

ALASKA LEGISLATURE COMMITTEE FILES, 1989-1990 8672  
6735 SENATE TRANSPORTATION

1137

Capital Costs. Alternative route alignments considered for the Portage-Bear Valley road range in cost from \$10.6 to \$17.8 million (August 1983 dollars, ref. 2). Cost differentials in the alignments considered were due primarily to the selection of location and type of bridge crossings over Portage and Placer creeks. All alignments provide essentially the same level of service, with only relatively minor differences in environmental impact. Consequently, for this analysis the least-cost alternative has been assumed to be acceptable.

As indicated above, substantial modifications to the tunnel will be required to provide for joint vehicle/rail use. The cost of tunnel improvements which included widening only for periodic turnouts, as previously described, were estimated in 1981 to be \$20,000,000 (ref. 14). A more recent analysis (1985) recommended full-length widening of the tunnel, resulting in an estimated cost of \$102.7 million (ref. 22).

An evaluation of the public safety considerations inherent in each of the design alternatives is beyond the scope of this study. Consequently, the range of development costs is presented, with the upper and lower figures representing the options as described above.

Another issue that has been recently discussed is the potential for using the existing pipeline tunnel as a plenum for the tunnel ventilation system. The pipeline tunnel parallels the rail tunnel, and it has been suggested that significant cost savings could be realized by eliminating the excavation needed to provide ventilation space in the rail tunnel. Since a detailed engineering analysis of the pipeline tunnel proposal would be required to ensure that it would provide a safe and effective means of ventilation, this study includes the cost of enlarging the rail tunnel and installing ventilation equipment as previously proposed.

Estimated construction costs for the system elements are summarized in Table 2-1.

TABLE 2-1  
Estimated construction Costs, Alternative 2

<u>Item</u>	<u>Estimated Cost (\$)*</u>	<u>Source</u>	<u>Date</u>	<u>Updated Cost (\$)</u>
Low-cost tunnel improvement alternative:				
Portage-Bear Valley Rd.	\$ 10,600,000	ref.2	Aug '83	\$ 10,800,000
Tunnel improvements	\$ 20,000,000	ref.14	Mar '81	\$ 24,800,000
			TOTAL	\$ 35,600,000
Full-length tunnel widening alternative:				
Portage-Bear Valley Rd.	\$ 10,600,000	ref.2	Aug '83	\$ 10,800,000
Tunnel improvements	\$102,700,000	ref.22	July '81	\$102,700,000
			TOTAL	\$133,500,000

\* Estimates include engineering, administration, and construction costs

Source: TAMS Engineers

Operating and Maintenance Costs. Operation of the joint use tunnel will require significant annual outlays for staffing, energy use, equipment maintenance, and spare parts and materials. Total annual costs are estimated at \$1,450,000 (1985 dollars, ref. 22). Some additional expense will be required to maintain the Portage-Bear Valley road; this cost will be minimal in relation to the tunnel operating costs, and is neglected for this analysis.

CHAPTER 3  
HISTORICAL AND PROJECTED TRAFFIC

CURRENT TRAFFIC

The Alaska Railroad keeps historical records of passenger and auto traffic between Portage and Whittier. As illustrated in Table 3-1, traffic counts between 1979 and 1985 have increased each year. The most drastic changes in passenger and auto ridership were in 1983 and 1985. The underlying cause of the recent jump in recorded ridership was that prior to 1985, cruise ship passengers were transferred from Whittier to Anchorage by chartered train service, and thus were not recorded with the shuttle service between Portage and Whittier.

TABLE 3-1  
Portage to Whittier Shuttle Traffic  
Historical Data

	Passengers	Annual % Change	Total Vehicles	Annual % Change	Total* Passengers	Annual % Change
1979	68,691		16,039		84,730	
1980	71,131	3.55%	16,226	1.17%	87,357	3.10%
1981	75,519	6.17%	17,879	10.19%	93,398	6.92%
1982	77,665	2.84%	17,784	-0.53%	95,449	2.20%
1983	98,224	26.47%	19,516	9.74%	117,571	23.18%
1984	100,351	2.17%	19,779	1.35%	120,130	2.18%
1985**	125,250	24.81%	21,878	10.61%	147,128	22.47%
Average Annual Traffic						
Growth '80-'85		11.98%		6.16%		10.99%

\* Total Passengers means passengers plus vehicles. Vehicle drivers are not counted with passengers.

\*\* Estimated. December 1984 ridership was used to calculate total 1985 ridership.

Source: Data: Alaska Railroad  
Table: TAMS Engineers

## FACTORS INFLUENCING FUTURE TRAFFIC

Future traffic levels to and from Whittier will be influenced by several factors including: community development plans by the City of Whittier; the possible construction of a new harbor facility at Shotgun Cove; a growing population base; increases in tourism and cruise ship activity; and the completion of the Begich, Boggs Visitor Center at Portage Lake. Each of these factors is discussed in more detail below.

### Land Ownership Trends

Over the past 15 years, patterns of land ownership in Whittier have changed from a single landholding by the U.S. government to several major landowners. With the prospect of a number of land grants and a City land disposal program, land ownership trends can be expected to dramatically change in the years to come.

State of Alaska. The State of Alaska is presently the major landowner in Whittier. The federal government transferred title to 5,205 acres of land to the State through provisions of a 1983 National Forest Community Grant Selection. Most of this land is located in the Shotgun Cove area. One hundred acres of this land grant will be transferred to Chugach Alaska Corporation, and another unspecified amount will be transferred to the City of Whittier. With the January 1985 transfer of the Alaska Railroad from the Federal Government to the State of Alaska, the valuable railroad lands concentrated in the Whittier core area and the West Camp Delta also came under State ownership.

Chugach Alaska Corporation. In December 1982, Chugach Alaska Corporation received titlement lands through the Alaska Native Claims Settlement Act and became the third largest landowner in Whittier. The corporation made two selections, one for 400 acres at the east of the Whittier core area, and one for 100 acres near the site of the proposed Shotgun Cove Harbor.

City of Whittier. The City of Whittier has always been a minor landowner in Whittier. Currently, the only land the City has title to is a few small parcels in the Whittier cove area which were purchased when the U.S. Army deactivated its Whittier operations. Most of the federal land originally purchased by the city was subsequently sold following its incorporation in 1971, in an effort to raise revenues and encourage residential development.

In 1984, state legislation was enacted to transfer 600 acres of the lands received from the federal land grant to the City of Whittier. Consequently, the City of Whittier will receive 200 acres of land in the Whittier subdivision, and 400 acres from the Shotgun Cove area. A provision of the legislation is that lands not needed for public purposes must be disposed of by the City within ten years.

Private Landholdings. A total of 250 acres of land in Whittier are owned by private landholders, excluding Chugach Alaska Corporation. Most of these lands are located in the West Camp Delta, the Whittier Cove area, and near the Shotgun Cove area.

Although the City's lands at the Shotgun Cove harbor site will be used for public service use, much of the land from the 600-acre State land grant will probably not be retained for public use. The City is in the process of developing a land disposal program, and has developed general guidelines for the disposal of lands in the Whittier and Shotgun Cove Subdivisions. It is expected that a significant amount of these lands will become available for purchase by private owners for residential development.

## Goals and Policies for Future Development

The City's general goals for community growth are to encourage a limited rate of growth that maintains and enhances Whittier's small-town, marine-oriented character, and to protect and enhance the natural features, environment, and scenic beauty of the community (ref. 11). The City also plans to encourage the expansion of marine/onshore recreation opportunities, the commercial fishing industry, tourism, commercial business, locally-preferred industries, residential development, and to work with state and federal agencies, and the Chugach Alaska Corporation to encourage community development.

## Shotgun Cove Harbor Development Plans

One of the primary attractions of Whittier is its access to Passage Canal and Prince William Sound. Whittier has one small boat harbor which is predominantly used by recreational boaters. Currently, all existing slips at the harbor are permanently assigned to boat owners and there is an extensive waiting list.

The City has issued a funding request to the Alaska State Legislature for development of a small boat harbor at Shotgun Cove, and completion of the Shotgun Cove Road to provide access to the harbor site. The City regards construction of the harbor and access road as key to Whittier's economic future, and has made this project its highest-priority funding request.

The U.S. Army Corps of Engineers (COE) is currently examining alternative sites in Shotgun Cove for the proposed boat harbor. Projections of future demand for harbor facilities are summarized as follows:

Existing Harbor Demand. The existing Whittier Small Boat Harbor has a total of 332 permanent berthing slips. Essentially all

available harbor slips are rented to year-round berth holders, most of whom own private recreational craft, while a smaller portion own commercial fishing or charter vessels. Over 90 percent of the permanent berth holders reside within the boundaries of the Municipality of Anchorage, while the remaining 10 percent live in Palmer, Whittier, Soldotna, and various other locations.

There are currently 210 vessel owners on the waiting list for permanent harbor moorage space at the Whittier Small Boat Harbor. More than 85 percent of these wait-listed vessels are recreational boats, while the remaining 15 percent are commercial vessels.

An estimated waiting time of 5 to 7 years for permanent moorage space has served as a strong disincentive for prospective wait-listed boats. For this reason, the COE has estimated the actual number of vessel owners desiring moorage space at the harbor as 350 rather than the 210 on the wait-list.

The harbor is designed to accommodate 20 to 30 transient vessels, depending on size. However, as many as 250 vessels have been recorded at one time at the transient float.

In 1984, a total of 506 transient vessels were recorded to have used Whittier harbor facilities. Most of this use occurred from May to September during the summer recreational and salmon fishing season. Approximately 60 percent of the transient vessels were commercial fishing boats, while the remaining 40 percent were recreational boats.

Future Recreational Vessel Demand. The primary factor influencing future regional demand for recreational moorage was determined to be population growth in the Municipality of Anchorage, the Matanuska-Susitna Borough, and the Kenai Peninsula Borough. Population projections for these areas are summarized in Appendix A.

Preliminary COE studies of the proposed Shotgun Cove Boat Harbor indicate that only two harbors in the Anchorage-Kenai Peninsula area (Homer and Seward) compete with Whittier facilities. Using projected regional population growth, driving distances, and current or planned moorage at Homer, Seward, and Whittier, the COE study concluded that 672 new vessel slips would be needed in Whittier by the year 2000.

Because the Shotgun Cove Harbor site provides ample opportunity for future expansion, the COE recommendation is that only 50 percent of the long-term future demand (336 spaces) be considered for present near term development planning.

The fleet composition of future vessels and geographic distribution of owner's residences is assumed to be similar to present users of the Whittier Small Boat Harbor.

Charter and Commercial Fishing Vessel Demand. In addition to recreational vessel use, there are currently 18 marine charter boats and 18 commercial fishing vessels using the Whittier Small Boat Harbor. The COE study indicated that approximately 15 new charter boats would be expected to commence operation at the new harbor during its first year of operation, with another 10 vessels commencing operation during the following five-year period. Furthermore, approximately 25 additional commercial fishing vessels are expected to use harbor facilities if additional space becomes available.

Estimates of all existing and future vessel moorage demands in Whittier are summarized in Table 3-2.

Preliminary plans by the Corps for initial harbor design considerations thus are based on projected requirements for 326 new slips (the difference between the aggregate moorage demand of 1,158 and total existing moorage space of 332). The anticipated slip demand through the year 2010 includes an additional 336 slips for a total of 1,162 new slips.

TABLE 3-2  
 Summary of Vessel Moorage Demands  
 For Initial Phase of Shotgun Cove Harbor Development  
 1985-2010

	Recreational	Commercial	Charter	Total
Existing Full-Time	296	18	18	332
Existing Wait-Listed	302	48	--	350
Existing Transient	40	60	10	100
Future	336*	25	15	376
Total	974	141	43	1,158

\* Figure shown is 50 percent of the total estimated recreational demand to be served in Whittier.  
 Source: U.S. Army Corps of Engineers

Population Needs

Whittier's population as of 1984 was 273 (ref. 11). Historically the resident population has fluctuated widely, mostly reflecting the extent of military involvement in the community. As is illustrated in Table 3-3, the community was established in the early 1940's and has fluctuated in population from 130 to 809 between census recording periods.

TABLE 3-3  
 Historical Whittier Population

<u>Year</u>	<u>Population</u>	
1939	0	
1950	627	
1960	809	
1970	130	
1980	198	
1982	211*	
1983	263*	24.6%
1984	273*	3.8%

\* revenue sharing estimates  
 Source: City of Whittier Community Comprehensive Plan, Draft, Nov. 1984 with updated editing.

Currently, Whittier residents are primarily dependent upon access to Anchorage for groceries, medical care, and other consumer products and services. Although Whittier has some consumer service businesses including two hotels, two restaurants, seasonal eateries, and two small general stores, trips to Anchorage are required for major purchases of consumer goods.

Population projections for the community, shown in Table 3-4, have been recently prepared by the Alaska Department of Community and Regional Affairs. The projections are based on an assumed annual net growth rate of 7.5 percent.

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TABLE 3-4  
Projected population, City of Whittier

<u>Year</u>	<u>Population</u>	<u>Year</u>	<u>Population</u>
1986	363	1997	806
1987	390	1998	866
1988	419	1999	931
1989	450	2000	1,001
1990	484	2001	1,076
1991	520	2002	1,157
1992	559	2003	1,244
1993	601	2004	1,337
1994	649	2005	1,437
1995	698	2006	1,544
1996	750	2007	1,660

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Source: State of Alaska, Department of Community & Regional Affairs, January 1986.

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Projected Tourism Increases

Results of the Alaska Traveler Survey and Visitor Industry Analysis 1983, conducted by the State Division of Tourism, indicated that 649,960 visitors came to Alaska between October 1982 and September 1983. Two-thirds of these visitors spent some time in Anchorage.

The Division of Tourism estimates that the number of people visiting the state since the 1983 study has increased by 7 percent annually to approximately 691,200 in 1984 and 740,000 in 1985. Similarly, a 5 to 7 percent increase in the number of statewide visitors has been projected for 1986.

According to the Anchorage Convention and Visitor's Bureau (ACVB), the number of non-Anchorage residents visiting Anchorage increased by 5.5 percent from 787,400 in 1983 to 830,700 in 1984. A similar increase has been estimated by ACVB for 1985. The 1984 Anchorage Visitors Study conducted by ACVB indicated that 44 percent of the summer 1984 visitors went to Portage Glacier during their visit, and 32 percent visited the Kenai Peninsula area. However, only 9 percent of the summertime visitors went to Prince William Sound, an indication of Whittier's current role as a transfer point rather than a stopover destination for most visitors.

Although Whittier's existing facilities lack the capacity for much increased use, tourism is viewed as a major sector of the local economy. The City of Whittier has adopted policies to encourage increased tourism by: 1) having Whittier recognized as a short-term and overnight stopover point for cruise ship, ferry and railroad tourist passengers, and 2) expanding marine-oriented recreational opportunities through the construction of Shotgun Cove Harbor, the development of Decision Point as a Marine Park, and increasing the number of charter boat services.

Future tourism increases at Whittier, generated by the expansion of cruise ship activity and the completion of the Begich, Boggs Visitor Center at Portage, are discussed in the following sections.

## Cruise Ship Activity

In June 1983, Whittier became the northern termination point for the Tour Alaska cruise ship, Cunard Princess. The cruise ship docks at Whittier following its voyage north from Seattle through southeast Alaska's inside passage. After disembarking in Whittier, passengers board the Alaska Railroad to tour Anchorage and make optional trips to Portage, Turnagain Arm, Mount McKinley, and Fairbanks. Since the Cunard Princess' first 9 landings in 1983, two new cruise ship lines have begun landing their ships in Whittier: French Pacquet's Rhapsody, and World Explorer Cruise's Universe, for a total of 26 cruise ship calls to Whittier in 1985 (a 188.8 percent increase over 1983). Each ship's ridership during 1985 is discussed in more detail below:

S/S Rhapsody. Discussion with marine operation personnel at Pacquet French Cruises, Inc. indicated that the Rhapsody's presence in the 1985 season generated a total of 9000 one way trips between Anchorage and Whittier. The company expects to be carrying 25 percent more passengers, generating approximately 11,200 one way trips between Anchorage and Whittier in 1986. The expected increase in passengers translates into 85 percent capacity ridership for the Rhapsody.

M/V Cunard Princess. During the 1985 summer season, the Cunard Princess generated roughly 1000 one-way transfers between Anchorage and Whittier per call, according to the Alaskan Maritime Agency in Whittier. In addition, it was noted that the M/V Cunard Princess was often near capacity (700 passengers with 800 capacity), but that on average 500 passengers left the boat and that roughly the same number of new passengers arrived from Anchorage.

S/S Universe. Marketing personnel with World Explorer Cruises indicated that 3,411 passengers from the Universe rode the Alaska Railroad between Portage and Whittier in 1985, indicating

that the Universe was operating on average at 83 percent capacity. Most Universe passengers ride the train to Anchorage with no stop over in Portage, although the cruise line does provide that option for passengers.

Regency. Traffic in 1986 will also be augmented by the addition of a new ship, the Regency, calling in Whittier. The Regency is a 708 passenger luxury liner that is expected to call in Whittier 9 times in the 1986 summer season. As with the M/V Cunard Princess and the S/S Rhapsody, Whittier will serve as a turnaround point, so that the Regency will be unloading 9 sets of passengers who will travel to Anchorage to fly home, and will be picking up 9 sets of passengers in Whittier to begin their trip. Transfers of these passengers between Whittier and Anchorage will be by the train to Portage and then by bus to Anchorage.

#### Begich, Boggs Visitor Center

Construction of the new Begich, Boggs Visitor Center in the Portage Glacier Recreation Area started in 1984 and is scheduled for completion in 1986. The 13,600 square foot center, which will accommodate up to 400 people at one time, is expected to attract a significant increase in visitors at Portage, with its 200-seat theater and enclosed observation platform facing the glacier. As the Visitor Center is in close proximity to all of the alternative access routes to Whittier, some carryover traffic to Whittier can be expected.

