF, 1982, pp 203).<sup>5</sup>

Marine:

At present, there are no docking facilities in Twin Hills. Freight is delivered to the village by landing craft (LCN's) which can pull onto the beach to be unloaded. An area on the western part of the townsite is presently used for this purpose. The village is considering designating a new barge unloading site and fishing boat staging area south of the community on Togiak Bay. Access to this new site will be served by Cannery Road, which is scheduled for completion in 1984.

Local fishing boats (skiffs) are presently stored and maintained at two sites: 1) on top of bluffs overlooking the Twin Hills River on the north side of the community; and, 2) near the existing barge unloading area. As discussed earlier, use of the bluff area has tended to erode the steep banks along the river. In addition, boat maintenance activities, particularly painting and chipping, have caused some conflict with other uses of the bluff, such as fish drying. The advantage of the bluff area for boat

maintenance is the proximity to boat owners' homes and the availability of electrical service. The other lesser used site for boat storage is the existing barge unloading area. This latter site presently lacks electrical service and is farther (approximately 1/2 mile) from boat owner's homes.

#### Local Roads, Trails and Walkways:

Transportation within Twin Hills is largely by foot or by three-wheel all-terrain vehicle (ATV's). A few cars and trucks are also used in the community. In the winter, snowmobile travel is common.

Local roads in Twin Hills largely follow the designated right-of-ways (R.O.W.'s) as established in the patented townsite survey. Right-of-way widths vary from 40 to 60 feet depending on location within the townsite. Aurora Street, the major east-west route within the populated area of Twin Hills, has a R.O.W. of 60 feet and serves most of the existing public buildings. Aurora Street also serves as the major route from the center of the community to the airstrip.

Two north-south streets, Twin Hills Road and Airport Road, have 60 feet R.O.W. designations on the townsite plat, however, only the northern portions of these streets have been improved for use. All other streets in the settled portion of the townsite have 40 foot R.O.W. designations. In the unsettled southern portion of the townsite, proposed connector streets between Twin Hills Road and Airport Road have 60 feet R.O.W.'s. The proposed alignment for Twin

Hills Road (not yet constructed) appears to run across village cemetery land. If this is verified by survey, the village council has indicated the need to redesignate the alignment of this street.

The major road construction project in Twin Hills that is expected to be completed in 1984 is the north-south road between the village and Togiak Bay called Cannery Road. This road will be used primarily for access to a proposed new barge unloading area and staging area for village fishing boats. A one-hundred foot right-of-way has been proposed for this road.

A number of trails are frequently used by Twin Hills residents, primarily for winter travel with snowmobiles. Such trails are used for subsistence activities such as trapping and for travel between villages. Commonly used trails which cross village corporation lands are potential 14(c)(3) reconveyances. Site control should also be established for commonly used trails within the federal townsite area. There are no designated walkways such as boardwalks in the community. Most pedestrian traffic occurs along public streets.

Once Cannery Road is completed, other road construction projects in Twin Hills to 1990 will likely include: eastward extension of Northern Lights Avenue; northward extension of Airport Road; possible southward extension of either Twin Hills Road or Airport Road; and an access road to the new sanitary landfill if a new site is chosen.

## Utilities

### Electricity:

In 1983, the village council constructed a new generator plant with a production of 60 kw (including one 40 kw generator and one 20 kw generator). This plant will enable the village to be independent of the school generator or private sources of power. The generator is located on the same lot (Lot 9, Block 8) that was previously used for a privately-owned generator. Diesel fuel needed to run the village generator will be stored next to the generator building in a 500 gallon day tank.

The Twin Hills school maintains two diesel generators which produce 66 kilowatts (kw) apiece of single-phase electricity.

Overhead power lines serve all residents of the community. Utility easements have not been established for major electrical lines where these lines occur outside of road R.O.W.'s.

