

Road Connection Analysis for Barkerville

An Evaluation of Options

Prepared for:
Barkerville Heritage Trust

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Executive Summary

The historic community of Barkerville is a vital asset in BC's tourism industry. Community members and the provincial government are currently working to strengthen Barkerville's position in the sector, and thereby assist the sector across the region.

Expansion plans focus on visitors driving the main arteries of Highways 97 and 16 to enjoy the spectacular scenery of BC's interior; tour the Alaska Highway; experience the "Gold Rush Trail" and other historic routes; or visit friends and relatives. The lack of road linkage to both primary traffic routes presents significant problems to efforts to attract these visitors. By creating a circle route between main routes, Barkerville would be able to increase its appeal to touring traffic.

This report evaluates three options for connecting Barkerville with highway corridors: the Purden Road, the Goat River Road, and the Matthew River Road. It evaluates them on the basis of the touring experience – specifically the ease of connecting directly with highway arteries, and the scenic value of the road. Wherever possible, costs are based on formal studies and estimates by the provincial ministry of highways.

In this analysis, the Purden Road is the superior option for Barkerville and its partners, as it

- creates a circle tour experience between main highway in the region;
- has the least environmental impact, being an upgrade of an existing route;
- offers the fastest option to implement, as the base route already exists; and
- provides almost all (81%) of the traffic potential and financial return of the best option, for a fraction (3.5%) of the capital cost.

The Matthew River Road, while providing a highly scenic route, does not connect the two primary traffic corridors of Highways 97 and 16. This is particularly significant given the importance of drawing more Alberta visitors to Barkerville, and in offering the opportunity for visitors starting their tour in BC to connect to Alberta.

Depending on the traffic that it is able to attract, the Purden Road option would bring significant benefit to the region, generating between \$8.0 and \$16.4 million in new economic activity in the first five years. Combined with its sizably lower costs, it provides a significantly higher overall payback than either of the other options:

- The Goat River Road would cost far more (\$434 million), take far longer to complete, and generate only marginally more total financial return.
- The Matthew River Road would not connect Barkerville to highway corridors, and therefore not reduce travel times of Alberta visitors to the site, or BC visitors heading to Alberta. Therefore, while offering similar costs to Purden, it would not provide significant traffic increases from that vital sector.

The Purden Road Connector offers substantial benefit to a major tourism asset for the province, which in turn strengthens the role it can play in diversifying tourism in the region. Finally, it offers strong financial returns to the provincial treasury.

Overview – Road Connection Analysis

The **Barkerville Heritage Trust** (BHT) is currently repositioning the historic community and heritage site of Barkerville, BC to improve its perception as a major tourism destination and enhance its financial prospects.

A component of Barkerville's overall business management plan is a road connector that would increase access possibilities to the site and offer potential "circle tour" opportunities for visitors. Barkerville is located at the end of a "cul-de-sac" – Highway 26, which connects the community to nearby Quesnel. This is the only road link, and tourists are obliged to return via the same route at the end of their visit. By preventing a continuation of new touring experiences, this physical situation significantly impacts Barkerville's ability to draw additional tourist traffic to the site and meet the BHT's growth expectations.

This analysis report was commissioned by the BHT to flesh out the understandings and evaluate the cost/benefits of three potential road connection options which would link Barkerville with a major highway artery – either to the north (Highway 16) or to the south (Highway 97).

It is important to note that this road connection analysis is a supporting component in Barkerville's larger plan. The BHT is working diligently to design and implement strategies that will strengthen Barkerville's position as a premier tourism destination in the province of BC. Vehicular touring traffic will play a vital role in these strategies. By lessening the distance for traffic on major routes to reach the site, and offering the possibility of circle tour experiences for the touring visitor, Barkerville's efforts to increase tourist traffic could be greatly enhanced.

Context for the Analysis

The tourism industry in Northern BC has historically been based on a "rugged outdoor wilderness" experience. Typical offerings to visitors included hiking, camping, fishing, hunting, mountain-climbing and horseback riding.