Currently, the Portage Glacier Recreation Area is considered the most frequently visited site of its kind in Alaska. Only 50 miles southeast of Anchorage via Seward Highway, the site provides easy, inexpensive access to Portage Glacier and nearby attractions. Visitation has increased steadily since the Portage Valley access road was constructed in 1954. Between

1966 and 1981, the number of people visiting the glacier more than tripled from 110,000 to 340,000. Visitation to the Portage Center for 1985 was estimated at 400,000.

The U.S. Forest Service projects annual increases of 17 percent in non-resident visitors and 10 percent in resident visitors to Portage until the first year of operation of the new visitor center in 1986. A 15 percent increase is projected for both non-resident and resident visitation during the center's first year of operation. Thereafter, annual increases of 13 percent in non-resident visitation and 10 percent in resident visitation are expected until a maximum capacity of 2,300,000 total visitors (1,771,800 non-resident and 529,000 resident) is reached in 1997 (ref. 21).

#### TRAFFIC FORECASTS 1986-2007

##### Methodology

Traffic projections were prepared by estimating the number of trips generated annually by each of the user groups described in the preceding sections. The assumptions used in developing high, medium and low forecasts were based on current practices and anticipated community changes. It was also assumed that access improvements under each of the transportation alternatives would be operational beginning in 1988.

##### High Forecast Assumptions

Local Population. As previously described Whittier's population is expected to increase 7.5 percent annually. For the high forecast scenario it was assumed that 26 percent of the Whittier population, representing 40 percent of the working age

population would commute to work in Anchorage.\* Each of the commuters was assumed to generate 500 one-way trips per year.

It was also assumed that the non-commuting balance of the Whittier community would still make trips for recreational, shopping, and medical purposes. Trips generated by the remaining 74 percent of the Whittier population were derived by assuming that on average each individual would generate trips according to the following schedule:

Prior to improved access

1 trip per month, September - May.  
9 trips per month, June, July, August.  
Total annual one-way trips per person: 72

With improved access

1 trip per month, October - April.  
2 trips per month, September, May.  
9 trips per month, June, July, August.  
Total annual one-way trips per person: 76

The trip generation assumptions were based on the local resident survey prepared for the Whittier Transportation Options Study, March 1981 (ref. 14).

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\* The percentage of working age adults, age 20 to 64, in the Whittier community was assumed to remain the same as determined by the 1980 census data as recorded in the City of Whittier Master Plan (ref. 11).

According to the Mat-Su Borough Planning Dept. approximately 40 percent of the working age adults living in the borough work in Anchorage. As travel time from Whittier to Anchorage would be comparable, the same proportion was used.

Population projections for the surrounding areas, including the Municipality of Anchorage, the Mat-Su Borough, and the Kenai Peninsula Borough are incorporated into traffic projections by their effect on moorage demand and charter boat usage in Whittier, as described in subsequent sections.

Cruise ships. Cruise ship activity for the high forecast scenario was assumed to grow at an annual average rate of approximately 7 percent, equivalent to the upper bound of non-resident tourist growth anticipated for the state as indicated by the Alaska State Division of Tourism.\* This rate of growth would require the addition of a new cruise ship at intervals of 3 years beginning in 1988. In accordance with current practices each new ship would call approximately 9 times per season.

The maximum capacity of the new ships was assumed to be 720 (the average size of the ships presently calling in Whittier). It was also assumed that the new vessels would operate at 85 percent of passenger capacity, since the ships now serving the area are operating at about this level.

Total trips generated were derived assuming that Whittier would be used as a turn around point and thus would service 18 sets of passengers, as is typically the case with existing cruise ship service.

According to these assumptions each additional cruise ship can be expected to generate approximately 11,000 annual one-way trips between Whittier and Portage.

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\* Alaska State Division of Tourism, Telephone conversation with personnel in the Marketing Research Department, Dec. 18, 1985. The expected annual growth in non-resident tourism in southcentral Alaska is between 3 and 7 percent.

Chartered boats. The high forecast for chartered boat usage assumes that the proposed Shotgun Cove harbor will begin operating in 1991. According to the current harbor development study by the Corps of Engineers, the 18 chartered craft currently operating will be supplemented by 15 new craft the first year of the new harbor's operation and 10 additional boats by 1995. These vessels typically offer half day to several day excursions. The high forecast assumes an average of one excursion offered daily by each vessel, and that each charter vessel operates at approximately 85 percent capacity for the May to September season. Each vessel is assumed to carry an average of 5 passengers per excursion, and each passenger is expected to generate two, one-way trips.

Boat Owners. Recreational boat owners with permanently assigned slips typically make one round trip per month during September to May, and two round trips per week during the summer months, resulting in an average for non-Whittier residents of 72 one-way trips annually (ref. 14). For the high forecast improved access was assumed to increase the annual total to approximately 100 one-way trips per year.

It was also assumed that on average each trip generated by a boat owner would generate at least one additional passenger trip.

As with the forecasts for charter boat traffic, it was assumed that the harbor at Shotgun Cove would be completed and operating in 1991. Under current planning by the Corps of Engineers 678 slips are projected to be used for recreational purposes. The equivalent of approximately 40 slips will be demanded for transient use (ref. 8).

Currently, approximately 97 percent of recreational and chartered boat owners who permanently moor their boats in

Whittier's small boat harbor live outside of Whittier, and it was assumed that this percentage would remain the same following development of the new harbor.

As discussed previously, initial harbor development at Shotgun Cove is assumed to be 50 percent of the anticipated recreational moorage demand for the year 2010 (ref. 8). For the high forecast scenario it was assumed that harbor expansion to meet the remaining demand (336 slips) would be completed by the year 2000.

Currently there are 18 commercial vessels moored in the Whittier small boat harbor, and approximately 70 percent of these vessels' owners reside outside of Whittier (ref. 8). By the year 2000, 141 total commercial moorage slips will be required in Whittier. Sixty of these slips are projected to be demanded by transient vessels (ref. 8). Of the 63 total commercial vessels owners expecting to demand permanent moorage space, approximately 92 percent will reside outside of Whittier. The decline in the proportion of Whittier-based commercial vessel owners is derived from the residential composition of commercial boat owners currently on the waiting list for permanent moorage space (ref. 8). It was assumed that commercial boat owners would generate travel demands at the same rate as recreational boat operators.

It was also assumed that available transient slips would generate trips to and from Whittier on an equivalent basis to permanent slips. In addition, transient boat owner traffic was estimated to increase at a rate proportional to the projected growth in Anchorage area population.

Ferry Traffic. It is a goal of the City of Whittier to pursue increased ferry service to Whittier (ref. 11). For this analysis, it was assumed that Alaska Marine Highway ferry access

to and from Whittier would be extended to year round service by 1990. Currently the M/V Bartlett, which services Whittier from mid-May through mid-September, transports 22,000 passengers and 4,500 vehicles on average each year, operating near capacity (ref. 11). It was assumed that when service is extended throughout the year that the system on average would operate at 80 percent capacity. Total traffic to and from Whittier generated by 12 month ferry service was estimated to be 52,800 passengers and 10,800 vehicles annually.

The Glacier Queen was estimated to generate 6,800 trips to and from Whittier based on a 17 week summer season, making 4 calls a week to Whittier, and servicing 100 passengers each call.

Beqich, Boggs Visitor Center. As a major tourist attraction for both residents and non-residents, the Beqich, Boggs Visitor Center can be expected to generate some additional traffic to Whittier. With improved access to Whittier travelers who are in the vicinity may decide to take the additional trip. As currently 1.5 percent of the visitors complete a trip to Whittier, the high forecast assumes that with improved access five percent of the net visitors to the visitor center (e.g., those who would not otherwise be expected to travel to Whittier) would be induced to take the additional trip to Whittier.

Traffic projections based on the high forecast scenario assumptions are summarized in Table 3-5.

TABLE 3-5

FORECASTED TRIPS GENERATED BETWEEN PORTAGE AND WHITTIER  
BY SOURCE  
HIGH

	RESIDENTIAL POPULATION	CRUISE SHIP TOURIST	CHARTERED BOATS	RECREATIONAL BOAT OWNERS	CHARTER BOAT OWNERS	COMMERCIAL BOAT OWNERS	FERRY	BEGICH-BOGGS VISITOR'S CENTER	HIGH FORECAST TOTAL	HIGH FORECAST AVERAGE DAILY TRAFFIC
1986	26,136	39,772	27,540	41,345	1,257	907	33,300	5804	176,062	482
1987	28,080	39,772	27,540	41,453	1,257	907	33,300	6639	178,948	490
*1988	78,035	50,788	27,540	56,850	1,729	1,247	33,300	24703	274,191	751
1989	83,808	50,788	27,540	56,998	1,729	1,247	33,300	28210	283,620	777
1990	90,140	50,788	27,540	57,146	1,729	1,247	70,400	30294	329,283	902
1991	96,845	61,804	50,490	186,912	3,169	4,008	70,400	34166	507,793	1,391
1992	104,108	61,804	53,550	187,398	3,361	6,376	70,400	39133	526,130	1,441
1993	111,930	61,804	56,610	187,885	3,553	8,744	70,400	44713	545,639	1,495
1994	120,870	72,820	59,670	188,374	3,745	11,112	70,400	50431	577,421	1,582
1995	129,996	72,820	62,730	188,863	3,937	13,753	70,400	57474	599,973	1,644
1996	139,680	72,820	65,790	188,863	4,129	13,753	70,400	65388	621,315	1,702
1997	150,109	83,836	65,790	189,355	4,129	13,753	70,400	73732	651,597	1,785
1998	161,284	83,836	65,790	189,847	4,129	13,753	70,400	83729	673,262	1,845
1999	173,389	83,836	65,790	190,340	4,129	13,753	70,400	94967	697,100	1,910
2000	186,426	94,852	65,790	190,835	4,129	13,753	70,400	106737	793,548	2,174
2001	200,394	94,852	65,790	251,460	4,129	13,753	70,400	106737	808,170	2,214
2002	215,480	94,852	65,790	252,114	4,129	13,753	70,400	106737	823,911	2,257
2003	231,683	105,868	65,790	252,769	4,129	13,753	70,400	106187	851,236	2,332
2004	249,003	105,868	65,790	253,426	4,129	13,753	70,400	106187	869,215	2,381
2005	267,627	105,868	65,790	254,085	4,129	13,753	70,400	106187	888,500	2,434
2006	287,555	116,884	65,790	254,746	4,129	13,753	70,400	106187	919,555	2,519
2007	309,158	116,884	65,790	255,408	4,129	13,753	70,400	105636	941,823	2,580
				256,072	4,129	13,753	70,400	105636		

SOURCE: TAMS ENGINEERS

Note: \*1988 - first year of new service

assumption, the high, medium and low forecasts incorporate an 8.8 percent, 7.0 percent, and 3.4 percent average annual growth rate, respectively.

Sharp increases in traffic for the medium and high scenarios are projected to occur in 1991 and 2000, due to the assumption that the first phase of the Shotgun Cove small boat harbor development will be completed in 1991, and that additional recreational harbor space will be completed by 2000.

#### Alternative 2

Under this development scenario all passenger traffic will be transported by private vehicles or motorcoaches. It was assumed that on average each vehicle would transport 2.5 passengers, as this was considered to be a representative number of occupants per vehicle for the primary groups traveling to and from Whittier (e.g., private residents, boat owners, charter boat users, and ferry passengers) (ref.14).

#### Alternative 2a

Alternative 2a assumes both direct vehicular traffic and Budd car shuttle access to Whittier. To estimate a split between rail and drive-through traffic it was assumed that the Budd car shuttle would be given priority use of the tunnel during peak (daytime) traffic hours. Consequently tour operators would to a large extent utilize the train service options for transportation between Portage and Whittier, to avoid the travel restrictions applied to motorists.

Recreational boaters, on the other hand, are expected to drive directly through to Whittier because of the convenience of hauling recreational gear and availability of access in the early morning and evening hours.

Charter boat users and ferry riders were assumed to use both forms of access to Whittier. These categories of travelers include both regional residents and out-of-state tourists, indicating that a significant proportions of each group will demand access by private vehicle as well as by public transport.

Local population traffic to and from Whittier was also assumed to be split between the two transportation options, with the largest proportion assumed to travel by private vehicle.

Table 3-8 summarizes the percentages of each traffic category assumed to travel by train and by vehicles.

---

TABLE 3-8

<u>Transport Mode</u>	<u>Percent of category</u>
Autos/Buses:	60% of local population traffic 90% of recreational boating 40% of charter boating 20% of Begich, Boggs incidental 50% of ferry traffic 20% of cruise ship passengers
Trains:	40% of local population traffic 10% of recreational boating 60% of charter boating 80% of Begich, Boggs incidental 50% of ferry traffic 80% of cruise ship passengers

---

Source: TAMS Engineers

TABLE 3-10

ALTERNATIVES 2, 3, 4, and 5

ANNUAL AVERAGE DAILY TRAFFIC

	HIGH		MEDIUM		LOW	
	TOTAL PASSENGERS	TOTAL VEHICLES	TOTAL PASSENGERS	TOTAL VEHICLES	TOTAL PASSENGERS	TOTAL VEHICLES
1985	403	60	403	60	403	60
1986	482	72	467	69	451	67
1987	490	73	475	71	457	68
*1988	751	300	568	227	533	213
1989	777	311	580	232	542	217
1990	902	361	635	254	551	220
1991	1,391	556	1,064	425	560	224
1992	1,441	577	1,093	437	571	228
1993	1,495	598	1,125	450	612	245
1994	1,582	633	1,160	464	624	250
1995	1,644	658	1,227	491	638	255
1996	1,702	681	1,258	503	653	261
1997	1,785	714	1,286	514	669	268
1998	1,845	738	1,316	526	716	286
1999	1,910	764	1,379	552	735	294
2000	2,174	870	1,564	626	756	303
2001	2,214	886	1,582	633	764	306
2002	2,257	903	1,600	640	772	309
2003	2,332	933	1,650	660	810	324
2004	2,381	953	1,670	668	819	328
2005	2,434	974	1,693	677	828	331
2006	2,519	1,008	1,716	687	838	335
2007	2,580	1,032	1,772	709	848	339
Average Annual Growth	8.90%	*6.72%	6.96%	*6.18%	3.44%	*2.48%

Source: TAMS Engineers

Note: \*1988 - first year of new service.

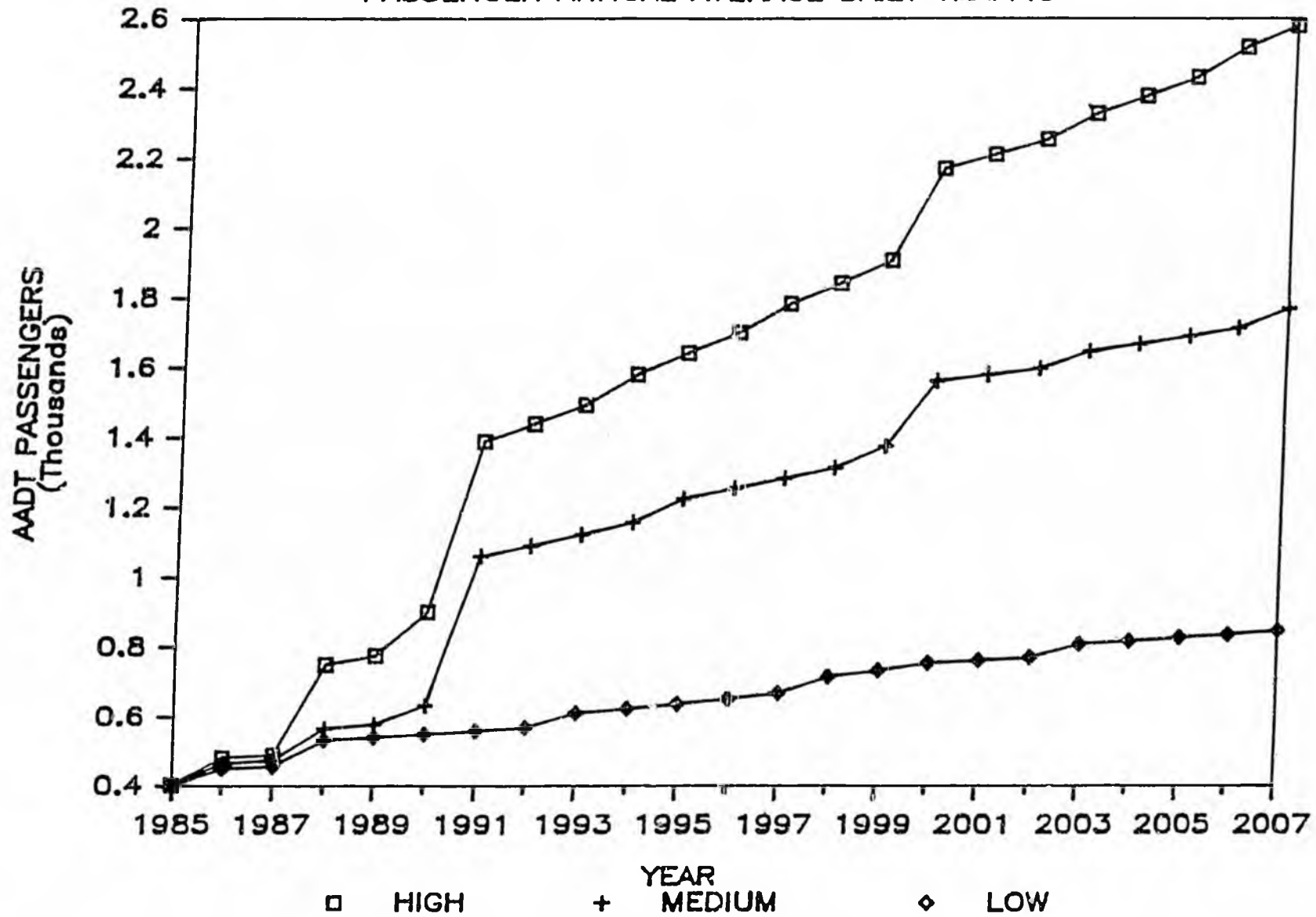
1986 and 1987 figures are based on current service.

