

REPORT

ON THE

EXAMINATION OF NATURAL RESOURCES

TRIBUTARY TO THE LINE OF THE

PACIFIC GREAT EASTERN RAILWAY

BY

JOHN STOUGHTON DENNIS

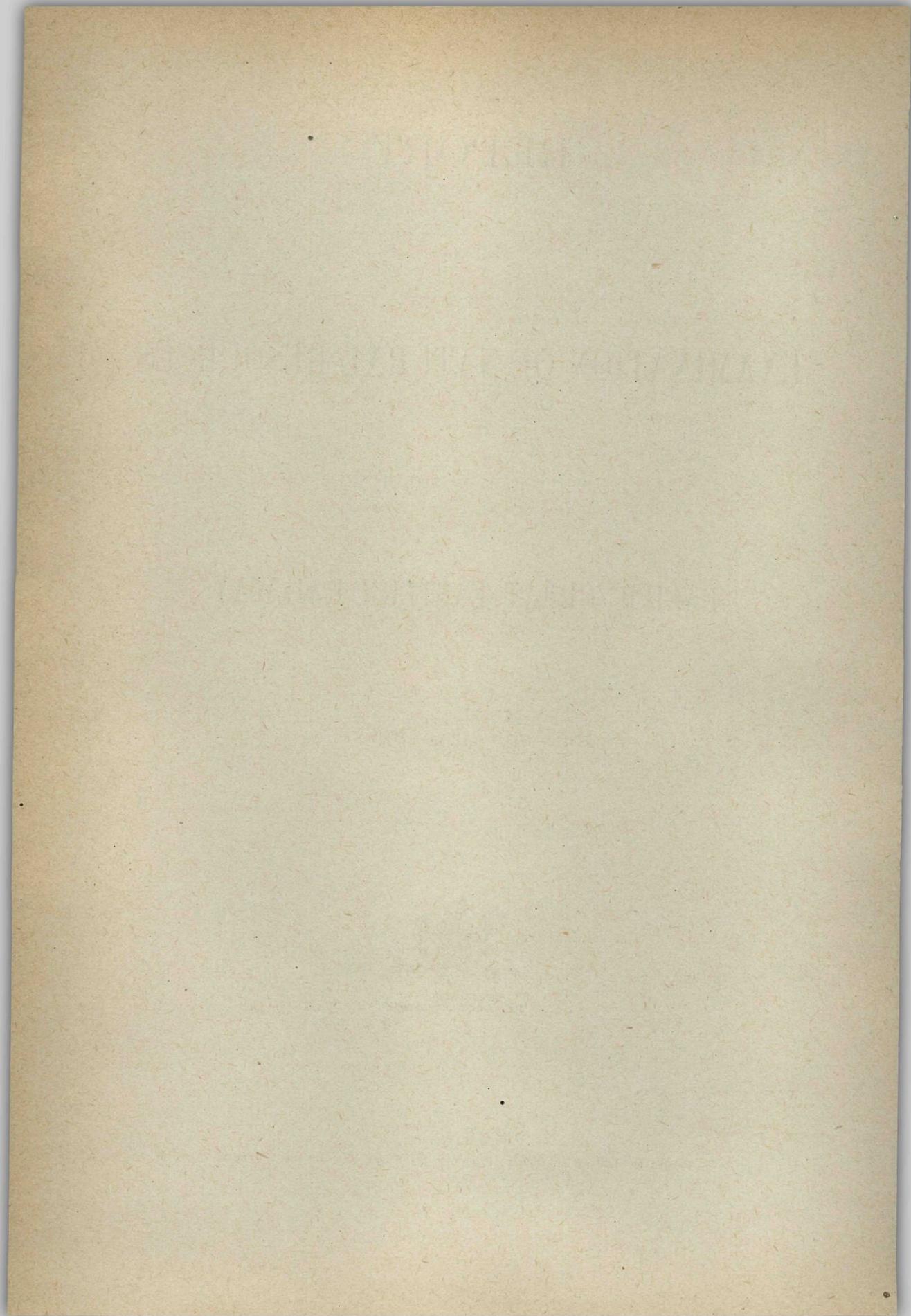


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Natural Resources Tributary to Pacific Great Eastern Railway.

BY JOHN STOUGHTON DENNIS.

MONTREAL, QUE., June 19th, 1922.

