

“Eighth Wonder of the World:” The Cariboo Wagon Road as British Columbia’s First Megaproject

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Article abstract

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Abstract

Interpretations of the creation and operation of the Cariboo Wagon Road, constructed during the 1860s to the gold fields in the northern interior of colonial British Columbia, range from a marvelous, essential conduit to a costly, superfluous thoroughfare. In our age of cost overruns, it is appropriate to begin a process of addressing cost-effectiveness in evaluating the colony’s largest infrastructure project. After clarifying the structure’s name and extent, this paper collates the relevant British Columbia colonial accounts to establish a global government first cost of the project and compares this expenditure with the cost of goldfield roads in California and Victoria colony, Australia. It then engages with the theory and practice of megaproject analysis in two ways. First, it offers a brief comparison of select primary sources concerning the Cariboo Wagon Road with some of the very different documents that support studies of major projects in the post-war period. It then deploys elements from the growing planning literature concerning megaprojects that allow analysis within the very constraints of the colonial sources. Such an endeavour illuminates some of the shortcomings and gaps in nineteenth-century calculations and understandings of the financial viability of the project.

Résumé

Les interprétations portant sur la création et le fonctionnement de la route d’accès à la région de Cariboo, construite au cours des années 1860 en direction des champs aurifères du nord de la Colombie-Britannique

* An earlier version of this work was also presented at the Western History Association Annual Meeting, Newport CA, in October 2014. I thank John Lutz for inviting me to participate in the *Colonial Despatches* project, and Frederike Verspoor for her illumination of the limits and possibilities of the colonial correspondence holdings at BC Archives. The anonymous reviewers for *JCHA* offered valuable suggestions. All errors of fact or interpretation that remain are mine alone.

coloniale, oscillent entre un merveilleux et essentiel corridor et une voie publique onéreuse et superflue. Il sied, à notre époque de dépassements des coûts, de s'interroger sur le rapport coût-efficacité dans l'évaluation du plus grand projet d'infrastructure de la colonie. Une fois expliquées la dénomination et l'étendue de cette structure, cet article rassemble les documents comptables pertinents de la Colombie-Britannique coloniale afin d'exposer les coûts initiaux globalement projetés par le gouvernement et les compare à ceux des champs aurifères de la Californie et de l'Australie coloniale. Il propose ensuite une conceptualisation et une application bifocale de l'analyse de mégaprojets : dans un premier temps, seront brièvement comparées des sources primaires présélectionnées relatives à la route d'accès à la région de Cariboo, avec des documents fort différents à l'appui d'études de mégaprojets de l'après-guerre; ensuite, seront présentées les données tirées d'une littérature de plus en plus vaste sur ce sujet, qui permettent de mener l'analyse malgré les limites des sources coloniales. Une telle entreprise met ainsi en lumière certaines des lacunes qui entachèrent, au XIXe siècle, la comptabilité et la compréhension de la viabilité financière du projet.

Introduction

“The Cariboo Wagon Road was not your normal highway.”¹

This opening from a recent Grade 5 social studies report captures both the findings and frustrations of historians concerning the largest infrastructure project of colonial British Columbia. Constructed during the period 1861–5 to open the gold fields of the northern interior to supply from the coast, the Cariboo Wagon Road, a “thoroughfare” 18 ft. (5.5 m) wide that allowed wagons to pass unimpeded, became the obsession of the colony’s celebrated first governor, James Douglas.² Crude word frequency tallies of the governor’s dispatches to the Colonial Office in London suggest that during the construction period, the matter of roads occupied nearly as much space in his official correspondence as did gold.³ However, unlike other important policies of the governor, even the basic characteristics of the Cariboo Wagon Road project, let alone its significance, remain obscure.⁴

Contemporary estimates of the cost/benefit of the road rested in part on broader evaluations of the governor’s poli-

cies. As Douglas was about to proclaim an increase in tolls on northbound traffic on the goldfield roads in February 1863, an anonymous supporter offered a spirited defence of his actions:

The system of Roads laid out, the excellence of their construction, & the economy with which they have been built must be seen to be properly appreciated. ... [The colonists] know well enough that tolls put on — to make roads to the Mines — lower the cost of every lb. of provisions that comes over the road so made, by 8 or 10 times the amount of the Toll. The proof of it is, that to a man, they have signed petitions wherever opportunity offered — praying for the construction of these roads — & asking for the imposition of the Tolls in question.⁵

Three years later the administrator for the next governor offered a much bleaker review:

The Road Policy of a previous administration ... [led to] the construction of two rival Roads through a wild and thinly populated Country at a [total] cost of [£200,480] ... These expenditures ... have entailed upon the Revenue a heavy and in part unnecessary charge ... for their maintenance and for interest on the debt incurred for their construction.⁶

Such contrary evaluations of the financial consequences of the road would seem to invite — indeed require — a review of the accounts of colonial British Columbia concerning the goldfield road. What is surprising, then, is the general retreat from investigation of this matter. While they have not ignored the cost of road construction, historians as well as tourism promoters have often treated the goldfield roads with little more than a spectacular Frederick Dally photograph of cribbing or cuts, always assumed to be the work of heroic Royal Engineers.⁷ Discussions of exotic transport — from packing camels to steam traction engines — have often pushed aside estimates of traffic.⁸ While these images and tales can evoke a sense of awe concerning the road's penetration and civilization of what appears to be

forbidding, empty wilderness, they obscure the calculations and costs that created this edifice.⁹

Social historians of colonial British Columbia were the first to overcome or transcend the shortcomings and limitations of the official colonial record. They produced a body of work, particularly concerning Indigenous history, which has elicited awards in Canada and attention and comparison abroad.¹⁰ But a widespread aversion to economic topics during the colonial era has led to an imbalance in recent syntheses of the period.¹¹ Comparison with syntheses of two other contemporary gold-rush societies, California and Victoria colony, Australia, suggests that the historiography of colonial British Columbia on this head has become both exceptional and parochial.¹²

In our age of cost overruns, it is appropriate to begin a process of addressing cost-effectiveness rather than camels in evaluating the Cariboo Wagon Road. After clarifying the structure's name and extent, this paper collates the relevant British Columbia colonial accounts to establish a global government first cost of the project and compares this expenditure with the cost of goldfield roads in California and Victoria colony, Australia. It then engages with the theory and practice of megaproject analysis in two ways. First, it offers a brief comparison of select primary sources concerning the Cariboo Wagon Road with some of the very different documents that support studies of major projects in the postwar period. It then draws on elements in the growing planning literature concerning megaprojects that allow analysis within the constraints of the colonial sources. Such an endeavour illuminates some of the shortcomings and gaps in nineteenth-century calculations and understandings of the financial viability of the project.

Name

Colonial documents normally refer to what historians now describe as the Cariboo Wagon Road as simply the "goldfield roads" or "roads to the gold." Administrator A.N. Birch enumerated the "two rival Roads," the cost of which he lamented above, as the "Douglas-Clinton and Alexandria Road" and the