Percentage growth is derived with base year 1986.

FIGURE 3-3

# ALTERNATIVES 2, 3, 4, and 5

PASSENGER ANNUAL AVERAGE DAILY TRAFFIC

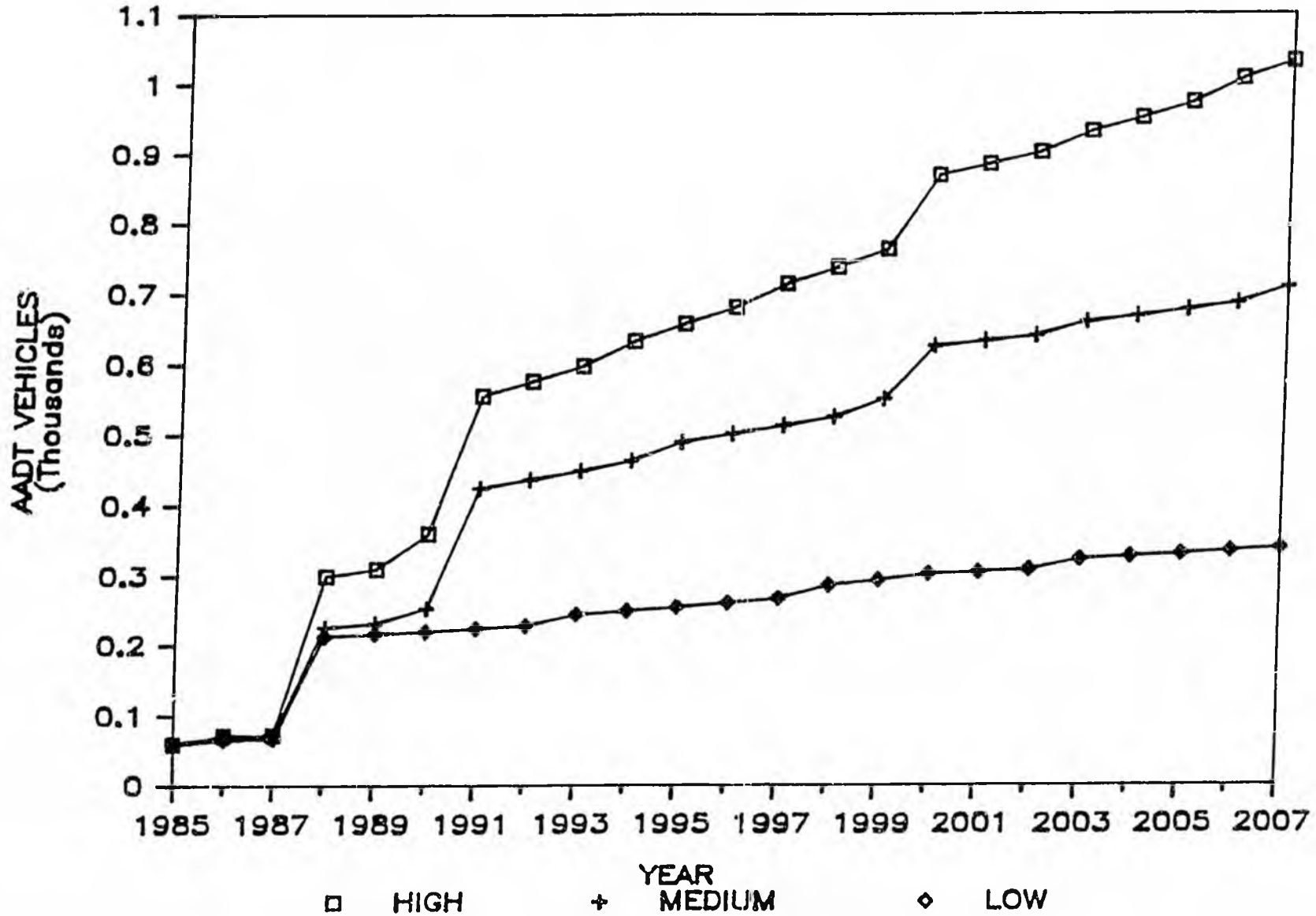


SOURCE: TAMS Engineers

FIGURE 3-4

# ALTERNATIVES 2, 3, 4, and 5

VEHICLE ANNUAL AVERAGE DAILY TRAFFIC



SOURCE: TAMS Engineers

CHAPTER 4  
FINANCING ALTERNATIVES

The use of local revenues to fund capital as well as operating and maintenance costs will be critical to the economic viability of improving access to Whittier. This chapter presents an analysis of a number of local financing options, including the use of revenues derived from access tolls; local taxes; and potential revenues derived from transporting by truck a portion of the rail freight projected to be shipped through Whittier.

CONSTRUCTION FINANCING USING NET REVENUES

A central element of this study effort is to determine the proportion of construction costs for transportation access improvements that could be financed through annual net revenues (the balance of gross toll receipts less operating and maintenance costs). In this section annual operating and maintenance (O&M) costs are determined using previously described cost components and projected traffic volumes. Based on a review of appropriate tariff levels, gross and net annual revenues are estimated, leading to estimates of potential revenue bonding capacity for each alternative.

Key assumptions used in determining the bonding capacity of each alternative include:

- Passenger and vehicle tolls, as well as O & M expenses, are assumed to increase at the rate of inflation, taken for this analysis to be 5 percent per annum.

- Revenue bonds are based on the net revenues of the project. Typically, a debt service coverage factor of at least 1.35 is required to satisfy the financial safety requirements of potential bond buyers. This factor implies that for every \$1.00 borrowed in the form of revenue bonds \$1.35 must be available to repay the debt from net revenues.
- The Bond Buyer's Index of Municipal Bond Interest Rates, which is an indicator of bond interest trends for the United States published by the Daily Bond Buyer, indicated a range of interest rates from 8.85 to 10.31 percent for revenue bond issues nationwide in 1985. Bond rates in Alaska are generally on the high end of the scale, due to the relatively volatile nature of the state economy. For this analysis revenue bonds are assumed to be issued at a tax free market interest rate of 10 percent per annum.
- Revenue bonds are typically issued for a period of twenty to thirty years following completion of capital construction. For this analysis a twenty year period has been used.
- Eighty five percent of projected bonding capacity was assumed to be available to pay for the costs of construction, including outlays for engineering design and construction administration. The remaining 15 percent was assumed to be required to offset bond sales costs, reserve requirements, and other up-front expenses.
- Bonding capacities were based on the net revenue streams for the period 1988 to 2007. For each alternative, the net present value of the revenue streams was deflated to represent 1986 dollars.

## Potential Tolls

To identify a reasonable range of potential tolls for passenger/vehicle access to Whittier, comparable tolls at facilities in the state and elsewhere (both planned and currently operating) were reviewed.

Alaska Railroad Portage-Whittier Fares. The current toll structure for the Alaskan Railroad shuttle service between Portage and Whittier has eleven fare categories, as shown in Table 4-1. The railroad also offers commuter, multi-trip tickets for passengers and vehicles traveling between Portage and Whittier at a thirty percent discount.

TABLE 4-1

Current Alaska Railroad Fares: Portage - Whittier

<u>User Class</u>	<u>Toll (One-way)</u>
Adult vehicle occupants, other than driver.....	\$ 6.00
Foot passengers.....	\$ 6.00
Children, 5 - 11 years old (on foot or in vehicles).....	\$ 3.00
Kayaks or canoes .....	\$ 5.00
Motorcycles.....	\$13.00
Motorcycles with one trailer, not > 5 feet in length ...	\$18.00
Vehicles or vehicles with trailers, not > 24 feet .....	\$29.00
Vehicles or vehicles with trailers, > 24 ft. and < 32 ft	\$38.00
Vehicles or vehicles with trailers, > 32 ft. and < 40 ft	\$43.00
Vehicles or vehicles with trailers, > 40 ft. (by special arrangement).....	\$48.00
Tour buses (includes fare of driver only).....	\$58.00

Source: Alaska Railroad, Anchorage-Portage-Whittier 1985-1986  
Fall-Winter Schedule (Nov. 1 - April 1).

Proposed Knik Arm Crossing. The Knik Arm Crossing Economic Feasibility Report examined a potential range of tolls ranging from \$1.00 to \$3.00 per vehicle-trip in 1983, and assumed that tolls would increase at a rate of 5 percent annually up to \$4.00 to \$12.00 by the year 2010 (ref. 3).

The study indicated that a \$2.00 per direction toll (1983 dollars) to cross the proposed bridge was the optimum toll that would maximize "revenue generation without sacrificing significant benefit".

Tongass Narrows Crossing Cost Benefit Study. Access to Gravina Island (where the Ketchikan airport is located, as well as a significant amount of the potentially developable land) is a major issue for Ketchikan residents. A recent study of access alternatives, including several bridge alignments and potential ferry service improvements, indicated that a reasonable upper limit for current fares would be approximately \$1.75 per passenger, and \$3.50 per automobile for a one-way crossing of Tongass Narrows (ref. 20).

Hood Canal Bridge. The Hood Canal Bridge in the Puget Sound region of Washington state serves as a direct link between the recreational opportunities of the Olympic Peninsula (including the Olympic National Park) and the Seattle metropolitan area. Although a recent court action has eliminated all tolls to cross the bridge, prior to that action typical tariffs were on the order of \$2.50 per trip for a conventional passenger vehicle.

Suggested Tolls For Revenue Analysis. As can be seen from the above examples, the unique nature of the existing and potential demand for access to Whittier makes direct comparisons difficult. Most of the facilities cited serve (or are intended to serve) relatively large traffic volumes when compared to the projected Whittier access demand, and involve a significant proportion of daily commuter activity.

Most services must also be priced to be competitive with alternative access options. The proposed Knik Arm Crossing, and the Hood Canal Bridge, for example, compete with drive-around alternatives. There is no convenient or practical alternative for vehicle or passenger access to Whittier from the Anchorage area.

As described previously, the most significant components of existing and projected demand for access to Whittier are tourism and recreational boating opportunities in Prince William Sound. Development as a bedroom community, with the resulting daily Anchorage-Whittier traffic, is not in conformance with long range development plans by the city (ref. 11). For this analysis daily commuter traffic has been assumed to occur at a significant level only for the high range traffic forecast.

Users will typically have to pay the toll at a frequency ranging from one time only (for tourists) up to 2 - 3 round trips per week for local residents and boaters during the summer. Consequently user-acceptable toll levels will be somewhat higher than for the above examples.

The amount of traffic traveling to or from Whittier will, of course, be influenced by the level of fares adopted. Given the projected types of demand for access, current Alaska Railroad fares are assumed to be the upper limit of acceptable fares for the improved access alternatives. At the same time, it is a desirable goal in improving access to the community to reduce the cost to the user, as well as providing an improved level of service.

For the analysis of potential revenues an average realized vehicle fare (assuming a mix of trailered- and non-trailered vehicles, buses, commercial trucks, and frequent user discounts) is therefore set at \$20.00 per one-way trip. Passenger car tolls would be somewhat lower than the average, while fares for buses and commercial trucks would be significantly higher. An average realized fare of \$4.00 per one-way trip is assumed for passengers (both walk-ons and vehicle occupants).

under the high projections for 1985.

ALTERNATIVES 2 AND 5

Under these alternatives direct vehicle access would be provided by extending the road from Portage Outlook to Bear Valley and by providing a single lane tunnel through Maynard Mountain. For Alternative 2 the existing rail tunnel would be upgraded to accommodate joint rail and vehicle travel; under Alternative 5 a separate highway tunnel would be constructed.

Preliminary traffic data obtained from the Alaska Railroad indicates a peak to average daily traffic ratio of 5 to 1 for 1985 traffic. For this analysis it is assumed that future movements will have a similar ratio of peak to average daily traffic.

As illustrated in Table 3-10, projected vehicle traffic increases steadily to a projected range of 339 to 1,032 annual average daily trips by the year 2007. With a peak to average traffic ratio of 5:1, peak daily traffic is estimated at a range of 1,695 to 5,160 vehicles requiring access to or from Whittier.

Assuming one cycle per hour the practical daily capacity of a one-lane tunnel has been estimated at 4,800 vehicles per day, assuming the tunnel would be available 24 hours each day (ref. 14). For Alternative 2 the estimated capacity would be reduced to 4,400 vehicles per day, allowing two hours per day to clear the tunnel and to pass a daily freight train.

Both alternatives would therefore not be able to meet the peak day projected traffic under the high growth scenario. The practical result would be that demand would be deferred to non-peak days, and that congestion and delays would be common.

Operating and Maintenance Costs. Initial annual costs to operate and maintain a single lane tunnel have been estimated at \$1,450,000 per year (ref 22). Costs for each year thereafter are assumed to increase at a 5 percent annual rate of inflation.

Alternative 2 Construction Financing. Gross revenues, annual O & M expenses, and revenue bonding capacity for Alternatives 2 and 5 are illustrated in Table 4-5. Internal construction financing capacity estimates include \$8.2 million for the low forecast, \$23.1 million for the medium forecast, and \$35.8 million for the high traffic scenario.

Two estimates of initial construction cost have been included, which vary primarily in assumptions regarding the amount of tunnel widening needed for safe vehicular passage. Costs range from \$35.6 million for the least expensive estimate, up to \$133.5 million for an estimate which includes the provision of a full width shoulder the length of the Passage tunnel.

TABLE 4-5

## ALTERNATIVES 2 AND 5

## PROJECTED NET REVENUES AND BONDING CAPACITY

	NET REVENUES					
	ANNUAL O&M COSTS	HIGH FORECAST	MEDIUM FORECAST	LOW FORECAST		
1988	\$1,598,625	\$1,691,666	\$887,446	\$737,440		
1989	\$1,678,556	\$1,895,051	\$989,714	\$812,835		
1990	\$1,762,484	\$2,593,935	\$1,302,007	\$896,210		
1991	\$1,850,608	\$5,203,396	\$3,541,873	\$990,699		
1992	\$1,943,139	\$5,731,030	\$3,876,952	\$1,096,688		
1993	\$2,040,296	\$6,316,374	\$4,250,882	\$1,381,061		
1994	\$2,142,310	\$7,143,284	\$4,666,509	\$1,523,180		
1995	\$2,249,426	\$7,881,245	\$5,312,424	\$1,682,579		
1996	\$2,361,897	\$8,653,690	\$5,780,856	\$1,862,990		
1997	\$2,479,992	\$9,650,093	\$6,256,808	\$2,065,954		
1998	\$2,603,992	\$10,556,079	\$6,784,799	\$2,505,692		
1999	\$2,734,191	\$11,573,139	\$7,599,141	\$2,774,419		
2000	\$2,870,901	\$14,230,278	\$9,433,648	\$3,078,017		
2001	\$3,014,446	\$15,272,651	\$10,047,758	\$3,295,244		
2002	\$3,165,168	\$16,410,275	\$10,710,565	\$3,530,119		
2003	\$3,323,427	\$17,912,476	\$11,700,766	\$4,053,366		
2004	\$3,489,598	\$19,279,057	\$12,477,981	\$4,341,316		
2005	\$3,664,078	\$20,773,418	\$13,327,431	\$4,652,119		
2006	\$3,847,282	\$22,708,946	\$14,246,039	\$4,987,548		
2007	\$4,039,646	\$24,519,632	\$15,578,020	\$5,349,510		
NET PRESENT VALUE (1988-2005, 10%)				\$56,801,591	\$36,665,031	\$13,128,230
BONDING CAPACITY (NPV/1.35, ROUNDED TO NEAREST 0.1 MILLION)				\$42,100,000	\$27,200,000	\$9,700,000
AMOUNT AVAILABLE FOR CONSTRUCTION				\$35,785,000	\$23,120,000	\$8,245,000

## ASSUMPTIONS:

AVERAGE REALIZED REVENUES, INITIAL YEAR -

\$20.00 PER VEHICLE

\$4.00 PER PASSENGER

TARIFFS AND EXPENSES ESCALATED AT 5 PERCENT PER YEAR

CONSTRUCTION FUNDING CAPACITY EQUAL TO 85% OF BONDING CAPACITY

SOURCE: TAMS ENGINEERS

or 87 percent of the estimated costs,

Direct Access Options (Alternatives 2, 4, and 5)

Alternatives 2, 4 and 5 each provide for direct drive-through access to Whittier. As Alternative 5 includes the construction of a new tunnel through Maynard Mountain and consequently does not have to share time with freight trains, it provides slightly greater daily traffic capacity than Alternatives 2 and 4. Similarly, as the transit length is longest for Alternative 4, the dual-tunnel scheme provides the least daily capacity of the three direct-access options.

Total estimated construction costs, and projected bonding capacity, are summarized as follows for each of the three alternatives:

	<u>Capital Cost</u> <u>(\$ millions)</u>	<u>Bonding Capacity</u> <u>(\$ millions)</u>
Alternative 2	\$35.6 - \$133.5	\$8.2 - \$35.8
Alternative 4	\$47.6 - \$159.7	\$7.1 - \$34.6
Alternative 5	\$121.0	\$8.2 - \$35.8

None of the direct access alternatives offer a strong potential for financing a large proportion of the estimated construction costs through revenue bonds. Only for Alternative 2 under the high traffic and revenue forecasts would internal financing be sufficient, and then only if construction costs can be held to the lower end of the projected range.

