

BOARD OF ROAD COMMISSIONERS FOR ALASKA

1924

extract from

ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1924

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ANNUAL REPORT OF THE CHIEF OF ENGINEERS, 1924

EXTRACT

REPORT UPON THE CONSTRUCTION AND
MAINTENANCE OF ROADS, BRIDGES,
AND TRAILS, ALASKA

BOARD OF ROAD COMMISSIONERS
FOR ALASKA



WASHINGTON
GOVERNMENT PRINTING OFFICE
1925

BOARD OF ROAD COMMISSIONERS FOR ALASKA

OFFICERS OF THE BOARD

President: Maj. James G. Steese, Corps of Engineers, United States Army, retired.

Engineer officer: Maj. John C. Gotwals, Corps of Engineers, United States Army, to March 26, 1924, and Maj. James G. Steese, from March 27, 1924, to date.

Secretary and disbursing officer: First Lieut. Pierre A. Agnew, Corps of Engineers, United States Army.

Military assistants, under the immediate orders of the president of the board: Maj. John C. Gotwals, Corps of Engineers, United States Army, March 27, 1924, to April 26, 1924, and Maj. Lunsford E. Oliver, Corps of Engineers, United States Army, May 21, 1924, to date.

Organization and duties.—The act of Congress approved January 27, 1905, "To provide for the construction and maintenance of roads * * * in the District of Alaska, and for other purposes" (33 Stats. 616), as amended by act of May 14, 1906 (34 Stats. 192), prescribes in section 2 as follows:

That there shall be a board of road commissioners in said district to be composed of an Engineer officer of the United States Army to be detailed and appointed by the Secretary of War, and two other officers of that part of the Army stationed in said district and to be designated by the Secretary of War. The said Engineer officer shall, during the term of his said detail and appointment, abide in said district. The said board shall have the power, and it shall be their duty, upon their own motion or upon petition, to locate, lay out, construct, and maintain wagon roads and pack trails from any point on the navigable waters of said district to any town, mining or other industrial camp or settlement, or between any such town, camps, or settlements therein, if in their judgment such roads or trails are needed and will be of permanent value for the development of the district, but no such road or trail shall be constructed to any town, camp, or settlement which is wholly transitory or of no substantial value or importance for mining, trade, agricultural, or manufacturing purposes.

The Engineer officer of the board shall in all cases supervise the work of construction and see that the same is properly performed.

It shall be the duty of said board, as far as practicable, to keep in proper repair all roads and trails constructed under their supervision, and the same rules as to the manner in which the work of repair shall be done, whether by contract or otherwise, shall govern as in the case of the original construction of the road or trail.

The board was organized May 15, 1905. War Department orders of February 15, 1913, relative to the work of the board, prescribe that the senior officer on duty, designated as president, shall have general charge of the operations, that the Engineer officer shall supervise the work of construction in the field as provided by law, and that the third officer shall act as disbursing officer of the board.

From its organization until December 29, 1917, the board reported direct to the War Department through The Adjutant General. On that date orders were issued by the Secretary of War placing the work under the general supervision of the Chief of Engineers.

The act of Congress approved March 3, 1911 (36 Stat. 1059), contains the following language:

[EXTRACT FROM THE ANNUAL REPORT OF THE CHIEF OF ENGINEERS
TO THE SECRETARY OF WAR.]

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, October 3, 1924.

Report for 1920, and that definite adoption of the proposed program be urged before Congress, with a view of providing feeders to the Government railway as well as for the general development of the Territory."

On July 27, 1923, the late President Harding, in his Seattle speech after his return from the interior of Alaska, said in part:

In another direction there is justification for a most liberal disposition—that of road and trail building. * * * Roads constitute a prime need in every new country, and our long national experience in pushing our highways ahead of the onrushing wave of settlement ought to convince us that the broadest liberality towards roads in Alaska will be certain to bring manifold returns. * * * The present road system is but a beginning, and I am willing to be charged with a purpose of something like prodigality in my wish to serve Alaska generously, and more, in this matter of road building.

The original plan of providing the money necessary for carrying on the work of the board is found in the act of January 27, 1905 which authorized the expenditure for the construction and maintenance of wagon roads, bridges, and trails in said district of 70 per cent, reduced by act of March 3, 1913, to 65 per cent, of what is known as the Alaska fund, derived from vocational and trade licenses outside of incorporated towns. This fund proved to be so inadequate and uncertain in amount that special appropriations in aid of the work were made for the fiscal year 1907, and appropriations have since been made from year to year.

Prior to 1919 the appropriations were available only for the fiscal year specified in the appropriation act. This policy seriously interfered with expeditious and economical prosecution of the work as the conditions necessitate making preparations and beginning operations some time previous to the beginning of the fiscal year. The construction season opens before that date, is very short, distances are great, and communication is difficult. Supplies must therefore be purchased in advance and in many cases freighted over the snow during the winter. Work can not be economically started after July 1 nor stopped and then started up again. The appropriation act of July 11, 1919, and the appropriations made since that date have therefore included a provision that the funds shall be immediately available. Delay of the work on account of the lack of funds has also been occasioned, however, by the fact that appropriation bills were not passed until near or after the beginning of the fiscal year. To guard against such possibility for the season of 1922 House Joint Resolution 282, approved April 6, 1922, provided as follows:

The Secretary of War is authorized to direct the Board of Road Commissioners for Alaska to incur obligations prior to July 1, 1922, for the construction and maintenance of roads, bridges, trails in Alaska of not to exceed 75 per cent of the appropriation for this purpose for the fiscal year ending June 30, 1922, payment of these obligations to be made from the appropriations for the fiscal year ending June 30, 1923.

A similar provision for the season of 1923 was made by a paragraph, as follows, in the appropriation act approved June 30, 1923:

Provided, That if an appropriation for this purpose for the fiscal year ending June 30, 1921, shall not have been made prior to March 1, 1923, the Secretary of War may authorize the board of road commissioners to incur obligations for this purpose of not to exceed 75 per centum of the appropriation for this purpose for the fiscal year ending June 30, 1923, payment of these obligations to be made from the appropriations for the fiscal year ending June 30, 1924.

A similar provision for the season of 1924 was included in the appropriation act approved March 2, 1923, but was dropped out on conference from the act approved June 7, 1924, as the regular appropriation for the 1925 working season should become a law before March 5, 1925.

Though an item in aid of this work has been included each year in the appropriation act for the support of the Army, the item was subject to a point of order prior to July 9, 1918, and was several times seriously endangered. In 1918 the Secretary of War finally announced he would submit no further estimates for the continuation of this work unless specifically authorized to do so. As a result the act of July 9, 1918 (40 Stat. 863) contains the following language:

Provided, That hereafter, so long as the construction and maintenance of "military and post roads" in Alaska, and of other roads, bridges, and trails in that Territory, shall remain under the direction of the Secretary of War, he is authorized to submit such estimates for the consideration of Congress as he, in his judgment, necessary for the proper prosecution of the work.

Since that date, therefore, the Secretary of War has been definitely charged with responsibility for the submission of estimates for the construction and maintenance not only of "military and post" roads in Alaska, but of "other roads, bridges, and trails" as well. The act approved June 30, 1922, making appropriations for the activities of the War Department transferred the item to Title II, Nonmilitary Activities. The work is therefore no longer a charge against the support of the Army.

The special acts of Congress authorizing and defining the scope of the work and the duties of the board and authorizing the submittal of estimates to Congress are as follows:

- Act approved January 27, 1905 (33 Stat. 616).
- Act approved May 14, 1906 (34 Stat. 192).
- Act approved March 3, 1911 (36 Stat. 1052).
- Act approved March 3, 1913 (37 Stat. 728).
- Act approved July 9, 1918 (40 Stat. 843).
- Act approved June 30, 1921 (42 Stat. 90).
- Act approved March 2, 1923 (42 Stat. 1420).
- Act approved June 7, 1924.

For latest published maps (see map following page 54, Part II, of the annual report of the Alaska Road Commission fiscal year 1921, and also a wall map of Alaska published by the board of road commissioners, 1923.)

Recommended modifications of project.—None

References to published articles not previously reported.—"Highway Development by the Alaska Road Commission," Engineering News-Record, September 27, 1923, pages 506-8, illustrated; "The Alaska Railroad," The Michigan Technic, November, 1923, pages 1-8, and 26, illustrated; and "Public Works in Alaska," the Military Engineer, January-February, 1924, pages 13-17, illustrated, all by Col. James G. Steece.

Local cooperation.—The Federal funds disbursed are obtained from an annual appropriation, "Construction and maintenance of military and post roads, bridges, and trails, Alaska," and from receipts from the Alaska fund by act of Congress approved January 27, 1905, and amended by act approved May 14, 1906. About 75 per cent of the total cost of the road and trail system has been paid from the Alaska fund which is derived from Federal trade

the approval of the Territorial board of road commissioners, of which he is chairman, appointed the president of the Federal Board of Road Commissioners for Alaska as the consulting engineer for the Territory and placed him in charge of all public works supported by appropriations made by the Territorial legislature. In May, 1923, he was appointed Director of Public Works for the Territory.

During the current fiscal year the board supervised the expenditure of \$14,993.86 by the chairman of the Territorial road commission for the third division, and \$20,000.50 by the chairman of the Territorial road commission for the fourth division.

For the working season of 1924 the Territorial board has allotted to the Department of Agriculture \$16,875 and to the Federal board the following amounts:

Cooperative projects -----	\$80,478.45
Shelter cabins -----	5,075.65
Total -----	\$85,554.10
Chairman third division -----	15,000.11
Chairman fourth division -----	9,000.00
Grand total -----	110,160.21

These funds are held subject to the call of the Federal board. The divisional funds are disbursed through local banks, but all vouchers are audited by the Federal board under the same restrictions that apply to Federal vouchers before being certified to the Territorial treasurer for payment.

The board has also cooperated with the Territory under the provisions of the following Territorial law, in the construction of a bridge over the Nizina river.

Act of May 5, 1921: Providing for the construction of a bridge across the Nizina River, in the Nizina mining district, McCarthy recording precinct, at or near Young Creek (or at any point connecting with the road now being constructed by the Board of Road Commissioners for Alaska from the town of McCarthy to Nizina River), in the third judicial division of the Territory of Alaska; providing for cooperation between the Territorial board of road commissioners and the Board of Road Commissioners for Alaska in the construction of said bridge, and making an appropriation therefor.

Be it enacted by the Legislature of the Territory of Alaska:

SECTION 1. There is hereby appropriated from any moneys in the Territorial treasury, not otherwise appropriated, the sum of \$25,000 for the construction of a bridge across the Nizina River, in the Nizina mining district, McCarthy recording precinct, at or near Young Creek (or at any point connecting with the road now being constructed by the Board of Road Commissioners for Alaska from the town of McCarthy to Nizina River), in the third judicial division of the Territory of Alaska.

SEC. 2. The Territorial board of road commissioners shall have authority, and it shall be its duty to enter into a cooperative agreement with the Board of Road Commissioners for Alaska, for the construction of said bridge; and in case cooperative work is performed the Territorial treasurer is authorized to deposit in the United States Treasury the amount of \$25,000 hereby appropriated to cover the share of the Territory of Alaska in the cooperative project of constructing said bridge: *Provided*, That an equal amount is expended to the construction of said bridge by the Federal Government acting through the Board of Road Commissioners for Alaska. The amount hereby appropriated shall be expended by the disbursing officer of the Board of Road Commissioners for Alaska.

Of the foregoing appropriation the board expended \$5,000 during the fiscal year 1922 and \$20,000 during 1923.

There has been cooperation with the Territory also in connection with the purchase, rehabilitation and operation of two tramroads, one extending from Nome to Shelton on the Seward Peninsula, a distance of about 87 miles, and the other situated in the Tolovana District about 50 miles northwesterly from Fairbanks and extending from the town of Brooks about 13 miles southerly to the head of navigation on the Tolovana River. Details are as follows:

(Act of May 5, 1921: Providing for the purchase of the Seward Peninsula Railroad for operation as a public tram and highway)

Be it enacted by the legislature of the Territory of Alaska:

SECTION 1. That the Federal Board of Road Commissioners for Alaska, with the consent and approval of the Territorial board of road commissioners, are hereby authorized and empowered to purchase in the name of and for and in behalf of the Territory of Alaska, the Seward Peninsula Railroad extending from the city of Nome, Alaska, to Shelton, Alaska, a distance of approximately 87 miles, together with the roadbed, rails, switches, spurs, lateral and other side lines, stations, roundhouses, and rights of way, and all realty owned or used by and in connection with the operation of said road; and all or any part of the equipment of said road which in their judgment is deemed advisable to purchase, including locomotives, freight and passenger cars, and other cars of all and every kind, and tools of every nature and kind pertaining or appurtenant to said railroad, at the lowest possible price for which said railroad and equipment may be obtained: *Provided, however*, That such purchase shall not be made for a greater sum than \$30,000, nor unless agreement shall have been entered into by the said Federal Board of Road Commissioners and the said Territorial board of road commissioners to the effect that said Federal Board of Road Commissioners shall, from funds appropriated or assigned to it, place the said railroad, roadbed, and truck in good condition for transportation of passengers and freight and operation as a public tram and highway: *And provided further*, That a full statement and inventory of the property, if purchased, so required shall be filed with the secretary of the Territory.

SEC. 2. That, when purchased, the railroad shall be, until otherwise provided for by law, under the management, control, operation, and regulation of the Federal Board of Road Commissioners, who shall, from funds appropriated or assigned to it for that purpose, repair, keep in condition, extend, and maintain said road, under such rules and regulations as they may promulgate, as a public highway.

SEC. 3. For the purpose of carrying out the provisions of this act there is hereby appropriated from the general funds of the Territory, not otherwise appropriated, the sum of \$30,000 or so much thereof as may be necessary to purchase said railroad.

In accordance with the provisions of the act above quoted the board had a physical valuation of the property made in connection with its examination of the entire transportation situation in the Seward Peninsula, required by act of Congress approved June 30, 1921.

Upon the recommendation of the board, the purchase was finally negotiated October 3, 1922, for \$24,000, title passing to the Territory as of December 29, 1921. The board assumed control of the property on October 4, 1922, and its rehabilitation for public use with cars using gas or dogs as motive power was begun in the spring of 1923 and continued during the current fiscal year.

The Territorial act of May 3, 1923, provided for the purchase of the Tolovana Tram Road for not to exceed \$8,000 under the same conditions as the Seward Peninsula Railroad. Upon the recommendation of the board the purchase was finally negotiated for \$6,100, title passing to the Territory as of June 11, 1924. The board

Estimate of funds, 1926

Name of route	Mileage	Items				Average per mile
		Repair and maintenance	Improvement	New construction	Total	
Southeastern Alaska:						
Haines-Hensant Camp	43	\$10,500	\$7,000	\$30,000	\$57,500	\$1.17
Porcupine Extension	20	6,000			6,000	.30
Douglas-Gastineau Channel	2	600	400		1,000	.50
Haines-Chilkoot	3	900	1,500		2,400	.80
Haines-Mud Bay	10	3,000		2,000	5,000	.50
Strawberry Point	1½	450	750		1,200	.80
Total	79½	21,450	9,650	42,000	73,100	.92
Eagle subdistrict:						
Eagle-Fortymile	50	4,500	10,000	10,000	24,500	.49
Eagle-Seventymile	60	1,725	5,000		6,725	.11
Steel Creek-Jack Wade	15	1,200	1,500	1,000	4,000	.27
Canyon Creek-Walkers Fork	21	500			500	.24
Eagle-Circle	160	1,000	1,000	1,100	4,000	.25
Woolchopper Creek	8	2,400	1,000	1,000	5,000	.63
Fourth of July-Nation	10	3,000	2,000	5,000	10,000	1.00
Miscellaneous trails	201	2,610			2,610	.13
Total	615	17,885	21,400	18,100	57,385	.94
Bethel subdistrict: Miscellaneous trails						
	831	8,310			8,310	.10
Total	831	8,310			8,310	.10
Valdez district:						
Valdez-Parnigan Drop	32	16,000	16,000		32,000	1.00
Valdez-Mineral Creek	10½	3,500	1,500	3,000	8,000	.76
Chisana-Nizina	78	780			780	.10
MacCarthy-Nizina	10	4,800	1,200		6,000	.60
Stechin-Kuskulana	10	4,800	1,200	4,000	10,000	.99
Total	152½	29,880	19,900	7,000	56,780	.37
Chitina district:						
Parnigan Drop-Willow Creek	60	30,000	30,000		60,000	1.00
Chitina-Willow Creek	30	19,500	19,500		39,000	1.30
Willow Creek Rapids	130	69,500	60,500		130,000	1.00
Gulkana-Tanana Crossing	180	3,000	2,000	10,000	15,000	.08
Chistochina-Slate Creek	40	400			400	.01
Total	450	122,400	121,000	10,000	253,400	.55
Southwestern Alaska:						
Knik-Willow Creek (Government railroad)	53½	16,000	10,470	2,500	29,000	.54
Alaska Peninsula	30	9,000	10,000		19,000	.63
Talkeetna-Cache Creek (Government railroad)	42	12,000	10,000	20,000	42,000	1.00
Talkeetna-Iron Creek (Government railroad)	45	1,150		40,000	41,150	.91
Anchorage-Eagle River (Government railroad)	10½	5,850	5,000		10,850	.98
Matanuska Valley (Government railroad)	31½	9,450	10,000		19,450	.61
Konai-Ruslan River	60	1,500	2,500		4,000	.07
Kodiak	5	1,500			1,500	.30
Trails	287½	2,875			2,875	.10
Total	574	59,975	47,970	62,500	170,445	.31
Fairbanks district:						
Fairbanks-Rapids (Government railroad)	138½	69,250	69,250		138,500	1.00
Fairbanks-Chatanika (Government railroad)	30	6,000	6,000		12,000	.40
Summit-Fairbanks Creek (Government railroad)	13	3,000			3,000	.23
Fairbanks-Ester Creek (Government railroad)	13	3,000			3,000	.23
Fairbanks-Chena Hot Springs (Government railroad)	64	1,600	1,400	7,000	10,000	.16
Chatanika Circle (Government railroad)	130	24,000	8,000	50,000	82,000	.63

Estimate of funds, 1926—Continued

Name of route	Mileage	Items				Average per mile
		Repair and maintenance	Improvement	New construction	Total	
Fairbanks district—Continued:						
Olmos-Beaver (Government railroad)	115	\$1,150	\$350		\$1,500	.13
Olmos-Livergood (Government railroad)	54	1,350			1,350	.25
Beaver-Curo	76	22,500			22,500	.30
Winter trails	261	2,610			2,610	.10
Total	803½	137,260	85,000	\$57,000	279,260	.313
Niagna district:						
Dunbar-Fort Gibbon (Government railroad)	121	3,000	2,000	5,000	10,000	.83
Fert Gibbon-Katag	257	3,000	2,000	5,000	10,000	.39
Dunbar-Brooks (Government railroad)	63	1,600			1,600	.25
Ruby-Poorman	59	9,000	4,000	15,000	30,000	.508
Rampart-Eureka	27½	2,000	3,000		5,000	.182
Hot Springs Landing-Eureka	24	7,200	2,800		10,000	.417
Hot Springs-Sullivan Creek	0	2,700	1,300		4,000	.414
Roosevelt-Kautishna	34	10,000			10,000	.294
Coldfoot-Wisenan	12	1,000			1,000	.83
Moose Creek-Eva Creek (Government railroad)	14	1,800	3,200		5,000	.357
Carlsons-Valdez Creek (Government railroad)	55	1,500			1,500	.27
Winter trails	457½	4,575			4,575	.10
Total	1,133	47,375	17,100	28,200	92,675	.82
Falakwin district:						
Ophir-Tokotna Landing	25	7,500	2,500	25,000	35,000	1.400
Medra-Nixon Forks	12	3,600			3,600	.300
Iditarod-Flat	8	2,400			2,400	.300
Poorman-Ophir (summer)	125	1,250	1,600		4,000	.500
Tokotna-Flat	95	950			1,250	.10
Flat-Georgetown (summer)	85	850			950	.10
Winter trails	956	9,560			9,560	.10
Total	1,286	25,910	4,100	25,000	55,010	.43
Nome district:						
Nome-Council	82	24,000			24,000	.300
Candle-Candle Creek	6	1,800	1,200	5,000	8,000	1.333
Dearing-Innachuk	25	7,500	7,500	10,000	25,000	1.000
Nome-Dahl	90	8,700		150,000	158,700	1.666
Dahl-Innachuk	85	6,500		100,000	106,500	1.485
Winter trails	3,063½	30,835			30,835	.10
Total	3,360½	79,935	8,700	265,000	353,635	1.05
SUMMARY						
Southeastern Alaska	79½	21,450	9,650	42,000	73,100	.920
Eagle subdistrict	615	17,885	21,400	18,100	57,385	.93
Bethel subdistrict	831	8,310			8,310	.10
Valdez district	152½	29,880	19,900	7,000	56,780	.372
Chitina district	450	122,400	121,000	10,000	253,400	.553
Southwestern Alaska	574	59,975	47,970	62,500	170,445	.307
Fairbanks district	138½	69,250	69,250		138,500	1.000
Falakwin district	1,286	25,910	4,100	25,000	55,010	.43
Nome district	3,360½	79,935	8,700	265,000	353,635	1.05
Total	9,383	550,380	334,820	514,800	1,400,000	.149

Commercial statistics.—Total commerce of Alaska for the calendar year 1923:

IMPORTS	
Merchandise from the United States	\$30,781,206
Merchandise from foreign ports	514,403
Gold and silver from foreign ports	4,700
Total imports	\$31,300,311

Since October 1, 1923, the Alaska Railroad has been operated independently. Expenditures for the fiscal year to include September 30, 1923, were \$1,511,878.05.

The practical result of the foregoing orders was the development, without legislation but through Executive order or interdepartmental or interbureau agreement, of a practical working arrangement through which the facilities of all the services involved were used interchangeably. A careful account was kept so that each appropriation was eventually expended for the purpose intended by Congress and no appropriation was either increased or diminished by such interchange of working funds or facilities. Separate accounts and reports are rendered to the departments under the direction of which the work is performed.

The result was an immediate speeding up of development work upon a unified plan based upon a careful survey of the situation, a thorough knowledge of the entire Territory and its problems, and a coordination of all the various conflicting interests after full hearing before all parties at issue. Instead of numerous references between different bureaus which formerly sometimes required papers to travel to Washington and back several times, matters were handled promptly upon the ground, or where the approval of Washington was required such approval was usually obtained by a single telegram covering the various angles or the views of the bureaus concerned.

Financial summary

Amount expended on all projects to June 30, 1924, including receipts from sales, etc.:	
During fiscal years 1905-1923	\$7,028,293.66
Fiscal year 1924	838,782.20
	<u>\$7,872,075.86</u>
Alaska special fund, fiscal years 1920-1923	399,098.47
Alaska special fund, fiscal year 1924	92,325.45
	<u>491,423.92</u>
	<u>\$8,363,499.78</u>
Total for new work	4,768,057.52
Total for maintenance	3,595,442.26
	<u>\$8,363,499.78</u>
Balance available	749,252.05
	<u>\$9,112,751.83</u>
Grand total to be accounted for	
Appropriations to June 30, 1924:	
Construction and maintenance of military and post roads, bridges, and trails, Alaska	5,670,000.00
Wagon roads, bridges, and trails, Alaska fund	2,775,208.43
Increase of compensation, War Department	93,223.96
Receipts from sales, etc.	48,004.14
Refunds to Alaska fund	3,187.18
Refunds to War Department appropriations	4,639.67
Refunds to contributed funds	656.25
Reimbursement from Navy Department	3,976.19
Sales, refunds, etc., to accrue to Alaska fund	2,017.88
Refunds to increase of compensation	4.28
Funds contributed by Territory of Alaska and towns for public roads, bridges, trails, and ferries, Alaska special fund	509,943.35
	<u>\$9,112,751.83</u>

Fiscal year ending June 30	1920	1921	1922	1923	1924
Expended for improvement and new work	\$185,190.66	\$432,243.00	\$230,251.01	\$314,195.30	\$400,360.53
Expended for maintenance	173,410.50	234,545.18	440,995.77	425,887.10	445,747.12
Total expended	358,601.25	666,788.08	671,246.78	740,082.40	846,107.65
Appropriated by War Depart- ment acts	109,000.00	350,000.00	425,000.00	1,115,000.00	725,000.00
Allotted from Alaska fund	124,992.96	218,237.10	173,029.10	34,398.23	67,683.67
Contributed by Territory of Alaska and others	115,517.94	113,746.61	56,421.05	113,412.87	111,501.13
Increase of compensation, War Department	0.00	040.00	4,322.09	25,857.72	58,003.23
Total	340,510.00	682,023.71	658,772.33	1,291,668.82	963,748.03

July 1, 1923, balance available	\$669,118.41
Amount appropriated by War Department act, approved March 2, 1923	600.00
Amount appropriated by War Department act, approved June 7, 1924	725,000.00
Amount accrued to Alaska fund during fiscal year 1924	115,803.20
Amount contributed by Territory of Alaska and others	111,501.13
Refund, War Department appropriations	2,519.18
Receipts from sales, etc., during fiscal year 1924	1,854.55
Increase of compensation, War Department, 1923	3,988.95
Increase of compensation, War Department, 1924	54,074.28
Total resources	<u>1,685,359.70</u>
June 30, 1924, amount expended during fiscal year, including receipts from sales, etc.:	
New work	\$400,360.53
Maintenance	445,747.12
	<u>846,107.65</u>
July 1, 1924, balance unexpended	749,252.05
July 1, 1924, outstanding liabilities	329,208.49
July 1, 1924, balance unobligated	<u>420,043.56</u>
Amount available from War Department act, approved June 7, 1924	557,103.69
Amount available from Alaska fund on June 30, 1924	157,086.93
Receipts from sales, etc., during fiscal year (not credited)	2,617.88
Amount available from contributed funds on June 30, 1924	19,175.68
Amount available from increase of compensation, War Depart- ment, 1924, on June 30, 1924	13,287.87
Amount available for fiscal year ending June 30, 1925	<u>749,252.05</u>
Amount (estimated) required to be appropriated for completion of existing projects	7,735,000.00
Amount that can be profitably expended in fiscal year ending June 30, 1926:	
For new work	514,000.00
For maintenance	886,000.00
Total	<u>\$1,400,000.00</u>

¹ Exclusive of available funds.

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1924-1927

ANNUAL REPORT OF THE ALASKA ROAD COMMISSION
FISCAL YEAR 1924

REPORT UPON THE CONSTRUCTION AND
MAINTENANCE OF MILITARY AND POST
ROADS, BRIDGES AND TRAILS; AND OF
OTHER ROADS, TRAMWAYS, FERRIES,
BRIDGES, TRAILS, AND RELATED WORKS
IN THE TERRITORY OF ALASKA

TWENTIETH ANNUAL
REPORT

1924
PART II

BOARD OF ROAD COMMISSIONERS
FOR ALASKA

JUNE AU, ALASKA

1924

THE
ALASKA ROAD COMMISSION

(From the speech of President Harding in Seattle,
July 27, 1923)

.... "In another direction there is justification for a most liberal disposition; that of road and trail building. Much of the Alaska which will in another generation be rich and productive, is yet unexplored, to say nothing of being mapped and equipped with highways. There should be an organization capable of the readiest response to demands for roads and trails. No discovery of riches should be kept from national development for want of access to it. Alaska is so vast a region that merely to prospect it thoroughly is a matter of generations, with a far larger population than it now possesses. Roads constitute a prime need in every new country, and our long national experience in pushing our highways ahead of the onrolling wave of settlement ought to convince us that the broadest liberality towards roads in Alaska will be certain to bring manifold returns.

"Aside from all this, there is the necessity to provide feeders for the railroad which the government has built and is now operating. More than \$56,000,000 has been spent on this 500 miles of railroad. It was not built in the expectation of immediate or even early profit; rather, it stands in much the same relation to Alaska that the Union Pacific did to our widely separated ocean fronts, east and west, when it was constructed far in advance of economic justifications. It is a pledge, a testimony of faith, a declaration of firm confidence in the future of all Alaska. It is but a beginning, as the present road system is but a beginning; and I AM WILLING TO BE CHARGED WITH A PURPOSE OF SOMETHING LIKE PRODIGALITY IN MY WISH TO SERVE ALASKA GENEROUSLY, AND MORE, IN THIS MATTER OF ROAD BUILDING.".....

Alaska Road Commission,
Juneau, Alaska, August 15, 1924.

The Honorable, the Secretary of War,
(Thru The Chief of Engineers, United States Army,)
Washington, D. C.

Sir:

In compliance with the provisions of Sec. 2 of an Act of Congress, approved January 27, 1905, as amended by Act approved May 14, 1906, I have the honor to submit the attached report of the operations of this Commission for the fiscal year ending June 30, 1924.

Three events of the past fiscal year are of importance in their relation to the development of Alaska and to the operations of this Commission. The first was the visit to the Territory of the late President Warren G. Harding, the only President of the United States who has ever set foot upon Alaskan soil. The undersigned was in responsible charge of the Presidential Party, numbering some 85 persons including Mrs. Harding and several other Ladies, from the time of their arrival at Seward, Alaska, on the morning of July 13, 1923, until their departure from Cordova, Alaska, on the evening of July 20, 1923, eight days of mingled pleasure and anxiety.

The President's itinerary during these eight days included special train service on The Alaska Railroad from Seward to Fairbanks and return including the Chickaloon branch and automobile rides in various towns en route, out the Richardson Highway from Fairbanks to the 18-Mile Roadhouse and return, then by transport from Seward to Valdez and Cordova, including an automobile ride out the Richardson Highway from Valdez through Keystone Canyon to the 19-Mile Roadhouse and return and a special train on the Copper River & Northwestern Railway from Cordova to Childs Glacier at Mile 42 and return.

The second was the separation of the management of The Alaska Railroad from the Consolidated Engineering Organization created by direction of the President during the previous fiscal year. No reason was given for this change, which partly broke up the only effort that has been successfully made in coordinating and consolidating the activities of some of the thirty-eight or more federal bureaus attempting to run the Territory at long range from Washington, D. C.

The third was the relief of Major John C. Gotwals, Corps of Engineers, on March 26, 1924, after four years of service as Engineer Officer of this Commission, during the last of which he also served as Vice-Chairman and later as Chief Engineer of The Alaska Railroad. Major Gotwals gave four years of intelligent, enthusiastic, and unselfish service, during which time he acquired a knowledge of the Territory, its people, topography, and transportation conditions, which has left an indelible impress upon its future development.

The close and cordial relations which this Commission has developed with other officials, both Federal and Territorial, continued during the year and several additional jobs for other bureaus were undertaken. The oft-repeated criticisms of government red-tape in Alaska decidedly do not apply to the operation of this Commission, which is the only federal bureau permanently resident in the Territory and clothed by its enabling act with authority "of its own motion" to handle its business without reference to Washington.

Respectfully,
JAMES G. STEESE,
President.

BIBLIOGRAPHY OF ARTICLES ON ALASKAN ENGINEERING CONSTRUCTION PROBLEMS.

By Colonel James Gordon Steese, A.M., D.S.M., F.R.G.S.

President Alaska Road Commission
Ex-Chairman, The Alaska Railroad

- The Military Engineer, Jan.-Feb., 1921, "The Roads of Alaska."
Engineering News-Record, Sept. 27, 1923, "Highway Development by the Alaska Road Commission."
The Michigan Technic, March, 1923, "The Alaska Road Commission."
The Michigan Technic, November, 1923, "The Alaska Railroad."
Proceedings of the Eighteenth Annual Convention of the American Road Builders' Association, Feb., 1921, an address, "Road Building in Alaska."
Good Roads Magazine, Mar. 1, 1922, "Roads and Trails in Alaska."
World Traveler, May, 1922, "Alaska in 1922."
The Highway Magazine, January, 1923, "Road Construction under the Alaska Commission."
American Motorist, March, 1923, "Across Alaska by Automobile."
The Military Engineer, Jan.-Feb., 1924, "Public Works in Alaska."

By Major John C. Gotwals, Corps of Engineers.

Ex-Chief Engineer, Alaska Road Commission
Ex-Chief Engineer, The Alaska Railroad

- The Military Engineer, Jan.-Feb., 1922, "The Alaskan Trail."
Penn State Engineer, March, 1922, "The Trails of Alaska."
The Tech Engineering News, April, 1923, "Recent Developments in Alaska."

Government Reports for Fiscal Year Ending June 30, 1923.

- Secretary of the Interior, pp. 24, 97, 111-114, 146 and 156.
Director, National Park Service, pp. 75-76 and 166-7.
Governor of Alaska, pp. 5-8, 10-17, 42-44 and 55-56.
Chief of Engineers, U. S. Army, pp. 1822-27 and 2084-2104.
President, Alaska Road Commission, complete.

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REPORT UPON THE CONSTRUCTION AND MAINTENANCE OF MILITARY AND POST ROADS, BRIDGES, AND TRAILS, ALASKA; and of other Roads, Tramways, Ferries, Bridges, Trails and Related Works in the Territory of Alaska.

REPORT OF THE BOARD OF ROAD COMMISSIONERS FOR ALASKA.

James G. Steese.....President and Chief Engineer.
Lunsford E. Oliver.....Assistant Chief Engineer.
Pierre A. Agnew.....Secretary and Disbursing Officer.

For Description of Project Under This Board see Part 1 of this Report, contained in Annual Report of the Chief of Engineers, United States Army.

OPERATIONS DURING THE FISCAL YEAR.

The work during the fiscal year ending June 30, 1924, was executed under appropriations for "Construction and maintenance of military and post roads, bridges and trails, Alaska, 1923-1924," approved March 2, 1923; "Construction and maintenance of roads, bridges and trails, Alaska, 1924-1925," approved June 7, 1924; and from receipts from the "Alaska fund," act of Congress approved January 27, 1905, as amended by act approved May 14, 1906. Work was also done which was covered by funds contributed by the Territory of Alaska and others, Act of Congress approved June 30, 1921. The work consisted chiefly of maintenance of existing roads, trails and bridges. The construction of several new projects was continued mostly under cooperative agreements with the Territorial Board of Road Commissioners.

The roads constructed by this board are in general good wagon roads. However, a more substantial type of road has now been built in many places, upon which automobiles and light trucks can be used economically. The demand for roads of this type is increasing, and effort is made in each case to provide a gravel surface for the road.

ORGANIZATION.

The headquarters of the board are located at Juneau; a sub-office is maintained at Washington, D. C., as required. The Territory is divided into seven districts. The Southeastern District comprises that part of Alaska south and east of the one hundred

and forty-first meridian; for administrative purposes, the Eagle-Fortymile-Seventymile and Bethel sub-districts are attached to the Southeastern District. The Valdez District comprises the territory between the one hundred and forty-first and one hundred and forty-eighth meridians lying south of the Alaska Range, except as included in the Chitina District. The Chitina District includes the Richardson Highway from Ptarmigan Drop, Mile 32, to Rapids, Mile 233, and its tributaries between these points. The Southwestern District includes the territory west of the one hundred and forty-eighth meridian and south of the Alaska Range; it includes the Alaska Peninsula and Kodiak Island. The Kuskokwim District includes the territory between the Alaska Range and the Yukon River west of the one hundred and fifty-fourth meridian. The Nome District includes the territory west of the Yukon River and also west of the one hundred and fifty-eighth meridian. The Yukon District includes the remainder of the Territory of Alaska, principally the Tanana, Koyukuk and Upper Yukon River valleys; the Nenana sub-district includes all sub-projects in the Yukon District west of Dunbar.

