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HIGHWAY STATISTICS

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OTTAWA

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HIGHWAY STATISTICS

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A large part of the debt of each province is attributable to the huge expenditures on highways during the past thirty years. Until provincial financing develops to the point where highway construction is paid for out of current revenues, or the "earmarked" taxes and fees from motor vehicle users, highway construction expenditures will continue to represent a large portion of provincial debt. In addition, debentures issued for past construction involve heavy annual interest payments plus the retirement requirements as they fall due (in 1944 provincial highway debt had been placed at some \$825 millions). Indicative of the great expansion in highway mileage is the fact that in 1922 Canada had 423,000 miles of highway and some 513,821 vehicles licensed, whereas by 1947, 553,000 miles of highway were available for 1,836,000 Canadian motor vehicles and the millions of United States cars which visit Canada annually. During the period from 1922 to 1947 the mileage of surfaced road, which is a good criterion of a nation's progress, increased from 48,695 to 140,049 miles.

When it is realized that throughout Canada there are but 23 persons to every mile of road and that there is on the average one mile of surfaced road for every 88 inhabitants, the magnitude of the problem faced in the construction of these essential traffic routes is illustrated. A relatively small population scattered over a large area has made the problem of highway construction, like that of other transportation facilities, particularly difficult of solution.

Data for the current report were taken from schedules filled in by federal and provincial officials having jurisdiction over highway and bridge construction and maintenance. In some instances the information desired was not forthcoming so that the public accounts of the delinquent provinces were used to secure approximations in order to complete the national total. Administration expenses are probably understated since in some instances it was not possible to separate them from total departmental administrative expenses.

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Table 1

HIGHWAY MILEAGES, 1946

Province	Portland Cement Concrete	Bitum- inous Pavement	Bitum- inous Surface	Gravel Crushed Stone	Other Surfaces	Total Surfaced Road	Improved Earth	Other Earth	Total Mileage
Pr. Ed. Island	4	205	-	249	-	458	2,352	906	3,716
Nova Scotia	7	919	33	6,164	-	7,123	3,223	4,776	15,122
New Brunswick	-	-	977	7,681	-	8,658	2,670	984	12,312
Quebec	342	3,207	1,089	19,465	-	24,103	-	16,226	40,329
Ontario	2,054	2,476	3,524	49,777	-	57,831	8,789	6,381	75,001
Manitoba	37	-	515	8,395	-	8,947	8,171	x 74,236	91,354
Saskatchewan	-	-	372	11,095	75	11,542	77,177	124,259	212,978
Alberta	-	-	735	9,469	-	10,204	24,730	45,589	80,523
British Columbia	41	124	1,453	8,057	47	9,722	9,758	2,687	22,167
Yukon - N.W.T.	-	-	-	1,461	-	1,461	-	-	1,461
Total	2,485	6,931	8,698	121,813	122	140,049	136,870	276,044	552,963

x - Includes all road allowances

Table 11 EXPENDITURES ON HIGHWAYS, 1946

	Canada	Prince Edward Island	Nova Scotia	New Brunswick
	\$	\$	\$	\$
Roads				
Construction	73,608,422	543,586	3,561,221	6,535,387
Maintenance	53,623,279	648,161	3,293,628	3,511,153
Administration and General	5,015,108	58,671	387,985	x 565,928
Total	132,246,809	1,250,418	7,242,834	10,612,468
Bridges and Ferries				
Construction	6,971,255	43,723	273,170	496,702
Maintenance	4,607,192	171,927	642,889	633,106
Administration and General	616,276	-	54,955	7,878
Total	12,194,723	215,650	971,014	1,137,686
Footpaths and Sidewalks	27,462	-	-	-
Grand Total	144,469,194	1,466,068	8,213,848	11,750,154
Dominion Expenditures				
Construction	1,963,222	1,240	-	-
Maintenance	2,772,554	1,396	27,663	1,873
Administration and General	1,039,337	1,671	1,629	-
Subsidies (Paid)	518,306	-	-	-
Total	6,293,419	4,307	29,292	1,873
Provincial Expenditures				
Construction	71,722,784	595,985	3,834,392	7,032,089
Maintenance	42,158,158	818,691	3,908,854	4,142,386
Administration and General	4,479,415	47,085	441,310	573,806
Subsidies (Paid + Received -)	+ 8,250,911	-	- 40,977	-
Total	126,611,268	1,461,761	8,143,579	11,748,281
Municipal Expenditures				
Construction	6,911,031	-	-	-
Maintenance	13,215,703	-	-	-
Administration and General	-	-	-	-
Subsidies (Paid + Received -)	- 8,859,923	-	+ 40,977	-
Total	11,266,811	-	40,977	-
Expenditures by Others	297,696	-	-	-
Grand Total	144,469,194	1,466,068	8,213,848	11,750,154
Total Expenditures				
Construction	80,589,053	587,309	3,834,392	7,032,089
Maintenance	58,246,736	820,088	3,936,517	4,144,259
Administration and General	5,633,405	58,671	442,939	573,806
Toll Bridges, Ferries and Roads				
Revenues	2,284,004	-	94,630	-

