

***The Genesis of the Coquitlam Lake
Conservation Reserve:
A Footnote on Early Conservation Policy
in the Lower Fraser Basin***

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A much praised policy of the Dominion Government for the management of its western lands was the creation of forest reserves. The establishment of a forest reserve did not withhold the included forests from logging. Rather, it held out the promise of scientific management of the selected forests on a sustained yield basis. Several forest reserves were established in the Railway Belt of British Columbia between 1888 and 1906 but none in the lower Fraser basin, the region with the major marketable forest resources. An apparent exception to this statement was the Coquitlam Conservation Reserve established on the western edge of the railway belt between 1904 and 1910. As we will note below, although the forests of the Coquitlam Lake drainage basin were “reserved”, this was not a result of the forest reserve policy. However, the process by which the Coquitlam Reserve was created had much in common with the process by which forest reserves were established elsewhere in the railway belt and this process provides insights into the political economy of resource management in the lower Fraser basin while it was under federal administration. Moreover, the creation of the Coquitlam Conservation Reserve, which became an important part of the watershed for the Vancouver metropolitan area, is an interesting episode in the history of the lower mainland of British Columbia. It is the genesis of the Coquitlam Conservation Reserve that is the subject of this note.

I. The Railway Belt

The railway belt was one of the terms of confederation of British Columbia with Canada. In return for a promise to ensure the construction of the transcontinental railway British Columbia agreed to transfer to the federal government -- “in trust” -- a strip of land 40 miles wide, straddling the railway main line from Port Moody through the province

(and some additional land in the Peace River area to compensate for unproductive land in the railway belt itself). The transfer was effected in late 1885. Unlike the arrangements in the railway belt on the prairies, land was not transferred directly to the railway company. Rather, the right to use and dispose of the land was transferred to the Dominion government to use as it saw fit to assist in financing the construction of the railway, although the provincial government retained its sovereignty over the area. Thus, as the land was alienated to private holders, it again came under provincial jurisdiction and the provincial government retained responsibility for all aspects of civil government, including the establishment of cities and towns. There was an inherent ambiguity in what specific powers were transferred to the federal government and the question of whether the Dominion government was abiding by the spirit of the arrangement became a matter of intense controversy. Particularly intense were disputes with respect to minerals and water. These particular issues were resolved by the courts and by side-agreements, but the final resolution of the overall controversy did not occur until a Royal Commission recommended the return of the remaining lands to the province, which was done in 1930.

II. Dominion Forest Reserves

The flirtation of the government of the new Dominion of Canada with forest conservation was provoked by a meeting of the American Forestry Association in Montreal in 1882. A wide-ranging discussion of the preservation and regeneration of forests occupied the convention and, although agreement could not be reached on broader conservation measures, in a formal resolution the Association called on the government

to undertake various measures to protect the forests from wild fires.¹ The government's response was to appoint J.H. Morgan as a Commissioner with the broad mandate to advise the government "... upon the steps that should be taken not only for the protection of the present forests of the Dominion but also for the planting of forest trees on an extensive scale." (NAC ; Canada 1883). In his first report, although focusing on the depletion pine and spruce forests in central Canada, the problems of fires in these forests and the difficulties of planting and growing trees on the prairies, Morgan issued a strong warning about the "reckless and destructive waste of the great forests of Canada ... by fire and by the axe-man." He was particularly emphatic that

The inevitable consequences of further neglect will be among others, climatic changes, drought varied by sudden and disastrous floods and a deterioration in the quality of the soil (Morgan 1886).²

It was not until 1893 that the Department of the Interior took up the challenge of forest conservation and began to consider both tree planting and the establishment of forest reserves in Manitoba.³ Two such reserves were established in 1895. Others followed on federal government land on the prairies, on the eastern slopes of the Rocky

¹ (NAC).A summary of the conference is in the Sept. 1, 1882 *Canada Lumberman*, (Lumberman 1882a). Gillis has an informative discussion of the origins and consequences of the Conference (Gillis 1986, pp. 35-49).

² A summary of the report is in the Annual Report of the Department of the Interior for 1884. Morgan was reappointed in 1887 to complete his preliminary report but in his second term he focused exclusively on the problems of growing trees on the prairies. (NAC ; Morgan 1889)

³ (Canada 1894).This report contains some comments from earlier years about the desirability of creating forested areas on the prairies. For later discussions see, for example, (Canada 1895), pp. 51-53;

Mountains and in the railway belt of British Columbia. In 1899 a separate division was established within the Department of the Interior to manage the reserves and to deal with other conservation issues, and in 1906 and 1911 special legislation was passed to govern the reserves (Canada 1900; Canada 1906; Canada 1911).

The objectives of the creation of forest reserves were several. The primacy of agricultural settlement of the west as the overall objective of policy was not to be compromised. Indeed, the creation of forest reserves was seen as complementary to agricultural settlement. A necessary condition for establishing a forest reserve was that the land be judged unsuitable for agriculture (and any agricultural land accidentally included in a reserve was supposed to be withdrawn). The importance of forest cover for the retention of water in the soil was well understood and the preservation of forested watersheds to protect the sources of water for agricultural communities was a primary consideration in the establishment of most forest reserves.

Although important for the preservation of ground water, the creation of a forest reserve was not seen as the withdrawal of forest land from commercial lumber production. Rather, the reserves were to be dedicated to lumbering, but on a regulated scale and pattern so as to guarantee a continuous supply of timber from the reserves into the future. In agricultural areas, the forest reserves would provide timber and lumber for settlers. Instead of leasing vast areas to timber companies, rights to harvest specific stands of trees under strict regulations were to be sold at auction. Thus, Dominion forest reserves were to demonstrate the possibilities of scientific timber harvesting of timber resources.⁴

Another objective that was given heavy emphasis was the protection of Dominion forests from fire. However, although the forest fire suppression service was the responsibility of the agency established to manage the forest reserves, forest fire suppression did not require the creation of forest reserves. The Dominion interest in fire protection extended well beyond the forest reserves and the fire suppression service operated throughout the railway belt including the lower Fraser basin where there were no forest reserves. There were also other secondary objectives with a decidedly modern cast, including the preservation of habitat for wildlife and facilitation of the use of forests, rivers and lakes for recreational purposes.

Given these broad conservationist objectives, it is interesting that no forest reserves were established in the lower Fraser basin. All of the reserves were in the interior. Two of the major ones, the Yoho Park Reserve (882 sq. mi.) and the Glacier Park Reserve (576 sq. mi.), were adjacent to newly created national parks in the Columbia River drainage basin, on the western slopes of the Rocky Mountains and the eastern slopes of the Selkirk Mountains respectively. However, most of the area in forest reserves was in the dry belt, in the hills surrounding Kamloops where the forest was relatively sparse. The creation of the Kamloops area reserves was the result of petitions from ranchers and farmers anxious to protect the watersheds of the streams used for irrigation in the valleys (Cameron 1918). At the time the reserves were created there was no strong immediate interest in logging these forests. Granted, two forest reserves were created in potentially highly productive lumbering areas in the Selkirk Mountains and on the western slopes of the Rocky Mountains, but the connection of both with newly created national parks provided particular incentives to preserve the forests. In the valley bottom of the lower Fraser all of the relevant land was agricultural or committed to

⁴ Gillis has an extended discussion of the promise and failures of the forest reserve system. As Gillis demonstrates, the performance fell far short of the ideal. (Gillis 1986, pp. 51-78)..

timber leases by the time the forest reserve policy was implemented. On the slopes of the bordering mountains there were abundant opportunities to create forest reserves. However, a potential shortage of water for irrigation in the valley was not a problem. There was no influential agricultural constituency anxious to promote forest reserves comparable to that in the dry belt of the interior.

There was one apparent exception to the lack of forest reserves in the lower Fraser basin. A large “conservation reserve” was established in the drainage basin of the Coquitlam River above Coquitlam Lake near the western edge of the railway belt. However, this was not a forest reserve in the normal sense.⁵ Although the trees in the drainage basin were indeed “reserved,” it was not for the purpose of scientific management of the forest or the protection of the water supply for irrigated agriculture. Rather, it was to protect the lake for two important interests, the City of New Westminster and the British Columbia Electric Railway Company. For the City the concern was the integrity of the municipal water supply; for the company it was the conservation and regulation of the runoff from seasonal rainfalls to increase electric power generating capacity. Thus, the reserve served important conservation objectives, but not those of the forest reserves. The combination of a powerful industrial concern and an important middle-size city provided the political constituency to induce the creation of the conservation reserve.

