A HISTORY OF THE SKAGWAY RIVER

Rolfe G. Buzzell, Ph.D.

February 2004

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Cover: Skagway, June 22, 1929. Photo KLGO SO49-949, Klondike Gold Rush National Park.

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The Division of Mining, Land and Water (DML&W), of the Alaska Department of Natural Resources, asked this investigator to research the history of the Skagway River (Figure 1) focusing on the question: Was the Skagway River used, or susceptible for use, for trade and commerce at statehood in 1959? If so, the river would be considered navigable for title purposes.

According to the Equal Footing Doctrine, new states enter the union on an equal footing with the other states. Title to all of the beds of navigable rivers and lakes vested in the State of Alaska at statehood. The federal courts define navigability as use, or susceptibility to use, of a river for trade and commercial travel, including commercial rafting, kayaking and canoeing (U.S. District Court 1987; U.S. Appeals Court 1989). The DML&W requested the collection of historic data on three broad topics: 1) historic use of the Skagway River prior to 1959; 2) contemporary use of the river after 1959; and 3) commercial use of the river.

Figure 1. The town of Skagway, June 22, 1929. The Skagway River flows south into Taiya Inlet. Photo KLGO SO49-949, Klondike Gold Rush National Park, Skagway.

II. HISTORIC USE OF THE RIVER DURING THE GOLD RUSH ERA

[**The River**] The Skagway River is 19 miles long as measured from the Warm Pass tributary. The final/lowest 5 miles flow south, southwest into Taiya Inlet. Its three main tributaries flow from White Pass, Warm Pass and East Fork; all originate in glaciers in British Columbia. The river drains an area of approximately 145 square miles. From its confluence with its East Fork to sea level, the average gradient of the lower five miles of the Skagway River is 60 feet per mile. Glaciers in the surrounding mountains and highland terrain significantly influence the discharge of water and sediment. The Skagway River valley is a half a mile wide at Skagway and gets narrower upstream. The valley floor is covered with coarse fluvial gravel. The lower 5 miles of the river is a braided glacial stream which divides occasionally into a multichannel configuration, separated by gravel bars and bounded by terraces. During periods of flooding, the bars and terraces are mostly covered by river water. Above the confluence with East Fork, the river is a single channel. The portion of the river near Skagway is a braided channel characterized by episodic events of erosion and deposition. The channel bottom in this area is higher at some points than the City of Skagway, which is protected by a system of dikes. Any breach of the existing dikes could result in major flooding (Environmental Services Ltd 1981:I-23).

[**Native Use**] At the time of contact with Europeans, the area at the north end of Lynn Canal was inhabited by the Chilkat and Chilkoot Tlingits. According to their oral history, they migrated northward into this area 400-900 years ago from their ancestral home in what is today the area around Prince Rupert, British Columbia (Cooper 1998:9). Only three ice-free corridors--the Chilkat, Chilkoot and White passes--exist between upper Lynn Canal and the interior. The Chilkat and Chilkoot Tlingit acted as intermediaries for trade between the coast and interior, enjoying a monopoly on trade between the coast and the Nahane (Stick Athabaskans) who lived along the headwaters of the upper Yukon River. The Chilkats and Chilkoots aggressively protected their trading monopoly by denying access to the interior through the Chilkat and Chilkoot valleys (Satterfield 1978:3-4). In 1850, a Tlingit raiding party burned the British trading post at Fort Selkirk in the interior (Figure 2) to counter the influence of traders on the Yukon (Bearss 1970:2). The Tlingit called the Skagway River valley "Skagua" meaning "where the same air is never breathed twice" or "home of the north wind" (Orth 1967:883; Cooper 1998:9). The Tlingits occasionally used the Skagway Valley. The first Euro-American settlers found abandoned camp sites on the east side of the lower river, as well as wooden deadfall traps for fox and bear, old axe blazes on trees, and large spruce trees in which knots had been tied many years earlier. In 1887, an unfinished dugout cottonwood canoe was found under a cover of vegetation on the west side of the Skagway River two miles up from the mouth. The canoe was decayed and covered with moss (Moore 1968:15-16).

[**Early Exploration**] Starting in the 1740s, Russian, British, Spanish, French, and American explorers began mapping the Pacific coast and making claims to the land. Russian fur traders established trading posts along the coast and British traders established trading posts in the interior. In a treaty signed at St. Petersburg on February 28, 1825, Great Britain and Russia defined their common boundary on the Pacific Coast of North America from latitude 54° 40' north to the Arctic Ocean. In a provision designed to guarantee access for British citizens across Russian territory to their territory from the Pacific, Section VI of the 1825 treaty established the "right of navigating

freely" on all "rivers and streams" originating in British territory that cross the boundary and flow to the Pacific.[1] That provision applied to the Skagway River and other rivers that had their headwaters in Canada. In 1834, the Hudson's Bay Company took advantage of that treaty provision by establishing a trading post just inside British territory on the Stikine River (U.S. Department of State 1952:186). In the "Treaty Concerning Cessation of Russian Possessions in North America" signed in 1867, Russia sold Alaska to the United States subject to prior and existing rights and treaty provisions. The treaty used language identical to the 1825 treaty to define the eastern boundaries of Alaska (U.S. Department of State 1952:188).

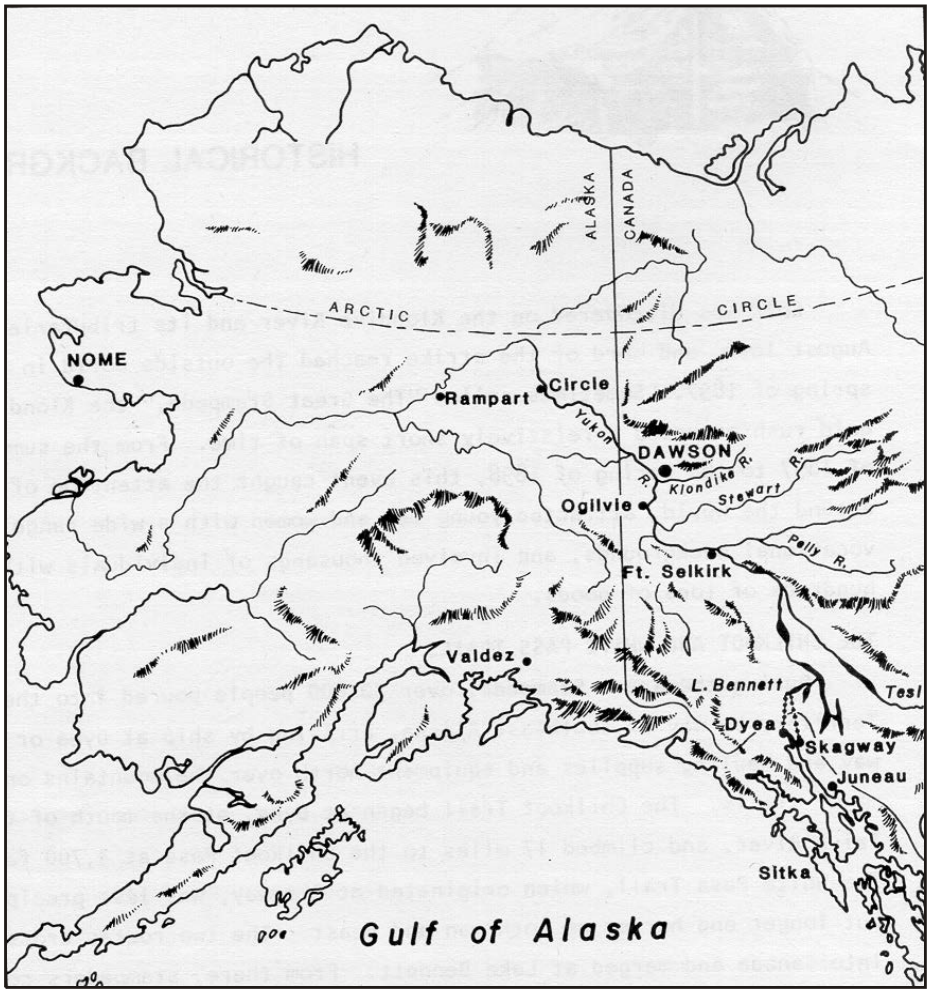

Figure 2. Map of Alaska and the Yukon, and the two routes to Dawson by way of Lake Bennett. Map from Carley, 1981:4.