Trends in demographics, environmental awareness, and rising affluence have reshaped tourism over the past three decades, presenting the region, and Barkerville in particular, with new opportunities and challenges. Recent concerns over security have also had an effect on the sector. These trends can be summarized as follows:

- **Demographics** – An ageing population generally tends to be less interested in physically demanding experiences in favour of "soft wilderness experiences", and more receptive to historical and nostalgia-based offerings. Older visitors generally place a premium on amenities (physical comfort) and convenience (saving time).
- **Environmental Awareness** – Among the many repercussions of a rising emphasis on the natural environment is a strong interest in experiencing pristine wilderness. This has contributed to growth in visitor traffic from around the world to premier destinations such as the Canadian Rockies. Large numbers of visitors from Canada, North America and the world come annually to nearby Jasper, Banff and Whistler, as well as secondary (but significant) sites such as Mount Robson and the Bowron Lakes.

- **Affluence** – Rising household income in Canada, the USA, Europe and the Pacific Rim has allowed tourists to afford a more upscale vacation experience. As people age, they enter their peak earning years. This combination has shifted interest away from rugged wilderness experiences (popular among young, fit, relatively poorer visitors) and towards RV traffic and resort-based experiences.
- **Security** – Shifts in travel patterns due to current terrorism threats and security responses have curtailed traffic from Europe.

Northern BC has long recognized the need to respond to shifting visitor expectations. Regional tourism agencies have for years emphasized and focused on “product development” – the creation of new experiences to appeal to the older, more affluent, more comfort-oriented visitor that forms a large and growing segment of the market. Responses to date have included:

- Diverse geographical experiences, with visitors being offered ferry rides and circle tours to create a comprehensive touring experience;
- Cruises between Vancouver and Alaska, stopping in Prince Rupert;
- Spas, dude ranches and other outdoor-oriented resorts;
- Heli-skiing, snowmobiling and cross-country skiing;
- Touring packages and vacation bundles to draw RV-ers in the Vancouver - Alaska Highway route.
- Railway tours – the Rocky Mountaineer (Kamloops to Jasper), and a pending package along the BC Rail line stopping in Quesnel and connecting to Jasper;
- Efforts to create international air access directly within the region, driven partly by the benefit to destination facilities of access within a two hour drive from such a facility,¹ and partly by the success of areas such as Whitehorse once such access is secured.
 - Direct air access and the development of new visitor experiences have resulted in eight flights weekly from Whitehorse to Frankfurt, Germany, and in excess of 2,000 European visitors on any given day between May and September).²

Efforts to promote “product development” to tourism firms have encountered obstacles. Repositioning a firm to draw new visitors is a long-term process. Firms catering to “touring” visitors are particularly challenged, as a wide range of firms must change to create an overall experience that encompasses many destinations and communities.

¹ Resort owners in the Central Interior widely cite a two hour drive as an important barrier for visitors arriving by air, particularly after a long flight (such as from eastern Canadian or international destinations. For winter traffic, this is a particularly important limit due to less favourable road conditions.

² Source: September 2005 interview with the manager of the Whitehorse airport.

Two situations highlight the problems of product development in Northern BC:

- Over the 1980s, several firms were successful in drawing high-end European visitors to their facilities around Valemount. This traffic presented a considerable opportunity for local restaurants and retailers. However, this opportunity was largely unrealized due to the incompatibility of their dining and shopping experience with the expectations of international guests. Helping local firms adjust their offerings to meet these new expectations was a high priority of the local economic development office from the early 1990s, but the transition was not sufficiently established for this strategic priority to be dropped until the end of the decade.
- When Rocky Mountain Vacations Inc. began operating the Rocky Mountaineer, it had to create many of the vacation experiences for its customers itself from its Kamloops base. Despite announcing its expansion along the BC Rail line (Kamloops-Quesnel-Jasper) in 2004, the shortage of experiences appropriate for this high-end visitor market remained a significant problem at the time of this writing (Spring 2007).

The role of Barkerville within this context is therefore crucial.

- The historical theme is a vital cornerstone for efforts to strengthen visitor traffic in the region;
- No individual community – much less a firm – can create a unique experience on the scale of Barkerville’s heritage site;
- Shifts in the visitor market – accelerated since 2001 by security concerns – increasingly require that firms offer access to a range of experiences geared to an ageing tourist;
- RV and family touring segments feature prominently in the region’s plans for diversification – segments to which Barkerville is particularly well positioned as an experience.