/ Includes \$36,662 construction and \$4,315 maintenance.

x Includes \$495,759 cost of new equipment charged against work.

EXPENDITURES ON HIGHWAYS, 1946

Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon - Northwest Territories
\$	\$	\$	\$	\$	\$	\$
22,180,753	22,713,125	2,006,522	4,021,984	5,822,920	4,969,864	1,253,060
10,342,639	23,691,352	1,180,447	1,680,616	5,359,930	1,920,353	1,995,000
1,113,206	800,679	311,076	165,164	20,216	641,469	950,714
33,636,598	47,205,156	3,498,045	5,867,764	11,203,066	7,531,686	4,198,774
2,713,832	1,540,056	136,983	350,518	382,356	917,915	116,000
799,423	723,660	6,098	104,269	448,187	1,010,633	67,000
451,196	-	105	23	444	44,675	57,000
3,964,451	2,263,716	143,186	454,810	830,987	1,973,223	240,000
-	9,376	2,669	55	14,334	1,028	-
37,601,049	49,478,248	3,643,900	6,322,629	12,048,587	9,505,937	4,438,774
-	1,939	82,350	-	457,707	50,926	1,369,060
42,822	141,068	23,558	9,113	220,016	243,045	2,062,000
-	677	529	715	22,461	3,941	1,007,714
-	-	-	-	518,306	-	-
42,822	143,684	106,437	9,828	1,218,490	297,912	4,438,774
24,892,654	17,349,587	2,061,154	4,372,502	5,747,568	5,836,853	-
10,954,861	14,425,374	1,165,611	1,775,827	2,277,760	2,688,794	-
1,459,664	800,002	310,698	164,472	-	682,378	-
-	+ 8,901,187	- 87,397	- 3,596	- 518,306	-	-
37,307,179	41,476,150	3,450,066	6,309,205	7,507,022	9,208,025	-
-	6,911,031	-	-	-	-	-
44,058	9,848,570	-	-	3,323,075	-	-
-	-	-	-	-	-	-
-	- 8,901,187	-	+ 287	-	-	-
44,058	7,858,414	-	287	3,323,075	-	-
206,990	-	87,397	3,309	-	-	-
37,601,049	49,478,248	3,643,900	6,322,629	12,048,587	9,505,937	4,438,774
24,894,585	24,262,557	2,143,505	4,372,502	6,205,275	5,887,779	1,369,060
11,142,062	24,415,012	1,189,168	1,784,940	5,820,851	2,931,839	2,062,000
1,564,402	800,679	311,227	165,187	22,461	686,319	1,007,714
1,173,869	-	-	-	115,852	899,653	-