*The Hon. John Oliver,
Premier, Victoria, B.C.*

SIR,—In compliance with your request, I have completed an examination of the natural resources tributary to the line of the Pacific Great Eastern Railway, and beg to submit the following report with reference thereto:—

Leaving North Vancouver, I proceeded to the end of the short branch of the line at Whiteville (13 miles); thence by motor-boat 27 miles to Squamish, the present terminus of the railway-line. From the latter point I covered the whole of the line by gasoline track-motor to Quesnel (348.5 miles), and made side-trips by automobile up the Lillooet River in the Pemberton Valley, south from Lillooet in the Fraser Valley, and east from Exeter Station to Canim Lake, these trips comprising 92 miles in all.

I made the return journey from Quesnel by automobile and crossed to the west side of the Fraser River at Williams Lake, making an extended trip through the Chilcotin District via Riske Creek, Hanceville, and the Gang Ranch, reaching the Canadian Pacific Railway at Ashcroft, a total auto trip of 298 miles.

For convenience of reference in reporting on the natural resources tributary to the railway-line and the possibility of creating additional traffic as a result of their further development, I have divided the line into four sections, as follows:—

- (1.) That portion from the terminus at Squamish to Lillooet (120.3 miles).
- (2.) That portion from Lillooet to Williams Lake (157.5 miles).
- (3.) That portion from Williams Lake to Quesnel (70.7 miles).
- (4.) The unfinished portion of the line from Quesnel to Prince George (81.5 miles).

In reporting on each of the above sections it is proposed to deal with the natural resources tributary thereto under the special headings of:—

Agricultural Land.	Water-powers.
Timber Resources.	Tourist Resorts.
Mineral Resources.	Traffic Possibilities.

SECTION 1.—SQUAMISH TO LILLOOET.

AGRICULTURAL LAND.

Beginning at Squamish, the line for some distance follows the valley of the Squamish, within which, adjacent to Squamish Village and further to the north and north-west, there are a few small farms. There is room for a number of additional settlers within this valley when additional land is cleared, and the soil and climate are suitable for all kinds of grain, fodder-crops, and small fruits. The district, however, is limited in extent, and, in any case, the grain, fruit, or cattle products will not provide any particular railway traffic, as what is not consumed locally will naturally be shipped from Squamish by water to Vancouver.

Leaving the Squamish Valley, the line ascends the Cheakamus River to the summit at Alta Lake, and thence following the waters flowing to the north to its intersection with the Lillooet River. Throughout this section there is practically no land available for agricultural development. The mountains are high, with steep slopes, and the country is heavily timbered with a very fine stand of merchantable timber, which is more particularly referred to hereafter under the heading of "Timber Resources," tributary to this section of the line. The Lillooet River is reached at Pemberton, and west and north-west of that point in the valley, including the Pemberton Meadows, for a distance of some 20 miles, an opportunity is afforded for considerable agricultural, stock-raising, dairying, and small-fruit production. There are a number of settlers already located in this valley, including a few returned soldiers located under the provisions of the Assisted Settlement Acts, and the existing evidences of soil, crops, and live stock justify the

statement that the present number could be at least doubled and the productiveness of the valley materially increased if certain colonization and development assistance were provided by the Government.

I motored up this valley from Pemberton, a distance of some 15 miles, and it is evident that the first and most pressing need is a good road and some permanent protection against the eroding banks of the river. The success of the present settlers and the chance of further agricultural development would be materially aided by the establishment of a creamery and a small jam-factory at Pemberton, and, in addition, some assistance should be given towards clearing land in the valley, both on existing farms and in many areas suitable for additional colonization. The timber on the bottom lands in the valley is not heavy and the cost per acre of clearing should not be prohibitive. It is quite clear from the evidence available on existing farms that clearing could be carried on within reasonable limits of expense and the resulting cleared areas would be highly suitable for settlement.

Leaving Pemberton at the crossing of the Lillooet River, the line ascends the Birkenhead River to the summit of the Cascade Mountains, and thence following certain tributary streams and lakes to the Fraser Valley at Lillooet. Between Pemberton and Birken Station at the summit of the Cascades the country is heavily timbered with a fine stand of merchantable timber, referred to in detail later on, and there are no tributary areas of agricultural land, except a few very small scattered areas already occupied, which can be further developed. From the summit of the Cascades, proceeding east and north, a district of semi-aridity is reached, within which the production of crops is only possible with the aid of irrigation, and there are no large agricultural areas adjacent to this portion of the land, with the exception of some small tracts at the south end of Anderson Lake, between Anderson and Seton Lakes, and at the eastern extremity of the latter. These small areas are now occupied and developed through the medium of small irrigation systems, and there does not seem to be any possibility of adding thereto, the slopes of the mountains being abrupt, and only in the bottoms of the narrow valleys is there any land which would justify clearing for occupancy.