BRADFIELD-CRAIG ROAD AND PORT PROJECT  
ALASKA SENATE TRANSPORTATION COMMITTEE  
May 2, 1989

An intercontinental road linking the British Columbia Highway system to the coast in Southeast Alaska has been a topic of discussion for many years. During the past 15 years the Alaska Department of Transportation has conducted a number of road reconnaissance studies that identified as many as 8 potential routes from the Canadian border to the coast. The area studied stretched from the Stikine River on the north to the Unik River on the south. After considering costs, engineering feasibility, environmental concerns and accessibility, the route through the Bradfield-Craig Watersheds appears to be the most feasible. It is the shortest route to the sea. It does not infringe upon any Wilderness area, and there is adequate water depth and land base at the head of the Bradfield Canal to accommodate a deep water port facility. On the Canadian side of the border the road will travel through the rich mineral and timber area in the Iskut River Basin and link up with British Columbia Highway 37 to complete the international road to the sea.

The economic benefits to be derived from the Bradfield-Craig Road and Port Project are many. This Project will open the door for a broad scope of long term growth and diversification. Initially the mines in the Iskut region will begin trucking large amounts of raw materials to the Bradfield Port. This would be the beginning of a new flow of commerce through Southeast Alaskan waters and ports. The road will encourage the development of other natural resources, especially timber, which in turn can provide an alternative saw log supply for our mills and encourage new growth in our timber industry facilities. The road will justify the activation of many known mineral deposits that are presently dormant for lack of cost efficient transportation. The road will afford us the opportunity to access new markets and take full advantage of the United States-Canada Free Trade Agreement, and the road will provide an alternate route for the independent traveler dispersing the pressure on our overtaxed ferry system. These are but a few of the myriad of economic opportunities that will arise.

Contained in the informational packet I distributed to you is a 2 page document titled, "Natural Resource Development in Northwestern British Columbia, 1988." The material in this document was compiled by Dr. Ted Grove, a highly respected Consulting Geologist with 30 years experience in natural resource development in Northwestern British Columbia and Alaska. Dr. Grove states, "Road access to the coast and electrical power would change the economics of developing the forest and mineral resources of the entire Iskut River, Unuk River and Sulphurets Creek Area."

BRADFIELD-CRAIG ROAD AND PORT PROJECT

Page 2

He further states that, "If only a few of the potential copper mines were considered there would be a potential for over 300,000 tons of concentrates per year. Lead and zinc, coal and asbestos could add a further 1.3 million tons per year at peak cycles. Together with wood forecast the area could be projected to export 2 million (+) tons per year, provide hundreds of new jobs, and import large tonnages by sea and road."

The overall economic returns to Southeast Alaska from the Bradfield-Craig Road and Port Project are difficult to forecast but looking at Wrangell's recent experience with just one operating gold mine and another in the construction phase you will see that in the past 12 months we have handled in excess of 6,300 tons of equipment and supplies. We have realized hard cash income of 2.5 million dollars. We have three new businesses and 20 new jobs. Since 1986 international flights at the Wrangell Airport have risen from 279 to 7,372 annually.

If you take these known dollar and volume figures and meld them into Dr. Groves' projections it will give us some idea of what to expect in economic return if the road project is completed. An annual hard cash return of better than 3/4 of a billion dollars annually with an economic factor of 5.5 billion dollars. Thousands of new job opportunities and many new business ventures.

This Project should be looked upon, not as an expense, but as a viable investment in the future of Southeast Alaska

## NATURAL RESOURCE DEVELOPMENT

IN NORTHWESTERN BRITISH COLUMBIA, 1988

*W.D. Jones Sept 23/88*

Resource development in northwestern B.C. is highly dependant upon access and power. The area is rich in natural resources but has only limited access via Highway 37, a few aircraft landing strips, no rail, and no major developed power supply.

Stewart, B.C.'s most northerly port on the Pacific coast, has recently become the transportation hub for much of the area and is now a booming community because of logging along part of Highway 37, and mine exploration and development from Stewart to the Sulphurets Creek area. This surge of activity came about at Stewart largely because Cassiar Asbestos abandoned its Skagway route and chose a cheaper truck-barge haul through Stewart. Logging operators have also taken advantage of the route and are now shipping increasingly larger volumes of saw and pulp wood through this port.

Recent plans to build a major pulp mill at Stewart appear to have many obstacles at this time and an alternative will be to ship logs and chips to existing mills. The cut from the Telegraph Creek area alone has been estimated from 400-500,000 tons annually.

At the present time 1.2 million cubic meters of wood are shipped annually through Stewart. Current timber cutting licenses are good until 1996 at the same allowable cut from the North Kalum T.S.A. The larger Cassiar T.S.A. has a volume of 330 million cubic meters of mature timber of which 70 million cubic meters (21%) are found in the relatively small Iskut River timber block which currently lacks access and power.

The main mineral product now shipped along Highway 37 through Stewart is asbestos from the Cassiar Mine. Because of a recent B.C. government loan of \$25 million new jobs have been added and production from open pit and underground has been assured to the year 2000. Stewart will also benefit from the new open pit operations at the nearby Silbak Premier and Big Missouri mines which will process 2,000 tons per day of gold-silver-copper-lead-zinc ore. Numerous new and revived mineral developments in the immediate Stewart area have added to the town's prosperity. In spite of the distance and lack of easy access, Stewart and Terrace, B.C. have also benefited from the huge surge of activity in the Iskut River-Unuk River-Sulphurets Creek area where at least 75 resource companies are actively developing major new gold-silver deposits. One of these, Skyline Explorations Ltd. Johnny Mountain Gold Mine, is now in production and a second, the nearby Cominco-Delaware SNIP property is nearing a production decision. Both these develop-

ments as well as a number of others in the Iskut River Gold Belt have largely switched to Wrangell as the more convenient air transportation centre.

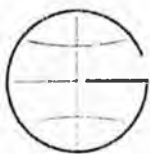
Other deposits in the same area include copper, lead and zinc mineralization which because of the lack of access and power must remain undeveloped. Road access to the coast and electrical power would change the economics of developing the forest and mineral resources of the entire Iskut River, Unuk River and Sulphurets Creek area.

Most of the area from Stewart to Telegraph Creek was explored in the 1950's through the 70's for porphyry copper and molybdenum deposits. Several world scale copper-moly deposits such as the 1.6 billion ton Shaft Creek, the Stikine Copper deposit and others have been found and partly developed but will go into production only when economic conditions including power and access to a sea port are considered appropriate.

Coal and ore concentrates from the general area extending from Cassiar to Stewart, but particularly from the Iskut River axis, would benefit from shorter road access to a sea port other than that currently provided by Stewart. A road along the Iskut River route to Bradfield Canal and a deep sea shipping facility would cut about 75 km off the current route. As Cassiar Asbestos has shown resource companies will switch routes and transport if there are benefits.

Shipments through the system are extremely difficult to forecast but if only a few of the potential copper mines were considered there would be a potential for over 300 000 tons of concentrates per year. Lead and zinc, coal, and asbestos could add a further 1.3 million tons per year at peak cycles. Together with wood forecasts the area could be projected to export 2 million (+) tons per year, provide hundreds of new jobs, and import large tonnages by sea and road.

Good road access to the sea would also benefit local tourist industries of the entire region.



E. W. GROVE CONSULTANTS LTD.

EDWARD W. GROVE, Ph.D., P.Eng.  
CONSULTING GEOLOGIST

4581 Boulderwood Drive  
Victoria, British Columbia  
Canada V8Y 3A5

Phone (604) 658-2366  
Fax (604) 658-5789

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Sept 22/08*

B.C. MINING OPERATIONS

VOLUMES, VALUES & FLIGHTS

NUMBER OF INTERNATIONAL FLIGHT OPERATIONS WRANGELL AIRPORT

Year	1986	1987	1988	1989
# Flights	279	3,600	6,361	7,372

AIRCRAFT CARGO VOLUME 4/1/88 - 4/1/89

FUEL	7,646,308	LBS.
LUBRICANTS	108,352	LBS.
FOOD & SUNDRIES	356,937	LBS.
BLDG. & HARDWARE SUPPLIES	177,000	LBS.
EQUIP. REPAIR & FABRICATION	72,000	LBS.
PROPANE, ACETYLENE, OXYGEN ETC.	236,900	LBS.
MISC. EQUIPMENT & SUPPLIES	22,000	
IN TRANSIT HEAVY EQUIPMENT & SUPPLIES	3,943,892	LBS.
ORE CONCENTRATES	76,275	LBS.
TOTAL AIRCRAFT CARGO VOLUME	12,642,644	LBS.

AIRCRAFT CARGO VALUE (local purchase) 4/1/88 -4/1/89

PETROLEUM PRODUCTS	\$1,678,228
FOOD AND SUNDRIES	497,000
BUILDING, HARDWARE, AUTOMOTIVE	178,000
MISCELLANEOUS SERVICES	135,000
(trucking, equipment repair, longshore, video rentals, hotel, meals etc.)	
TOTAL LOCAL PURCHASES	\$2,488,228

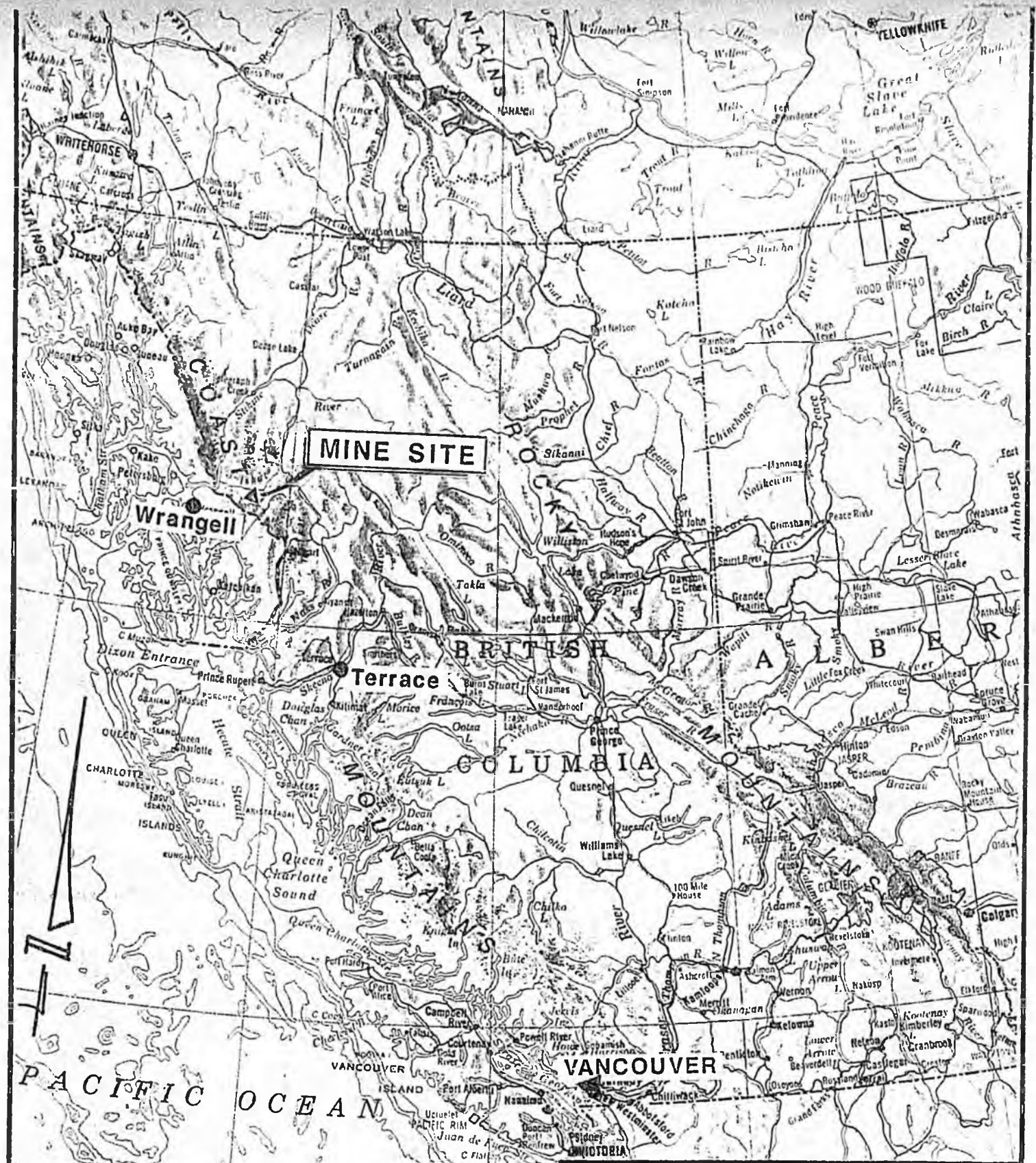
NEW BUSINESSES & JOBS AS A DIRECT RESULT OF MINING ACTIVITY

North Arm Expediting (new business)	3 employees
White Pass Oil (new business)	3 employees
Bradfield Electric (new business)	1 employee
(will have construction crew for power line)	
U.S. Customs	1 new employee
City Market	5 new employees
Diamond Aviation	1 new employee
Chevron Oil	1 new employee
Longshoremen	5 new jobs

TOTALS: 3 NEW BUSINESSES & 20 NEW JOBS

In addition there are 3 Canadian air carriers working out of Wrangell. Two servicing mining operations daily with 3 -4 employees staying in Wrangell. One transporting mining personnel for R & R one trip per week.

Estimated Overall Economic Value to Wrangell is in excess of \$15,000,000.00.



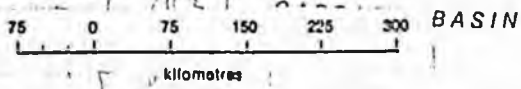
**MINE SITE**

**Wrangell**

**Terrace**

**VANCOUVER**

**PACIFIC OCEAN**



<b>SKYLINE EXPLORATIONS LTD.</b>	
<b>Johnny Mtn. Gold Mine</b>	
<b>KEY MAP</b>	
Scale <b>1:7 500 000</b>	Date <b>March, 1988</b>
Ref.	



**MINE SITE**

**PROPOSED ROAD**

**SKYLINE EXPLORATIONS LTD.**

**Johnny Mtn. Gold Mine**

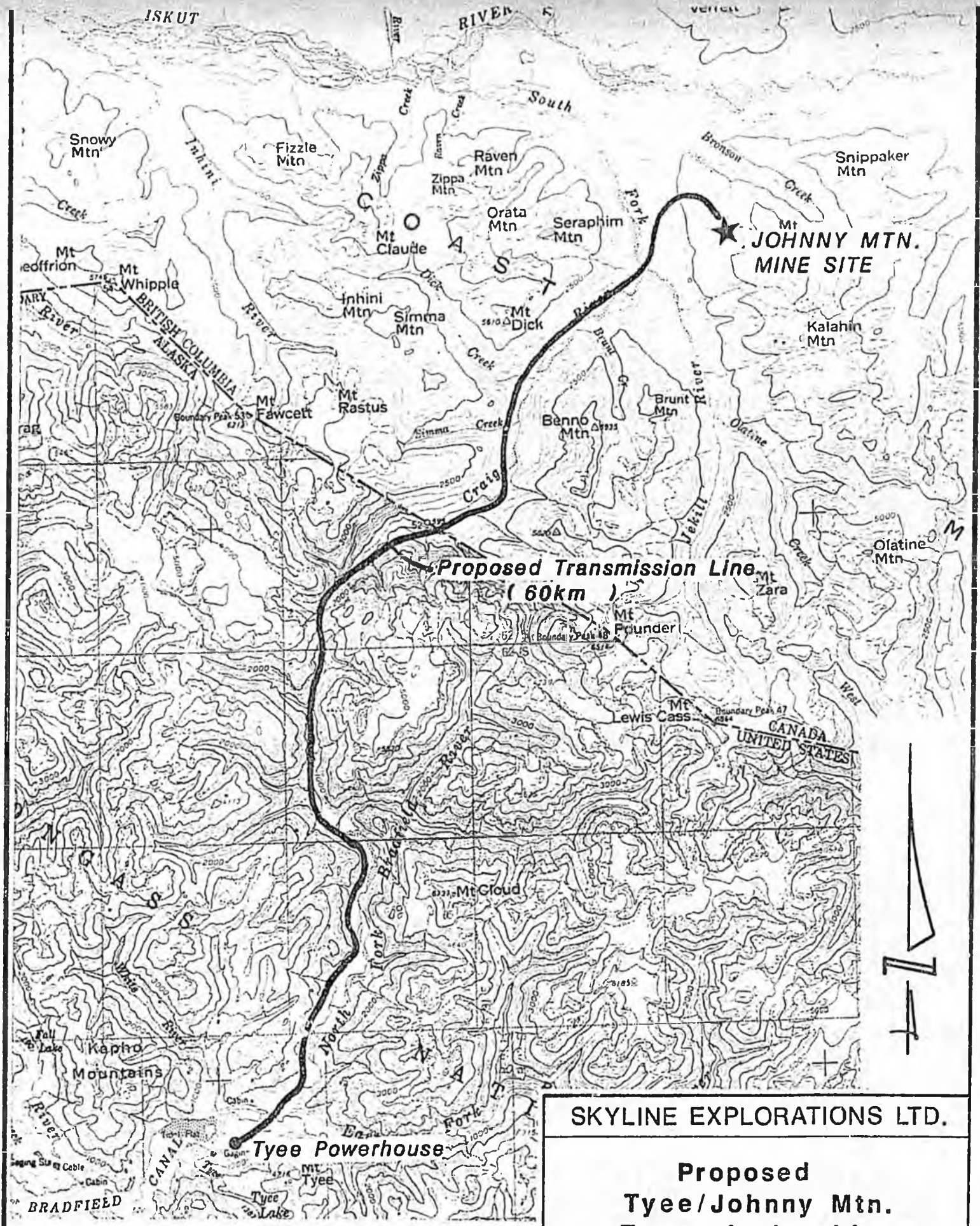
**LOCATION MAP**

Scale 1:2 000 000

Date March, 1988

Ref.

50 0 50 100  
KILOMETRES



SKYLINE EXPLORATIONS LTD.