Table 111 ^{1/} STATISTICS ON URBAN STREETS, SIDEWALKS, BRIDGES AND CULVERTS
IN CITIES AND LARGE TOWNS, 1946

Expenditures	Canada	Prince Edward Island	Nova Scotia
	\$	\$	\$
New Construction	6,955,021	16,358	527,579
Major improvements, widening, etc.	2,898,225	529	156,165
Maintenance repairs and minor improvements	6,213,684	26,340	480,597
Cleaning, snow clearing, sanding, etc.	7,084,046	21,870	65,417
Administration and general expenses	1,449,350	5,541	68,751
Total	24,600,324	70,618	1,098,307
Construction [/]	10,451,282	18,305	515,832
Maintenance [/]	14,149,042	52,315	582,475
Total Expenditures on roads	20,658,425	52,550	867,487
Total Expenditures on bridges and ferries	406,516	-	16,181
Total Expenditures on footpaths and sidewalks	3,052,036	18,013	201,925
Undistributed amounts shown in total expenditures	483,349	75	12,716
<u>Subsidies and Amounts Collectable</u>			
From Dominion Government	6,951	-	5,000
From Provincial Government	160,887	-	-
From County, Township, etc.	163,665	-	-
From other sources	38,885	-	-
Total	370,368	-	5,000
Net Expenditures (total expenditures less subsidies) ...	24,229,956	70,618	1,093,307
<u>Class of Road</u>	<u>Miles</u>	<u>Miles</u>	<u>Miles</u>
Concrete (Portland Cement)	918.07	9.81	29.59
Bituminous Pavements	3,368.40	21.75	114.70
Bituminous Surfaces	2,043.67	3.56	111.46
Gravel (traffic bound gravel or crushed stone and stabilized gravel or stone, not surfaced treated)	3,310.85	44.06	180.68
Other Surfaces - brick, granite block, wood block, etc.	389.97	3.00	28.72
Total Mileage of Surfaced Roads	10,030.96	82.18	464.95
Improved earth roads (graded and drained)	2,434.42	24.87	153.65
Other earth roads	1,860.87	5.00	114.60
Total Mileage of all Roads	14,326.25	112.05	733.20

[/] Includes proportion of Administration and General Expenses and Undistributed items.

1/ STATISTICS ON URBAN STREETS, SIDEWALKS, BRIDGES AND CULVERTS
IN CITIES AND LARGE TOWNS, 1946

New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
\$	\$	\$	\$	\$	\$	\$
377,796	2,101,428	2,127,845	658,001	176,967	821,114	368,153
10,070	628,790	1,803,696	5,169	66,564	83,410	143,832
169,177	1,038,150	2,241,297	438,979	275,374	532,671	1,011,099
133,171	3,633,016	2,485,188	197,606	113,919	206,797	227,062
42,407	660,681	282,824	111,306	43,312	105,289	129,239
732,621	8,062,065	8,940,850	1,391,061	676,136	1,749,281	1,879,385
411,696	2,973,929	4,059,969	699,109	260,198	962,454	549,792
320,925	5,088,136	4,880,881	691,952	415,938	786,827	1,329,593
688,074	6,301,758	7,908,777	1,180,959	590,892	1,461,650	1,606,296
5,000	63,897	133,102	75,540	3,873	17,404	91,519
39,547	1,279,032	877,425	128,412	79,781	252,111	175,792
-	417,378	21,546	6,150	1,590	18,116	5,778
-	-	-	-	-	-	1,931
-	75,000	38,607	6,940	25,400	9,775	5,165
13,000	-	150,665	-	-	-	-
19,719	10,292	-	136	-	336	8,402
32,719	85,292	189,272	7,076	25,400	10,111	15,498
699,902	7,976,773	8,751,578	1,383,985	650,736	1,739,170	1,863,887
<u>Miles</u>	<u>Miles</u>	<u>Miles</u>	<u>Miles</u>	<u>Miles</u>	<u>Miles</u>	<u>Miles</u>
29.79	145.19	498.61	97.34	2.93	7.72	97.29
117.10	834.51	1,580.01	201.22	79.42	166.10	253.59
38.00	323.94	865.12	43.25	41.21	106.17	510.96
102.57	297.29	689.78	542.75	334.91	604.64	514.17
3.83	27.09	130.24	3.45	20.27	3.25	170.12
291.29	1,628.02	3,763.76	888.01	478.74	887.88	1,546.13
45.20	215.82	483.26	325.45	563.59	464.48	158.10
2.00	216.18	154.91	97.11	211.28	865.27	194.52
338.49	2,060.02	4,401.93	1,310.57	1,253.61	2,217.63	1,898.75

1/ These statistics are for all cities and towns of 2,000 population and up in Nova Scotia and New Brunswick, 4,000 and up in Quebec and Ontario, 1,000 and up in the four western provinces, and all urban municipalities in Prince Edward Island.

All rural roads in Prince Edward Island, Nova Scotia and New Brunswick are under provincial jurisdiction and the rural municipalities contribute towards their construction and maintenance. In Quebec the improved roads are constructed and maintained by the province. In Ontario trunk roads are the responsibility of the province and the province subsidizes the counties and township for expenditures by them on local roads. In the western provinces all the main highways are constructed and maintained by the provinces. The Dominion Government constructs and maintains roads in the national parks and most bridges over navigable streams. Consequently the expenditures included in this report represent practically all expenditures in Canada on rural roads, bridges and ferries.

