

THE EVENING TIMES AND STAR, ST. JOHN, N. B., SATURDAY, JULY 2, 1921.

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RAPID PROGRESS IN WATER POWER DEVELOPMENT ON THE MUSQUASH; THE GREAT STORAGE POSSIBILITIES

Much Concrete Poured for Two Big Dams and Work Being Rushed Over Whole System

Contracts for Storage Dams, Generating Station, Hydraulic Turbines, Generators, Surge Tanks, Transmission Line, and Other Equipment Call for Completion and Delivery Before End of This Year—The Wide Drainage Area and Its Possibilities—Salient Features.

Although a great deal has been written about the work of developing the water powers of New Brunswick now going on under the direction of the New Brunswick Electric Power Commission, comparatively few people realize that so much has been accomplished in the short time that has elapsed since the commission was created. It was only a year ago, for instance, that C. O. Foss, chief engineer of the commission, found that it was possible to divert the water of the west branch at Musquash to a power house on the east branch and use a single set of operators. Today a great number of men are rushing to completion two huge dams, one on the east branch, the other on the west branch, to say nothing of numerous smaller dams at different places in the area of supply, and the contracts which were let for the generating station with its complex machinery, the surge tanks, the hydraulic turbines, the wood stave pipe, the steel towers and transmission cables, the receiving station at Fairville and for various other equipment, call for completion and delivery before the end of the year. All this work, the chief engineer says, is well in hand, and he expects no delay whatever in getting the whole Musquash system connected up.

A PROGRESSIVE POLICY.

But the efforts of the commission are by no means confined to the Musquash. Giving close attention to the falls on the Tetagouche, Sagouche, Magalloway, Tobique, St. John, South West Miramichi, Upsalquitch, Kennebecasis and Lepreau rivers, and on other streams. The policy of the Foster government is to develop the water powers of the province wherever it is possible and in the interests of the people to do so, and as rapidly as the work can be carried on. This year the Musquash power plant is being constructed, and the public will watch the results with keen interest, for it shows that the policy of water power development for reducing the cost of power and at the same time conserving coal for other and more necessary purposes has been well established in New Brunswick. For the present the Musquash supply will be disposed of in St. John and vicinity, but it may well follow that before long the power from the Lepreau will be linked up and a transmission line constructed from St. John to Moncton, supplying Sussex and other towns on the way.

Engineers Pleased.