⁵ As we will note below, p.1, a relatively small reserve was created in 1904 and 1906. It was not included in a list of Dominion forest reserves in British Columbia published in 1910. (Canada 1910). The larger reserve, encompassing the entire drainage basin of the lake, was created in 1910. Unlike normal forest reserves, its creation was not discussed in subsequent reports of the Inspector of Forest Reserves as published in the Annual Reports of the Department. of the Interior.

III. Water for Vancouver.

In 1886 two companies were incorporated to supply water to municipalities of the lower mainland (BC 1886a; BC 1886b). The Vancouver Water Works Company planned to take water from the Capilano River on the north side of Burrard Inlet across from the City of Vancouver, a distance of about 10 miles. The Coquitlam Water Works Company planned to develop Coquitlam Lake, on the Coquitlam River, which drained into the Fraser River just east of New Westminster (BC 1885). The lake was about 20 miles from Vancouver. The waterworks at the lake and the upper part of the pipeline were to be shared with New Westminster. From a reservoir near Port Moody, at the head of Burrard Inlet and about half the distance between Vancouver and the lake, the pipeline would serve Vancouver and any settlements that subsequently developed along the route. The source of water for the Capilano project was thus considerably closer to the centre of urban development in Vancouver but it involved what was then a formidable engineering hurdle of an underwater pipeline across the inlet. By contrast, the Coquitlam route was on land throughout its length.

The Capilano River was under provincial jurisdiction and when the provincial legislature incorporated the Vancouver Water Works Company it also granted the rights to build a dam and divert river water. Jurisdiction over Coquitlam Lake was less certain. The provincial government claimed jurisdiction over the use of water in lakes and rivers, and in the Act of incorporation gave the Coquitlam Water Works Company permission to construct water works and divert water.⁶ However, the lake

⁶ The provincial government’s authority over the use of water was assumed in the Land Act, and regulations were established for the diversion of water for agricultural and mining purposes and for Indians on Indian Reserves. (BC 1884). Special uses of water, such as for municipal

was within the railway belt and although at this time the federal government seemed to defer to the provincial government with respect to the use of water, the land surrounding the lake was unquestionably federal land.⁷ The company prudently obtained a federal lease for the lands required to construct the works "... and rights ... to enter upon certain other lands and construct the necessary works."⁸

Vancouver probably had a smaller population than New Westminster when the two water companies were formed. However, Vancouver, the terminus of the transcontinental railway, was a boom town,

water supply or electric power generation, were dealt with in special legislation incorporating the relevant companies. Although recognising the authority of the Dominion government over navigable waters, the provincial government formally asserted its ownership of water in 1892 and consolidated the provisions of separate acts in 1897 (BC 1892; BC 1897)

⁷ In a later discussion of the situation, a prominent New Westminster citizen noted:

The lease was recommended, the provincial government having been communicated with in the matter. In this ... the Dominion government recognized the right of the provincial government to dispose of the water. (Columbian 1909i)

This interpretation is supported by a 1901 letter from the Deputy Minister of the Department of the Interior to attorney's for the BC Electric Co., concerning the company's application for the right to use was from Coquitlam Lake for the generation of electric power.

... all the Department could do in this matter would be to issue a confirmatory grant to the Company after representatives had filed here a certified copy of the grant from the Province [of the water rights]. (BCE , file 166-20)

Later, the federal government successfully asserted a claim to control over the use of water in the railway belt. (Denis 1911, pp. 310-313)

⁸ We have not found the relevant order in Council (dated July 5, 1886). This information is from a summary of the history of the case prepared in 1909 by legal counsel for the City of New Westminster. (Columbian 1909j; Columbian 1909j)

growing much more rapidly than the older centre on the Fraser River.⁹

The Vancouver market was the prize sought by both companies. From the city's perspective, urgency was lent to the project by the fire that ravaged Vancouver in June 1886, and the conditions under which water would be provided to the city for fire protection was an important element in the proposals of both companies.¹⁰

The formal contest between the two companies for the water franchise in Vancouver began on January 24, 1887, with initial presentations to the city council (Advertiser 1887). Unable to judge the technical merits of the proposals and unwilling to contemplate the delay that would be inevitable if they sought an independent professional opinion, the Fire, Water and Light Committee made a decision based on financial considerations alone. They concluded that from a financial perspective the Capilano proposal was preferable and recommended it to the full council (News 1887a). The city council, however, decided to invite both companies to submit formal proposals. (News 1887b). The Coquitlam company revised the financial provisions, significantly reducing

⁹ Morley notes that on January 1, 1887 Vancouver had a population of 5,000. If that figure is accurate, the rate of growth was quite remarkable. The 1891 census reported that Vancouver had twice the population of New Westminster, 13,685 vs. 6,641. By 1901 the discrepancy was even more marked, 27,010 vs. 6,499. (Morley 1974, p. 108)

¹⁰ Cain implies that it was the inability of existing provisions for water to cope with the fire that initiated the development of the water works. That the fire spurred the city council to action is evident. However, an improved water system was on the agenda well before the fire. The fire was on June 13, 1886. The bills to incorporate the two water companies were introduced in the Legislative Assembly in February and received Royal Assent in early April. Both schemes must have undergone considerable advanced exploration and engineering planning. In the case of the Capilano company this work is described in Smith and referred to by Cain. The city council invited both companies to submit proposals in early September. (News 1886; Smith 1889; Cain 1976).

its estimate of the cost, and at a subsequent meeting the city council chose the Coquitlam project. (News 1887c; News 1887d). Judging from newspaper reports of the debate in council, the crucial consideration appears to have been uncertainty about the feasibility of the Capilano plan to transport the water through pipes laid under Burrard Inlet, and the associated risk of a prolonged interruption of water service from broken underwater pipes that would be difficult to repair (particularly at critical times like a major fire).¹¹ On the other side a number of aldermen showed loyalty to “Vancouver’s own” Capilano scheme, at least one expressing concern about having to rely on co-operation with New Westminster in financing and maintaining the water works when that city had not expressed an opinion on the project. (News 1887d). There were also allegations of conflict of interest and possibly corruption -- allegations that

... there are one or more of the Aldermen who are interested in the Coquitlam scheme. (PropertyOwner 1887)

and,

It is an open secret that there is money in it to certain members of the Council (Squaredeal 1887)¹²

A committee was appointed to work with the city solicitor and the company to draft a formal agreement.

¹¹ Given the importance of the technical issues, it is interesting that the council was unwilling to contemplate the delay that would have resulted from obtaining an opinion from an independent engineer experienced in water transmission. The Capilano company planned to reduce the risk by have two parallel underwater pipes a significant distance apart.

The process of public persuasion was vigorous. We have no record of verbal interchanges, of course, apart from newspaper summaries of city council meetings, but a series of letters to the editor on both sides began even before the council made its decision. Most of the letters were signed by pseudonyms like “One who was there” (an allusion to attendance at a public meeting) and “Vancouver.” Given that these correspondents were debating engineering details, with references to engineering literature, it is possible that they were agents of, if not principals in, the two companies. On the one hand it was argued that the Capilano technology was untested, an experiment, with grave risks from corrosion and the force of the tidal current against the pipes. Concern was also expressed about possible damage to the pipes by ships’ anchors and, if shipping was held responsible for damages, that increased insurance rates would adversely affect the port. On the other side, attempts were made to refute these allegations with reference to technical literature and experience elsewhere and it was asserted that the Coquitlam company was planning to use inferior materials in its pipeline leading to maintenance problems in the future.¹³ It was also argued that the convenient downward revision of the cost estimates between the initial and the second proposal had resulted in a significant understatement the costs of the Coquitlam project to meet the competition

¹² The News-Advertiser was challenged to name the aldermen. The editor replied that the charges were not those of the newspaper. He had merely opened the papers pages, as usual, to letters from its readers.

¹³ One of the authorities whose experience elsewhere was cited in the debate in favour of the Capilano project was J. F. Ward, who subsequently accepted the contract to lay the pipes under the inlet. Early in the process a cable being used to haul the pipes across the inlet snapped. Ward returned to the eastern /US and abandoned the contract. The chief engineer of the company then accepted the contract himself and successfully laid the pipe using a different method. (Hill 1887; Smith 1887c; Smith 1889), pp. 344-346

of the Capilano company. Concern was also expressed that the city would have to bear most of the cost of the distribution system given that the company had only promised to install mains to the eastern edge of the developing city and three additional miles of distribution pipes. (One-who-was-there 1887). The editor of the News Advertiser entered the debate on the side of the opponents of the Coquitlam Scheme, placing particular emphasis on the likelihood that the costs had been understated and that Vancouver would be faced with an unanticipated heavy financial burden if the proposal was adopted.