### Water System

A well was drilled in Twin Hills by the U.S. Public Health Service in 1971, and water distribution lines were installed throughout the village in 1977. Water is pumped from the well at a rate of 7.5 gallons/minute to a 60,000 gallon steel storage tank, and then flows by gravity through 6-inch distribution mains. An approximate 43-foot difference in elevation between the water tank and homes maintains

water pressure of 20 pounds per square inch for each home. Small amounts of fluoride and chlorine are added to the water at the pumphouse. Pressure is adequate for the use of the village's five fire hydrants. A second well has been dug in the community for use if the present source becomes inadequate, however, there is no indication that this will be needed soon. Utility easements have not been established for water mains where these occur outside road R.O.W.'s (with the exception of the R.O.W. from the water storage tank to the western edge of the airport lease area).

The village pumphouse is monitored on a part-time basis by a pumphouse operator. The pumphouse has its own generator and fuel supply (7,500 gallon tank).



Twin Hills Pumphouse (courtesy of DOWL Engineers)

Although the present well and water storage tank will be sufficient for the projected 1990 population,<sup>6</sup> there will likely be a need for a few waterline extensions to connect new housing units in the community by 1990.

#### Sewer System:

The U.S. Public Health Service installed sewer lines in Twin Hills in 1977. Sewage is collected in 6-inch lines and gravity-fed to a one-acre lagoon from all but two residences. The two houses not connected to the system rely upon individual septic systems. Utility easements have not been established for sewer mains where these mains occur outside of road R.O.W.'s.

Sewer lines will likely need to be extended to meet future service demands. The capacity of the sewage lagoon is more than sufficient to meet the needs of the projected 1990 population.<sup>7</sup>

#### Fuel Lines and Storage:

Diesel fuel is delivered annually to Twin Hills by means of a Bureau of Indian Affairs barge, "North Star." An underground fuel line extends from the Twin Hills River to connect storage tanks located at both the school and village pumphouse. A utility easement has not been established for this fuel line. The school tanks have a storage capacity of 22,000 gallons while the storage tank used to operate the village water and sewer systems has a capacity of

7,500 gallons. All of the above capacities are sufficient for existing use. For home heating purposes residents presently purchase fuel by 55 gallon drums at the Togiak Fisheries cannery. In 1984, the village council plans to erect two new bulk fuel tanks for storage and subsequent resale of heating oil to residents. The total capacity of these tanks will be 20,000 gallons.

Map V-I schematically represents the location of water, sewer, electric, and fuel lines within Twin Hills.

# MAP V-1

## TWIN HILLS - GENERAL

### LOCATION OF UTILITIES



#### LEGEND

- Electricity
  - Power line (aboveground)
  - Power pole
  - ⊙ Street light
  - (GEN) Generator
- Communications
  - ⊙ Radio tower
- Water
  - Water line
  - ◆ Hydrant
- Sewer
  - Sewer line
  - Manhole
- Fuel line
  - - - Fuel line

Adapted from Twin Hills Community Profile, Alaska Department of Community and Regional Affairs, 1982.

## VI. EXISTING AND FUTURE LAND USE

### Housing and Residential Land Use

In 1983, there were 20 year-round housing units in Twin Hills and an additional four units used on a seasonal basis. All houses were single-family detached units. Housing condition appeared to be generally good, with some need for minor repairs and upkeep. As shown on Pocket Map #2, all existing housing units are situated on surveyed lots within the federal townsite. Total residential acreage in 1983 was approximately 6 1/3 acres. According to local estimates, the availability of housing in 1983 was generally adequate to support the existing population.

According to population projections as given within the Bristol Bay Cooperative Management Plan<sup>1</sup>, the year 1990 population of Twin Hills is estimated to reach 85 residents. The BBCMP further estimates that 23 housing units would be necessary to house the projected 85 residents<sup>2</sup>. This total represents three additional housing units over what was available within the community in 1983. Local estimates predict that up to seven additional housing units will be needed by year 1990<sup>3</sup>.

Assuming seven new housing units will be needed in Twin Hills by 1990, these units would likely be located on existing vacant lots in the northern portion of the federal townsite. Such lots are close to existing utilities and within easy walking

distance to the school and other community buildings. Lot sizes are already established by survey.