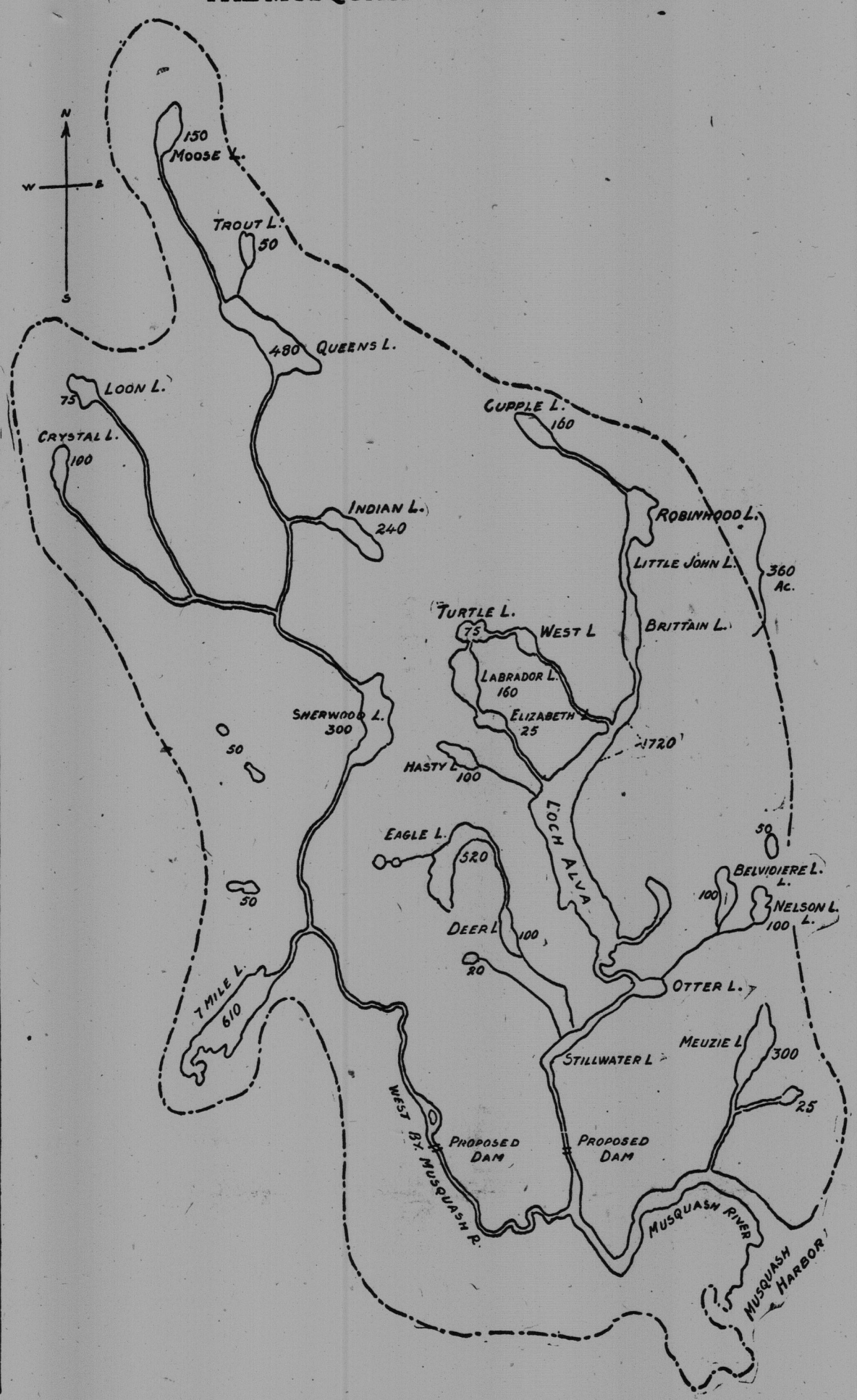
Henry Holgate, consulting engineer for New Brunswick Electric Power Commission, inspected the Musquash work this week along with Mr. Foss, and he assured Premier Foster and Lieut.-Governor Fugatey who visited the site of the big dam while he was there that he was greatly pleased with the progress which has been made and most optimistic regarding the added power which may be derived on the Musquash by means of storage dams affecting a wide area. A very important feature of the Musquash territory is found in the large number of lakes in the drainage area which, by means of added storage, may be utilized in increasing the power available. The total drainage area on the Musquash is between 140 and 170 square miles. This is a conservative estimate. Half a dozen lakes are available for storage. A storage dam at Log Falls on the west branch will create another lake containing about 1,000,000,000 cubic feet of water, and a similar provision can easily be made for another billion cubic feet. The dams being constructed at the outlet of Loch Alva will impound 1,500,000,000 cubic feet of water in Loch Alva alone. Thus the wisdom of choosing the Musquash area for immediate development is clear enough. Both Mr. Holgate and Mr. Foss are confident that their estimates of the amount of power they will be able to turn out are well on the safe side.

Some Interesting Details.

It was on the first day of July, 1920, one year ago yesterday, that Mr. Foss, who was at that time chairman of the New Brunswick Water Power Commission, a commission appointed by order-in-council June 5, 1918, for the purpose of investigating water power possibilities in the province, discovered a possibility of diverting the water of the west branch of the Musquash to a power house on the east branch at the head of tide, which will handle the water of both streams with one set of operators. The New Brunswick Electric Power Commission was appointed on July 6, 1920, consisting of Hon. C. W. Robinson, chairman; Reid McManus, secretary, and C. O. Foss, chief engineer. Up to this time Mr. Foss explained to the Telegraph yesterday, all the work of the investigating commission in this section had been with a view of developing the Lepreau first, but on discovering the possibilities of the Musquash it was decided to take that up first, and the chief engineer was instructed to have a careful instrumental survey made to see if his impressions gained from walking over the possible diversion would prove correct. The survey proved the possibility and feasibility so he was instructed to submit the whole Musquash scheme to Mr. Holgate, of Montreal, for his examination and report. This was done and after a personal examination Mr. Holgate fully approved and recommended that this development be made first. All this careful and highly important preliminary work took some time and the first call for tenders for construction work was not made till Sept. 21. These tenders were for the construction of earth dams on the east and west branches.