In the process of public debate and backroom lobbying, the Coquitlam proposal was modified twice more. The final draft agreement called for the city to partially guarantee the bonds of the water company to a maximum of \$280,000 for 10 years. The council had no power to make such a guarantee; a vote of the ratepayers was required. It was defeated by a vote of 86 to 58.¹⁴ The reasons for the failure of the referendum are buried with the minds of the voters, of course. Cain attributed the defeat to the relatively high cost of the Coquitlam proposal. That is a possible explanation, but it should be noted that the city council eventually sought an independent professional assessment. They received a “back of the envelope” estimate of the cost of the project that was similar to the Coquitlam company’s figure.¹⁵ Schussler’s estimates were immediately

disputed by H. B Smith (Smith 1887a; Smith 1887b). It should be noted, however, that Smith was involved with the Capilano company. He was responsible for much of the preliminary work in 1885 and became the “engineer in charge” of the project (Smith 1889). The Capilano company also obtained an assessment of the feasibility and cost of their project from a California engineer (Eckart 1887).¹⁶ Published strategically on the eve of the vote, it suggested a cost for the Capilano project well below that of the Coquitlam project. The Coquitlam people never had a chance to reply. On balance, the ratepayers must have been confused by the assertions and counter-assertions about the costs and feasibility of the two projects. We suspect that their vote reflected a deep seated malaise about the secrecy surrounding the details of the Coquitlam project, the assertions of local political connections by the company, and the fact that there was no provision in the agreement for the city to assume ownership of the waterworks at some time in the future.¹⁷ In any case, what is relevant is that the by-law was defeated, and the Coquitlam company did not gain its desired access to Vancouver. This was a very serious setback to the company. It now had only the New Westminster market to rely on to cover the cost of the water works.

¹⁴ Given a population probably in excess of 5000 it is interesting that only 141 votes were cast. Apparently most of the population were not ratepayers and hence not eligible to vote.

¹⁵ The technical and financial details of the Coquitlam proposal were not released to the public (and this secrecy became a significant issue in the controversy). However, they were sent to Hermann Schussler of the Valley Water Works Company in California. Pleading a lack of time, given the many projects he had underway, he returned the package of material unopened. However, he also produced his own rough estimates of the cost of a water line of the length suggested and his specifications for the required material. When adjusted for import duties and

miscellaneous other charges, it was argued that his estimate of \$188,665 was about the same as the Coquitlam company’s estimate of \$280,000 (News 1887e). We do not know how “independent” Mr. Schussler was.

¹⁶ Paradoxically, some of the evidence quoted by Eckart was from the work of Schussler, the expert hired by the city council to evaluate the Coquitlam project.

¹⁷ There was no provision permitting the Coquitlam company to sell the water system to the city in the legislation incorporating the company. It was asserted that such a provision was deliberately omitted by the legislature because the water works would serve more than one city, unlike the Capilano works that were to be dedicated to Vancouver. (Courbould 1887)

IV. *Water for New Westminster.*

In early September 1886, at the time of its initial discussions with Vancouver, the Coquitlam Company also wrote to the New Westminster city council announcing its plans to provide water to the city and seeking a “favourable expression of opinion” that might be of assistance in fund raising in England. (NW , Sept. 6, 1886; *Columbian* 1886a).¹⁸ However, unlike the Vancouver city council, the New Westminster council showed no great anxiety to receive a formal proposal, perhaps because, in the words of the editor of the local newspaper,

The city of New Westminster is very differently situated from Vancouver with respect to water. There they have no natural supply of pure water Westminster, on the other hand, has excellent water, but the supply is not at all sufficient.... (*Columbian* 1887b)¹⁹

The council's reply to the company was that “... the city was not in a position to make any definite arrangement at present.” (NW , Sept. 13, 1886; *Columbian* 1886b). While the Vancouver debate was underway, a local merchant submitted a proposal to the New Westminster council to provide the city with water from an unspecified source (NW , May 20, 1887; *Columbian* 1887a).²⁰ The council chose not to act on what was described as a “vague and indefinite” proposal and the matter was left in

¹⁸ Mr. A. E. Hill, president of the company, went to England to raise money, but was unsuccessful. (Hill 1895; Conway 1915)

¹⁹ At this time water was obtained both from wells and from city-owned, spring-fed tanks on the upper levels of the city. Water was piped from the tanks to residents' homes. (Conway 1915)

²⁰ The promoter, E.S. Scoullar, guaranteed that the water would be “pure spring water” but refused to reveal the source because “... a powerful rival might throw obstacles in their way.” (*Columbian* 1887a). It was later revealed that Scoullar planned to take water from the Fraser! (*Guardian* 1887). Scoullar was later elected an Alderman and played a prominent role in the resolution of the water supply situation.

abeyance until after the Vancouver referendum when the Coquitlam Company promised to make a definite proposal. The defeat of the by-law in Vancouver forced the company to change its plans. Instead of a waterworks of a size to serve the two cities, the cost of which would be shared with Vancouver, it had to plan for a waterworks for New Westminster alone (or perhaps New Westminster and smaller surrounding settlements). That proposal, submitted in late June, 1887, called for the city to guarantee 6% interest on up to \$180,000 of bonds for ten years.²¹ (NW , June 27; *Columbian* 1887c). In return, the city would receive free water for fire protection and a 75% share of the net profits from the operation during the period of the guarantee. However, the “net profits” were to be calculated by including in the operating cost a 10% return to the company on the “cost of the work.”²² The water system was thus projected to cost more than half the final estimate of cost of the Vancouver project (\$280,000). Given that there were some fixed costs that were to be shared with Vancouver (whatever works were required at the lake, the pipeline from the lake to the Port Moody reservoir, and the reservoir), this is perhaps not surprising, despite the shorter distance from the lake to the city. Although some aspects could be scaled down, it is unlikely that everything could be scaled down proportionately with the reduced projected service. The council must have been unhappy that the proposed interest guarantee involved twice the rate of interest that was

²¹ As in the case of Vancouver, in a sense any payments under the guarantee were a loan. The city would have first claim on the revenues of the waterworks beyond “expenses of maintenance and operation.” “Expenses” presumably included interest on the bonded indebtedness but it is not clear if they included the payment of a 10% profit to the shareholders. In context, it seems likely that they did.

²² It is not clear if this is literally 10% on the “cost of the work” or on the shareholders capital in the project. If the former, given that the sale of

proposed in Vancouver (6% vs. 3%). That the 75% share of net profits (vs. 1/8 for Vancouver) was a significant consideration seems unlikely, given the way it was to be calculated and given that the company did not have the freedom to set the tariff for water. A maximum was specified in the Act that incorporated the company.²³

A public meeting was called to consider the two water proposals. It is perhaps a useful gauge of the lack of urgency for a new water system in New Westminster as compared to Vancouver that a quorum was not achieved (NW , July 15). When the two proposals were again considered by the city council it was decided that both should be "... laid over until such time as a scheme more favourable to this corporation [the city] is presented." (NW), July 18]. For the Coquitlam company, failure to obtain a franchise for New Westminster, the only remaining sizeable city, would have been fatal. We do not know what backroom lobbying went on in the meantime, but, it was almost a year before the company formally responded with a modified proposal. Presumably reacting to the Aldermen's concerns about the uncertainty surrounding payments for which the City might be liable under the interest guarantee, the company substituted an annual payment of 1/2% of the city's assessment (modified a month later to a fixed annual payment of \$5,000) in consideration of the

bonds was expected to cover most of the cost of the waterworks, the likelihood of a net profit was very small.

²³

... in no case shall the Company affix a greater rate than sixty cents a thousand gallons for water, or one dollar a month from the owner or occupants of any house or building wherein the number of persons does not exceed four, and thirty cents a month per capita for each and every additional occupant. (BC 1886b)

provision of unlimited water for fire protection and flushing sewers.²⁴ In addition, the company agreed to give the City residual rights to acquire the water system.²⁵ Again the City declined, stating that

... the only system that would receive the approval of the ratepayers would be that the city should own and control the same (NW , June 11, 1888; *Columbian* 1888c)²⁶

At the same time the City approached the government for an amendment to the City charter that would permit them to purchase or lease the waterworks (BC 1889)

The situation of the Coquitlam Company was made even more unhappy when the Vancouver Water Company announced that it would soon be in a position to supply water to New Westminster from the Capilano River and sought permission to place pipes in the streets (NW , Sept. 17, 1888; *Columbian* 1888d).²⁷ It is not clear if the Vancouver

²⁴ We have not been able to find a copy of the agreement and the details of the debate on the proposal are not in the city council Minutes and were not published in either the *British Columbian* or the *Mainland Guardian*. The editor of the *British Columbian* estimated that the 1/2% rate would yield the company \$4,000 per year. This, however, would have increased as the city grew. (*Columbian* 1888a; *Columbian* 1888b). It is impossible to know what payments the City would have been called upon to make under the interest guarantee. At a maximum it would have been \$10,800 per annum; at a minimum zero. It should be remembered, however, that any such payments became a first charge on subsequent revenues in excess of actual operating costs. Unless the system was terribly inefficient (or corrupt) payments on the interest guarantee should be regarded as a loan. It is difficult to see how the fixed charge was superior from the city's perspective.