One problem with designating federal townsite lots for future housing is that pursuant to FLPMA, the BLM Townsite Trustee cannot issue deeds to these lots to private individuals unless these persons had improvements on the lots prior to August 6, 1975. If Twin Hills were to incorporate as a city under Title 29 of the Alaska Statutes, the townsite land would be reconveyed to the new municipality by the BLM Townsite Trustee after pending lawsuits are settled. Even as a municipality, however, the sale or lease of city lots must conform to administrative procedures as outlined in AS 29.48.260. Moreover, these procedures do not guarantee the deeding of the lots to local residents.

If Twin Hills remains an unincorporated community, a number of possibilities exist for making the surveyed townsite lots available for housing:<sup>4</sup> One, the Townsite Trustee could issue a permit to the Bristol Bay Regional Housing Authority to allow construction on the lots. This would, however, allow the housing to be subject to qualifying requirements of the Housing Authority, and could possibly preclude some residents. A second possibility would be for the townsite trustee to hold an auction for the lots. In this case, persons from outside the community could also bid on the lots. Until the Unalaska and Aleknagik cases are settled, however, such an auction would not take place. The above circumstances

basically point out the difficulties in offering surveyed townsite lots for future residential development. Legislation is being proposed which would alleviate some of the above conditions to the benefit of the village. For the present, however, getting the lots to residents within the village for residential use remains a difficult task.

The unsubdivided portion of the federal townsite is also unavailable for any land transactions until the Aleknagik case is settled.

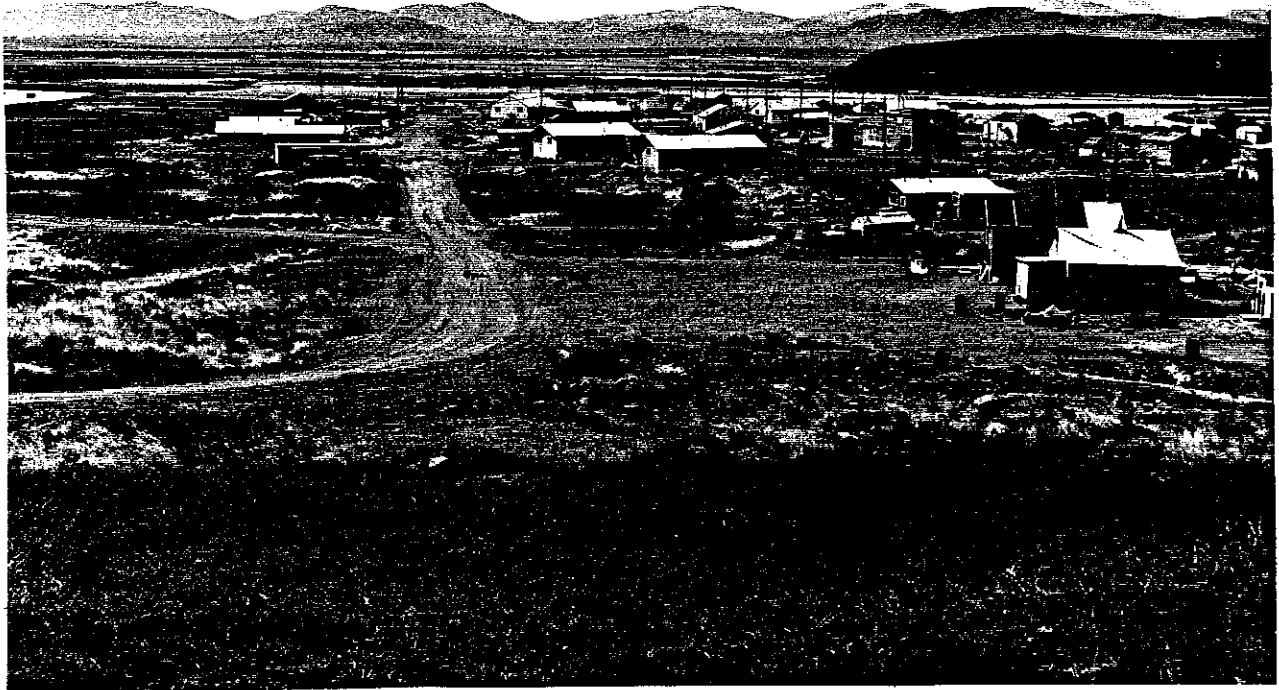
There are two areas within the Twin Hills federal townsite (ten lots) that appear to be most desirable for meeting the housing needs specified to 1990. One area (7 lots) is within the northeast portion of the townsite and adjacent to the airport lease area. The other area (containing 3 lots) is along the south side of Aurora Street, west of the community hall. Either site could be connected quite readily to existing utilities and are within easy walking distance to school, church or other public use areas and facilities. Northern Lights Avenue would have to be extended to provide access to the area within the northeast part of the townsite. Total acreage of the proposed residential lots is 2.86 acres.