Each district is in charge of a superintendent. It is the duty of each superintendent to visit his working crews and to give them the necessary engineering supervision during the season. The foremen in local charge are in nearly all cases trained men who have been attached to this board for many years.

MACHINERY AND EQUIPMENT.

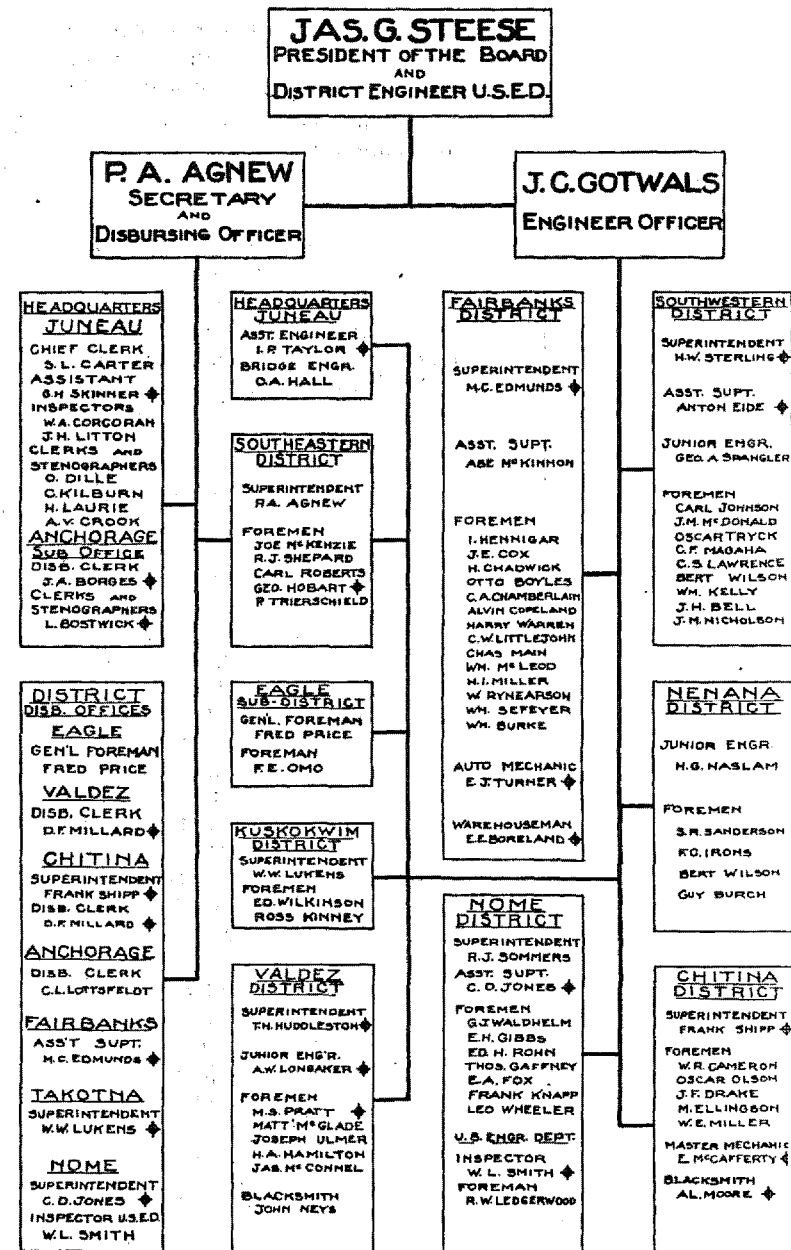
The following additional equipment was purchased during the fiscal year:

- 14 Trailers, highway.
- 3 Tractors, Best -30.
- 4 Trucks, Ford, Runabout.
- 2 Trucks, Ford, Dump, $\frac{7}{8}$ cu. yd. capacity.
- 1 Locomotive, Gasoline, 36 in. Gauge.
- 1 Gasoline Section Car.
- 4 Push Cars, Roller Bearing.
- 2 Graders, Tractor-drawn (Big Winner).
- 4 $1\frac{1}{2}$ Cu. Yd. Dump Bodies.
- 5 Road Drags, 2-blade, adjustable.
- 2 Road Drags, 3-way steel.
- 1 Mowing Machine, Brush.
- 3 Plows, Road.
- 2 Ditchers, Road.

Additional quantities of surplus Army stocks, highly suitable for this work have been received including:

- 10 G. M. C. Trucks, $\frac{3}{4}$ ton.
- 24,000 yds. Canvas.
- 60 Tons Dynamite, 40%.
- 20 Tons Sodatol Explosive.

ORGANIZATION CHART—WORKING SEASON 1923. ALASKA ROAD COMMISSION AND U. S. ENGINEER DEPARTMENT



♦ ENTIRE YEAR, OTHERS PART TIME ONLY.

- 1 Machine Shop, portable.
- 1 Locomotive, gasoline.
- 2 Cars, section, gas.
- 4 Cars, push, roller bearing.
- 15 Drags, road.
- 1 Mowing Machine, brush.

Warehouses, caches, garages, barns, etc., are located at all suitable points.

PROGRESS OF THE WORK.

The high scale of wages and supplies in the Territory is a large element in the cost of this work. The rate paid for labor varies from \$3.50 to \$6 per day with board for common labor. The cost of subsistence and forage is also correspondingly high. Besides these high costs, the nature of the work in Alaska adds to the cost in a way to make comparisons with road work in the United States difficult. In the roads built here the cruising, clearing, grubbing and construction of the road includes all work done upon the roads in the settled parts of the United States from pioneer days. Even with this the milcage cost of our roads can be looked upon with a great deal of gratification.

Since assuming charge at the beginning of the 1920 working season, the present board has been engaged in overhauling the entire road and trail situation, rehabilitating or abandoning the projects which have fallen into disrepair or disuse, and drawing up a progressive and comprehensive plan of operations covering a period of years. A brief resume of this situation as it has developed will now be given.

The total mileage of roads and trails constructed by the board during its first sixteen years of existence (1905-1920) aggregates 4890 miles, consisting of 1031 miles of wagon road, 636 miles of sled road, and 3223 miles of trail.

In addition, some 712 miles of temporary trail have been flagged as required. Not all of this mileage has been maintained year by year; some has been in disuse or practically impassable for many years and a small mileage has been superseded by other routes or methods of transportation as will appear more in detail below.

The specific routes included in this 5602 miles are enumerated in Tables I and IV, Annual Report for 1921. The following table summarizes the status of the work of investigation and rehabilitation begun four years ago. The funds available enabled substantial progress to be made and the investigation is now practically completed.

STATUS	MILEAGE					
	Wagon Road	Sled Road	Trail	Total	Flagged	Grand Total
1920 Report	1,031	636	3,223	4,890	712	5,602
ADDITIONS:						
New Mileage	512	563	4,292½	5,367½	.....	5,367½
Reclassified	167	166	.....	333	.....	333
Grand Total	1,710	1,365	7,515½	10,590½	712	11,302½
DEDUCTIONS:						
Transferred to other Bureaus	117½	9	48½	175	.....	175
Reclassified .....	.....	144	189	333	.....	333
Abandoned or dropped acct. duplication of routes	94%	123½	951½	1,169%	.....	1,169%
Net Total	1,497%	1,088½	6,326½	8,912%	712	9,624%
Territorial Work 1924	69	54	4½	127½	.....	127½
No Work 1924	127½	277	2,444	2,848½	234½	3,083
Alaska Road Commission Work 1924	1,301¼	757½	3,878	5,936%	477½	6,414¼

During the past fiscal year the expenditures were distributed over the following mileage:

DISTRICT	Wagon Road	Sled Road	Trails	Flagged Trails	Total
Southeastern Alaska	77	.....	2	.....	79
Eagle	17	93	336	.....	446
Bethel .....	.....	.....	621	.....	621
Valdez	67½	.....	7	.....	74½
Chitina	238	.....	.....	.....	238
Fairbanks	333¼	221½	333	.....	887¾
Nenana	149	334½	389	.....	872½
Southwestern Alaska	124½	92½	260	.....	477
Kuskokwim	38	.....	588½	.....	626½
Nome	257	16	1,341½	477½	2,092
Totals	1,301¼	757½	3,878	477½	6,414¼

The Board has expended the following funds since the beginning of road and trail development in the Territory:

FEDERAL APPROPRIATIONS:

Alaska Fund, 1905-1920	\$2,155,030.92*
War Dept. Acts, 1905-1920	3,058,041.44**
Increase of Compensation, 1918-1920	145.20
U. S. Treasury Adjustments, 1905-1920	22,870.76
Alaska Fund, 1921-1924	493,348.19
War Dept. Acts, 1921-1924	2,062,844.18
Increase of Compensation, 1921-1924	79,795.17
Total	\$7,872,075.86

CONTRIBUTED FUNDS:

Territory of Alaska, 1920	\$ 101,184.56
Territory of Alaska, 1921-24	386,136.05
Miscellaneous, 1922-1924	4,103.31
Total	\$ 491,423.92
Grand Total	\$8,363,499.78

*Includes the following adjustments:

Appropriations	\$2,123,585.65
ADDITIONS:	
Receipts, from sales	\$48,694.14
Repayments, voucher corrections	1,326.68
Total	\$2,173,606.47

DEDUCTIONS:	
Disbursing officer shortage***	18,575.55
Net Total	\$2,155,030.92
**Includes the following adjustments:	
Appropriations	\$3,055,000.00
ADDITIONS:	
Navy Dept. reimbursement	\$ 3,976.19
Repayments, voucher corrections	291.80
Total	\$3,059,267.99
DEDUCTIONS:	
Disbursing officer shortage***	1,226.55
Net Total	\$3,058,041.44
***Defaulting officer was dismissed the service by G. O. No. 4, War Dept., Washington, D. C., Feb. 17, 1912.	

In addition to the above funds, disbursed through the U. S. Treasury, the Board has supervised the expenditure of the following funds disbursed by other agencies for road and trail development:

Road tax, labor, and miscellaneous contributions, 1905-1920	\$200,000.00
Department of Agriculture, 1920	202,702.67
Quartermaster General, 1901-1902	100,000.00*
Chief of Engineers, 1904-1905	34,631.78*
Territorial Divisional Commissions, 1921-1923	56,500.02
Territorial Divisional Commissions, 1924	34,994.36
Seward Peninsula Tramway, 1923	24,010.65
Tolovana Tram Road, 1924	6,400.00
Mt. McKinley National Park, 1924	700.25
Total	\$659,939.73

*Expended prior to organization of the Alaska Road Commission.

The annual cost of maintenance of routes in Alaska varies considerably with the locality, the range of climate being greater than that of the United States, and the cost of labor varying greatly. The experience of this Board indicates that for all Alaska proper, average maintenance costs, including a fair allowance for floods, etc., are about as indicated in table following:

Classification	Mileage	Annual Maintenance per Mile	Total
Wagon Roads	1,497¾	\$300.00	\$449,325.00
Sled Roads	1,088¼	25.00	27,212.50
Trails	6,326½	10.00	63,265.00
Flagged Trails	712	3.00	2,136.00
Totals	9,624¾	\$ 56.31	\$541,938.50

The above does not provide for any improvements or extensions. The intermediate, or interior, sections of many of the through routes need improvement to the same standard as the rest so that the entire route may be used throughout by the same traffic without the necessity of breaking loads. A certain amount of new work on extensions must be provided for each year to keep pace with developments. This has only been possible up to the present time at the expense of needed maintenance work.

The magnitude of the task and extent of territory covered by the wide-flung activities of this board may be realized from the fact that it would take two years of continuous traveling with the best facilities available for a single individual to make a complete inspection of the entire mileage for which the Board is responsible.

Actually the President and the Engineer Officer spend about 80% of their time in the field. They have visited every district and have inspected most of the projects a number of times. The Secretary and Disbursing Officer has been engaged in overhauling the property, accounts and office methods and has made a tour of inspection of the district offices to standardize methods and accounts.

FEDERAL AID.

The provisions of the Federal Aid Road Acts do not apply to the Territory of Alaska. They can be so applied only by an Act of Congress. The original Federal Aid Road Act was approved July 11, 1916, and was amended by the Act approved February 28, 1919. Finally, the Federal Highway Act of November 9, 1921, still further defined the situation. Should the provisions of these acts be applied to the Territory of Alaska by appropriate Act of Congress upon the same basis as to the States, the Territory would receive about 5½% of the Federal Aid money upon the following conditions:

- (a) The formal acceptance by the Territorial Legislature of the conditions imposed by these Acts;
- (b) The provision by the Territorial Legislature for a Highway Department acceptable to the Federal Government;
- (c) The approval by the Federal Government of all proposed projects;
- (d) The approval by the Federal Government of all surveys, plans, specifications, and estimates;
- (e) The approval by the Federal Government of all work before payment;
- (f) The provision by the Territory for all maintenance of completed mileage;
- (g) The contribution by the Territory of about 10% of the amount allotted by the Federal Government.

It will readily be seen from the above that in applying the provisions of the Federal Aid Road Acts to the special conditions in the Territory, substantial modifications in the existing Acts will have to be provided for, if the work is to be as effectively handled as is now possible under the very broad enabling act of the Alaska Road Commission.

Since the extension of the Federal Aid Road Acts to Alaska without modification was urged in the last Congress, apparently

without an appreciation of the final effect upon road and trail construction in the Territory, it is believed desirable to point out how different conditions in a sparsely settled pioneer country are from those found in the more settled sections of the States. Alaska is one-fifth the size of the United States, yet it has a population of only about 29,000 whites, or less than 60,000 including Indians, Aleuts, and Eskimos. In other words, in a given area in the United States, there are more than 300 times as many people as in the same area in Alaska. Further, the entire section of Alaska north of the Arctic Circle is practically uninhabited. This constitutes about one-fourth of the area of the Territory.

It seems likely, therefore, that should the provisions of the Federal Aid Road Acts be extended to Alaska, the other States will insist upon a reduction in Alaska's allotment based upon her great area of uninhabited or sparsely inhabited lands. In fact, during a former Session of Congress, the Delegate from Alaska proposed an allotment based upon one-fourth of Alaska's actual area. It seems most probable, too, that Congress will not authorize the establishment of two Federal road building organizations in the same areas. Either the Federal Aid money will be expended under the direction of the Alaska Road Commission, or the Alaska Road Commission will be abolished and a Bureau of Public Roads organization created to handle the work.

The first may be accomplished by a simple proviso in the appropriate legislative item. No change need be made in the authority or methods of operation of the Alaska Road Commission. In fact, the Alaska Road Commission is a unique organization without parallel in the Federal government. It was created to meet special and unusual conditions and operates under a more liberal law than any other bureau of the Government. Its abolishment without otherwise providing for its important functions would be a distinct loss to the Territory.

The Delegate from Alaska is fully alive to the importance of the Alaska Road Commission to the economic life of the Territory and has recommended the following amendment to any Act extending Federal Aid to the Territory (See his statement before the House Committee on Roads on page 91 of Hearings held March 13, 1924):

"Provided, That hereafter all funds available, or that may become available, for the construction, repair, or maintenance of roads, bridges, or trails, in the Territory of Alaska shall be expended under the direction of the Board of Road Commissioners, created by the Act of January 27 1905, and conformably to the provisions of said act as amended."

If the second is to be accomplished, it will be necessary to amend the Federal Highway Act, insofar as it is to relate to Alaska, by incorporating in it most of the provisions of the Act of January 27, 1905, as amended, creating the Alaska Road Commission. This will be evident from a consideration of the following:

(a) The Alaska Road Commission was created in 1905, eleven years before the enactment of the first Federal Aid Road Act. It has thus had twenty years of experience with conditions in Alaska. It has practically grown up with the country, has developed a philosophy of road and trail development, has accumulated an organization and plant, and has developed methods of work adapted to the peculiar conditions in Alaska, which have no parallel in the States. A knowledge of working and transportation conditions in the Interior of the Territory cannot be acquired without an all-year-round experience therein extending over several years.

The standards and methods of the Bureau of Public Roads, on the other hand, developed under the requirements of the Federal Aid Road Acts, are the outgrowth of experience in the more settled parts of the United States where great emphasis is placed upon hard-surfaced roads and density of traffic. Such conditions will not exist and such expensive construction will probably not be justified in Alaska for a generation, if ever. This phase of the situation will be more evident from the discussion below under "General Problems of Construction," "General Transportation Problem" and "Detailed Operations by Districts."

(b) Under its basic act, the Alaska Road Commission has full authority "of its own motion" to locate, lay out, construct, and maintain such projects as appear in its judgment to be desirable. It can adjust its operations to changing conditions from time to time with a full knowledge of actual conditions on the ground. In fact, it is the only federal bureau permanently resident in Alaska with full authority to handle its business without reference to Washington. It does, in fact, revise its operations twice each year in the interest of effective management.

Under the Federal Aid, on the other hand, all projects, specifications, standards, etc., must be submitted to the Secretary of Agriculture in Washington, D. C., for approval. Any subsequent changes must follow the same channel. The direct and unavoidable result is several years' delay in initiating work upon an urgent project, inflexibility of specifications, often impossible of economical determination in advance, and a tendency to see approved projects through in spite of later developments. The approval of projects in Washington adds nothing to their technical adequacy. To put up a case in satisfactory form to secure the approval of some one

who knows little or nothing about it frequently involves a lot of time, trouble, and expense, which serves no useful purpose whatever.

(c) The Alaska Road Commission is authorized to construct not only wagon roads of whatever standard existing or reasonably prospective traffic may require, but also winter sled roads, tramways, ferries, bridges, and trails. For winter conditions and throughout the Interior of the Territory generally, these more primitive forms of construction are of more importance than the provision of summer wagon roads. A large part of the Territory is adequately served in summer time by a large mileage of navigable waterways with which roads can never hope to compete even if greatly increased road funds should become available. All interior mails, freight, passengers, and express are handled in winter time over these so-called trails. This condition has no parallel in the States and these forms of construction are totally unprovided for under the Federal Aid.

(d) Under the Federal Aid, all maintenance must be provided for by the State. This the Territory is totally unable to do in its present or reasonably prospective stage of development. The Territory does appropriate over half its resources for the support of roads and schools, but the road and trail contribution is a small part of the amount required for the maintenance of the entire existing system and allows no margin for much needed development. The Alaska Road Commission, therefore, assumes the greater part of this burden and will be forced to continue to do so indefinitely.

(e) The Alaska Road Commission also has authority to receive contributions from the Territory, Municipalities, mining companies, and others, deposit such funds in the United States Treasury, and then to expend them for the purpose contributed. It is thus enabled to do a great variety of construction jobs for various branches of the government and others at a much less cost to the communities concerned than would otherwise be possible. These services are of great importance to the general government and to small isolated communities where adequate private engineering facilities do not exist and cannot be supplied at any reasonable cost.

DEPARTMENT OF AGRICULTURE.

While the provisions of the Federal Aid Road Acts do not apply to the Territory, the provisions of the same acts relating to roads in the National Forests do apply to the Tongass and Chugach National Forests which constitute about 5% of the area of the Territory. As these forest funds require Territorial cooperation, the amounts accruing under the Acts of 1916 and 1919 stood

idle until the passage of the Territorial Cooperative Road Act approved April 21, 1919 (Chapt. 11, Session Laws of 1919). The funds then released and subsequent funds are expended under the direction of the Secretary of Agriculture, represented locally by the U. S. Forest Service. In addition to the cooperative funds, the Act of 1921 and subsequent acts released additional forest funds for the expenditure of which cooperation is not mandatory.

Until July 1, 1920, the President of the Alaska Road Commission acted as the representative of the Department of Agriculture and supervised the performance of work and the expenditure of these cooperative funds within the National Forests, as all projects were former projects of this Commission. Until May 1, 1922, the Forest Funds were inadequate to take care of the projects in the National Forests already under construction under the Alaska Road Commission. The latter, therefore, continued to allot part of its own funds to these projects under a tripartite agreement to which the Territory, the Forest Service, and the Alaska Road Commission subscribed.

Since July 1, 1920, the Department of Agriculture has maintained a separate road building organization, the Bureau of Public Roads, in the Territory. Since May 1, 1922, it has assumed responsibility for all projects within or partly within the National Forests. To these projects the Territory contributes part of its funds under such cooperative agreements as may be required. The funds of the Alaska Road Commission, heretofore allotted to these projects, are thereby released for expenditure in the other 95% of the Territory.

The National Forests both lie along the sea-coast; the Tongass National Forest including most of Southeastern Alaska, the Chugach Forest including the Prince William Sound region, the shore line of Kenai Peninsula, and the east shore of Cook Inlet. Due to the rugged character of these sections of the Territory and to the excellent system of sheltered waterways, the main transportation will always be by water. Most of the projects in the National Forests, therefore, consist of short spurs in the neighborhood of the principal towns, or from minor ports to agricultural or mining districts lying in the immediate hinterland. In general they do not tie into the main overland transportation system of the Territory.

TERRITORIAL ROAD LEGISLATION.

By the Act of April 28, 1915 (Chapt. 27, Session Laws 1915), the present Territorial road districts, corresponding to the judicial divisions, were created. There was also authorized an elected road commissioner for each district to receive as compensation five per cent of all money expended by him. He was authorized to appoint

two assistants in each precinct as inspectors, for the compensation of whom no provision was made. Seventy-five per cent of the Forest Revenues were appropriated for this work.

By the Act of April 30, 1917 (Chapt. 17, Session Laws 1917), \$20,000 was appropriated for shelter cabins, this money to be expended under the general supervision of the Governor of the Territory by the road commissioners who were to receive, also, five per cent of the fund for their services.

The Act of May 3, 1917 (Chapt. 36, Session Laws 1917) created the present Territorial Board of Road Commissioners and authorized and directed the submission of estimates to the Legislature covering road work considered necessary and desirable. Under this law in each road district there was created a Divisional Board consisting of a chairman and secretary to be elected. His salary was fixed at \$2,500 per year and he was authorized to expend, in addition, necessary amounts to cover office, clerk hire, et cetera. The other two members of the Divisional Boards were appointed by the Territorial Board and received actual expenses during such time as they were actually employed. The Divisional Boards were required to submit an annual report to the Territorial Board upon January first.

Funds were provided by the Act of May 3, 1917 (Chapt. 35, Session Laws 1917), to the amount of \$400,000, for the biennium, to be divided equally among the four road districts. A supplemental Act of the same date (Chapt. 50, Sessions Laws 1917) appropriated \$25,000 for the construction of the Nizina River Bridge.

The present road law in the Territory, known as the Cooperative Road Act, was passed on April 21, 1919 (Chapt. 11, Session Laws 1919). It was made necessary by the federal appropriation for the National Forests, which could be expended only provided cooperative funds were appropriated by the Territory, the Department of Agriculture funds becoming available in the ratio of about three dollars of federal funds to one dollar of Territorial funds. Under this law the Territorial Board of Road Commissioners, consisting of the Governor, the Secretary, and the Treasurer of the Territory, was authorized to enter into cooperative agreements with the Department of Agriculture, the Alaska Road Commission, or other federal bureaus, and to turn over to the disbursing officers of such bureaus territorial funds to be expended by them upon the cooperative projects.

The Territorial Board was also authorized and directed to submit to the Legislature estimates for further work. The Divisional Boards consisted, as before, of one elected commissioner at an annual salary of \$2,500 and two appointed members who should be reimbursed for their expenses for such time as they should actually serve. The Divisional Boards, also, were required to submit annual reports upon January first.

This law further provided that after March 1, 1921, the Divisional Chairman should be appointed from qualified civil engineers in the Territory who should serve without pay and provided for two elected commissioners in each division who should receive a per diem of \$10 for such time as they should actually serve, but whose total compensation should not exceed \$1,000 in any one year.

Funds were provided by the Act of May 1, 1919 (Chapt. 36, Session Laws 1919), in the sum of \$375,000 for the biennium, to be equally divided among the four districts. The same Act also appropriated \$5,000 for shelter cabins to be constructed under the general supervision of the Governor.

Since March 1, 1921, the supplemental provisions of the law of April 21, 1919, have been in effect. The Act of May 5, 1921 (Chapt. 30, Session Laws 1921) appropriated \$25,000 for a new Nizina River Bridge to be built by the Alaska Road Commission, provided the Alaska Road Commission should contribute at least an equal amount. The Act of May 5, 1921 (Chapt. 39, Session Laws 1921) appropriated \$30,000 for the purchase of the Seward Peninsula Railway, provided the Alaska Road Commission would agree to rehabilitate it and operate it as a public tram or highway. The Act of May 7, 1921 (Chapt. 46, Session Laws 1921) appropriated \$240,000 for roads and trails for the biennium 1921-1923 and an additional sum of \$10,000 for shelter cabins.

The Act of May 3, 1923 (Chapt. 86, Session Laws 1923) appropriated \$8,000 for the purchase of the Tolovana Tram Road provided the Alaska Road Commission would agree to rehabilitate it and operate it as a public tram or highway. The Act of May 4, 1923 (Chapt. 96, Session Laws 1923) appropriated \$240,000 for roads and trails for the current biennium and an additional sum of \$15,000 for shelter cabins. The Act of May 3, 1923 (Chapt. 92, Session Laws 1923) re-enacted and strengthened Sections 1, 2 and 3 of the Cooperative Road Act of 1919, and provided for an additional member of the Territorial Board of Road Commissioners to serve as Highway Engineer. The Act of May 5, 1923 (Chapt. 100, Sessions Laws 1923) appropriated \$3,000 for a preliminary survey to determine the feasibility of a tramway or wagon road over the Portage from Unalakleet to Kaltag.

In addition to funds appropriated by the Territorial Legislature, 25% of certain revenues from timber sales in the National Forests accrue to the Territory; 75% of the Territory's portion are available for general roadwork throughout the Territory.

The Territorial Board of Road Commissioners, as now constituted, is composed of the following:

Scott C. Bone, Governor of the Territory, Chairman;
Karl Theille, Surveyor-General, Secretary;
Walstein G. Smith, Territorial Treasurer, Member;
Robert J. Sommers, Territorial Highway Engineer.

LOCAL COOPERATION.

Under the authority of the Territorial Cooperative Road Act, approved April 21, 1919, and the Act of Congress approved June 30, 1921, the Board has made numerous cooperative agreements for the prosecution of work supported in part by federal funds and in part by funds appropriated by the Territorial Legislature. In the first and second divisions, Southeastern and Western Alaska, respectively, no divisional chairmen were appointed during the past year, all available funds being allotted to cooperative projects. In the other two divisions, superintendents of the Board were appointed chairmen of the respective commissions.

The President of the Board was appointed as the Consulting Engineer for the Territory on November 14, 1921; on May 10, 1923, he was appointed Director of Public Works. For the past three fiscal years he has supervised the work of the Divisional Chairmen as well as the other public works supported by appropriations of the Territorial Legislature. No Territorial road building organization has been maintained since March 1, 1921.

The following general road funds have been expended upon cooperative projects and the work supervised by the Board:

Fiscal Year	Territorial	A. R. C.	Total
1920	\$101,184.56	\$ 69,295.76	\$ 170,480.32
1921	97,611.98	203,904.57	301,516.55
1922	69,705.29	219,935.95	289,641.24
1923	92,533.33	162,401.90	254,935.23
1924	81,961.13	199,470.66	281,431.79
Totals	\$442,996.29	\$855,008.84	\$1,298,005.13

Under authority of the same Act of Congress, the Board received and expended the following contributed funds for the fiscal years indicated:

1922—Contributed by municipalities	\$ 1,683.77
Nizina River Bridge	5,000.00
1923—Contributed by municipalities	1,379.54
Nizina River Bridge	20,000.00
1924—Contributed by municipalities, etc.	1,040.00
Total	\$29,103.31

An examination of the Seward Peninsula Railway was made in connection with an investigation of the entire transportation situation on the Seward Peninsula, required by Act of Congress approved June 30, 1921.

This railroad was purchased for \$24,000 with certain stipulations added in respect to maintaining the roadway over mining property owned by the Pioneer Mining Company. Its rehabilitation has been begun by the Board.

An examination of the Tolovana Tram Road was made and its purchase recommended. This purchase has been completed for \$6,400, title passing as of June 11, 1924, and the Commission has

taken possession of the property. Plans for its rehabilitation have been completed and the work was under way at the close of the fiscal year.

Allotments have been made and expended under the direction of the Chairmen of the Divisional Commissions by fiscal years as follows:

1922—Third Division	\$ 7,812.19
Fourth Division	21,365.00
1923—Third Division	10,855.72
Fourth Division	15,717.11
1924—Third Division	14,993.86
Fourth Division	20,000.50
Total	\$90,744.38

Detailed statements of operations are included under the district reports and of expenditures under the financial summary.

The Shelter Cabin Fund, expended under the direction of the Governor of the Territory, was also supervised and the work performed by the Board. Its status at the end of the fiscal year was as indicated in the following table:

SHELTER CABIN FUND

DIVISION	Expended Biennium 1921-23	Allotted Biennium 1923-1925	Expended F. Y. 1924	Unexpended
First	\$	\$	\$	\$
Second	3,000	4,975.50	2,249.32	2,726.18
Third	3,000	3,575.00	1,750.00	1,825.00
Fourth	4,000	6,449.50	5,325.00	1,124.50
Totals	\$10,000	\$15,000.00	\$ 9,324.32	\$ 5,675.68

For the working season of 1924 (fiscal year 1925) the Territorial Board has allotted to the Department of Agriculture \$16,875.00, and to the Federal Board the following amounts:

Cooperative projects	\$ 80,478.45
Shelter Cabins	5,675.68
Total	\$ 86,154.13
Chairman, Third Division	15,006.14
Chairman, Fourth Division	9,000.00
Grand Total	\$110,160.27

\$15,675.68 has been deposited and the balance is held subject to the call of the Federal Board. The divisional funds are disbursed through local banks, but all vouchers are audited by the Federal Board under the same restrictions that apply to Federal vouchers before being certified to the Territorial Treasurer for payment. The City of Nome has contributed \$3,500 to pay for certain terminal developments in connection with road, river, and harbor work at Nome.

The Cooperative Road Act has worked satisfactorily under the conditions imposed. Certainly, the amount of road work accomplished for the money expended has been far in excess of

anything heretofore possible. Had the Territory attempted to expend its \$30,000 per division under an independent organization, nearly one-third of the available funds would have gone into overhead, salary and expenses of a divisional chairman and clerk, rent, light, etc. All of this service was furnished free by the Alaska Road Commission and at no additional cost to itself. In addition, the extensive plant and mechanical equipment of the Alaska Road Commission, representing a capital investment of over \$500,000, were furnished where needed in the Territorial work without extra charge except for fuel and ordinary running repairs. Due to the extensive organization of the Alaska Road Commission, it has also been possible to apply Territorial money to outlying projects where the maintenance of an independent organization would have been impossible or prohibitive in cost. Finally, all available money is lumped together and expended upon a comprehensive system with a continuity in plans and a consistency in operations over an extended period of years.

The Alaska Road Commission, also, is a gainer under the Cooperative Road Act. By having greater funds available, it is able to consolidate purchases and supplies and thus to secure better prices. Conflicts in plans and complications in operations are avoided. By having funds becoming available all the year round, the difficulties resulting from fiscal year appropriations beginning or terminating about the middle of the open working season are minimized, and the entire organization and conduct of operations, are rendered more flexible.

The situation is well expressed in the following extract from the biennial report of the Territorial Board:

LETTER OF TRANSMITTAL.

Juneau, Alaska, March 17, 1923.

To the Honorable Members of the Sixth Territorial Legislature,
Juneau, Alaska.

Sirs:

Attached hereto is a detailed report of the Territorial Board of Road Commissioners. It covers all road work and expenditures of the Divisional Boards and also cooperative work and expenditures with the Alaska Road Commission and the U. S. Forest Service.

* * * * *

Under the cooperative agreement and in accordance with Chapter 11, Section 17, Session Laws of Alaska, April 21, 1919, the Alaska Road Commission assumed all overhead expenses, including salaries and expenses of the chairmen of both the Third and Fourth Divisions, plant and equipment, and all supervision by the Alaska

Road Commission's organization, the Territory being charged only for labor and supplies actually going into the work.

* * * * *

The shelter cabin fund was expended through the Alaska Road Commission, under the cooperative agreement with them, and they assumed responsibility for all construction without overhead cost to the Territory. Report is attached hereto.

A review and comparison of the biennial reports for the past two bienniums reveals a substantial saving to the Territory as a result of cooperation with the various road building organizations in the Territory and the wisdom of the Territorial Legislature in creating the law making such cooperation possible. Under the present cooperative plan and agreement with the Alaska Road Commission, a more constructive distribution system of funds for road building is had and this makes it possible to prevent duplication of road organization and permits the maintenance of one well coordinated organization with sufficient funds at its disposal to do effective road work for the development and projection of an adequate road system and program in the Territory at large.

In conclusion, the Territorial Board wishes to express its appreciation for the efficient manner in which the Territorial road funds have been applied by the U. S. Forest Service and the Alaska Road Commission under the present cooperative agreements.

Respectively submitted,

KARL THEILE,

Secretary of the Territorial Board of Road Commissioners.

ADDITIONAL OPERATIONS OF THE BOARD OR OF ITS MEMBERS.

The following additional duties have been imposed upon the members of the board by appropriate authority:

- (a) By par. 3, S. O. No. 50-0, War Department, Washington, D. C., March 9, 1921, and under the provisions of Acts of Congress approved June 17, 1910, and June 15, 1917, the President of the Board, in addition to his other duties, was detailed for consultation or to superintend the construction or repair of any aid to navigation authorized by Congress, in the Sixteenth Lighthouse District (includes the Territory of Alaska) and was directed to report by letter to the Secretary of Commerce.
- (b) Effective April 1st, 1921, the Juneau, Alaska, engineer district was created by G. O. No. 1, War Department, Office of the Chief of Engineers, Washington, February 21, 1921. The President of the Board, in addition to his other duties, was appointed District Engineer; the other two members of

the Board were placed under the immediate orders of the District Engineer and the Secretary and Disbursing Officer of the Board was, in addition, designated as Disbursing Officer for the district. The Alaska district does not form a part of the Northern Pacific Division; the District Engineer reports direct to the Chief of Engineers. Detailed report of the operations of the Alaska District will be found in the Annual Report, C. of E. Expenditures for the fiscal year, and to include vouchers received and placed in the account including June 30, 1924, were \$37,802.90.