²⁵ The formula for the acquisition price was full cost plus ten percent plus a sufficient additional sum to bring the return to the shareholders (taking into account all dividends) up to 10%.

²⁶ As noted below, p. 1, the city already had a municipally owned electricity generating and distribution system.

²⁷ A new proposal for pumping water from the Fraser also appeared, but given the superior quality of mountain water and the simplicity of a

Water proposal was serious or just a “tit-for-tat” for the Coquitlam company’s attempt to invade its Vancouver territory.²⁸ However, together with the city council’s stalling, it put the Coquitlam company in a corner. It responded with a two-pronged offer: either the company would supply water to the City for fire protection at an annual payment of only \$2,000 (with the city having residual rights of purchase after ten years “on such reasonable terms as may be agreed upon by mutual consent”), or it would permit the City to take a majority of the first issue of capital stock (NW , Jan. 28, 1889; *Columbian* 1889a). However, the Aldermen were determined that the City should own the water works outright. Negotiations continued until mid-March 1889 when the company agreed to sell to the City its rights to develop Coquitlam Lake as a source of water for New Westminster for \$20,000. (*Columbian* 1889c; *Columbian* 1889d). The agreement was subject to consent of the ratepayers to a debenture issue of up to \$200,000 to finance the construction, which was given on June 13, 1889

The first phase of the struggle over the future of the mountain lake and its drainage basin was over. New Westminster had established limited property rights in the lake for its municipal water supply. However, this was only the first battle. Coquitlam Lake and New Westminster were soon caught up in another contest between two companies for other rights to the water of the lake -- in this case to generate electricity.

gravitational system with a high head, it does not seem to have been taken seriously. (NW , Feb. 27, 1889; *Columbian* 1889b).

²⁸ It is also difficult to know if the city council took the proposal seriously. They sent the standard reply, “... the council is not in a position to enter into any agreement at present.” (*Columbian* 1888d)]

V. *Electric Power from Coquitlam Lake*

The British Columbia Electric Railway Company was incorporated in England in 1897 to acquire the assets of a failing company that had consolidated the bankrupt electric street railways of Vancouver, Victoria and New Westminster. (Maiden 1947; Roy 1970). From steam driven generating plants it provided electricity for lighting in Vancouver and to operate the Vancouver street railway and the interurban railway to New Westminster. New Westminster had its own municipally-owned steam powered plant and several sawmills also had steam powered generating facilities.

By the mid-1890s the generation of alternating current electricity by hydro power and its commercial distribution were well established elsewhere. The first installation was at Oregon City, with a 14 mile, 3,000 volt transmission line to Portland. The dramatic hydro development that attracted widespread attention, however, was at Niagara Falls. Begun in 1891 and operating in 1897, this facility transmitted 22,000 volts over 23 miles to Buffalo, New York. It demonstrated the feasibility of hydro-electric generation on a very large scale, transmitting it at high voltages over significant distances and then transforming it into voltages appropriate to industrial and residential use (Usher 1929, 1954, pp. 403-5; Chesney 1936; Meyer 1971, pp. 183-189). On the Canadian west coast, BC Electric pioneered in 1898 with a relatively small hydro plant on the Goldstream River near Victoria on Vancouver Island (Maiden 1947, p. 51). Perhaps equally significant as a local demonstration of transmission over what was then a long distance was a 32 mile transmission line to the Rossland mines from a hydro electric station installed in 1897-98 on the Kootenay River. (Denis 1918; BC 1924)

Given the terrain, with abundant water stored in mountain lakes and rivers rushing down steep mountain slopes, the prospects of

generating electricity in the lower mainland by hydro power had attracted the interest of the early electric railway companies in the region but lack of capital prevented them from exploiting the possibilities (Roy 1970, p.155). A prime candidate was the Coquitlam River system because of its proximity to the major urban areas. First with a serious proposal, however, was the recently incorporated Stave Lake Power Company which in June 1900 revealed plans to generate electric power on the Stave River, another tributary of the Fraser River about 35 miles upstream from New Westminster (Columbian 1900a).²⁹ By early 1901 the company had obtained from both the provincial and the federal governments the rights to divert the waters of Stave River for hydro-electric generation (Canada 1901).

The events that led to the creation of the Coquitlam Conservation Reserve occurred in three phases. In the first phase, the Stave Lake company sought to establish a market for its proposed hydro-electric development. The second phase was a determined attempt by the Stave Lake company to disrupt the plans of the BC Electric to develop the power potential of Coquitlam Lake. The third and decisive phase began with a proposal to increase the height of the dam on Coquitlam Lake.

A. Phase 1: The Stave Lake Proposal.

The construction of a hydro-electric facility, high voltage transmission lines and a municipal distribution system required a large amount of capital. At the time, the Stave Lake company suggested a total

cost of perhaps \$600,000, a very large sum in 1900 (Province 1901ha).³⁰ A local enterprise, owned and funded by local business people, the Stave Lake Company could not hope to raise the funds on this scale without access to world capital markets. The problem was to interest outside capital, American, British or eastern Canadian, in a hydro electric project in a rapidly growing but nonetheless remote corner of North America. To this end, an assured market for the electricity was vitally important. Thus, it was essential that the company obtain permission to erect poles and distribution line on city streets and capture the concentrated markets of the urban areas, particularly Vancouver but preferably New Westminster as well -- and this required the approval of the municipal governments.

For over a year, the Stave Lake project was the only one before the public. The company approached both Vancouver and New Westminster city councils with proposals to supply them with electricity for street lighting and for long-term franchises to supply electricity to residential and industrial customers, including permission to locate poles and distribution lines on municipal streets and lanes. Both councils procrastinated. This may simply have been judicious deliberation by the Aldermen, concerned, among other things, about the proposed long term commitment.³¹ However, the British Columbia Electric Railway Company

³⁰ It is always difficult to compare the purchasing power of money at different times, but for a rough conversion into current dollars, multiply by about 22. Per capita income, in dollars of constant purchasing power, would have been about 30% of incomes today. Saving levels would have been correspondingly smaller in 1900, such that raising this sum of money would be more difficult than today.

³¹ The company sought a fifty year franchise for the delivery of industrial power. It was reported that the fifty year term was the major concern of the Vancouver city council (Province 1901b; Province 1901c). In New Westminster the profitability of the municipal generating plant was also a factor in the debate. A report prepared by the Treasurer for the comfort of municipal bondholders suggested that the plant made a profit

²⁹ The high voltage transmission line that was eventually installed on a more direct route to Vancouver was 30 miles long. The corresponding line for the Coquitlam project was only 16 miles (Denis 1918, p. 227-8).

was lurking in the background, probably exerting political pressure. It was already providing steam-generated electricity in Vancouver, was suggesting similar service for New Westminster and was simultaneously exploring hydro generation possibilities (see below, p. 14).³²

A fundamental concern of the aldermen of both cities was that the Stave Lake company might not be able to raise the funds to complete the project. If this happened after the city granted a franchise, the provision of adequate, low-cost electricity might be long delayed or the city might be forced to provide funds to complete the project or to guarantee interest on a large bond issue. To allay such fears, the company had announced in October, 1900, that control had been assumed by a syndicate headed by C. H. Mackintosh, a Victoria financial broker with British financial connections. Mackintosh -- described by one editor as a man with a "golden touch" who "has had absolute control of more important business deals" than any man in Canada and "has never been connected with a failure" -- had been involved with the British America Corporation and its financial involvement in the Rossland Mines (Province 1900a).³³

of \$5000 in 1900 which would be sacrificed if the Stave Lake proposal was accepted. The profitability of the municipal plant was intensely contested by supporters of the Stave Lake proposal, including the editor of the *Columbian* newspaper. It was argued that the accounting was faulty, involving the imputation of an inflated value for street lighting and failure to include relevant costs, including depreciation of the plant. (*Columbian* 1901b; *Columbian* 1901e)

³² The General Manager of BC Electric reported that "in April 1897, our company had the Stave Lake proposition thoroughly examined, and we went to the expense of having a survey made." They concluded that development there was premature given the distance from Vancouver (Buntzen 1901a).