At Lillooet the first large area of land suitable for agricultural development is met with. The district, which is practically all devoid of timber, covers the bottom lands and the first benches of the Fraser Valley for some distance north and south of Lillooet. An automobile trip was made for some 15 miles south from Lillooet for the purpose of inspecting the existing ranches, and while cultivation in this district is, of course, only possible with the aid of irrigation, the character of the soil and climate are such that where water is available most luxuriant crops of grain, fodder, roots, and fruit can be produced. It is evident from the inspection made and the information obtained that practically all the land suitable for cultivation in this district is now being occupied, the area, of course, being limited by the water-supply available. It is possible that this area might be materially extended by the construction of more extensive systems for water-delivery, and possibly further development may justify the construction of these more expensive irrigation systems, but until they are undertaken it would seem that there is little hope of more extended settlement or cultivation in the district.

The Lillooet District, owing to its elevation, climate, and soil, with irrigation is suitable for the production of practically all crops, including high-priced fruits, and many of the so-called larger ranches are very attractive in appearance. I ascertained, however, that a very considerable portion of the land under cultivation was being devoted to the continuous production of potatoes, and that, as was to be expected, continuous cropping with one character of crop has very materially reduced the output, and I am of opinion that unless steps are taken to introduce on these areas a proper crop-rotation system, particularly in the early introduction of the growth of alfalfa, clover, or some other leguminous crop, many of the most productive areas will be destroyed. I also understand that the condition referred to is largely due to the renting of large ranches to Chinese tenants, who persist in producing continuous crops of potatoes, and I fear that a continuance of this system will materially reduce the value of the land and crop productiveness of the district.

In view of the suitability of the district for a more intensive class of agriculture, it seems certain that the district would benefit materially in having the larger ranches cut up into smaller holdings, which could be devoted to the production of a higher-class product, including fruit and early vegetables, and the introduction of such a system would, without doubt, be of great material benefit to the general prosperity of the district.

TIMBER RESOURCES.

On that portion of Section 1 of the line between Squamish and Pemberton the line passes through a continuous area of fine merchantable timber. Much of this timber is tributary to tide-water at Howe Sound and will, without doubt, be moved over the railway-line to mills at tide-water. There is also in this district a large quantity of timber suitable for pulp which should also move to present pulp and paper factories on Howe Sound.

Between the Lillooet River and the summit of the Cascade Range at Birken Station there is also a considerable body of merchantable timber which is tributary to the Lillooet River and Harrison Lake, and, within the latter district, also a considerable area of timber suitable for pulp which could be delivered by the railway-line for water carriage at the Lillooet River. The timber in both of the areas described is more or less difficult to log owing to the steep mountain-slopes, and it would seem that a very considerable proportion of it could be better manufactured through the medium of small mills on the railway-line than to haul over the railway-line as logs to tide-water or to the Lillooet River. There are already a few small mills operating locally on this section of the line and their number could be increased with advantage both to the timber-owner and the railway company.

MINERAL RESOURCES.

A careful study of all the reports and information available relative to the mineral deposits indicate that there is no immediate probability of the development of any extensive mineral resources tributary to Section 1 of the line. In the vicinity of Alta Lake, near the summit of the Coast Range, it is claimed that some copper properties have been located, but so far no extensive development is being carried on or ore taken out. In this vicinity there are also certain deposits of iron ore which were worked to a limited extent and some ore shipped out, but the workings are not at present being operated. It is understood that in the Lillooet Valley in the vicinity of Pemberton Meadows certain mineral claims have been located, but no further development carried on. On the west slope of the Cascade Range in the Birkenhead River Valley and tributaries it is understood that there are some promising copper properties adjacent to the railway-line, but no development-work has yet been undertaken. On Anderson Lake a large deposit of talc has been located, from which certain shipments have been made, but this mine is inoperative at the present time. At McGillivray Creek, emptying in Anderson Lake, some gold-mining has been carried on and a stamp-mill erected, but this mill is inoperative at the present time. From this point a trail runs over the summit to Cadwallader Creek, where some gold-mines are in operation.

There are other mineral prospects, as indicated by reports and information available, adjacent to different points on this section, but, as stated, there seems to be no prospect of immediate development which would create traffic.

WATER-POWERS.