- (c) Effective November 19, 1921, the President of the Board was appointed Consulting Engineer for the Territory and assumed direct charge of all Territorial public works. Effective May 10, 1923, he was appointed Director of Public Works for the Territory.
- (d) By informal arrangement, effective April 1, 1922, the President of the Board agreed to act for the National Park Service, Department of the Interior, on certain matters relating to the improvement of the Sitka National Monument and the development of Mount McKinley National Park.
- (e) By direction of the President, War Department and Interior Department orders were issued on February 13, 1923, detailing the President and the Engineer Officer of the Board, in addition to their other duties, to duty with the Government railroad in Alaska under the provisions of an Act of Congress approved March 12, 1914. The President was appointed Chairman and Chief Engineer and the Engineer Officer Vice-Chairman of the Alaskan Engineering Commission. They took over the management of The Alaska Railroad and allied activities of the Alaskan Engineering Commission as of March 24, 1923.

The Alaskan Engineering Commission was abolished on August 15, 1923, upon the recommendation of the Chairman thereof, and the designation "The Alaska Railroad" substituted therefor.

On October 1, 1923, the joint management of the roads and railroad was terminated. No reason was assigned for this sudden and unexpected change of policy. The President of the Alaska Road Commission remained Chairman of The Alaska Railroad until March 17, 1924, to handle estimates, Congressional hearings, and other matters in Washington, D. C. He had no railway operating functions or responsibilities in Alaska after October 1, 1923.

The title of the Engineer Officer of the Alaska Road Commission was changed from Vice-Chairman to Chief Engineer of The Alaska Railroad on September 29, 1923. After December 24, 1923, he had no railway operating functions or responsibilities in

Alaska, but was retained on special duty in Washington, D. C., under the Secretary of the Interior. He was relieved from further duty with The Alaska Railroad on March 26, 1924.

Since October 1, 1923, The Alaska Railroad has been operated independently. Expenditures for the fiscal year to include September 30, 1923, were \$1,511,878.05.

CONSOLIDATED ENGINEERING ORGANIZATION.

The practical result of the foregoing orders has been the development, without legislation, but through executive order or inter-departmental or inter-bureau agreement of a practical working arrangement through which the facilities of all the services involved are used interchangeably, but a careful account is kept so that each appropriation is eventually expended for the purpose intended by Congress and no appropriation is either increased or diminished by such interchange of working funds or facilities. Separate accounts and reports are rendered to the departments under the direction of which the work is performed.

The result has been an immediate speeding up of development work upon a unified plan based upon a careful survey of the situation, a thorough knowledge of the entire Territory and its problems, and a coordination of all the various conflicting interests after full hearings before all parties at issue. Instead of interminable references between different bureaus which formerly sometimes required papers to travel to Washington and back several times, matters are handled promptly upon the ground, or where the approval of Washington is required, such approval has usually been obtained by a single telegram covering the various angles or the views of the bureaus concerned.

The following are the current activities under consolidated engineering direction:

The construction, repair, and maintenance of federal roads, tramways, ferries, bridges, trails, and related works, now aggregating over 9,000 miles, and extending from open-all-the-year-round south coast ports to all inhabited parts of the Territory; Territorial roads, bridges, ferries, and trails throughout the Territory, covered by cooperative agreements; shelter cabins; Nizina River Bridge; Nome-Shelton Tramway (87 miles operated by cars drawn by dogs); Tolovana Tramway; Kaltag Portage Survey; Improvement of Nome Harbor; Improvement of Wrangell Harbor; the preliminary examination or survey of Wrangell Narrows, Tolovana River, Yukon-Kuskokwim Portage, English Bay, and Gastineau Channel and adjacent waters; the investigation of port facilities; the survey and design for a Government dock at Juneau; the issuance of permits for fish traps and other structures in the navigable waters along the Territory's 26,000 mile coast line; miscellaneous inspections, public

hearings, and contingencies of rivers and harbors; improvement of Sitka National Monument; development of Mt. McKinley National Park.

The following activities were separated as of October 1, 1923: construction, maintenance, and operation of The Alaska Railroad from Seward to Fairbanks, 470½ miles; railway spurs to the Eska, Jonesville, Chickaloon, and Healy River coal mines, 46 miles; from Fairbanks to the gold creeks as far as Chatanika, 39 miles narrow gauge; Moose Creek coal spur, 4½ miles; narrow gauge; also river boat service on the Tanana and Yukon Rivers during open season of navigation between Nenana and Holy Cross, 750 miles, with through billing arrangements covering freight service from Seattle or Tacoma to points on the Yukon River and its principal tributaries between the International Boundary at Eagle and Bering Sea at St. Michael; also an agreement covering automobile service on the Richardson Highway from Fairbanks to Chitina and Valdez, 410 miles; operation of coal mines, hospitals, hotels and commissaries.

GENERAL PROBLEMS OF CONSTRUCTION.

In the laying out of new work and execution of our projects in Alaska, familiarity must be had with both the topographic features and climatic conditions of all parts of the Territory. These vary widely. The climate of the coastal region of Southeastern and Southwestern Alaska is very similar to the Puget Sound region of Washington, while the climate of the interior river valleys is similar in a degree to the interior country to the east of the coast range in the Northwest states. Temperatures in winter time are, however, lower than those encountered in Eastern Washington or Western Montana. The summer time in the interior valleys, while of short duration, often for a short period brings temperatures as high as any encountered in the interior portions of the Northwest states. Continuing the same parallel with the Northwest states, the coastal country is subjected to a very heavy rainfall, occasionally turning to snow with the lowest winter temperatures, and the interior on the other hand, receives light rain and snow fall. During the long winter of the interior, clear days with low temperatures prevail and with the light snow fall excellent conditions are provided for winter sledding.

In topography, Alaska is essentially a country of bold relief. As one proceeds inland from the coast the exceedingly rugged coast range is first passed. Then one drops into a semi-interior of rolling country, extending to the main Alaska Range. The main Alaska Range rises to great heights and after passing it one enters the great interior river valley of the Yukon. Even within this valley rolling hills are encountered everywhere, rising into eleva-

tions which are almost mountainous. This diverse topography continues almost to the Arctic slope.

The forests of the coastal country contain a very dense growth of spruce and hemlock timber. In the interior the usual timber is spruce, hemlock not appearing, and in addition cottonwood and birch are found in many places. The glaciers, resulting from the very heavy snowfall in the Coastal Range, are a conspicuous feature of that mountain system and are likewise encountered on the south slope of the Alaska Range and to some extent on the north slope. The glacier streams, created by the seasonal melting of these glaciers, are one of the most annoying obstacles encountered in our road construction.

In respect to the commerce of Alaska, this Territory is, and always will be, essentially a producer of raw materials, metals or metalliferous minerals, and in addition on the coast, fish. Furs are produced in lesser proportions, but are a very important element in the commerce of Alaska and are distinguished by their rare beauty in the fur markets of the world. Efforts continue to produce wood pulp, but the unsettled prices of the last two years have made such development difficult.

Oil prospecting has continued vigorously and high hopes exist for the bringing in of a producing field of the high grade refining paraffine base oil found in Alaska. The coal developments, chiefly in the Matanuska fields, and near Healy River, have made progress. The production of both fields has been an important item of local production in the Government Railroad Area. It is improbable, in view of the extremely low rates prevailing for ocean shipping from our west coast to the Orient and through the Panama Canal to the east coast, that Alaskan coal can be exported in quantities for sale to our Pacific States. However, the excellent coal beds now under development are of such quality that a small movement of coal to Alaskan ports and to the nearer points on our West Coast is underway.

Agricultural effort, mainly directed to the production of the hardier cereals and root crops, has continued and is of high value for local consumption. The extension of the agricultural effort, of course, rests upon increased population engaged in mining or other local industries.

With the above outline, the character of the commerce existing between the United States and Alaska can be readily seen. Alaska is essentially an overseas country based on the ports of our Northwest states. Its population is maintained by the shipment of raw materials to the Northwest states in exchange for which indispensables, chiefly foodstuffs and manufactured articles, are sent to Alaska.

GENERAL TRANSPORTATION PROBLEM.

The traffic movement, based on the commerce of Alaska and complying with the exactions of climate and topography, gives the key to the solution of the transportation problems of Alaska. As a basis for all this traffic, the primary element is that of the ocean going ships plying from Seattle, or other Northwest ports, to the seaports of Alaska.

From these vessels material and personnel are distributed, first by railroads, of which three are in operation, i. e., the White Pass and Yukon from Skagway to Whitehorse, the main artery serving the Yukon Territory; second, the Copper River & Northwestern Railway from Cordova to the Kennecott Copper Mines; and third, the recently constructed Government Railroad from Seward, on the Gulf of Alaska, to Anchorage at the head of Cook Inlet, and thence along the Susitna Valley crossing the Alaska Range through Broad Pass to Nenana on the navigable waters of the Tanana River, and to Fairbanks, the center of the Fairbanks mining district and the interior terminus of the Valdez-Fairbanks wagon road.

For transportation from seaports to the interior, great service is rendered by the splendid interior waterways of the Yukon, Kuskokwim, Tanana and Koyukuk. While these rivers are open only five months in the year, the service they render is and always will be extremely important.

Along with the above two means of communication enters into service the wagon roads, sled roads and trails, constructed by this Board. In respect to railroads, however, the service rendered by wagon roads is of immensely more importance than that performed by the same means in our prairie states. No such general development will follow the construction of a railroad in Alaska as followed the construction of the railroads through the prairie states of the West, following the great period of American railroad construction. In our Western agricultural states, farms at once became accessible to the great Eastern markets, though located as far as fifty miles from the main railroad line after the construction of the same. On the other hand, it is practically impossible to proceed with wheeled vehicles anywhere in Alaska without some form of prepared wagon road. The need for some form of overland transportation is met at lesser cost in many parts of Alaska by the use of sled roads and trails. These provide a means of penetrating inaccessible country and of bringing it into a stage of development warranting the heavier cost of construction of a located and graded wagon road. This form of development has been successfully carried out by this Board, the dog trail and sled road permitting entry into an area at low cost and being later improved into a summer road if the development warrants it.

It is this carefully guided expenditure upon roads and trails in all the area of Alaska capable of providing traffic for the Government Railroad, that is necessary before that great federal endeavor can receive all of the traffic with which this great Territory can provide it. To enable all this traffic to reach the railroad, eventually it will be found that an amount very nearly equaling the cost of the railroad will have been spent upon wagon roads, trams, sled roads and other means of overland transportation within the Territory.

REGIONS OF ALASKA.

Our problems are outlined by reviewing the physical features of Alaska and the lines of communication already established. The portion of Alaska now under development naturally divides itself in this way into the following districts:

First, Southeastern Alaska, embracing the islands and coastal mainland east of the 141st meridian. This region is served almost entirely by water borne commerce and little new construction is necessary except in providing short tributary roads to the coastal towns.

Second, the Copper River Valley, embracing Cordova, Valdez and Kennecott, and penetrated by the Copper River Railroad with the Valdez-Fairbanks road serving as a tributary.

Third, the Susitna Valley, including the country traversed by the Government Railroad in the Susitna Valley and on the Kenai Peninsula, including Seward, Anchorage, and the Matanuska coal fields. The Alaska Peninsula and Kodiak Island, served by boats based on Seward, are closely attached in development to this region and are included therein.

Fourth, the Kuskokwim Valley, including the lower Yukon Valley and that of the Kuskokwim. This region is very meagerly provided with transportation means and important projects of this Board aim at its relief and attachment to the Government Railroad.

Fifth, the Yukon, including Fairbanks and the Yukon, Koyukuk and Tanana Valleys. This rich placer mining district is of high importance for development and if producing quartz mines can be added to the placer mining production, an important tonnage will be produced for the Government Railroad.

Sixth, Nome, including the Seward Peninsula and the Arctic slope of Alaska. This region is served by summer roads of minor importance and throughout by highly important winter dog trails.

COMMERCIAL STATISTICS.

A careful traffic census was begun by the Commission in 1911. Comparing the expenditures for freight on each route at the present rate with the cost of transporting the same amount of freight at the rates prevailing before the road was constructed, a figure is obtained which represents the economic saving to the community served by the construction of the particular route in point.

Combining the saving for all the routes built by the Commission, the following table for 1911, 1912, and 1913, has been compiled:

TRAFFIC SUMMARY.

Year	Expenditures for the year	Total expenditures for roads to end of year	Economic saving to shippers
1911	\$266,777.95	\$1,903,103.27	\$1,981,677.00
1912	317,303.72	2,220,406.99	2,141,638.00
1913	353,118.29	2,573,525.28	2,144,667.00
1911-1913	937,199.96	2,573,525.28	6,268,032.00

From this table it will be seen that the saving in these three years alone was almost three times the total expenditure for roads to the end of 1913. Records for succeeding years were burned up in the fire of 1915. No census was taken during the war.

A new census was inaugurated January 1, 1921, and was continued through the last calendar year. Due to poor communications, reports of this census are still incomplete. Such fragmentary reports as have been received show a very gratifying reaction from recent work performed by this Board, and an astonishing aggregate of traffic upon trails lying in remote sections.

The Traffic Census table on pages 32 and 33 gives a synopsis of the traffic reported upon a few typical routes for the calendar year 1923. It has been impossible to date to obtain at any reasonable cost complete data upon the great majority of the routes. However, efforts are being continued in this direction and more complete results are expected during the current season.

In the interior, the great cost of moving freight by teaming or packing, together with the difficulty and uncertainty of moving it at all, constitutes the main obstacle to the growth and development of the district.

During the opening of the new diggings in the Chisana region a few years ago, beans, coffee, sugar, hay, candles, bacon, grain, etc., were sold at \$1.50 a pound. The freight charges were almost a dollar a pound, so that the original cost of the article was of relatively little importance. And even at that, the supply could not keep pace with the demand. Last summer the freight charges for transporting supplies from Dawson, in the Klondike, to some mines about one hundred miles away in the American 40-Mile Dis-

trict was greater than the original cost of the supplies plus the freight from the United States to the Klondike. (Dawson is 1,700 miles from Seattle.)

The cost of transportation by the usual modes of transport in Alaska are shown in the following table:

	Per Ton-Mile.
Winter:	
Bob-sled (sled road)	\$ 0.37
Double-ender (trail)	1.30
Dog-team (trail)	6.30
Summer:	
Truck (wagon road)	.50
Wagon (wagon road)	1.23
Pack train (trail)	4.80
Man (no trail)	26.67*

(*)—Average from very widely varying figures. At Lisianski Inlet, in Southeastern Alaska, in 1921, I observed lumber, pipe, tar paper, groceries, etc., being carried on the backs of Indians from the beach up a slippery mountain trail about 7,500 feet long to a new gold strike in a little basin at about 800 feet elevation at 4 cents per pound, or \$80.00 per ton—over 1 cent per ton-foot.

Railroad transportation cannot yet be regarded as a usual form for Alaska, and steamship rates are entirely arbitrary, depending upon competition. They, like the existing railroad rates, have been fixed by two factors only; 1st, the cost of hauling on some competing wagon road, sled road, or trail, where such competition exists (or, in the case of steamships, sometimes by competing steamer line); and 2d, by the highest rate the freight can stand and be shipped at all.

The table shows the actual cost at the rates for teams, labor, food, forage, etc., prevailing in the great interior regions of Alaska. They are based also on the costs of hauling large quantities. On the south coast the comparative values are the same, but the actual values are about one-third less because of lower costs of above controlling elements.

TRAFFIC CENSUS

District	Route No.	Station	Period 1923	No. of Persons	Autos	Wagons	Sleds	Pack Horses	Ton-nage
ANCHORAGE									
Archangel Extension	35A	Fishhook	Jan-Jun	305	.....	6	20	37	355
Willow Creek Extension	35D	.....	Jan-Jun	245	1	1	5	.....	32
Wasilla-Fishhook	35E	Wasilla	Jan-Dec	2546	792	334	723	.....	927
Wasilla-Knik	35F	Wasilla	Jan-Jun	750	91	182	.....	262	30
Wasilla-Finger Lake-Palmer	35H	.....	Jan-Jun	881	2	273	270	.....	64
Matanuska Trunk Road	35K	U. S. Exp. Station	Jan-Apr	479	.....	447	.....	.....	.....
Houston-Willow Creek	35N	Houston	Jan-Mar	353	.....	.....	200	.....	263
Talkeetna-Cache Creek	51	Moose Creek	Jan-Dec	1459	3	137	596	302	476
FAIRBANKS									
Fairbanks-Chitina	.....	Gulkana	Feb	29	4*	.....	21	.....	27
Dunbar-Ft. Gibbon	5A	Richardson	May-Dec	1488	813	30	3	11	357½
Fairbanks-Chena Hot Springs Trail	7J	Hot Springs	Jan-Apr	528	.....	.....	131	.....	33
Chatanika-Circle	16	Colorado Roadhouse	Jan-Jun	182	.....	.....	75	.....	50½
Ruby-Poorman	38A	12 Mile Roadhouse	Aug-Dec	78	.....	.....	31	.....	17
Kobi-Eureka	46	.....	Jan-Apr	159	.....	.....	113	26	26
Nenana-Knights Roadhouse	.....	.....	Nov-Dec	58	.....	.....	51	.....	9½
Kobi-Diamond	46	Ruby	Jan	58	.....	.....	29	.....	42
Kobi-McGrath Trail	46E	Knight's Roadhouse	Jan-Mar	420	.....	.....	432	.....	175½
Govt. R. R.-Valdez Creek	76	Knight's Roadhouse	Jan	66	.....	.....	57	3	.....
Salcha Ferry	.....	Toklat	Nov-Dec	139	.....	.....	82	.....	4½
.....	.....	Diamond Roadhouse	Jan-Apr	618	.....	.....	.....	464	523
.....	.....	Carlson Roadhouse	Mar-May	218	.....	.....	86	.....	16
.....	.....	Highway 380, Richardson	Jan-Dec	1373	737	10	.....	26	215½
NOME									
Nome-Council	8	Nome	June-Sept	468	453	.....	.....	.....	102
Nome-Bessie	13A	Nome	June-Sept	8400	2625	.....	.....	.....	638
Bessie-Banner	13B	Nome	Jul-Sept	480	460	.....	.....	.....	276
Bessie-Little Creek	13C	Nome	Jul-Sept	1748	368	.....	.....	.....	460
Nome-Osborne	13F	Nome	Jul-Sept	375	273	.....	.....	.....	92
Grass Gulch	13G	Nome	Jul-Sept	150	50	.....	.....	.....	50
Nome River Extension	13I	Nome	Jul-Sept	368	184	.....	.....	.....	15
Bessie Buster	13K	Dexter R. H.	Jan-Dec	944	315	39	87	.....	20½
Kourgarok	.....	Nome	Jul-Sept	460	460	.....	.....	.....	184
.....	.....	U. S. Roadhouse	Oct-Dec	153	3	69	10	.....	24½

Kaltag-Solomon	18	Portage	Feb	21	.....	.....	19	.....	6
.....	.....	.....	Nov-Dec	34	.....	.....	27	.....	6
.....	.....	Bonanza	Jan-Dec	122	.....	.....	71	.....	7
.....	.....	Unalakleet	Jan-Dec	85	.....	.....	76	.....	5
.....	.....	Solomon	Jan-Dec	498	.....	.....	396	.....	76
.....	.....	Isaac's Point	Jan-Dec	326	.....	.....	162	.....	8½
Kaltag-Solomon	18	Bluff	Jan-Dec	514	.....	.....	250	.....	28
Bonanza-Kotzebue	18A	Haycock	Jan-Dec	92	.....	.....	78	.....	28½
.....	.....	Deering	Jan-Dec	1201	.....	.....	903	.....	64
Cripple River	25A	Nome	Jul-Sept	15	.....	6	.....	.....	10
Penny River	25B	Nome	Jul-Sept	45	.....	.....	.....	.....	30
Nome-Wireless	25C	Nome	Jul-Sept	2760	20	50	.....	.....	50
Mouth of Center Creek	25D	Nome	Jul-Sept	1288	184	.....	.....	.....	5
Submarine Paystreak	25E	Nome	Jul-Sept	2070	460	.....	.....	.....	92
Anvil Glacier	25F	Nome	Jul-Sept	598	276	.....	.....	.....	184
Snake River Extension	25G	Nome	Jul-Sept	552	184	.....	.....	.....	92
Candle-Candle Creek	26	Candle	Jan-Dec	1489	30	69	208	.....	384
Nome-Taylor	28A	Dexter R. H.	Jan-Dec	256	27	.....	120	.....	34½
.....	.....	P.O. Hot Springs	Nome	213	.....	.....	105	.....	4
Koyzebue-Shungnak	41A	Noorvik	Jan-Dec	1198	.....	.....	921	.....	23
Nome-Teller	67	Sinrock	Jan-Dec	206	.....	.....	111	1	16
.....	.....	Teller	Jan-Dec	324	.....	.....	265	.....	59
Teller-Lost River	67A	Wales	Jan-Dec	72	.....	.....	71	.....	7½
Kotlik-Marshall	73A	Old Hamilton	Jan-Apr	360	.....	.....	235	.....	17½
.....	.....	.....	Nov-Dec	114	.....	.....	95	.....	11
.....	.....	Fortuna Ledge	Jan-Dec	1282	.....	.....	730	4	72½

*-Tractors.

SUBSISTENCE COSTS.

(includes food, freight, and mess help)

ANCHORAGE DISTRICT

Location	Average No. Men Crew	No. Days Worked	Cost Per Day Per Man
Anchorage	18	106	1.52
Wasilla	23	184	1.37
Talkeetna	15	304	1.34
Kanatak	11	149	2.09*

*Due to lighterage charge and small crew.

FAIRBANKS DISTRICT

Location	Average No. Men Crew	No. Days Worked	Cost Per Day Per Man
Richardson Highway—			
1. Mile 238-290	13	103	1.38
2. Mile 290-340	11	116	2.00
3. Mile 343-353	21	98	1.94
4. Mile 335-350	11	68	1.52
Chatanika	19	118	1.75
Kastishna	15	114	1.70
Hot Springs	7	140	1.59
Fbks-Summit	10	84	1.78
Clery	12	137	1.57

HAINES DISTRICT

Average for District			1.40
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TWENTY YEARS' SERVICE.

At this, the completion of twenty years' operations of the Alaska Road Commission, an outline of the progress of the work performed is of great value. The work naturally divides into three phases or periods. The first was that covered by the period of time in which General Wilds P. Richardson, Retired, U. S. Army, was President of the Board and extended from 1905 to 1917. This was essentially a period of pioneering. While this period covered nearly all the stampedes into the Territory, settlements and traffic lines of communication were very unsettled. With small but increasing appropriations, the pioneer development of the Territory was followed with great intelligence through this period.

The largest project of the Commission, the Richardson Road from Valdez to Chitina to Fairbanks, was located and improved for nearly the entire distance to wagon road standard. This period laid the foundation for all future work and terminated with the opening of the so-called War Period, 1917-20.

This second period was one of general stand-still for the work of the Road Commission, as well as industrial development within the Territory. Appropriations were small, expert personnel was not available for supervision, prices were high and labor scarce. The work was applied to a few projects only and much of the mileage established in the previous period went into disrepair or almost entirely passed out of existence. This period closed with the organization of the present board in 1920.

The third period, 1920 to the close of the fiscal year 1924, was characterized by increased appropriations, broader legislation, close cooperation with the Territory, procurement of mechanical equipment, reopening of old trails and roads, heavier construction to withstand motor traffic, and adjustment of lines of communication to the vast change brought about in Alaska by the approaching completion of the Alaska Railroad from Seward which reached Fairbanks in 1923. The changes occurring in the third period, with these increased means at hand and with the perfected organization, are laid out in detail hereafter.

The pioneer period of the Alaska Road Commission is largely over. All existing mileage has been opened and improved, so far as funds have permitted. The present network of roads serves as an infallible guide for the future development of overland routes through the Territory. This development only calls for additional funds for construction.

PROPOSED OPERATIONS FOR NEXT YEAR.

This report covers operations up to June 30, 1924, or practically the working season of 1923. Current operations (working season of 1924) will be covered in the annual report for 1925. About one million dollars is available for the year. Estimates, as given in detail below, for the working season of 1925 (fiscal year 1926) have been submitted and will be considered during the coming short session of Congress. The appropriation should be available on or before March 4, 1925. These estimates were submitted in April 1924, in accordance with the Ten Year Program drawn up in 1920.

Funds available for next year will be expended on the rehabilitation and maintenance of the existing system. Little can be done to meet the pressing need for improvement and extensions of the system, especially in providing urgently needed highway and trail feeders to The Alaska Railroad (Government Railroad), now completed, without much greater annual appropriations than have been made up to the present.

The annual maintenance of the proposed system after completion, as nearly as can be estimated at this time, will cost about \$550,000.

An appropriation, in addition to contributed and tax funds, of \$1,400,000 to be distributed approximately as follows, can be profitably expended on this work during the fiscal year ending June 30, 1926:

ESTIMATE OF FUNDS, 1926.

Name of Route	Mileage	ITEMS			Total	Aver. per Mile
		I. Repair and Maintenance	II. Improvement	III. New Construction		
Southeastern Alaska:						
Haines-Pleasant Camp	43	\$ 10,500	\$ 7,000	\$ 40,000	\$ 57,500	\$1,337
Porcupine Extension	20	6,000	-----	-----	6,000	300
Douglas-Gastineau Channel	2	600	400	-----	1,000	500
Haines-Chilkoot	3	900	1,500	-----	2,400	800
Haines-Mud Bay	10	3,000	-----	2,000	5,000	500
Strawberry Point	1½	450	750	-----	1,200	800
Total	79½	\$21,450	\$ 9,650	\$ 42,000	\$ 75,100	\$ 920
Eagle Sub-District:						
Eagle-Fortymile	50	\$ 4,550	\$ 10,000	\$ 10,000	\$ 24,550	\$ 491
Eagle-Seventymile	60	1,725	5,000	-----	6,725	112
Steel Creek-Jack Wade Canyon Creek-Walker's Fork	15	1,200	1,800	1,000	4,000	267
Eagle-Circle	21	500	-----	-----	500	24
Woodchopper Creek	190	1,900	1,000	1,100	4,000	21
Fourth of July-Nation	8	2,400	1,600	1,000	5,000	625
Miscellaneous trails	10	3,000	2,000	5,000	10,000	1,000
Total	615	\$ 17,885	\$ 21,400	\$ 18,100	\$ 57,385	\$ 93
Bethel Sub-District:						
Miscellaneous Trails	831	\$ 8,310	-----	-----	\$ 8,310	\$ 10
Total	831	\$ 8,310	\$ -----	\$ -----	\$ 8,310	\$ 10
Valdez District:						
Valdez-Ptarmigan Drop	32	\$ 16,000	\$ 16,000	-----	\$ 32,000	\$1,000
Valdez-Mineral Creek	10½	3,500	1,500	3,000	8,000	762
Chisana-Nizina	78	780	-----	-----	780	10
McCarthy-Nizina	16	4,800	1,200	-----	6,000	375
Strelina-Kuskulana	16	4,800	1,200	4,000	10,000	625
Total	152½	\$29,880	\$ 19,900	\$ 7,000	\$ 56,780	\$ 372
Chitina District:						
Ptarmigan Drop-Willow Creek						
Chitina-Willow Creek	60	\$ 30,000	\$ 30,000	-----	\$ 60,000	\$1,000
Willow Creek-Rapids	39	19,500	19,500	-----	39,000	1,000
Gulkana-Tanana Crossing	139	69,500	69,500	-----	139,000	1,000
Chistochina-Slate Creek	180	3,000	2,000	10,000	15,000	83
Total	40	400	-----	400	400	10
Total	458	\$122,400	\$121,000	\$ 10,000	\$ 253,400	\$ 553
Fairbanks District:						
Fairbanks - Rapids (Government Railroad)	138½	\$69,250	\$ 69,250	-----	\$ 138,500	\$1,000
Fairbanks-Chatanika (Government Railroad)	30	9,000	6,000	-----	15,000	500
Summit - Fairbanks Creek (Government Railroad)	13	3,900	-----	-----	3,900	300
Fairbanks - Ester Creek (Government Railroad)	13	3,900	-----	-----	3,900	300
Fairbanks - Chena Hot Springs (Government Railroad)	64	1,600	1,400	7,000	10,000	156
Chatanika - Circle (Government Railroad)	130	22,000	8,000	50,000	80,000	615
Olness - Beaver (Government Railroad)	115	1,150	350	-----	1,500	13
Olness - Livengood (Government Railroad)	54	1,350	-----	-----	1,350	25
Beaver-Caro	75	22,500	-----	-----	22,500	300
Winter Trails	261	2,610	-----	-----	2,610	10
Total	893½	\$137,260	\$ 85,000	\$ 57,000	\$ 279,260	\$ 313

Name of Route	Mileage	ITEMS			Total	Aver. per Mile
		I. Repair and Maintenance	II. Improvement	III. New Construction		
Nenana District:						
Dunbar-Fort Gibbon (Government Railroad)	121	\$ 3,000	\$ 2,000	\$ 5,000	\$ 10,000	\$ 83
Ft. Gibbon-Kaltag	257	3,000	2,000	5,000	10,000	39
Dunbar - Brooks (Government Railroad)	63	1,600	-----	-----	1,600	25
Ruby-Poorman	59	9,000	6,000	15,000	30,000	508
Rampart-Eureka	27½	2,000	3,000	-----	5,000	182
Hot Springs Landing-Eureka	24	7,200	2,800	-----	10,000	417
Hot Springs - Sullivan Creek	9	2,700	1,300	-----	4,000	444
Roosevelt-Kantishna	34	10,000	-----	-----	10,000	294
Coldfoot-Wiseman	12	1,000	-----	-----	1,000	83
Moose Creek-Eva Creek (Government Railroad)	14	1,800	-----	3,200	5,000	357
Carlson's - Valdez Creek (Government Railroad)	55	1,500	-----	-----	1,500	27
Winter Trails	457½	4,575	-----	-----	4,575	10
Total	1,133	\$ 47,375	\$ 17,100	\$ 28,200	\$ 92,675	\$ 82
Southwestern Alaska:						
Knik-Willow Creek (Government Railroad)	53½	\$16,050	\$ 10,470	\$ 2,500	\$ 29,020	\$ 542
Alaska Peninsula	30	9,000	10,000	-----	19,000	633
Talkeetna - Cache Creek (Government Railroad)	42	12,600	10,000	20,000	42,600	1,014
Talkeetna - Iron Creek (Government Railroad)	45	1,150	-----	40,000	41,150	914
Anchorage - Eagle River (Government Railroad)	19½	5,850	5,000	-----	10,850	505
Matanuska Valley (Government Railroad)	31½	9,450	10,000	-----	19,450	617
Kenai-Russian River	60	1,500	2,500	-----	4,000	67
Kodiak	5	1,500	-----	-----	1,500	300
Trails	287½	2,875	-----	-----	2,875	10
Total	574	\$ 59,975	\$ 47,970	\$ 62,500	\$ 170,445	\$ 297
Kuskokwim District:						
Ophir-Takotna Landing	25	\$ 7,500	\$ 2,500	\$ 25,000	\$ 35,000	\$1,400
Medra-Nixon Forks	12	3,600	-----	-----	3,600	300
Iditarod-Flat	8	2,400	1,600	-----	4,000	500
Poorman-Ophir (Summer)	125	1,250	-----	-----	1,250	10
Takotna-Flat	95	950	-----	-----	950	10
Flat-Georgetown (Summer)	65	650	-----	-----	650	10
Winter Trails	956	9,560	-----	-----	9,560	10
Total	1,286	\$ 25,910	\$ 4,100	\$ 25,000	\$ 55,010	\$ 43
Nome District:						
Nome-Council	82	\$ 24,600	-----	-----	\$ 24,600	\$ 300
Candle-Candle Creek	6	1,800	1,200	5,000	8,000	1,333
Deering-Inmachuk	25	7,500	7,500	10,000	25,000	1,000
Nome-Dahl	99	8,700	-----	150,000	158,700	1,603
Dahl-Inmachuk	65	6,500	-----	100,000	106,500	1,485
Winter Trails	3,083½	30,835	-----	-----	30,835	10
Total	3,360½	\$79,935	\$ 8,700	\$265,000	\$ 353,635	\$ 105
Summary:						
Southeastern Alaska	79½	\$21,450	\$ 9,650	\$ 42,000	\$ 73,100	\$ 920
Eagle Sub-District	615	17,885	21,400	18,100	57,385	93
Bethel Sub-District	831	8,310	-----	-----	8,310	10
Valdez District	152½	29,880	19,900	7,000	56,780	372
Chitina District	458	122,400	121,000	10,000	253,400	553
Fairbanks District	893½	137,260	85,000	57,000	279,260	313
Nenana District	1,133	47,375	17,100	28,200	92,675	82
Southwestern Alaska	574	59,975	47,970	62,500	170,445	297
Kuskokwim District	1,286	25,310	4,100	25,000	55,010	43
Nome District	3,360½	79,935	8,700	265,000	353,635	105
Total	9,363	\$550,380	\$334,820	\$514,800	\$1,400,000	\$ 149

THE FUTURE.

A program of operations, prepared by the Board of Road Commissioners in cooperation with the Governor of Alaska, the Territorial Road Commission and other interested Federal and Territorial officials, was submitted in the annual report of the board for 1920. It proposed three classes of work: First, the construction of about 700 miles of arterial or feeder highways, mainly following old routes (estimated cost \$7,000,000); second, the construction of development roads to be constructed from time to time on locations left for future determination (estimated cost \$1,000,000); third, the maintenance of existing road and trail system (estimated cost for the 10-year period, \$2,000,000). Total estimated cost, \$10,000,000. The proposed annual appropriations and the amounts annually appropriated to date are shown in the following table:

1920 PROGRAM

Amounts required each year of the 10-year period of road and trail development.

Fiscal Year	Working Season	Amount Estimated	Amount actually Appropriated
First (1922).....	1921	\$ 955,000	\$425,000
Second (1923).....	1922	1,200,000	465,000
Third (1924).....	1923	1,500,000	650,000
Fourth (1925).....	1924	1,600,000	725,000
Fifth (1926).....	1925	1,400,000	.....
Total for first 5 years.....	.....	\$ 6,655,000	.....
Sixth (1927).....	1926	1,045,000	.....
Seventh (1928).....	1927	750,000	.....
Eighth (1929).....	1928	600,000	.....
Ninth (1930).....	1929	500,000	.....
Tenth (1931).....	1930	450,000	.....
Total for second 5 years.....	.....	\$ 3,345,000	.....
Total for 10 years.....	.....	\$10,000,000	.....

General indorsement of this program has been given by Federal interests as follows:

In June, 1920, the Alaska advisory committee, consisting of representatives of the Department of the Interior, the Department of Agriculture, the Post Office Department, and the United States Shipping Board reported that "the construction of wagon roads and trails is one of the most important and urgent needs of Alaska" and recommended "an appropriation of at least \$1,000,000 annually until the completion of an adequate road system in Alaska."