Once the above lots are filled (beyond 1990), residential land use will probably be directed to the southern surveyed portion of the townsite which is south of the school property. Roads would need to be extended to provide access.

### Commercial/Industrial Land Use

At present, Twin Hills has one commercial store which is established within an individual's residence. There is no other commercial or industrial development in the community. In terms of land use, the residence/store sits on a townsite lot of .41 acres.

Future commercial development in Twin Hills will be largely dependent on regional economic development and also on the proposed activities of the Twin Hills Native Corporation. Although commercial activities have not been fully planned for Twin Hills, a number of areas are being reserved by the village council for potential commercial development. The first area consists of a single lot at the northern edge of the school property along Aurora Street. This site is presently occupied by DOT/PF as a temporary construction office for the Cannery Road project. Once DOT/PF is finished using the site, the village council has proposed the lot serve as a future site for a Twin Hills Native Corporation building. The second area reserved for commercial development is the lot adjacent to the existing store. This lot is available in the event the store were to expand in the future. The third area to be set aside for possible commercial development is within the western portion of the townsite near the existing barge unloading area. This area may have potential commercial value in relation to boat maintenance and storage activities.



Looking west along Aurora Street

### Transportation

Airport - As discussed earlier, a number of airport improvements are being proposed, including lengthening and widening of the existing runway; improved runway surfacing; and cross-wind runway. A specific cross-wind runway location has not yet been

identified, however, it is generally known that the proposed runway will extend in an easterly direction from the existing runway. The proposed runway will also be approximately 2,080 feet in length or 80% of the proposed 2,500 foot main runway. Visual clearance zones are also required off the ends of the runway<sup>5</sup>. The proposed area for the cross-wind runway is located beyond the boundaries of the federal townsite and within lands that were conveyed to the Twin Hills Native Corporation.

Marine Facilities - As described in Section V, two areas are being proposed for marine facilities. The first area is the existing barge unloading area. This land would be set aside for additional boat storage and maintenance activities and for possible commercial development related to same. For either activity, electrical service needs to be extended to the area. The second area, located at the terminus of Cannery Road on Togiak Bay, would possibly be used for barge unloading and as a staging area during the summer fishing season. A tract of approximately 20 acres is being proposed for this latter area.

Local Roads, Trails and Walkways - By 1990, it is anticipated that a few roads, including Northern Lights and Aurora Streets, will need to be extended to serve new residential development. Additionally, if a new solid waste disposal site were to be found, an access road would need to be constructed. Site control should be established for all commonly used trails.

## Utilities

Electricity - The village generator is located on Lot 9, Block 8 (the former site of a privately operated generator) Utility easements should be designated for major overhead powerlines when these lines are located outside of public road right-of-ways.

Water System - As described earlier, the capacity of the water system is adequate for the anticipated population to year 1990. A permit from the townsite trustee should be obtained for the existing pumphouse to assure site control. Water mains will need to be extended to proposed residential areas once development occurs. Utility easements should be obtained for water mains when these are located outside of road right-of-ways.

Sewer System - As discussed earlier, the sewage lagoon is capable of handling existing and year 1990 community demands. If residential development occurs in the northeast portion of the townsite, sewer mains will have to be extended to serve this area. Utility easements should be obtained for sewer mains when these lines are located outside of road right-of-ways. Adequate site control should also be obtained for the sewage lagoon facility. This facility is located outside of the townsite area and is within lands that were conveyed to the Twin Hills Native Corporation.