[**Early Euro-American use of the Chilkoot Trail**] In 1838, an employee of the Russian American Company was the first Euro-American to visit Lynn Canal and the lower part of the Chilkat River (U.S. Department of State 1952:241). George Davidson of the U.S. Coast and Geodetic Survey surveyed the coast of Chilkat Inlet in upper Lynn Canal in 1867 and 1869 (U.S. Department of State 1952:246). Soon after, Euro-Americans trading and prospecting in the upper Yukon learned about the Chilkat and Chilkoot trails between the southeast coastal waters and the headwaters of the Yukon River. George Holt, the first white man to cross Chilkoot Pass, made the

[1] Section VI of the 1825 Treaty states: "It is understood that the subjects of His Britannic Majesty, from whatever quarter they may arrive, whether from the ocean or from the interior of the continent, shall forever enjoy the right of navigating freely, and without any hindrance whatever, all the rivers and streams which, in their course toward the Pacific Ocean, may cross the line of demarcation upon the line of coast described in Article III of the present Convention" (U.S. Department of State 1952:195).

journey to the upper Yukon in 1873 or 1874. The Chilkats turned back three prospectors in 1879 when they tried to go over the Chilkoot Pass. The following year, armed U.S. Navy personnel persuaded the Chilkats to open the trail to prospectors. The discovery of gold in the Juneau area that same year brought more prospectors to southeast Alaska. In 1882, Arthur Krause went over the Chilkoot Pass and made a sketch map of it (Wharton 1972:43). A year later, Lieutenant Frederick Schwatka of the U.S. Army led a military reconnaissance across the Chilkoot Pass and descended the Yukon River to its mouth on a raft (U.S. Department of State 1952:249). Several years later, John J. Healy and Edgar Wilson established a trading post at the head of Taiya estuary, marking the beginning of Dyea (Wharton 1972:43; Satterfield 1978:13). The number of prospectors using the Chilkoot Trail gradually increased after prospectors discovered gold in the late 1880s on the Stewart and Fortymile rivers, upper tributaries of the Yukon River.

[**Discovery of the White Pass**] In 1887, William Ogilvie conducted the first survey of Chilkoot Inlet, Taiya Inlet, and Chilkoot Pass for the Canadian Department of the Interior. Captain William Moore, a prospector and adventurer who accompanied Ogilvie, volunteered to investigate the nearby headwaters of the Skagway River. Skookum Jim Mason, a Stick Athabaskan, had told Moore's son, Billie, the year before about a possible route between the Skagway River and Lake Bennett that was not as high as the trail over the Chilkoot Pass. The two men followed the Skagway River through the mountain pass to Lake Lindeman (Minter 1987:21, 25-26). Ogilvie incorporated the information obtained from Moore in his survey and called it "White Pass" in honor of Thomas White, the Canadian Minister of the Interior. The route over the 2,900-foot high pass was 45 miles long–ten miles longer than the Chilkoot Trail, but 600 feet lower in elevation.

[**Early Settlement at Skagway**] Convinced White Pass would be the gateway to the interior for a gold rush that would surely come in the future, Moore returned to the mouth of the Skagway River in a canoe with another son, Bernard, in October 1887. They paddled "about a quarter of a mile" up a side channel (later called Mill and Pullen Creek) of the Skagway River, according to Bernard Moore, "then put up our tent and camped at the foot of a little bluff on the beach where a small creek comes down and joins the large creek on the right-hand or east side of the bay" (Moore 1968:102). The Moores pitched a tent and caught salmon from Mill Creek (Moore 1968:15). They built a log cabin about 5 miles up the river at the foot of the pass. They also staked a homestead at the mouth of the Skagway River and began building a dock using local timber. They returned in May of 1888 and hauled their "boat up the creek as far as the tide would allow, unloaded her, and made temporary camp." They re-staked their 160 acre homestead, built a new log cabin on Mill Creek, and extended the dock out from the beach. They cut logs from the hillside and made a small raft of logs, which they floated up Mill Creek on the tide to their cabin site. They also caught small trout in the creek for their dinner (Moore 1968:115-116, 120-121). In July, when they could not find their boat, they built "a small raft to cross the mouth of the Skagway River in order to reach the westerly side" and struck out overland for Dyea to borrow a boat (Moore 1968:127). Captain Moore and his son returned to the homestead each summer during the following decade to check on their claim and make improvements (U.S. Department of State 1952:248; Satterfield 1978:13-15; Berton 1969:147-148; Spude 1983:12).

[**First Prospectors over the White Pass Trail**] In February 1895, Bernard Moore assisted seven prospectors from California across the White Pass. He hauled their outfits, weighing seven tons, with a team of horses from the beach landing up the frozen Skagway River to the mouth of the first canyon. He cut a two mile trail over a ridge to avoid the falls at the junction

of the upper and lower canyons (Moore 1968:173). In August 1896, George Carmack, Skookum Jim Mason, and Tagish Charley discovered gold on a tributary of the Yukon River. News of their discovery prompted thousands of stampeders to rush to the head of Lynn Canal to cross the mountain passes on their way to the Klondike. The first wave of stampeders landed in Dyea because the Chilkoot Trail had been publicized by Schwatka and others (Bearss 1970:47). Captain Moore promoted the White Pass Trail as the gateway to the Yukon. The beach next to the Skagway River had a better harbor for ocean-going vessels than Dyea. Moore had a small wharf, was constructing a sawmill, and had blazed a trail to the summit of White Pass. He persuaded several ships in the second wave of stampeders to land at his dock rather than at Dyea. Within weeks the beach next to the Skagway River was overrun by 6,000 stampeders who established a townsite on Moore's homestead. The White Pass and Chilkoot trails quickly became clogged with stampeders. The White Pass Trail was narrow and fraught with hazards, and soon strewn with the maimed and starved bodies of 3,000 dead horses. As travel on the Dead Horse Trail, as the White Pass Trail was dubbed, bogged down, Skagway grew from a tent camp to a city of 10,000 people (Figure 3), and descended

Figure 3. Skagway during the summer of 1900. Mill Creek is in the foreground. Captain Moore's sawmill and house are next to the creek. Case and Draper photo, KLGO SO97-2006, Klondike Gold Rush National Park, Skagway.

into lawless chaos. A visitor from the Northwest Mounted Police referred to the town as "little better than a hell on earth" (Major Samuel Steele, quoted in Bearss 1970:114).

[**The River and the Trail**] The gold rushers attempted to bypass the Skagway River as they traveled the White Pass Trail, except in winter when the river was frozen. While Natives and stampeders poled canoes and shallow draft boats six miles up the Taiya River to the Chilkoot Trail, the Skagway River was too swift and its current too forceful for poling supplies up the river. The river's dominating character within the narrow valley determined where the trail was located. Stampeders characterized the river as a "shallow stream" that was "very swift" (Haskell 1898:463). One traveler noted that the river was often "so swift as anywhere to bear a man off his feet" (Abney 1900:58). Captain Moore's rough trail up the valley leading to the pass crossed the Skagway River many times, often on log bridges suitable for one animal at a time. The White Pass Trail (Figure 4) began on the east side of the Skagway River. After 1.5 miles, it crossed the river and ran parallel along the west bank for 2.5 miles to a landmark called the "Boulder." After that it climbed gradually, then more steeply, to Porcupine Hill (Mile 5.3). In the first nine miles, the trail crossed the river four times (Carley 1981:207-208). Wagon trains that forded the lower part of the river in August 1897 had many accidents due to high water. Pack horses had to ford the river early in the morning before the sun-melted glacial water made the river too dangerous to cross. Foot passengers sometimes waded riffles on the east side and crossed on fallen logs (Jensen 1967:505, 507). In fall 1897, the Skaguay and Lake Bennett Tramway Company began building a road up the Skagway River valley. Its operations included a ferry to carry passengers and freight across the Skagway River (*The Skagway News*, November 12, 1897:2).[2] The company built a log bridge over the river two miles from town that could carry one horse at a time, eliminating the need for the ferry. The wagons had to be unloaded, the horses led carefully over, the goods transferred across the bridge, then the wagons drawn over and reloaded before they could continue up the trail. The foot bridge did not withstand spring floods, which spread the river 300 feet from bank to bank (Haskell 1898:463; La Roche 1897; Jensen 1967:505, 507). From the log bridge, the trail continued for three more miles before it narrowed and continued up the steep valley, crossing and re-crossing the river. Further upstream, the river was murky and swift, but could be forded in the area where White Pass City grew up in 1898 (Bearss 1970:83-84). The White Pass Trail was popular with packers, while most stampeders who could not afford to hire packers hiked the Chilkoot Trail.