The streams flowing both ways from the summit of the Coast Range adjacent to the railway-line afford opportunities for small hydro-electric development, and there is the possibility of a considerable development on the Cheakamus River at Bear Mountain Canyon, where it is claimed that 40,000 horse-power is available. On the east slope of the Cascade Mountains a large power-development is receiving consideration by diverting the water of Ridge River, and certain preliminary surveys and development in connection therewith have been undertaken.

TOURIST RESORTS.

On Section 1 of the railway-line opportunities are offered for the erection of very attractive tourist resorts at several points. At Daisy Lake, Mons Station, at the summit of the Coast Range, there is already a small tourist chalet, and the possibility of developing a very attractive resort at this point, which, owing to its proximity to the Coast cities, affords an opportunity for material development. At Anderson and Seton Lakes, on the east side of the Cascade Range, there are also opportunities for tourist resorts, both of these lakes being of an extremely attractive character, but, unfortunately, possessing very precipitous banks on each side, and thus limiting the area for summer houses, except at the south end of Anderson Lake, on the flat between Anderson and Seton Lakes, and at the east end of the latter lake, where there is already a tourist chalet largely patronized by tourists on account of the attractiveness of the lakes and the character of the fishing.

TRAFFIC POSSIBILITIES.

The information given above relative to the resources tributary to Section 1 of the line does not justify any immediate expectation of an increase in traffic. It seems clear that the present haulage of logs from the timber areas to tide-water and, possibly, later, to small local sawmills will increase, and we are justified in anticipating that there will be haulage of pulp-wood over this section of the line at some future date to the pulp and paper mills at Howe Sound. In considering traffic of this character it must, however, be remembered that it is not of a permanent character, and that in time the timber resources will be entirely exhausted and that the district from which the timber is removed is not, as a whole, capable of being converted into other traffic-producing areas.

The additional development, as indicated above, of the agricultural areas tributary to this section in the Pemberton Valley and at Lillooet will, without doubt, stimulate the shipment of additional agricultural products and improve the one-way movement of merchandise, but the areas at both points are too limited in extent to justify the expectation of intensive traffic resulting therefrom.

The mineral resources tributary to this section might in time produce traffic, but this development is problematic, and it may be expected that it will be some years before these resources, even under the most favourable conditions, can be looked to to develop any considerable amount of railway traffic.

As has been pointed out, there exists the possibility of developing some very attractive tourist resorts at points on the lakes on this section of the line, and their development would be followed up by an increased local traffic. This traffic, however, can only be depended upon during a short summer season.

A careful consideration of all the natural resources tributary to Section 1 of the line justifies the statement that there is no immediate prospect of their development upon a basis which will create traffic sufficient to take care of the heavy fixed charges and operating expenses on this section of the railway.

SECTION 2.—LILLOOET TO WILLIAMS LAKE.

AGRICULTURAL LAND.

The agricultural areas in the Lillooet District at the southern end of this section have already been dealt with and are properly tributary to Section 1.

Crossing the Fraser River at Lillooet and proceeding north along the Fraser River, there are some small irrigated areas tributary to the line that have been developed as far as justified by the available water-supply for irrigation. On these areas, where water is available, good fodder and root crops are being raised, but the remarks given above relative to continuous cropping on land in the Lillooet District with potatoes are applicable also to many of the areas between Lillooet and Pavilion.

At Pavilion and in the valley of the Pavilion Creek there are some small areas of high productiveness, and in this district there are some large ranches, particularly the Carson Ranch, where large areas are devoted to the production of fodder in connection with stock-raising activities. Pavilion Valley, however, is limited in extent, and the summit is soon reached to the eastward, the agricultural areas east of that point being, of course, tributary to the Cariboo Road and the markets at Clinton and Ashcroft.

From Pavilion to Kelly Creek, where the railway-line leaves the valley of the Fraser, there is no possibility of any additional agricultural development adjacent to the line, which here follows the steep side-slopes of the Fraser Valley.

In certain of the bottom lands and also to the westward of the river some agricultural development is being carried on, but the latter areas are separated from the railway-line by the deep valley of the Fraser.

Leaving the Fraser River at the mouth of Kelly Creek, the line follows up the latter stream to the summit and thence north-easterly to Clinton. Along this route there are some small areas of agricultural land, but no possibility of any largely increased development.

At Clinton the line meets the Cariboo Road coming in from the south at Ashcroft. Along this road for some distance south and in the valley east and west from Clinton there is some agricultural development where water for irrigation is available, but the bench and

higher lands are suitable only for a limited amount of grazing and no opportunities offer for extended settlement.