Fuel Lines and Storage - Site control was obtained from the townsite trustee for the proposed village bulk fuel storage facility (proposed within the unsubdivided townsite area), however, a specific site description was not included in the trustee's permit. It is recommended that a site description be drafted to accompany the permit. Utility easements should be obtained for underground fuel lines when these lines are located outside of road right-of-ways.

#### Public Land Use

Health Clinic - The existing health clinic and .20 acre lot upon which it is located are sufficient to serve the foreseeable needs of the community to year 1990.

School - The existing school facility and 8.05 acre tract upon which it is located are sufficient to serve the foreseeable future needs of the community to year 1990. The village council is interested in negotiating with the State for a lease or deed to approximately 3.5 acres of the school tract (Block 11) located along Aurora Street. The land would be used by the village for public facilities such as a new community hall and a proposed public safety building. This area has also been discussed as a possible location for a Twin Hills Native Corporation building.

Community Hall - As described in Section V, the existing community hall is insufficient to meet the

needs of the community. A new facility is being sought by the village council. The most desired site (specific acreage not yet determined) is located along Aurora Street within the existing school property (Block 11).

Village Garage/Workshop - The existing village garage/workshop is sufficient to meet foreseeable needs of the community to year 1990. Site control has not been established for this facility.

Storage/Maintenance Building - In 1983, a new airport storage/maintenance building was near completion. This building will house the village grader and serve as a waiting shelter at the airport. A lease has been obtained from DOT/PF for the building site.

Village Cemetery - The cemetery, encompassing approximately .25 acres, is located directly south of the school. The village council is interested in setting aside approximately 1.75 additional acres for this area. As shown on the Twin Hills Community Profile, the existing cemetery tract is potentially intersected by two proposed street right-of-ways.<sup>6</sup> If this situation actually occurs on the ground, a realignment of street right-of-ways may need to be made.

Moravian Church - The Moravian church occupies a .31 acre lot in the developed portion of the townsite. Additional land needs have not been identified for the church.

Solid Waste Disposal - As discussed earlier, the village council will not seek a new solid waste disposal site unless it is found that the existing site is polluting groundwater resources. If a new disposal area is sought, the location will likely be along Cannery Road at a distance of at least 1/4 mile to one mile from the airport property.

Communications - Two lots immediately west of the existing community hall have been set aside for communications purposes. The lot adjacent to the community hall is now the site of a building containing telephone switching equipment. The other lot will be set aside for a future satellite receiving dish to be used for television reception.

Fish Drying Racks - Eleven lots on the northern portion of the townsite are presently being used for boat storage and maintenance, and for fish drying racks. These lots also contain numerous accessory buildings. If improvements had been placed on these lots prior to August 6, 1975, some residents would likely be eligible for deeds to the lots from the townsite trustee. Whether or not deeds are applied for, there appears to be limited desire on the part of the village residents to change the existing land use of this area. Consequently, this area is designated as public land to be used as it has been used, with the possible exception of boat storage and maintenance activities being moved to an alternate site. The approximate acreage of this area totals 1.5 acres. The bluff areas adjacent to the above

lots in question were also designated as municipal reserve lands by the townsite trustee on the Twin Hills plat. The purpose of the reserve was to allow access to the Twin Hills River.<sup>7</sup> The "reserve" area totals 2.32 acres.

## VII. FUTURE LAND USE PLAN

### Summary of Future Land Use Needs

Table VII-1 summarizes Twin Hills land needs to year 1990 for residential, commercial, and public use lands. Table VII-1 also indicates if the required lands are located inside or outside of the federal townsite, and if site control has been obtained for public facilities.

### Future Land Use Plan Map

Pocket Map #3 shows future land use in Twin Hills for the categories of residential, commercial, and public use.