The Cariboo-Chilcotin Coast Tourism Association has estimated that Barkerville’s markets have historically been as follows:

- “Close-In” – residents of the Cariboo region and nearby Prince George amount to approximately 65% of visitor traffic to the site;
- “Short-Haul” – the urban areas of Vancouver, Calgary and Edmonton generate approximately 20% of Barkerville’s volume;
- “Long Haul” – visitors from central and eastern Canada, as well as international destinations (USA, Europe, Asia), account for approximately 15% of annual visits.

Linkage with Barkerville’s Marketing Strategy

Any evaluation of road connection options must be done in light of the kinds of visitors that Barkerville expects to appeal to. Since the full business management plan for Barkerville is still being developed, this analysis uses Barkerville’s interim marketing plan – as prepared by the Cariboo-Chilcotin Coast Tourism Association (CCCTA) – for this visitor information.

The Marketing Plan defined the target segments for visitor expansion as follows:

- Close-in Market Development (Cariboo/Omineca)
- Short–Haul Market Development (Other BC and Alberta)
- Long-Haul Market Development (Europe and Asia)
- Niche Marketing (Families, ‘Baby-Boomers’/RVers)³

The motives for each group in selecting a vacation are important to understand the role that the driving experience will play in Barkerville’s ability to draw them. In the absence of direct research, the CCCTA assumes the following motives for each segment that it targets:⁴

Table 1. Assumed Travel Motives of Visitors

Area	Assumed Travel Motives
Close-In Cariboo / Omineca	<ul style="list-style-type: none"> • Touring with visiting friends and family • Attending events in Barkerville, Wells and surrounding area • ‘Sunday Drive’ • Family adventure • Educating children and adults • General touring
Short Haul Other BC Alberta	<ul style="list-style-type: none"> • General Touring In-Province ‘Exploring BC’ (typically older demographic, primarily empty-nesters, ‘Baby-Boomers’) • Interest in historical attractions (typically older demographic, primarily empty-nesters, ‘Baby-Boomers’) • Interest in BC’s Gold Rush history (typically older demographic, primarily empty-nesters, ‘Baby-Boomers’) • Family holiday (young to middle-age groups) • Researching / Genealogy
Niche Markets Families <u>‘Baby-Boomers’ /</u> <u>RVers</u>	<p>Families are an identified, established market for Barkerville. Market penetration is necessary to bring Barkerville to the forefront of thought when families are planning their vacations, excursions or day-trips.</p> <p>As ‘Baby-Boomers’ age their choice in travel activities is becoming more conservative and perhaps a bit nostalgic. As well they are overwhelmingly the owners of RVs that travel the Alaska Highway. Barkerville needs to appeal to this market and lure them off Hwy 97 enroute to Alaska.</p>