From Clinton to Exeter the line crosses a high plateau of poor soil, with scattered bull-pine and brush, with many alkali ponds and lakes, suited only for a limited amount of summer grazing. To the east of the line, in the vicinity of Green Lake, there is some scattered settlement, but the district does not lend itself to any marked extension of settlement or development.

From Exeter Station an automobile trip was made east to Canim Lake, following the valley of Bridge Creek. In this valley there are some forty-seven settlers and to the east some fourteen along the shores of Canim Lake. This valley was one of the most attractive visited. Irrigation is not necessary and fine crops are raised. Information obtained indicated that land can be cleared and made ready for cultivation at a cost of about \$40 per acre, and there is the opportunity of locating 150 additional settlers in the district, provided they are given encouragement and assistance, their present greatest need being a good road through the valley and its extension to the east along the south shore of Canim Lake, and the establishment of a creamery at Exeter Station.

From Exeter to Williams Lake the line closely parallels the Cariboo Road through a district particularly adapted for ranching. Several large ranches are met with, particularly those in the vicinity of 100-Mile House and Lac la Hache, and the high quality of the cattle seen was noticeable in this as well as in all the other ranching districts visited. This section is not suitable for agriculture without irrigation and further development is limited by the water-supply. Cattle must be fed during the winter season, which, of course, imposes a limitation upon ranching development. A very fine ranch with extensive irrigated areas is located at the St. Joseph Mission near Williams Lake, but, in my opinion, further agricultural development in this district is dependent upon subdivision of the large ranch areas and their utilization upon a more intensive system of production.

There is a large area of country tributary to this section of the line lying to the east and north-east of Williams Lake, in the Horsefly District. In this district, near Rose Lake, Harper's Camp, and at other points along the road from Williams Lake to Horsefly Lake, there is considerable settlement, and the possibility of extending this settlement if a first-class road is provided and some assistance given in clearing land and bringing it under cultivation.

Also tributary to this section of the line is the extensive ranching area in the Chilcotin District lying to the west of the Fraser River. An extensive automobile trip of some 100 miles was made through this district, whose marketing centres are on the railway-line at Williams Lake, Chasm Station, and Clinton.

The Chilcotin District is a high plateau with large areas of open prairie country and scattered timbered areas of jack-pine and poplar. The growth of bunch-grass is sparse, indicating the semi-aridity of the district, but it is specially adapted for summer grazing of cattle, sheep, and horses, which have to be fed during the winter months. In the valleys or at points where water is obtainable for irrigation bountiful crops of fodder are raised, but these areas are somewhat limited in extent and the fodder for winter feeding which can be raised is, of course, a limiting factor upon the total of stock production. The district contains several large ranches, and again the high quality of the cattle seen grazing at large was noted. The annual shipment of beef cattle from this district amounts to some 3,000 head, and it seems probable that the district is now carrying about as many cattle as can be taken care of, and that unless extensive additional areas can be brought under irrigation for production of fodder-crops the number of export cattle is not likely to be largely increased in the near future. The Chilcotin District is suitable only for ranching, outside of the small areas which can be irrigated, but development in the district can be materially aided by improving the main roads to the marketing centres on the railway-line.

TIMBER RESOURCES.

There are not large areas of merchantable timber immediately tributary to this section of the line. The timber adjacent to the line is largely bull-pine, jack-pine, and some poplar, and, as a fact, many districts would be improved for ranching and settlement purposes if this timber was burned off.

North-east from Williams Lake, in the Horsefly Lake District, there are some large areas of fine timber and also of pulp-wood, but this timber is tributary to Section 3, via Quesnel Lake and River, and is more particularly dealt with later on.

MINERAL RESOURCES.

There are no indications of mineral resources of special value immediately tributary to this section of the line.

In the vicinity of Clinton deposits of carbonate of soda, sulphate of soda (Glauber salts), and magnesium sulphate have been located and some shipments made, but these deposits are not likely to be largely developed or result in heavy shipments for some time. The only other mineral deposits heard of were some claims to the east of Lac la Hache which are undeveloped.

The new placer-gold discoveries in the Horsefly and Quesnel Lake Districts are tributary to the line, with Williams Lake as shipping-point, and if these diggings prove of value, both freight and passenger traffic to that point will be stimulated. Placer-gold mining, however, is not of a character to induce permanent development and cannot be counted upon to produce an increasing and permanent character of traffic.

Reports were received of the location of a seam of good coal near the east end of Canim Lake, but this is too remote to be of value except for local consumption by settlers in the vicinity.

WATER-POWERS.