[**The Brackett Wagon Road**] In the fall of 1897, George Brackett, an ex-mayor of Minneapolis and a former engineer on the Northern Pacific Railroad, helped organize the Skagway and Yukon Transportation and Improvement Company to build a wagon road over the White Pass route. He also hoped to later build a rail line. He raised $300,000 and began construction of the wagon road in November 1897. Brackett took over the route started by the Skaguay and Lake Bennett Tramway Company. He completed 8 miles of road before running out of funds in December 1897 (Bearss 1970:211). Meanwhile, packers hauled supplies on horse-drawn sleds as far up the frozen Skagway River as they could, bypassing the wagon road and its tolls, in order to cache the supplies for the push to the top that would come in the spring (Bearss 1970:216-217; Mintar

[2] According to the article in the newspaper, the Skaguay and Lake Bennett Tramway Company solicited proposals to furnish and deliver "square and flat timbers to be used in the construction of a bridge across the Skagway River, near the present ferry."

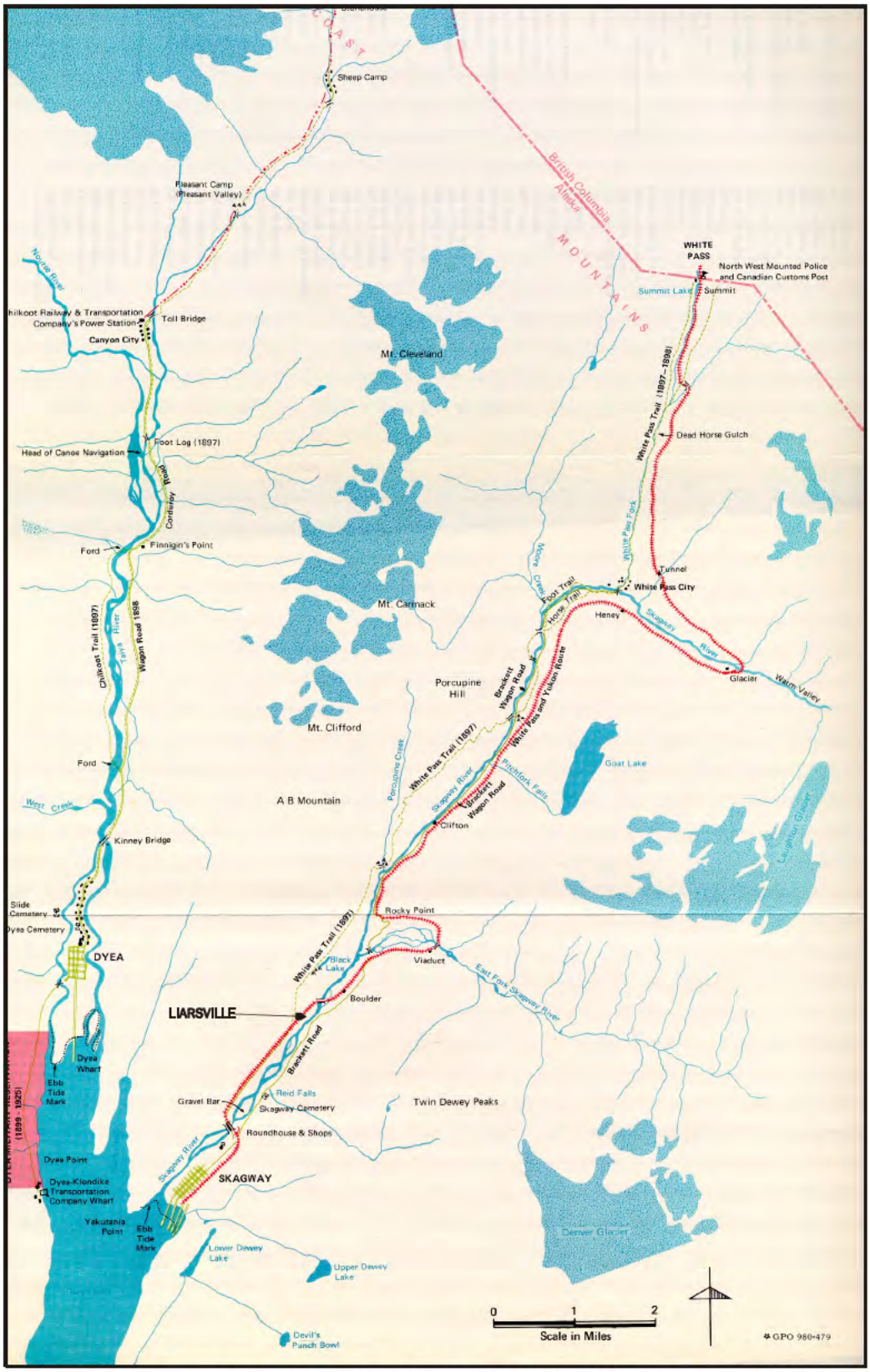

Figure 4. Map of the White Pass Trail, the Brackett Wagon Road and the White Pass and Yukon Railway. Reprinted from Bearss 1970:305, Plate II.

1987:122). In early March 1898, the ice started to melt and horse teams broke through the river ice in several places (Bearss 1970:211). Brackett completed a bridge over the East Fork in mid-April 1898, and began collecting tolls for foot travelers, horses, and wagons (Clifford 1983:17). When the packers refused to pay, Brackett persuaded the U.S. Army to send troops to enforce collection of the tolls. Brackett made no further progress completing the wagon road to the summit. In April 1898, a group of investors organized the White Pass and Yukon Railway (WP&YR) and began constructing a rail line. The Brackett Wagon Road was heavily traveled in the summer and fall of 1898 by packers as well as railroad construction crews (Bearss 1970:238). Wagon road traffic and toll receipts declined as the rail line advanced toward the summit and began competing with packers. When winter came, packers again bypassed the start of the road and hauled their sleds up the frozen river (Figure 5) to White Pass City (Minter 1987:270). A "toll war" broke out when packers refused to pay tolls on the last four miles of trail above White Pass City that the packers had built (Bearss 1970:232). Brackett finally sold the right-of-way for the wagon road to the railroad for $50,000. The WP&YR completed the line to Lake Bennett on July 6, 1899, and to Whitehorse in the summer

Figure 5. Packers sledding freight up the frozen Skagway River to avoid paying tolls on the Brackett Wagon Road, shown in the background. L.E. Robertson photo, Yukon Archives photo #1992, Whitehorse.

of 1900. By then the gold rush was over. The WP&YR, however, insured the permanency of Skagway as the gateway to the mines in the interior. Most of the merchants at Dyea moved to Skagway and the Chilkoot Trail was abandoned (Bearss 1970:273-274; Bearss and White 1976:57).

[**WP&YR makes changes in the Skagway River**] Construction and maintenance of the WP&YR impacted the Skagway River. Brackett's initial refusal to sell the road forced the WP&YR to build two heavy duty trestle bridges across the lower Skagway River to avoid the wagon road. The first bridge, about 1.5 miles from the mouth, was 550 feet long. The second bridge, near East Fork, was 1,600 feet long. During construction of the line, the WP&YR did considerable blasting in the canyon, dumping tons of debris into the river and occasionally changing its course (Minter 1987:191, 204-205, 222). The WP&YR mined gravel from the bed of the Skagway River in 1899 and used the gravel as ballast for the rail bed at the lower end of the line (Graves 1970:61). After the railroad was completed, floods on the Skagway River played havoc with the rail line. In October 1901, a disastrous flood severely damaged three railroad bridges (Figure 6), washed away the rail