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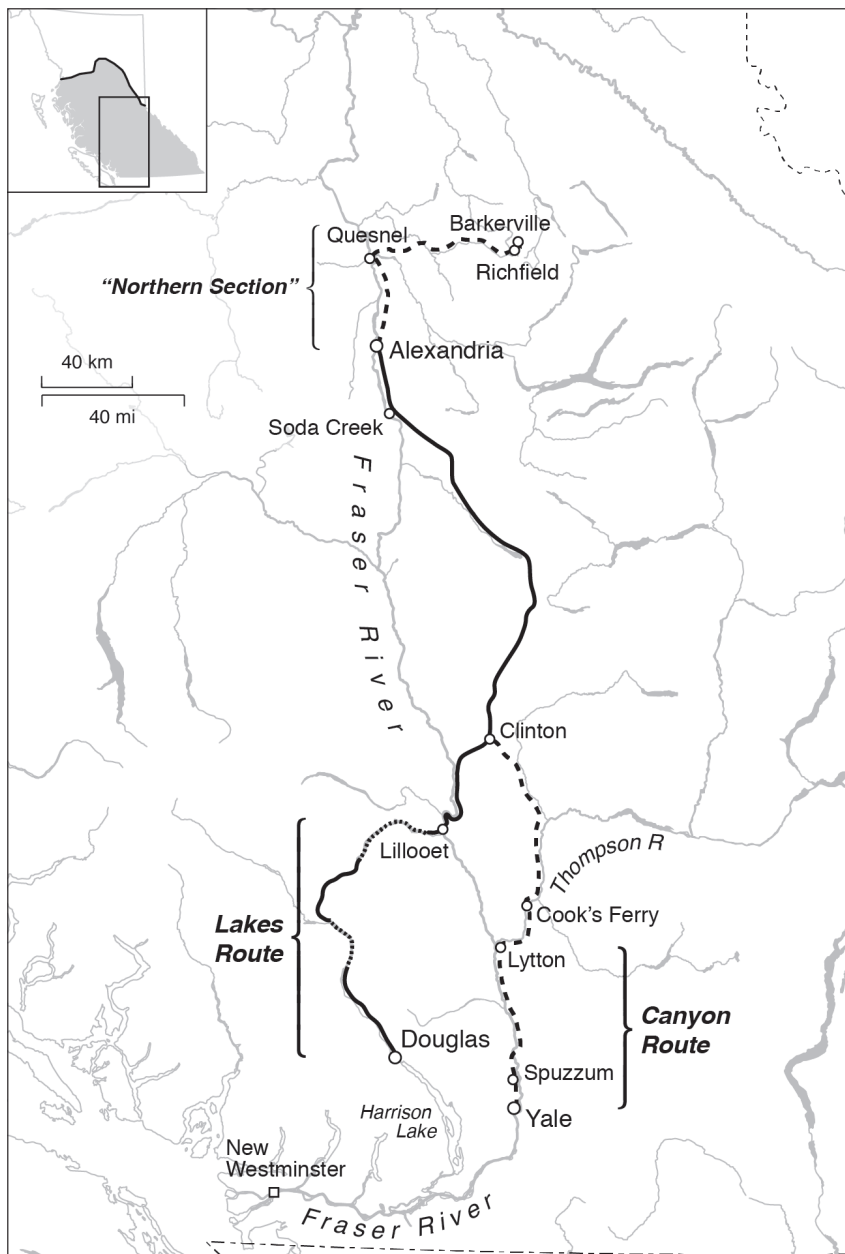


Figure 1: Cariboo Wagon Road, "complete," 1866. Source: Adapted from map that accompanies Douglas to Newcastle, 15 April 1862, 5571 60/13, in University of Victoria Libraries, Early BC Maps. <http://contentdm.library.uvic.ca/cdm/singleitem/collection/collection5/id/275/rec/3>. Cartography by Eric Leinberger.

“Yale-Clinton and Alexandria Road.” The inclusion of the Clinton-Alexandria leg in both roads was sarcastic; Douglas had earlier resorted to the ruse of two separate roads to Alexandria to cloak the enormous cost of the later, shorter, branch from Yale to Clinton, 136 miles (218 km), which I designate as the canyon route and its extension.¹³

At Clinton it joined the extension of an earlier constructed series of portage roads between three lakes from Douglas to Lillooet. Part of the cost of this projection was externalized by the operators of small steamers, packed north in pieces along the trail that preceded the wagon road and reassembled on the lakes. These vessels created delays in scheduling and increased cost, not only by tariffs but also by the necessity of transloading goods from wagons. However, a wagon road was completed on the portages and then extended north to Clinton before the end of 1862 on its way to Alexandria. This route, which I designate as the lakes route and its extension, garnered more northbound traffic than the canyon route until the middle of 1864. Birch reserved the label “Cariboo Wagon Road” to embrace both routes, the inverted “Y” with a common northern leg that extended, by the beginning of 1864, from Clinton to Alexandria (Figure 1).¹⁴

As silent partner on a section of the Yale-Clinton leg and principal contractor of the Alexandra Bridge that spanned the Fraser River canyon, Joseph Trutch benefitted from every wagonload on the new route.¹⁵ Appointed surveyor-general — the head of the colonial Department of Lands and Works, after the departure of the Royal Engineers — Trutch promoted the canyon route as the “trunk wagon road,” announcing that the completion of a bridge across the Thompson River near Cook’s Ferry allowed “loads [...] carried in wagons [to travel] from Yale to the Cariboo mines without breaking bulk.”¹⁶ The older road was now relegated to a branch.

In 1914, the most influential historian of the road, Frederic W. Howay, accomplished the change in designation, if not name, that Trutch had sought. In what remains the most substantial published account of the road, where contracts are rehearsed and costs calculated, Howay transformed the canyon

route into the "Yale-Cariboo wagon road."¹⁷ That conduit began at the head of navigation in the Fraser canyon, Yale, crossed the river at Spuzzum to Lytton, followed the Thompson River to Cook's Ferry, crossed and rose to Clinton on the Cariboo Plateau, returned to the Upper Fraser below Alexandria, followed the river again to Quesnellemouth (Quesnel), where it headed east along Lightning Creek to its official northern terminus at Richfield. To emphasize the canyon route's superiority over the lakes route, which he reduced to the "Harrison-Lillooet road," Howay inserted a facsimile of an 1863 broadsheet attack on the earlier conduit, apparently produced by some merchants and shippers in Yale. What became accepted as the label for the entire road was a shortening of his aspirational metaphor of the canyon route: "the great Cariboo wagon road — the Appian way of British Columbia."¹⁸

Distance

The Royal Engineers, a detachment of some 150 sappers with a handful of officers under the command of Col. R.C. Moody, were posted to the colony in 1858 by the secretary of state for the colonies "as pioneers in the work of civilization, in opening up the resources of the Country by the construction of Roads and Bridges."¹⁹ Celebrated by Howay and others as the prime builders of the Cariboo Wagon Road, they made surveys in the colony calibrated in units of one-hundredth of a mile.²⁰ In May 1859, for example, Lt. H.S. Palmer calculated the length of trail and lake travel from Douglas to Lillooet as 123.91 miles (199.37 km), of which the land segments comprised 68.15 miles (109.7 km).²¹ These precise calculations were not inserted into other official documents, however. Thus, the department specifications for the final short portage wagon road from Seton Lake to Lillooet on the lakes route, which Palmer had calculated as 3.70 miles (5.96 km), required only that the "commencement and termination of the road ... to be pointed out by the Chief Commissioner or his agent, and the route to be generally according to the line of blazed trees running on or deviating on either side of

the present mule trail.”²² Contracts provided no more detail, and plans or surveys were not attached. Though engineer-inspectors were to keep daily journals of the progress of road construction and make monthly reports to their commander, few have survived.²³ This imprecise method of location invited evasion and dispute, most notably in contractor Gustavus Wright’s deviation from Williams Lake to Deep Creek in his construction of the Lillooet-Alexandria road. While the surviving sappers’ reports illuminate in part the difference in location of the conflicting routes, there is no calculation of the difference in distance.²⁴

Completed contracts did not elicit a final official rendering of location and calculation of distance. Although contractors apparently placed mile posts on their sections, the Lands and Works Department made no record of their location or even number.²⁵ Before the road was completed, a returned Royal Engineer officer declared to a London audience that “400 miles (644 km) of excellent wagon roads” now led from Yale to Cariboo.²⁶ An express timetable book published in 1865 stated that the road distance from Yale to Williams Creek was 387 miles (623 km). The following year Trutch declared the distance of the road from Yale to the “heart of the mining district of Cariboo” to be 378 miles (609 km). In 1867 the governor echoed the engineer, reporting that he “drove, six in hand, from Yale . . . into Cariboo, about 400 miles (644 km),” which became the most repeated estimate of the distance of the Cariboo Wagon Road, probably because it was easiest to recall.²⁷ In the recent exhibition of the Royal Museum of British Columbia concerning the gold rush era, a panel on the Cariboo Wagon Road acknowledged the difficulty. “How long is the Cariboo Wagon Road? It is hard to say.”²⁸

Cost

Howay’s estimate of the total cost of the project, \$1,250,000, is incomplete because it excludes the cost of the lakes route and its extension to Clinton. But the distorted cost buttresses his tendentious conclusion that the governor deserved “unstinted praise” for his financial management of the project.²⁹ The two

most influential students of Douglas accept the estimate without query, respectively celebrating the ratio of debt that the governor undertook to complete the project as "eloquent," because it allowed the creation of a "great inland highway."³⁰

A tally of the 82 relevant line items in the Blue Books, the annual compendium of colonial statistics prepared and forwarded to London for the years 1859-66, leads to an calculation of £304,643 for the colonial expenditure on the two legs from Douglas and Yale, which met at Clinton and then extended to the gold camps in the Cariboo.³¹

One other expenditure must be addressed. Though virtually every contemporary observed that the Royal Engineers played an important role in the survey and construction of the road, the scattered surviving letters of officers and NCOs rarely enumerate the number of sappers on particular assignments and the duration of their labour.