³³ An Eastern Canadian and an accomplished journalist, Mackintosh became a Conservative politician (M.P., mayor of Ottawa) and Lieutenant Governor of the Northwest Territories. He used his vice-regal acquaintances to promote British Columbia mining in British financial circles and is attributed much of the responsibility for enticing the British

Probably because of the collapse of the British America Corporation nothing more was heard of Mr. Mackintosh and his golden touch. With considerable fanfare, in September, 1901, the Company again announced that the financing was assured, in this case from the same eastern American capitalists who had built the water works for Seattle. Shortly thereafter it reported that work had begun at Stave Falls but little progress was in fact made. (Province 1901p). By then BC Electric had entered the field with a project to develop power from Coquitlam Lake. Presumably because of the changed context and hence the altered prospects for the Stave Lake project, the American capitalists did not pour in the required funds. It was not until 1909, when the company was taken over by eastern interests and reorganised as the Western Canada Power Corporation that funds were forthcoming to undertake the project.³⁴ Power was first delivered to Vancouver from Stave Falls in early 1912 (BC 1924)

The company protested the slowness with which the city councils were acting on the proposals of June 1900 and received strong editorial support.³⁵ Through the balance of 1900 and into 1901 the New

America Corporation into the Rossland mining camp in the late 1890s. Mackintosh became the Canadian manager for the Corporation, which had extensive holdings in Rossland and was involved in the Britannia mine. (*Columbian* 1900b; Morgan 1912; Mouat 1995). According to the editor of the Province the take-over by Mackintosh was "An Industrial Revolution": "No Canadian stands higher in the estimation of English investors." (Province 1900a; Province 1900b)

³⁴ By the time Western Canadian Power took over, the Stave Lake company had done some clearing, installed a station to measure the water flow, build roads and camps, and had partially constructed a sluice dam to regulate the flow of flood waters. (Canada 1916, p. 67)

³⁵ Both the Vancouver Province and the New Westminster British Columbia strongly endorsed the Stave Lake project and criticised their respective city council's for failing to take prompt action. In both cases the positive argument was the advantages of low cost power for industrial

Westminster council simply deferred consideration of the application. In late 1900, an agreement was offered by the City of Vancouver, but on terms so onerous that the company rejected it out of hand (Province 1901a).³⁶ There followed a campaign of persuasion through direct lobbying, public statements and letters to the editor. The company touted the benefits of cheap electricity for the industrial development of the city and criticised what it alleged were the high rates charged by the BC Electric for electricity.³⁷ Finally, an agreement on more favourable terms was reached with the Vancouver council in April 1901.³⁸ It did not, however, grant *exclusive* rights to sell electricity in the city.

development. The Vancouver News Advertiser, by contrast, was sceptical. The editor (echoing statements by BC Electric) argued that the maximum price quoted in the draft agreement was not less than that charged by BC Electric from steam generation and that it was foolish to enter into a long term contract (50 years) when the price of electricity would undoubtedly fall in the future. (Columbian 1900a; News 1901b; Province 1901d; Province 1901f; News 1901i)

³⁶ We do not have a copy of the proposed agreement. Although the company objected to several clauses, the one that drew most of its ire was an annual rental fee of \$5 per pole. The company (and the editor of the Province) argued that not only was the fee excessive but no such fee was levied on other utilities (telephone and BC Electric) that had poles along city streets (Province 1901a). In an earlier version of the agreement negotiated by the Board of Works of the city the rental was to be \$1 per pole (News 1900).

³⁷ By and large BC Electric stood aloof from the public debate but the General Manager felt obliged to vigorously dispute these allegations. (Buntzen 1901a; Buntzen 1901b; Buntzen 1901c).

³⁸ The agreement, which did not provide exclusive rights to the company, permitted the erection of poles and lines at a rental fee of \$.50 per pole. The franchise for the delivery of electricity for lighting was for 14 years and for industrial power for 50 years, with maximum prices set for each. A time limit for the start and completion of construction of facilities to service Vancouver (extensions were agreed to in 1902, 1903, 1904, 1905 and 1907). A copy of the agreement is in a file in the BC Electric records held by Special Collections in the University of British Columbia Library (BCE) and a summary in (Province 1901h).

Following the Vancouver agreement, the company made a new proposal to New Westminster, similar to the Vancouver agreement (Columbian 1901a). Again the council procrastinated, referring the matter to committee, drafting a bylaw and then repeatedly deferring debate and decision. In exasperation, the company tried to get around the council by seeking to acquire the unused charter of the New Westminster Electric Light and Motor Power Company which included the right to erect poles and distribute electric power in New Westminster (Province 1901q). When this ploy did not work the company tried a bluff and in a bitter statement withdrew its proposal (Columbian 1901d). This led the editor of the Columbian to bemoan "A Chance Let Slip" (Columbian 1901c). That it was a bluff is evident in that a new proposal soon appeared and through an alderman who was also a stockholder in the company a bylaw was drafted and submitted to the council (Province 1901i). Again the council stalled through several weeks of otherwise intensive activity involving applications for water rights on the Coquitlam river and lake, announcement of the BC Electric Coquitlam Lake proposal, announcement of American financial involvement in the Stave Lake project, a formal proposal to New Westminster from BC Electric, and the negotiation of a formal agreement with BC Electric. Despite all these developments, by mid-November the Stave Lake bylaw was still in limbo. It was then effectively withdrawn.³⁹

In desperation, in mid-November the manager of the Stave Lake Company asked the New Westminster council that consideration of a

³⁹ While stalling decision on the bylaw, the council had refused to permit the mover to withdraw it, presumably because of its value in the bargaining process with BC Electric. In a peculiar move, in committee and at the instigation of the mover, the council systematically deleted all of the substantive clauses from the bylaw, and then passed it with only one clause -- its title. (Province 1901w).

proposed agreement with the BC Electric be deferred "... until we have an opportunity to go into the matter fully with you," and late in the month submitted yet another proposal (News 1901g; Province 1901z).⁴⁰ A new bylaw was drafted which permitted the company to sell electricity in New Westminster, but only for industrial power and heat, not for domestic or municipal lighting. (Province 1901v). Negotiations dragged on until an agreement was reached in February 1902 (Province 1902)⁴¹. The agreement did not grant exclusive rights to sell electric power in the city.

Thus, the Stave Lake company was painfully making a little headway in its attempt to enter the local market for its electricity. However, the spectre of a powerful rival had emerged. If this rival, with a generating facility much closer to Vancouver than Stave Falls, succeeded with its project, the immediate prospects for the Stave Lake Company, lacking exclusive control of any market, were dim. Prospective investors would be hesitant to go ahead. In the second phase of the process of creating the Coquitlam Conservation Reserve the Stave Lake company was engaged in a desperate attempt to prevent the British Columbia Electric Railway Company from developing the hydro-electric potential of Coquitlam Lake.

⁴⁰ In his letter to the council, Ferguson noted that the Stave Lake Company was also an applicant for power from Coquitlam Lake and argued that their application would prevail because it was consistent with a provision of the Water Clauses Consolidation Act which seemed to prohibit the diversion of water out of its natural channel. See below, p.1. The Stave Lake proposal involved a power plant on the Coquitlam River so the water would be returned to the river and would be available to all of the municipalities that would rely on it for water.

⁴¹ The agreement permitted the construction of poles and lines at a rental that began at \$.10 per pole and rose to \$.50 over time, but only for the delivery of industrial power. It did not confer the right to sell electricity for residential light. The agreement was for fifty years, with a time limit for the completion of work. Several extensions were granted before electricity was in fact delivered. (NW 1902)

B. Phase 2: The Struggle for Coquitlam Lake.

At the same time that the Stave Lake Company was attempting to reach agreement with the city councils of Vancouver and New Westminster, the British Columbia Electric Railway Company had consulting engineers in the field exploring the possibilities of Coquitlam Lake as a power source (Roy 1970, p. 156). In September 1901, through its subsidiary, the Vancouver Power Company, BC Electric revealed its plans to build a tunnel through a mountain ridge, diverting water from Coquitlam Lake to Buntzen Lake, about 30 metres lower and about 120 metres above the Indian Arm of Burrard Inlet (Province 1901o) (News 1901d). The water stored behind a dam in Buntzen Lake was in turn to be used to generate electric power at sea level.