In May, 1921, the Inter-Departmental Alaska Board, consisting of representatives of each of the Federal executive departments, recommended: "That approval be given the general program of road construction submitted by the Alaska Road Commission in its Annual Report for 1920, and that definite adoption of the proposed program be urged before Congress, with a view of providing feeders to the Government railway as well as for the general development of the Territory."

On July 27, 1923, the late President Harding, in his Seattle speech after his return from the Interior of Alaska, said in part:

"In another direction there is justification for a most liberal disposition—that of road and trail building.***** Roads constitute a prime need in every new country, and our long national experience in pushing our highways ahead of the onrolling wave of settlement ought to convince us that the broadest liberality towards roads in Alaska will be certain to bring manifold returns.*****The present road system is but a beginning; and I am willing to be charged with a purpose of something like prodigality in my wish to serve Alaska generously, and more, in this matter of road building."

The original plan of providing the money necessary for carrying on the work of the board is found in the Act of January 27, 1905, which authorized the expenditure for the construction and maintenance of wagon roads, bridges, and trails in said district of 70 per cent, reduced by Act of March 3, 1913, to 65 per cent, of what is known as the Alaska Fund, derived from vocational and trade licenses outside of incorporated towns. This fund proved to be so inadequate and uncertain in amount that special appropriations in aid of the work were made for the fiscal year 1907, and appropriations have since been made from year to year.

Prior to 1919 the appropriations were available only for the fiscal year specified in the appropriation act. The construction season is very short, however, and distances are great and communication is difficult. Supplies must therefore be purchased in advance and in many cases freighted in over the snow during the winter. Work cannot be economically started after July 1 nor stopped and then started up again. These conditions necessitate making preparations for the operations of the season sometime previous to the beginning of the fiscal year. The appropriation act of July 11, 1919, and the appropriations made since that date, have therefore included a provision that the funds shall be immediately available. Delay of the work on account of the lack of funds has also been occasioned, however, by the fact that appropriation bills were not passed until near or after the beginning of the fiscal year. To guard against such possibility for the season of 1922 House Joint Resolution 282, approved April 6, 1922, provided as follows:

"The Secretary of War is authorized to direct the Board of Road Commissioners for Alaska to incur obligations prior to July 1, 1922, for the construction and maintenance of roads, bridges, trails in Alaska of not to exceed 50 per cent of the appropriation for this purpose for the fiscal year ending June 30, 1922, payment of these obligations to be made from the appropriations for the fiscal year ending June 30, 1923."

A similar provision for the season of 1923 was made by a paragraph, as follows, in the appropriation act approved June 30, 1922:

Provided: That if an appropriation for this purpose for the fiscal year ending June 30, 1924, shall not have been made prior to March 1, 1923, the Secretary of War may authorize the board of road Commissioners to incur obligations for this purpose of not to exceed 75 per centum of the appropriation for this purpose for the fiscal year ending June 30, 1923, payment of these obligations to be made from the appropriation for the fiscal year ending June 30, 1924.

A similar provision for the season of 1924 was included in the Appropriation Act approved March 2, 1923. It was dropped out in conference from the corresponding act approved June 7, 1924, as the regular appropriation for the 1925 working season should become a law before March 4, 1925, and contain the customary language, "to be immediately available."

Though an item in aid of this work has been included each year in the appropriation act for the support of the Army, the item was subject to a point of order prior to July 9th, 1918, and was several times seriously endangered. In 1918 the Secretary of War finally announced he would submit no further estimates for the continuation of this work unless specifically authorized to do so. As a result the act of July 9, 1918 (40 Stat. 863) contains the following language:

"Provided, That hereafter, so long as the construction and maintenance of "military and post roads" in Alaska, and of other roads, bridges, and trails in that Territory shall remain under the direction of the Secretary of War, he be authorized to submit such estimates for the consideration of Congress as are, in his judgment, necessary for the proper prosecution of the work."

Since that date, therefore, the Secretary of War has been definitely charged with responsibility for the submission of estimates for the construction and maintenance not only of "military and post" roads in Alaska, but of "other roads, bridges and trails" as well. The act approved June 30, 1922, making appropriations for the activities of the War Department transferred the item to Title II, Nonmilitary Activities. The work is therefore no longer a charge against the support of the Army.

At the close of the fiscal year ending June 30, 1926, five of the ten years of the 1920 program of operations will have elapsed. The average appropriations will have been less than half* of the estimates. Starting with an appropriation of \$100,000 for 1920, each year an increased amount has been secured, but only in 1924 did the appropriation (\$650,000) reach the pre-war figure (\$500,000).

*For the four fiscal years 1922-1925 actual appropriations, as indicated in the above table, have aggregated only \$2,165,000 as against estimates of \$5,255,000.

With the meagre amounts granted during the intervening years, the Commission was faced with the need for continuing the new construction begun in 1916 upon a \$500,000 per year basis, to repair the damage due to the neglect of the lean war years, to keep the existing system in repair, to build a more substantial type of road to withstand motor traffic, and to embark upon a \$3,000,000 project to provide feeder highways and trails to the newly constructed \$60,000,000 Government railroad; and all this in spite of the greatly increased cost of labor, materials, and supplies. New construction could be accomplished only at the expense of much needed maintenance. However, a comparison of the current report with the report for 1920 will show that substantial results have been accomplished for the money expended. The close of the five-year period will see the 1920 system rehabilitated and improved, annual maintenance performed as required, and a considerable mileage of new construction accomplished.

It now becomes necessary to revise the table for the second five-year period of the Ten Year Program. Many changes in the transportation situation have developed since 1920 and it must be emphasized that in developing a pioneer country great flexibility of plans and organization must be maintained. Any program proposed to extend over several years in advance can only be tentative. Here again a comparison of the current report with the report for 1920 will be enlightening.

For the five-year period, 1927-1931 (working seasons 1926-1930), the following appropriations are recommended:

(a) For Maintenance of Existing Routes 9,624 $\frac{1}{2}$ miles @ \$542,-000 per year	\$2,710,000
(b) For Improvement of Existing Routes to the same standard throughout	2,600,000
(c) For Completion of Projects already Undertaken	1,180,000
(d) For Completion of Projects already Approved but not yet Undertaken	2,335,000
(e) For Completion of Projects likely to arise with Development during the 5 years	1,135,000
Total for five years	\$9,960,000
Less Alaska Fund and Territorial Contributions (estimated)	960,000
Net Federal Appropriations	\$9,000,000

Item (a), Maintenance of Existing Routes, is necessary in order to hold the existing system in service and to prevent further deterioration. The present condition and needs of the 9,624 $\frac{1}{2}$ miles of the existing system are described in detail under the different district reports herein.

Item (b) Improvement of Existing Routes, is necessary to enable existing through routes to be utilized throughout in all kinds of weather by the same class of traffic without the necessity of breaking loads. The principal routes requiring substantial improvement are the Eagle-Fortymile, Richardson Highway, Fairbanks Sys-

tem, Circle System, Beaver-Caro, Knik-Willow Creek, Wasilla-Mat-anuska, Anchorage System, Roosevelt-Kantishna, Ruby-Poorman and Ophir-Tacotna Landing.

Item (c) Completion of Projects already Undertaken, is necessary to raise the classification of parts of existing routes and to complete new projects within a reasonable time, especially those undertaken to provide highway and trail feeders to the Government Railroad. 118 miles of new construction estimated to cost an average of \$10,000 per mile, including maintenance of completed sections during the construction period, will be required. The following routes are included:

Haines System	7	miles
Gulkana-Chistochina	36	"
Fairbanks-Circle	53	"
Talkeetna-Cache Creek	20	"
Iliamna Bay-Iliamna Lake	2	"
Total	118	"

Item (d), Completion of Approved New Projects is necessary to permit aggressive action toward completing the proposed system so as to provide Alaska with a complete road and trail system, such as immediate needs justify and probably sufficient to meet all reasonable demands until the Territory shall be sufficiently developed to take over internal public works as a part of its own government. 264½ miles of new construction will be required, including the following routes:

Eagle-Fortymile	38	miles
McCarthy-Nizina	7	"
Brooks Tramway (Extension)	12	"
Moose Creek-Eva Creek	8	"
Willow Creek System	8	"
Kanatak-Pearl Creek Dome	11	"
Homer Spit	12	"
Kantishna-Park Boundary	8	"
Rampart-Eureka	15½	"
East Fork-Council	25	"
Nome-Dahl Tramway (Extension)	12	"
Inmachuck-Candle Creek Tramway	30	"
Deering-Inmachuk	13	"
Dahl-Inmachuk	66	"
Total	264½	"

Item (e), Completion of Road and Trail Projects to Arise with Development during the Five Year Period, provides a reserve to meet new conditions or changes in existing conditions. Among the many possible development routes, the following are of most immediate importance and warrant further study:

Eagle-Seventymile.
Fortymile-International Boundary.
Grundler-Tetling.
Chistochina-Slate Creek.
Chistochina-Nabesna-Chisana.
Chitina-Kotsina.
Katalla-Yakataga.
Kenai-Homer.
Iliamna Lake-Lake Clark.
Talkeetna-Iron Creek.
Fairbanks-Chena Hot Springs
Lignite-Kantishna.
Flat-Georgetown.
Alatna-Shungnak.

The above program is the result of over four years of intensive study of the transportation system of the Territory by the President of the Commission. During this time he has repeatedly visited practically every inhabited district of any importance, and has made reconnaissances into remote and little known regions. This program, calling for an expenditure of \$9,000,000, including maintenance, is very modest compared with the recommendations of the Alaska advisory committee in 1920, referred to heretofore. That committee recommended about \$25,000,000 worth of new construction, including the following wagon roads which this Board has not yet adopted and some of which it has definitely disapproved so far as any consideration during the present generation is concerned:

	Approx. mileage
Kantishna-McGrath-Iditarod	350
Cache Creek-Rainy Pass-McGrath	280
Fairbanks-Ruby	300
Poorman-Ophir	125
Ruby-Nome	375
Total	1430
Estimated Cost	\$15,000,000

Distributing the above work over a five year period in such manner that the entire project may be handled with the greatest eventual economy, we have the following table of proposed appropriations:

PROJECT OF 1924.

Federal appropriations required each year of 5-year period of road and trail development.

Fiscal Year	Working Season	Maintenance* Existing Routes	Improvement Existing Routes	Completion approved projects already underway	Construction approved projects not yet underway	Construction new projects likely to develop	TOTAL
1927	1926	\$ 350,000	\$ 600,000	\$ 400,000	\$ 400,000	\$	\$1,750,000
1928	1927	350,000	500,000	300,000	750,000	100,000	2,000,000
1929	1928	350,000	500,000	280,000	670,000	200,000	2,000,000
1930	1929	350,000	500,000	200,000	350,000	350,000	1,750,000
1931	1930	350,000	500,000		165,000	485,000	1,500,000
Total		\$1,750,000	\$2,600,000	\$1,180,000	\$2,335,000	\$1,135,000	\$9,000,000

*Exclusive of Alaska Fund and Territorial Contributions for maintenance estimated at \$192,000 per year.

The amounts submitted in the above estimates are necessary for the development of Alaska. The postponement of the construction outlined will only postpone the economic use of the Government Railroad, now completed and operating at a deficit of 1½ millions annually, and the development of Alaska. The above amounts can be profitably and economically expended by this commission with its existing organization.

THE RICHARDSON HIGHWAY.

INTRODUCTION

The Richardson Highway is the name locally applied to the U. S. Military Wagon Road extending from Valdez, an open-all-the-year south coast port of Alaska, to Fairbanks, on the Tanana River, the main distributing point for the great Yukon Valley and other interior regions of Alaska. It was so named after its builder, General Wilds P. Richardson, U. S. Army, who was President of the Alaska Road Commission from the date of its organization in 1905, until he was called away in December, 1917, for overseas service in the Great War.

From Valdez to Fairbanks is 371 miles. From Willow Creek, Mile 92, there is a wagon road connection, 39 miles long, to Chitina, on the Copper River and Northwestern Railroad, at Mile 130, from Cordova, another open-all-the-year south coast port.

EARLY HISTORY

In the summers of 1885, 1898, and 1899, War Department expeditions under Captains Abercrombie and Glenn, and Lieutenants Allen and Herron, made explorations and collected much valuable data regarding the country and the best routes of travel. For the fiscal year 1901, Congress appropriated \$100,000 for military roads and bridges in Alaska, to be expended under the War Department. Practically all of this was spent by Major Abercrombie on the route leading from Valdez to Eagle (Ft. Egbert,) the all-American route to the Klondike and Yukon gold fields. It was sufficient only for the construction of a crude pack trail through sections otherwise impassable and the building of some of the most necessary bridges along the route.

ALASKA ROAD COMMISSION

In the summer of 1904, an appropriation of \$25,000 was made for a survey and estimate for a wagon road along this route, followed by a supplemental appropriation of \$5,700 in 1905. In 1905, pursuant to an Act of Congress, approved January 27, 1905, "To provide for the construction and maintenance of roads*****in the District of Alaska, and for other purposes," the Alaska Road Commission was organized. Prior to December 29, 1917, the Commis-

sion reported to the Secretary of War through the Adjutant General of the Army. On that date orders were issued by the Secretary of War placing the work under the general supervision of the Chief of Engineers, under whose direction, river and harbor improvements and other public works are constructed and maintained. The Commission, as reorganized since the close of the War, is now composed of three officers of the Corps of Engineers of the Regular Army; James G. Steese was President and John C. Gotwals, Chief Engineer during this post-war period.

FAIRBANKS BECOMES INNER TERMINUS

By the time this Commission had accumulated sufficient funds to begin active construction, additional developments indicated Fairbanks as the logical inner terminus for the road. Since then the Commission has built and maintained, at a total cost of over \$8,000,000.00, a system of roads and trails aggregating over 9,600 miles, and extending to all parts of inhabited Alaska. The Richardson Highway, however, remains its most important project. By 1909, it was passable for dog teams; by 1911, for a light horse-drawn wagon; and in 1913, the first light automobile made the through trip from the interior to the coast. Later, that same summer, Colonel Steese had the good fortune to make a trip over the road in the first auto truck to tackle the overland journey.

DESCRIPTION.

Leaving Fairbanks, the Richardson Highway runs eastward up the right, or north, bank of the Tanana River which it follows more or less closely for 90 miles to its confluence with the Big Delta. While traveling up the Tanana River a magnificent panorama of the snow-capped summits of the Alaska Range is obtained. Then the route crosses the Tanana (by ferry) above the mouth of the Big Delta and continues up the right or east bank of that stream in a southerly direction to the summit of the Alaska Range through Isabelle Pass at an elevation of 3,300 feet.

DONNELLY CUT-OFF

Fifty-nine miles from Fairbanks, a winter cut-off leaves the summer route and crossing the Tanana at Washburn (mouth of the Little Delta) runs in a southeasterly direction across a low swampy country, impracticable for traffic except when frozen, to a point on the Big Delta about 35 miles from its mouth, where it crosses and rejoins the main summer route. The saving in distance by this cut-off for the winter mail is about 13 miles. Its principal advantages are due to its level character and to the fact that it passes through a section protected from the winter storms. It has been the effort of the Commission to have the winter and summer routes coincide as far as possible.

COPPER RIVER VALLEY

Continuing from Isabelle Pass, the route descends to the headwaters of the Gulkana River and runs along the valley and side hills to the eastward of that stream and along a series of beautiful lakes in a general southerly direction to the confluence of the Gulkana and Copper Rivers. Along this section on a clear day, one may see off to the eastward a long line of snow-clad mountains, including the smoking cone of Mt. Wrangell, an active volcano.

Crossing the Gulkana near its mouth, the route follows the right or west bank of the Copper River, gradually diverging from it and crossing the Tazlina, Klutina and Tonsina Rivers. At Willow Creek, the route divides, the shorter branch going down the Copper River Valley to Chitina. The longer branch continues into the Valley of the Teikhell, turns westerly through a broken and rugged country, and gradually ascends the Teikhell and Tsaina River gorges to the summit of the Chugach or Coast Range, at Thompson Pass at an elevation of about 2,750 feet. From here it descends the valley of the Lowe River through Keystone Canyon, then turns off across the Valdez Glacier Delta to Valdez. From Gulkana to Valdez the general route of the old Abercrombie trail is followed.

A TRANSCONTINENTAL ROUTE

The highway crosses two main mountain ranges as well as several subsidiary divides, numerous rivers and small streams, and embraces in its course practically all the various problems of construction to be dealt with in the Territory. All streams of importance have been bridged except the Salcha and Tanana Rivers which are crossed by ferry.

CONDITION—SPRING OF 1920

The total expenditures of the Commission for construction and maintenance of the Richardson Highway (410 miles of wagon road) up to June 30, 1920 were \$2,523,501.88 or \$6,155.00 per mile, including 15 years maintenance. Originally designed as a good country highway or wagon road, the rapidly growing automobile traffic soon led to a demand for a more expensive type of construction. The Commission has never professed to build hard surfaced boulevards, nor would any considerable expenditure for such a purpose be justifiable in view of the limited funds and the urgent needs in so many localities. Prior to the war, the work of placing a gravel surface on sections most needing it was begun, but no general project for surfacing all roads can be carried to completion unless much larger appropriations are provided or assured.

LEAN APPROPRIATIONS DURING WAR

Due to the extremely small appropriations of the two war years, it was impracticable to repair damage between Mile 8 and Mile 17, caused by extreme high water in Lowe River. No attempt was made therefore to keep the Valdez-Willow Creek section open. Efforts were concentrated on the Chitina-Fairbanks section. About one-fourth of this 320 mile route had a gravel surface, and in the early summer of 1920 an automobile drove through in 22 hours actual running time. A large part of the remaining three-fourths of the route was in quite bad shape. Two major bridges, Tazlina and Piledriver, needed reconstruction; the ferry across the Salcha River was unsatisfactory, and should be replaced by a bridge; and several minor glacial streams also needed to be bridged. Some additional side hill relocation was necessary along the Tanana River and between Sourdough and Paxsons.

The Valdez-Willow Creek section was totally impassable, except for pack animals, at several places, and the entire 92 miles was in a woeful state of disrepair.

REHABILITATION AND IMPROVEMENT

As soon as increased funds became assured in June, 1920, the work of rehabilitation and improvement was vigorously begun. For improvement and maintenance during the fiscal years 1921-1924, \$1,173,651.63 or \$2,860.00 per mile, have been spent in order to get the overland route open, keep it open, and bring it all up to standard.

The following table gives an idea of the bridge structures so far erected to cross the many glacial streams between Valdez and Fairbanks:

Pile trestle bridges	5,976 lineal feet
Pile and framed trestle approaches to trussed spans	3,412 " "
Log stringer culvert bridges	882 " "
2 Panel "A" frame trussed spans	893 " "
3 Panel Pratt truss spans	606 " "
4 Panel Howe truss spans	998 " "
Miscellaneous Howe truss spans of more than 4 panels	480 " "
Combination steel and fir lumber Pratt truss spans	200 " "
Combination Pony truss spans	240 " "
Suspension spans	325 " "
All-steel Petit truss span	300 " "
Total lineal feet of bridge structures on Richardson Highway, not including small culverts, corduroy, etc.	14,312 lineal feet

PRESENT CONDITION

The entire route is now standard graded on final location and the gravel surfacing is rapidly going forward.

The following table indicates the condition as of March 1, 1924:

	Miles
Heavy Gravel Surface	118
Light Gravel Surface	31
Natural Gravel or broken rock roadbed	77
Unsurfaced, (to be surfaced)	184
Total	410

All bridge structures have been overhauled and reconstructed where required. The following important bridges will be constructed in the near future:

Robe River, 300-ft. pile trestle.
Tsaina River, 45-ft. truss, 80-ft. approach.
Mile 39½, 40-ft. truss.
Upper Tonsina River, 100-ft. truss, 60-ft. truss.
Lower Tonsina River, 2-100-ft. trusses.
Klutina River, 3-100-ft. trusses.
Tazlina River, 80-ft. truss.
Gulkana River, 2-150-ft. trusses.
Summit, 150-ft. pile trestle.
Millers—Mile 223, 60-ft. truss.
Jarvis Creek, 800-ft. pile trestle.
Salcha River, 180-ft. steel truss; 345-ft. trestle approach.
Shaw Creek, 105-ft. pile trestle.

EXTENSION TO CIRCLE

The all-American route will not be complete, however, until it is extended to the upper Yukon and serves as a portage between the Yukon and Tanana Valleys. The plans of the Commission contemplate an eventual extension of the Richardson Highway from Fairbanks to Circle, a distance of 160 miles, making a total distance from Valdez of 531 miles, or about the distance from Boston to Richmond, or from Vancouver to Banff. About two-thirds of this extension is now passable for wagons. A regular winter mail-stage service is maintained, using double bob-sleds. Automobiles can now travel for fifty miles out of Fairbanks, or twenty miles beyond Chatanika. On the Circle end, over fifty miles are now passable for wagons and can be improved to motor standard at small expense, once the intervening gap of about sixty miles is completed. Work has been underway in this section for the past four seasons; three more seasons should see the gap closed.

CONCLUSION

The Richardson Highway is an important traffic feeder both to The Alaska Railroad and to the Copper River and Northwestern Railway. With these two rail systems it forms a circular route which has now become widely known on the outside as the Golden

Belt Line Tour. During the current season many hundreds of tourists made this truly magnificent scenic trip without any delays or inconveniences other than are incident to motoring in any mountainous country.

During its first fifteen years of development, the Richardson Highway was the only overland means of access to the interior of Alaska. In addition to its value in aiding local travel and development, its function of bringing new people and new money for permanent investment into the Territory is of constantly growing importance. It is truly remarkable that the federal government should have constructed and maintained this excellent overland highway in such a remote and sparsely settled region so long before the federal aid idea was accepted in the States. Its cost of only \$9,000 per mile, including twenty years' maintenance, coupled with the fact that it has been rendering service in the transportation of mail, express, passengers and freight, throughout its length from the very start in 1905, is even more remarkable. It stands as a permanent and outstanding monument to its projectors.

DETAILED OPERATIONS BY DISTRICTS.

The nature of the construction work varies from primitive pioneer cruising and blazing of pack trails to surveying and locating well graded gravel roads. In Southeastern Alaska and the centers of population of Southwestern Alaska and of the Interior, several hundred miles of road exist, well surfaced and well graded and meeting adequately the increased motor transportation thereon. A considerable amount of work is constantly required in improving portions of old roads, involving regrading, realignment, and gravel surfacing. The condition of roads here in Alaska continues to improve by thawing and drying out from year to year. For this reason, the carrying along of construction through protracted periods has not always been a disadvantage. The cruising, location and clearing of the right-of-way and the gradual grading results in a road structure of less total cost than would have been possible had the construction been completed the first season. In many cases the construction of the road in one season is impossible. This applies to the large areas of marshy and permanently frozen ground which always require two or three seasons of exposure to the sun's rays to become dried out and compacted.

The work of the Board is carried out almost entirely by its own forces. A few small contracts are let. In the general case no organization competent to do our work can be found in the district in which it is executed. The preparing of our work for letting by contract would involve elaborate surveys and constant engineering supervision, finally resulting in an overhead cost totally out of proportion to the extent of our funds. At the same time, no location without elaborate clearing and digging of

test pits could, previous to construction, predetermine the road cross section or the road alignment. After a road has been opened up and cleared many improvements can be made in alignment and grade. This is done. The work is so scattered that the foreman, assisted from time to time by the district superintendent, must be competent to make local improvements and locations.

The high cost of labor and its scarcity during the war years was a serious handicap. Except in the interior, labor will be plentiful and efficient at reasonable wages during the present season. The cost of maintaining horses through the winter time has always been a serious loss to this Board.

Recently an excellent mechanical equipment has been received and distributed. This includes tractors and dump trucks, and is expected largely to remove the loss of maintaining horses through the winter time and to increase the quantity of work performed. One advantage in the use of mechanical equipment is that Alaska now has, and will have increasingly, a local coal and oil supply. The lignite from the Nenana fields can now be purchased at Fairbanks at \$8.00 per ton. Katalla distillate is available in quantities in the Prince William Sound region at 24 cents per gallon.

A gas and oil station recently established at Seward permits the procurement of fuels and lubricants at low cost and available for distribution over the Alaska Railroad. The development of new coal fields and oil prospects will decrease these costs of fuel. All these developments are very important for the prosecution of our work.

In wagon road construction a maximum grade of ten per cent and curvature of not less than one hundred feet radius are permitted. The width of our roads is generally such as to afford one wagon track. In a few cases, where congested traffic occurs, the road section has been widened out to provide for two tracks. The location of wagon roads to provide a firm road bed in summer time requires considerable meandering to reach thawed and firm ground. Sled roads, on the other hand, require a clearing of all stumps to a width of eight feet and are located, as nearly as possible, on tangent. An effort is made to locate winter and summer roads upon identical routes. Winter dog trails, of extreme importance in the interior, must, above all, be carefully blazed and marked so that travelers can easily follow them. Shelters must be provided as it is inconvenient, if not dangerous, to camp out in the interior in the winter time. The marking of pack trails is equally important with that of winter dog trails. These, again, require careful alignment to avoid swamps and thawed spots absolutely impassable in the summer time.

In general, in the interior, winter time affords access to every working therein. The dry cold, with the light snow of the in-

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terior, affords opportunity for the use of dog teams in reaching almost every working. On the other hand, the open streams in summer time, by the use of river and polling boats, afford access almost equally well. Between these periods there exists in the spring the "break-up" period, in which the ice goes out of the streams and the snow disappears, and the "freeze-up" period in the fall, when the rivers close and the snow begins to cover the ground. The first, coming at the commencement of work on the many small mines of the interior, and the latter at the close of work are of immense importance for the interior operator and must be given grave consideration by this board. In accordance with these conditions it is the general policy of the board to construct first a sled road to a working which it is desired to make accessible and to follow this with the bridges and the necessary detours around lakes and swamps to make the route passable in summer time. This, then, gives a means of access to the interior operator's workings in the two most important periods of the year for him, that is, the "freeze-up" and the "break-up." Work so conducted very substantially increases the working period for the interior miner.

JUNEAU HEADQUARTERS.

The general office of the Board is located at Juneau, the capital of the Territory. This is the headquarters for all activities of the members of the Board.

The field activities of the Board extend to all inhabited parts of the Territory, but the largest projects and the bulk of its expenditures are located in the central part of the Territory tributary to the Richardson Highway and The Alaska Railroad. Close liason is obtained with all other Federal or Territorial bureaus or officials.

The President of the Board has general charge of the operations of the Board, conducts hearings, investigates new projects, allots available funds, and approves and certifies, on behalf of the Board, all vouchers and expenditures. He spends a majority of his time in the field keeping in close touch with the progress of the work and of conditions generally in the Territory.

The Engineer Officer supervises the work of construction in the field, prepares estimates, requisitions, etc., and oversees the design of major structures. He spends most of his time in the field and undertakes a great deal of pioneer reconnaissance work. The President and the Engineer Officer interchange functions in different parts of the Territory, thus expediting the handling of emergencies.

The Secretary and Disbursing Officer is in general charge of the office, handles purchases and supply, and disburses the

funds of the Board. He has a bonded disbursing clerk in each district who draws overdrafts on the nearest bank or commercial house to make prompt payments for labor and supplies. These overdrafts are met monthly by the disbursing officer and carried as "cash advanced" until the covering vouchers arrive; usually several months and frequently two years later. He visits each district office periodically to standardize methods and accounts. By means of the cable, telegraph, and radio, the general office is in constant touch with each district office.

WASHINGTON, D. C., SUB-OFFICE.

Routine business with the War Department is carried on through the Chief of Engineers, U. S. Army. The President of the Board is required to defend the annual estimates of the Board in person before the Appropriations Committees of Congress. He is also called upon to testify upon Alaskan affairs before various other committees and to confer with other bureau chiefs in Washington. To meet these conditions, he maintains a sub-office in Washington, D. C., for several weeks each winter.

SEATTLE, WASH., DISTRICT ENGINEER OFFICE.

By informal arrangement, the District Engineer, U. S. Engineer Department, Seattle, Wash., has consented to act as a purchasing agent of the Board. Upon request he advertises and canvasses bids, inspects and ships supplies, answers inquiries, secures information, and, in general, represents the Board in Seattle. For this service he charges the Board only for the actual time of such of his subordinates as may be actually engaged in this work. This accommodation results in a considerable saving to the United States, as otherwise the Board would be compelled, during the busy season, to maintain a high-priced representative in Seattle and to provide for office space, fuel and light, clerical help, etc.

The services rendered to this Board through such purchases and shipments are invaluable. The low prices obtained and the prompt shipments made have been an important factor in extending our work.

During the fiscal year \$183,247.50 worth of supplies were secured at a cost of \$3,048.17 or 1% for purchase and inspection.

SOUTHEASTERN DISTRICT.

Supervised from the Juneau Office.

1st. Lieut. P. A. Agnew, Supt.

This district includes all the territory east of the 141st meridian, being the portion of the territory designated as the panhandle. Due to the rugged character of the country and to the excellent system of sheltered waterways, the main transportation will always be by water. There exist in the district, however, two main through projects; first, the Haines-Pleasant Camp project, extending from tide-water up the Chilkat and Klehini River valleys to the International Boundary, and thence through the Rainy Hollow Mining District, and by trail on to Lake Klwane and the White River country in Yukon Territory; and, second, the Juneau-Eagle River project, extending from Juneau along the coast to the Mendenhall River, Auk Bay, Eagle River Valley, and eventually probably to the Berner's Bay Region.

The most difficult topographic obstacles to road building are encountered in this district, as well as the greatest density of wheeled traffic, but the supply problem is quite simple. The lower costs in this district due to lower freight rates from the United States, the long working season and mild climate more than counter-balance the topographic obstacles in the construction costs.

There are 27 sub-projects in this district. Of this number 17 are within the boundaries of the Tongass National Forest, and have accordingly been turned over to the Department of Agriculture, working in cooperation with the Territory of Alaska.

These are:

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
1	Prince of Wales Island	4		7	11
2A	Auk Bay Extension	2			2
2B	Mendenhall Glacier Extension.....	3			3
2C	Eagle River Extension	6		14	20
2D	Juneau-Duck Creek	10			10
14	Sitka-Indian River	3½			3½
39	Juneau-Sheep Creek	3			3
43	Petersburg-Scow Bay	5		1	6
44	Skagway Valley	2½			2½
44A	Skagway-Smuggler's Cove			3	3
45	Silver Bow Basin	4			4
50	Stikine River			10	10
52	Ketchikan-Ward's Cove				
58	Hyder-Salmon River				
72	Wrangell Oil Dock	½			½
82	Taku River	3			3
91	Yakutat			1½	1½
	Totals	46½		36½	83

The following sub-projects, being located entirely outside the limits of the National Forests, are being retained by this Board. All are cooperative projects with the Territory. As all available Territorial funds in the First Division were allotted to cooperative projects, no divisional organization was maintained. No chairman and secretary of the divisional road commission was appointed. The two elected members are J. C. Hayes and Joseph Ulmer. Mr. Ulmer was employed by the Alaska Road Commission in the Interior during almost the entire year.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
3A	Haines-Wells	25			25
3B	Pleasant Camp Extension	18			18
3C	Porcupine Extension	20			20
3D	Haines-Mud Bay	10			10
3E	Haines-Chilkoot	3			3
14A	Sitka National Monument			2	2
14B	Sitka Military Cemetery	½			½
40	Douglas-Gastineau Channel	2			2
40A	Hawk Inlet Trail				
81	Good Creek-Salmon River	1½			1½
	Totals	80		2	82

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial	Construction	Maintenance	TOTAL
3A	\$ 2,642.49	\$ 5,000.00		\$ 7,642.49	\$ 7,642.49
3B	25,576.20	11,500.00	33,576.20	3,500.00	37,076.20
3C	505.69	500.00	700.00	305.69	1,005.69
3D	1,104.41	1,000.00		2,104.41	2,104.41
3E					
14A	594.85	1,000.00 (a)	500.00	1,094.85	1,594.85
14B	130.25	100.00		230.25	230.25
40	79.80	100.00		179.80	179.80
40A	10.00	15.00	25.00		25.00
81	902.15	1,285.00	1,500.00	687.15	2,187.15
Totals	\$31,545.84	\$20,500.00	\$36,301.20	\$15,744.64	\$52,045.84

(a)—Includes \$500.00 contributed by National Park Service.

HAINES SYSTEM.

Joe McKenzie, General Foreman.

R. J. Shepard, Location and Supply.

This system of roads was in a very conspicuous state of disrepair in 1920. The important Haines-Wells-Porcupine road was only passable for four miles out of Haines. The bridge crossing the Chilkat River at Wells was inaccessible and unsafe and slides and general damage existed throughout. The road was rebuilt to Wells, a new bridge constructed across the Chilkat River and the road extended on the north side of the Klehini River to a point opposite the mining camp of Porcupine. In addition to this, the old Territorial road partially constructed to Mud Bay along the Chilkat Peninsula was opened up to traffic, surfaced and put in usable condition. This work has resulted in renewing mining

activity on the Upper Klehini and across the Canadian border from the terminus of the road and has made accessible a fine stand of timber and some excellent agricultural land.

ROUTE 3A—HAINES-WELLS.....(25 MILES WAGON ROAD)

This is the most important project in Southeastern Alaska, consisting of the first 25 miles of the route to Porcupine, Rainy Hollow, and the interior.

Repairs were made to the road between Haines and Mile 18, consisting of the removal of slides, cutting brush and replacement of culverts and small bridges. From Mile 18 to Mile 25, the road was gravelled throughout. This road is now in excellent condition.