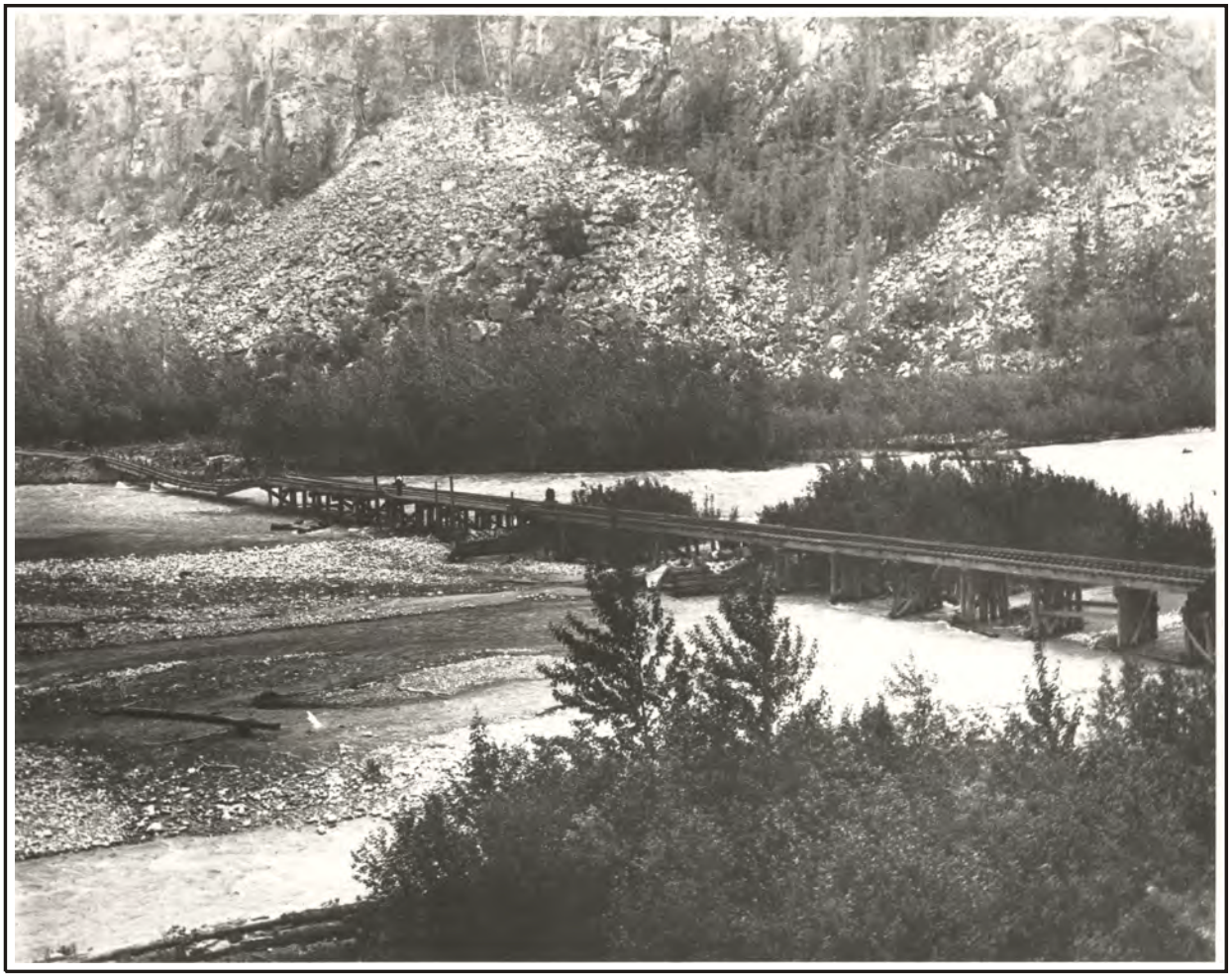

Figure 6. The damaged White Pass and Yukon Railway bridge at Mile 4 after the 1901 Skagway River flood. H.C. Barley Collection, Yukon Archives #5226, Whitehorse.

bed in places, and disrupted service between Skagway and Whitehorse for a week (*The Daily Alaskan*, October 13, 1901:1). The WP&YR quickly repaired the bridge near its railroad yards at the northern edge of Skagway, but had to use a "river boat" for several days to ferry passengers and freight across the Skagway River until repairs on the second bridge were completed (*The Daily Alaskan*, October 15, 1901:1 and October 17, 1901:1; Taylor 1901:204).

III. ATTEMPTS TO CONTROL FLOODS ON THE SKAGWAY RIVER

[**Skagway Floods, 1901-1967**] After the gold rush, many of Skagway's businesses closed and the population fell to 600 by 1910 (Bearss 1970:277). While the WP&YR made Skagway the "sole port of trans-shipment" from Lynn Canal to the Yukon, the town had no local industry other than tourism (Alaskan Boundary Tribunal 1903-1904:62-63). The city was built on a terraced flood plain. The Skagway River was prone to periodic flooding that could cause great damage. The basic cause of high water on the river is heavy precipitation over the basin. Flooding intensity is increased by heavy snowfall at relatively cool temperatures in the mountains, followed by continual precipitation and warming of the air mass resulting in melting of fallen snow, adding to the rainwater runoff (Lamke 1979). High water and floods have occurred during the months of June through November, and major floods usually occurred during the months of September, October and November (U.S. Army Corps of Engineers 1951:47). The largest floods occurred in October 1901, September 1919, September 1927, September 1936, October 1943, October 1944, October 1949, and June 1967. Beginning in 1901, the WP&YR, the City of Skagway, federal agencies, and private individuals built dikes to channel the river and protect the town and private property from flood waters.

[**Initial WP&YR & City efforts to control the river**] The same disastrous flood that took out the railroad bridges in October 1901 also inundated Skagway and induced the first efforts to channel the river. During the flood, residents unsuccessfully attempted to build emergency dikes. Skagway's mayor called for a united effort to construct dams and jetties that would control the current of the river and prevent damage from future floods (*The Daily Alaskan*, October 15, 1901:1, 4). After the flood waters receded, the WP&YR built jetties on both sides of the river upstream of its shops and extending down the river to the lower railroad bridge. The work included a semi-circular jetty on the west side of the river to confine the river. The railroad also built a 120-foot single span truss bridge to replace the multi-pile bridge that tended to catch floating debris when the river was swollen. Skagway's city engineer predicted that WP&YR efforts to build a dikes to protect its rail yard would change the course of the river, causing the river to cut a new channel downstream between Eighteenth to Sixteenth avenues "and plow a watery pathway through the city." The engineer recommended building a breakwater on the east side of the river from the railroad bridge to the site of the Sixteenth Avenue wagon bridge that had been destroyed by the flood (*The Daily Alaskan*, October 17, 1901:1). The City Council authorized $1,000 to re-channel the river (*The Daily Alaskan*, October 18, 1901:1 and October 29, 1901;1). In the following years, the city constructed a series of dikes or wing dams to redirect the main channel to the west. In 1903, the City rebuilt the 16th Avenue and 22nd Avenue bridges that had been destroyed in the 1901 flood (*The Daily Alaska*, April 30, 1903:1; *The Daily Alaska*, August 25, 1903:1) and spent $200 repairing the new dikes to prevent the channel from getting out of its course (*The Daily Alaska*, May 2, 1903:1 and May 19, 1903:4; *The Daily Alaskan*, September 15, 1903,:1).

[**ARC becomes involved with flood control**] The Alaska Road Commission (ARC) became involved in flood control efforts in the 1910s when it took over responsibility for the 22nd Avenue Bridge and the mile-long road extending north from Skagway. The ARC did a location survey in 1914 for a 13.5 mile road from Skagway to the United States-Canadian Border, the Alaska section of a proposed highway between Skagway and Whitehorse (ARC 1914:8). In 1915, the ARC built

a 50-foot bridge spanning the Skagway River at 22nd Avenue (ARC 1916:8). High water damaged the bridge two years later, prompting the ARC to do additional work to protect the bridge. The ARC also constructed 2.5 miles of road extending north from the bridge up the Skagway River Valley (ARC 1917:18). After the Canadian Government dropped plans to build its portion of the road to Whitehorse, the ARC continued to maintain the existing 2.5 mile road for local use. The ARC also expended funds to protect the bridge (ARC 1918:3844) and strengthen the dike further downstream protecting the city. A flood in September 1918 damaged the 22nd Avenue wagon bridge, cut a new channel to the east side of the river bottom below the bridge, and nearly destroyed the earthen works that kept the river confined to its channel (*The Daily Alaska*, September 18, 1918:2 and September 27, 1918:2). The ARC repaired the bridge in early 1919. On September 13, 1919, a larger flood cut a new channel about 7 miles up from the mouth of the Skagway River. High water damaged the lower railroad bridge, swept away the upper railroad bridge, wiped out whole sections of track, and carried away both spans of the 22nd Avenue wagon bridge (*The Daily Alaskan*, September 13, 1919:1 and September 16, 1919:4; City of Skagway 1919). The City of Skagway repaired the wagon bridge in early 1919, splitting the cost with the ARC (Figure 7). In 1922, the ARC constructed a 175 foot

Figure 7. The railroad bridge (center) and the 22nd Avenue wagon bridge (bottom) crossing the Skagway River just below the White Pass and Yukon Railway yards, June 29, 1929. U.S. Navy aerial survey photo, U.S. Forest Service photo #311 FSZ38C.

span cable suspension bridge over the Skagway River for pedestrians and pack horses as part of the construction of a three mile trail from Skagway across the river to Smugglers Cove. The bridge and trail were jointly funded by the ARC, the Territorial Board of Road Commissioners (TBRC), and the Alpine Club of Skagway (ARC 1922:24; TBRC 1923:17). A shift in the main channel of the river three years later damaged the east abutment of the suspension bridge. The ARC and the Territory split the costs of construction and later, reinforced a rock filled log crib to act as a sheer to prevent further encroachment of the river (ARC 1925:66; TBRC 1927:14-15; ARC 1927:35). By 1929, this trail, known as Route 44A, stretched 6 miles to Dyea (ARC 1929:50).