BC Electric had powerful political connections in both Ottawa and Victoria (Roy 1970). With considerable haste, the provincial government acted to make the development possible, reserving the water in Coquitlam Lake

... for the purpose of making provision, whenever it appears expedient, as a source of supply for water works systems, for power purposes, or such other purposes as may be expedient. (BC 1901)

Although there can be little doubt that the government had the BC Electric's project in mind, the reservation did not specify who would develop the power potential of the lake.⁴²

⁴² In August 1901 it was reported that three parties were seeking hydro-electric rights on the Coquitlam River: McPhillips, Wooton & Bernard, Victoria lawyers, on behalf of a client; "another company of New Westminster people," and "... a syndicate of which Mr. John Hendry is the moving spirit." McPhillips, Wooton & Bernard had among their clients BC

The lower mainland was thus presented with two potential hydro-electric power projects competing for the same prize, the provision of electricity to Vancouver and New Westminster for residential, municipal and industrial purposes. On the one side was a local enterprise, with many shareholders in the local business community, strongly supported by two major newspapers (The Province in Vancouver and the Columbian in New Westminster), but with limited capital and tenuous connections to world capital markets. On the other side was an English company, with an established market for electricity in its own street and interurban railway system, solid connections to the London capital market, and considerable political influence in Ottawa and Victoria. It had all of the appearance of a classic David and Goliath contest -- only in this case, Goliath won.

Roy adduces evidence to suggest that the true agenda of the Stave Lake Power Company was not to block the Coquitlam Lake development, but to make a deal with the BC Electric, either to sell power to the Vancouver firm or to sell the company (Roy 1970). The attempts to sell the company might suggest that either the Stave Lake promoters were not serious about developing hydro-power on the Stave River or that they recognised that victory by BC Electric was inevitable, perhaps because of the Vancouver firm's political connections or its superior financial resources.⁴³ Nonetheless, the Stave Lake Company made determined efforts to capture both the Vancouver and the New Westminster markets. Perhaps for this reason, the public debate was relatively subdued. The

Stave Lake Company's proposal involved a generating plant on the Coquitlam River itself, but the company was forced to admit that it had not yet developed engineering plans for the installation. In the press, the Stave Lake Company attacked the Coquitlam Lake tunnel project as impractical and much more costly than suggested by BC Electric. (Province 1901u). With the smugness that goes with the certainty of winning, the BC Electric asserted the falsity of the Stave Lake claims, reiterated its plans and financial position, effectively ignoring Stave Lake Power's jibes (Province 1901o; Province 1901t). In bureaucratic channels, however, the contest was bitter.

C. *New Westminster and Coquitlam Power*

Initially, the City of New Westminster opposed the BC Electric's plans for the diversion of water from Coquitlam Lake. Although there was an important issue of principle involved, in substance the objections appear to have been tactical. That the aldermen, reflecting their constituents, were primarily concerned to protect the integrity of the municipal water supply, seems evident. However, it is far from evident that there was ever a significant risk to the water supply, either quantity or quality.⁴⁴ That the council was also seeking other advantages for the city is also apparent. To the BC Electric, the City's opposition appeared to be

Electric and John Hendry was a principal in the Stave Lake Company (Province 1901l).

⁴³ Indeed, earlier the General Manager of BC Electric had cited an offer by the Manager of the Stave Lake Company to sell the company to BC Electric. He used this to question the seriousness of the intent of the Stave Lake Company. (Horne-Payne 1901; Buntzen 1901a)

⁴⁴ The original plan of BC Electric did not contemplate a dam. Some aldermen were concerned that should BC Electric tap Coquitlam Lake without building a dam the water level could be lowered to a point that would create problems for the New Westminster water supply. The New Westminster council requested the construction of a dam to raise the level of the lake. With a dam and properly located water intake there was no reason for the flow of water to New Westminster to be restricted -- indeed, it was improved. (Province 1901r). It is also possible that a failure

a potentially serious obstacle. The company worked strenuously to assure the City that not only would their works at the lake not degrade the quality of municipal water but also, despite the diversion of some lake water, the construction of a dam would improve both the volume and pressure of the water supply (News 1901e). The company paid for an evaluation by an independent engineer. The integrity of the water supply guaranteed, the company also offered incentives. The city was promised electric power at no more than two-thirds of the existing cost of steam generation and the company also agreed to erect car repair shops for the interurban railway in New Westminster (BCE , file 83-43; Roy 1970).⁴⁵ The city council was convinced and by early November, 1901, it agreed not to oppose and further BC Electric's application for the right to divert the water of Coquitlam Lake.⁴⁶

Nonetheless the City resolved to protect its interests. The aldermen heard of the BC Electric application for water rights at Coquitlam Lake in later August, 1901, and quickly decided to make their own

to remove vegetation from flooded land affected the quality of the water, as was occasionally suggested in the debates.

⁴⁵ The plans to build the car shops in New Westminster were announced very shortly after the agreement was signed. (Province 1901x)

⁴⁶ The actual agreement with BC Electric was not enacted into a bylaw until April 1904. In the meantime, relations between the power company and the New Westminster council deteriorated. On the advice of the Dominion Land Agent, before the Federal cabinet acted on the BC Electric application for part of the city's land, the city council had sought to remove from the land to be ceded to the company under the 1901 agreement a strip of land 86 ft wide that would have included part of the dam site. The purpose was to ensure access to the lake and to the city's waterworks. To the company, this was a violation of the spirit of the 1901 agreement; they accused the city of breaking faith with the company. The city's request was not accepted by the government. (BCE , file 166-20)

The agreement finally negotiated gave the company the right to sell power for industrial uses but the city retained its residential distribution

application for water rights at the lake (Province 1901k; Province 1901m). By the Water Clauses Consolidation Act of 1897 the provincial government had codified the procedure for obtaining rights to use water that was under provincial jurisdiction. Central to the procedure was a government official -- in the case of New Westminster the mining recorder -- who was designated as water commissioner to receive applications, assess them, adjudicate conflicting claims and make a recommendation to the government. In early November 1901, immediately after the City's agreement with BC Electric, the Water Commissioner held a formal hearing on applications for Coquitlam Lake water. Because of the earlier agreement between the company and the city, the applications of the BC Electric and the City of New Westminster were not in conflict. Indeed, the attorney for BC Electric lent support for the City's application. However, the Stave Lake company had submitted its own application for water rights at the lake and strenuously opposed the BC Electric application. To complicate matters, some other near by municipalities had also submitted applications. The Stave Lake Company's proposal involved a generating plant on the Coquitlam River itself, but the company was forced to admit that it had not yet developed engineering plans for the installation (News 1901f; Province 1901s). Legal counsel for BC Electric alleged that applications from Richmond and Coquitlam were frivolous, "... stimulated by the Stave Lake Company, if not actually initiated by that Company" to gain a postponement (BCE , file 166-20). He further argued that at subsequent hearings, other municipalities would apply for the same purpose. In any case, the Commissioner discovered that what should have been a rather straight forward case was sufficiently complex and controversial that he

network. The city purchased power in bulk from BC Electric. (NW 1902; Denis 1918, p. 220)

adjourned the hearing without a decision. As they were entitled to do under the Act, the BC Electric applied directly to the provincial cabinet for resolution. In mid-November the City was notified that the decision had been taken out of the Commissioner's hands by the provincial cabinet, who would decide on municipal uses of the water as well as the dispute between the power companies (Province 1901y). When the Water Commissioner's hearing was resumed on December 5, it was immediately adjourned on instructions from Victoria (Province 1901za). After a hearing in Victoria, the BC Electric was granted the right to divert sufficient water from the lake to generate 5,000 horse power of electricity per day providing it made arrangements that would guarantee the City's requirements for an adequate supply of pure water. (Province 1901zb; Province 1901zc). Apparently the provincial government decided that the applications of the Stave Lake Power Company and the several municipalities were merely obstructionist.

Although it was at that time deferring to the provincial government on the question of rights to use the water, as trustee for all unalienated land in the railway belt the federal government was also directly involved in decisions about the development of Coquitlam Lake. When the BC Electric announced its plans to generate power from the lake, the City moved quickly to protect its interests. On September 21, 1900 the City asked the federal government for over 18,000 acres of land in a 1/2 mile radius around the lake (Columbian 1910).⁴⁷ The government moved slowly. When the Dominion Land Agent in New Westminster reported that the relevant land was not valuable for agriculture and contained very little merchantable timber the federal government had no apparent financial reason to retain the land. At the end of May, 1902, noting that "... it is

extremely important that this water supply shall be guarded and preserved from contamination," an Order in council was passed approving the sale of the land to the City at the nominal price of \$250, providing the City had the land surveyed at its own expense. (Canada 1902b)

The BC Electric also needed land for the construction of a dam and diversion tunnel and for this purpose it also approached the federal government. Some of the land was within the grant to the city. With the agreement of the City the government modified the Order in Council, excluding the relevant land from the city's grant and selling it to the BC Electric at \$5 per acre (Canada 1902b). The way was now clear for the construction of the dam, tunnel and generating facilities.