Some small hydro-electric development projects are noted as being possible in this district on the Bonaparte, Mahood, Clearwater, Horsefly, and Chilcotin Rivers, but none of these are of sufficient size to attract special notice or capable of supplying anything but local needs when increased settlement and development in the district creates a demand.

TOURIST RESORTS.

Lac la Hache, the south shore of which is followed for some 10 miles by this section of the line, is a very beautiful lake of good water and offers exceptional facilities for summer houses and a delightful tourist resort. Lake Canim, on account of the good fishing obtainable and the beauty of the surroundings, also offers attractions for the tourist. The remoteness, however, of these lakes prevents the probability of their attractiveness being utilized to any marked extent in the near future.

TRAFFIC POSSIBILITIES.

There is nothing to indicate that any marked increase in traffic on this section of the line can be looked for in the near future. The further colonization and development of land in the Bridge Creek Valley, Canim Lake, and Horsefly Districts will provide additional traffic of a permanent character, but the progress of this development will be entirely dependent upon the construction of good roads and the colonization assistance given the settlers.

The total inward and outbound traffic of the large Chilcotin District is tributary to this section of the line, but, as has been pointed out above, the district is one suitable for and devoted entirely to ranching, and there is nothing to justify the expectation of increased development within the district or traffic therefrom in the near future. These remarks also apply to those districts tributary to the line in the Lac la Hache and Williams Lake Districts, which are devoted to ranching.

SECTION 3.—WILLIAMS LAKE TO QUESNEL.

AGRICULTURAL DEVELOPMENT.

Leaving Williams Lake the line follows the valley of Williams Lake Creek westerly to the valley of the Fraser, and thence north along the Fraser until Quesnel is reached at the mouth of the Quesnel River, and for the greater portion of this distance the railway-line closely parallels the Cariboo Road.

Practically all the river-bottoms of the Fraser Valley on this section are occupied and many fine farms are noted, particularly the Moffat Ranch, the Australian Ranch, and that of Yorston Bros. These bottom lands are irrigated from small streams, tributaries of the Fraser, and very luxuriant grain and fodder crops are produced. There are also some considerable areas of cleared and cultivated areas on the first benches above the river, and also farther back from the river on the higher benches. Inspection of the district indicates that there are large areas tributary to the line on this section that offer splendid opportunity for additional settlers, the soil being good, the timber fairly light, and, as one approaches Quesnel, the need for irrigation less marked.

It is safe to assume that adjacent to the line between Soda Creek and Quesnel the present number of settlers could at least be doubled, as the district produces good crops, is specially adapted for dairy-farming, and the clearing of timber is not too burdensome. A special effort should be made to colonize these additional areas and make them productive.

There is also a large area of bottom and bench land of a similar character tributary to this section of the line on the west side of the Fraser River, across to the railway-line being provided by ferries across the river at Castle Rock and Quesnel. The section of the line from Soda Creek to Quesnel (including the land on the west side of the Fraser River), and also a large area tributary to the town of Quesnel, certainly offer greater prospects of agricultural development and resulting traffic than any other portions on Sections 1 and 2.

A creamery has now been established at Quesnel, and if some more frequent facilities are afforded for moving cream on the railway-line, and some encouragement and assistance given to new settlers in the district in clearing the land and establishing homes, I would look forward to its becoming a well-settled and successful agricultural area, with several hundred additional settlers. To aid in this I suggest a small cold-storage plant, jam-factory, and an egg section as adjuncts to the creamery at Quesnel, which would materially assist in the development of the district.

It is also desirable that the east and west roads on the west side of the Fraser, giving access to the railway-line via the ferries at Castle Rock and Quesnel, and also those reaching stations on the railway-line from adjacent territory on the east side of the river, should be put in first-class condition and maintained as main marketing highways in the district.

TIMBER RESOURCES.

There is no large area of merchantable timber immediately tributary to this section of the line. There is sufficient timber for local use and its quality improves as you proceed north, but none which would justify extensive lumbering operations or manufacturing on the line, except for local demands.

Reports have been examined regarding very large areas of fine timber and a large supply of pulp-wood situated on Quesnel and Horsefly Lakes and tributary waters. This timber is all tributary to the railway-line at Quesnel via the Quesnel River, and will no doubt be ultimately brought to that point for manufacture. It is stated that comparatively small expenditures will render the Quesnel a safe driving stream for logs, and the railway transportation offered at Quesnel, together with the fact that a good mill-site is available there, and that nearer railway facilities are not at all probable, justify the expectation that these valuable timbered areas will sooner or later be developed and afford traffic for the line at Quesnel.