**Proposed  
Tyee/Johnny Mtn.  
Transmission Line**

Scale	1 : 250 000	Date	88/02/22
N.T.S. N.T.S. 104/B			

PROPOSED BRADFIELD-CRAIG ROAD

APPROXIMATE MILE/KILOMETERS

	MILES	KILOMETERS
BRADFIELD CANAL TO CASSIAR HIGHWAY (@ BOB QUINN LAKE)	86.0	138.40
BRADFIELD CANAL TO CANADIAN BORDER	31.0	41.38
CANADIAN BORDER TO JOHNNY MOUNTAIN MINE	15.0	24.14
JOHNNY MOUNTAIN TO CASSIAR HIGHWAY	45.0	72.50
BRADFIELD CANAL TO CASSIAR JUNCTION	278.0	447.60
STEWART B.C. TO BOB QUINN LAKE	134.0	217.0
STEWART B.C. TO CASSIAR JUNCTION	327.0	526.0

## 15. Bradfield Canal

LOCATION: At head of Bradfield Canal, southeast of Wrangell.

LEGAL DESCRIPTION: T. 65 S., R. 89 E.; T 65 S., R. 90 E., C.R.M.

ACREAGE: 5,020 - nominated  
4,090 - proposed for selection

NOMINATED BY: City of Wrangell

ACCESS: By boat to anchorage in Bradfield Canal. Tidewater terminus of future transportation corridor into British Columbia (Iskut River, Cassier Highway). Airstrip for Tye power project is within nomination. Old logging roads lead up North Fork Bradfield River.

NEARBY COMMUNITIES: Wrangell - 45 miles NW, Myers Chuck - 60 miles SW

LAND STATUS: National Forest

GENERAL DESCRIPTION: Flat valley land from above confluence of north and east forks of Bradfield River to Bradfield Canal. There are extensive mudflats and wet grasslands (over 2 square miles) at head of Bradfield Canal. The valley walls are steep and forested. Proposed selection includes some steep slopes adjacent to Bradfield Canal and relatively flat areas near the mouth of the Harding River that could be used as a port site.

The Tye Lake hydroelectric project powerhouse is located within nomination, Tye Lake is to the south. This power project, administered by the Alaska Power Authority, supplies electricity to Wrangell and Petersburg (see selection proposal #16).

East Fork Bradfield River is a natural transportation corridor to active mining areas near Mt. Johnny B.C., 35 miles to the NE. Mine developers are interested in power line to Tye project and eventual road to tidewater. A road could eventually link to Cassier Highway and continental road system.

PURPOSE AND SUITABILITY: If a road or railroad is built into B.C., this site would become a port. Development of a new community is possible. There is a large area of flat land suitable for community development.

The North Fork of the Bradfield River is one of the two most likely transportation routes to the Iskut River, the other route being along Aaron Creek and the Katete River. Routes up the Stikine River are costly due to necessary bridges and also run through federally designated wilderness.






SELECTION HISTORY: None.

DIFFERENCE BETWEEN STATE AND FEDERAL MANAGEMENT: Port development would be much easier if the land is state owned. Community development could only occur under state ownership.

RECOMMENDATION: Priority A, although future use is speculative. Steep slopes on north side of Bradfield Canal and extensive mudflats that have high habitat values have been excluded from the selection.



**LEGEND**

-  State owned
-  Existing state selection
-  Private (including Native owned)
-  Boundary of proposed selection
-  Boundary of area not recommended for selection

SCALE 1:63360



**NFCG NOMINATION FOR SELECTION**

**BRADFIELD CANAL**  
4090 Acres

**BRADFIELD CANAL A-5**  
T.65S., R.89 & 90E., C.R.M.

**Tongass National Forest**

DECISION NOTICE  
and  
FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT  
BRADFIELD ELECTRIC TRANSMISSION CORRIDOR

USDA, Forest Service, Tongass National Forest  
Stikine Area, Wrangell Ranger District

An environmental assessment that discusses the proposed Bradfield Electric power transmission line is available for public review in the Forest Service, Wrangell Ranger District office in Wrangell, Alaska.

Bradfield Electric, of Wrangell, Alaska, has requested a special use permit to survey, construct, operate and maintain a 69 KV power transmission line across National Forest lands from the Tyee power house to the Canadian border to serve short term mining interests around Johnny Mountain, B.C.

A Forest Service interdisciplinary team analyzed the potential environmental effects of this proposal, as well as the alternatives of using a long span design and buried transmission cable. Alternative routes were not considered because all other routes were either physically, economically, or legislatively undesirable. In addition, an alternative of denying the permit was considered. An environmental analysis document was then prepared.

The analysis indicates that alternative number 3 would provide the most desirable corridor for the powerline ROW because this route would have the least adverse environmental effects; the greatest potential for mitigation; would be acceptable within a LUD II area; and would not significantly interfere with the potential for future development within the corridor.

Based on this evaluation, it is my decision to adopt alternative number 3, a short span power transmission line, and to issue the required special use permit to Bradfield Electric, Wrangell, Alaska. This permit will allow for the survey, construction, operation and maintenance of a 69 KV power transmission line across National Forest lands. The approved route is from the Tyee powerhouse to the Canadian border along the North Fork Bradfield and Craig River drainages. All mitigation measures for protection of fish, wildlife, visual and soils resources as listed in the Environmental Assessment are adopted and shall be incorporated in the special use permit. In addition, the powerline will be designed to cross rivers and streams at a low angle of incidence, where physically possible, to help avoid bird strikes.

The proposed action will have no significant effect on subsistence uses or resources in accordance with ANILCA section 810.

I have determined that this action would not significantly affect the quality of the human environment. Therefore an Environmental Impact Statement is not needed.

Since the proposal to plan, construct, operate and maintain a power transmission line on National Forest lands may include wetlands or floodplains, implementation of this project shall not take place until thirty days after the date of this decision notice.

This decision is subject to administrative review pursuant to 36 CFR 211.18. Notice of appeal must be in writing and submitted to Douglas K. Barber, Acting Forest Supervisor, Stikine Area, P.O. Box 309, Petersburg, AK 99833, within 45 days of the date of this decision.

May 6, 1988

Date

/s/ Douglas K. Barber

DOUGLAS K. BARBER  
Acting Forest Supervisor

BRADFIELD-CRAIG  
ROAD & PORT PROJECT  
SUPPORTING RESOLUTIONS

# SOUTHEAST CONFERENCE

P. O. Box 22286

Juneau, Alaska 99802

## SOUTHEAST CONFERENCE RESOLUTION #88-09

RELATING TO THE CONSTRUCTION OF A ROAD FROM THE CANADIAN BORDER TO THE SEA VIA THE BRADFIELD-CRAIG RIVER CORRIDOR AND THE CONSTRUCTION OF A DEEP WATER PORT FACILITY ON THE BRADFIELD CANAL

WHEREAS, the Southeast Conference is dedicated to improving the economic stability and quality of life in all Southeast Alaskan communities; and

WHEREAS, efficient transportation systems are the key element for the movement of goods and services and the resulting development of a stable and diverse economic foundation in Southeast Alaska; and

WHEREAS, economic development in Southeast Alaska today is severely handicapped by high tariffs, Jones Act restrictions, market inaccessibility and other barriers directly attributable to inadequate transportation systems; and

WHEREAS, the success of any effort to broaden the economic base in Southeast Alaska is highly dependent upon our ability to develop a hard surface link to the mainland that will provide a viable alternative for accessing new markets in the United States and Canada; and

WHEREAS, the pending United States-Canada Free Trade Agreement affords and opportunity for furthering our economic relationships with Canada if we have access to the Canadian markets; and

WHEREAS, massive natural resource developments in British Columbia have created a legitimate long term demand for access to the sea via a road system through Central Southeast Alaska; and

WHEREAS, the State of Alaska has completed numerous reconnaissance studies in Central Southeast Alaska to determine the most practical road route to access the mainland; and

WHEREAS, a road up the Bradfield-Craig River Corridor and construction for a deep water port on the Bradfield Canal has been adjudged the least sensitive environmentally and the most viable from an engineering standpoint by the Alaska Department of Transportation and Public Facilities (AK DOT/PF); and

WHEREAS, this route lends itself to AK DOT/PF long range transportation plans for expansion of road systems in Central Southeast Alaska; and

WHEREAS, the State of Alaska has nominated land selections for port development on the Bradfield Canal in anticipation of road construction; and

RESOLUTION #88-09, P.2

WHEREAS, the State of Alaska has allocated funds for, and is proceeding with, an economic feasibility study on the Bradfield-Craig Road and Port Project; and

WHEREAS, a utility corridor to supply power to Canadian mining companies has already been established parallel to the proposed Bradfield-Craig road route; and

WHEREAS, the State of Alaska has initiated diplomatic contact with British Columbia to discuss the Bradfield-Craig road and its continuation on the Canadian side of the border to intersect with the British Columbia highway system to complete the intercontinental link from Central Southeast Alaska to Canada and the Continental United States; and

WHEREAS, Canadian resource development interests have given their assurances to the State of Alaska and the Province of British Columbia that they find the proposed Bradfield-Craig Road and Port highly desirable as a route to the sea for export of raw materials, and that they will lend their support to the development of the project; and

WHEREAS, the City and Borough of Juneau, the Ketchikan Gateway Borough, and the Cities of Wrangell and Petersburg have endorsed the project by passing formal resolutions expressing their support for the Bradfield-Craig Road and Port Project.

NOW THEREFORE BE IT RESOLVED that the State of Alaska is urged to expedite construction of a road to Canada via the Bradfield-Craig River Corridor and the construction of a deep water port facility on the Bradfield Canal; and

BE IT FURTHER RESOLVED that because of the importance of this project to the future economic security of all Southeast Alaska, the Southeast Conference places the Bradfield-Craig Road and Port Project as a high priority of the Conference.

Adopted by the Southeast Conference this 24th day of September, 1988.

  
Ernest Polley, President

KETCHIKAN GATEWAY BOROUGH

Resolution No. 785

A RESOLUTION OF THE ASSEMBLY OF THE KETCHIKAN GATEWAY BOROUGH, ALASKA, URGING THE GOVERNOR AND THE ALASKA LEGISLATURE TO APPROPRIATE FUNDS FOR THE TIMELY CONSTRUCTION OF A ROAD FROM THE CANADIAN BORDER TO THE SEA VIA THE BRADFIELD-CRAIG RIVER CORRIDOR AND CONSTRUCTION OF A DEEP WATER PORT FACILITY ON THE BRADFIELD CANAL; AND ESTABLISHING AN EFFECTIVE DATE

RECITALS

A. The Ketchikan Gateway Borough Assembly supports construction of a road from Canada through Central Southeast Alaska to access a deep sea port on the Bradfield Canal.

B. The Alaska Department of Transportation and Public Facilities (ADOT/PF) has conducted studies to determine the most practical route for such a road. Of the several corridors identified, designated roadless and wilderness areas selected by the American and Canadian governments hinder road construction on all but the route from the Canadian Border to the Bradfield-Craig River watersheds.

C. Extensive mining activity in British Columbia creates long-term demand for road access to deep water port facilities. Canadian mining and other resource development interests have expressed a preference for a route through the Bradfield-Craig corridor because of its access to the sea.

D. The Canadian mining company involved has a major capital investment in their operations and has assured the City of Wrangell they will actively participate in road construction to link up with the Bradfield-Craig route.

E. Construction of this road now will assure continuing trade relations with our Canadian neighbors.

F. The centralized location of this corridor lends itself to future expansion of transportation systems vital to the diverse economic development of Southeast Alaska. This corridor will promote commerce and industry, provide an alternate land route, and improve national defense.

NOW THEREFORE, BE IT RESOLVED BY THE ASSEMBLY OF THE KETCHIKAN GATEWAY BOROUGH, ALASKA, as follows:

Section 1. The Assembly requests Governor Cowper to direct ADOT/PF to determine the construction cost for the Bradfield-Craig River Route Road and deep water port facility on the Bradfield Canal.

Section 2. Governor Cowper is further requested to join with the Alaska State Legislature to introduce legislation based upon the ADOT/PF cost findings that will enable the Bradfield-Craig Road and Bradfield Deep Water Port Projects to proceed in a timely manner.

Section 3. The Assembly urges all Alaska Legislators to support the development of the road and port project.

Section 4. The Borough Clerk is directed to send copies of this resolution to Governor Cowper, Commissioner Hickey, Commissioner Brady, Commissioner Smith, Colonel Willbur T. Gregory Jr., and all members of the Alaska State Legislature.

Section 5. This resolution shall become effective upon adoption.

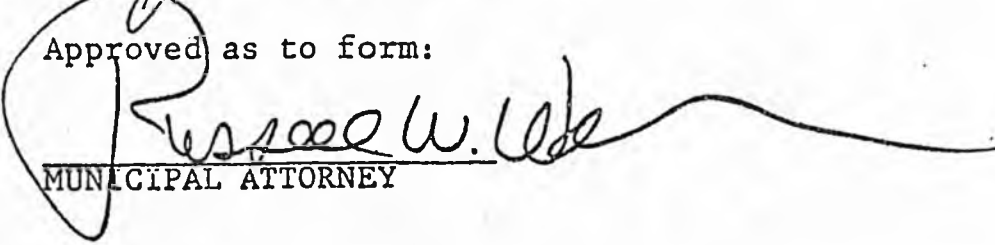
ADOPTED this 20th day of June, 1988.

  
BOROUGH MAYOR

ATTEST:

  
BOROUGH CLERK

Approved as to form:

  
MUNICIPAL ATTORNEY

RECEIVED

# AGENDA

MAY 27 '88

6-14-88

CITY OF WRANGELL  
ALASKA

Presented by: The Manager  
Introduced: 05/16/88  
Drafted by: K.C.R.

## RESOLUTION OF THE CITY AND BOROUGH OF JUNEAU, ALASKA

Serial No. 1310

A RESOLUTION SUPPORTING THE CONSTRUCTION OF A ROAD FROM THE CANADIAN BORDER TO THE SEA VIA THE BRADFIELD-CRAIG RIVER CORRIDOR AND SUPPORTING THE CONSTRUCTION OF A DEEP WATER PORT FACILITY ON THE BRADFIELD CANAL.

WHEREAS, the City of Wrangell has requested that the City and Borough of Juneau support the proposed Bradfield-Craig road and port project, and

WHEREAS, economic development anywhere in Southeast Alaska is directly or indirectly of benefit to all of the residents of Southeast Alaska, and

WHEREAS, extensive mining in British Columbia fifteen miles from the border crossing of the proposed Bradfield-Craig route has created an immediate and legitimate long-term demand for road access to the sea and deep water port facilities, and

WHEREAS, Canadian mining and other resource development interests have expressed a preference for the route through the Bradfield-Craig area because of its close proximity to the sea, and

WHEREAS, the mining interests already have major capital investment in their operations and have assured city and borough officials that they will actively participate in road construction to link up with the Bradfield-Craig route, and

WHEREAS, construction now of a twenty-six mile segment of road will ensure continuing trade relations with our Canadian neighbors, and

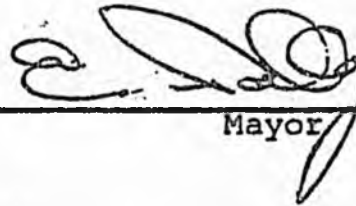
WHEREAS, this international road connection would provide many opportunities to implement the new United States-Canada Free Trade Agreement and thereby foster social, cultural, and economic relationships beneficial to both countries;

NOW, THEREFORE, BE IT RESOLVED BY THE ASSEMBLY OF THE CITY AND BOROUGH OF JUNEAU, ALASKA:

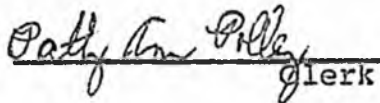
1. That the State of Alaska is urged to pursue the construction of a road from Canada down the Bradfield-Craig River Corridor and the construction of a deep water port facility on the Bradfield Canal.

2. Effective Date. This resolution shall be effective immediately upon adoption.

Adopted this 16th day of May, 1988.

  
\_\_\_\_\_  
Mayor

Attest:

  
\_\_\_\_\_  
Clerk

WY 6-78

# AGENDA

RESOLUTION 1139-R

CITY OF PETERSBURG 5-10-88

A RESOLUTION OF THE PETERSBURG CITY COUNCIL URGING THE GOVERNOR AND THE LEGISLATURE OF THE STATE OF ALASKA TO INITIATE LEGISLATION TO APPROPRIATE FUNDS TO ENABLE THE TIMELY CONSTRUCTION OF A ROAD FROM THE CANADIAN BORDER TO THE SEA VIA THE BRADFIELD-CRAIG RIVER CORRIDOR AND CONSTRUCTION OF A DEEP WATER PORT FACILITY ON THE BRADFIELD CANAL.

WHEREAS, for the past three decades the City of Petersburg has supported construction of a road from Canada through Central Southeast Alaska to the sea; and

WHEREAS, these requests have resulted in seemingly interminable reconnaissance studies by the Alaska Department of Transportation and Public Facilities to determine the most practicable route for such a road; and

WHEREAS, the reconnaissance studies have resulted in a number of designated route potentials for a road; and

WHEREAS, legislative actions by the governments of the United States and Canada have now designated roadless and wilderness areas that would discourage road construction on all but one of the routes proposed in the reconnaissance studies; and

WHEREAS, a twenty six mile segment of that one remaining alternate route is from the Canadian Border down the Bradfield-Craig River watersheds and is the shortest route to the sea and deep water port capability; and

WHEREAS, extensive mining activity in British Columbia, fifteen miles from the border crossing of the proposed Bradfield-Craig route, has created an immediate and legitimate long term demand for road access to the sea and deep water port facilities; and

WHEREAS, Canadian mining and other resource development interests have expressed a preference for the route through the Bradfield-Craig area because of its close proximity to the sea; and

WHEREAS, the mining interests already have a major capital investment in their operations and have assured us they will actively participate in road construction to link up with the Bradfield-Craig route; and

WHEREAS, construction of a twenty six mile segment of road now will ensure continuing trade relations with our Canadian neighbors, but to procrastinate will send them the message that we are not interested and force them to go inland with all of their business; and

WHEREAS, construction of twenty six miles of road in this centralized location lends itself to future expansion of hard surface transportation systems vital to the economic diversification and development of all Southeast Alaska; and

WHEREAS, this international road connection would provide the opportunity for maximum utilization of the new United States-Canada Free Trade Agreement and foster social, cultural and economic relationships beneficial to both countries; and

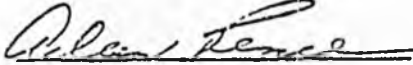
WHEREAS, said international road would increase traffic flow efficiency for commerce and industry, provide a viable alternative land route for the traveler, improve national defense in the event of foreign hostilities and provide an evacuation route in the event of a coastal catastrophe.