Expenditure:

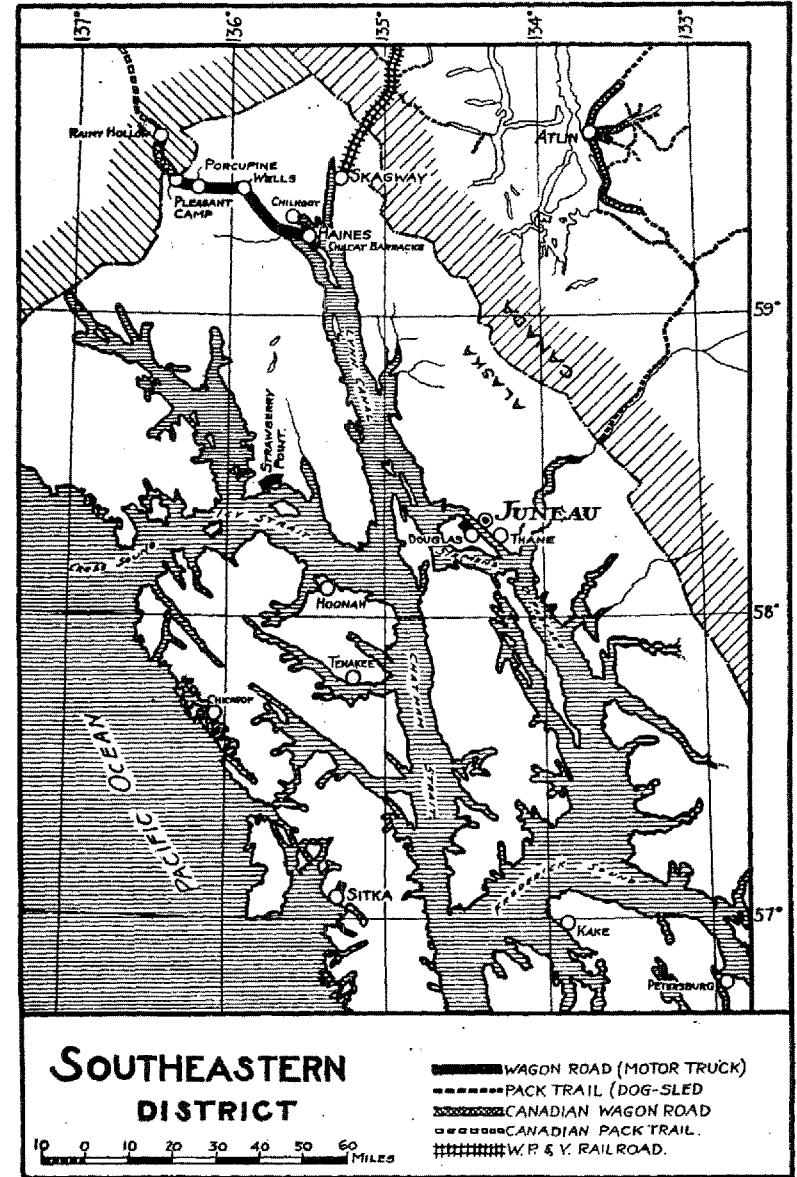
Alaska Road Commission	\$2,642.49
Territory of Alaska	5,000.00
Total	\$7,642.49

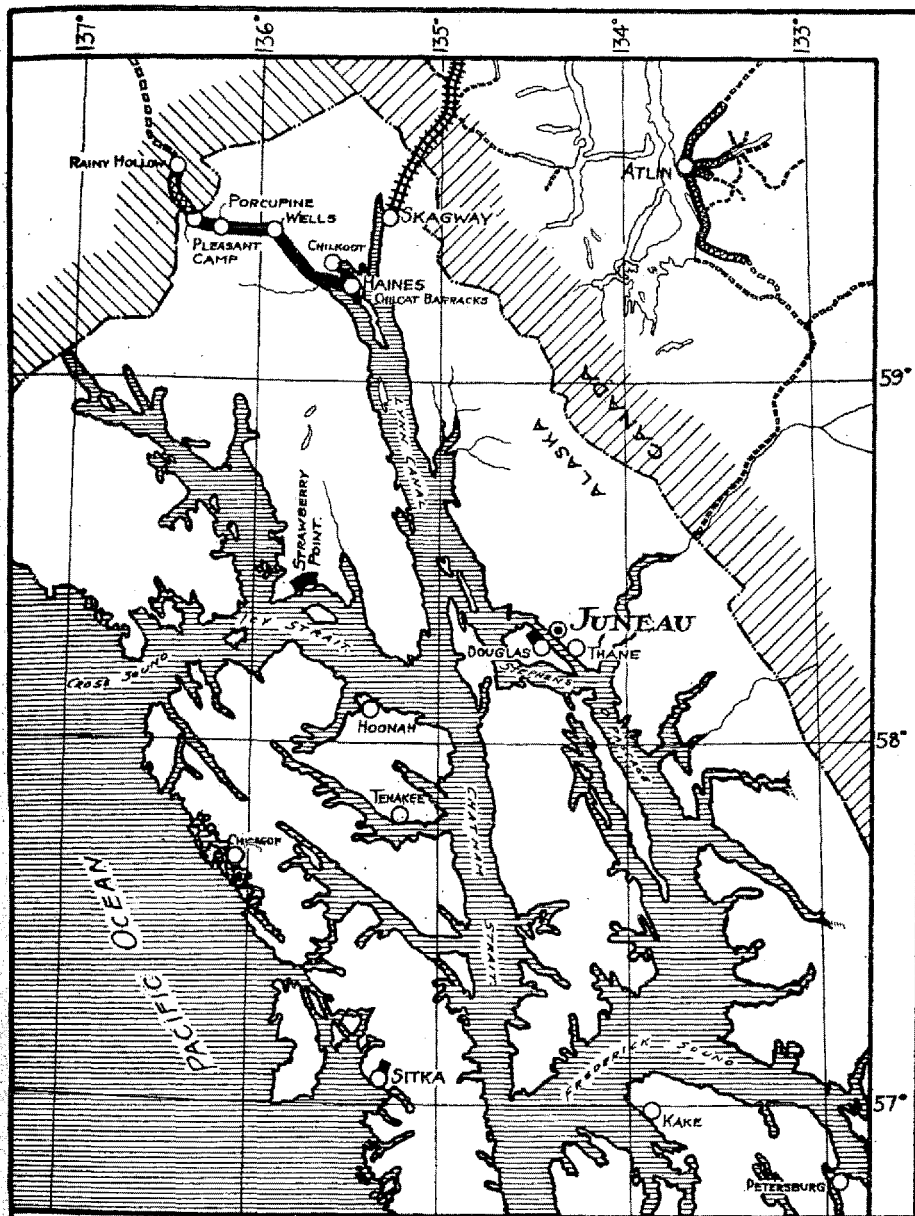
ROUTE 3B—PLEASANT CAMP EXTENSION...(18 MILES WAGON ROAD)

This road is a very important one, being an extension of Route 3A along the north bank of the Klehini. When completed it will afford access to the rich upper Klehini Valley and to the Rainy Hollow District in British Columbia where important developments are under way; also to the Porcupine district where mining has recently been resumed.

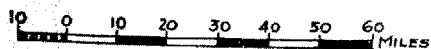
Of the three miles of this extension constructed previously, 1¼ miles were in very bad condition at the opening of the season. Fills had settled and banks sluffed down. These slides were removed, the road widened and brought up to grade, additional culverts were placed and soft portions gravel surfaced. During the past season 3¾ miles of new road were built. Clearing was very heavy over this section. ¼ mile of solid rock excavation was accomplished. During the winter a 70-foot Howe truss span was erected over Little Boulder Creek, situated 1¼ miles beyond the end of the season's construction. The timber for this bridge was all hewed on the site. A cut of solid rock on the east approach to this bridge was completed. The following quantities are included in the above:

Clearing	20 acres
Excavation, solid rock	2,500 cu. yds.
Excavation, common	10,000 cu. yds.
Gravel surfacing	2,500 cu. yds.
Culverts	10
Bridges	One 70-foot span





SOUTHEASTERN DISTRICT



- WAGON ROAD (MOTOR TRUCK)
- - - - - PACK TRAIL (DOG-SLED)
- XXXXXX CANADIAN WAGON ROAD
- CANADIAN PACK TRAIL.
- ||||||| W.P. & Y. RAILROAD.

This road is now practically complete to the 32nd mile post or seven miles from Wells.

Expenditure:

Alaska Road Commission	\$25,576.20
Territory of Alaska	11,500.00
Total	\$37,076.20

ROUTE 3C—PORCUPINE EXTENSION (20 MILES WAGON ROAD)

This is the old Porcupine Road on the south side of the Klehini River. Since the old bridge at Wells was condemned it has been reached by fording the Klehini from Route 3B.

During the past season repairs were made to the bridge over the Porcupine River. This allows access to the upper end of this route from the upper end of the Pleasant Camp Extension by fording the Klehini River. A cable tram, 500-foot span, for foot passengers was erected across the Klehini River at Fish Point.

Expenditure:

Alaska Road Commission	\$505.69
Territory of Alaska	500.00
Total	\$1,005.69

ROUTE 3D—HAINES-MUD BAY (10 MILES WAGON ROAD)

This road extends southward from Haines along the west side of the Chilkat Peninsula to the cannery on Letnikoff Cove and thence across the Peninsula to Mud Bay on the east side of the Peninsula.

This road was repaired early in the past season from Haines to the cannery at Letnikoff Cove and was in excellent condition all summer. Repairs were mainly gravelling, ditching, and widening roadway. From Letnikoff Cove to Mud Bay, the road was sufficiently repaired to permit team traffic.

Expenditure:

Alaska Road Commission	\$1,104.41
Territory of Alaska	1,000.00
Total	\$2,104.41

ROUTE 3E—HAINES-CHILKOOT (3 MILES WAGON ROAD)

This road was built by the Territory from Haines to the cannery and several homesteads on Chilkoot Inlet.

It is in fair condition.

Expenditure: None.

TOTAL EXPENDITURES, HAINES SYSTEM.

Alaska Road Commission	\$29,828.79
Territory of Alaska	18,000.00
Total	\$47,828.79

SITKA SYSTEM.

Pete Trierschild, Custodian National Park Service,
General Foreman.

ROUTE 14A—SITKA NATIONAL MONUMENT....(2 MILES TRAIL)

This route includes the cable suspension footbridge and trails in the Sitka National Monument.

During the past year the following improvements were accomplished:

Totem poles were erected, repaired and painted.
The suspension footbridge was repaired and creosoted.
A 30-foot footbridge was rebuilt.
The bulkhead along Indian River was extended 70 feet and backfilled.

Three additional benches were provided.

Signs were repainted.

Additional walks were cleared and gravelled.

Expenditure:

National Park Service	\$ 500.00
Alaska Road Commission	594.85
Territory of Alaska	500.00

Total

ROUTE 14B—SITKA MILITARY CEMETERY.....(1/2 MILE WAGON ROAD)

The old abandoned post cemetery in which are buried officers and enlisted men of the Army, Navy, Marine Corps, and Coast Guard Service, formerly members of the Sitka Garrison, or on duty in adjacent waters, was rehabilitated through the combined efforts of the Governor of the Territory and the citizens of Sitka, the expense being borne partly by the town and partly by an allotment from the Navy Department.

The cemetery was maintained in good condition during the past year. Additional grass seed was sown and walks repaired. Additional gravel was placed on the road built to connect the cemetery with the town last year.

Expenditure:

Alaska Road Commission	\$ 130.25
Territory of Alaska	100.00

Total

TOTAL EXPENDITURES, SITKA SYSTEM.

National Park Service	\$ 500.00
Territory of Alaska	600.00
Alaska Road Commission	725.10
Total	\$1,825.10

ROUTE 40—DOUGLAS-GASTINEAU CHANNEL...(2 MILES WAGON ROAD)

With the decline of population and activity on Douglas Island the use of this road has decreased.

Ditches were cleared and minor repairs made to bridges and culverts.

Expenditure:

Alaska Road Commission	\$ 79.80
Territory of Alaska	100.00

Total

ROUTE 40A—HAWK INLET TRAIL—(1/2 MILES PROPOSED TRAIL)

This proposed trail extends from the beach on Hawk Inlet to a prospect, inland approximately 1 1/2 miles.

An investigation was made of this route in the spring of 1923. No work is contemplated in the near future unless development of the property warrants.

Expenditure:

Alaska Road Commission	\$10.00
Territory of Alaska	15.00

Total

ROUTE 81—GOOD CREEK-SALMON RIVER...(1/2 MILES WAGON ROAD)

(Strawberry Point)

This road extends from Parker's ranch on Good River to the bridge crossing the Salmon River, 1 1/2 miles east. The location follows the section lines.

During the past season a bridge was constructed by contract over the Salmon River. It consists of 320 feet of trestle approach and one 20-foot draw span.

Expenditure:

Alaska Road Commission	\$ 902.15
Territory of Alaska	1285.00

Total

DISTRIBUTION OF EXPENDITURES

Type	Miles*	Expenditure	Unit Cost Dollars per Mile
Wagon Road	77		
Trail	2		
Totals	79	\$52,045.84	\$658.81

(*)—Includes only routes maintained during fiscal year.

EAGLE SUB-DISTRICT.

Supervised from the Juneau Office.

Fred Price, General Foreman in Charge.

(July 1 to Oct. 31, 1923.)

This sub-district includes the Territory east of the 144th meridian between the Yukon and Tanana Rivers. The work is confined largely to the roads and trails centering around the town of Eagle and supplying the mining camps tributary thereto.

This sub-district, which includes an area of very early development in Alaska, was reopened during the last four years. A thorough reconnaissance was made by the Engineer Officer in 1921. This reconnaissance included all routes within the sub-district and was concluded by traversing the old historic Eagle Trail from Eagle to Gulkana on the Richardson Road. The information gathered in this reconnaissance has been the basis for work during the last three years. No lively new mining developments have occurred within the district during these years, and the work has been largely directed toward keeping open existing routes, improving winter sled road and summer trail mileage, and relieving in every possible way the light traffic existing over this widely scattered and remote district.

There are twenty-one sub-projects in this district affording communication between Eagle and the Seventymile country to the north and northwest and the Fortymile country to the south and southwest. With the completion of these sub-projects by the United States and the extension of the Dawson-Miller Creek Road to the International Boundary by Canada, there will be provided a through route for wheeled traffic from Eagle to Dawson, the main distributing center for the Klondike and Yukon Territory. Eagle or Fort Egbert, nearby, is the northern terminus of the Valdez-Fort Egbert trail and telegraph line, the original American route to the Yukon.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
11A	Eagle-O'Brien Creek	12	15		27
11AA	Gravel Gulch-Liberty			15	15
11B	O'Brien Creek-Fortymile		23		23
11C	Steel Creek-Jack Wade	2½	12½		15
11CC	Steel Creek-Jack Wade			15	15
11D	Canyon Creek-Walker's Fork		21		21
11E	Eagle-Seventymile	2½	17½	40	60
11F	Jack Wade-Chicken			20	20
11G	Steel Creek-Moose Creek		15		15
11H	Liberty Cabin-Dome			10	10

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
11I	Dome-Steel Creek			12	12
11J	Fortymile-Franklin		30		30
11K	Fortymile-Steel Creek		8		8
11L	Franklin-Chicken		10		10
11LL	Franklin-Chicken		20		20
11M	Jack Wade-Walker's Fork			18	18
53	Eagle-Circle			190	190
65D	Kechumstuk-Tanana Crossing			60	60
65E	Chicken-Kechumstuk			28	28
86	Fourth of July Creek		10		10
87	Woodchopper Creek			8	8
	Totals	17	182	416	615

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial	Construction	Maintenance	TOTAL
11A	\$ 4,670.05			\$ 4,670.05	\$ 4,670.05
11AA					
11B	122.64			122.64	122.64
11C	60.00			60.00	60.00
11CC					
11D					
11E	1,406.53			1,406.53	1,406.53
11F					
11G	35.00			35.00	35.00
11H	381.84			381.84	381.84
11I					
11J					
11K					
11L					
11LL					
11M					
53	412.51			412.51	412.51
65D	189.00			189.00	189.00
65E	672.00			672.00	672.00
86	1,063.86			1,063.86	1,063.86
87	445.00			445.00	445.00
Totals	\$ 9,458.43			\$ 9,458.43	\$ 9,458.43

ROUTE 11A—EAGLE O'BRIEN CREEK....(12 MILES WAGON ROAD, 15 MILES SLED ROAD)

This is the main route from Eagle to the Fortymile District. The first 12 miles have been improved to summer wagon road standard. This section starts from Eagle and follows up the right limit of American Creek to Discovery Fork, thence along the right limit to Gravel Gulch at Mile 12. From Gravel Gulch a winter sled road follows to the summit and down the right limit of King Solomon to the mouth of Liberty Fork, at Mile 27.

During the past season considerable damage from early summer storms occurred to this road. This damage was repaired, several culverts were replaced, a new bridge was constructed over Marion Creek and several slides were removed. Minor repairs were made to the sled road portion of the route, leaving it in fair condition for winter travel.

Expenditure: \$4,670.05.

ROUTE 11AA—GRAVEL GULCH-LIBERTY.....(15 MILES TRAIL)

Between Gravel Gulch and the mouth of Liberty Fork a summer pack trail leaves Gravel Gulch. Following the ridge along

the heads of Boundary and the north fork of King Solomon Creeks it continues along the high, dry ground to Liberty cabin at the mouth of Liberty Creek. The distance is the same as by the winter sled road included in Route 11A.

Expenditure: None.

ROUTE 11B—O'BRIEN CREEK-FORTY MILE....(23 MILES SLED ROAD)

This is a continuation of Route 11A from Liberty Cabin to the mouth of O'Brien Creek on Fortymile River, a distance of 23 miles, or 50 miles from Eagle.

Several washouts were repaired and other minor repairs were made on this sled road placing it in fair condition for winter use.

Expenditure: \$122.64.

ROUTE 11C—STEEL CREEK-JACK WADE....(2½ MILES WAGON ROAD, 1½ MILES SLED ROAD)

This winter sled road starts at the mouth of Steel Creek, at the end of Route 11K, follows up the left limit to the summit of the ridge, crosses over and down the left limit of Jack Wade to the post office, a distance of 15 miles, or 73 miles from Eagle.

Road was cleared of slides and minor repairs made to sled road.

Expenditure: \$60.00.

ROUTE 11CC—STEEL CREEK-JACK WADE....(15 MILES TRAIL)

This is the alternate summer pack trail to Route 11C crossing the ridge to the northeastward of the winter sled road.

Expenditure: None.

ROUTE 11D—CANYON CREEK-WALKER'S FORK....(21 MILES SLED ROAD)

This sled road branches off Route 11G near the mouth of Canyon Creek six miles east of Steel Creek, and follows up Canyon Creek to its head and then crosses and follows the right limit of Walker's Fork to within five miles of the boundary line. The total distance from the mouth of Steel Creek is 27 miles, and from Eagle is 85 miles.

Expenditure: None.

ROUTE 11E—EAGLE-SEVENTY MILE....(2½ MILES WAGON ROAD, 17½ MILES SLED ROAD, 40 MILES TRAIL)

The route to Seventymile leaves Eagle through the old army post of Fort Egbert, following the wagon road across American Creek a mile and a half. It then continues as a winter sled road for 18½

miles up Excelsior Creek, across a low summit and down the right limit of Rock Creek to its mouth at Seventymile. The pack trail leaves the sled road at Rock Creek Bridge several miles above the mouth of Rock Creek, crosses over a low divide into Bryant Creek and follows up the right limit to a mile below the falls where it crosses and continues up the left limit to Barney Creek. Here another crossing is made to the right limit and again back to the left limit and across Placer Creek near its mouth. The trail then climbs the ridge which it follows for a distance of 10 miles, dropping down again and crossing the Seventymile just below Nugget Creek. It then continues up the right limit of Seventymile to Alder and Flume Creeks, a total distance of 60 miles from Eagle.

Portions of the wagon road damaged by high water were regraded and one mile of new wagon road was constructed.

Light repairs were made throughout.

Expenditure: \$1,406.53.

ROUTE 11F—JACK WADE-CHICKEN.....(20 MILES TRAIL)

This trail climbs the ridge west of Jack Wade post office, following around the head of Ubler, Polly and Napoleon Creeks and drops down to the crossing of the Fortymile River at Franklin post office, again climbs the ridge, following around the heads of Kettle George and a fork of Chicken, where the winter sled road is followed upon the right limit of Chicken Creek to Chicken Post Office. The distance from Jack Wade to Franklin by this route is 12 miles, and from Franklin to Chicken 8 miles.

Expenditure: None.

ROUTE 11G—STEEL CREEK-MOOSE CREEK....(15 MILES SLED ROAD)

This winter road extends from the mouth of Chicken Creek along the left limit of Fortymile River, a distance of 15 miles, to the international boundary near Moose Creek.

A small amount of work was done on this sled road clearing slides.

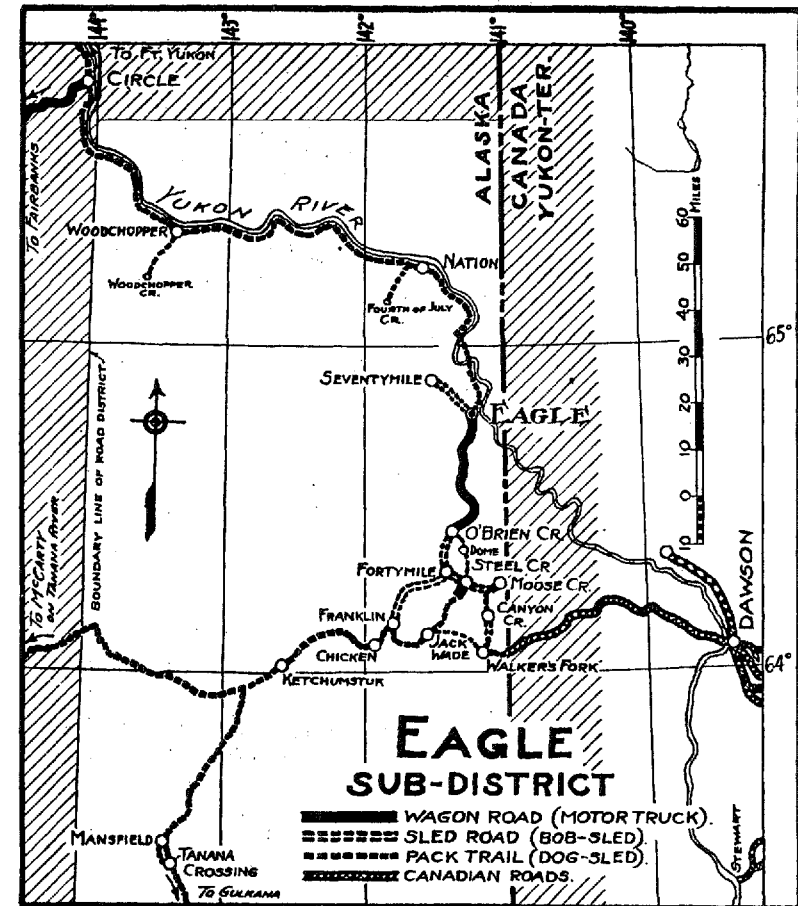
Expenditure: \$35.00.

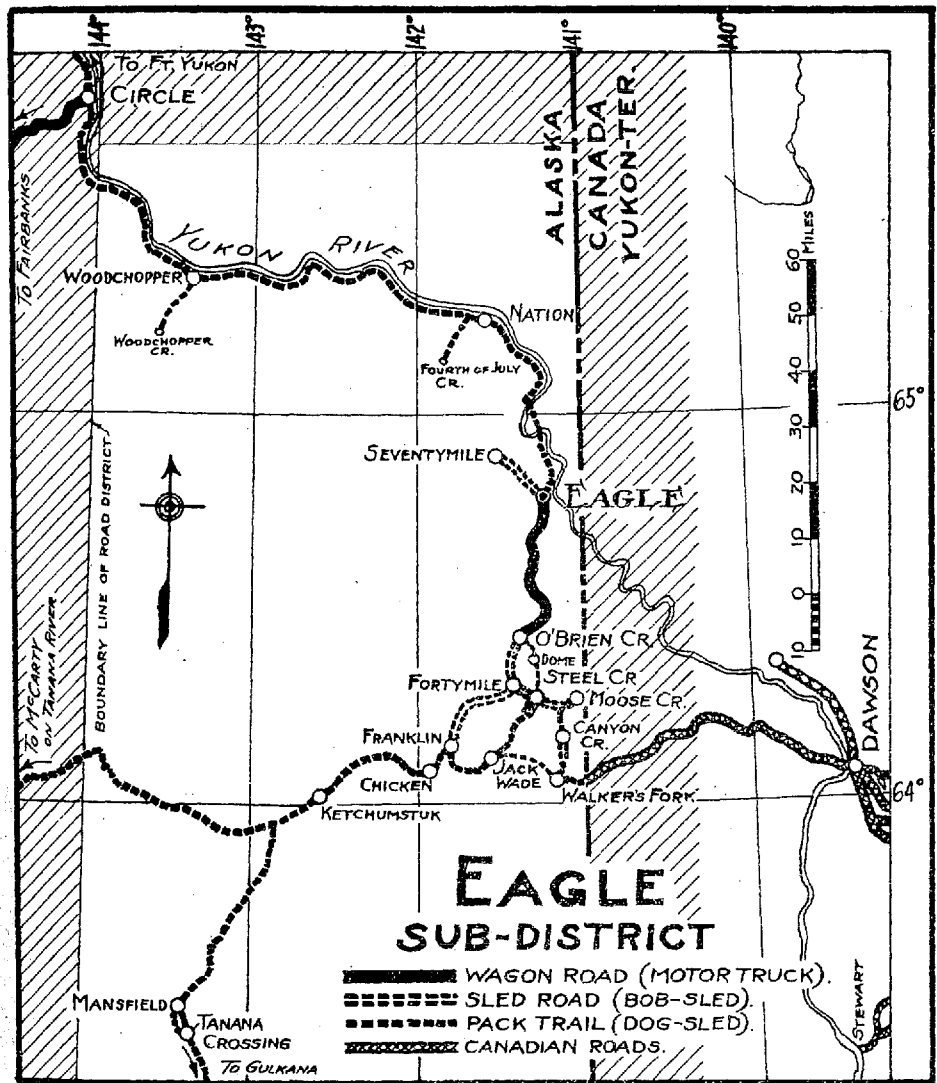
ROUTE 11H—LIBERTY CABIN-DOME.....(10 MILES TRAIL)

From Liberty Cabin a summer pack trail follows the ridge around the head of McKinley Creek and down the right limit of Dome Creek to the hydraulic workings near the mouth of Dome Creek.

During the past season a bridge of thirty-two foot span, eleven feet wide, was constructed over Liberty Creek. This bridge is a great improvement to this route.

Expenditure: \$381.84.





ROUTE 11I—DOME-STEEL CREEK.....(12 MILES TRAIL)

This is a continuation of Route 11H from Dome Creek up the right limit of Dick Dale Creek, around the heads of Flat and Twin creeks and down a steep bench to Steel Creek.

Expenditure: None.

ROUTE 11J—FORTY-MILE-FRANKLIN.....(30 MILES SLED ROAD)

This sled road is a continuation of Route 11B, extending from the mouth of O'Brien Creek up the Fortymile River to Franklin Post Office at the mouth of Franklin Gulch, a distance of 30 miles, or 80 miles from Eagle.

Expenditure: None.

ROUTE 11K—FORTY-MILE-STEEL CREEK..(8 MILES SLED ROAD)

This winter sled road branches off Route 11B at the mouth of O'Brien Creek and follows down the Fortymile River a distance of 8 miles to the mouth of Steel Creek, 58 miles from Eagle.

Expenditure: None.

ROUTE 11L—FRANKLIN-CHICKEN.....(10 MILES SLED ROAD)

This winter sled road is a continuation of Route 11J and follows up Franklin Gulch to the mouth of Kettle Creek, then over a low divide, along the right limit into a fork of Chicken Creek. It follows down the right limit to the post office, a distance of 10 miles, or 90 miles from Eagle.

Expenditure: None.

ROUTE 11LL—FRANKLIN-CHICKEN.....(20 MILES SLED ROAD)

This is an alternative winter sled route which follows the main Fortymile River to the mouth of Dennison Fork and then across to Chicken post office.

Expenditure: None.

ROUTE 11M—JACK WADE-WALKER'S FORK....(18 MILES TRAIL)

This pack trail leaves Jack Wade Creek at Robinson Creek, climbs to the top of the ridge and follows around the head of Squaw, Baby, Camp and Twelvemile creeks to the head of Canyon Creek. It there picks up the winter sled road, Route 11D, and follows it to Walker's Fork.

Expenditure: None.

ROUTE 53—EAGLE-CIRCLE.....(190 MILES TRAIL)

This winter trail follows the Yukon River from Eagle to Circle.

It is used principally by mail carrier but also serves all winter travel between these points.

Several important improvements were made to this trail during the past season. A trail was cut around Tacoma Bluff near Circle taking the trail off the river at this point. All fallen timber was removed from trail and the so-called Montuk and Seventy-Mile cut-offs improved. One small bridge was built.

Expenditure: \$412.51.

ROUTE 65D—KECHUMSTUK-TANANA CROSSING.....(60 MILES TRAIL)

This is a continuation of Route 65E, and extends from Kechumstuk along the left limit and across Little Indian and Indian Creeks to Mitchell's Ranch, a distance of 15 miles. From Mitchell's Ranch it crosses the flats, then across Lake Mansfield and Marsh Lake and on to Tanana Crossing, a total distance from Kechumstuk of 60 miles.

Trail was cleared of brush, several small bridges built and signposts erected. This trail is now in fair condition.

Expenditures: \$189.00.

ROUTE 65E—CHICKEN-KECHUMSTUK.....(28 MILES TRAIL)

From Chicken this pack trail crosses the flats, then across Mosquito Fork and around Taylor Mountain, and down across Mosquito Fork again at Kechumstuk.

During the past season this trail was cleared throughout its entire length. Several small bridges were built. During the past winter contract was let to Dick Mitchell for the construction of a fifty-foot span bridge over Mosquito Fork. This work places this trail in fairly good condition.

Expenditure: \$672.00.

ROUTE 86—FOURTH OF JULY CREEK....(10 MILES SLED ROAD)

This winter sled road leads from the landing on the Yukon River up the right limit of Fourth of July Creek to the hydraulic workings of the July Creek Placer Company, then crosses the creek and follows up the left limit to the camp.

The bridge over Fourth of July Creek, washed away during extremely high water, was rebuilt, several portions of the road which had been damaged by a heavy rainstorm were repaired and several culverts were replaced. One mile of new road was built leading to the Company's camp.

Expenditure: \$1,063.86.

ROUTE 87—WOODCHOPPER CREEK.....(8 MILES TRAIL)

This is a new project.

The trail leads from Woodchopper Landing on Yukon River eight miles up Woodchopper Creek, serving several miners and prospectors along the creek.

During the past season this trail was brushed out. A number of small bridges and culverts were built. The route is now passable and will prove of great benefit in moving supplies to the mining camps in this section.

Expenditure: \$445.00.

DISTRIBUTION OF EXPENDITURES

Type	Miles*	Expenditure	Unit Cost Dollars per Mile
Wagon Road	17	\$ 4,876.58	\$286.86
Sled Road	93	2,481.50	26.68
Trail	336	2,100.35	6.25
Totals	446	\$ 9,458.43	\$ 21.21

(*)—Includes only routes maintained during fiscal year.

BETHEL SUB-DISTRICT.

Supervised from the Juneau Office.

Earle M. Forrest, District Superintendent, Bureau of Education,
Inspector.

This sub-district includes the lower Kuskokwim Valley, and the Yukon-Kuskokwim Portage routes. There are twelve sub-projects in this sub-district, making the hinterland accessible from Bethel, a deep sea port at the mouth of the Kuskokwim River, having direct communication by sea with Seattle and San Francisco during the open summer season.

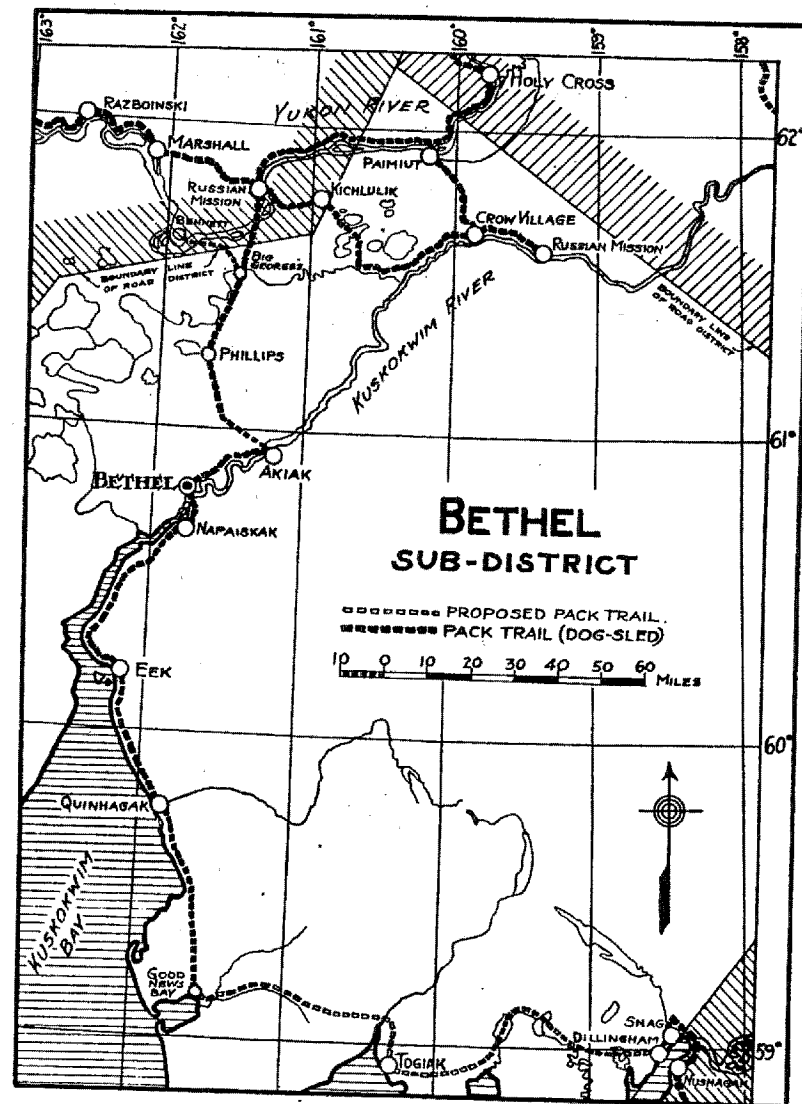
Prior to the fall of 1921, neither this Board nor the Territory had expended any funds for road or trail construction in this region. In September 1921 the President of the Board accompanied by the Surveyor-General of the Territory made a reconnaissance trip from McGrath down the Kuskokwim River to Bethel and then crossed the portage to the Yukon River at Russian Mission. Several contracts were let at this time and systematic work was undertaken which will result in a few years in giving this remote district a complete system of overland communication for winter use.