TABLE VII - 1

## TWIN HILLS ACREAGE REQUIREMENTS TO YEAR 1990

Land Use	1983 Acreage	Location Of Acreage	Additional Acreage Needed by 1990	Location Of Additional Acreage by 1990	Has Site Control Been Obtained	Type of Existing Site Control
A. Residential	6.38 (including seasonal homes)	within townsite	2.87	within townsite	in some cases	Eligible applicants can receive deeds;
B. Commercial	.41	within townsite	.58	within townsite	no	
C. Public Use (follows)						
Village Clinic	.20	within townsite	0		no	
School	8.05	within townsite	0		yes	deed
Community Hall	.19	within townsite	.38 - .5	within townsite	no	
Village garage/workshop	approx. .25 acres with- in school site	within townsite	0		no	
Solid Waste Disposal	approx. .25 acre	within townsite	0	outside of townsite	site has not yet been identified	Potential 14(c) (3) reconveyance
Communications	.19 acre	within townsite	.19	within townsite	no	

TABLE VII - 1

CONTINUED

Land Use	1983 Acreage	Location Of Acreage	Additional Acreage Needed by 1990	Location Of Additional Acreage by 1990	Has Site Control Been Obtained	Type of Existing Site Control; or Site Control(s) Recommended
Airport	106.2 acres	outside of townsite	Acreage to be determined once DOT/PF field study is completed	outside of townsite	Existing area: yes Proposed area: no	Existing Airport: 20-year lease to DOT/PF The entire airport area is a potential 14(c) (3) reconveyance
Boat storage/Maintenance	approx. 3 acres	within townsite	3 to 5 acres at barge landing site	within townsite	no	
Generator	.26	within townsite	0		yes	Permit from Townsite Trustee
Pumphouse	within residential lots	within townsite	0		no	
Water Tank	approx. .25 acres within airport tract	outside of townsite	0		yes	Lease from DOT/PF
Sewage Lagoon	one acre	outside of townsite	up to 15 acres	outside of townsite	no	Potential 14(c) (3) reconveyance
Bulk Fuel Storage	approx. .25 acre	within townsite	0		yes, but property description was not included	Letter from Townsite Trustee

TABLE VII - 1

CONTINUED

Land Use	1983 Acreage	Location Of Acreage	Additional Acreage Needed by 1990	Location Of Additional Acreage by 1990	Has Site Control Been Obtained	Type of Existing Site Control
Storage Building	approx. .25 acre within airport tract	outside of townsite	0		yes	Lease from DOT/PF
Cemetery	Up to .25 acres	within townsite	1.75 acres	within townsite	no	
Municipal Reserve	2.32	within townsite	0		yes	Designated within original plat for federal townsite
Fish drying racks, accessory buildings	1.5	within townsite	0		no	
Cannery Road corridor	approx. 2.5 linear miles x 100 foot R.O.W.	outside of townsite	Approx. 30 acres	along Cannery Road alignment	no	Potential 14(c) (3) reconveyance
Togiak Bay barge landing area	0	outside of townsite	Approx. 20 acres	outside of townsite	no	Potential 14(c) (3) reconveyance
Local Roads	R.O.W.'s	within townsite	Road extensions will be needed as new development occurs	will vary	yes	Designated within original plat for federal townsite
Utility lines (overhead electrical, and underground water, sewer, and fuel lines)	undetermined acreage	within townsite	possible extension of utility lines to new areas	will vary	no (in most cases)	easements should be obtained for utilities whenever these occur outside of designated road R.O.W.'s

TABLE VII - 1

CONTINUED

Land Use	1983 Acreage	Location Of Acreage	Additional Acreage Needed by 1990	Location Of Additional Acreage by 1990	Has Site Control Been Obtained	Type of Existing Site Control
Trails which cross village corporation lands	undetermined location or acreage	outside of townsite			no	Potential 14(c)(3) reconveyance
Trails within townsite	undetermined acreage	within townsite			no	

Recommendations for ANCSA 14(c)(3) Reconveyances

As indicated earlier in Table VII-1 and as shown on Pocket Map #1, the recommendation for ANCSA 14(c)(3) reconveyance lands include the following:

Existing Airport Area	106.02 acres
Airport Expansion (cross-wind runway)	Acreage to be determined once a field study is completed
Cannery Road Corridor (100 foot R.O.W.)	30.00 acres
Future Community Expansion (south of townsite)	To be determined at some future date based on community needs
Togiak Bay barge landing and staging area	20.00 acres
Sewage lagoon area	15.00 acres
	<hr/>
TOTAL	171.02 acres

Once the airport crosswind runway acreage has been determined from a field study, the Twin Hills Village Council will be ready to request the above acreage as an ANCSA 14(c)(3) reconveyance proposal from the Twin Hills Native Corporation. Once future community needs are again analyzed and this plan is updated, the village council may request a subsequent ANCSA 14(c)(3) reconveyance.

#### Summary of Community Development Needs

Following is a summary of Twin Hills community development needs (not listed in priority order) which have been identified by the Twin Hills Village Council. These needs were also discussed throughout the preceding text.

- The northern portion of the existing school tract, along Aurora Street, has been identified as a prime area for a new community hall, public safety building, and Twin Hills Native Corporation office.
- A need exists for a new community hall which can accommodate community meetings, cultural activities, recreation, and sufficient village office space.
- A dump truck is needed by the village for road maintenance and other village construction projects.

- The following airport improvement needs have been identified: 1) runway resurfacing; 2) lengthening and widening of existing runway; and 3) a cross-wind runway.
  
- The proposed alignment of Twin Hills Road appears to cross village cemetery land. It is recommended that a survey be done to determine the location of these streets. If streets do cross the cemetery, a realignment of streets may be necessary.
  
- It is recommended that site control be obtained for all public facilities (as identified within plan).

## VIII. REFERENCES CITED

### Specific References

#### Section II.

- 1 U.S. Bureau of the Census, 1980.
- 2 University of Alaska, Institute of Social and Economic Research, Economic, Subsistence, and Sociocultural Projections in the Bristol Bay Region. Bristol Bay Cooperative Management Plan, December 1982, p III-10.
- 3 Institute of Social and Economic Research, p. III - 3.
- 4 Institute of Social and Economic Research, p. III-10.
- 5 Institute of Social and Economic Research, p. III-54 through p. III-112.

#### Section IV.

- 1 Interviews with BLM Townsite Trustee, 1983.
- 2 Interviews with BLM Townsite Trustee, 1984.

#### Section V.

- 1 Phone interview with Bristol Bay Area Health Corporation staff, May 31, 1983.

- 2 Phone interview with staff of Southwest Region Schools, June 24, 1983.
- 3 Phone interview with staff of United Utilities, June 24, 1983.
- 4 Interview with DOT/PF staff, May 1983.
- 5 Alaska Department of Transportation and Public Facilities, Bristol Bay/Upper Kuskokwim Area Transportation Needs Assessment Report, 1982, p. 203.
- 6 U.S. Public Health Service, Final Report - Sanitation Facilities Construction for Twin Hills, Alaska, November, 1980.
- 7 U.S. Public Health Service, 1980.

Section VI.

- 1 Institute of Social and Economic Research, p. III-14.
- 2 Institute of Social and Economic Research, p. III-19.
- 3 Village Council Meeting, Twin Hills, April, 1983.
- 4 Interviews with BLM Townsite Trustee, 1984.
- 5 Interviews with DOT/PF personnel, May, 1983.

- 6 Alaska Department of Community and Regional Affairs, DOWL Engineers, North Pacific Aerial Surveys, and Bristol Bay Native Association, "Twin Hills Community Profile," January, 1982.
- 7 Interviews with BLM Townsite Trustee, 1983.

General Reference

Alaska Department of Community and Regional Affairs, DOWL Engineers, North Pacific Aerial Surveys, and Bristol Bay Native Association, "Twin Hills Community Profile," January, 1982.

Large Maps not scanned:

Pocket Map 1: Twin Hills Regional Land Ownership and Proposed ANCSA 14(c)(3)  
Lands

Pocket Map 2: Twin Hills Land Ownership & Existing Land Use

Pocket Map 3: Twin Hills Future Land Use