NOW THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PETERSBURG, ALASKA:

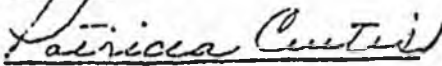
1. Governor Cowper is hereby requested to direct the Department of Transportation and Public Facilities to make an accurate determination of construction costs for the Bradfield-Craig River route to the Canadian Border and a deep water port facility on the Bradfield Canal.
2. Governor Cowper is further requested to join with the Alaska State Legislature to introduce legislation based upon the cost finding of AK DOT/PF, that will enable the Bradfield-Craig Road and Bradfield Deep Water Port projects to proceed in a timely and expeditious manner.
3. In the name of prudent economic development and the furthurance of a strong self-supporting economic base in Southeast Alaska, we ask all legislators of the State of Alaska to support the development of this road and port project.
4. The City Clerk is hereby directed to transmit copies of this resolution to:

Governor Steve Cowper  
Commissioner Mark Hickey, AK DOT/PF  
Commissioner Judith Brady, AK DNR  
Commissioner Anthony Smith, AK DOC/ED  
Colonel Wilber T. Gregory Jr., Army Corps of Engineers  
All members of the Alaska State Legislature

PASSED and APPROVED this 2 day of May, 1988.

  
Mayor

ATTEST:

  
City Clerk

CITY OF WRANGELL, ALASKA

RESOLUTION NO. 4-88-295

A RESOLUTION OF THE COUNCIL OF THE CITY OF WRANGELL, ALASKA URGING THE GOVERNOR AND THE LEGISLATURE OF THE STATE OF ALASKA TO INITIATE LEGISLATION TO APPROPRIATE FUNDS TO ENABLE THE TIMELY CONSTRUCTION OF A ROAD FROM THE CANADIAN BORDER TO THE SEA VIA THE BRADFIELD-CRAIG RIVER CORRIDOR AND CONSTRUCTION OF A DEEP WATER PORT FACILITY ON THE BRADFIELD CANAL.

WHEREAS, for the past three decades the City of Wrangell has been asking for construction of a road from Canada through Central Southeast Alaska to the sea; and

WHEREAS, these requests have resulted in seemingly interminable reconnaissance studies by the Alaska Department of Transportation and Public Facilities to determine the most practicable route for such a road; and

WHEREAS, the reconnaissance studies have resulted in a number of designated route potentials for a road; and

WHEREAS, legislative actions by the governments of the United States and Canada have now designated roadless and wilderness areas that would discourage road construction on all but one of the routes proposed in the reconnaissance studies; and

WHEREAS, a twenty six mile segment of that one remaining alternate route is from the Canadian Border down the Bradfield-Craig River watersheds and is the shortest route to the sea and deep water port capability; and

WHEREAS, extensive mining activity in British Columbia fifteen miles from the border crossing of the proposed Bradfield-Craig route has created an immediate and legitimate long term demand for road access to the sea and deep water port facilities; and

WHEREAS, Canadian mining and other resource development interests have expressed a preference for the route through the Bradfield-Craig area because of its close proximity to the sea; and

WHEREAS, the mining interests already have a major capital investment in their operations and have assured us they will actively participate in road construction to link up with the Bradfield-Craig route; and

WHEREAS, construction of a twenty six mile segment of road now will ensure continuing trade relations with our Canadian neighbors, but to procrastinate will send them the message that we are not interested and force them to go inland with all of their business; and

WHEREAS, construction of twenty six miles of road in this centralized location lends itself to future expansion of hard surface transportation systems vital to the economic diversification and development of all Southeast Alaska; and

WHEREAS, this intercontinental road connection would provide the opportunity for maximum utilization of the new United States-Canada Free Trade Agreement and foster social, cultural and economic relationships beneficial to both countries; and

WHEREAS, said intercontinental road would increase traffic flow efficiency for commerce and industry, provide a viable alternative land route for the traveler, improve national defense in the event of foreign hostilities and provide an evacuation route in the event of a coastal catastrophe.

NOW THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF WRANGELL, ALASKA:

- Section 1. Governor Cowper is hereby requested to direct the Department of Transportation and Public Facilities to make an accurate determination of construction costs for the Bradfield-Craig River route to the Canadian Border and a deep water port facility on the Bradfield Canal.
- Section 2. Governor Cowper is further requested to join with the Alaska State Legislature to introduce legislation based upon the cost findings of AK DOT/PF, that will enable the Bradfield-Craig Road and Bradfield Deep Water Port projects to proceed in a timely and expeditious manner.
- Section 3. In the name of prudent economic development and the furtherance of a strong self-supporting economic base in Southeast Alaska, we ask all legislators of the State of Alaska to support the development of this road and port project.
- Section 4. The City Clerk is hereby directed to transmit copies of this resolution to:
- Governor Steve Cowper  
Commissioner Mark Hickey, AK DOT/PF  
Commissioner Judith Brady, AK DNR  
Commissioner Anthony Smith, AK DOC/ED  
Colonel Wilbur T. Gregory Jr., Army Corps of Engineers  
All members of the Alaska State Legislature
- Section 5. This resolution shall become effective on approval.

PASSED AND APPROVED: April 12, 1988

Leroy M. Vincent  
Mayor

I have read and correct  
copy of the original filed in  
my office.

ATTEST: Francette Vincent  
City Clerk (Acting)

Francette Vincent  
City Clerk - Acting  
City of Wrangell, Alaska

CHAMBER OF COMMERCE  
CITY OF WRANGELL, ALASKA

A RESOLUTION OF THE CHAMBER OF COMMERCE OF THE CITY OF WRANGELL, ALASKA SUPPORTING CONSTRUCTION OF A ROAD FROM CENTRAL SOUTHEAST ALASKA TO BRITISH COLUMBIA VIA THE BRADFIELD-CRAIG RIVER CORRIDOR, AND THE ESTABLISHMENT OF DEEP WATER PORT FACILITIES AT AN ACCEPTABLE SITE. WE REQUEST THAT OUR LOCAL, STATE, AND FEDERAL OFFICIALS TAKE APPROPRIATE MEASURES TO INSTITUTE THE PLANNING, PERMITTING AND FINANCING NECESSARY TO COMPLETE THIS PROJECT IN A TIMELY MANNER.

WHEREAS, the Wrangell Chamber of Commerce has historically supported construction of a road system connecting Central Southeast Alaska with British Columbia; and

WHEREAS, a road between Central Southeast Alaska and British Columbia would generate industrial, commercial and recreational opportunities essential to the economic stability, diversification and future growth of the region; and

WHEREAS, recent mining activity in British Columbia has created a rapidly expanding demand for road access to the sea and deep water port facilities in Central Southeast Alaska; and

WHEREAS, the Alaska Department of Transportation and Public Facilities has conducted a series of reconnaissance studies during the past three decades, to determine the most feasible routes for road access from Central Southeast Alaska to Canada; and

WHEREAS, within the past ten years congressional action and other considerations in Canada and Alaska have created roadless and wilderness areas within the reconnaissance study area; and

WHEREAS, the wilderness and/or roadless designation adversely affects road construction on all routes proposed in the reconnaissance studies with the exception of the route through the Bradfield-Craig River watershed area; and

WHEREAS, the Bradfield-Craig route is geographically the shortest distance to deep water port potential from the mining operations and other proposed renewable resource (timber) harvest areas in British Columbia; and

WHEREAS, Canadian mining firms have expressed a preference for this road route to the sea for shipment of ore concentrates to outside refining facilities; and

WHEREAS, the Canadian timber industry would open new areas and utilize the road for timber shipments to the sea; and

WHEREAS, the route from deep water on the Bradfield Canal to the Canadian border (approx. 25 miles) will accommodate the demand for deep water access at a cost considerably less than heretofore proposed routes; and

WHEREAS, construction of this road will herald the beginnings of long term Canadian-American relationships mutually beneficial to the future growth, economic diversification and overall economic development programs for the citizens of both countries.

NOW THEREFORE, BE IT RESOLVED BY THE CHAMBER OF COMMERCE OF THE CITY OF WRANGELL, ALASKA:

Section 1. The City of Wrangell, The State of Alaska Office of the Governor, Departments of Transportation, Natural Resources, Commerce & Economic Development; The United States Forest Service and the United States Corps of Engineers are hereby requested to jointly and cooperatively take appropriate measures to institute planning, permitting, financing, and diplomatic intercourse with Canada in order to expedite construction of a road from Central Southeast Alaska to British Columbia via the Bradfield-Craig River corridor and to establish a deep water port facility at an appropriate site.

Section 2. The Secretary of the Wrangell Chamber of Commerce is hereby directed to transmit a copy of this resolution to each of the following:

Mayor Fern Neimeyer, City of Wrangell  
Paul Meyhoff II, Office of the Governor  
Commissioner Mark Hickey, AK DOT/PF  
Commissioner Judy Brady, AK DNR  
Commissioner Anthony Smith, AK DOC/ED  
Walt Sheridan, USFS ANILCA Coordinator  
Colonel Wilbur T. Gregory Jr., U.S. Army Engineers,  
Alaska District

Senator Ted Stevens  
Senator Frank Murkowski  
Congressman Donald Young  
Lloyd Jones, Alaska State Senator  
Robin Taylor, Alaska State Representative  
John Sund, Alaska State representative

Section 3. This Resolution shall become effective on approval.

PASSED AND APPROVED: February 13, 1988

Clifford James  
President, Wrangell Chamber of Commerce

ATTEST: [Signature]  
Secretary

U.S.-CANADA FREE TRADE AGREEMENT

SYNOPSIS

THE WHITE HOUSE  
Office of the Press Secretary

For Immediate Release

January 2, 1988

FACT SHEET

U.S.-CANADA FREE TRADE AGREEMENT

The United States and Canada have entered into a free trade agreement that, if approved and implemented, will take effect on January 1, 1989. The agreement will:

- o Eliminate all tariffs on bilateral goods trade within 10 years of implementation;
- o Reduce nontariff trade barriers;
- o Establish principles for the conduct of bilateral trade in services;
- o Establish rules for the conduct of bilateral investment;
- o Resolve many outstanding bilateral trade issues;
- o Enhance the energy and national security of the two countries;
- o Facilitate business travel; and
- o Establish a timely bilateral dispute settlement mechanism.

Economic Implications

Each year the U.S. and Canada exchange more goods and services than any two countries in the world. Bilateral trade in goods and services exceeded \$150 billion in 1986.

The elimination of tariffs and most other barriers to trade between the two countries will increase economic growth, lower prices, expand employment and enhance the competitiveness of both countries in the world marketplace.

Chronology of the Negotiation

- o In March 1985, President Reagan and Prime Minister Mulroney asked their trade officials to explore ways to reduce and

MORE

eliminate existing barriers to trade between the U.S. and Canada.

- o On September 26, 1985, Prime Minister Mulroney formally requested that the U.S. and Canada examine the potential for negotiating a comprehensive free trade agreement.
- o On December 10, 1985, President Reagan notified the Congress of his intent to enter into bilateral negotiations with Canada using "fast track" procedures.
- o On June 17, 1986, U.S. and Canadian negotiators on the free trade area met for the first time in Ottawa.
- o On October 3, 1987, President Reagan notified Congress of his intent to enter into a free trade agreement with Canada.
- o On December 9, 1987, U.S. and Canadian negotiators initialled a final text of the agreement.
- o On January 2, 1988, President Reagan and Prime Minister Mulroney signed the final text of the agreement.

#### The Fast Track

Section 102 of the Trade Act of 1974 authorizes the President to enter into bilateral free trade agreements and to have the Congress approve them on a "fast track" basis. Section 102 authority expires at midnight on January 2, 1988.

In order for a bilateral agreement to qualify for fast track consideration, several conditions must be met:

- o The negotiation must be requested by the foreign country;
- o The President must notify the House Ways and Means and Senate Finance Committees of the negotiations, giving them 60 legislative days advance notice;
- o The President must notify the Congress of his intent to enter into an agreement 90 days before doing so.

After entering into an agreement, the President must submit it to Congress, along with a draft implementing bill, a statement of any administrative action proposed to implement the agreement, an explanation of how the bill or statement changes or affects existing law and a statement of reasons why the agreement serves the interests of U.S. commerce and why the bill and proposed action are required and appropriate.

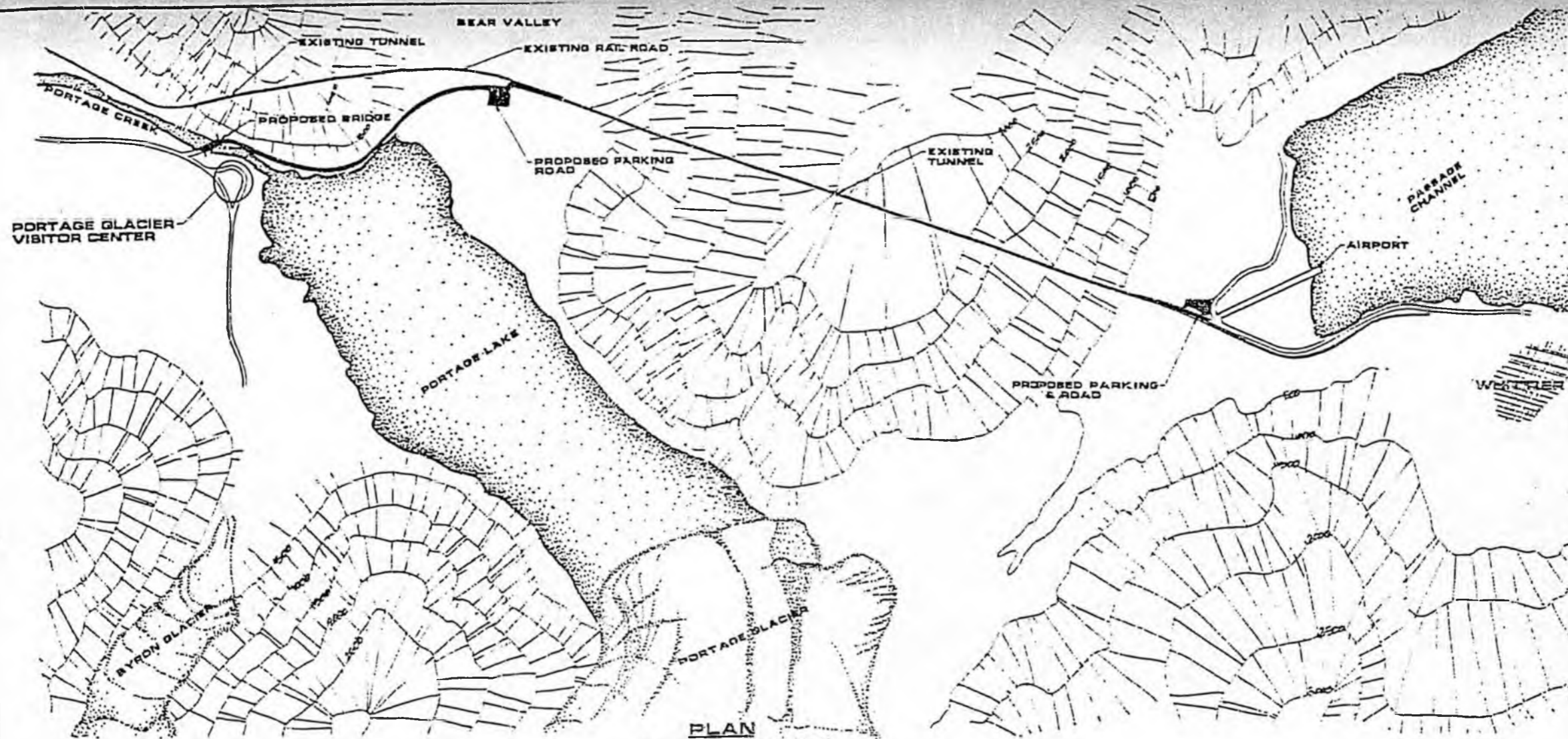
MORE

The implementing bill is introduced in both Houses of Congress on the day it is submitted and is referred to the committees of jurisdiction. House committees have 45 days in which the House is in session to report the bill; they are discharged automatically from further consideration after that period. The House votes within 15 days in session after the measure has been received from the House committees.

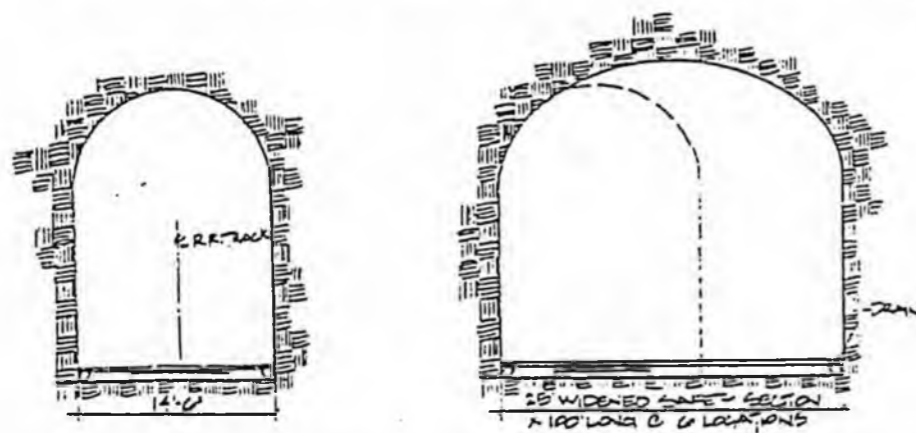
After receiving the bill from the House, the Senate committees have 15 days in which the Senate is in session to report the bill; they are discharged automatically from further consideration after that period. The Senate votes within 15 days in session after the measure has been received from the Senate committees.