The governor tried to elicit this information. The British treasury had long called for close differentiation between purchase of goods and labour from private merchants and government stores and public workmen, and circulated a form to do so.³² In 1861, the colonial secretary for British Columbia created a similar document that required the enumeration of Royal Engineers and civilian labourers employed on each project.³³ These forms, which the Lands and Works Department submitted monthly for the remainder of 1861 and at the end of 1862, provide the only surviving quantitative data for disposition of the Royal Engineers on road projects. Thus, it appears that approximately half the force, 70 sappers, worked on the Yale-Sailors Bar section (contract) of the canyon route for most of the 1862 season (May–November). For the periods before and after, we have only sporadic anecdotal evidence concerning their disposition. When Walter Moberly, recently appointed as government superintendent after his failure as a contractor, estimated the relative cost of goldfield roads to Sandford Fleming in 1863, he admitted that "the only chance of error ... is in the Royal engineers work."³⁴ Such vagaries made it difficult for the colonial government to recognize cost, let alone control it.

Accounts of the engineers frequently highlight the strained relationship between Douglas and Moody, which appears to lead to a tirade in which the governor declared that “the Royal Engineers are to BC what the Old Man of the Sea was to Sinbad,” and prayed to be relieved of this “costly ornament.”³⁵ However, the source of stress was largely financial rather than personal. As Douglas forwarded during the first half of 1858 enthusiastic reports of gold finds near the Fraser and Thompson Rivers without critical comment or reservation, Secretary of State Sir Edward Bulwer Lytton pounced on them to justify a policy of immediate self-sufficiency for the colony: “Any expenditure which the British Treasury shall have incurred on this account will have to be reimbursed by the Colony, as soon as its circumstances permit, and for which I have now to instruct you to make suitable provision.”³⁶ This declaration indicated that the colony would be liable for the entire cost of garrisoning the engineers in the colony from the outset. However, only for the financial year 1862–3 did the British government demand, and the colony pay, half the annual expenses, £11,000.³⁷ There is no evidence in the colonial statistics, or the printed British parliamentary papers, that the colony was charged for the cost of the engineers for the previous four years.

Thus, the total colonial expenditure on the road was £315,643, 22 percent more than Howay’s calculation when converted.³⁸

Comparison with Other Gold Rush Roads

The expenditure per mile on the Cariboo Wagon Road, ranging from £618 (\$3,000) for the entire structure (493 miles [794 km]) to £1981 (\$9,600) for the canyon section (57 miles [92 km]), invites comparison with the cost of resource roads in other contemporary gold rush societies, California and Victoria colony in Australia. Dwarfed by population and the value of gold extraction in the other two, British Columbia exceeded them, a decade after their respective rushes began, only in the length of its major conduit. The road was, indeed, a big deal in a small strike (Figure 2).

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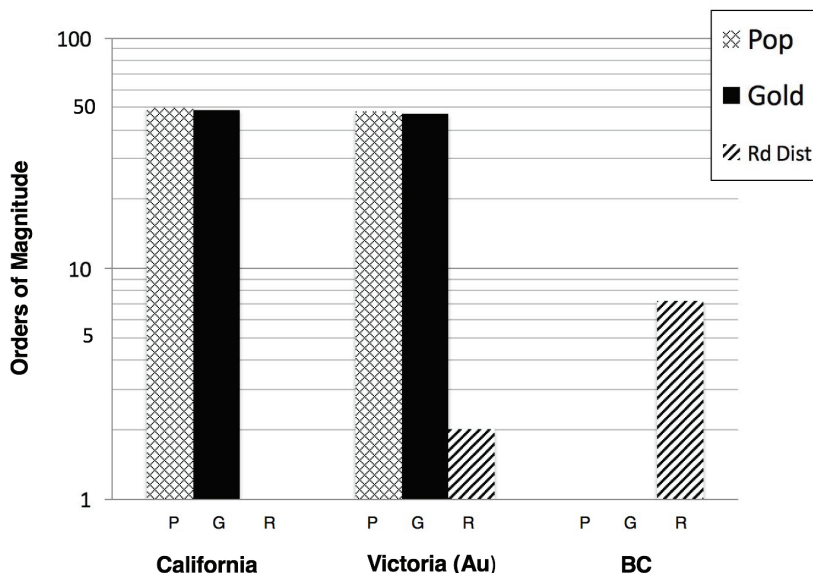


Figure 2: Population, Gold, and Road Distance during the First Decade of the Gold Rush: Comparison of Orders of Magnitude. Source: Population (European) - *US Census*, 1860, Population, 598–9; G. Serle, *The Golden Age: A History of the Colony of Victoria, 1851–1861* (Parkville: Melbourne University Press, 1963), 382; and J.D. Belshaw, *Becoming British Columbia: A Population History* (Vancouver: University of British Columbia Press, 2009), 39–40. Gold - Mary Hill. *GOLD: The California Story* (Berkeley: University of California Press, 1999), Table A 4, 263; Serle, 390; and BC, *Sessional Papers*, 1902, Report of the Minister of Mines, p. 921. Road distance: see below.

Comparison with California has been hindered, however, by the disposition of many students of western North America to view infrastructure development through the lens of teleological transcontinentalism. This approach regards bridging the continent as the ultimate, indeed inevitable, goal, and thereby justification, of major roads and railway projects in the nineteenth century. It has permitted historians to treat the construction of roads from Sacramento to the Sierra goldfields, the major conduit for supplies to the mines, as the insignificant “California End” of a vast overland transcontinental road system that accommodated and encouraged the great rush of migrants from east to west.³⁹ That a wagon road could be finished from

Sacramento to Placerville, a distance of 55 miles (89 km), and then extended an additional 150 miles (242 km) eastward in one season for \$36,000 suggests that a steady flow of emigrants westward had already prepared the route. The best-known eastward road project in the Sierras, the Dutch Flat Wagon Road, which extended 60 miles (97 km) from Newcastle toward Virginia City to forward supplies for the construction of the Central Pacific Railroad at a cost of \$200,000, is more notable as the alleged vehicle of a muckraking “Swindle.”⁴⁰ The cost per mile, \$3,300, was similar to that of the entire Cariboo Wagon Road, as mentioned above.

While the paucity of Overlanders who travelled west to the Pacific colony has discouraged a complementary interpretation concerning British Columbia goldfield roads, many accounts discern a transcontinental element in the Cariboo Wagon Road by alluding to its later service as part of the route and even the roadbed for the Canadian Pacific and Canadian Northern Railways. Ignoring that rail construction in the canyon demolished some of the wagon road’s most expensive structures — cribs and bridges — and that the completed railway created a series of obstacles to the road by crisscrossing its alignment, frequently without signage or risers, these studies imply that this belated use not only made the original road an important step in developing a transcontinental infrastructure, but also justified its high initial cost.⁴¹

In his controversial study of the development of transport in Australia, where railways acquired integrated transcontinental systems only in the later twentieth century,⁴² Geoffrey Blainey offers an overview of the particular economics of land transport that also illuminates the creation of British Columbia goldfield roads. He suggests that after the first Australian gold rush era of the 1850s, the purpose of railways was “not to link the ports [on different coasts] but to link each inland area with the nearest port.”⁴³ This very “untranscontinental” orientation also applies to both the roads that preceded railways to the diggings in Victoria colony and those that linked the interior gold fields in British Columbia with the coast.

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The final cost of the major goldfield road from Melbourne to Bendigo, approximately 110 miles, after five years' construction and improvement was declared as £678,688.⁴⁴ The cost per mile of the trunk road, approximately the same length as the canyon route in British Columbia, was £11,290. Exceeding estimates in an 1854 report by more than 65 percent, the per mile cost was more than five times that of the road from Yale to Lytton. But this expenditure produced a road 24 feet wide, which was macadamized or metalled, long considered a superior standard in Britain. Surpassing the "thoroughfare" in British Columbia in both width and surface, it carried freight estimated at more than 3,000 tons per week, more than half the yearly freight hauled north on the Cariboo Wagon Road during 1862, which saw the heaviest traffic.⁴⁵ Furthermore, in a colony with a rapidly growing European population, the Victoria government oversaw increasing streams of revenue from not only gold export taxes, but also land sales, and had little difficulty in covering the road expenditure.⁴⁶

Megaproject Sources

The term "megaproject" apparently appeared in print for the first time during the later 1970s, when it described, among others, Canadian ventures such as the James Bay Project and the Alberta oil sands.⁴⁷ As many have observed, there is no universal definition of the term that can apply to different types of projects in different eras.⁴⁸ Clearly, those undertakings of the postwar era described as megaprojects were much larger in size, complexity, and cost than the Cariboo Wagon Road. More important here, the range, extent, and variety of documents that scholars can access to analyse these recent projects are much greater than those of the colonial documents. A brief review of key sources examined by three students of postwar megaprojects in British Columbia serves as a foil that illuminates some of the limits of documentation concerning the Cariboo Wagon Road.