MINERAL RESOURCES.

The world-famous Cariboo placer-gold mining district is tributary to this section, and the new discoveries made in the southern portion of that district tributary to Quesnel and Horsefly Lakes may result in a renewal of the activity which first attracted attention to the district. The small amount of prospecting for other minerals carried on in the district prior to railway connection being provided has resulted in production of samples of free gold, silver, copper, lead, and other mineral deposits, and there is every reason to expect that continuous prospecting will locate valuable mines in this highly mineralized district. Placer-mining will, of course, be carried on for many years, and attention is now being directed to large areas tributary to the Quesnel and Cottonwood Rivers which promise satisfactory return in gold and platinum though dredging operations.

In the immediate vicinity of Quesnel extensive deposits of diatomaceous earth have been located, which may prove of commercial value later on.

South of Quesnel some small outcroppings of lignite coal occur, and on Australia Creek a seam of this coal is being worked which provides a fairly good domestic fuel, but is valueless for industrial purposes on account of its high ash content and low fixed carbon.

Speaking generally of the mineral resources tributary to this section, it may be said that the information available justifies the expectation that more detailed geological examination and careful prospecting will locate valuable mineral deposits and result in extensive development.

WATER-POWERS.

This district, in common with all those adjoining the line, offers many opportunities for the development of small hydro-electric development, and on the Quesnel River at two points somewhat extensive power plants could be developed. However, there will be no justification for the development of power or electric energy at any of these points until settlement becomes much more widely extended in the district and active development of the timber and mineral resources undertaken.

TOURIST RESORTS.

There are no points immediately adjacent to this section of the line which offer opportunity for the development of tourist resorts.

The town of Quesnel is a very attractive site for summer homes and may in time attract people who wish to spend the holiday season in an attractive district of Northern British Columbia, and the large lakes to the east (Quesnel and Horsefly) will continue to attract sportsmen owing to the excellent fishing and big-game shooting, but these districts are too remote from the railway-line to attract ordinary tourists.

TRAFFIC POSSIBILITIES.

That portion in this section of the line in the Fraser Valley from Soda Creek north to Quesnel affords an opportunity for largely increased traffic resulting from extended agricultural development. The district in question is, as has been explained above, capable of supporting a large number of additional settlers, and if actively developed should provide a more intensive local traffic than any other portion of the line to the south.

Ultimately, traffic will no doubt result from the manufacture of lumber and, possibly, pulp at Quesnel, resulting from the development of the large timbered areas at Quesnel and Horsefly Lakes and tributary streams, but expenditures must be made in improving the Quesnel River for driving purposes before traffic will result therefrom.

The information available also indicates the probability of future development of mining areas in the district tributary to this section of the line, resulting, of course, in traffic consequent upon the movement of machinery and supplies, but for the immediate future I cannot see any prospect of increased traffic resulting from development of resources tributary to the line, except that resulting from further development of the agricultural areas in the Fraser Valley as outlined above.

SECTION 4.—QUESNEL TO PRINCE GEORGE.

The uncompleted portion of the line from Quesnel to Prince George was not personally examined. I had previously inspected the district for some 20 miles south and west from Prince George, and the only means of transportation from Quesnel to Prince George was by small motor-boat on the Fraser, which would afford no opportunity of inspecting the country adjacent to the located railway-line.

I have carefully perused all available reports on this district, and especially that submitted by R. J. Work, Right-of-way Agent of the company, under date October 3rd, 1921.

The information disclosed by these reports indicates that this unfinished portion of the line intersects districts suitable for further agricultural development, this being especially the case in the vicinity of Stone Creek, Strathnaver, Meadow Creek, and 10-Mile Lake.

The soil in these districts appears to be good, irrigation not necessary, and the timber easy to remove, but these reports also make it clear that there are no other special resources of timber or minerals tributary to this section; and while it may be assumed that the completion of the line would stimulate the agricultural development, it seems very doubtful whether sufficient traffic to meet operating expenses would result, particularly as that portion of the district for 20 miles south and south-west of Prince George is naturally tributary to the Grand Trunk Pacific line at that point.

It is also to be noted that several of the districts tributary to this section, which are suitable for agricultural development, as explained above, are comprised of large holdings in private hands, and it seems quite clear that in this instance, as well as at other points on the railway-line previously referred to, some steps must be taken to subdivide these large holdings and introduce an active colonization policy before the somewhat limited agricultural areas tributary to the line can be brought to a full measure of productiveness.

GENERAL REMARKS.