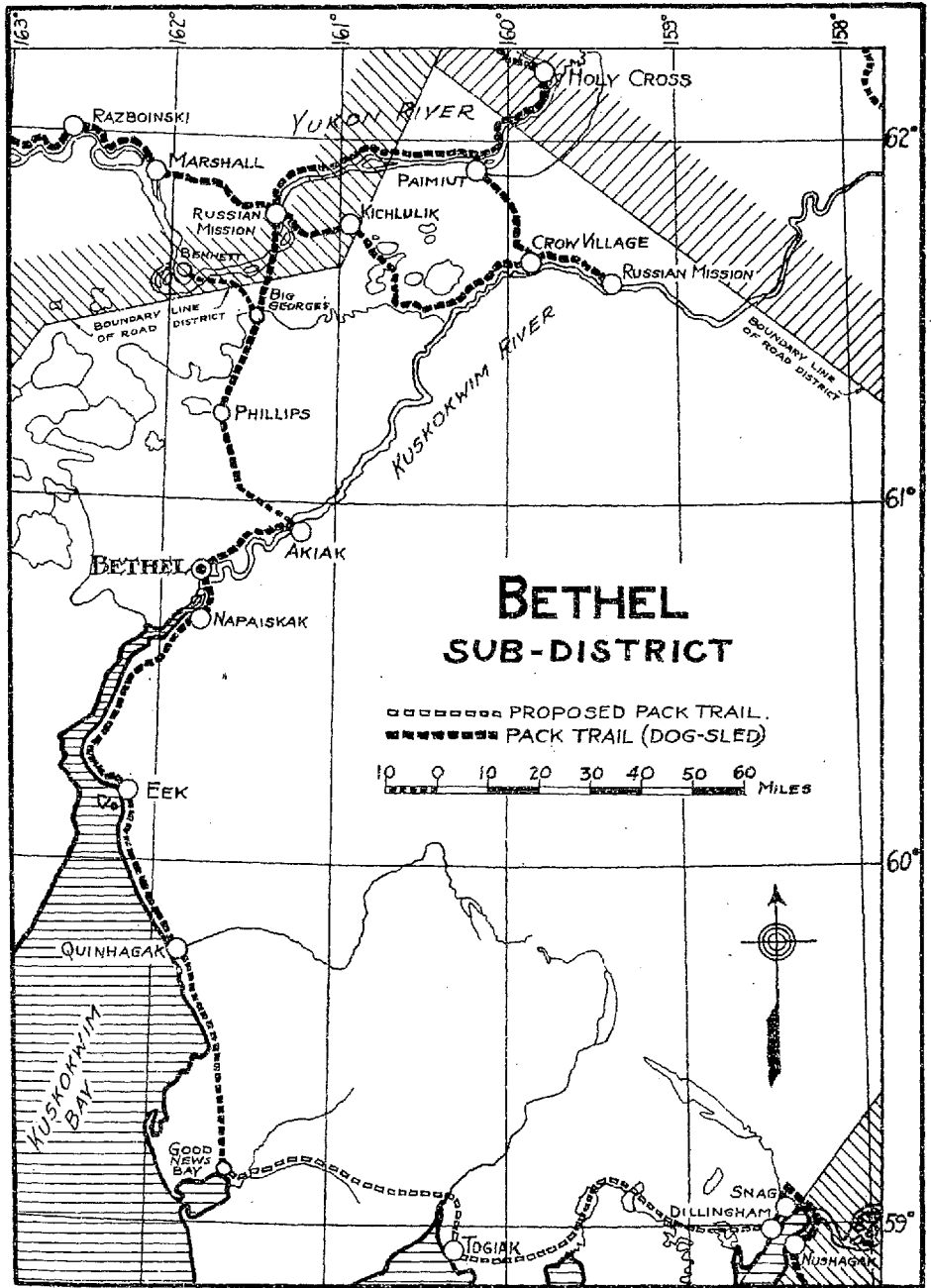
During the past winter, the Surveyor-General of the Territory representing this Board, made a reconnaissance of all winter trails in this district from McGrath on the upper Kuskokwim by way of Bethel, Goodnews Bay and Nushagak to Cold Bay on the Alaska Peninsula. Contracts were let for the permanent staking of winter trails and the erection of shelter, extending the system of trails to connect with the winter boat service at Kanatak.

The work is supervised from Juneau by means of the new radio station established at Bethel. Inspections are made through the courtesy of Mr. Earle M. Forrest, District Superintendent for the Bureau of Education, located at Akiak, 26 miles up the Kuskokwim River from Bethel. All sub-projects are paid from cooperative funds contributed by this Board and the Territory of Alaska.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trails	Total Miles
90C	Shelter Cabins-3rd Divn.				
90D	Shelter Cabins-4th Divn.				
92A	Bethel-Quinhagak			90	90
92B	Bethel-Akiak			26	26
92C	Akiak-Russian Mission			75	75
92D	Bennett's Cutoff			18	18





BETHEL SUB-DISTRICT

○○○○○○ PROPOSED PACK TRAIL
 ———— PACK TRAIL (DOG-SLED)
 10 0 10 20 30 40 50 60
 Miles

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
92E	Yukon-Kuskokwim Portage			120	120
92G	Quinhagak-Goodnews Bay			60	60
92G	Goodnews Bay-Togiak			53	53
92H	Togiak-Nushagak			125	125
92I	Nushagak-Naknek			90	90
92J	Nsknek-Egekik			65	65
92L	Kolmakof-Aniak			25	25
92M	Aniak-Tuluksak			84	84
Totals				831	831

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial	Construction	Maintenance	TOTAL
90C					
90D		\$ 1,625.00	\$ 1,625.00		\$ 1,625.00
92A					
92B	\$ 195.00	200.00	395.00		395.00
92C	784.00	800.00	1,584.00		1,584.00
92D	196.00	200.00	396.00		396.00
92E					
92F	1,659.32	758.45	2,417.77		2,417.77
92G	185.00		185.00		185.00
92H	488.44		488.44		488.44
92I	325.00		325.00		325.00
92J	210.00		210.00		210.00
92L	95.00		95.00		95.00
92M	269.96		269.96		269.96
Totals	\$ 4,407.72	\$ 3,583.45	\$ 7,991.17		\$ 7,991.17

90C—SHELTER CABINS—3RD. DIVISION

In January, 1924, contracts were let for the erection of shelter cabins as follows:

Route	Contractor	Item	Amount
Goodnews Bay-Togiak	W. M. Noden	1 cabin	\$ 575.00
Nushagak-Naknek	Ernest Olsen	2 cabins	750.00
Naknek-Egekik	Frank Altonen	1 cabin	500.00
Total			\$1825.00

Expenditure: None.

90D—SHELTER CABINS—4TH. DIVISION

The following work was completed and settlement made:

Akiak-Russian Mission	2 cabins rebuilt	\$ 425.00
Quinhagak-Goodnews Bay	2 cabins erected	1200.00
Total		\$1625.00

In January, 1924, contracts were let for the erection of shelter cabins as follows:

Route	Contractor	Item	Amount
Goodnews Bay-Togiak	W. M. Noden	1 cabin	\$ 424.50
Aniak-Tuluksak	W. J. Crittbee	2 cabins	700.00
Total			\$1124.50

Expenditure: \$1,625.00.

ROUTE 92A—BETHEL-QUINHAGAK.....(90 MILES TRAIL)

This is the winter mail trail between Bethel and the village of Quinhagak to the south and on the east side of the estuary of the Kuskokwim River. This trail was permanently staked and improved in winter of 1921 and 1922. No maintenance work was

required during the past season and the trail is now in good condition.

Expenditure: None.

ROUTE 92B—BETHEL-AKIAK.....(26 MILES TRAIL)

This is a winter mail trail. Akiak is upstream from Bethel. This trail was permanently staked in the winter of 1921 and 1922. In the fall of 1922 a 60 foot bridge was built by contract across a creek on this trail. Voucher in payment for this work included in this fiscal year.

Expenditure:

Alaska Road Commission	\$195.00
Territory of Alaska	200.00
Total	\$395.00

ROUTE 92C—AKIAK-RUSSIAN MISSION.....(75 MILES TRAIL)

This winter mail trail extends from Akiak on the Kuskokwim River to Russian Mission on the Yukon River, via Phillips and Big Georges. This trail was permanently staked in the winter of 1922 and 1923. A total of 421 tripods and beacons were erected. Voucher in payment for this work is included in this fiscal year.

Expenditure:

Alaska Road Commission	\$784.00
Territory of Alaska	800.00
Total	\$1,584.00

ROUTE 92D—BENNETT'S CUT-OFF.....(18 MILES TRAIL)

This winter mail trail extends from Big Georges on Route 92C to Bennett's Trading Post on the Yukon River, about 24 miles below Russian Mission. The permanent staking of this cut-off was performed in the winter of 1922 and 1923. Voucher in payment for this work went into the account during the current fiscal year.

Expenditure:

Alaska Road Commission	\$196.00
Territory of Alaska	200.00
Total	\$396.00

ROUTE 92E—YUKON-KUSKOKWIM PORTAGE.....(120 MILES TRAIL)

This summer portage is passable with difficulty for canoes and poling boats from Russian Mission via the Yukon River, Portage Slough and the Tulakwiksak River to the High Portage, then by a series of grassy lakes and sloughs, down Crooked Creek, up

Johnson Creek and over Portage No. 4, to Mud Creek and down to the Kuskokwim River.

This portage was well marked in the summer of 1922. Stakes and directing arms were set up in the grassy lakes, sloughs and swamps to indicate the route. A reconnaissance of this route with a view to its improvement under the River and Harbor Act was made during the past season and report has been submitted.

Expenditure: None.

ROUTE 92F—QUINHAGAK-GOODNEWS BAY...(60 MILES TRAIL)

This winter mail trail is an extension of Route 92A down the east shore of the estuary of the Kuskokwim River to Goodnews Bay. The contract let for staking this trail was completed during the past season. Tripods 8 feet high were erected at 200 foot intervals except across water surfaces. Beacons with directing arms 12 feet high were erected at lake crossings. The banks at points of ingress and egress from lakes were graded down and the trail cut out 12 feet wide where it passed through brush or timber.

Two shelter cabins were erected, one at Jack Smith Bay and one at mouth of Indian River.

Expenditure: (Exclusive of shelter cabins):

Alaska Road Commission	\$1,659.32
Territory of Alaska	758.45
Total	\$2,417.77

92G—GOODNEWS BAY-TOGIAK.....(53 MILES TRAIL)

This winter trail extends along the coast from Goodnews Bay to the Togiak school house on Togiak Bay and is a part of the through route from Bethel to Kanatak. A contract for the permanent staking of this route was let to W. M. Noden for \$1500, work to be completed this season.

Expenditure shown covers cost of reconnaissance, awarding contracts, and inspection.

Expenditure:

Alaska Road Commission	\$185.00
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92H—TOGIAK-NUSHAGAK.....(125 MILES TRAIL)

This is a winter trail connecting the settlement of Togiak with the settlement at Nushagak at the mouth of the Nushagak River. It is a part of the through route from Bethel to Kanatak. A contract was let to Ed McCann for the permanent staking of this route for \$2990, the work to be completed this season. Expenditure shown covers cost of reconnaissance, awarding contract, and inspection.

Expenditure:

Alaska Road Commission	\$488.44
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92I—NUSHAGAK-NAKNEK.....(90 MILES TRAIL)

This is the winter trail from Nushagak by way of Kogiung at the head of Kvichak Bay to the canneries at the mouth of Naknek River. This is a portion of the through route from Bethel to Kanatak. A contract for the permanent staking of this trail was let to Ernest Olson for \$1800, work to be completed this season. Expenditure shown hereunder covers cost of reconnaissance, awarding contract, and inspection.

Expenditure:

Alaska Road Commission\$325.00

92J—NAKNEK-EGEKIK.....(65 MILES TRAIL)

This winter trail extends along the shore of Kvichak Bay from the Naknek River to the mouth of the Egekik River. This is a portion of the through route from Bethel to Kanatak. A contract for the permanent staking of this route was let to Frank Altomen for \$1500, work to be completed this season. The expenditure shown hereunder covers cost of reconnaissance, awarding contract, and inspection.

Expenditure:

Alaska Road Commission\$210.00

92L—KOLMAKOF-ANIAC.....(25 MILES TRAIL)

This is the portion of the winter mail trail along the Kuskokwim River between Kolmakof and Aniak. A contract was let for the permanent staking of this route to W. J. Cribbee for \$500, the work to be completed during the summer of 1924. Expenditure shown hereunder covers cost of reconnaissance, awarding contract, and inspection.

Expenditure:

Alaska Road Commission\$95.00

92M—ANIAC-TULUKSAK.....(84 MILES TRAIL)

This winter mail trail is a part of the through route from Iditarod to Bethel. It connects the settlements at Aniak and at Tuluksak, both on the Kuskokwim River. A contract for the permanent staking of this trail was let to H. Downey for \$1800, the work to be completed during the summer of 1924. Expenditure shown hereunder covers the cost of reconnaissance, awarding contract, and inspection.

Expenditure:

Alaska Road Commission\$269.96

DISTRIBUTION OF EXPENDITURES.

Type	Miles*	Expenditure	Unit Cost Dollars per Mile
Trail	621	\$ 6,366.17	\$ 10.24

(*)—Includes only routes maintained during fiscal year.

VALDEZ DISTRICT.

T. H. Huddleston, Superintendent, Valdez.

A. W. Longaker, Jr. Engineer, McCarthy.

This district embraces all that portion of Alaska lying south of the Alaska Range between the 141st and the 148th meridians, except the Richardson Highway and its tributaries between Mile 32 and Mile 233, the latter forming the Chitina District.

Valdez, at the head of Prince William Sound, is the northernmost open all-the-year-round port in Alaska. It is the southern terminus of the Military Road and Telegraph Line to the Interior. Fort Lisicum, nearby, was abandoned as a military post on July 20, 1922. A company of the Signal Corps is stationed at Valdez and charged with the maintenance and repair of the telegraph line. At Valdez is located also the U. S. Court for the Third Judicial Division. This Board has heretofore maintained its principal supply depot at Valdez.

The work in this district was in very bad condition at the time of taking over this work in 1920. Numerous washouts along Lowe River and Keystone Canyon near Valdez had made practically inaccessible the 92 miles of the Richardson Highway between Willow Creek and Valdez. The decision being reached that this point of entry to interior Alaska was worthy of retention, the efforts of the Board were vigorously turned to opening this road. An entirely new location was made over Keystone Canyon. New bridges were built across Bear and Sheep Creeks and five miles of new location were made along Lowe River. All of this construction has resulted in this road being opened up permanently. This route opens up a wonderful commercial and scenic region from Valdez to the interior of Alaska. Since the road has been opened up a very healthful increase of traffic over the same has been noted.

A very important new project in this district is the McCarthy-Nizina River Road and Bridge. Work on this road was begun in 1920 and with cooperative funds from the Territory, amounting to \$25,000, work on the bridge across the Nizina River was started in 1922.

There are nine sub-projects in this district under the supervision of this Board. The maintenance of the Valdez Dike, originally constructed by this Board, is paid for by the City of Valdez.

SUMMARY OF ROADS.

Sub-Project No.	Name of Route	Wagon Road	Trail	Total Miles
4BA	Valdez-Ptarmigan Drop	32		32
36*	Valdez-Mineral Creek	10½		10½
36A*	Granby Road	5		5
54	Chisana-Nizina		78	78
56A	Katalla-Yakataga		60	60
57	McCarthy-Nizina	9	7	16
57A	Nizina River Bridge			
60	Valdez Dike			
61*	Strelina-Kuskulana	16		16
61A	Kotsina Reconnaissance			
90C	Shelter Cabins, 3rd Div.			
	Totals	72½	145	217½

(*)—Also Territorial Projects.

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial	Construction	Maintenance	TOTAL
4BA	\$29,526.20		\$13,026.20	\$16,500.00	\$29,526.20
36*	1,424.56	\$ 1,500.00		2,924.56	2,924.56
36A*					
54					
56A					
57	19,055.24		16,355.24	2,700.00	19,055.24
57A	16,697.58		14,197.58	2,500.00	16,697.58
60					
61*	556.85	500.00		1,056.85	1,056.85
61A	475.93		475.93		475.93
90C		1,000.00	1,000.00		1,000.00
Totals	\$67,736.36	\$ 3,000.00	\$45,054.95	\$25,681.41	\$70,736.36

(*)—Expenditures by the Territory.

ROUTE 4BA—VALDEZ-PTARMIGAN DROP....(32 MILES WAGON ROAD)

This portion of the Richardson Road extends from Valdez across the Coast Range to the interior between the Coast and Alaska Ranges. The severe and varied climate and topography encountered makes this section the most difficult to maintain of any of the entire road. During 1918 a severe freshet caused by swollen glacier streams destroyed and cut into the roadway for nearly six miles. In addition to this the roadway had been neglected for some years previous. Starting in the summer of 1920 the present Commission carried out energetic measures to reopen this important section. This was accomplished and the road was opened for through traffic in July 1921 though much additional work was necessary to prevent further washouts.

Two sections of new road were built during the past season, made necessary by the encroachment of Lowe River at Mile 8 and by overflows of Sheep Creek, Mile 19. This work consisted of the following items:

Cleared	3,500 lin. ft.
Graded, 12 ft. wide	6,990 lin. ft.
Gravel Surfaced	5,650 lin. ft.
Culverts constructed	12
Bridges constructed	126 lin. ft.

Brush was cleared from sides of roadway Miles 3 to 10. Numerous slides were removed, washouts repaired, and general repairs to roadway made over the entire section.

Expenditure: \$29,526.20.

ROUTE 36—VALDEZ-MINERAL CREEK....(10½ MILES WAGON ROAD)

This route extends from Valdez along the beach to the westward as far as the mouth of Mineral Creek, then up the creek to McIntosh's Roadhouse and to the mining workings.

During the past season this road was improved. A 150 foot section which had been washed out was detoured, 4,835 feet of new road was graded 8 feet wide. A foot bridge over Mineral Creek was repaired.

Expenditure:

Alaska Road Commission	\$1,424.56
Territory of Alaska	1,500.00

Total\$2,924.56

ROUTE 36A—GRANBY ROAD.....(5 MILES WAGON ROAD)

This road was originally built by the Granby Company to haul supplies from their wharf on the beach to the mines in Solomon Gulch. On the beach, it also connected with the old trail from Fort Liscom to Valdez. All heavy supplies are now hauled up the cliffs by an aerial tram, but the upper end of the road is still used as a means of communication between the different properties in the Gulch, principally the Granby Mines and the power plant which supplies the City of Valdez with light and power.

Expenditure: None.

ROUTE 54—CHISANA-NIZINA TRAIL.....(78 MILES TRAIL)

This trail leads from the Copper River and Northwestern Railroad over the Alaska Range to the Chisana mining district in the White River country.

No work was done on this trail during the year except the erection of one shelter cabin on the Rohn Glacier as shown under 90C.

Expenditure: None.

ROUTE 56A—KATALLA-YAKATAGA.....(60 MILES TRAIL)

This trail extends from the town of Katalla on Controller Bay, along the coast to the settlement at Yakataga. Shelter cabin was erected during the summer of 1922.

No work was done on this trail during the year.

Expenditure: None.

ROUTE 57—McCARTHY-NIZINA.....(9 MILES ROAD, 7 MILES TRAIL)

This route connects the Copper River and Northwestern Railroad at McCarthy with the mining operations in the Nizina district, crossing the Nizina River at Mile 10.

Prior to last season the road had been completed 2½ miles from McCarthy, the right of way cleared and several stretches of grading and corduroying done to the 6 mile. From the 6 mile to the river crossing very little improvement had been made.

Work the past season consisted in the construction of 2 miles of new road from Mile 7 to 9 and the improvement of the road from Mile 2 to 7. The principal items of work accomplished were:

Clearing	9.7 acres
Grading	8500 lin. ft.
Regrading	5280 lin. ft.
Ditching	5455 lin. ft.
Corduroy	300 lin. ft.
Culverts (17)	272 lin. ft.
Bridges (2)	48 lin. ft.

The road at the close of the season was passable for light wheeled traffic throughout, though the section between 5 and 7 mile posts was soft in places and rough.

Expenditure: \$19,055.24.

ROUTE 57A—NIZINA RIVER BRIDGE.

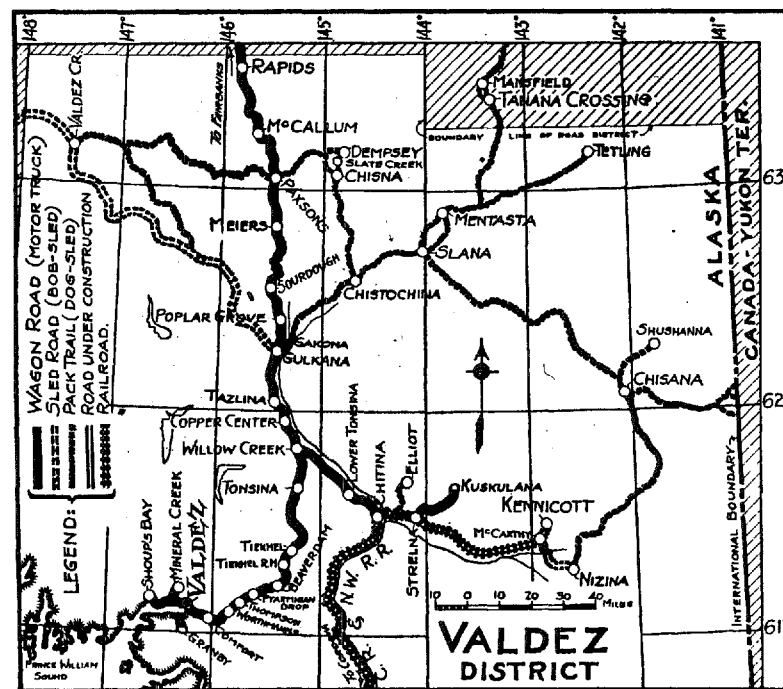
This important project to bridge the Nizina River and make accessible the mineralized section of the upper Chitina Valley progressed satisfactorily. The five piers, each consisting of two cylinders of steel sheet piling were placed in the spring of 1923. During the past season these cylinders were capped with concrete and are now in readiness to receive the spans. The design for the superstructure is complete and present plans contemplate its erection during the winter of 1924 and 1925.

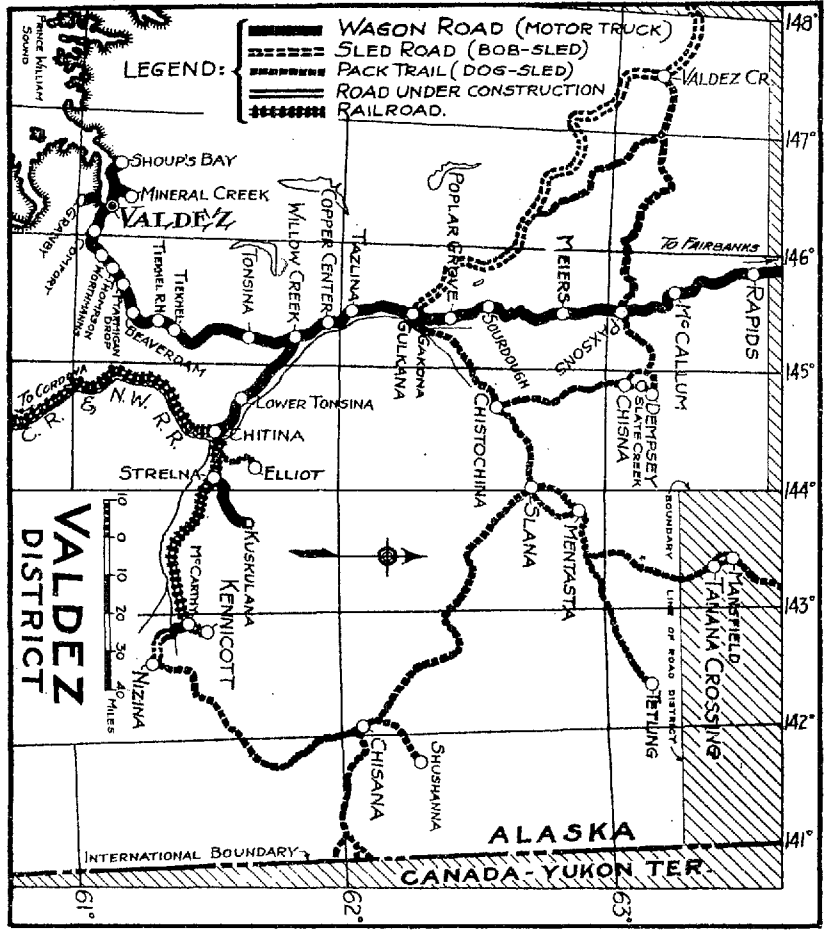
Expenditure: \$16,697.58.

ACCOUNT NO. 60—VALDEZ DIKE.

The Valdez Dike was constructed by the Board in 1913 to protect the government property within the limits of Valdez from overflow by the streams issuing from the Valdez Glacier. A special appropriation for the purpose was made by Congress. Subsequent maintenance charges have been met by contribution by the City, the Board performing the work.

Expenditure: None.





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ROUTE 61—STREINA-KUSKULANA... (16 MILES WAGON ROAD)

This road leads from Strelina on the Copper River and North-western Railroad up the right limit of the Kuskulana River to several groups of mining properties. A substantial bridge across the Kuskulana River near Mile 10, built by the Territory, gives access to operations on the left limit.

Repairs were made to the approach to the Kuskulana bridge and to the abutments. Culverts were repaired, soft spots graveled and 300 feet of road which had washed away was rebuilt. The road is now in fair condition.

Expenditure:

Territorial Divisional Chairman	\$1,499.98
Territorial Cooperative	500.00
Alaska Road Commission	556.85
Total	\$2,556.83

ROUTE 61A—KOTSINA RECONNAISSANCE.

A reconnaissance was made by an engineer employed by this Board, of the region surrounding the Kotsina River. Three feasible routes were covered between the mining districts and the Copper River, & Northwestern Railroad. All of the prospects in the vicinity were visited. The construction of a 35 mile road serving these prospects would be an expensive undertaking, and is not justified at this time.

Expenditure: \$475.93.

ACCOUNT 90C—SHELTER CABINS.

Trail	Work Done	Cost
Chisana-Nizina	1 cabin erected on Rohn Glacier	\$1,000.00

Expenditure:

Territory of Alaska	\$1,000.00
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DISTRIBUTION OF EXPENDITURES.

Type	Miles*	Expenditures	Unit Cost Dollars per Mile
Wagon Road	67½	\$52,487.85	\$777.60
Trail	7	75.00	10.71
Totals	74½	\$52,562.85	\$705.54

(*)—Includes only routes maintained during fiscal year.

CHITINA DISTRICT.

Frank Shipp, Assistant Superintendent.

This district embraces that portion of the Richardson Highway from Ptarmigan Drop, Mile 32 to Rapids, Mile 233, together with all tributary roads and trails between these points. This includes the branch of the Richardson Highway from Chitina, on the Copper River and Northwestern Railroad to the junction with the main Highway at Willow Creek.

A sub-office was established at Chitina in 1918, when a disastrous flood closed the military road through the Keystone Canyon, 16 miles from Valdez. This section of the road was reopened for traffic in 1921. Meanwhile the overland route was by way of the Copper River and Northwestern Railroad from Cordova to Chitina, 130 miles; thence by the Chitina cut-off (military road), 39 miles from Chitina to Willow Creek, Mile 92 north of Valdez on the main road.

The most important project within this district, that is the Richardson Highway, in 1920 were not yet completely graded. Bridges and culverts were badly in disrepair and almost no surfacing had been performed. Very meager road building equipment existed. New machinery was procured. Means were found to obtain local Alaska fuel for the operation of the excellent motor equipment obtained. All broken bridges and culverts were replaced. New bridges were constructed across the Tazlina River, Tonsina River, Miller's Glacier Stream and the Gakona River. Grading was completed and about 60 miles of gravel surfacing was placed. Important work was also carried out on the Gulkana-Chistochena-Slate Creek Trail. Reconnaissances were extended by the Engineer Officer and his assistants into all possible tributary regions.

There are 12 sub-projects in this district. Of this number, 10 were maintained during the past year.

SUMMARY OF ROADS

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
4BB	Ptarmigan Drop-Ernestine	31			31
4C	Ernestine-Willow Creek	29			29
4D	Willow Creek-Gulkana	36			36
4E	Gulkana-Sourdough	21½			21½
4F	Sourdough-Mile 168	18			18
4G	168 Mile Post-Delta River	38			38
4HI	Delta River-Rapids	25½			25½
6A	Willow Creek-Tonsina	24			24
6B	Tonsina-Chitina	15			15
65A	Gulkana-Chistochina	4		36	40
65B	Chistochina-Slate Creek			40	40
65C	Chistochina-Tanana Crossing			140	140
	Totals	242		216	458

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial	Construction	Maintenance	TOTAL
4BB	\$ 6,340.35	-----	-----	\$ 6,340.35	\$ 6,340.35
4C	11,912.79	-----	-----	11,912.79	11,912.79
4D	27,180.52	-----	1,980.52	25,200.00	27,180.52
4E	22,290.89	-----	11,540.89	10,750.00	22,290.89
4F	28,582.41	-----	19,582.41	9,000.00	28,582.41
4G	18,130.62	-----	6,730.62	11,400.00	18,130.62
4HI	38,967.63	-----	26,417.63	12,550.00	38,967.63
6A	14,898.05	-----	2,898.05	12,000.00	14,898.05
6B	19,821.91	-----	7,821.91	12,000.00	19,821.91
65A	25,252.41	-----	22,752.41	2,500.00	25,252.41
65B	-----	-----	-----	-----	-----
65C	-----	-----	-----	-----	-----
Totals	\$213,377.58	-----	\$99,724.44	\$118,653.14	\$213,377.58

ROUTE 4BB—PTARMIGAN DROP-ERNESTINE.....(31 MILES WAGON ROAD)

This portion of the Richardson Highway drops down the Tsaina and Tiekhell River Gorges and then climbs again over Ernestine Dome.

The usual maintenance and seasonal repair work was performed during the past season. Material was purchased and plans made for the erection of the Tsaina bridge. This bridge will be erected early this season.

Expenditure: \$6,340.35.

ROUTE 4C—ERNESTINE-WILLOW CREEK.....(29 MILES WAGON ROAD)

This portion of the road is located over the elevated rolling country between Ernestine and Willow Creek. At the latter point connection is made with the road to Chitina on the Copper River and Northwestern Railroad.

Work during the past season consisted of constructing and repairing bridges and culverts, cleaning ditches, light regrading and gravel surfacing. The principal items of work accomplished are as follows:

Light Regrading	4¼ miles
Light Gravel Surface	4¾ miles
Culverts Constructed	38
Bridges Constructed (1)	18 lin. ft.
Ditches Cleaned	1800 lin. ft.

Expenditure: \$11,912.79.

ROUTE 4D—WILLOW CREEK-GULKANA.....(36 MILES WAGON ROAD)

This section of the Richardson Highway extends from Willow Creek, the Junction of the Chitina Branch road to the Crossing of the Gulkana River. The route follows up the gravel benches on the right limit of the Copper River Valley.

In the late spring of 1923 one 60 foot pony truss span and one 100 foot Howe truss span, both of Douglas fir, were erected at the crossing of the Tazlina River. The three old piers in this bridge were repaired. The piers on the Gulkana bridge were repaired, culverts renewed, ditches cleaned and light regrading performed over eight miles of this route.

Expenditure: \$27,180.52.

ROUTE 4E—GULKANA-SOURDOUGH.....(21½ MILES WAGON ROAD)

This section of the Richardson Highway extends from the crossing of the Gulkana River up the left limit of the Gulkana to the Sourdough Roadhouse. The route is largely over gravel, affording good bottom and drainage.

Work during the past season consisted of rebuilding culverts and bridges, ditching, regrading, and gravel surfacing. The brush was cleared from the sides of the road for a distance of three miles. The principal items of work accomplished are as follows:

Culverts constructed	22
Bridges constructed (4)	58 lin. ft.
Light regrading	3 miles
Gravel surfacing, 2,222 cu. yds.....	2¾ miles
Log cache constructed, size 24x36 ft.....	1

Expenditure: \$22,290.89.

ROUTE 4F—SOURDOUGH-MILE 168....(18 MILES WAGON ROAD)

This portion of the Richardson Highway is located in an elevated plateau in the midst of lakes and swamps. A considerable amount of graveling is necessary to bring this section up to the standard of the remainder of the road.

The past season work consisted of regrading, gravel surfacing, cleaning ditches, repairing bridges and culverts, and clearing brush from sides of road. The principal items of work accomplished are as follows:

Gravel surfacing, 5,620 cu. yds.	5¾ miles
Corduroy placed	7120 lin. ft.
Ditches cleaned	5 miles
Brush cleared from sides of roadway.....	8 miles

For placing 2,370 cu. yds. of gravel surfacing with an average haul of ¾ mile, the cost was \$1.50 per cu. yd. For placing 3,250 cu. yds. with an average haul of 2½ miles, the cost was \$2.50 per cu. yd.

Expenditure: \$28,582.41.

ROUTE 4G—MILE 168-DELTA RIVER....(38 MILES WAGON ROAD)

This section of the Richardson Highway extends over Isabelle Pass, the summit of the Alaska Range, to the headwaters of

the Delta River. The portion south of the range is largely through a swampy plateau and will require considerable graveling to bring it up to the standard of the remainder of the road. The portion north of the range, however, is on good gravel bottom.

Work during the past season consisted of regrading, surfacing, cleaning ditches, and the construction and repair of culverts and bridges. The principal items of work accomplished follow:

Regrading	6½ miles
Gravel surfacing, 2400 cu. yds.	3½ miles
Resurfacing	7¼ miles
Ditches cleaned	4¾ miles
Bridges constructed (1)	36 lin. ft.
Culverts constructed	20

Expenditure: \$18,130.62.

ROUTE 4HI—DELTA RIVER-RAPIDS.....(25½ MILES WAGON ROAD)

This section of the Richardson Highway extends down the right limit of the Delta River, following the river closely, to the Rapids Roadhouse. It is necessary to cross several glacier streams along this route and as the glaciers are not far back from the road, considerable difficulty is encountered with floods in these streams due to heavy rains and warm weather.

During the past season the usual maintenance work was performed. Slides were cleared from the roadway, culverts and bridges repaired, and new culverts constructed. Considerable effort was necessary to protect the bridge at Mile 223 over a glacier stream. During the spring (1924) this bridge was rebuilt. Seven 60 foot spans were placed on pile foundations, protected by rock filled cribs on the upstream face. The greater part of the timber and lumber for this structure was acquired near the site. The following are the principal items of work accomplished:

Bridges rebuilt (2)	205 lin. ft.
Bridges constructed, 7 60-foot spans	420 lin. ft.
Culverts rebuilt	16
Dykes constructed (2)	1100 lin. ft.

Expenditures: \$38,967.63.

ROUTE 6A—WILLOW CREEK-TONSINA.....(24 MILES WAGON ROAD)

This is a portion of the road leading from Willow Creek to Chitina, which makes connection between Chitina, on the Copper River and Northwestern Railroad, and the through road from Valdez to Fairbanks.

The principal work on this route during the past season was dragging. The section was dragged four times. One round trip was made over the road with a grader, filling in ruts.

This section requires a gravel surface practically throughout. Two large pits were stripped late this season preparatory to the early prosecution of this work.

Expenditure: \$14,898.05.

ROUTE 6B—TONSINA-CHITINA.....(15 MILES WAGON ROAD)

This portion of the road leading into Chitina is in good repair and needs only a light gravel surface to make it excellent.

Work the past season consisted of resurfacing, repairing culverts, and widening narrow sections of grade. The following are the principal items of work accomplished:

Culverts rebuilt 8
 Gravel placed for surfacing986 cu. yds.
 Excavation, widening roadway650 cu. yds.
 Expenditure: \$19,821.91.

ROUTE 65A—GULKANA-CHISTOCHINA.....(4 MILES WAGON ROAD, 36 MILES TRAIL)

This route extends from the junction with the Richardson Highway at Gulkana, up the Copper River Valley on the right limit, to the mouth of the Chistochina River.