"About this time," Mr. Foss added, "the rapidly increasing personal interests of Mr. Holgate made it quite impossible for him to attend to the details of designing the necessary hydraulic and electric machinery, so on his recommendation C. H. & P. H. Mitchell were engaged. After much consideration and consultation with Mr. Holgate and the Mitchell it was decided to change the dam construction from earth to concrete; accordingly new tenders were called for Nov. 9 and this having been approved by order-in-council a contract was signed on Nov. 23 with the New Brunswick Contracting Company, Ltd., for the construction of the east and west branches dams and for the clearing and grading of the beds for the wood stave pipe lines from these respective dams to the common power house. Work was begun early in December, and though the winter was mild the work of grading the pipe lines was of such a character that the work was done at considerable loss to the contractor.

THE MUSQUASH DEVELOPMENT.



This map shows the great drainage area of the Musquash, where several lakes are available for storage purposes. The dams being constructed at the outlet of Loch Alva will impound 1,500,000,000 cubic feet of water in Loch Alva alone. The total drainage area of the Musquash is between 140 and 170 square miles.

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Power Advantages of the Musquash

The immense drainage area. This is between 140 and 170 square miles in extent.

The numerous lakes available for storage purposes.

Loch Alva alone, by means of dams being constructed at its outlet, will impound 1,500,000,000 cubic feet of water. The dams will raise the water in Loch Alva about twenty feet.

The water of the west branch of the Musquash is being diverted to the east branch power house by means of an 8-foot wood stave pipe, 7,420 feet long.

No danger of minimum supply of water at any season of year falling below the conservative estimates made by experts.

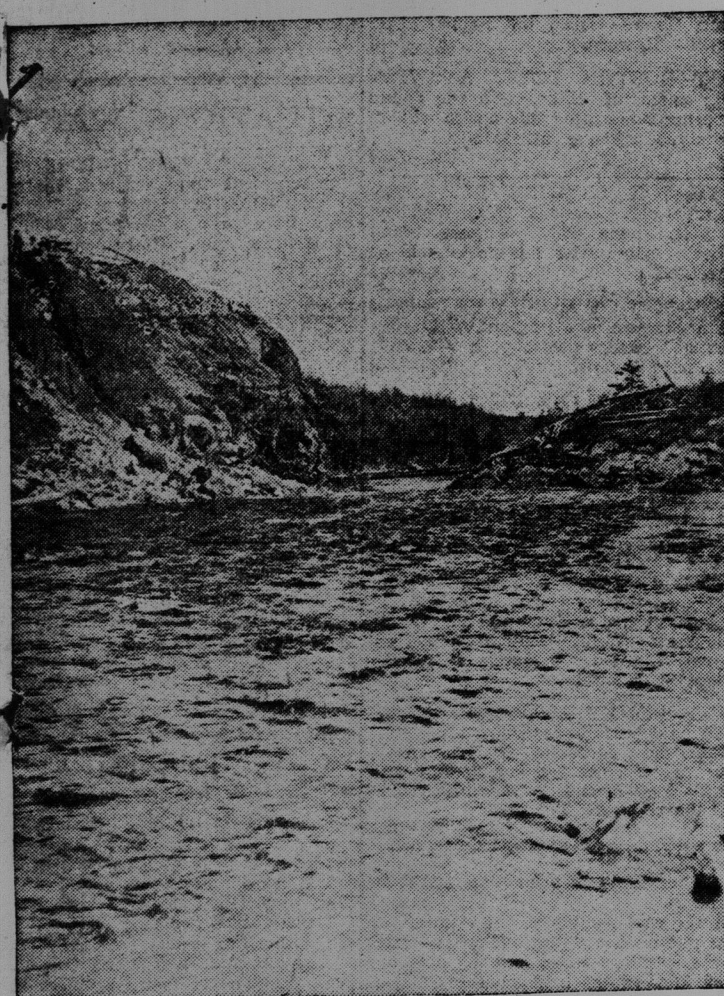
Power house only twelve and a half miles from the Reversing Falls at St. John.

tion of the necessary wood stave pipe. On April 1 a contract was signed with the Maritime Construction Company for clearing the transmission line right-of-way and for constructing the foundations for the steel towers. On April 8 a contract was signed by the Canadian Westinghouse Electric Company for the switching and metering equipment for the generating station at Musquash and the receiving station at Fairville. On May 10 a further contract was signed with the New Brunswick Contracting Company for the construction of the generating station. On May 11 a contract was signed with the Canadian Chicago Bridge Company for the necessary surge tanks. In addition to the foregoing contracts orders have been placed with the Canadian Bridge Company for the steel towers and with the Northern Aluminium Company for the transmission cables and other orders have been given for small incidental requirements. All these contracts and orders are for completion and delivery before the end of the year, and the work is fully up to schedule requirement to meet these dates.