In a chapter of an ambitious book, Joy Parr explores the accounts, and the feelings, of residents displaced by the construction of the High Arrow Dam (now Keenleyside Dam) during

the 1960s.⁴⁹ Perhaps most striking in Parr's approach is her call to "those who were there' for help writing their histories."⁵⁰ To do so, she creates and attaches a digital archive described as part of the Megaprojects New Media Series, which contains photographs and audio as well as written reminiscences of two families that were displaced.⁵¹

During the 1860s in British Columbia, "those who were there" who were ultimately displaced by the traffic, if not the construction, of the Cariboo Wagon Road were the Indigenous communities located on or near its two routes, particularly after the devastating smallpox epidemic of 1862.⁵² It is tempting to regard the most visible conflict between the original inhabitants and settlers, the Tsilhqot'in Resistance, or Chilcotin War, as a consequence of the construction of the Cariboo Wagon Road since an attack on a road building camp near Bute Inlet in 1864, frequently described at the time as a "massacre," appeared to precipitate the conflict. But the disease probably preceded construction along the trails of this small, belated gold road project which had little financial support from the government and logistical connection with the major construction thrust in the interior.⁵³ Most sources that have survived concerning the conflict stem from documentation of the trial of the Indigenous leaders, not the construction of the road.⁵⁴

Closer in time and space to the Cariboo Wagon Road is a petition from settlers in Douglas in early 1862 that requested officials "to give [Indians] whatever necessary medical attendance they may need, and to keep the Indians (as far as possible) from having an unnecessary intercourse with the white population." The following year, a broadsheet denigrated the Douglas route because of "smallpox there, but don't hurt white men, only kills Indians."⁵⁵ Clearly these scattered documents, which reduce Indigenous people to the Other, do not resonate with Parr's approach.⁵⁶

In a series of articles, Tina Loo refines and sometimes challenges elements of anthropologist James C. Scott's notion of "high modernism" in an analysis of postwar dam building in the Peace and Columbia River systems.⁵⁷ For Loo, as for Scott, megaproject

planning at the highest level is centralized, informed by a way of seeing, "a synoptic or bird's eye view," that makes it "possible to imagine and implement grand and even quixotic plans . . . without the messy detail of context."⁵⁸

Perhaps the only "map" concerning the Cariboo Wagon Road that compares in intent, if not scale and scope, with Loo's example of the "power trench" plan which conjured a series of reservoirs along the Rocky Mountain Trench to generate hydro-electricity, is Moody's hurried creation in March 1862 of a "programme" of some 19 separate contracts for a grid of roads across the entire colony, in response to the governor's peremptory demand for communication with the Upper Country.⁵⁹ Much of the grid was not realized in the colonial period.

Besides grand planning, Loo points to the important role in megaproject realization of "high modernist local knowledge," which, though mobile, was rooted in "an exceptionally close and astute observation of the environment," such as the investigations of a soils engineer on the Portage Mountain Dam.⁶⁰ For "local knowledge" of the northern part of the colony, one turns frequently to the reports and cartography of Judge M.B. Begbie, who was a perceptive observer of the land through which he travelled on circuit.⁶¹ Lieutenant Palmer, who directed most Royal Engineer surveys and explorations, reacted to Begbie's unsanctioned activities with appropriate high modernist hubris. He complained to Moody that "the arch enemy must be shut up. He has no business to be mapping when there are REs in the country."⁶²

While the documents above might be considered as rudimentary examples of high modernism, one must stretch to regard the construction work of the Royal Engineers as a display of "scientific expertise and rational planning."⁶³ The maps and reports of RE surveys and explorations certainly indicate engineering competence.⁶⁴ However, in the few surviving documents that illuminate parts of the construction process of the Cariboo Wagon Road, it is difficult to describe the organization of road building as particularly modern, let alone "high modernist," even by the standards of the day.⁶⁵

In a recent study of a series of major projects in northwest British Columbia, Jonathan Peyton uses the term “unbuilt environment” to highlight the “environmental and social side effects of planned but unrealized megaprojects that were conceived as development schemes.”⁶⁶ Peyton’s theme of failure certainly resonates with the argument here concerning the Cariboo Wagon Road. What allows him to make his case for the failure of a transportation infrastructure project, in this instance, the Dease Lake Extension, is a large inventory of technical reports on project outcomes that justified its abandonment.⁶⁷

Like the sources concerning smallpox discussed above, the limited construction documents concerning the Cariboo Wagon Road contain few accounts of its environmental impact as well as of its social effects. For example, there is no record of a tally of explosives used or quantities (of earth and rock) moved in the blasting carried out by Royal Engineers in the Fraser Canyon in 1862 and the Thompson Canyon in 1863. It is no surprise, then, that the effect of these actions on the salmon run is not recorded, as was the case during the construction of the Canadian Northern Railway fifty years later.⁶⁸

The shortcomings of the documents concerning the Cariboo Wagon Road in the comparisons above stem in large part from a peculiar constraint of the major source, which limits all research. The largest trove of official documents of the colonial government, the “Colonial Correspondence,” now organized in the British Columbia Archives (BCA) as a government record group, GR-1372, has significant gaps in documentation of the (mainland) Colony of British Columbia during Douglas’ tenure as governor until 1864. Though Douglas made inspection tours of the mainland every year, he resided in Victoria, and most correspondence in GR-1372 comprises only those documents that were forwarded to him in the island colony, usually through the colonial secretary for British Columbia, who also resided in Victoria. The site that held most documents concerning the planning and construction of the Cariboo Wagon Road was the office of the Department of Lands and Works in New Westminster. The bulk of these documents, which were not moved to the capi-

tal when Britain combined the colonies in 1866, was destroyed sometime later.

Rather than speculate on the Cariboo Wagon Road's resonance, or lack thereof, with analyses of postwar megaprojects based on documentation that is simply not accessible here, it makes more sense to employ a theory resting on documents similar to those series that have survived in their entirety in this case. These complete sources are the colonial statistics, or Blue Books, which allow the calculation of the cost of the project above, and the colonial dispatches, the official correspondence between the governor and the secretary of state for the colonies in London, which includes enclosures and minutes (evaluations by London officials of each of Douglas' letters).

Megaproject Characteristics

In one of the broadest studies to date, Bent Flyvbjerg and others analyse data concerning 258 "major projects" worldwide during the period 1927–98 to identify a series of factors that led in most cases to cost overrun, which the authors regard as part of a pathology of megaproject planning.⁶⁹ Though their focus and research methods are decidedly ahistorical, their inferences, as well as their database, rest in part on examination of historical data. Recently Flyvbjerg claims that this approach can also illuminate the analysis of infrastructure projects of the 1860s, such as the construction of the first American transcontinental railroad and the Suez Canal.⁷⁰ His ideas have recently been applied in a detailed case study of a major project in India during the 1870s.⁷¹ An examination of the documents concerning the Cariboo Wagon Road in the complete series set out above reveals several elements that Flyvbjerg suggests are characteristic of most megaprojects.

To embrace and compare projects from the mid-nineteenth century through the early twenty-first century, where costs rise from millions to tens of billions of dollars, one needs a threshold of definition for the megaproject that is relative rather than absolute. Such a threshold could be the ratio of the cost of the project

to an appropriate “measuring rod,” a sum that is central to the financial activity/survival of the state, corporation, or community that undertakes the work.⁷²

Although financial data for the Cariboo Wagon Road and the society in which it was constructed are limited, one can calculate a ratio based on one such “measuring rod:” global colonial expenditure. Expenditure on the Cariboo Wagon Road and the trails that preceded it during the years 1859–65 absorbed 27.8 percent of the global colonial expenditure during that seven-year period. In 1862, the year of greatest expenditure, the road represented 45 percent of the global budget. In Flyvbjerg’s only detailed case study of a megaproject within a single jurisdiction, the Danish Great Belt Fixed Link, which tied the eastern island of Zealand to the mainland, the cost of the project over 11 years of construction represented less than one percent of total government expenditure during the same period.⁷³ By this measuring rod, then, the Cariboo Wagon Road crosses the threshold of definition as a megaproject.