During the past year a bridge, consisting of two 100 foot Howe truss spans, together with 150 ft. of trestle approach, was erected over the Gokona River at the end of the wagon road section of this route. This bridge gives access at all times of the year to the large district along the Chistochina River.

Expenditure: \$25,252.41.

ROUTE 65B—CHISTOCHINA-SLATE CREEK....(40 MILES TRAIL)

This trail extends from the end of route 65A, up the right limit of the Chistochina River, to the mining operations on Slate Creek.

Expenditure: None.

ROUTE 65C—CHISTOCHINA-TANANA CROSSING.....(140 MILES TRAIL)

This is the part of the old Valdez-Ft. Egbert trail from the Chistochina River to the crossing of the Tanana River. A reconnaissance of this trail was made by the Engineer Officer of the Board in 1921. The trail is little used and no work is contemplated in the near future.

Expenditure: None.

DISTRIBUTION OF EXPENDITURES.

Type	Miles*	Expenditure	Unit Cost Dollars per Mile
Wagon Road	238	\$188,125.17	\$790.44

(*—Includes only routes maintained during fiscal year.

FAIRBANKS DISTRICT.

Ike P. Taylor, Supt., July 1 to Sept. 30, 1923.

M. C. Edmunds, Asst. Supt. to Sept. 30, 1923 and Supt. October 1, 1923 to June 30, 1924.

Abe McKinnon, Asst. Supt. to Aug. 5, 1923.

H. G. Haslem, Locating Engineer to August 31, 1923.

Donald MacDonald, Asst. Supt. May 26 to June 30, 1924.

This district embraces that portion of the territory between the 144th and 148th meridians and between the Yukon River and north of the Alaska Range; also that territory lying north of the Yukon River from the 150th meridian to the Canadian boundary.

There are 39 sub-projects in this district of which 7 are abandoned. 22 of the remaining 32 are road or trail feeders directly tributary to the Government Railroad, and the balance are extensions of these feeders into more remote sections of the Territory. The system of roads and trails devised by this Board ties into the railroad in this district as follows:

Main Line	Route
Mile	
463 Happy	7D Ester Creek
	7R Goldstream-O'Connor Creek
	4K Fairbanks-Salchaket
470 Fairbanks	4J Salchaket-Richardson
	4I Richardson-Grundler
	4H2 Grundler-Rapids
	7G Fairbanks-Gilmore
	7J Fairbanks-Chena Hot Springs
	7N Farmers Birch Hill
	7T Farmers Chena Slough
	31 Caribou Creek
	Route
Chatanika Branch:	
Mile	
11 Fox	7B Fox-Olnes
13 Gilmore	7G Fairbanks-Gilmore
	7I Gilmore-Summit
	7B Olnes-Fox
26 Olnes	7K Olnes-Livengood
	23A Olnes-Beaver
	7H Little Eldorado Creek
29 Eldorado	7A Summit-Chatanika
32 Chatanika	7C Summit-Fairbanks Creek
	16 Chatanika-Miller House
	15 Circle-Miller House
	23A Chatanika-Beaver

The following sub-projects of this Board have been abandoned:

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
4A	Donnelly-Washburn		55		55
5*	Ester-Dunbar		27		27
7E	Vault Creek	2			2
7F	Vault Creek-Treasure Creek	1½			1½
7L	Chena-Ester	4			4
7M	Fairbanks-Tanana Landing	3			3
63A	Brooks-Terminal	13			13
	Totals	23½	82		105½

(*)—Section of original Ester-Ft. Gibbon Route—148 miles.

The Donnelly-Washburn sled road is a portion of the winter route from Fairbanks to Valdez. Since the completion of the Government Railroad to Fairbanks, there is no through winter travel over this route and its period of usefulness is ended.

All winter mail to the westward was formerly distributed from Fairbanks and followed the Ester-Fort Gibbon sled road. Since the completion of the Government Railroad, this mail now leaves the railroad at Dunbar and follows the Dunbar-Fort Gibbon section of the same sled road.

The Vault Creek and Vault Creek-Treasure Creek Roads connect the old town of Vault with claims on Treasure Creek and with the Happy-Chatanika Railroad. No work has been done on these routes for a number of years and there is at present no occasion for doing any work.

The Chena-Ester Road connects the abandoned town of Chena on the Tanana River with Ester City on Ester Creek. The road has not been used for several years. The Fairbanks-Tanana Landing Road connects Fairbanks with the Tanana River, being a part of the old original Fairbanks-Valdez Road. No money has been spent on this road for many years nor are present expenditures warranted.

The Brooks Terminal Road extends from Brooks to the head of navigation on the Tolovana River. No improvements have been made on this route in a number of years and the project is now abandoned in view of the purchase by the Territory of the tram road which connects the above points.

This district had especially suffered during the war period. The most important project within the district, the Richardson Road, was in very bad disrepair for the entire distance from Fairbanks to McCarty. Very few reconnaissances had been made over the important winter trails. Many winter trails had fallen into disuse. No progressive plan existed for adjusting the road work of the district to the new conditions brought about by the completion of the Government Railroad.

With reorganization and elimination of remote districts, a new organization was planned. Modern road building equipment was

obtained. The rehabilitation of the Richardson Road was completed to Grundler. About 50 miles of the same was graveled. Bridges and culverts were rebuilt. An important feeder to the Government Railroad from Circle to Chatanika was located throughout and construction well advanced. All Fairbanks local roads were rehabilitated.

The important winter trails, Salcha to Caribou, Fairbanks to Chena Hot Springs, Olmes to Beaver and Beaver to the Chandalar and Koyukuk were all opened and rehabilitated. The transportation overland into Fairbanks is already an important item as a means for traffic to get to the Alaska Railroad, and the revival of the interior has begun with the construction of these overland facilities.

The following sub-projects, upon which work is being done by the Board, are arranged in two groups: First, those supported during the fiscal year from funds of this Board or of the Territory of Alaska, disbursed through the U. S. Treasury; and, second, those supported by Territorial funds disbursed by the Territorial Road Commission for the Fourth Division. All work on the second group was performed by an assistant superintendent of this Board who also served as chairman and secretary of the Territorial Divisional Commission, under the direction of the President of this Board, who also served as Director of Public Works for the Territory.

FEDERAL PROJECTS.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
4H2	Rapids-Grundler	48			48
4I	Grundler-Richardson	20½			20½
4J	Richardson-Salchaket	30			30
4K	Salchaket-Fairbanks	40			40
7A*	Summit-Chatanika	11			11
7C*	Summit-Fairbanks Creek	13			13
7D*	Ester Creek	13			13
7G	Fairbanks-Gilmore	13			13
7I	Gilmore-Summit	6			6
7J*	Fairbanks-Chena Hot Springs		64		64
7R	Goldstream-O'Connor Creek		6		6
7V	Wireless Road	¼			¼
15	Circle-Miller House	49			49
16	Chatanika-Miller House	14½	66½		81
23A*	Olmes-Beaver			115	115
23B	Beaver-Caro	75			75
23C	Big Creek Trail			20	20
23D	Caro-Flat Creek		45		45
23E	Caro-Coldfoot			85	85
31	Caribou Creek		46		46
59	Fairbanks Bridge				
65F	Grundler-Tanana Crossing			113	113
90D	Shelter Cabins				
	Totals	333¼	227½	333	893¼

(*)—Also Territorial Projects.

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial	Construction	Maintenance	TOTAL
4H2	\$16,224.11	-----	-----	\$16,224.11	\$16,224.11
4I	30,684.19	-----	\$20,434.19	10,250.00	30,684.19
4J	12,786.74	-----	3,786.74	9,000.00	12,786.74
4K	48,430.73	-----	28,430.73	20,000.00	48,430.73
7A*	8,427.79	-----	5,127.79	3,300.00	8,427.79
7C*	187.00	-----	-----	187.00	187.00
7D*	100.00	-----	-----	100.00	100.00
7G	5,785.58	-----	1,885.58	3,900.00	5,785.58
7I	2,326.20	-----	526.20	1,800.00	2,326.20
7J*	3,014.22	-----	-----	3,014.22	3,014.22
7R	-----	-----	-----	-----	-----
7V	342.00	-----	-----	342.00	342.00
15	3,482.90	-----	-----	3,482.90	3,482.90
16	68,509.81	-----	61,009.81	7,500.00	68,509.81
23A*	3,749.64	-----	2,549.64	1,200.00	3,749.64
23B	5,482.64	-----	3,607.64	1,875.00	5,482.64
23C	277.64	-----	-----	277.64	277.64
23D	1,928.26	-----	803.26	1,125.00	1,928.26
23E	6,969.15	-----	6,119.15	850.00	6,969.15
31	733.64	540.00(c)	-----	1,273.64	1,273.64
59	5,227.59	-----	-----	5,227.59	5,227.59
65F	1,000.00	-----	1,000.00	-----	1,000.00
90D	-----	1,900.00	1,600.00	300.00	1,900.00
Totals	\$225,674.83	\$ 2,440.00	\$136,880.73	\$91,234.10	\$228,114.83

(*)—Also Territorial Projects.

(c)—Contributed by Stewart and Denhart.

ROUTE 4H2—RAPIDS-GRUNDLER.....(48 MILES WAGON ROAD)

This road is the section of the Richardson Highway between Rapids Roadhouse on the upper Delta River and the ferry crossing of the Tanana River at Grundler, just above the confluence of the Delta and Tanana Rivers.

This entire section was dragged, gravel surfaced over Pillsbury Dome and repaired and broken culverts renewed. The road was moved back from the bank of the Delta River in Mile 275 where the river was encroaching.

Expenditure: \$16,224.11.

ROUTE 4I—GRUNDLER-RICHARDSON—.....(20½ MILES WAGON ROAD)

This section of the Richardson Highway practically parallels the Tanana River on its north side between the ferry crossing at Grundler and the old mining town of Richardson.

Marked improvement was made over this section during the past season. Gravel and broken rock surfacing was placed on 8½ miles of road, culverts were renewed and work started on a new location through the town of Richardson, made necessary by the encroachment of the Tanana River on the old road. The entire section was dragged three times during the season.

Late in the fall a one hundred foot Howe truss span of Douglas fir with native spruce pile foundations, together with seventy-five feet of trestle approach was erected over a slough of the Tanana River, one-half mile north of Grundler.

The following is a summary of work accomplished:

Surfacing material placed5,419 cu. yds.
 Culverts, corrugated iron pipe, 44 placed..... 552 lin. ft.
 Culverts, timber, 11 placed..... 176 lin. ft.
 Clearing, 60 ft. wide, new road.....4,000 lin. ft.
 Grubbing, 32 feet wide, new road.....4,000 lin. ft.
 Graded, 32 ft. wide, new road.....2,000 lin. ft.
 Road brushed both sides 10 miles

Bridges, 1-100 ft. Howe Truss span, 75 foot trestle 175 lin ft.

Expenditure: \$30,684.19.

ROUTE 4J—RICHARDSON-SALCHAKET.....(30 MILES WAGON ROAD)

This is the section of the Richardson Highway between the old mining town of Richardson and the Salchaket Trading Post, where the road crosses the Salchaket River by ferry.

General repairs were made to culverts and several short sections were gravel surfaced. The road was dragged three times the entire length. Due to the encroachment of the Tanana River in Mile 324, a new location was made and 1,700 feet of new road built.

Expenditure: \$12,786.74.

ROUTE 4K—SALCHAKET-FAIRBANKS.....(40 MILES WAGON ROAD)

This is the most northerly section of the Richardson Highway, extending from the ferry across the Salchaket River to the town of Fairbanks. Considerable attention has been given to this section of the highway in past years.

Graveling of this section was continued during the season, with a Marion steam shovel, tractors and dump trucks. A heavy gravel surface was placed on 10½ miles, the gravel surface now being continuous from Fairbanks south for 28 miles. Culverts were renewed where necessary with corrugated iron pipe, several small bridges were replaced with culverts and filled.

The section of road north from the Salchake ferry for a distance of five miles was practically all surfaced with gravel and broken rock by team haul; only a light surface was given. This portion of road, which has previously been almost impassible at times, is now in fair condition.

The cribbing around the pier and abutments on the Piledriver bridge was completed and cribs filled with rock. The road was dragged four times its entire length.

The principal items of work accomplished were as follows:

Road surfaced	14½ miles
Surfacing material placed	13,228 cu. yds.
Culverts placed, corrugated iron.....	270 lin. ft.
Culverts placed, timber	40 lin. ft.
Side ditches cleaned	4 miles
Logs in cribbing	920 lin. ft.
Rock in cribbing	175 cu. yds.

Expenditure: \$48,430.73.

ROUTE 7A—SUMMIT-CHATANIKA.....(11 MILES WAGON ROAD)

This is a cooperative project, partly supported by Territorial funds as described below.

Federal Expenditure\$8,427.79

ROUTE 7C—SUMMIT-FAIRBANKS CREEK...(13 MILES WAGON ROAD)

This is a cooperative project, partly supported by Territorial funds as described below.

Federal Expenditure\$187.00

ROUTE 7D—ESTER CREEK.....(13 MILES WAGON ROAD)

This is a cooperative project, partly supported by Territorial funds as described below.

Federal Expenditure\$100.00

ROUTE 7G—FAIRBANKS-GILMORE.....(13 MILES WAGON ROAD)

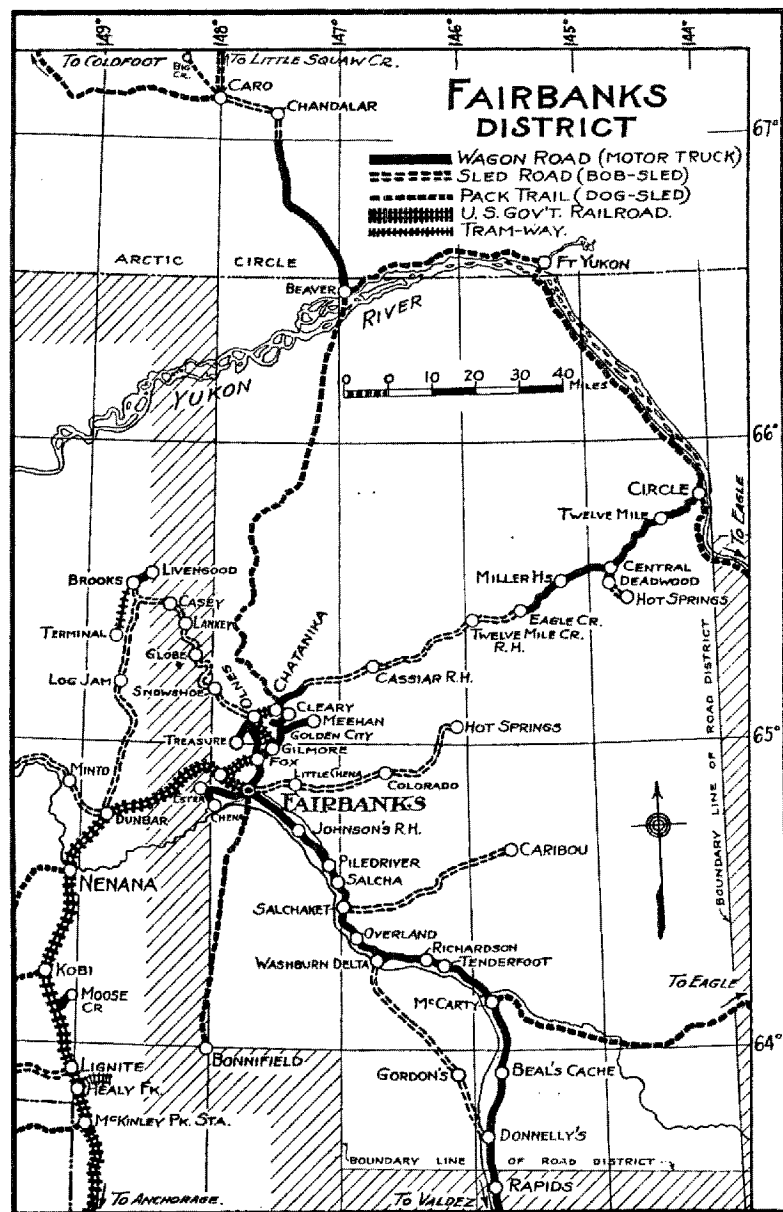
This road forms an integral part of the proposed extension of the Richardson Highway to Circle City, connecting Fairbanks with the town of Gilmore, near the headwaters of Goldstream Creek, in the center of a prominent placer district. It is a very important feeder road to the town of Fairbanks, serving as it does an area of mines and farms.

Several short sections of this road were gravel surfaced, culverts repaired and brush along road cut. A new location was made near the town of Fox, necessitated by mining operations. 1,200 feet of new road was graded over tailing piles. A new bridge 30 feet long was built over Goldstream Creek; 8 new plank culverts were placed; and road dragged three times.

Expenditure: \$5,785.58.

ROUTE 7I—GILMORE-SUMMIT.....(6 MILES WAGON ROAD)

This route also forms a part of the proposed extension of the Richardson Highway. It extends from the town of Gilmore to the Summit Roadhouse on the divide where the road branches, one branch Route 7C, going to Fairbanks Creek and the other, Route



7A, to Chatanika. Considerable automobile and truck traffic passes over this route, bound for Fairbanks Creek and Chatanika.

One-half mile of road was surfaced with tailings, two miles of the old portion of side hill grade was regraded and widened out, eight new plank culverts were placed, and the new grade built last season was smoothed over with grader.

Expenditure: \$2,326.20.

ROUTE 7J—FAIRBANKS-CHENA HOT SPRINGS.....(64 MILES SLED ROAD)

This is a cooperative project, partly supported by Territorial funds. The road leaves the Fairbanks-Gilmore road, Route 7G, 2½ miles from Fairbanks, and extends up the Chena River Valley to the Chena Hot Springs, tapping a large area of low grade placer ground.

There are several homesteads along the first ten miles of this route and it has been proposed to build a wagon road to serve these, this road later to be extended to serve the mines above. A good location was selected for the route over first ten miles and this portion was cleared and grubbed forty feet wide, the work being done with funds subscribed by the citizens of Fairbanks and farmers and miners served by this route.

Due to the change in location of this proposed wagon road, the 2½ miles of wagon road formerly shown on this route is now carried as Route 7GA, described below.

Three small bridges were replaced on the winter road, wind-falls cleared out, two shelter cabins repaired, stoves installed, and 3 miles of new sled road cut north of the junction of the north fork. This new portion of road eliminates a steep side hill section and one bad crossing at the Chena River.

Federal Expenditure: \$3,014.22.

ROUTE 7R—GOLDSTREAM-O'CONNOR CREEK....(6 MILES SLED ROAD)

This road connects the Railroad with prospective placer ground on O'Connor Creek, a tributary of Goldstream, which the road crosses eight hundred feet from the Railroad.

Present condition of this route is good, and no further work need be done on it until placer discoveries on the creek warrant it.

Expenditure: None.

ROUTE 7V—WIRELESS ROAD.....(¼ MILE WAGON ROAD)

This short road connects the Wireless station of the U. S. Signal Corps with the city streets of Fairbanks. This road has

been all but impassable for heavy loads in wet weather and it has been necessary for the Signal Corps to move supplies and heavy machinery over this route.

225 cubic yards gravel surfacing was placed and the road is now in fair condition.

Expenditure: \$342.00.

ROUTE 15—CIRCLE-MILLER HOUSE....(49 MILES WAGON ROAD)

This road connects Circle City on the upper Yukon River with the Circle placer district. This road will be the final link in the proposed extension of the Richardson Highway from Fairbanks to the Yukon River.

Early spring damage from freshets was repaired, ten new culverts built, old culverts repaired and brush cut from sides of road. Repairs were made to the ferry across Birch Creek.

Expenditure: \$3,482.90.

ROUTE 16—CHATANIKA-MILLER HOUSE....(14½ MILES WAGON ROAD, 66½ MILES SLED ROAD)

This route connects the town of Chatanika, at the end of the branch line of the Government Railroad, with Miller House at the end of Route 15, being a part of the through route to Circle City and a section of the proposed extension of the Richardson Highway from the Coast at Valdez to the Yukon River.

The portion of this road constructed during 1922 was damaged by extremely high water in the Chatanika River Valley. This damage was repaired during the 1923 season necessitating the construction of one mile of new road. The road was extended five and one-half miles. Four and one-half miles of this was finished and is in good condition. The last mile worked over in 1923 was completed in the spring of 1924. The right of way was cleared and grubbed one mile ahead of the graded section.

The following are the main items of work during the 1923 season:

Clearing, 60 ft. wide	5 miles
Grubbing, 32 ft. wide	5 miles
Ditches, side	2.1 miles
Corduroy, 12 ft. wide	2.1 miles
Grading	3.9 miles
Graveling, surfacing and fills, 6,675 cu. yds.....	3.2 miles
Culverts, corrugated iron pipe, 14 placed	244 lin. ft.
Culverts, timber box, 12 placed	192 lin. ft.
Bridges, 3 built, log stringer type	66 lin. ft.

The sled road portion of this route was maintained. Four small bridges were rebuilt and six hundred feet of side hill grade completed on Eagle Summit.

The survey for the wagon road was extended during the season to the first summit, 53 miles from Chatanika. A very good location was obtained, the maximum grade used being seven per cent.

During the late winter all supplies for the 1924 working season were purchased and freighted in over the snow. An unusually early spring permitted work to be resumed in May, and a great deal of construction was accomplished by the end of the fiscal year. Expenditures indicated below include these winter purchases and early spring work. Detailed report of work done will be included in report for next year.

Expenditure: \$68,509.81.

ROUTE 23A—OLNES-BEAVER.....(115 MILES TRAIL)

This route, formerly called the Chatanika-Beaver trail, has been changed with the southern terminus at Olnes on the branch line of the Alaska Railroad. The route follows the Olnes Livengood sled road, Route 7K, for a distance of 14 miles and joins the old Chatanika-Beaver trail at Mile 40 from Olnes. The northern terminus is at the town of Beaver on the Yukon River. From this point a road extends into the Chandalar mining district.

This entire trail was brushed out eight feet wide, necessary bridges built, and old cabins repaired for shelter in which stoves were placed. All open stretches of the trail were tripoded. This is a cooperative project partly supported by Territorial funds.

Federal Expenditure: \$3,749.64.

ROUTE 23B—BEAVER-CARO.....(75 MILES WAGON ROAD)

This route connects the town of Beaver on the Yukon River with the town of Caro on the Chandalar River. Over this road is hauled all supplies and equipment for the placer mines north of Caro.

This road was formerly a sled road but continued improvement has brought it up to a fair wagon road standard.

Work this season consisted in repairs to bridges, corduroying and ditching mud holes, and the location and construction of six miles of new road from Mile 69 to Caro. It is now possible to haul loads of 3,000 pounds with one team from Beaver to Caro.

Expenditure: \$5,482.64.

ROUTE 23C—BIG CREEK TRAIL.....(20 MILES TRAIL)

This route leaves the Caro-Coldfoot trail, Route 23E, at its junction with Big Creek, Mile 25, and follows up Big Creek to the placer workings at the head of the creek. The trail is suitable for dog team or double ender travel.

This route was formerly shown as Caro-Big Creek, 45 miles trail, but as the Caro-Coldfoot trail is identical with the first 25 miles, the name is changed and the length properly shown as 20 miles.

Work this season consisted in cutting down nigger-heads and brush for four miles and installing a stove in the Mile 69 cabin.

Expenditure: \$277.64.

ROUTE 23D—CARO-FLAT CREEK.....(45 MILES SLED ROAD)

This sled road was built by the miners of this district, and is the route by which all freight is moved from Caro to the rich placer and quartz properties on Little and Big Squaw Creeks.

Minor improvements were made on this road during the past season, niggerheads were cut down in a few places, and a short section of the route relocated. This road is in fair condition for bob sled freighting.

Expenditure: \$1,928.26.

ROUTE 23E—CARO-COLDFOOT.....(85 MILES TRAIL)

This trail extends from Caro, on the Chandalar River, by way of Big Creek, the South Fork of the Koyukuk River, and Slate Creek to Coldfoot, on the Middle Fork of the Koyukuk River. This trail connecting with Route 23B at Caro, which latter route in turn connects with Route 23A at Beaver, gives an outlet from the Upper Koyukuk District to the Railroad at Fairbanks.

As the result of a reconnaissance made in the winter of 1922, this trail was rehabilitated. It was brushed out where it passed through timber, all open stretches tripoded and shelter cabins erected. Cable tramways for the accommodation of foot travelers in summer were erected over the Chandalar and over the South Fork of the Koyukuk River. This trail is now easily passable for dog team travel in winter and foot travel in summer.

* Expenditure: \$6,969.15.

ROUTE 31—CARIBOU CREEK.....(46 MILES SLED ROAD)

This is an old winter sled road cut in 1908. It leaves the Richardson Highway 40 miles south of Fairbanks on the south side of the Salchaket River and follows up the Salchaket to Caribou Creek, serving placer mines in that vicinity.

Due to renewed activity on Caribou Creek, this trail was rehabilitated in the spring of 1923. Last winter $\frac{3}{4}$ mile of new road near McCoy Creek was cut out and four permanent bridges, aggregating 160 lineal feet, 12 feet wide, were erected.

Expenditure:

Alaska Road Commission\$738.64
Contributed by Stewart and Denhart 540.00

Total\$1,278.64

ROUTE 59—FAIRBANKS BRIDGE

This is a three hundred foot steel Petit Truss bridge across the Chena Slough, connecting the town of Fairbanks with the Railroad terminal and all the mining and farming country north of the town.

In connection with the improvement of the Terminal ground of the Railroad, a new approach, 146 feet long, was constructed on the north end of this bridge. The decking is of Douglas fir on creosoted fir pile foundations. A new main floor was placed on the steel span. This bridge is now in excellent condition. The City of Fairbanks rebuilt the approach to the south end of the bridge.

Expenditure: \$5,227.59.

ROUTE 65F—GRUNDLER-TANANA CROSSING.....(113 MILES TRAIL)

This winter trail extends from Grundler (McCarty) ninety miles south of Fairbanks on the Richardson Highway, up the Tanana River Valley to Tanana Crossing. It crosses the Tanana River three times, at Healy River, Sam Creek and at Paul's Cabin. A number of prospectors are served by this trail and trading posts are operated at Healy River and at Tanana Crossing.

Over a part of the distance the route follows an old prospector's trail. This was widened out, windfalls removed and banks at approaches to stream crossings graded down. Twenty-six miles of new trail were cut and two bridges constructed over Little Clearwater and George Creeks, capable of carrying a horse and double ender. The total length of bridges constructed was 145 lin. ft.

During the past winter twenty-five tons of freight were hauled over this trail by dog team and double ender.

Expenditure: \$1,000.00.

ACCOUNT 90D—SHELTER CABINS

Trail	Work Done	Cost
7J Fairbanks-Chena	cabins repaired and stoves installed	\$ 300.00
Hot springs	cabins repaired and stoves installed in	
23A Olmes-Beaver	3 old cabins	600.00
23E Caro Coldfoot	cabins repaired; 1 cabin built; Stoves installed in 7 cabins	1000.00
Total Expenditure: Territory of Alaska		\$1900.00

DISTRIBUTION OF EXPENDITURES.

Type	Miles*	Expenditure	Unit Cost Dollars per Mile
Wagon Road	333 $\frac{1}{4}$	\$185,921.50	\$557.90
Sled Road	221 $\frac{1}{2}$	8,221.12	37.12
Trail	333	11,996.43	35.03
Totals	887 $\frac{3}{4}$	\$206,139.05	\$232.20

(*)—Includes only routes maintained during fiscal year.

TERRITORIAL PROJECTS.**TERRITORIAL ROAD COMMISSION—FOURTH DIVISION**

Abe McKinnon, Chairman and Secretary to Aug. 5, 1923.

M. C. Edmunds, since Aug. 6, 1923.

Mel. R. Sabin, Member. John Soll, Member.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
7A*	Summit-Chatanika	11			11
7B	Fox-Olnes	13			13
7C*	Summit-Fairbanks Creek	13			13
7D*	Ester Creek	13			13
7DA	College Spur	1/2			1/2
7GA	Lazelle Road	2 1/2			2 1/2
7H	Little Eldorado Creek	6			6
7J*	Fairbanks-Chena Hot Spring		64		64
7K	Olnes-Livengood		54		54
7N	Farmers-Birch Hill	9			9
7NA	Isabelle Creek	2			2
7S	Graehl Bridge				
7T	Farmers-Chena Slough	4 1/2			4 1/2
15A	Central House-Circle Hot Spring	9			9
23A*	Olnes-Beaver			115	115
	Totals	83 1/2	118	115	316 1/2
	Totals**	46 1/2	54		100 1/2

*—Cooperative projects with Alaska Road Commission.

**—Exclusive of Cooperative projects.

ROUTE 7A—SUMMIT-CHATANIKA.....(11 MILES WAGON ROAD)

This is an old road extending from the Summit at end of Route 71, down Cleary Creek to the town of Chatanika, at the end of the Happy-Chatanika branch of the Alaska Railroad. It is a portion of the proposed extension of the Richardson Highway to Circle.

Work of rehabilitating this old road was begun this season. Two relocations were made to eliminate steep grades and get road on better ground. The first four miles from Chatanika to old Cleary City was regraded and soft places surfaced with tailing from the nearby dumps. Three and one-half miles of new road were built. The principal items of work accomplished are:

Clearing, 50 feet wide	3.5 miles
Grubbing, 32 feet wide	3.5 miles
Grading	3.4 miles
Surfacing (broken rock and tailings).....	2.4 miles
Culverts, timber, 19 placed	266 lin. ft.
Culverts, corrugated iron pipe, 12 placed	168 lin. ft.
Bridges, 2 built	40 lin. ft.

Expenditures: Territory of Alaska (Divisional) \$500.00

ROUTE 7B—FOX-OLNES..... (13 MILES WAGON ROAD)

This road connects the towns of Fox and Olnes, situated at Miles 11 and 26 respectively, on the Happy-Chatanika Branch of

the Alaska Railroad. The road was constructed in pre-railroad days and has been little used until recently when renewed activity on Dome Creek has increased travel over this route.

Work this season consisted in surfacing soft spots, cleaning side ditches and repairing culverts.

Expenditure: Territory of Alaska (Divisional) \$2,112.00

ROUTE 7C—SUMMIT-FAIRBANKS CREEK.....(13 MILES WAGON ROAD)

This is the road from the Summit at the end of Route 71 to Fairbanks Creek where two dredges are in operation and several small placer and quartz mining outfits are working. Considerable traffic passes over this road both in summer and winter.

Due to very quick runoff at the breakup period, considerable damage occurred to the roadway as it is largely on side hill grade. Seven miles were regraded, ditches cleaned, brush cut from sides of road and culverts repaired. Five new culverts were placed.

Expenditure: Territory of Alaska (Divisional) \$1,500.00

ROUTE 7D—ESTER CREEK.....(13 MILES WAGON ROAD)

This road connects the town of Fairbanks with Ester City on Ester Creek, one of the rich placer creeks in the early days of the camp, and where there is still quite a little activity. Along this route is the Agricultural College and School of Mines and the Government Agricultural Experimental Farm

The road was surfaced for 1 1/2 miles near Ester City with tailings, the grade widened over Gold Hill and brush cut from sides of road. The gravel surfacing was extended from Fairbanks to the College, eight new culverts placed and one thirty-foot bridge redecked. In all, 4 1/2 miles of road were surfaced.

Expenditure: Territory of Alaska (Divisional) \$4,955.00

ROUTE 7DA—COLLEGE SPUR.....(1/2 MILE WAGON ROAD)

This road connects the College siding, Mile 467 Alaska Railroad, with the College Buildings, crossing Route 7D at 4 1/2 miles from Fairbanks. The portion of this route from Route 7D to the College Buildings was graded and graveled in the summer of 1922.

This season, eight hundred feet of new road were graded and graveled, connecting the portion already built with the railroad.

Expenditure: Territory of Alaska (Divisional) \$500.00.

ROUTE 7GA—LAZELLE ROAD.....(2 1/2 MILES WAGON ROAD)

This road branches off Route 7G, Fairbanks-Gilmore road, 3 miles from Fairbanks, extending to the Lazelle farm and serving three other farms along the route. This wagon road was for-

merly carried under Route 7J, Fairbanks-Chena Hot Springs, and considered the beginning of a proposed road to the Chena Hot Springs. This season, however, a new location was made for the Chena Hot Springs road, leaving Route 7G at 2½ miles from Fairbanks.

Work this season consisted in regrading ½ mile, cleaning side ditches, and placing six new culverts.

Expenditure: Territory of Alaska (Divisional) \$186.00.

ROUTE 7H—LITTLE ELDORADO CREEK.....(6 MILES WAGON ROAD)

This road extends from Little Eldorado station, Mile 30 on the Happy Chatanika branch of the Alaska Railroad; up Little Eldorado Creek to its head, making a junction with Route 7A, Summit-Chatanika, 4 miles from the Summit. Placer mines along Little Eldorado Creek are served by this road, and it gives an outlet to the main system of roads connecting with Fairbanks.

Work this season consisted in surfacing soft places, a total of one-half mile being surfaced, cutting brush along sides of road, cleaning side ditches, and repairing culverts.

Expenditure: Territory of Alaska (Divisional) \$1,500.00.

ROUTE 7J—FAIRBANKS-CHENA HOT SPRINGS....(64 MILES SLED ROAD)

Already described above under Federal projects.

Expenditure: Territory of Alaska (Divisional) \$314.00.

ROUTE 7K—OLNES-LIVENGOOD.....(54 MILES SLED ROAD)

This route connects Olnes, Mile 26 on the Happy-Chatanika branch of the Alaska Railroad, with the town of Brooks on Livengood Creek in the Tolovana mining district. This road has practically been unused since the construction of the Dunbar-Brooks sled road. It is still used by foot travelers and occasionally by dog teams in winter.

This season a foot bridge was built over Washington Creek replacing a bridge washed out on the old sled road. Repairs were made to the first 1½ miles of road out of Olnes, over which freighting is done to operators along the Chatanika River.

Expenditure: Territory of Alaska (Divisional) \$288.00.

ROUTE 7N—FARMERS-BIRCH HILL....(9 MILES WAGON ROAD)

This road has been entirely built by Territorial funds through the farming country along Birch Hill. It branches from the Fairbanks-Gilmore road, Route 7G, at Mile 3 and connects with the Ester Creek road, Route 7D, at Mile 4.

This season a new location was made on the Ester road end of this route, placing the road on the property line and shortening

and straightening the old road, which had never been improved in this section. 1½ miles of new road were cleared, grubbed and graded; ½ mile regraded and widened; eight new culverts placed; and two new bridges of 12 and 14 foot spans were built.

This route is now in good condition and should need little additional work other than seasonal maintenance.

Expenditure: Territory of Alaska (Divisional) \$3,145.00.

ROUTE 7NA—ISABELLE CREEK.....(2 MILES WAGON ROAD)

This road branches from the Farmers-Birch Hill, Route 7N, where the latter road crosses Isabelle Creek, and extends up Isabelle Creek, serving several farms.