Storage. "The storage question is a very important one and it is the intention of the commission to ultimately secure the maximum within the bounds of reasonable cost, having in mind that in the case of the Musquash every added cubic foot of water per second through the year will be worth \$620 at 1c per K. W. H. The drainage area of the two branches is practically the same and is estimated at from seventy to eighty square miles each. We have used the smaller in all our estimates, though now that we have the runoff records for nearly six years on the Lepreau it does not matter whether we have the correct drainage area or not. From the Crown Land plans we have computed the area drained by the Lepreau to be ninety miles and the two Musquash streams seventy miles each or 7-8 of the Lepreau and assumed that each branch of Musquash runoff to be 7-8 of Lepreau, and now that we have practically a year's records of the west branch we find our assumption very closely correct. If we had been able to start our plant on January of this year with the storage reservoirs empty, and had drawn 180 feet per second as provided in our present estimate of power, the surplus runoff would have filled the reservoirs we are at present providing and forty percent of the surplus would have gone to waste up to the first of May, which proves conclusively that we can increase the estimated power considerably by increasing the storage. The runoff for the four months above named is the lowest for that period of any of the six years' records we have."

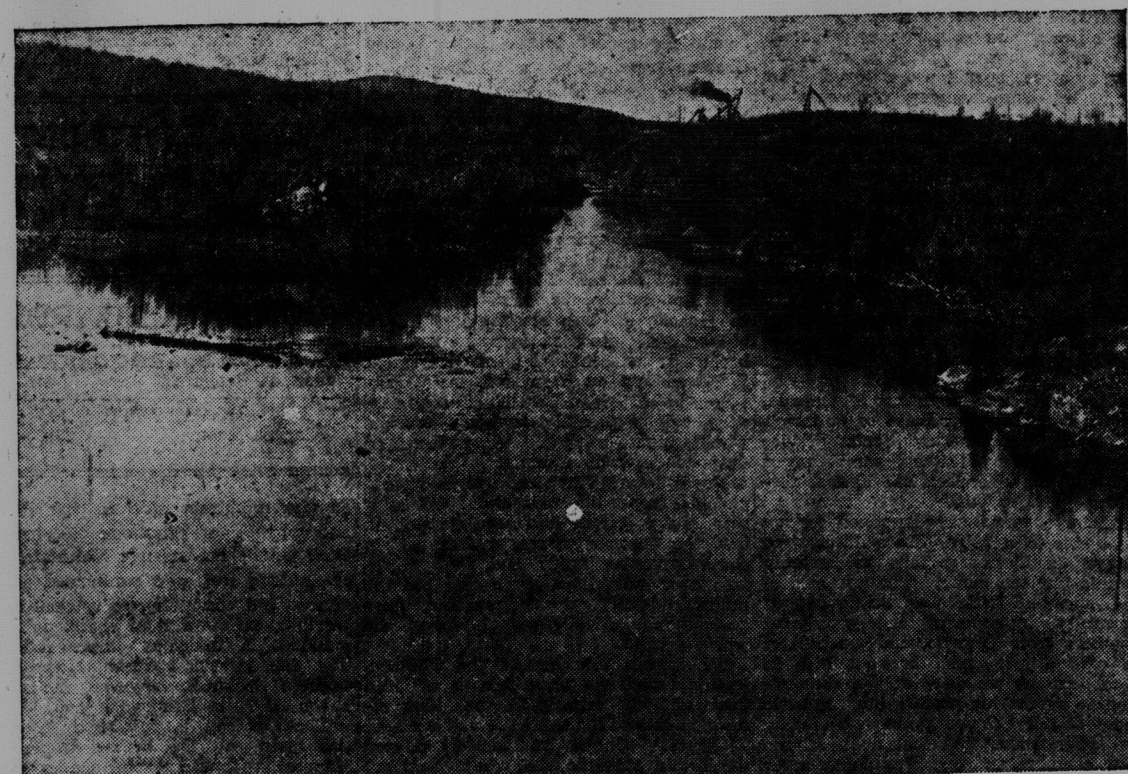
Salient Features. "The salient features of the Musquash proposition are as follows: The water from the west branch will be delivered through an 8-ft wood stave pipe 7,420 feet long to the power house under a static head of 118 feet above high tide, but as we are only dealing with the upper half of Bay of Fundy tide there will be 12 of each 24 hours of low tide and mean tide for the other 12 hours, so that the average static head will be 128.5 feet. The water of the east branch is delivered through a ten foot pipe 3000 feet long to the same power house under a static head of 107 feet above low tide, 88 feet above high tide or 100 feet above mean tide, but for the reason stated the average static head for the full 24 hour period will be 108.5. All the information we have indicates that the average

THE MUSQUASH DEVELOPMENT.