[**The Aviation Field**] In 1929, the City of Skagway obtained land and began clearing an airfield along the east bank of the Skagway River at the north end of town. The following year, the ARC leveled and sowed the field to grass, and constructed a temporary brush dike along the west side to prevent encroachment by the Skagway River (Figure 8). The Territory paid for construction of the air field, which was 310 feet wide and 1,960 feet long (ARC 1930:47; TBRC 1931:18). High water from the river damaged the protective dike between the river and airfield in July 1930. The ARC made emergency repairs to the dike (Christianson 1930; Walkley 1930). Flooding in June 1931 damaged the pier of the suspension bridge and fifty feet of protective works along the aviation field caved into the river. With funds supplied by the Territory, the ARC constructed another dike along the west side of the air field and repaired the rock-filled crib protecting the south abutment of the suspension bridge (ARC 1931:36; Kuhre 1931; Hesse 1933:8-9).

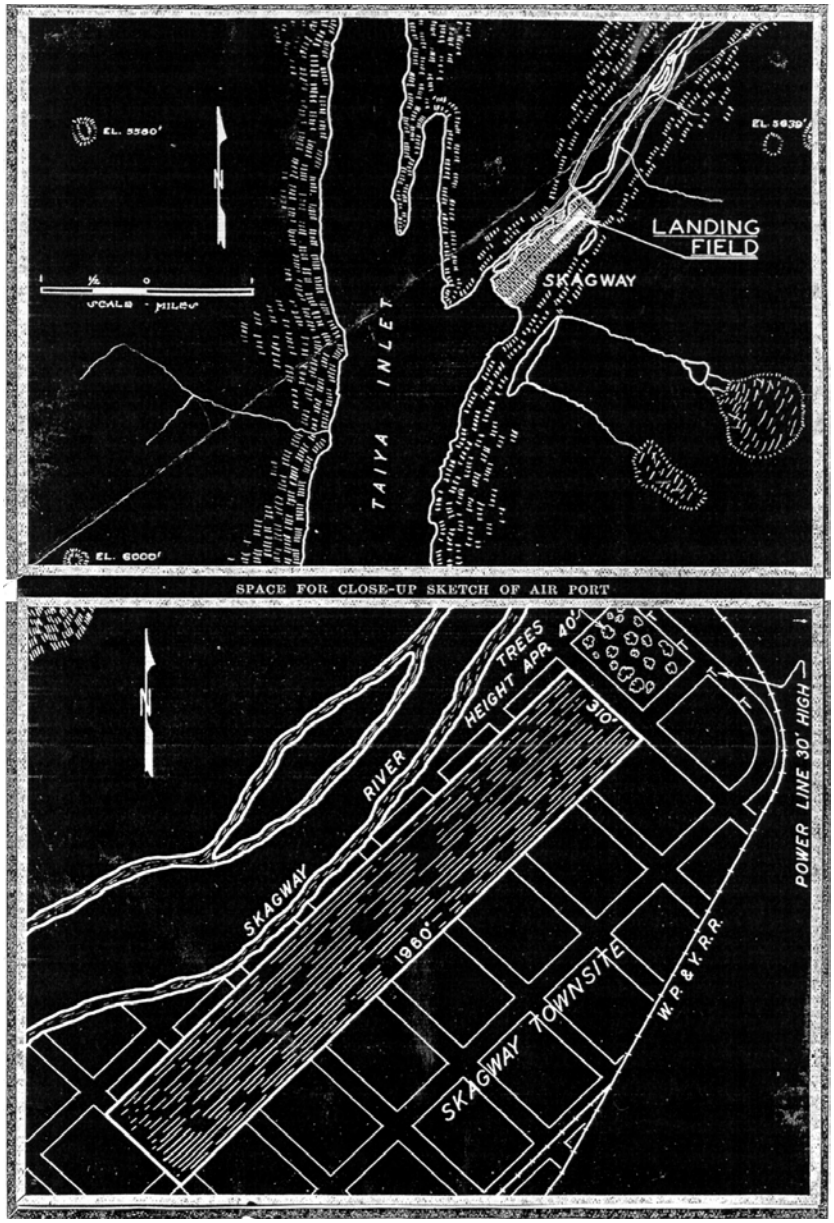

Figure 8. Plats showing the Skagway airfield just below the 22nd Avenue wagon bridge, December 1932. ARC 1932.

[**The Floods of 1937-1944**] Frustrated by periodic flood damage to its rail bridges on the lower river, the WP&YR decided to eliminate the two bridges across the lower portion of the Skagway River. In March 1937, the railroad began laying 2.5 miles of track on the east side of the river between its shops and Boulder (*Skagway Cheechako*, March 13, 1937:1). Three months later, the river flooded its banks and damaged the airfield. The ARC placed 230 linear feet of rock jetties and wire mattresses in the places where the current was threatening the bank (Watson, 1937; Johnson 1937:78; Hesse 1939:15). In August 1937, the U.S. Army Corps of Engineers recommended the discharge of the Skagway River be controlled and diverted by a five foot high rock and brush dike 6,700 feet in length terminating in an 1,800 feet long rock-mound breakwater in the harbor. The cost was estimated at $104,000. Congress funded the project in the River and Harbor Act of June 10, 1938. The Corps of Engineers completed Skagway's first permanent river dikes and breakwater in 1940 (U.S. Army Corps of Engineers 1951:29). During World War II, the U.S. Army enlarged the Skagway airfield (Bob Dill, personal communication, April 29, 2003). Severe floods in October 1943 and October 1944 took out the foot bridge, caused extensive damage to the dike along the river, and washed out a 400 foot section of the breakwater at the mouth of the Skagway River. The Army constructed a rock and earth dike to connect the downstream Army Corps dike (Figure 9) and

Figure 9. Skagway, April 9, 1945. Note the permanent dike along the river and the near-by military buildings. U.S. Army photo, 93.01.091, Skagway Museum and Archives.

the upstream railroad crib dike in 1943 and 1944. The U.S. Army Corps of Engineers rehabilitated the 1940 dike in May 1945 (Debelius 1974:6, 9). Hydrologists consider the 1943 event to be the flood of record–the highest flood waters on the river, commonly referred to as a 100 year flood.

[Postwar Dike Improvements] In 1946, Congress adopted Skagway's dike and breakwater as flood control structures and authorized a flood control project for the Skagway River. This flood control project was never funded, however. Federal funds in the amount of $55,966 were expended in 1951 on a joint civil-military effort to strengthen dikes, widen the channel and raise the highway bridge. In 1950, a new, longer airfield was constructed to the south of the original airfield. The new field was built adjacent to the dike using river gravel to fill the adjacent land to the height of the dike (Debilius 1974:6-7, 9). The U.S. Geological Survey installed a gauge to measure the volume of flowing water at the mouth of the Skagway River in 1963. The gauge was moved in 1976 to the 23rd Avenue bridge, because the original site was influenced by tides. The gauge was removed in 1986.