This season, one-half mile of road was graded, brush cut from sides of road and ditches cleaned.

Expenditure: Territory of Alaska (Divisional) \$150.00.

ROUTE 7S—GRAEHL BRIDGE

This bridge is over a slough on the winter cut-off from the Fairbanks-Gilmore road, Route 7G, into Fairbanks. All the travel from that route in winter comes into Fairbanks over this bridge, after the main Chena Slough has frozen over.

This bridge was renewed in the fall of 1922, and is now in good condition.

Expenditure: None.

ROUTE 7T—FARMERS-CHENA SLOUGH.....(4½ MILES WAGON ROAD)

This route leaves the Richardson Highway 4 miles south of Fairbanks and extends to the Chena Slough and up the slough, serving several homesteads.

Effort was continued this season to bring this road up to wagon road standard. All stumps were grubbed 12 feet wide for 4½ miles, rough spots in roadway leveled off and two bridges built, one 20 and one 24 foot span.

This road is now passable for wagons with fair sized loads. It is planned to extend this road 3 miles farther up the slough and to grade it the entire length. This will open up some very desirable farming country.

Expenditure: Territory of Alaska (Divisional) \$1,000.00.

ROUTE 15A—CENTRAL HOUSE-CIRCLE HOT SPRINGS.....(9 MILES WAGON ROAD)

This is a branch road from the Circle-Miller House road, Route 15, at the Central House, 36 miles from Circle. It extends to the Circle Hot Springs, which in the past few years has had

quite a large patronage. The road was maintained during the season. Several bad mud holes were corduroyed, culverts repaired, and brush cut out from sides of the road. Five new culverts were built.

Expenditure: Territory of Alaska (Divisional)....\$1,200.50.

ROUTE 23A—OLNES-BEAVER.....(115 MILES TRAIL)

Already described above under Federal projects.

Expenditure: Territory of Alaska (Divisional) \$2,580.00.

DISTRIBUTION OF EXPENDITURES.

Type	Miles*	Expenditure	Unit Cost Dollars per Mile
Wagon Road	83½	\$16,748.50	\$200.58
Sled Road	118	402.00	3.41
Trail	115	2,580.00	22.17
Totals	316½	\$19,730.50	\$ 62.34

(*)—Includes only routes maintained during fiscal year.

NENANA DISTRICT.

Hawley W. Sterling, Supt., July 1 to July 31, 1923.

Ike P. Taylor, Supt., Aug. 1 to Oct. 31, 1923.

M. C. Edmunds, Supt., Nov. 1, 1923 to May 15, 1924.

H. G. Haslem, Supt., May 16 to June 30, 1924.

This district embraces that portion of the territory lying west of the 148th meridian, from the Yukon River on the north to Mile 360 on the Government Railroad on the south, which is the northern boundary of Mt. McKinley Park; also that territory between the 150th and 158th meridian north of the Yukon River. Within this area are the important mining districts of the Kantishna, Livengood, Hot Springs and the Bonnifield.

There are 20 sub-projects in this district; 7 of these are road or trail feeders directly tributary to the Government Railroad and the balance are either extensions of these feeders into more remote sections of the territory or connections with river routes. The system of roads and trails ties into the railroad in this district as follows:

Main Line Mile	Route
363 Lignite	46B Lignite-Kantishna
371 Moose Creek	88 Moose Creek Road
387 Kobi	46 Kobi-Diamond-McGrath
	46G Kobi-Bonnifield
411 Nenana	46C Nenana-Knights
432 Dunbar	5A Dunbar-Ft. Gibbon
	63 Dunbar-Brooks

The Nenana District, organized from a portion of the old Yukon District followed the vigorous carrying out of all road and trail work near the Government Railroad and upon the Yukon and Tanana Rivers in the last four years. The first work taken up in this district was the repairing of damages due to neglect in the war years. The main arteries along the Tanana and Yukon Rivers through Fort Gibbon revived.

Reconnaissances were carried on the Koyukuk, Kobuk and Chandalar districts in the extreme north. An important reconnaissance was made by the Engineer Officer from Mt. McKinley Park Station through the Kantishna to McGrath on the Upper Kuskokwim. A road was located and started into Mt. McKinley National Park. A sled road was constructed from Kobi on the Government Railroad to the Kantishna. A winter dog trail serv-

ing as a mail trail for all points in extreme western Alaska was opened up from Kobi to McGrath. A light summer road suitable for light wagon transportation was built from Roosevelt, the head of navigation on the Kantishna River to the Kantishna Mining District. A stable and office for this district has been established and a lively program for construction in the future is planned. This program will have very important effect in gathering traffic for the Government Railroad.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
5A	Dunbar-Ft. Gibbon		121		121
9*	Rampart-Eureka	12	15½		27½
17	Ft. Gibbon-Kaltag			257	257
22*	Hot Springs-Sullivan Creek	9			9
29	Ft. Gibbon-Bettles			198	198
29A	Bettles-Coldfoot		52½		52½
29B	Alatna-Shungnak Reconnaissance				
30*	Hot Springs Landing-Eureka	24			24
38A*	Ruby-Long	30			30
38E*	Long-Poorman (summer)	29			29
38EE	Long-Poorman (winter)		29		29
46	Kobi-Eureka		95		95
46A*	Roosevelt-Kantishna	34			34
46B	Lignite-Kantishna			85	85
46C	Nenana-Knight's Roadhouse			42	42
46E	Diamond-Telida			90	90
46G	Bonnifield Reconnaissance				
47	Coldfoot-Wiseman	1	11		12
63	Dunbar-Brooks		63		63
63B	Brooks-Amy Creek	4			4
63C	Brooks Tram	13			13
88	Govt. Railroad-Moose Creek	6			6
90D	Shelter Cabins				
97	Suntrana foot bridges				
Totals		162	387	672	1221

(*)—Also Territorial Projects.

SUMMARY OF EXPENDITURES.

Sub-Project Number	Federal	Territorial	Construction	Maintenance	TOTAL
5A	\$ 1,547.00		\$ 500.00	\$ 1,047.00	\$ 1,547.00
9*	1,080.00	\$ 200.00		1,280.00	1,280.00
17	4,329.74		1,759.74	2,570.00	4,329.74
22*	5,360.90	400.00		5,760.90	5,760.90
29					
29A					
29B	2,397.25		2,397.25		2,397.25
30*	696.00	400.00		1,096.00	1,096.00
38A*	5,094.02	500.00		5,594.02	5,594.02
38E*	4,353.98	490.00	4,093.98	750.00	4,843.98
38EE	50.00	10.00		60.00	60.00
46	349.99			349.99	349.99
46A*	14,343.47	2,000.00	11,843.47	4,500.00	16,343.47
46B					
46C	151.60			151.60	151.60
46E	398.52			398.52	398.52
46G	538.73		538.73		538.73
47	2,542.61		1,942.61	600.00	2,542.61
63	1,450.12			1,450.12	1,450.12
63B	610.00			610.00	610.00
63C					
88	350.00			350.00	350.00
90D		1,328.00	900.00	428.00	1,528.00
97	326.30		326.30		326.30
Totals	\$45,970.23	\$ 5,328.00	\$24,302.08	\$26,996.15	\$51,298.23

(*)—Also Territorial Projects.

ROUTE 5A—DUNBAR-FORT GIBBON....(121 MILES SLED ROAD)

This is the winter mail trail between Dunbar, Mile 432 on the Alaska Railroad, and the old army post of Ft. Gibbon, at the confluence of the Tanana and Yukon Rivers. This route was formerly known as the Ester-Ft. Gibbon road, distance of 148 miles. Since the completion of the Government Railroad, the section of 27 miles from Ester to Dunbar is no longer used.

The road was brushed out between Hot Springs and American Creek, bridges repaired and slides cleared away at Baker Bluff where road follows around a steep hill. The entire route was gone over and minor repairs made.

Expenditure: \$1,547.00.

ROUTE 9—RAMPART-EUREKA.....(12 MILES WAGON ROAD, 15½ MILES SLED ROAD)

This route connects the mining town of Rampart, on the Yukon River, with the mining camp of Eureka on Eureka Creek, the waters of which flow into the Tanana River. This route, together with Route 30, forms an important portage between the Yukon and Tanana Rivers.

The portion of this route from Rampart to the 12 miles post is now a fair wagon road. The remaining 15½ miles is only a fair sled road.

Work this season consisted of clearing the brush from sides of road, cleaning ditches, repairing culverts and grade which was badly washed out.

The bridge over Big Minook Creek, giving access to the workings on Hunter Creek, was rebuilt. Miners on Hunter Creek cooperated in this work. A shelter cabin was erected at 21 miles from Rampart.

Expenditure:

Alaska Road Commission	\$1,080.00
Territory of Alaska	200.00
Total	\$1,280.00

ROUTE 17—FT. GIBBON-KALTAG.....(257 MILES TRAIL)

This is purely a winter mail trail used by dog teams between the old army post of Ft. Gibbon at the confluence of the Tanana and Yukon Rivers, and Kaltag on the lower Yukon River. All the mail and travel to the lower Yukon as well as to Nome and the entire Seward Peninsula passes over this route. The trail follows the ice of the Yukon River the greater part of its length.

The annual staking of the portions of the trail on the river ice was performed. Two permanent bridges were constructed over

Mason and Illinois Creeks, thereby obviating the annual cost of building temporary bridges over these streams. Four miles of new trail was built around Mason Slough. The trail originally followed down this Slough, but due to warm springs the ice was never safe. The new trail follows the left limit of the Slough.

Expenditure: \$4,329.74.

ROUTE 22—HOT SPRINGS-SULLIVAN CREEK....(9 MILES WAGON ROAD)

This road extends from the Tanana River at the mouth of the Hot Springs Slough to placer workings on Sullivan Creek and the vicinity of the old camp of Tofly. It is used by mail carriers between Dunbar and Ft. Gibbon after the freezeup.

General repairs were made to this road, including filling washouts, cutting brush from sides of road, repairing culverts and bridges. One new 30 foot stringer bridge was built; 16 new culverts placed; 1,168 feet of corduroy laid and covered with earth; and 3,465 feet of side ditches dug.

Expenditure:

Alaska Road Commission	\$5,360.90
Territory of Alaska	400.00

Total	\$5,760.90
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ROUTE 29—FORT GIBBON-BETTLES.....(19) MILES TRAIL)

This route is the present winter mail trail from Ft. Gibbon on the Yukon River to Bettles, the head of steamboat navigation on the Yoyukuk River where it connects with Route 29A, Bettles-Coldfoot.

Shelter cabins were erected along this trail as described below under Shelter Cabin Fund, Account No. 90D. No other work was done.

Expenditure: None.

ROUTE 29A—BETTLES-COLDFOOT....(52½ MILES SLED ROAD)

This sled road connects Bettles, the head of navigation on the Koyukuk River with the town of Coldfoot, also on the Koyukuk River. It forms a part of the winter mail trail to the upper Koyukuk District and over this route is hauled freight landed at Bettles in summer, which it is not possible to move with horse scows. This route was greatly improved in the fall of 1922 and is now in good condition.

Expenditure: None.

ROUTE 30—HOT SPRINGS LANDING-EUREKA.....(24 MILES WAGON ROAD)

This road extends from Hot Springs landing on the Tanana River to the mining camp of Eureka on Eureka Creek. It passes through the town of Hot Springs, 2 miles from the landing. This route together with Route 9, Rampart-Eureka, forms an important portage route between the Tanana and Yukon Rivers, as well as serving an area of placer mines.

Considerable damage occurred to this road from spring run off. This damage was repaired, the bridges across Hot Springs Slough and across Baker Creek were repaired, brush cut from sides of road, ditches cleaned and culverts repaired. Six new culverts were built.

Expenditure:

Alaska Road Commission	\$696.00
Territory of Alaska	400.00

Total	\$1,096.00
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ROUTE 38A—RUBY-LONG.....(30 MILES WAGON ROAD)

This is an excellent winter and summer road connecting Ruby with the workings on Long Creek. In connection with the extension to Poorman, Route 38E, it will afford summer transportation to the operations around Poorman. During the past season protection work was carried out during the breakup, Seasonal maintenance was performed, bridges and culverts repaired, ditches cleaned and some surfacing accomplished.

Expenditure:

Alaska Road Commission	\$5,094.02
Territory of Alaska	500.00

Total	\$5,594.02
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ROUTE 38E—LONG-POORMAN.....(29 MILES WAGON ROAD)

This is a very poor summer road, following in part the winter mail trail, Route 38EE. Its rehabilitation is now underway.

During the past season the extension of this road was begun from Long toward Poorman. A total of 1¾ miles of road was built. Minor repairs were made on the Solatna River bridge and piers. The principal items of work accomplished were as follows:

Grading	7,000 lin. ft.
Corduroy laid	1,000 lin. ft.
Surfacing	4,000 lin. ft.
Bridges, one	20 lin. ft.
Culverts	16

Expenditure:

Alaska Road Commission.....	\$4,353.98
Territory of Alaska.....	490.00
	<hr/>
	\$4,843.98

ROUTE 38EE—LONG-POORMAN (WINTER).....(29 MILES SLED ROAD)

This is a section of the winter mail trail between Ruby and Ophir. It uses the same bridge across the Solatna River as Route 38E. Minor repairs were made to bridges, and windfalls cleared from this sled road during the past season.

Expenditure:

Alaska Road Commission.....	\$50.00
Territory of Alaska.....	10.00
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Total.....	\$60.00

ROUTE 46—KOBI-EUREKA.....(95 MILES SLED ROAD)

This route connects Kobi Station, Mile 387 on the Alaska Railroad with Kantishna Post Office at the mouth of Eureka Creek, the center of the present quartz and placer mining activities in the Kantishna district. The portion of the route from Kobi to Diamond, 60 miles, was improved to an excellent sled road in the winter of 1922. From Diamond to Kantishna Post Office is a fair sled road.

Work this season consisted in repairs to bridges damaged by high water, and the removal of windfalls caused by forest fires.

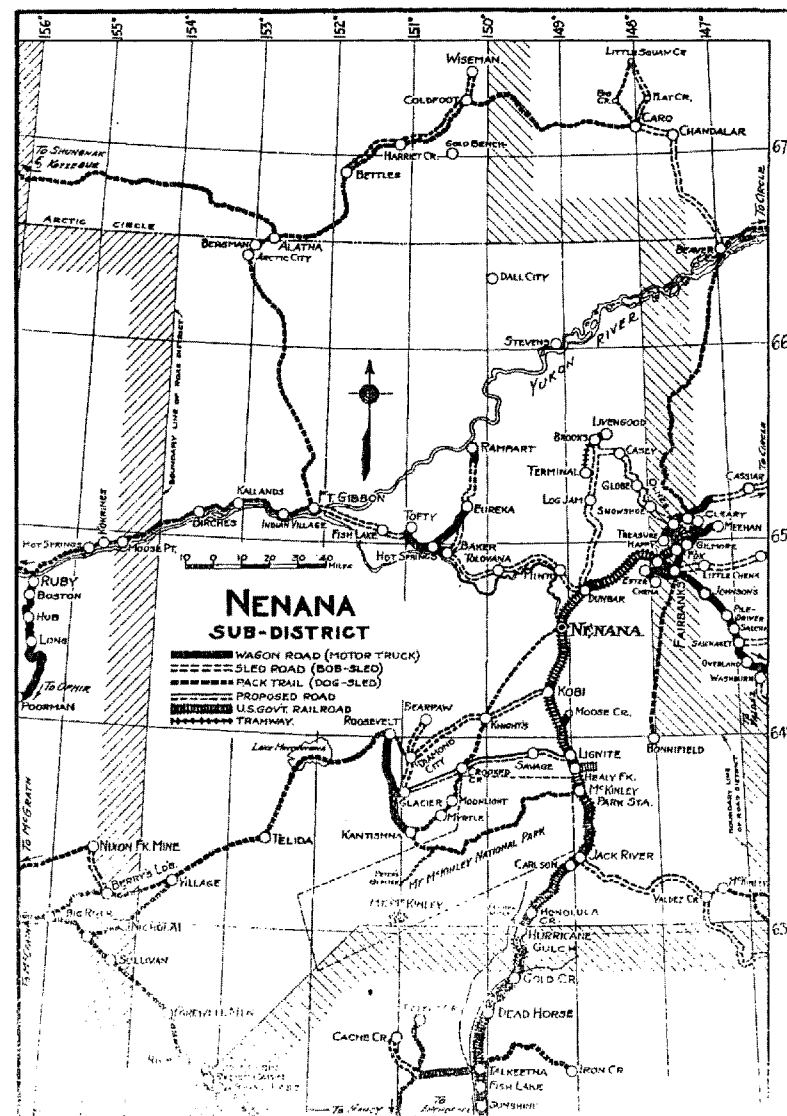
Expenditure: \$349.99.

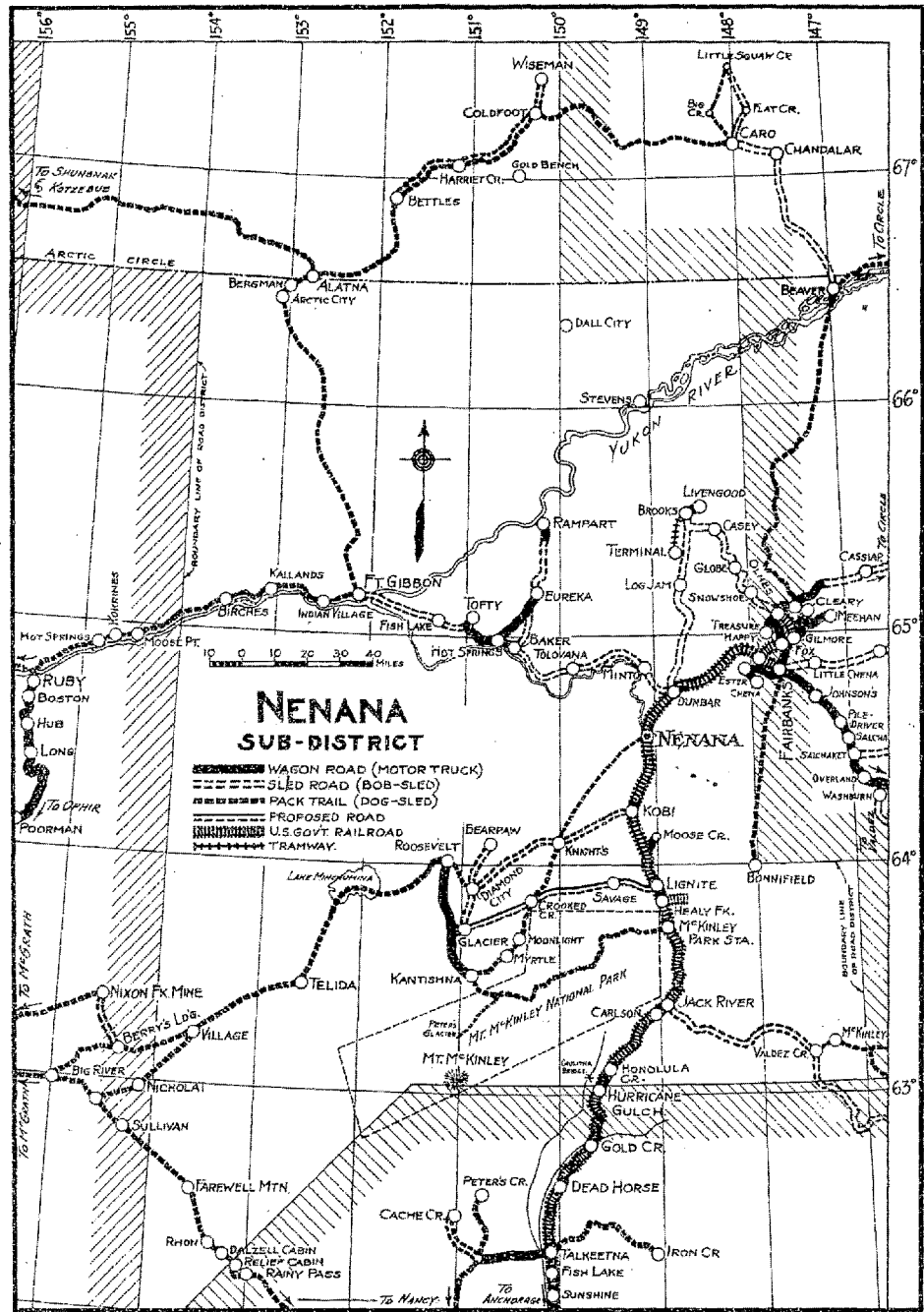
ROUTE 46A—ROOSEVELT-KANTISHNA.....(34 MILES WAGON ROAD)

This road connects Roosevelt, the head of navigation on the Kantishna River with the Kantishna Post Office. It is used for all summer mail and freight into the Kantishna District. Though passable its entire length for wagons with light loads, a great amount of improvement will be necessary to bring this road up to a good wagon road standard.

Work was continued this season in extending the road from Roosevelt. Following are the principal items of work accomplished:

Corduroy laid.....	7780 lin. ft.
Gravel Surfacing.....	3500 cu. yds.
Ditching.....	8510 lin. ft.
Culverts placed.....	11
Clearing, 60 ft. wide.....	5 miles
Grubbing, 30 ft. wide.....	5 miles





This road is now in fair condition from Roosevelt to Bear Creek, a distance of 15 miles, though seven miles of this distance is over the old road which is located on good ground. Beyond Bear Creek it will be necessary to corduroy 2½ miles of swamp. With this exception the road is fair for light loads from Bear Creek to the Kantishna Post Office.

Expenditure:

Alaska Road Commission.....	\$14,343.47
Territory of Alaska.....	2,000.00
Total.....	\$16,343.47

ROUTE 46B—LIGNITE-KANTISHNA.....(85 MILES TRAIL)

This route extends from Lignite station. Mile 363 on the Alaska Railroad, west across Middle, Chisana, and Toklat Rivers up Crooked Creek and down the Bearpaw River to Glacier City, where it makes a junction with Route 46, Kobi-Eureka.

This trail is little traveled at present and no further improvement is contemplated. The trail was marked and shelter tents erected in the spring of 1922.

Expenditure: None.

ROUTE 46C—NENANA-KNIGHTS ROADHOUSE.....(42 MILES TRAIL)

This winter dog trail connects the town of Nenana on the Tanana River (Mile 411 Alaska Railroad) with Knights Roadhouse on the Toklat River, 25 miles from Kobi where a junction is made with the Kobi-Diamond sled road.

This trail was originally cut out by the citizens of Nenana and later improved by the Alaska Road Commission. It serves as an alternate route from Knights Roadhouse to Nenana for travel coming from the west and bound for Nenana. Windfalls were removed and some high stumps cut out this season to make this trail passable as the mail for McGrath and that vicinity is now routed from Nenana over this trail. The town of Nenana cooperated with labor.

Expenditure: \$151.60.

ROUTE 46E—DIAMOND-TELIDA.....(90 MILES TRAIL)

This is a section of the winter mail trail from Diamond, mile 60 on Route 46, to McGrath in the Upper Kuskokwim district. Over this route now passes all the mail for the Kuskokwim and Iditarod placer camps, and practically all the travel in winter from these districts now uses this route. It is a vast improvement over the old route to these districts by way of Rainy Pass. There is no appreciable summit to go over and snow conditions are never so severe as south of the Alaska Range.

Last year a new trail was cut from Diamond to Telida Village. The past season all lakes were staked, approaches graded and windfalls removed.

Expenditure: \$398.52.

ROUTE 47—COLDFOOT-WISEMAN.....(1 MILE WAGON ROAD, 11 MILES SLED ROAD)

This road extends from Coldfoot, the head of navigation by horse scows on the Koyukuk river, up the Middle Fork of the Koyukuk to Wiseman, where the larger part of the placer mining in this district is now in progress. Over this road is moved practically all the freight for the upper Koyukuk.

The road is in fairly good condition, the only work this season being the erection of three cable tramways, over Slate Creek, Marion Creek and the Middle Fork of the Koyukuk respectively. An old cable ferry over the Middle Fork at Wiseman was repaired. The erection of these tramways makes this route passable for foot travel in summer and gives an easy outlet from this district, whereas prior to their erection summer travel in this country was arduous, the crossing of all these streams being a dangerous undertaking.

Expenditure: \$2,542.61.

ROUTE 63—DUNBAR-BROOKS.....(63 MILES SLED ROAD)

This sled road extends from Dunbar station, mile 432 Alaska Railroad, to the placer mining camp of Brooks on Livengood Creek, at the headwaters of the Tolovana River.

This trail is now in good condition, all the principal streams crossed having been bridged with the exception of the Chatanika and Tolovana Rivers which are crossed on the ice after the freezeup.

Work this season consisted in replacing approaches to bridges damaged by high water, the removal of numerous windfalls caused by fire having burned over the country through which the trail passes; and grading down the banks of the Chatanika and Tolovana rivers for an easy approach onto the ice.

Expenditure: \$1,450.12.

ROUTE 63B—BROOKS-AMY CREEK (4 MILES WAGON ROAD)

This road extends from the town of Brooks up Livengood Creek to the mouth of Amy Creek where it crosses Livengood and follows up Amy Creek one mile. Over this road is hauled supplies for a large part of the placer mining operations in this district. The road was built by the Territory in the early days of the camp and has since had very little maintenance.

This season several small washouts were repaired, culverts renewed and soft spots surfaced. The bridge over Livengood Creek was repaired.

Expenditure: \$610.00.

ROUTE 63C—BROOKS TRAM.....(13 MILES TRAM ROAD)

This is an old tram road extending from the town of Brooks, the center of the Tolovana mining district, to the head of navigation on the Tolovana river. The rails are of wood. A Dodge touring car with wide flanged wheels is used for motive power. By using two trailers also equipped with wide flanged wheels, it is possible to haul two and one-half tons over this road in one hour.

By a special act of the Territorial legislature, the Alaska Road Commission was authorized as agent for the Territory, to enter negotiations for the purchase of this tram from its present owners. Accordingly an inspection was made and negotiations have been completed for its purchase. It is planned by the Board to make necessary repairs to the present track and possibly extend the tram to the Log Jam, a distance of 12 miles from the present terminus. This proposed extension would eliminate one transfer of all freight at the Log Jam as at present and would avoid trouble with low stages of water above the Log Jam.

Expenditure: None.

ROUTE 82—GOVERNMENT RAILROAD-MOOSE CREEK.....(6 MILES WAGON ROAD)

This road connects the placer workings on upper Moose Creek, a tributary of the Nenana River, with the Alaska Railroad at Ferry station, Mile 371.

During the past season, under a cooperative agreement with operators on this creek, considerable improvement was made to this road. One-half mile of side hill road was completed, stumps removed and road leveled off for one mile.

Expenditure: \$350.00.

ROUTE 97—SUNTRANA FOOTBRIDGE

This proposed footbridge over the Healy River will connect the village of Suntrana with the workings of the Healy River Coal Corporation, and gives access to the village from the end of the Healy River spur of the Alaska Railroad.

Materials have been landed at the bridge site and the erection will be performed as soon as water conditions in the river will permit.

Expenditure: \$326.30.

EXAMINATIONS AND SURVEYS

ROUTE 29B—ALATNA-SHUNGNAC RECONNAISSANCE

A reconnaissance for the selection of a winter route between the Koyukuk and Kobuk Rivers was made. The most feasible route was found to be leaving Alatna on the Koyukuk River, following up the Alatna River, over the divide to the Kobuk and down the Kobuk to Shungnak. The distance from Alatna to Shungnak, both of which are on existing trails, is 148 miles. It is estimated the cost of cutting and marking this trail and the erection of necessary shelter will be \$8,500. Very little mining is in progress on the upper Kobuk but considerable activity is evident in the reindeer industry.

Expenditure: \$2,397.25.

ROUTE 46G—KOBİ-BONNIFIELD RECONNAISSANCE.

A reconnaissance was made of the route from Kobi, Mile 387 on the Alaska Railroad, to the mining district around Bonnifield Creek. A feasible route was selected for a winter sled road into this district. The distance from Kobi to the crossing of Bonnifield Creek is approximately 40 miles. It is estimated that a fair sled road can be constructed at a cost of \$5,000.00.

Expenditure: \$538.73.

ACCOUNT 90D—SHELTER CABINS

Trail	Work Done	Cost
9 Rampart-Eureka	1 cabin erected.....	\$ 378.00
29 Tanana-Bettles	8 cabins erected.....	800.00
46C Nenana-Knight's Roadhouse	1 cabin erected.....	150.00
Total Expenditure: Territory of Alaska		\$1,328.00

DISTRIBUTION OF EXPENDITURES

Type	Miles*	Expenditure	Unit Cost Dollars per Mile
Wagon Road	149	\$36,098.37	\$242.27
Sled Road	334½	5,729.32	17.12
Trail	389	4,879.95	12.54
Totals	872½	\$46,707.64	\$ 53.53

(*)—Includes only routes maintained during fiscal year.

SOUTHWESTERN DISTRICT.

O. A. Hall, Supt., July 1 to July 30, 1923; Anchorage
Hawley W. Sterling, Supt., Aug. 1, 1923, to June 30, 1924.

Anton Eide, Asst. Supt., Seward.

G. J. Truitt, Junior Engr., April 12 to June 30, 1924; McKinley Park.

This district includes the Kenai and Alaska Peninsulas and all of the territory tributary to the Government Railroad between Seward and Mile 350.

At the time of taking up the post war work, no superintendent was permanently located in this important district. This district contains a wide belt of country of interest for development, due to its relation to the Government Railroad. As a first step in reviving road work here, a superintendent was permanently located within the district. Reconnaissances were extended in all directions. The Engineer Officer reconnoitered the route from McGrath over Rainy Pass to the Alaska Railroad, definitely settling with a similar reconnaissance along the north slope from Mt. McKinley to the same point in the Kuskokwim, the relative advantages of each route.

A system of local roads for the new town of Anchorage was planned and constructed. The roads from Wasilla to the Willow Creek mines were revived so that all mineral workings are served by both summer and winter roads. The important placer mining camp of Cache Creek was opened up by the construction of a sled road from Talkeetna on the Government Railroad to the mineral workings and this has been followed by the construction of a summer road, now half completed and giving very gratifying results both in respect to activity in this mining camp and to traffic attracted to the Government Railroad. Numerous small projects throughout the district were laid out and partially completed. All practicable sources of traffic to or from the Government Railroad have received some work. The conception of traffic relations to the Government Railroad has been perfected.

There are 37 sub-projects in this district under supervision of this Board. Of this number, 33 are road or trail feeders to the Government Railroad, (The Alaska Railroad).

The system of roads and trails devised by this Board ties into the railroad in this district at the following points:

Main Line Mile	Route
0 Seward	10 Seward-Kenai Lake
	10A Seward-Radio
	10B Seward-Nash
7 Woodrow	10 Seward-Kenai Lake
23 Roosevelt	55 Kenai Lake-Kenai
29 Moose Pass Station	24 Mile 29-Sunrise
	24A Lynx Creek-Sixmile
	24B Sunrise-Hope
75 Girdwood	19E Girdwood-Crow Creek
114 Anchorage	75 Anchorage-Eagle River
	75A Anchorage-Lake Spenard
	75B Whitney Road
	75C Chester Creek Boat Landing
	75B Whitney Road
119 Whitney	75 Anchorage-Eagle River
126 Eagle River	35J Matanuska-Wasilla
151 Matanuska	35K Matanuska Trunk Road
	35L Matanuska-Palmer
160 Wasilla	35A Archangel Extension
	35B Mile 26 1/2 -Palmer
	35D Willow Creek Extension
	35E Wasilla-Fishhook
	35F Wasilla-Knik
	35H Wasilla-Finger Lake
	35J Wasilla-Matanuska
	35M Knik Corduroy
181 Nancy	20B Susitna-Rainy Pass
	20H Nancy-Susitna
227 Talkeetna	51 Talkeetna-Cache Creek
	83 Talkeetna-Iron Creek
288 Honolulu Creek	93 Chulitna Bridge and Trail
297 Colorado	93A Bull River Trail
320 Cantwell	76 Cantwell-Valdez Creek
347 McKinley	46D McKinley Park Trail
Chickaloon Branch:	Route
	Mile
6 Palmer	35B Palmer-Mile 26 1/2
	35C Palmer-Matanuska River
	35G Palmer-Springer
	35H Finger Lake-Wasilla
	35K Matanuska Trunk Road
	35L Palmer-Matanuska
13 Moose Creek	35I Moose Creek Grade
38 Chickaloon	96 Chickaloon-King River

The following former sub-projects of this Board have been abandoned or superseded by preferable routes resulting from the change in the general transportation situation following the construction of the Government railroad:

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
12A	Mile 34-Lynx Creek	15			15
19	Kern Creek-Knik			86	86
19A	Kenai Lake-Kern Creek			40	40
19B	Mile 27-Mile 29			2	2
19C	Kenai Lake-Mile 27 ANRR			7	7
19D	Kern Creek-Indian Creek			22	22
20A	Knik-Susitna			30	30
20E	Susitna-McDougal			35	35
20F	McDougal-Cache Creek			30	30
20G	Lakeview R.H.-McDougal			15	15
66	Matanuska-Chickaloon			38	38
	Totals	15		305	320

The following former sub-projects of this Board have been turned over to the Department of Agriculture working in cooperation with the Territory of Alaska:

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
10	Seward-Kenai Lake	14			14
10A*	Seward-Radio	1			1
19E	Girdwood-Crow Creek	10			10
24	Mile 29 ANRR-Sunrise	39			39
24A	Lynx Creek-Sixmile Creek	7			7
24B	Sunrise-Hope		9		9
55**	Kenai Lake-Kenai			12	12
	Totals	71	9	12	92

(*)—Turned over to the Navy Department.

(**)—Quartz Creek-Russian River section only.

The following sub-projects, being located entirely outside the limits of the National Forests, are being retained by this Board. They are arranged in two groups; first, those sub-projects supported during the fiscal year from funds of this Board or of the Territory of Alaska, disbursed through the U. S. Treasury; and, second, those supported by Territorial funds disbursed by the Territorial Road Commission for the Third Division. In all cases, the work was performed by the superintendent of this Board, who also served as chairman and secretary of the Territorial Divisional Commission, under the direction of the President of this Board, who also served as the Director of Public Works for the Territory.

FEDERAL PROJECTS.

Sub-Project No.	Name of Route	Wagon Road	Sled Road	Trail	Total Miles
20E	Susitna-Rainy Pass			127	127
20H	Nancy-Susitna			25	25
35A	Archangel Extension	5 1/2			5 1/2
35C*	Palmer-Matanuska River	1 1/2			1 1/2
35D	Willow Creek Extension	11			11
35E	Wasilla-Fishhook	16			16
35F	Wasilla-Knik	15			15
35H*	Wasilla-Finger Lake-Palmer	12			12
35J*	Wasilla-Matanuska	10			10
35K*	Matanuska Trunk Road	8			8
35O	Fishhook-Goldmint		6		6
46D	McKinley Park Trail	2		85	87
48	Iliamna Bay-Iliamna Lake	10		2	12