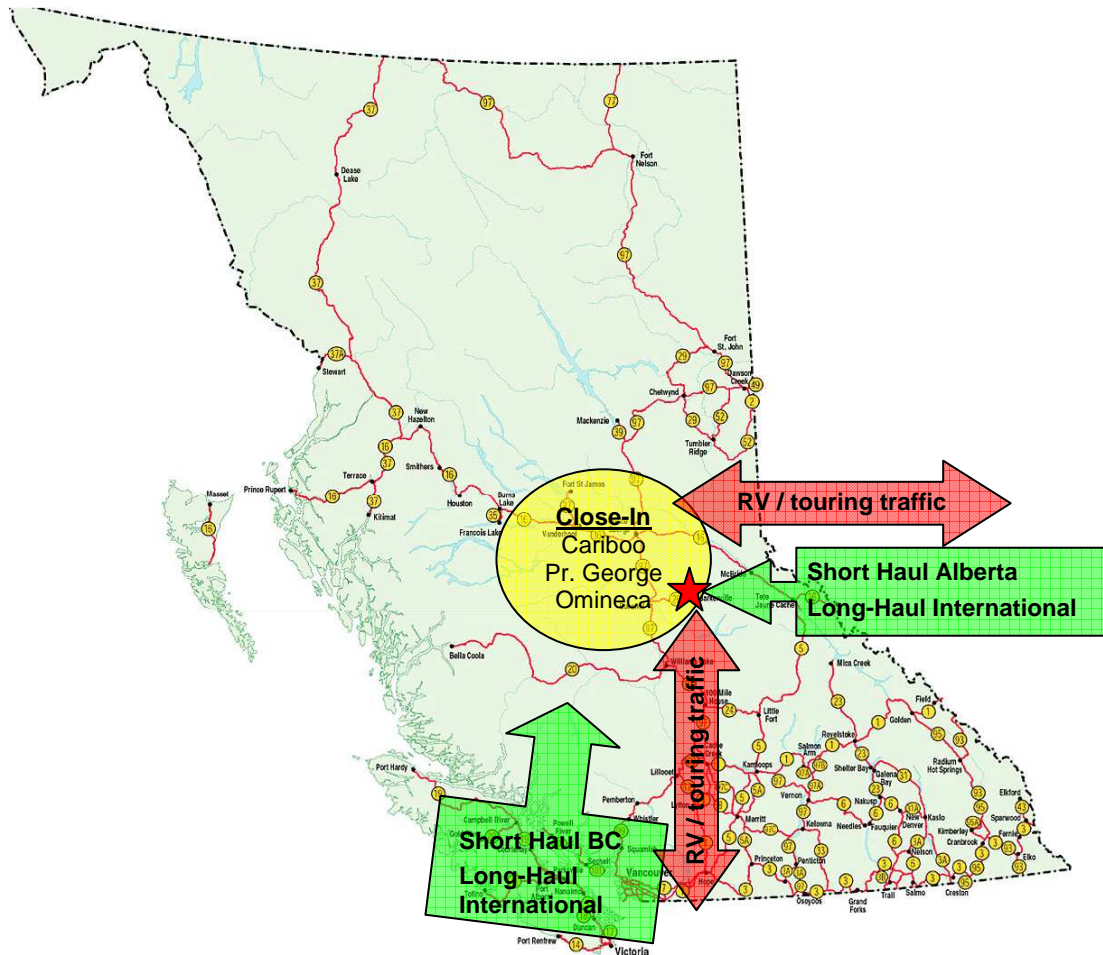
Source: Cariboo Chilcotin Coast Tourism Association

³ Barkerville Heritage Trust 2006/2007 Marketing Plan, Cariboo Chilcotin Coast Tourism Association (May 2006), Page 2.

⁴ Ibid, pp. 2-6.

The motives for each segment clearly show the importance of the “touring experience” in the vacation. Therefore, in appealing to them, Barkerville must cater to the sense of adventure and exploration prominent in each segment. The limitation of the “cul-de-sac” nature of the road network therefore becomes particularly evident, and the need for a circle tour particularly important. Graphically, Barkerville’s position in this overall traffic “flow” is shown in Figure 1.

Figure 1. Routes for Targeted Visitor Segments to Visit Barkerville



The primary traffic corridors in the area are Highway 97 (North-South), Highway 16 (East-West) and Highway 5 (North-South). A secondary route is Highway 24, which connects Highways 97 and 5, approx. 140 km south of Barkerville.

To better gauge the nature of vehicle traffic in the area, the report considers data from the BC Ministry of Highways. Data on annual average daily traffic is available in a range of locations up to 2002, and in detail at fewer locations to the current year (2005).⁵

⁵ Source: BC Ministry of Transportation, Traffic Volume Reports (1994-2002)