Cost overrun requires comparison of expenditures with *ex ante* estimates. As part of its financial reporting to the Colonial Office, each colony was required to submit not only the colonial statistics, a measure of what had occurred during the previous financial year, but also estimates of expenditure for the following year. Only near the end of 1861 did the governor choose to submit the colony’s first estimate for the following year. It has not survived, but we have a revealing response of an exasperated official in London: “The fault of these estimates is that they furnish no detail whatsoever on such services as ... Roads, amounting to £31,749. ... These heads of expenditure which most demand scrutiny and deserve explanation are exempted by Douglas from all supervision by means of his merely stating them in a single large sum.”⁷⁴ In the 1862, the year of greatest spending on roads, the actual colonial expenditure on this head was some £ 92,000. The resulting cost overrun of 290 percent exceeds that of all the 167 road megaprojects that Flyvbjerg examines.⁷⁵

Bias of promoters is one of the factors that Flyvbjerg suggests leads to cost overruns.⁷⁶ In the early part of 1861, the

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residents of Yale and Lytton embarked on a concerted campaign to convince the governor that a wagon road through the canyon, rather than a mule trail, was essential to the comfort and security of the miners in the Upper Country, and the prosperity of the colony. The arguments in the eight petitions to the governor that survive, which rehearsed the canyon route's superiority to the lakes route, were neither novel nor, without huge expenditure, convincing. Among the signatures on most of these documents were those of merchants Cook and Kimball, the leaseholders of Cook's Ferry across the Thompson River, and Charles Oppenheimer and Thomas Lewis, principals in the first Lytton-Alexandria Road contract. In March, the Lytton gold commissioner informed Douglas that "If it is contemplated to make a road similar to the road between Yale and Boston Bar, ... a road wide enough for wagons should be made," and suggested that it would not be more expensive than rerouting the existing mule trail, to which the governor added the following gloss: "I approve of your suggestion of forming a wagon road. ... It is an object which the country requires and must ultimately be done."⁷⁷ Col. Moody, the commander of the Royal Engineers, recognized the bias. "[The governor's] policy is evidently to leave ... the individuals from whom proposals may be received to say whither they want the roads to go, ... These individuals are only individually, not publicly, interested, and the system will not give H[is] E[xc]ellency or the public the satisfaction he appears to expect."⁷⁸

Optimism bias, or planning fallacy, describes the general characteristic of managers to overestimate benefits and underestimate costs of megaprojects.⁷⁹ This feature illuminates some of the reports and rationalizations of Douglas, who served as chief advocate, as well as prime mover, for the Cariboo Wagon Road. During more than 35 years' service in the Hudson's Bay Company, he had acquired a reputation as an astute businessman, which the Colonial Office accepted by appointing him governor of both its Pacific colonies. Like his superiors in London, he was aware of the cyclonic nature of earlier gold rushes, perhaps more in Australia than in California, since he corresponded with the

governor of Victoria colony five years after its rush had commenced. During 1859 and 1860 Douglas dutifully reported declines in Fraser River mining activity and the departure of many miners from the site of the first British Columbia rush.⁸⁰

It is, therefore, astounding that the governor forwarded to the Colonial Office in 1861 a series of sensational anecdotes concerning the extent of gold discovered in the Cariboo without any comment on their reliability. When he received early reports of strikes along Antler Creek in the Cariboo in the spring of 1861, Douglas breathlessly informed the Colonial Office that “Every successive discovery tends to confirm the impression that the Gold Fields which have been struck at Rock Creek and Caribou are but two points in a range of auriferous mountains containing incalculable wealth for a total distance of 330 miles. This theory, ... if correct, opens a magnificent vista of future greatness for the Colony.”⁸¹ The colony had no ability to confirm or discard this “theory.” Unlike Victoria colony, the only formal mineralogical survey in British Columbia was carried out along the shores of the lakes route in 1860 by a Royal Navy surgeon with an interest in rocks.⁸²

Near the end of the year, Douglas restrained himself no longer. He wrote, “The reports that have gone abroad, backed as they have been by the production of the gold, proclaim [Cariboo] District as the richest gold field yet known in the world.” As proof, he offered from his “travelling Note Book” vignettes of eleven Cariboo miners, one of whom was “taking it out by the mule load.”⁸³ Comparison of the orders of magnitude of gold production estimates with California and Victoria, above, reveals that Douglas’ boast, while alluring, proved as inaccurate as the 1858 published map of “The New Eldorado,” which placed Yale on an extensive plain, more than halfway to Alexandria.⁸⁴

Traffic

Along with cost overruns, one of the central characteristics of modern infrastructure megaprojects is the general failure of demand forecasting, the accurate prediction of traffic levels. The

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total volume of freight headed north, the direction of most traffic on the Cariboo Wagon Road since only people and gold headed south, can be calculated from the revenue of toll stations that Douglas set up at the end of 1860. This northbound freight was greatest in 1862, some 18 months before the completion of the canyon route. More troubling for the financial viability of the project was the constant decline of traffic on the road after this year (Figure 3).

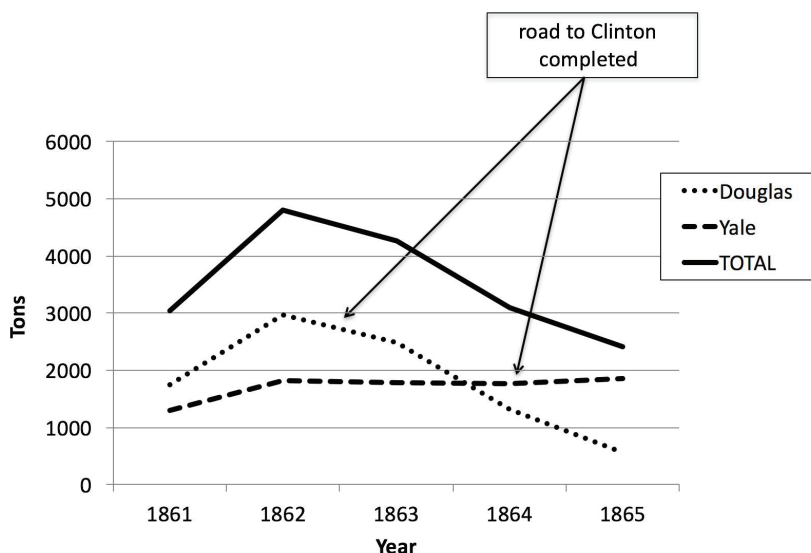


Figure 3: Comparison of Freight Volume – North. Source: BCA, GR-1372, Tolls.

The decline in the volume of lakes route freight in 1864 and 1865 stemmed in part from the decrease in repair work on that section, which received only a quarter of the sum expended on the canyon route. This unequal apportionment of funds for repair was hardly surprising since Trutch, the new head of the public works department, had built and collected tolls for the Alexandra Bridge in the canyon route. Despite an apparent divestment, he continued to benefit financially from every wagon on that route.

Returns from road tolls were no less bleak. By the end of 1862 the cumulative toll revenue did not cover even the relatively modest expenditure two years earlier on ordinary roads and mule trails on the lakes and canyon routes. Douglas predicted that

revenue from road tolls would double in 1863 from the previous year; it increased only because he doubled toll charges in April of that year with, he claimed, the “consent of the majority of the inhabitants,” for which there is no evidence (Figure 4).⁸⁵

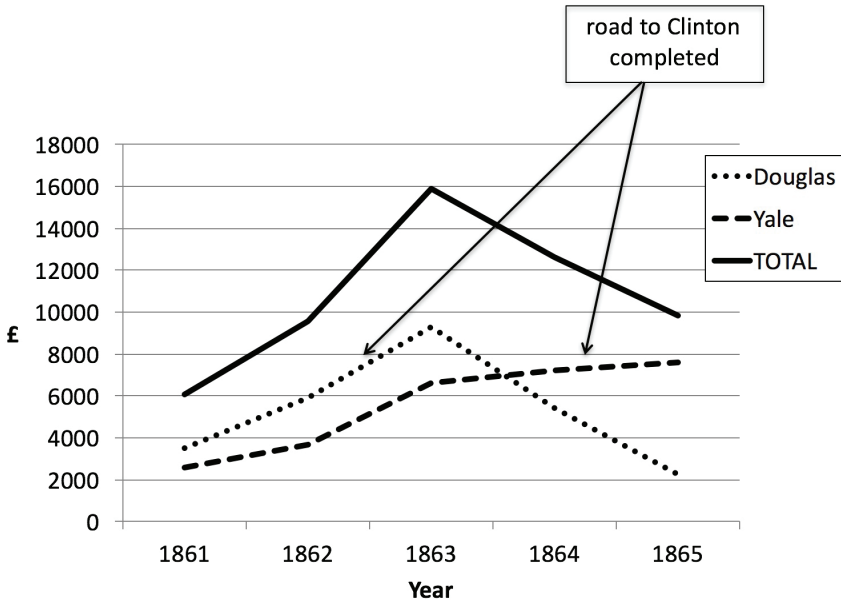


Figure 4: Comparison of Receipts – North. Source: BCA, GR-1372, Tolls.