[**Flooding after 1944**] Additional Skagway River floods occurred in October 1949, June 1967, 1982, 1989, September 1990, and September 1994, but none was as large as the 1943 flood. Receding glaciers in the highlands may be responsible for reduced meltwater in the Skagway River system in the second half of the twentieth century. A major flood of the Skagway River, the biggest in recent years, occurred in September 1967. The river almost overflowed portions of the dike along the river and rose to a foot below the airport runway. Federal funds in the amount of $26,000 were spent on dike repairs, while the State paid a contractor working on the highway $9,285 to repair the dike along the airport (Andrew Bierely, personal communication, April 29, 2003; Debilius 1974:7, 9, 10). After the 1967 flood, a flood insurance study was conducted that delineated flood zones and the City of Skagway adopted flood plain land use regulations. The city codified these regulations in SCC Title 15.12 and implemented them through the building review process. City Council Resolution 88-22R, passed on August 4, 1988, made flood plain control and management the priority management concerns of the lower Skagway River (City of Skagway 1991:X-1). In 1994, high water made it necessary to evacuate people on the west side of the river (Stan Selmer, personal communication, May 1, 2003). Except for emergency repair work, the 1940 dikes had not been improved until the late 1990s when the airport was moved onto the flood plain adjacent to the city, the only undeveloped area available that would allow an increase in the size of the runway. A new dike and breakwater were constructed to separate the airport from the river.

IV. RECREATIONAL AND COMMERCIAL FLOAT ACTIVITY

[**Early recreational float trips**] The only known navigation of the Skagway River between 1902 and the early 1980s has been recreational. In the 1940s, about a dozen kids built "box boats," crude vessels constructed of scrap lumber and used them to float in back eddies of the Skagway River near 9th Avenue (Carl Mulvihill, personal communication, April 29, 2003). Other kids swam in the summer in back eddies, behind the dikes. In the 1980s and early 1990s, local kids used the old foot bridge, built in the 1970s to replace the 1940s foot bridge, for a form of surfing. The kids used ropes attached to the bridge to hold them in place as they balanced on surf boards in the river (Stan Selmer, personal communication, May 1, 2003). Floating the river in rafts and inner tubes began in the 1970s. Former Skagway resident Jay Cable recalled seeing about 20 people floating the Skagway River between 1978 and 1991. Most were high school students using inner tubes or small rafts. They put in at Liarsville, about 3.5 miles upstream from the mouth of the river, and floated downstream to the 23rd Avenue Bridge. Few, if any, wore personal floatation vests, but there were no drownings during those years (Jay Cable, personal communication, April 30, 2003). In 1983-1984, Skagway residents Duff and Karla Ray started a commercial raft business called "Chilkoot Trail Rafters." The outfit offered tourists a day trip combining a hike on part of the Chilkoot Trail and rafting down the Taiya River. The company did not offer commercial trips on the Skagway River, but did five to six trips down the Skagway River each year for training and fun. The Duffs used a 20 foot raft with a big rowing station in the middle. The raft usually carried 8-10 people. After they closed the business, the Rays floated the lower Skagway River two or three times in the 1980s, and a couple of times in the 1990s (Karla Ray, personal communication, May 1, 2003).

[**Commercial Rafting**] Don Parkinson and Chris Turner started the first commercial raft business offering float trips on the Skagway River in 1995. The business was called Skagway Float Tours. Parkinson put the rafts in the river at the north end of town at Liarsville and took them out at the footbridge near the mouth. The company charged $35 per person for the 45-minute trip down the Skagway River (Figure 10). The company offered commercial rafting tours on the Skagway River during the 1995 season and part of 1996. It employed Jeremy Andrews and T.J. Tritschett as raft guides (Firmin 1995:9; Cristopher Siegel, personal communication, May 1, 2003). Parkinson sold

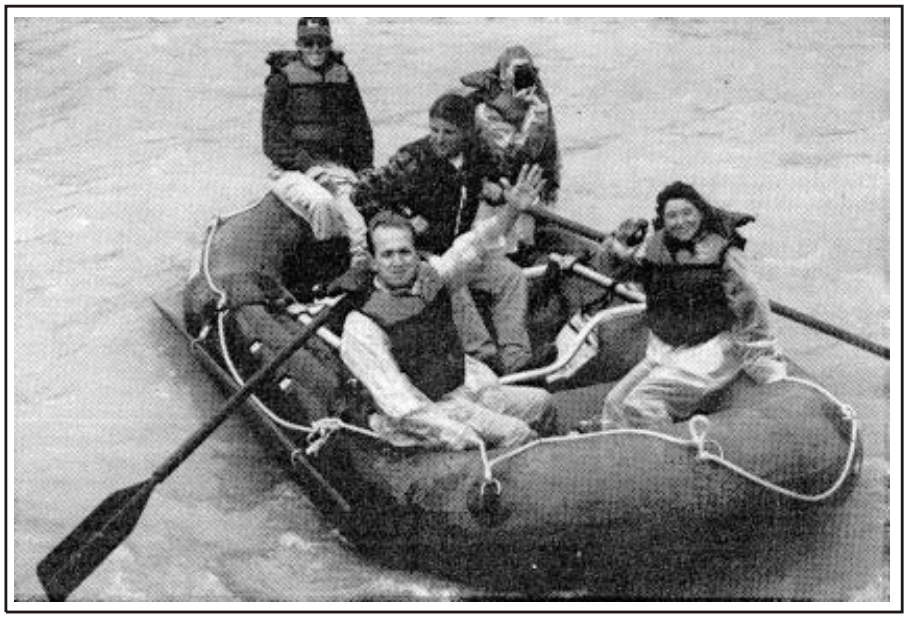

Figure 10. Passengers on a Skagway Float Tours raft trip waving after passing under the Skagway River bridge. This photo appeared in *The Skagway News*, August 25, 1995.

sold Skagway Float Tours to Cristopher Siegel in 1997. Siegel offered commercial raft trips on the lower Skagway River during 1997 and 1998. He used two 14-foot rafts and a 12-foot raft. The 14-foot rafts were capable of carrying up to six people, or 1,250-2,000 pounds. He put in at Liarsville and took out at the mouth of the river. In 1997, Skagway Float Tours carried 216 retail passengers and 125 crew passengers. During 1998, the company carried 406 paying customers (Figure 11). Siegel also did a number of trips on the river for training and recreation. He suspended commercial raft trips on the Skagway River in 1999 during the airport reconstruction project. Heavy equipment in the flood plain interfered with floating the river. The project included a new dike around the airport that extended to the harbor and destroyed their former takeout point at the mouth of the Skagway River. Skagway Float Tours focused their commercial rafting operation on float tours on the Taiya River. Siegel approached the City of Skagway about creating another takeout site at the mouth of the Skagway River. City manager Robert Ward told Siegel the city was sympathetic to his request for re-establishing a takeout site suitable for commercial float tours, but the city wanted to wait until a dispute with the State over who owned the river bed was resolved. Siegel resumed commercial float trips on the Skagway River in 2002. He made about 30 more float trips, but only two or three of those trips carried paying customers. The other trips were for crew training or recreation (Cristopher Siegel, personal communication, April 30 and May 1, 2003).

Figure 11. Seven people in a Skagway Float Tours raft on the Skagway River, August 19, 1997. Photo by Frank Leonetti, Seattle, Washington.

[**Recreational rafting, canoeing and kayaking**] The rescue coordinator for the Skagway Fire Department estimates that 30-50 people float the Skagway River every year. Most of them put in at Liarsville (Wayne Greenstreet, personal communication, April 29, 2003). Skagway's mayor, Tim Bourcy, floated the river once, putting in at Liarsville (Tim Bourcy, personal communication, May 1, 2003). While most of those who float the river do so in rafts, a few use canoes. Skagway's

Tourism Director, Buckwheat Donohue, floated the lower river twice in a canoe during 1990 or 1991. In the early 1990s, Larry Gullnasud, Donohue's friend and canoeing partner, unsuccessfully tried to navigate the lower Skagway River in a canoe (Buckwheat Donohue, personal communication, May 1, 2003). Ray Duff made several successful canoe trips down the lower Skagway in the late 1980s, but the last time he tried floating the river, he wrecked his canoe (Karla Ray, personal communication, May 1, 2003). Others floated the river using kayaks. Bruce Weber and Skip Elliot floated the Skagway River in an inflatable kayak in the early 1990s. They put in at Liarsville and took out at the old footbridge near the mouth of the river (Bruce Weber, personal communication, April 30, 2003). One resident recalled seeing two to three kayaks going down the river each week during the summer of 2002 when the water level was high (Andrew Bierely, personal communication, April 29, 2003). Jim Wessel kayaked the Skagway River four to six times in the last two years, often with Seth Plunkett. Wessel used an eight foot long Dager white water kayak. He put in at Liarsville and took out at the footbridge at the mouth of the river (Jim Wessel, personal communication, April 30, 2003). Cristopher Siegel floated the Skagway River in an inflatable kayak for the first time in 2001. He made about 15 kayak trips on the river in 2002 (Cristopher Siegel, personal communication, May 1, 2003). Local residents and seasonal employees in the tourism industry occasionally use inner tubes to float the Skagway River.