D. Coquitlam Lake Timber

With its rights to the water secured along with the land to build the dam and tunnel, BC Electric began construction. They engaged the contract logging firm of Ironside, Rannie and Campbell to harvest the timber on the land that had to be cleared in connection with the project and to provide the timber required for the tunnel and dam project. The logging firm operated a saw mill at Coquitlam Lake for this purpose. Under existing regulations for the disposal of land in the railway belt, sale of the land by the government did not convey title to the trees thereon (Shearer 1996). Thus, title to the timber on the land granted to the City remained with the crown. When the tunnel and dam were completed, Ironside, Rannie and Campbell proposed to continue operating their mill, harvesting the timber around the lake and using the lake to transport the timber to the mill (Province 1905). We do not know if it was enquiries from loggers that alerted the federal government or if it was the City that requested the

⁴⁷ Part of the land was held by the city under the old 40-year lease to the Coquitlam Water Works Company.

reservation to protect its interests at the lake.⁴⁸ In any case, in August 1904 the government, placed a reservation on the timber on the land granted to the City and required potential loggers to obtain permission from the City (Canada 1904). The government's announced purpose was to preserve the water from contamination.

Not only did the City have a veto over logging on the land at the edge of the lake, its ownership of land in a 1/2 mile band around the lake permitted it to control access both to the lake and to timber beyond the City's land. Although there was apparently little useful timber on the city's land, the 105 square mile drainage basin was described as "... of a mountainous character ...(and) ... heavily timbered." (BC 1924). It was this timber that was the object of the loggers. The lake provided a natural transport system from the forest to the mill. Indeed, except by lake access to the timber was almost impossible. This put the city in a strategic position to extract economic rent, largely at the expense of bonuses that might otherwise be paid to the federal government for timber licenses. With the mill already in place and the timber lands already cruised, Ironside, Rannie and Campbell had an advantage over other potential loggers. To avoid the cost of moving their mill, that also had an incentive to reach a financial settlement with the city.

Ironside, Rannie and Campbell approached the city council in August 1905 (Province 1905). Negotiations were conducted in private, reported neither in the minutes nor in the press.⁴⁹ An agreement was reached late in December 1905 involving an annual payment of \$4,000 to

the City for five years (Columbian 1906b).⁵⁰ The City then notified the federal government "... that a satisfactory arrangement could be made between the City and the persons securing the rights to cut the timber ..." and the government rescinded the timber reservation, thus permitting logging in the area, but only with the City's permission (Canada 1906b)

Unfortunately for the logging company and the city council, Dominion timber regulations in effect at that time required that the rights to harvest the timber be sold by competitive tender. A notice of the auction, covering 12,200 acres was posted, but the deadline for tenders was short -- less than two weeks. The local lumbering community was outraged; there was insufficient time to survey the area, make an agreement with the city and prepare a competitive tender.⁵¹ The editor of the *Columbian* was also outraged, referring to the agreement as "A Patent Job",

... a municipal scandal of grave proportions, which should stir the citizens of New Westminster to resolute action with a view to putting an end to the pernicious practice of disposing of municipal business in private caucus instead of at the open meetings of the council (Columbian 1906c; *Columbian* 1906e)

If we are to believe the newspaper reports, the citizens of New Westminster were also outraged. The point of their outrage varied: to some it was the favoritism shown to a Vancouver logging firm; to others, it was the secrecy that surrounded the negotiations and decision making;

City land; the most valuable consideration was the right to float timber on the lake. (Columbian 1906b).

⁵⁰ The City was also given the right to relocate its pipeline onto the right of way of the tram that the logging company was planning to build to its mill. This would have facilitated maintenance.

⁵¹ In the debate in city council it was noted, however, that one of the local mills "... tried to get [the timber] without paying the city a cent; he had tried time and again." If true, this suggests that the timber potential of the lake was reasonably well known, at least to the Brunette Mill. (Columbian 1906g). See also (Columbian 1906h)

⁴⁸ In the public debate, both were implied.

⁴⁹ After fact that an agreement had been made was revealed a reporter for the *Columbian* newspaper asked to see the minutes. He was told that "... the minutes of the committee meetings are private, like the meetings themselves." It was also reported that little of the timber was on

but to all it was concern for the purity and volume of the municipal water supply.⁵² These issues were hotly debated at the next meeting of the city council, which was packed with local lumbermen and other concerned citizens (Columbian 1906e).⁵³ Following a subsequent raucous public meeting two nights later, the council annulled the agreement and notified the federal government of their actions and the reasons for it (Columbian 1906h; Columbian 1906j). The government responded by rescinding the Order in Council that permitted logging and reinstating the reservation on the timber because

... the ratepayers of the City were of the opinion that the removal of the timber and the operations necessary in connection therewith would have the effect of contaminating and depleting the City's water supply (Canada 1906b)

Effectively, this was the beginning of the Coquitlam Conservation Reserve.

E. Phase 3: Raising the Dam

The tunnel from Coquitlam Lake was not completed until July 1905 but the new BC Electric generating facility on Indian Arm went into operation in 1903 using the water from Buntzen Lake alone. An explosive

⁵² Aspects of the debate have echoes in recent debates over logging in the watershed. One logger was quoted as saying that he would bid for the timber and "... if he got it he would cut every stick from the water to the snowline." An alderman expressed concern that "...the mountain side would be stripped of every foot of timber," which would ultimately lessen the city's water supply and create a risk of contamination. Reference was made to a parallel debate that was occurring over logging in the Capilano watershed for Vancouver. (Columbian 1906g)

⁵³ A municipal election had been held between the signing and the public revelation of the agreement. Some of the new aldermen were not implicated in the agreement and were severely critical of it.

increase in demand for electricity, including BC Electric's own plans to extend the interurban railway up the Fraser Valley to Chilliwack, soon rendered the initial installation inadequate despite the addition of three generators, two of them of much larger capacity than the original ones (Villstrup 1936). Plans were soon developed to raise the height of the dam and expand the tunnel to provide water for additional generating capacity.

In the late summer of 1908 it was discovered that the action of the water in the lake was gradually undercutting the dam and there was concern that the dam might rupture. Repairs were effected although it was generally agreed, that a new dam was required. (Columbian 1908a). Indeed, independently of the damage to the dam, the New Westminster City Council was urging construction of a new dam to improve the water flow. However, when BC Electric announced their plans for a new dam 75 feet high (the old one was 15 feet) the reaction was one of astonishment and instant opposition. (Columbian 1908b).⁵⁴ The basis of the opposition was three fold: safety, water quality and the flow of water in the river.

⁵⁴ The first dam was of timber construction, filled with rocks (what was called a "rock-filled timber-crib dam" (BC 1924). Dams of this construction had high maintenance costs and a relatively short life but were suited to circumstances where a relatively small dam was all that was required. The new dam was to be a hydraulic fill earth dam. At the time, this was a standard construction for larger dams that were not made of concrete. Earth was deposited in the dam structure by a rapidly flowing stream of water. The narrow core of the dam, made of fine material, was relatively impervious to water. The large bulk that gave the dam in cross-section the shape of a very broad-based inverted V was of coarser, less impervious material. The surface was typically rock-filled. (Creager 1945, pp. 782-805). At the base, the Coquitlam dam was 655 ft wide and at the top 40 ft. It was constructed of local material, with a core was of blue clay. To raise the level of the lake by about 60 ft. the dam had a maximum height of 100 ft. The expanded lake had an area of 3,075 acres compared to 2,238 acres for the lake behind the original dam. (Conway 1915)

The safety concern -- fear of a break in the dam -- was uppermost in the minds of the residents along the Coquitlam River (Columbian 1908d; Columbian 1908f). Thus, according to one report

“The Coquitlam residents,” said a gentlemant from there to-day, “are up in arms against what they consider to be a menace to the safety of themselves and their lands, and they are prepared to do all that is possible to prevent the raising of the dam.” (Columbian 1908d)

To the residents of New Westminster, farther removed from potential flooding, the primary issue was one of water pollution from the flooding of the relatively flat land at the ends of the lake. Some of this land was swamp and all of it was covered with vegetation and debris. There was concern that decaying vegetation would affect the colour and taste of the water and might harbour diseases like typhoid fever. There was also concern that a larger body of water would be stagnant, also leading to a deterioration of the quality of the water. (Columbian 1909c). Concern about the level of water in the river was raised by the lumbering interests. There were a number of timber berths along the river and their operators depended on the river to float the logs to the mills. They expressed alarm that the diversion of more water from the lake would reduce the flow in the river to the point that it was useless for floating logs. (Columbian 1908f)

Inevitably, also, the promoters of the Stave Lake Power saw in the opposition to the higher dam an opportunity to resuscitate their project. If the construction of a new dam was blocked, the next logical source of additional electric power would be Stave Falls. This would enhance the value of their property; BC Electric would be more inclined to buy power from Stave Lake or, indeed, buy the company. Accordingly, they promoted a petition in opposition to the new dam, citing all of the common concerns about the dam. (Columbian 1908e). To make their project seem credible again they first announced that English financing had been secured and then that Standard Oil was interested. (Columbian 1909a; Columbian

1909b). There was also a hint that the Great Northern Railway was involved.⁵⁵

BC Electric tried to counter these concerns. Representatives of the company met with city council and attended public meetings. To satisfy the safety concerns, even larger dams elsewhere of the same construction were described and the extensive and successful dam-building experience of the American engineer who would design and build the dam was emphasised (Columbian 1908h). He was an internationally recognised expert on this type of dam. To placate concerns about water quality the company agreed to extend the water intake pipe farther into the lake, to replace the city's water line if the added pressure caused it to rupture, and seemed to agree to remove all vegetation from the land before flooding (although later it was asserted that the company had not agreed to the expense of removing all vegetation) (Columbian 1909e; Columbian 1909f).⁵⁶ With respect to the lumbermen's concerns, the company agreed to release water at appropriate times, creating an artificial freshet, to carry logs down the river.