Conclusion

For the Cariboo Wagon Road, the largest infrastructure project in colonial British Columbia, this study first suggests the origin of its name, estimates its distance, and calculates a total colonial government expenditure, 22 percent higher than the traditional estimate. It then compares the cost of this road with major conduits to the diggings in two contemporary gold rush societies, California and Victoria colony in Australia.

The gaps in colonial documentation make it difficult to compare the Cariboo Wagon Road with postwar megaprojects in British Columbia. However, adapting the megaproject “measuring rod” of Bent Flyvbjerg leads to a ratio of project expenditure that crosses the threshold for definition as a megaproject. In

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Douglas' reports to the Colonial Office and in the petitions he received, one detects not only cost overrun, but also optimism bias, promoter bias, and the failure of demand forecasting, elements of megaproject pathology according to Flyvbjerg. The calculation of northbound traffic on the Cariboo Wagon Road supports a case that a canyon road of lesser capacity, an ordinary wagon road (12 ft. [3.7 m] wide) rather than a thoroughfare, if not the original mule trail, would have been sufficient to transport excess freight that the lakes route could not accommodate.

In an early account of the Royal Engineers, Howay first describes the Cariboo Wagon Road as "a work [that] ... British Columbians may claim to be the eighth wonder of the world." Repeated in his detailed study, the claim suggests that Howay recognized that the extent, cost, and complexity of this project made it altogether different from other colonial works — a megaproject, even if rudimentary, before the term was coined.⁸⁶ But his verdict also epitomizes the romantic view of the project that still resonates, and obscures.⁸⁷ It rests on a handful of documents "whose impressions, endlessly reprinted, have been arranged to suit the purposes of whomever is writing."⁸⁸ To "unromance" the road, to discern the contours, and the flaws, of British Columbia's first megaproject, we must run the documentary tailings of bureaucracy and finance, which have been too long ignored, through an improved sluice box of theory.

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transcontinentales canadiennes et américaines au terminus de leur emplacement respectif sur la côte du Pacifique, ainsi que dans les communautés de la région reposant sur les services, entre 1865 et 1930.

Endnotes

- 1 Brad and Beverly, Grade 5 report, http://www.dragon.sd28.bc.ca/siemens/Building_Our_Province/Cariboo_Wagon_Road.html <viewed 21 August 2014>.
- 2 For a sympathetic review of the governor's activities that made him celebrated, see Margaret A. Ormsby, "DOUGLAS, Sir JAMES" in *Dictionary of Canadian Biography*, vol. 10, University of Toronto/Université Laval, 2003, <viewed 27 April 2014> http://www.biographi.ca/en/bio/douglas_james_10E.html. The commitment to, and the expense of, the thoroughfare was abandoned when Douglas retired. Contracts let from Alexandria north to Richfield in the Cariboo goldfield specified an "ordinary" road only 12 ft. (3.7 m) wide with bypasses every 200 yards (183 m).
- 3 From the beginning of 1861, when news of gold strikes in the Cariboo reached the governor, to April 1864, when Douglas retired as governor, a crude word frequency tally suggests that the word "road" or its variants appeared in almost as many of Douglas' dispatches to the Colonial Office (57), as did the word "gold" (58). The calculation rests on searches of CO 60, the PRO designation of the Colonial Office dispatches of British Columbia, within the database, University of Victoria, *Colonial Despatches: The Colonial Despatches of Vancouver Island and British Columbia 1846-1871*, <http://bcgenesis.uvic.ca/index.htm> (hereafter *CD*), setting governor = author.
- 4 Douglas' activities concerning Indigenous people, which included his own family, represent the most obvious example of an element of the governor's policies that has attracted continued academic interest for half a century. Major studies of aspects of this topic include Robin Fisher, *Contact and Conflict: Indian-European Relations in British Columbia, 1774-1890* (Vancouver: University of British Columbia Press, 1977); Paul Tennant, *Aboriginal People and Politics: The Indian Land Question in British Columbia, 1849-1989* (Vancouver: University of British Columbia Press, 1990); Cole Harris, *Making Native Space: Colonialism, Resistance and Reserves in British Columbia* (Vancouver: University of British Columbia Press, 2002); and Adele Perry, *Colonial Relations: The Douglas-Connolly Family and the Nineteenth-Century Imperial World* (Cambridge: Cambridge University Press, 2015).

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- 5 CD, Extract from letter to John Lindley, dated 11 January 1863, enclosed in Lindley to Duke of Newcastle, 18 March 1863, 60 /16.
- 6 CD, A.N. Birch, Administrator for Governor Frederick Seymour, to E.N. Cardwell, 9 July 1866, 8284 60 / 25.
- 7 Images of the road and the communities at its northern end, created by Dally and his contemporary, Carlo Gentile, have frequently appeared in narrative surveys of the province, including F.W. *Howay, British Columbia from the Earliest Times to the Present*, vol. 2 (Vancouver: S.J. Clarke Publishing Company, 1914); M.A. Ormsby, *British Columbia: A History* (Toronto: Macmillan, 1958); and even graced the cover of an earlier edition of the most influential recent academic overview, Jean Barman, *The West Beyond the West: A History of British Columbia*, 3rd ed. (Toronto: University of Toronto Press, 2006). For an astute analysis of attempts to historicize and romanticize what an auto enthusiast described as the "new Cariboo Road," the provincial highway constructed "on the very bones of the gold road," from Hope to Quesnel and its rudimentary extension to Barkerville during the period 1925–32, see Ben Bradley, *British Columbia by the Road: Car Culture and the Making of a Modern Landscape* (Vancouver: University of British Columbia Press, 2017), 115–49, quotations 119, 120.
- 8 For exotic transport, see Howay, *British Columbia*; M.S. Wade, *The Cariboo Road* (Victoria: Haunted Bookshop, 1979); and Art Downs, *Wagon Road North: Saga of the Cariboo Gold Rush* (Quesnel, BC: Northwest Digest, 1960), which the publisher claims has sold 144,000 copies in reprints and new editions.
- 9 Of course, there was an intricate system of transportation corridors that preceded the construction of the Cariboo Wagon Road. On the Indigenous trails, and the Hudson's Bay Company's elaboration of them, see Kenneth C. Favrholt, "The Cordilleran Communication: The Brigade System of the Far Western Fur Trade" (M.A. thesis, University of British Columbia, 1997).
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- nial period include P. Edmonds, *Urbanizing Frontiers: Indigenous Peoples and Settlers in 19th-Century Pacific Rim Cities* (Vancouver: University of British Columbia Press, 2010); Robert Hogg, *Men and Manliness on the Frontier: Queensland and British Columbia in the Mid-Nineteenth Century* (London: Palgrave Macmillan, 2012); Christopher Herbert, “White Power, Yellow Gold: Colonialism and Identity in the California and British Columbia Gold Rushes, 1848–1871” (Ph.D. diss., University of Washington, 2012); and Kenton Storey, *Settler Anxiety at the Outposts of Empire: Colonial Relations, Humanitarian Discourses, and the Imperial Press* (Vancouver: University of British Columbia Press, 2016). Daniel P. Marshall, “Claiming the Land: Indians, Goldseekers, and the Rush to British Columbia” (Ph.D. diss., University of British Columbia, 2000), explores the activities of California immigrants and the influence of California ideas in the development of British Columbia during this period.
- 11 P.F. Palmer, “A Fiscal History of British Columbia in the Colonial Period” (Ph.D. diss., Stanford University, 1932), is vitiated by a general reluctance to deploy (use?) quantitative data from the Blue Books, the official annual colonial accounts sent to London for audit and review by Colonial Office bureaucrats. P.A. Phillips, “Confederation and the Economy of British Columbia” in *British Columbia and Confederation*, ed. W. Shelton (Victoria: University of Victoria, 1967), 41–67, draws most of his data from a Canadian pamphlet published in 1867. Cole Harris recently observed that “a sustained analysis of the colonial economy [of British Columbia] is not yet in the literature.” *The Reluctant Land: Society, Space, and Environment in Canada before Confederation* (Vancouver: University of British Columbia Press, 2008), 447.
- 12 A review of the four-volume California History Sesquicentennial Series, published by the University of California Press from 1998 to 2003, reveals articles in each volume on elements of economic development (and class). In volume 1 of *The Cambridge History of Australia* (Cambridge: Cambridge University Press, 2013), many chapters deal with colonial economics as well as social and cultural topics. In contrast, notes for the chapters concerning the colonial period in two recent British Columbia history textbooks indicate that the authors referred to few recent academic studies of economic development. Jean Barman, *The West Beyond the West*, and Patricia E. Roy and John H. Thompson, *British Columbia: Land of Promises* (Toronto: Oxford University Press Canada, 2005).
- 13 On Douglas’ attempts to obscure the cost of road building and the role it played in the Colonial Office’s decision to “relieve” him of his post as governor, see F. Leonard, “Colonial Road Warrior: James Douglas and the Obfuscation of the Cariboo Wagon Road,” paper presented at the Canadian Historical Association, Annual Meeting, St. Catherines, 26-8 May 2014.