[**Rafts used for Rescue Operations**] On August 11,1995, two men and a woman tied three inner tubes together and floated down the river. None of them were wearing life jackets (personal floatation devices). The inner tubes struck the pier of the 23rd Avenue Bridge, spilling all three into the water. Two made it to shore, but the third person, Rich W. Boussom of Sitka, drowned and his body was never recovered. About 60 local residents, including Skagway Fire Department employees and volunteers, participated in the rescue effort and the search for the missing man. They used boats to search the bay and mouth of the river and a raft (Figure12) to search the lower river (Statler 1995:1, 8; Carl Mulvihill, personal communication, April 29, 2003; Wayne Greenstreet, personal communication, April 29, 2003; Andrew Bierely, personal communication, April

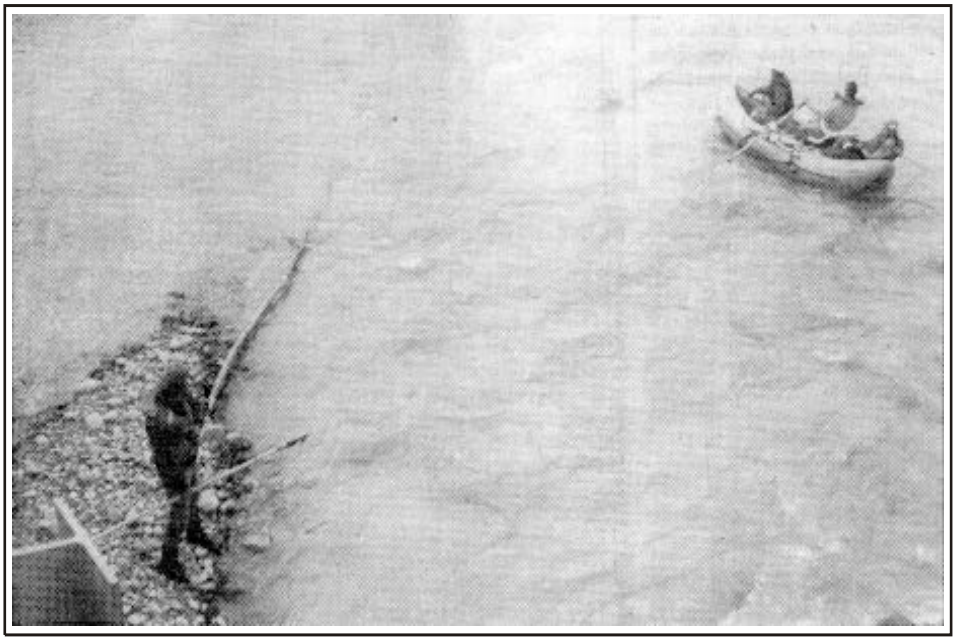

Figure 12. Fire Department rescue coordinator Wayne Greenstreet (left) pokes at debris under the Skagway Bridge, while volunteers in a raft (upper right) continue the search for a drowning victim in the river. This photo appeared in *The Skagway News* on August 25, 1995, two weeks after the tragic accident.

29, 2003). There have been other accidents involving people floating the Skagway River, but no other fatalities. One canoe that capsized in the river ended up bent around one of the pilings of the highway bridge (Andrew Bierely, personal communication, April 29, 2003). In the years after the drowning, employees of the Skagway Fire Department have conducted rescue training on the river. During 2002, they used a 15-foot inflatable raft on the river as part of their training exercises (Wayne Greenstreet, personal communication, April 29, 2003).

[**Kayaking the upper river**] Few people attempt to float the Skagway River above its confluence with the East Fork. The upper part has steep gradient and requires frequent portages. Ken Madsen wrote about a kayak trip on the upper Skagway River in the early 1990s in two books. Madsen has written extensively about kayaking rivers in the Yukon, British Columbia and southeast Alaska. He and Jody Schick attempted to run 12 miles of the Skagway River in one-man kayaks starting at the railroad bridge at Glacier, 1.5 miles above the river's confluence with the White Pass Fork. Madsen described the Skagway above the confluence with the East Fork as "a serious river" with Class V-VI whitewater. He reported many unrunnable rapids and waterfalls, including a stretch where a huge avalanche forced the river underground. His kayaking partner on the trip described the upper Skagway River as having "more river hazards per kilometer than any other river he has paddled" (Madsen 1996a:50-51; Madsen 1996b).

[**Local opinions about floating the lower river**] Although both recreational and commercial floaters have used the lower Skagway River with increasing frequency in recent years, local residents have divergent opinions on whether the river is safe for floating. Some residents did not recall seeing anyone rafting or kayaking the river, and did not consider it safe for such activities (Barbara Kalan, personal communication, April 30, 2003), particularly for canoes (Buckwheat Donohue, personal communication, May 1, 2003). Even those who float the river agree that it is fast, shallow, very cold, contains large angular boulders, is subject to variations in water depth, and can be dangerous (Cristopher Siegel, personal communication, May 1, 2003; Tim Bourcy, personal communication, May 1, 2003; Stan Selmer, personal communication, May 1, 2003). The lower part is considered less difficult to float than the upper part, but contains jagged metal obstacles that can be hazardous to floaters. Over the years, the WP&YR and other parties dumped locomotives, flat cars, automobiles, boilers, scrapmetal and other objects into the river as part of dikes protecting the surrounding area from flooding (Cristopher Siegel, personal communication, May 1, 2003; Stan Selmer, personal communication, May 1, 2003). Dave Lama and other local rafters and kayakers have collected jagged metal pieces from the river during low water to help clean up the river and make it safer for floating (Jim Wessel, personal communication, April 30, 2003; Cristopher Siegel, personal communication, May 1, 2003). Skagway mayor Tim Bourcy, who floated the river once, characterized the river as "life threatening." He acknowledged, however, that improvements in the design and manufacture of whitewater canoes and kayaks, and recent cleanup of metal objects in the river channel, make the river paddleable from Liarsville to the mouth (Tim Bourcy, personal communication, May 1, 2003). Madsen described the lower four miles of the river as flowing "swiftly through the forest," but did not rate the class of whitewater (Madsen 1996a:50-51). Jim Wessel, who has floated the river several times starting below the river's confluence with East Fork, rated that lower portion (Figure 13) as Class II rapids (Jim Wessel, personal communication, April 30, 2003), which is relatively tame by river rafting standards.

Figure 13. Three people in a Skagway Float Tours raft descending the lower Skagway River during the summer of 1999. Photo by Mike Coller, Skagway.

V. OTHER ACTIVITIES ON THE SKAGWAY RIVER

[**Fishing the river**] During the Gold Rush years, some of the town's residents fished in the river (Figure 14). One early resident, who relied on fish from the river for subsistence was a Native called Indian Chilkoot Charley. He lived in a shack by the Skagway River (Anzer 1959:98). In the past, the river has supported salmon, dolly varden and hooligan. The Alaska Department of Fish and Game (ADF&G) anadromous stream number designated for the Skagway River is 115-34-10300. From time to time, the ADF&G stocked humpback (pink) salmon in the river (Barbara Kalan, personal communication, April 29, 2003). The river has a small fall run of chum (dog) and coho (silver) salmon below the East Fork. The Skagway River is considered to have minimal fishing potential, as fish are few in number and the stream habitat and production capability have been substantially degraded by human activity over the years (City of Skagway 1991:III-17). Alterations of the river for flood control by the WP&YR, the City of Skagway, the ARC, and the U.S. Army, and construction of the new airport in the late 1990s destroyed much of the fish habitat.

Figure 14. Skagway residents fishing on the Skagway River during the Gold Rush years. Yukon Archives photo #2663, Whitehorse.