In completing the general inspection of the natural resources tributary to the Pacific Great Eastern Railway and reporting thereon as outlined above, I have, of course, devoted no consideration to the location and construction of the railway-line from an engineering standpoint, as that did not come within the scope of the duty delegated to me. I venture, however, as an engineer, to express my surprise regarding the character of the location of portions of the line, particularly that north from Lillooet along the steep slopes of the eastern bank of the Fraser Valley.

I was agreeably surprised with the character of construction and physical condition of the railway-line, but realize the high cost of construction and of future maintenance, and refer to these facts only because the fixed charges resulting from construction and operating cost can only be met by intensive traffic resulting from development of natural resources tributary to the line. It would seem clear that the Pacific Great Eastern Railway must be looked upon purely as a colonization line and cannot in any sense be expected to fulfil any function of through traffic, and, as a consequence, considering the fact that the line is now owned by the Province, I venture to point out that it will be necessary to undertake certain activities and large expenditures by the Government in aiding the early development of the natural resources tributary to the line, which they would not be called upon to undertake if the road was the property of a private corporation, and with this in mind I respectfully submit the following:—

RECOMMENDATIONS.

(1.) Steps should be immediately taken to create a Colonization and Development Department of the railway's service. This Department should be headed by an official with the title of "Development Agent," whose duties would include all right-of-way, townsite, and industrial matters, and whose first activity should be the preparation of a carefully prepared report, graphically illustrated by a map, showing the location and character of all agricultural, timber, mineral, water-power, and other resources tributary to the line.

Having prepared this report and map, he should submit recommendations relative to the assistance to be granted by the Government in developing such resources, and such recommendations should include:—

- (a.) The selection of certain agricultural areas tributary to the line within which increased agricultural development must be expedited by Government assistance in clearing of land, establishment of creameries, jam-factories, cold-storage and egg-collecting plants.
- (b.) The location of the main marketing roads to the east and west from the railway-line and their immediate improvement to afford more ready access in the delivery of agricultural products to shipping-points.
- (c.) The preparation of the necessary literature and maps for general distribution to indicate areas which offer opportunity for further agricultural development, and the establishment by the railway company of colonist passenger and freight rates to induce settlement of these areas.
- (d.) The consideration of, and the recommendation of, a policy under which large holdings in private hands tributary to the line can be subdivided and colonized so as to permit of more intensive settlement and cultivation.
- (e.) The preparation in condensed form, for issue as a pamphlet, of the most reliable information obtainable relative to mineral resources tributary to the line, and, possibly, before this is done, a more thorough investigation by the Mineralogist of the Government service, so that when this pamphlet is issued for the guidance of prospectors the information contained therein may be of the most complete and reliable character.
- (f.) A further study and inspection of the timber resources tributary to the line, together with information as to methods of getting this timber to the line, including improvement of streams for driving purposes and the encouragement, as far as possible, of the location of small lumber-mills at different points on the line to handle the smaller areas of timber immediately adjacent to the line.

(g.) A careful study of the industrial and business opportunities at points on the line and the completing of reliable data relative thereto, including water or other power development, so that any and all inquiries regarding industrial and business openings can be promptly replied to.

(2.) From Clinton to Quesnel the Pacific Great Eastern Railway practically parallels the Cariboo Road. This road, which is a main trunk highway, and which is being kept in first-class condition is, and always will be, a serious competitor with the railway-line in the movement of local traffic.

It would seem evident that the Province cannot undertake to maintain both this trunk highway and the parallel railway-line, particularly in view of the fact that the portion of the district served by the railway-line north of Clinton has the present more urgent need of a better system of marketing highways from east and west of the railway-line. It is respectfully suggested that if small sections of the Cariboo Road necessary for use by existing settlers to reach their marketing centres were maintained as public highways, the other large sections of this road now operated in competition with the railway-line might properly be put upon a toll basis and the receipts resulting therefrom devoted to the improvement of the east and west marketing roads so urgently needed to aid in further development of agricultural, ranching, timber, and mineral areas.

CONCLUSION.

From a careful and detailed inspection of the natural resources tributary to the Pacific Great Eastern Railway, and a careful study of all the available reports relative thereto, I am forced to the conclusion that, while there is the possibility of materially extending the present development of the agricultural, timber, and mineral resources, through the medium of Government assistance, as outlined above, there is no prospect that traffic can be created as a result of such development, at least for many years to come, sufficient to provide for the heavy fixed charges resulting from the construction, maintenance, and operation of this railway-line.

I am, Sir,

Your obedient servant,

J. S. DENNIS.

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