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- 14 CD, Birch to Cardwell, 9 July 1866, 8284 60 / 25.
- 15 Robin Fisher, "TRUTCH, Sir JOSEPH WILLIAM" in *Dictionary of Canadian Biography*, vol. 13, University of Toronto/Université Laval, 2003–, <viewed 27 April 2014> http://www.biographi.ca/en/bio/trutch_joseph_william_13E.html, does not discuss in detail his activities as a contractor.
- 16 BC, Lands and Works Department, *Report of the Operations of the Lands and Works Department of British Columbia in the year 1865* (New Westminster, 1866), 3.
- 17 *Howay*, British Columbia, 177.
- 18 *Howay*, *British Columbia*, quotation 97. The facsimile broadsheet, "High Toned and Elegant Route to the Cariboo!" undated, follows p. 107.
- 19 CD, Sir Edward Bulwer Lytton to Douglas, 16 October 1858 (LAC / 259 / RG7 / G8C/6 / 30). On Moody, see Margaret A. Ormsby, "MOODY, RICHARD CLEMENT" in *Dictionary of Canadian Biography*, vol. 11, University of Toronto/Université Laval, 2003–, <viewed 27 April 2014> http://www.biographi.ca/en/bio/moody_richard_clement_11E.html.
- 20 F.W. Howay, *The Work of the Royal Engineers in British Columbia, 1858 to 1863* (Victoria: R. Wolfenden, 1910); Beth Hill, *Sappers: The Royal Engineers in British Columbia* (Ganges: Horsdal & Schubart, 1987).
- 21 Lt. H.S. Palmer, "Reconnaissance of the Harrison and Lillooet Route to the Upper Fraser, 1 July 1859," printed in UK, *Parliamentary Papers* (hereafter *PP*) 1860 (2724), p. 49. For slightly different estimates of distances, see inset table, Gustavus Epner, "Map of the Gold Regions in British Columbia," 1862.
- 22 British Columbia Archives [hereafter *BCA*], GR -1372, F963(b)1/4, Lands and Works Department, Specifications, Wagon Road, Seton to Cayoosh, 17 April 1861.
- 23 *BCA*, C/AB/30.6J/1, BC - Royal Engineers, Correspondence Outward, July 1861–October 1864, Moody, Circular, May 1862.
- 24 J.R. Wardrop, "Gustavus Blinn Wright: Colonial Entrepreneur" (Extended Research Paper, History, University of Victoria, 1979).
- 25 B.C. Patenaude, *Trails to Gold*, vol. 1 (Victoria: Horsdal & Schubart, 1995), 122–3.
- 26 H.S. Palmer, "The Geography of British Columbia and the Condition of the Cariboo Gold District," *Royal Geographical Society Proceedings*, 14 March 1864, 90.
- 27 *Guide Book of the Pacific: Containing the Time and Distance Tables, Rates* (San Francisco: Sterling M. Holdridge, 1865), 165; BC, *Report of the Operations*, 3; CD, Seymour to Buckingham, 30 November 1867, 1210 60 / 29.
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- 31 On the evolution of the Blue Books, see Bruce Curtis, “The Canada ‘Blue Books’ and the Administrative Capacity of the Canadian State, 1822–67,” *Canadian Historical Review* 74, no. 4 (December 1993): 539–65.
- 32 UK, PP 1847 (740) Colonies. Return ... in a tabular form of the gross revenues, under their different heads, of each of Her Majesty’s colonies..., pp. 21, 188.
- 33 BCA, C/AB/30.1J/9, B-4718, Colonial Secretary to L&W 1860–63, Colonial Secretary to Moody, 1 April 1861.
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- 35 Governor James Douglas, V.I., Correspondence Outward, 27 May 1859 – 9 January 1864, Private Official Letter Book, Douglas to T.F. Elliott, private, 17 April 1863.
- 36 CD, Lytton to Douglas, 2 September 1858, LAC, RG7, G8C/6, p. 64, CO 398/1, p. 60.
- 37 CD, Newcastle to Douglas, 22 February 1862 (CO / 398 / 2 / 23 / 104).
- 38 This calculation does not include colonial government expenditures made during 1858 and 1859 on trails and rudimentary “horse roads” for which there are no precise entries in the Blue Books. It also does not embrace expenditures by other parties. These include the steamers on the lakes between Douglas and Lillooet, the bridges at Spuzzum and Cook’s Ferry, and the cable ferries that preceded them.
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- 40 Howard, 171–2.
- 41 Perhaps the most unrestrained celebration of the interweaving of railway and road in the Fraser Canyon, with little awareness of how it compromised the latter, is A.C. Laut, *The Cariboo Trail: A Chronicle of the Gold-fields of British Columbia* (Toronto: Glasgow, Brook & Co., 1916), 99–100. Less enthusiastic accounts of the railway superimposition upon the road include BCA, G/C19/B77h, BC, Department of Public Works, “Brief History of Cariboo Road in its Relationship to the Construction

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- 42 Though sections with different gauges were completed long before, the east-west India Pacific Railway was completed as a transcontinental single gauge line only in 1969. Tracks of the north-south Ghan Railway reached Darwin in 2004.
- 43 Geoffrey Blainey, *The Tyranny of Distance: How Distance Shaped Australia's History* (Melbourne: Sun Books, 1966) 244, 247.
- 44 Victoria, *Votes and Proceedings of the Legislative Council and Assembly during the Session 1856-7*, C24, "Roads and Bridges," 3.
- 45 Victoria, *Internal Communication: Report of the Commissioners Appointed to Enquire into the Best Mode of Providing for the Internal Communication of the Colony* (Melbourne: John Ferres, Government Printer, 1854), 4, 54. On the influence of John Loudon McAdam's "General Rules" on British road building, see Jo Guldi, *Roads to Power: Britain Invents the Infrastructure State* (Cambridge, M.A.: Harvard University Press, 2012), 53–6.
- 46 Geoffrey Serle, *The Golden Age: A History of the Colony of Victoria, 1851–1861* (Parkville: Melbourne University Press, 1963), 235.
- 47 Alan Altshuler and David Luberoff, *Mega-Projects: The Changing Politics of Urban Public Investment* (Washington, D.C.: Brookings Institution Press, 2003), 2.
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- 50 Joy Parr, Jessica Van Horssen, and Jon van der Veen, "The Practice of History Shared Across Differences: Needs, Technologies, and Ways of Knowing in the Megaprojects New Media Project," *Journal of Canadian Studies/Revue d'études canadiennes* 43, no. 1 (Winter 2009): 35-58.
- 51 <http://megaprojects.uwo.ca/arrowlakes/>.
- 52 Robert Boyd, *The Coming of the Spirit of Pestilence: Introduced Infectious Diseases and Population Decline among Northwest Coast Indians, 1774–1874* (Vancouver: University of British Columbia Press, 1999), 172–201, deals with the epidemic largely on the Coast.