Amendments to the bill are not in order. A simple majority of each House is required for approval.

# # #

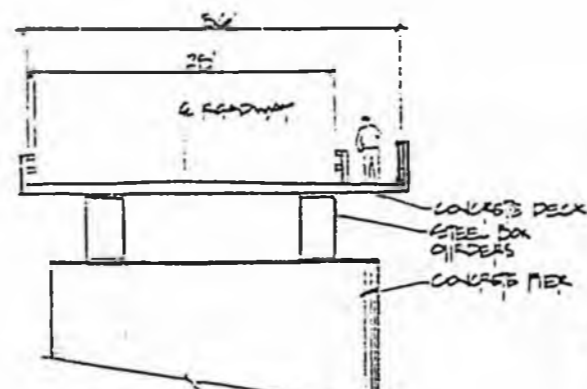


**PLAN**  
 1" = 100' HORIZONTAL SCALE  
 1" = 20' VERTICAL SCALE

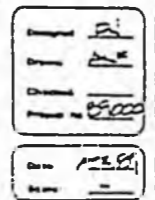


**EXISTING RAILROAD SECTION**

**WIDENED TUNNEL SECTION**

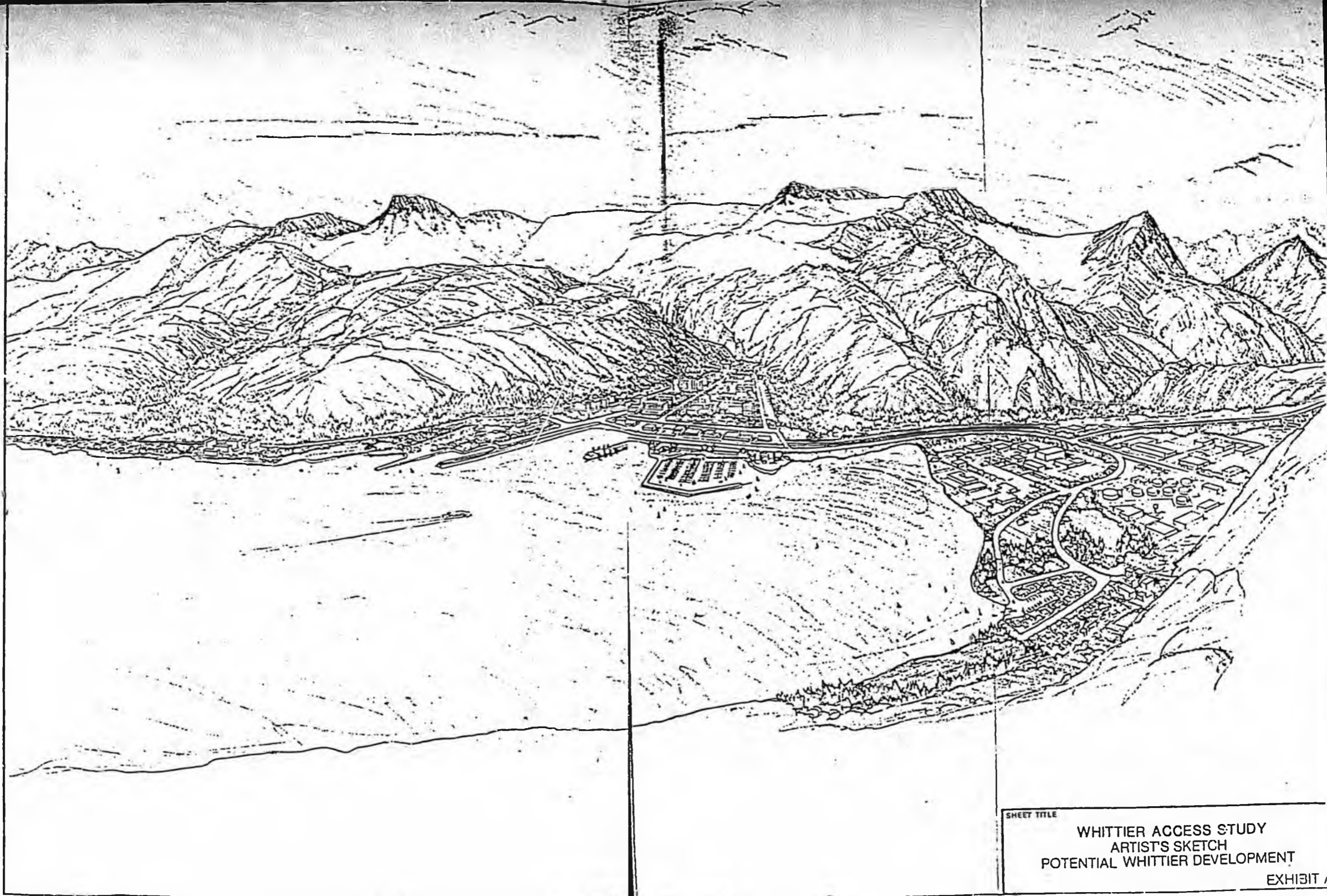


**BRIDGE SECTION**



**WHITTIER TUNNEL**

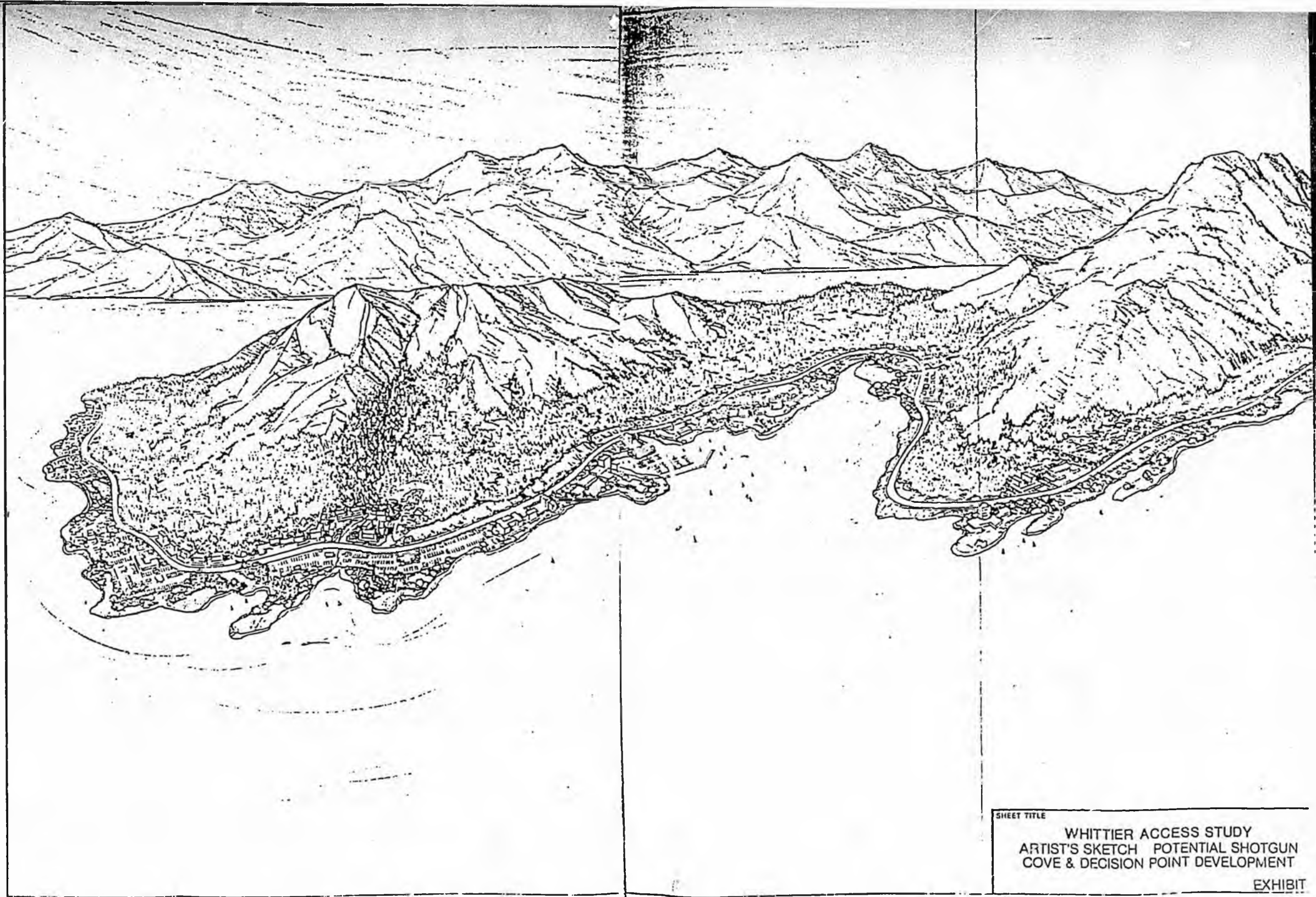
**Peratrovich, Nottingham & Drage, Inc.**  
 Engineering Consultants  
 1506 West 38th Avenue,  
 Anchorage, Alaska 99503 (907) 561-1011



SHEET TITLE

WHITTIER ACCESS STUDY  
ARTIST'S SKETCH  
POTENTIAL WHITTIER DEVELOPMENT

EXHIBIT /



SHEET TITLE

WHITTIER ACCESS STUDY  
ARTIST'S SKETCH POTENTIAL SHOTGUN  
COVE & DECISION POINT DEVELOPMENT

EXHIBIT



ADOPTED AUGUST 1972

February 16, 1990

# CITY of WRANGELL, ALASKA

INCORPORATED JUNE 15, 1903

BOX 531, 99929 (907) 874-2381  
FAX: (907) 874-3952

FEB 22 1990

Senator Lloyd Jones  
Alaska State Legislature  
Post Office Box V (MS 3100)  
Juneau, Alaska 99811

Dear Lloyd:

Enclosed is a copy of City of Wrangell Resolution No.02-90-342, supporting CS HR311, for the issuance of revenue bonds for construction of the Bradfield Resource Road, a 12 month review of B.C. mining's economic contribution to Wrangell, and two location maps of the area.

During the past two decades AK DOT/PF has conducted no less than six reconnaissance studies searching for the route that will best serve the transportation needs of commerce and industry in Southeast Alaska and North West British Columbia.

The Bradfield route has been determined to be the most feasible. It is the shortest route to the sea. It does not infringe upon any wilderness area, and there is an ideal deep water port location at the head of the Bradfield Canal. A power corridor has already been established from the Tyee Power Plant along the Bradfield route to facilitate the sale of surplus power to mining operations in British Columbia.

Today's resource development in British Columbia has created a demand for access to the sea. The Skyline mine on Johnny Mountain is operational. The adjacent Cominco-Delaware mine will be operational this year and there are some 75 other mining companies in various stages of exploration and development in the Iskut region. The enclosed figures for Wrangell are the result of air transport to the Iskut mining region at today's operational level. The amount is miniscule compared to the traffic and dollar volume that will be generated throughout Southeast Alaska when road access to the coast is available.

# CITY OF WRANGELL, ALASKA

Bradfield Resource Road  
Page 2

Construction of the Bradfield Road and Port will provide the catalyst for development of an estimated 1 billion+ tons of known mineral deposits and 3 billion board feet of timber that is presently dormant for want of cost efficient transportation. Annual shipping volume is projected at 1.5 to 2 million tons, and the Bradfield road represents an average round trip savings of 226 miles to port when compared to any other possible route in the region.

The Canadians are actively pursuing construction of a road into the Iskut region from the east and have indicated a willingness to tie into the Bradfield Road at the border. They make no bones about the fact that they intend to open the region for resource development whether or not we build a road on our side of the border.

We have a golden opportunity to benefit from massive Canadian resource development now, and to nurture economic and social exchange with Canada forever.

Please support passage of CS HB311.

Sincerely,

Donald J. House  
Mayor

DJH\jg

cc: Governor Steve Cowper  
State of Alaska Sixteenth Legislature

encl.

Lloyd: A copy of this letter and enclosures was sent to the Governor and every member of the legislature.  
member of

CITY OF WRANGELL, ALASKA

RESOLUTION NO. 02-90-342

A RESOLUTION OF THE COUNCIL OF THE CITY OF WRANGELL, ALASKA IN SUPPORT OF COMMITTEE SUBSTITUTE HOUSE BILL #311, APPROVING THE ISSUANCE OF REVENUE BONDS FOR CONSTRUCTION OF THE BRADFIELD RESOURCE ROAD.

WHEREAS, there is a fundamental need for Southeast Alaska to diversify its economy to insure the future self-sufficiency and economic stability of the region; and

WHEREAS, economic development and diversification in Southeast Alaska is stifled by market inaccessibility, Jones Act restrictions, high tariffs and other obstacles directly attributable to insufficient transportation infrastructure; and

WHEREAS, a road linking Central Southeast Alaska and British Columbia will generate industrial, commercial and recreational opportunities for economic diversification in Southeast Alaska; and

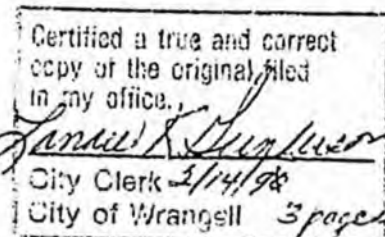
WHEREAS, the State of Alaska has conducted numerous reconnaissance studies in Central Southeast Alaska in an effort to evaluate the optimum routing for a hard surface road to the mainland to unite with the Canadian road system forming an international link with Canada and the contiguous United States; and

WHEREAS, the reconnaissance studies have determined that a route through the Bradfield-Craig watershed with a deep water port at the head of the Bradfield Canal is the most viable from an engineering standpoint and least sensitive environmentally; and

WHEREAS, this routing is compatible with AK DOT/PF long range plans for expansion of transportation infrastructure in Southeast Alaska; and

WHEREAS, the State of Alaska has nominated 5,020 acres at the east end of Bradfield Canal for land selection for the purpose of port development to service the proposed road; and

WHEREAS, the State of Alaska has appropriated funding for an Environmental Impact Statement for the Bradfield Road and Port Project; and



WHEREAS, the Bradfield route is the shortest distance to the sea for existing mining operations in the Iskut and Sulpherets regions of British Columbia who would immediately utilize the road for export of raw materials and import of equipment and supplies; and

WHEREAS, the Bradfield road will initiate activation of a large number of known mineral deposits and timber resources that are presently dormant for lack of cost efficient transportation; and

WHEREAS, the volume of commerce that will be generated by easy access to the sea will provide an economic return that justifies the comparatively small cost of road and port development; and

WHEREAS, in the long term this intercontinental road system will open the door for maximum utilization of the United States Canada Free Trade Agreement and foster social, cultural and economic relationships beneficial to both countries; and

WHEREAS, said intercontinental road system will provide a viable alternate land route for the traveler easing the pressure on our overtaxed ferry system, provide an evacuation route in the event of a coastal catastrophe, and improve national defense in the event of foreign hostilities; and

WHEREAS, the Southeast Conference, The City and Borough of Juneau, the Ketchikan Gateway Borough, and the City of Petersburg have joined with the City of Wrangell and endorsed the Bradfield Road and Port Project by passing formal resolutions expressing their support for the project.

NOW THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF WRANGELL, ALASKA:

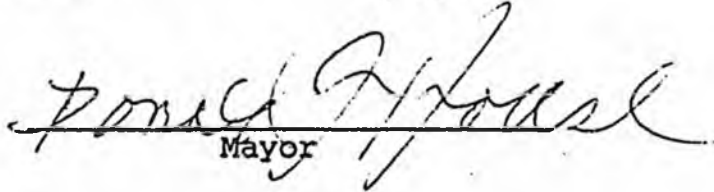
1. In the name of prudent economic development and the furtherance of a strong self-supporting economic base in Southeast Alaska we ask Governor Cowper and the Sixteenth Legislature of the State of Alaska to support passage of Committee Substitute House Bill #311.
2. We further request Governor Cowper and the Sixteenth Legislature of the State of Alaska to support affirmative action to implement the Environmental Impact Statement process for the Bradfield Road and Port Project.

3. The City Clerk is hereby directed to transmit copies of this resolution to:

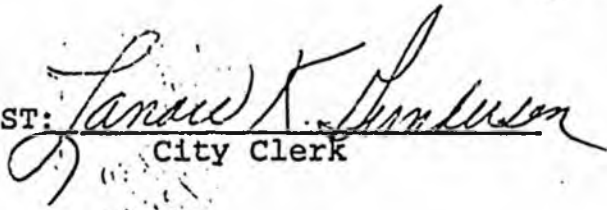
Governor Steve Cowper  
The Sixteenth Legislature of the State of Alaska

4. This resolution shall become effective on approval.

PASSED AND APPROVED: FEBRUARY 13, 1990

  
Mayor

ATTEST:

  
City Clerk

WRANGELL, ALASKA & B.C. MINING OPERATIONS

VOLUMES, VALUES & FLIGHTS

NUMBER OF INTERNATIONAL FLIGHT OPERATIONS WRANGELL AIRPORT

Year	1986	1987	1988	1989
# Flights	279	3,600	6,361	7,372

AIRCRAFT CARGO VOLUME 1/1/89 - 1/1/90

FUEL	10,169,590	LBS.
LUBRICANTS	144,108	LBS.
FOOD & SUNDRIES	474,726	LBS.
BLDG. & HARDWARE SUPPLIES	235,410	LBS.
EQUIP. REPAIR & FABRICATION	95,760	LBS.
PROPANE, ACETYLENE, OXYGEN ETC.	315,077	LBS.
MISC. EQUIPMENT & SUPPLIES	29,260	LBS.
IN TRANSIT HEAVY EQUIPMENT & SUPPLIES	5,245,376	LBS.
ORE CONCENTRATES	7,026,250	LBS.
TOTAL AIRCRAFT CARGO VOLUME	23,735,557	LBS.