The provincial and federal expenditures are for their respective fiscal years ending closest to December 31, 1946. The county and township expenditures in Ontario are for the calendar year.

The National Harbours Board operates a toll bridge across the St. Lawrence at Montreal and across the Narrows at Vancouver. There are three other toll bridges in Quebec, one operated by a municipality and two by companies. There were also toll ferries and bridges in Nova Scotia, New Brunswick and British Columbia and a toll road in British Columbia. The total revenue collected by these amounted to \$2,284,004, exclusive of ferries operated by companies and international bridge, ferry and tunnel companies, which are covered in a separate report.

The subsidies paid by the provinces and contributions by municipalities are shown as additions or subtractions to total provincial and municipal expenditures under the heading "Subsidies". The expenditures by "Others" are principally contributions by railways for crossing improvements, bridge maintenance, etc. Expenditures by urban municipalities on streets and sidewalks are included in table III.

During 1946 total estimated expenditures by all authorities on rural roads, bridges, ferries, footpaths and sidewalks reached \$144,469,194 compared with \$84,164,757 in 1945, an increase of \$60,304,437 or 71.7 p.c. Considerable of the work carried on in 1946 represented construction and maintenance postponed during the war years.

Dominion expenditures, due mainly to the taking over of the Alaska Highway on April 3rd from the United States Army, rose from \$1,073,581 to \$6,293,419. Provincial outlay climbed from \$73,536,267 to \$126,611,268 or by 72.2 p.c. with construction up \$44,300,000. Municipal expenditures were also heavier, increasing from \$9,441,779 to \$11,266,811.

The Alaska Highway, constructed in 1942-43 from Dawson Creek, B.C., to Fairbanks, Alaska, covers a distance of 1,523 miles and is supplemented by access roads serving airports along the route. This was a joint defence project and expenditures were made by the United States Government with Canada supplying the right-of-way and waving customs duties on equipment and materials from the United States for construction purposes, etc. While the mileage taken over by Canada on April 3, 1946, is included under highway mileage, the vast expenditures on the construction of the highway, estimated at nearly \$159,800,000, never have appeared in the expenditure tables of the Highway reports. (The settlement of some \$108,000,000, which Canada paid to the United States, was to cover northwest and northeast airfields, flight strips, telephone systems, buildings and other assets, but the highway was taken over without charge with the understanding that Canada assumes responsibility for the maintenance and operation of the highway within her borders as an integral part of her highway system).

The Alaska Highway was constructed in two stages by U.S. Army (Engineers) and American and Canadian civilian personnel. In 1942 a "Pioneer Road" was pushed through at an estimated cost of \$27,744,585 and in 1943 this road was improved into the "Final Type Road" (permanent, all-weather, gravel surfaced) at a cost of \$94,079,635. Additional work for highway maintenance, etc., from 1944 to April, 1946, brought total expenditures to the above mentioned \$159,800,000. At mile 1221 the highway crosses the Alaska boundary between Canada and Alaska, so that the bulk of the expenditures were for construction and maintenance within Canadian territory. There are some 135 bridges, 20 feet or greater in length, and the length of bridges approximates 7 miles.

In addition, the Haines lateral road project extends from Haines near Skagway through Southwest Alaska, British Columbia and the Yukon Territory to the main highway at mile 1012 (Champagne) a distance of 154 miles. While built to Alaska Highway specifications at a cost of \$12,216,000, this emergency outlet to the sea has not been maintained to modern standards.

Construction cost per mile on the Alaska Highway for the final-type road, including bridges, was \$66,160 per mile, while the pioneer road cost the U. S. Government \$17,221 per mile. Although these averages may appear high for a gravel road, the precarious military and naval situations existing in the Alaska area in 1942 and 1943 necessitated speedy construction over a remote wilderness. Transportation, labor, accommodation, food, overtime and other cost items were particularly heavy.

Current maintenance costs to the Canadian Army represent a charge of \$1,408 per mile per annum, which includes 1,221 miles of the Highway and 240 miles of access roads and air strip. In addition, administration and general expenses are nearly \$1 million annually.

Winter maintenance along the highway is not a serious problem. The snowfall is light and usually is easily removed with proper snow removal equipment. Temperatures, however, range from 90 above in summer to 60 below in winter.

(Further details may be found in "The Alaska Highway" - (Committee on Roads, U.S. House of Representatives, 7th Congress 2d Session, House Report No. 1705), and in Hansard, March 5-7, 1942, etc.)

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