- 53 Lutz, *Makuk*, 132–3. For a brief account of the epidemic in the interior, see B.K. Plant, “‘The Most Dreadful Scourge to which the Human Race is Subject:’ The 1862-63 Smallpox Epidemic and Aboriginal People in British Columbia” (Honours Thesis, History, University of Victoria, 2000).
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- 55 Petition, 18 January 1863, enclosed in J.B. Gaggin to Colonial Secretary, 19 January, 1863, BCA, GR-1372, F622. The facsimile broadsheet, “High Toned and Elegant Route to the Cariboo!” undated, follows Howay, p. 107.
- 56 For a classic formulation of the notion of the Other, see Edward Said, *Orientalism* (New York: Vintage Books, 1979), 1. Perhaps the only academic work on an element of the Cariboo Wagon Road that responds to Parr’s call to help the “people who were there” create their history, is a study of the first portage road section on the Lakes Route between Douglas and Lillooet Lake, which deploys symmetrical archaeology rather than the concept of the megaproject. See Erin Gibson, “Movement, Power and Place: The Biography of a Wagon Road in a Contested First Nations Landscape,” *Cambridge Archaeological Journal* 25, no. 2 (May 2015): 417–34.
- 57 “‘People in the Way:’ Modernity, Environment, and Society on the Arrow Lakes,” *BC Studies* 142-3 (Summer-Autumn 2004): 161–96; “Disturbing the Peace: Environmental Change and the Scales of Justice on a Northern River,” *Environmental History* 12, no. 4 (2007): 895–919; Loo with Meg Stanley, “An Environmental History of Progress: Damming the Peace and Columbia Rivers,” *Canadian Historical Review* 92, no. 3 (September 2011): 399-427; Tina Loo, “High Modernism, Conflict, and the Nature of Change in Canada: A Look at Seeing Like a State,” *Canadian Historical Review* 97, no. 1 (Spring 2016): 34–58. The most recent article makes a larger argument about the utility and limits of Scott’s approach for historians. Scott’s book, *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, CT: Yale University Press, 1998), explores a series of failed social engineering schemes from the eighteenth- to the mid-twentieth centuries. Like Parr, both Scott and Loo regard modern dam building as an example of the megaproject.
- 58 Loo with Stanley, “Environmental,” 402.
- 59 *Ibid.*, 402, map, 403. BCA, GR-1372, F 930, Moody to Colonial Secretary, 12 March 1862. The original map that accompanied this letter has not been located.

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- 60 Ibid., 410–21, quotation 416, from Scott, 316.
- 61 See, for example, M.B. Begbie, "Journey into the Interior of British Columbia," *Journal of the Royal Geographical Society of London*, vol. 31 (1861): 237–48; as well as map (please verify), *The Gold Regions of the Fraser River and Cariboo Country, British Columbia, from Reconnaissance by the Honourable Judge Begbie*, (New Westminster: n.p., 1861). <http://contentdm.library.uvic.ca/cdm/singleitem/collection/collection5/id/139/rec/1>. For a brief evaluation of Begbie's work as a geographer in a biography that follows his judicial career, see D.R. Williams, "A Man for a New Country:" *Sir Matthew Baillie Begbie* (Sidney, BC: Gray's Publishing, 1977), 50–7.
- 62 Scott, 7. BCA, GR-1372, F1782a, Palmer to Moody, 17 August 1862.
- 63 Loo with Stanley, "Environmental," 401.
- 64 See for example, Palmer's best known publication, *Report of a Journey of Survey, from Victoria to Fort Alexander, via North Bentinck Arm* (New Westminster: Royal Engineers Press, 1863). See also note 21. On Palmer's career, see Frances M. Woodward, "PALMER, HENRY SPENCER" in *Dictionary of Canadian Biography*, vol. 12, University of Toronto/Université Laval, 2003–, <viewed 27 April 2014> http://www.biographi.ca/en/bio/palmer_henry_spencer_12E.html.
- 65 In the RE wash drawings of the road alongside the Fraser and Thompson Rivers, there is little evidence of the separation of plotting from sighting, or the determination of alignment by estimates of quantities (of earth and rock) to be moved. These techniques were prominent in British road building a generation earlier. BC, Land Title, and Survey Authority, 16 T 1, Roads and Trails, "Wagon Road from Boston to Yale," 1862; 2 T 2, Roads and Trails, "Rough Estimate of Road between Cook Ferry & the Buonoparte River," 1863. Guldi, *Roads*, 56–70.
- 66 Jonathan Peyton, *Unbuilt Environments: Tracing Postwar Development in Northwest British Columbia* (Vancouver and Toronto: University of British Columbia Press, 2017), 7.
- 67 Ibid., 62–88.
- 68 Matthew D. Evenden, *Fish versus Power: An Environmental History of the Fraser River* (New York: Cambridge University Press, 2004): 24–35.
- 69 Bent Flyvbjerg, Nils Bruzelius, and Werner Rothengatter, *Megaprojects and Risk: An Anatomy of Ambition* (New York: Cambridge University Press, 2003).
- 70 B. Flyvbjerg, "What You Should Know about Megaprojects and Why: An Overview," *Project Management Journal* 45, no. 2 (April-May, 2014): 6–7.
- 71 R. Lewis and M. Siemiatycki, "Building Urban Infrastructure: The Case of Prince's Dock, Bombay," *Journal of Policy History* 27, no. 4 (October 2015): 722–45. The Prince's Dock appears to have more documentation than (that?) survives for this project.

- 72 Flyvbjerg, “What You Should Know” 6–7.
- 73 Flyvbjerg, *Megaprojects*, 13; Denmark — General government final consumption expenditure, 1988–98, constant LCU, <http://www.indexmundi.com/facts/denmark/general-government-final-consumption-expenditure>
- 74 CD, T.F. Elliot, Minute, 5 February 1862, on Douglas to Newcastle 30 November 1861, 1163 60 / 11.
- 75 Flyvbjerg, *Megaprojects*, 17.
- 76 Bent Flyvbjerg, Mette Skamris Holm, and Søren Buhl, “Underestimating Costs in Public Works Projects: Error or Lie?” *Journal of the American Planning Association* 68, no. 3 (2002): 279–95.
- 77 BCA, GR-1372, F96/4, H. Ball to Colonial Secretary (for BC), 4 March 1861.
- 78 BCA, GR-2900, v. 9, Correspondence outward, April 2, 1861 — August 22, 1863, Moody to Colonial Secretary (for BC), 29 October 1861.
- 79 B. Flyvbjerg, “Survival of the Unfittest: Why the Worst Infrastructure Gets Built — And What We Can Do about It,” *Oxford Review of Economic Policy* 25, no. 3 (December 2009): 344–67.
- 80 Ormsby, “DOUGLAS, Sir JAMES,” *DCB*; BCA, C/AA/10.4/3, Governor James Douglas, Vancouver Island, Correspondence Outward, 27 May 1859–9 Jan. 1864, Private Official Letter Book [hereafter Douglas-LB1], Douglas to Sir H. Barkly, private, 6 August 1860; Douglas to Moody, private, 9 September 1860.
- 81 CD, Douglas to Newcastle, 4 June 1861, 6744 60 / 10.
- 82 CD, Douglas to Newcastle, 9 November 1860, 91 60 / 8, enclosing report of G. Forbes to Douglas, 22 October 1860. Forbes’s report is printed in UK, *PP* 1862 (2952), 32–40. Approximately two years after the discovery of gold in Victoria, Mineralogical Surveyor A.R.C. Selwyn, who would later become head of the Geological Survey of Canada, made a summary of a detailed technical analysis of gold reefs in the vicinity of Mount Alexander. UK, *PP* 1854–55 (1978), 102–3.
- 83 CD, Douglas to Newcastle, 30 November 1861, 1164 60 / 11; 24 October 1861, 10961 60 / 11.
- 84 D. Hayes, *British Columbia: A New Historical Atlas* (Vancouver: Douglas & McIntyre, 2012), 64–5, cf. Figure 1.
- 85 CD, Douglas to Newcastle, 13 May 1863, 6333 60 / 15.
- 86 Howay, *Work of the Royal Engineers*, 8; Howay, *British Columbia*, 96.
- 87 See the non-academic titles in note 7 as well as parts of the RMBC exhibition, note 28.
- 88 Louise Dechêne, *Habitants and Merchants in Seventeenth-Century Montreal*, trans. L. Viardi (Montréal: McGill-Queen’s University Press, 1992), xvii, challenges the traditional view of the “Great Men” of New France.