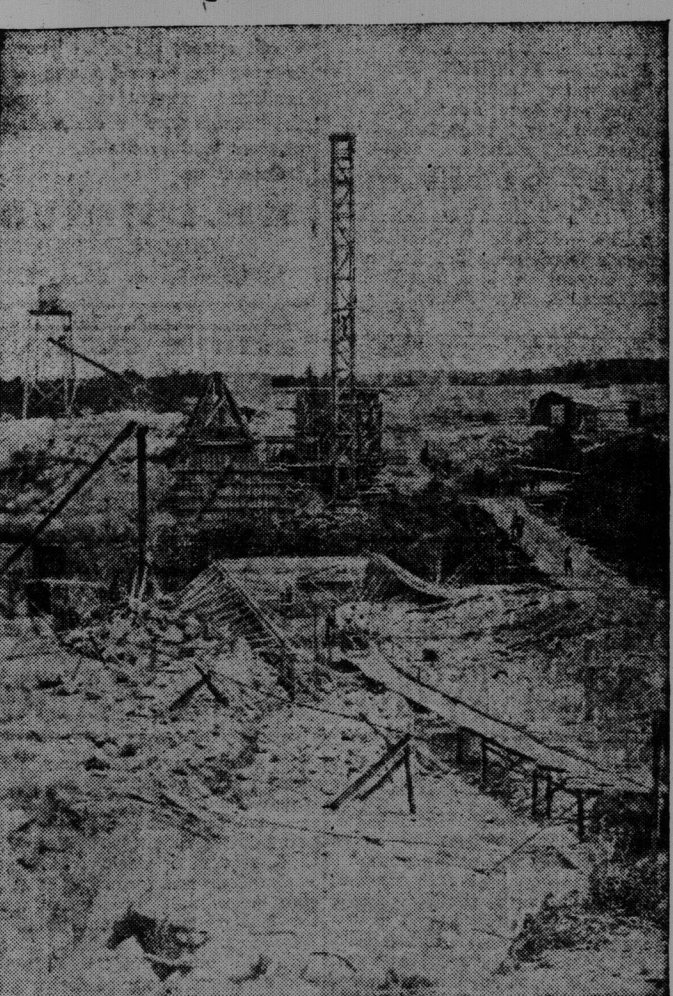
The east branch dam site, looking south. This picture shows the water above the big dam, which is being constructed at the high bluff. At present the water is shut off by a coffer-dam near Loch Alva.

THE MUSQUASH DEVELOPMENT.



The east branch dam site, looking north. This picture shows the water below the dam, the gorge being seen in the distance.

THE MUSQUASH DEVELOPMENT.



Concrete Pouring Tower at the East Branch Dam.

IN MEMORY OF SON.

Curry Monument to be Unveiled in Victoria Park, Amherst, Saturday.

(Amherst News.) Many, sacred in the minds of men of Cumberland County, will mark the Curry Monument in Victoria Park, at 2:30 p. m. Saturday, July 2, in commemoration of this signal event in the county's history. Among those who will attend will be Sir Charles Townshend, Col. Charles Bent, Rev. Dr. Stiel, Hon. E. N. Rhodes, M. P.; Dr. George B. Cutten, H. J. Logan, Warden Allen, M. P. P.; Mayor C. D. Shipley, Amherst; Mayor C. A. Hantley, Parrsboro; Mayor J. A. DeWolfe, Oxford; Mayor James Munro, Springhill; Mayor D. J. Clarke, Joggins; D. J. MacKenzie, M. P. P., Malagash; and Archie Torris, M. P. P., Springhill.

The monument, of grey granite, is of huge dimensions, mounted upon a heavy base. The upper stone is completely surrounded by bronze work, bearing the names of the men of Cumberland County who made the Supreme Sacrifice during the Great War. A list of these names have appeared in the News, and will be again printed at a later date. In the centre of the monument is the bronze memorial shield from Senator and Mrs. Springhill.

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