AIRCRAFT CARGO VALUE (local purchase) 1/1/89 - 1/1/90

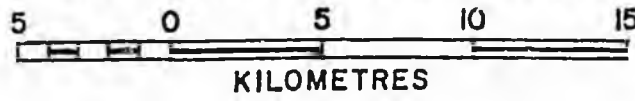
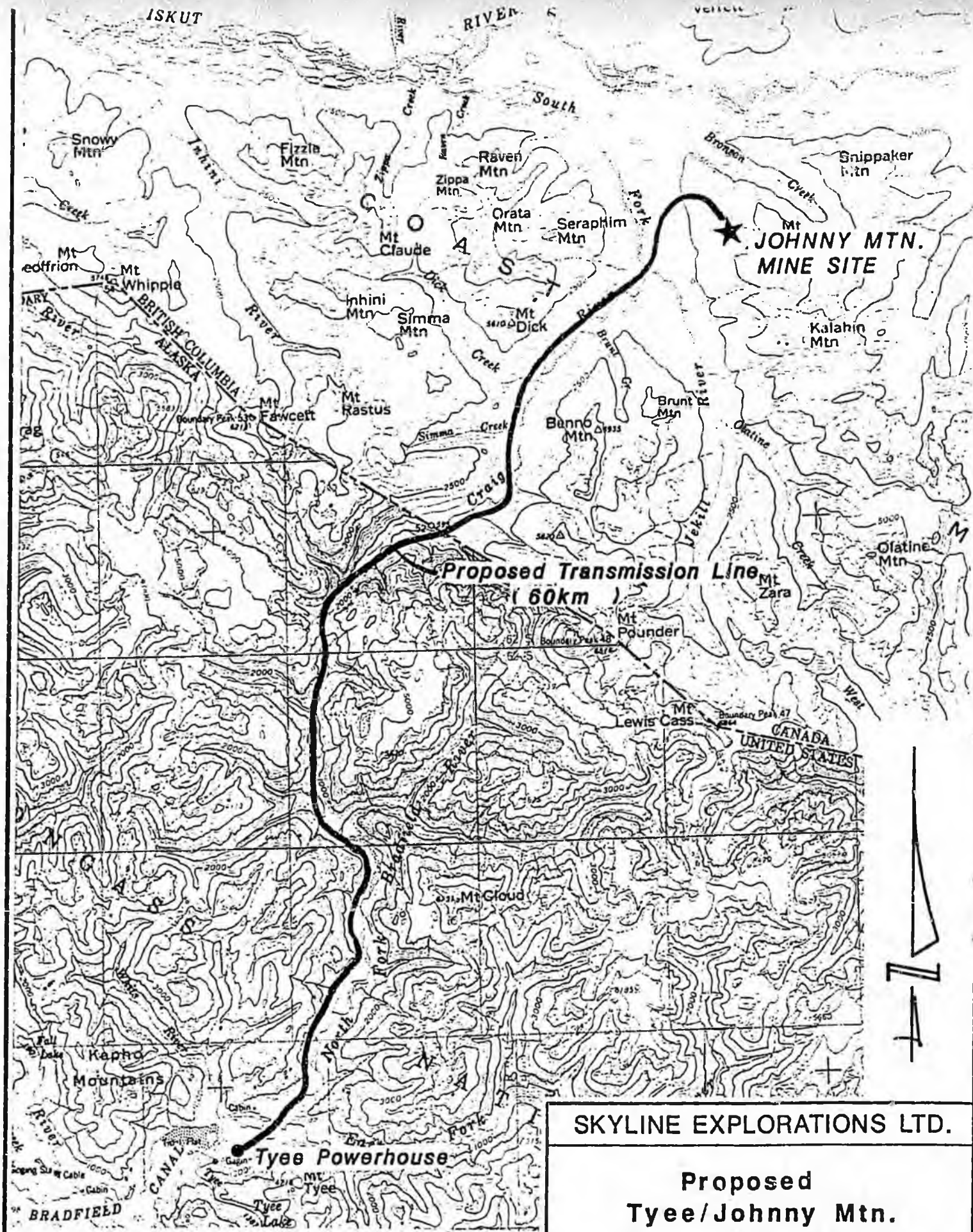
PETROLEUM PRODUCTS	\$2,232,043
FOOD AND SUNDRIES	661,010
BUILDING, HARDWARE, AUTOMOTIVE	236,740
MISCELLANEOUS SERVICES	179,550
(trucking, equipment repair, longshore, video rentals, hotel, meals etc.)	
TOTAL LOCAL PURCHASES	\$3,309,343

NEW BUSINESSES & JOBS AS A DIRECT RESULT OF MINING ACTIVITY

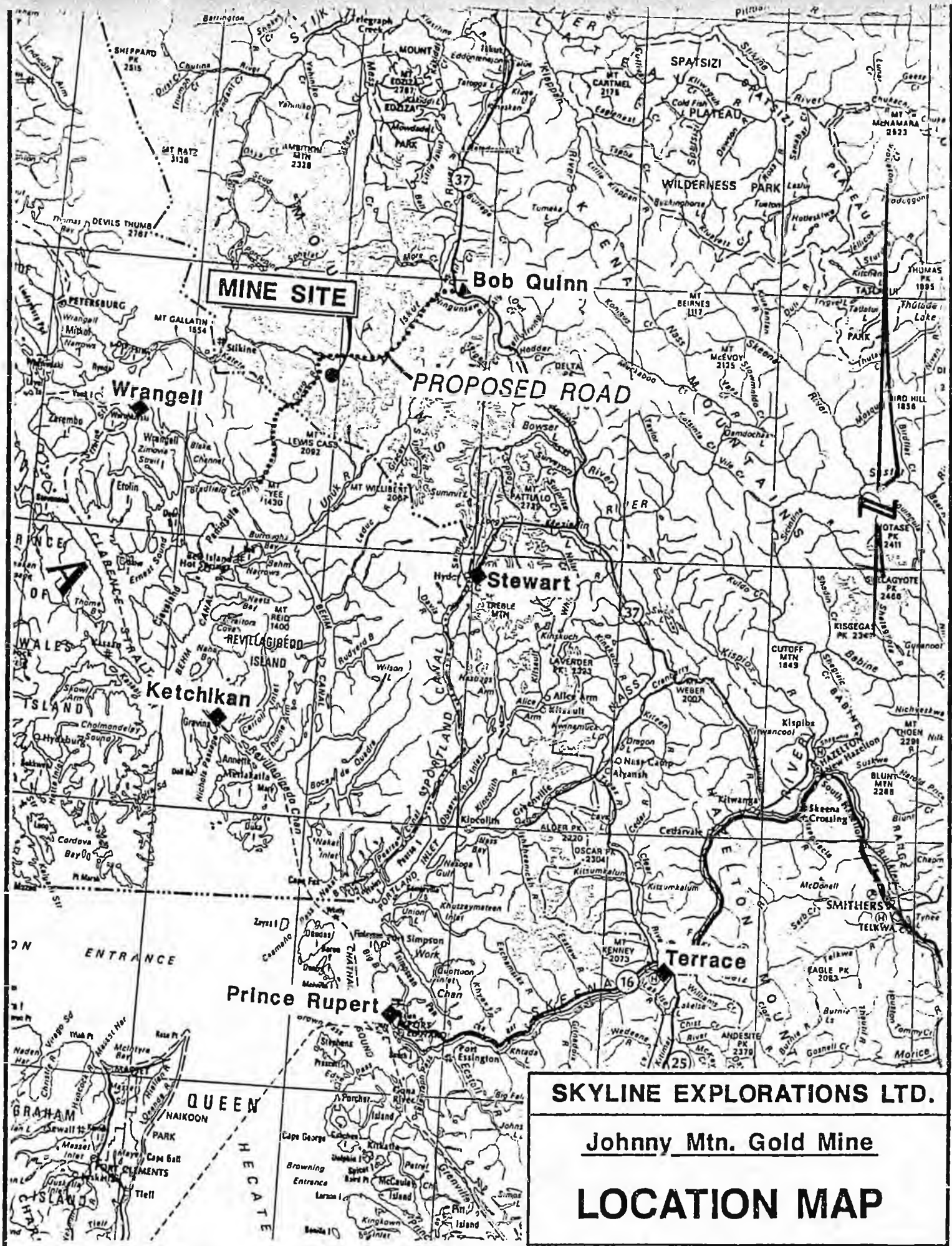
North Arm Expediting (new business)	4 employees
White Pass Oil (new business)	5 employees
Bradfield Electric (new business)	1 employee
(will have construction crew for power line)	
U.S. Customs	1 new employee
City Market	5 new employees
Diamond Aviation	1 new employee
Chevron Oil	1 new employee
Longshoremen	5 new jobs
Trans-Provincial Airlines (new business)	1 new job
TOTALS: 4 NEW BUSINESSES & 24 NEW JOBS	

In addition there are 3 Canadian air carriers working out of Wrangell. Two servicing mining operations daily with 3 -4 employees staying in Wrangell. One transporting mining personnel for R & R one trip per week.

Estimated Overall Economic Value to Wrangell is in excess of \$21,000,000.00.



SKYLINE EXPLORATIONS LTD.	
<b>Proposed Tye/Johnny Mtn. Transmission Line</b>	
Scale	1 : 250 000
Date	88/02/22
N.T.S. N.T.S. 104/B	



**SKYLINE EXPLORATIONS LTD.**

Johnny Mtn. Gold Mine

**LOCATION MAP**

Scale 1:2 000 000	Date March, 1988
Ref.	



Province of  
British Columbia

Ministry of  
Energy, Mines and  
Petroleum Resources

Parliament Buildings  
Victoria  
British Columbia  
V8V 1X4

OFFICE OF THE MINISTER

November 30, 1989

DEC 20 1989

The Honourable Lloyd Jones  
Chairman  
Senate Transportation Committee  
Alaska State Legislature  
P.O. Box V  
Juneau, Alaska  
99811, U.S.A.

Dear Senator Jones:

Thank you for your letter of October 26, 1989, regarding the proposed road to connect the lower Iskut valley mining area to the Stewart-Cassiar Highway. The press clipping which you have attached to your letter is accurate in its description of the British Columbia government's policy on the road proposal. I am optimistic that the provincial government can reach a cost-sharing agreement with the mining companies that would allow construction of the road to commence next year.

Provincial support for the Iskut road does not foreclose other road options in the area. However, as I am sure you understand, the link to the Stewart-Cassiar Highway is preferred by the Province in view of the potential flow of employment and business benefits to British Columbia communities, such as Stewart.

In closing, I will endeavour to keep you abreast of developments on the Iskut road proposal.

Yours sincerely,

Honourable Jack Davis  
Minister

cc: The Honourable Dave Parker  
Minister of Crown Lands

Mr. Mark Hickey  
Commissioner DOT

**BRADFIELD INDUSTRIAL ROAD  
FEASIBILITY STUDY**

**FINAL REPORT**  
September 1989

**Submitted to:**  
**Alaska Department of Transportation and Public Facilities**  
**Southeast Region**  
**P.O. Box 021467**  
**Juneau, Alaska**

**Prepared by:**  
**S.C. Jacoby and Associates**  
**Juneau, Alaska**

**with**  
**Baxandall Associates**  
**Juneau, Alaska**

**and**  
**Mr. Phil R. Holdsworth**  
**Juneau, Alaska**

# BRADFIELD INDUSTRIAL ROAD FEASIBILITY STUDY

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**BRADFIELD INDUSTRIAL ROAD  
FEASIBILITY STUDY**

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## 1.0 INTRODUCTION

During October 1988, the Alaska Department of Transportation and Public Facilities requested proposals for a study to determine the economic feasibility of building an industrial road from the head of the Bradfield Canal, via the Bradfield and Craig River drainages to the Canadian border -- a distance of 31 miles. The principal focus of the road, routing and destination would be to serve the transportational needs of Canadian mining interests in the lower Iskut River region by providing "straight-through" trucking to deep water at the Bradfield Canal.

In late October, a contract was awarded to Stephen C. Jacoby & Associates in conjunction with Baxandall Associates, P.E., and Mr. Phil R. Holdsworth, E.M., and a scope of work agreed on.

## 2.0 OBJECTIVES

The Bradfield Industrial Road feasibility study undertaken over the last several months has focused on a host of resource, economic, and policy issues relating to the feasibility of this project. The project objectives relate to three principal areas of input data;

### 1) Resource Assessment

Identification of the principal mining interests in the Iskut River area and surrounding mineral districts possibly affected by a port destination resource road. Assessment of present mine production and mine development forecasting for various mineral deposit classes. Similarly a timber resource analysis was performed assessing present inventory volume within the region and annual allowable cut estimates determined. The mineral and timber resource assessment would provide the basis for 1) prospective in-haul and out-haul relationships related to road access development and 2) unit haul cost analysis for route alternatives.

### 2) Bradfield Route - Engineering and Cost Analysis

An analysis of the Bradfield Route clearly defined two design alternatives, 1) continuous surface road, point to point and 2) road/tunnel point to point. Construction costs estimates were developed for both alternatives and incorporated into comprehensive cost equations, for road development, and operation and maintenance along this route. All cost estimating has undergone final refinement following nominal route reconnaissance during August 1989.

An on-going Iskut Valley Route alternative study, joint-funded by the British Columbia Ministry of Energy, Mines & Petroleum Resources and cooperators within the B.C. mining industry, will provide construction cost estimates based on preferred

alignments for Iskut River Road development from the Cassiar Hwy. (Highway 37) at Bob Quinn Lake to the Johnny Mountain mine area. Two tributary roads will additionally be evaluated, one up the Craig River to the international boundary, interfacing with the Bradfield Route at the common border, and another tributary link to the lower Unuk River.

### 3) Economic Analysis of the Bradfield Route Alternatives

The analysis looked at the various alternatives and a comparative evaluation performed to determine the estimated expense in the development and operation of an access road to and through the Iskut Region. The construction, maintenance and operation and haul costs developed within the Engineering and Cost Analysis section were used in developing the route comparisons.

## 3.0 SUMMARY

The summary conclusions derived from the benefit cost analysis of the Bradfield Industrial Road, using best available information on mineral potential and current cost data, were based on two points of reference;

1) The total construction, operating and haul cost of two Bradfield route alternatives from a marine transfer site at the head of the Bradfield Canal to the U.S.-Canada border, approximately 31 miles in length. Alternative 1, a continuous surface road, is estimated to cost 20 million dollars, based on alignment and construction standards detailed in Section 5 of this report. Alternative 2, a road/tunnel option, is estimated to cost 23 million dollars. *Alternative 2, the road /tunnel option is the preferred alternative*. The increased initial cost of construction for this alternative is offset by improved year around efficiency of the facility and an overall reduction in adverse haul gradient.

2) A comparative evaluation was then performed for the Alternative 2-Bradfield road/tunnel option contrasted with an Iskut River to Cassiar Highway routing with Stewart as the port destination. This evaluation incorporated construction, maintenance and haul as cost parameters. The benefit cost comparisons of the two routings were based on a common point of origin, and reflected best available cost data for the Canadian portion of the routings. Two separate analysis were run, one isolating haul cost, the other included haul cost. *In both cases the Bradfield routing demonstrates a favorable rate of return(13.6% and 42.6% respectively) over the Iskut/Stewart routing.*

The reported findings contained in this Bradfield Industrial Road analysis provide a certain measure of insight as to the economic feasibility of more direct and shorter road access for the mineral and timber resources within the Iskut Region of

Northwestern British Columbia. The task of reliably assessing mineral resource potential is predicated on numerous assumptions relating to current exploration data, driven by strong base metal and precious metal pricing. A number of qualifications deserve recognition; for example, if the public sector were to absorb an increased percentage of infrastructure costs, the financial viability of the regional mineral properties would be vastly improved. Also, further exploration activities at major properties may define greater ore reserves or improved ore grades which could substantially change the viability of the prospects by increasing projected revenues, increasing the scale of operations while reducing unit costs of operation, or extending projected mine life. Similarly, through exploration, a number of apparently minor properties, based on present knowledge, could reach a higher potential. In short, there is considerable uncertainty regarding the timing and extent of resource development which cannot be avoided.

It should also be noted that this study recognizes that as a result of resource depletion and changing economic conditions, potential mines, once in production, could inevitably close over the course of the study period (twenty year life). The implications of such closures would have to be dealt with on a case by case basis.

The benefit cost analysis of the Bradfield route, incorporating construction cost and comparative haul cost analysis indicate the Bradfield route is economically viable when compared to the alternative Iskut River/Cassiar Highway routing to Stewart. This conclusion is based in part on assumptions regarding commodity movement and the potential for increased mine development activity within the Iskut Region. Construction costs for the various alternate routes were closely related. The key factor identified is the haul cost savings that would be realized in the cost of out-haul transport of resource commodities to a marine terminal and in-haul volume for mine development and annual operation.

Regardless of a favorable showing of viability found for the Bradfield route when compared to the Iskut/Stewart routing, there remain serious questions with respect to regional pleasure in British Columbia regarding transport and port destination for Canadian mineral and timber commodities, and the resulting service centers either absorbed or displaced in an expanding resource development economy. The need for continued and expanded dialogue by both the State of Alaska and the Province of British Columbia is viewed as essential for developing a common position on this regional transportation issue.