[**Plans for a hydroelectric plant**] For a brief time, the local power company considered damming the river to build a hydroelectric plant. In the 1910s and 1920s, Charlie Nye, the owner of Home Power Company, did preliminary work on a hydroelectric dam across the Skagway River above the East Fork. Nye's crews repaired part of the Brackett Wagon Road to get equipment to the site. They also built a cabin and strung two cables across the river for an aerial tram powered by a steam winch. Nye dropped the project because the town of Skagway did not have enough residents and industry to make a hydroelectric project commercially viable (Karl Gurcke, personal communication, April 24, 2003; Bruce Weber, personal communication, April 30, 2003; Stan Selmer, personal communication, May 1, 2003).

[Gravel extraction and other activities in the river] The creation of dikes by the WP&YR, the City, and other agencies and parties, to protect Skagway changed the river and led to other activities that impacted the river. The WP&YR, the ARC and private contractors extracted gravel from the river bed for use in the construction of road and rail beds and the construction of buildings. In the 1960s and 1970s (Figure 15), the City of Skagway filled in land below the ordinary high water mark behind some of the 1940s dikes and created artificial lots. The city sold 26 lots to private parties. The Skagway airport was moved to the south and expanded. In the late 1990s, the airport runway and taxiway were extended further west into the old riverbed and protected with a new dike and breakwater. The mining of gravel in the riverbed also continued. During the 1990 flood, the river broke through the buffer zone on one of the extraction areas, flooding it and reestablishing a

Figure 15. The City of Skagway and the Skagway River, 1970. The view is looking north. Photo KLGO D-1970 SO-1 1737, Klondike Gold Rush National Park, Skagway.

channel on the southeast side of the material site. After that, mining in the floodplain has been regulated to improve the river's hydraulic capacity and to minimize the probability of channel diversion through mining sites (City of Skagway 1991:71-72).

VI. THE SKAGWAY RIVER IS A NAVIGABLE WATERBODY

[**Defining Navigability**] For the purpose of deciding who has title to submerged lands, determining navigability is a question of fact, not a simple legal formula. The physical characteristics of and uses of a waterbody, referred to as navigability "criteria," are based on legal principles that have been established by federal courts. These criteria, which must be applied to rivers, lakes and streams throughout the state, must take into account Alaska's geography, economy, customary modes of water-based transportation and the particular physical characteristics of the waterbody under consideration. Navigability is defined as use of the river for trade and commercial travel, including commercial rafting, kayak and canoe trips. Criteria established by the courts include: 1) the waterbody must be useable as a highway for the transportation of people or goods; 2) waters that are capable of being used for transporting persons and goods, although not actually used, are navigable; 3) transportation must be conducted in the customary modes of trade and travel on water; 4) waters must be navigable in their natural and ordinary condition; and 5) to be considered navigable for title purposes, the waterbody must have been navigable in 1959 when Alaska became a state.

[**Court Case Sets Precedent**] The Gulkana River was the federal court case that set the precedent for determining navigability in Alaskan waters (Alaska v. United States, 662 F.Supp. 455, District of Alaska 1987). In that case, the U.S. District Court stated that to demonstrate navigability, it is only necessary to show that the waterbody is physically capable of "the most basic form of commercial use: the transportation of people or goods." Since the Gulkana River can be used for the transportation of people or goods, the court found the Gulkana River navigable. On appeal, the federal court of appeals affirmed the district court's finding of navigability. It found that modern use of the Gulkana River for guided hunting, fishing and sightseeing trips is a commercial use. Since the physical characteristics of the river have not changed since 1959, the Court of Appeals concluded that modern use of the river for guided hunting, fishing and sightseeing trips provides conclusive evidence that the river was susceptible of commercial use at statehood. The court also found that modern inflatable rafts can be used to establish navigability (Alaska v. Ahtna, Inc., 891 F.2d 1401, 9th Circuit Court, 1989). The Gulkana River precedent is now binding on all future navigability determinations in Alaska (Noah 1994:7).

[**The Skagway River is Navigable**] In view of the historic data and the criteria established above, it is the opinion of this historian that the Skagway River, from East Fork to its mouth, was navigable prior to statehood (1959) and continues to be navigable to the present, supporting trade and commercial activities. The historic evidence falls into two categories:

[**Recent recreational and incidental use of the river**] Recent recreational and incidental use of the river is evidence that the Skagway River is navigable in fact and indicates the susceptibility for use of the river for trade and commerce. Recent activities on the river demonstrating the river is navigable in fact include:

> Recreational Rafting and Kayaking: The first documented recreational rafting on the Skagway River began in the late 1970s and early 1980s, as witnessed by former Skagway resident Jay Cable. Ray and Karla Duff floated the river in a raft in the 1980s, and a number of other people had floated the river in inner tubes, rafts, canoes, and kayaks. The rescue

coordinator for the Skagway Fire Department estimates that 30-50 people float the river every year (Wayne Greenstreet, personal communication, April 29, 2003). One person reported that he made 30 kayak trips down the river in 2002 (Cristopher Siegel, personal communication, May 1, 2003).

Rafts used in Rescue Operations: In 1995, the Skagway Fire Department used an inflatable raft to search for a person who drowned while floating the river in an inner tube. In the years following the drowning, Fire Department personnel have been using an inflatable raft on the river during rescue training exercises.

[**Historic Commercial Use of the River**] Commercial use of the Skagway River falls into six categories, five of which fall with the period before 1959 and one in the period since 1959. All six events or activities are evidence of use for trade and commercial:

Native Use of the River: Bernard Moore's discovery in 1887 of an unfinished cottonwood canoe two miles up the Skagway River is evidence of aboriginal navigation of the river. In Tlingit canoe manufacture practice, the builder felled a tree and completed the shape of the outside of the canoe. The roughed out canoe was left upside down in the woods for a year to season the wood and dry out. The carver returned the following year and rough out the inside of the canoe. This would lighten it enough so the heavy craft could be dragged to the water, then floated down the river to be finished at a temporary camp or village (Stewart 1984:53). It is not possible to determine if the unfinished canoe that Moore found was abandoned due to a fault in the wood or because the builder was unable to return after the roughed out canoe had been seasoned. The Tlingit could not have dragged a three to four ton crudely carved canoe through the trackless woods alongside the Skagway River. Once the roughing out was completed, the Tlingit would have floated the canoe down the river to a camp where work on the craft could have been completed. It is unlikely that the unfinished dugout canoe discovered by Moore was the only canoe built along the Skagway River. The unfinished canoe is evidence of aboriginal use of the river (John Breiby, personal communication, May 6, 2003).

The 1825 Treaty defines all rivers and streams heading in Canada to be navigable: Article VI of the February 1825 treaty between Great Britain and Russia established the right of navigating freely all rivers and streams which cross the boundary and proceed to the Pacific Ocean. The United States acquired these lands from Russia in 1867 subject to prior and existing rights (including the 1825 Treaty provisions).

Use of the river associated with homesteading activities: Captain Moore and his son navigated the Skagway River and a side channel they called Mill (later known as Pullen Creek) while staking a claim to and working on their homestead. In 1887, they floated their boat up a side channel of the Skagway River when they first arrived at Skagway to stake their homestead. They returned in May of 1888 and hauled their boat up the same side channel of the river to unload supplies. They floated logs tied together in a raft up the same side channel to the site where they built their homestead cabin. In July, after their boat

disappeared, they built a small raft and crossed the mouth of the Skagway River so they could hike to Dyea and borrow a boat to look for their missing boat.

Use of a river ferry as part of the Brackett Wagon Road: The first attempt to build a wagon road up the Skagway River valley included a ferry in November 1897 that carried passengers and freight across the swollen river. After the Brackett Wagon Road took over the route, a bridge was built which made a ferry unnecessary.

WP&YR used a boat to ferry passengers and freight: The WP&YR used a river boat for a week to ferry passengers and freight across the Skagway River after a flood in October 1901 took out the railroad bridge near the confluence of the East Fork.

Commercial rafting on the Skagway River: Don Parkinson and Chris Turner started the first commercial rafting operation on the Skagway River in 1995. Under the name Skagway Float Tours, they offered rafting tours during the 1995 and 1996 seasons. They employed two other people as river guides. Cristopher Siegel bought the business in 1997 and offered commercial raft trips on the river during 1997 and 1998 (Figure 16). The business suspended operations on the Skagway River from 1998 to 2001 because heavy equipment in the river during construction of the dike next to the new airport interfered with floating the river. Siegel resumed commercial operations in 2002 on a limited scale after the airport project was completed.

Figure 16. Three people in a Skagway Float Tours raft floating down the lower Skagway River during the summer of 1999. Photo by Mike Coller, Skagway.

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