BC Electric's application to the provincial government for additional water from Coquitlam Lake was advertised in late December, 1908 (VPC 1908). The combined opposition managed to delay the decision and to induce the provincial government to appoint an

⁵⁵ Cynicism was expressed about the role of the Stave Lake company in the opposition and its attempts to exaggerate concerns and manipulate public opinion. “Citizen” meetings were in significant degree contests among representatives of “large interests” (BC Electric, Stave Lake, lumbering firms), and there was a struggle between some participants and the more cautious members of the city council over the composition of a delegation to carry the community's concerns to Victoria. (Columbian 1909c; Columbian 1909f).

⁵⁶ The reason for the subsequent denial was probably a realisation of the magnitude of the cost. The clearing and clean-up, forced by the federal government, cost \$650,000 (Conway 1915, p. 24).

independent engineer to investigate. (Columbian 1909g). In May the government awarded the requested water rights to the company, but with important conditions attached (Columbian 1909h). These conditions included a requirement that all vegetation be removed from the area to be flooded and that strict sanitary conditions, approved by New Westminster, be adhered to, both during construction and in subsequent operation of the facility.⁵⁷

To carry through with their plans BC Electric required additional land at the lake both for the dam and to be flooded by the enlarged lake. In this respect, the City of New Westminster thought they held the trump card which would permit them to extract significant concessions from the power company. The relevant land included the areas that the federal government had granted to the city. However, although New Westminster had been granted the land, the city had never actually received title. There was some confusion over whether the required \$250 had actually been paid, but the city was able to produce the cancelled cheque (Canada 1910b). What the city had not done, however, was commission the required legal survey. In August 1909 lawyers for the BC Electric made application to the federal government for the land required to increase the height of the dam. On the grounds that the conditions of the grant had not been fulfilled because the survey had not been undertaken and recorded, the government voided the sale of the land to the city.⁵⁸ The

plans of the BC Electric were approved and the required land sold to the company, subject to certain conditions to guarantee the integrity of the water supply for New Westminster (Canada 1909c).⁵⁹ Provision was made for the periodic release of water to float logs in the lower river but the minister denied any concerns about the navigability of the lower river, water for agriculture or access to the lake by spawning salmon. Indeed, arguing that rotting fish would adversely affect the quality of drinking water, the Minister concluded that

... no provision for the passage of fish is necessary in the new works, and that such provision may be dispensed with (Canada 1909c)

At the crucial point in the long complex process, the city had been out maneuvered by the company.

The city had lost its potential economic asset -- control over access to and use of the lake and the mountains, valley and trees beyond. The happy aspect of the outcome from the city's perspective is that a reserve much larger than the original sanitary cordon around the lake was established, encompassing the lake's entire 105 sq. mi. catchment basin with strict controls over access. This is the Coquitlam Conservation Reserve.

VI. *Conclusions*

The creation of the Coquitlam Conservation Reserve was an important early example of the implementation of conservation policy in

⁵⁷ In addition to some technical matters relating to the construction, other conditions required the company to release water from time to time for the floatation of logs, to acquire a sanitary cordon of 1/2 mile around the new lake and present it to New Westminster, and to pay for the costs of the parties involved in the Victoria hearing and for the engineer-consultant retained by the provincial government. (Columbian 1909h)

⁵⁸ When the city acquired the rights of the Coquitlam Water Works Company it also acquired the 40 year lease on some land at the lake. The lease had been cancelled in 1906. Concern that the lake had not

been surveyed as required -- described as a "gross breach of trust" -- were raised in a 1908 letter to the editor of the Columbian and in the civic election campaign. The standard reply was that a survey was expensive and funds were not available. (Wolfenden 1908; Columbian 1908i)

⁵⁹ In substance these were the conditions imposed by the provincial government with the exception of the provincial requirement that a 1/2

the lower Fraser basin by the federal government. In a sense the Conservation Reserve was a forest reserve, but it was not established under the forest reserve legislation. Moreover, the restrictions were much more comprehensive and rigid than those of a forest reserve. Although not absolutely prohibited, there was no presumption that the forests would be logged, whether on a scientific or rapacious basis. Admission to the reserve was to be strictly controlled in the interests of sanitation and the purity of the water. As a result, not only the forest but also the lake and the upper part of the river were protected for posterity.

While it was thus an important example of conservation, the reservation was not a product of a benevolent conservation policy implemented by federal civil servants seeking out natural environmental resources in the lower Fraser basin to be preserved. Rather, it was a political response to local initiatives and conflicts. In this, the creation of the conservation reserve had much in common with the reported process by which many interior forest reserves were created. On the one hand were contestants who wanted to use the resources to expand a profit-seeking enterprise that supporters considered to be important for the promotion of settlement and industrial development. On the other hand were contestants who were concerned about the volume and purity of water for human consumption. At this time, issues of recreational use of the mountain lake and valley and the preservation of the natural environment for its wilderness value do not appear to have been factors in the debate.

As in many conflicts over resource use, the problem was not simply to choose between mutually exclusive conflicting claims to the lake. It turned out that in important respects the interests of the contestants

converged. The task of the government was to find acceptable forms of co-operative use of the resource -- another point of similarity with the creation and management of forest reserves. There were, of course, mutually exclusive conflicting claims to be adjudicated, but that task fell primarily to the provincial government. It made the choice conflicting industrial claims and, by granting the primacy of New Westminster, between potentially conflicting municipal claims.

It is also worth noting that in making decisions on the use of the lake important environmental issues were either downplayed or ignored. The government showed no concern about diverting a major part of the water from its natural channel, through the mountain to another lake and hence to the ocean. As a result, the normal flow of water through the river below the lake was severely restricted, with untold consequences for the ecology of the lower river valley. The government dismissed potential concerns about the navigability of the lower river but made ad hoc provisions for the furtherance of the one important activity along the river -- logging. The government also showed a curious disregard for the impact of the dam and water diversion on fish. Although it acknowledged that a large run of salmon used the lake for spawning, no provision was made for the maintenance of a suitable flow of water in the river for this purpose and a fish ladder around the dam was deemed unnecessary. This is quite contrary to the importance ascribed to the preservation of fish habitat in another contemporary controversy over a dam and power development on the Alouette River (Canada 1909a).

That said, it is also important to emphasise that the resolution of the dispute over Coquitlam Lake was not entirely one-sided. While the governments permitted the industrial enterprise to appropriate a major portion of the water in the lake, severe and costly restrictions were imposed in the interest of preserving the purity of the water. It is also

mile strip around the new lake be acquired and presented to New Westminster.

worth emphasising that in some respects local government was not more friendly to environmental concerns than was the remote government in Ottawa. The New Westminster city council appeared willing to look on its property rights at the lake as an economic asset not simply as a device to preserve the integrity of the water supply. Thus, the council was willing to separate its property rights into property rights in water quantity and property rights in water quality, and to sell off some of each (quantity to the power company and quality to the loggers). Indeed, the insistence on the conditions to protect the quality of the water can be seen as a testament to the power of aroused public opinion. The outrage of citizens changed the behaviour of the civic government and both directly and indirectly through the city council influenced the decisions of the provincial and federal governments.

With hindsight, today's residents of the metropolitan area of the lower mainland might wish that a smaller portion of the water of the lake was appropriated for the generation of electric power. However, we should be thankful for the restrictions on access and exploitation of the upper valley and mountain sides imposed in 1910 that preserve the lake as a regional water reservoir.

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