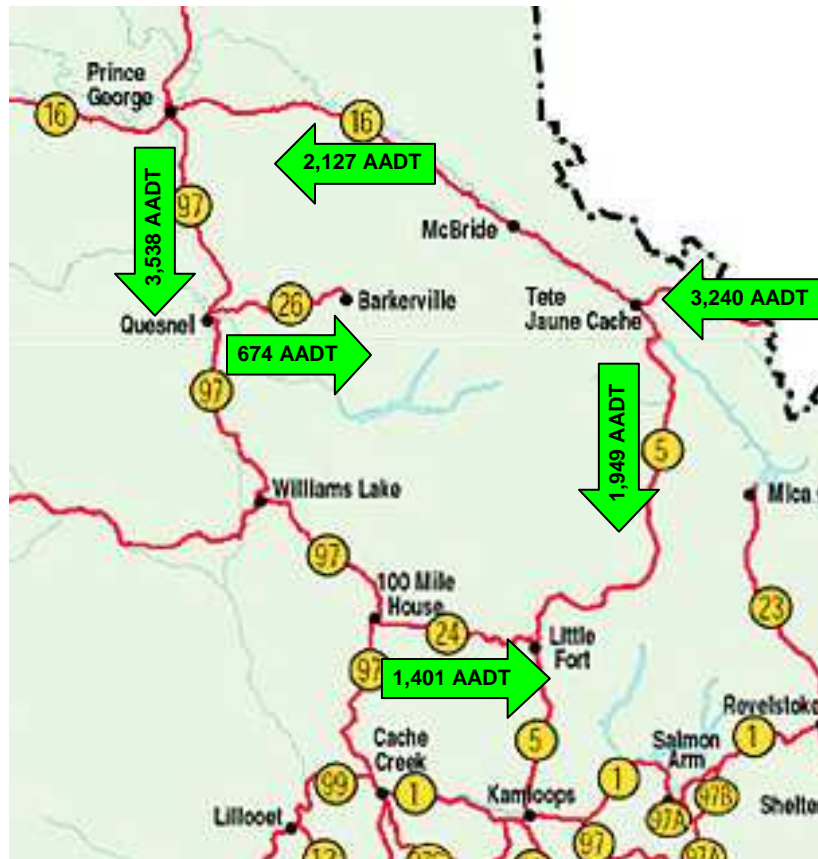
This data shows traffic flows as follows:

Table 2. Traffic Flows on Highways Near to Barkerville (2002 Data)

Hwy	Location	Annual Average Daily Traffic	LOCATION DESCRIPTION	TMP_ID
16	East of Hwy 5 intersection	3,240	22.8 km east of Mt. Robson Park Infocentre, 39.1 km east of Route 5, east of Tete Jaune Cache	23-007W
16	McBride	2,127	At west end of C.N.R. overpass, approx. 3.0 km West of McBride	23-005W
97	Prince George south	3,538	5.5 km south of Stone Creek Bridge and 26.2 km south of Old Cariboo Hwy, south of Prince Ged	P-41-1S
5	Blue River	1,949	At north end of North Thompson River Bridge, approx. 43.0 km north of Blue River	23-001S
26	Wells	674	4.8 km west of Robbers Roost stop-of-interest, 37.2 km east of Route 97, east of Quesnel	41-013W
24	93 Mile House	1,401	0.3 KM east of Route 97 at 93 Mile	29-017E

Source: BC Ministry of Transportation, Traffic Volume Reports, 2002 data

Figure 2. Traffic Flows on Highways Near to Barkerville (2002 Data)⁶



Note: AADT = Annual Average Daily Traffic.

⁶ Due to a change in data collecting by the provincial Ministry of Highways, more recent (2005) data is available for fewer points. However, that data clearly shows the heavy seasonal fluctuation of traffic. For example, in the most recent peak tourist season (August 2005), average daily traffic on Highway 97 was 4,963 vehicles – over double the rate in January (2,372).

Road Connection Options & Growth Potential

Despite its importance in the transitioning of tourism experiences in Northern BC, and its strong fit with trends in the visitor market, Barkerville's repositioning is occurring in a context of declining attendance. A lack of focused marketing for the site, and less effective product development in the sector overall, resulted in attendance steadily dropping from 100,000 visitors historically to an annual attendance of 67,000 in 2006.

In evaluating the opportunity to connect Barkerville to nearby traffic corridors and potentially increase visitor numbers, three road connection options have been posited and it is these three that this analysis considers. These were identified in a 1991 study for the BC Ministry of Transportation and Highways (MOTH),⁷ with high-level cost estimates updated by MOTH staff to reflect current (2007) construction realities as follows:⁸

1. **Purden Road** – Also known as the Well-Barkerville-Purden connector road, this route is an upgrade of an existing road running northwards from Barkerville to Highway 16, joining near Purden Mountain. Estimated cost = \$15.0 million.⁹
2. **Goat River Road** – A proposed new road that traverses the Cariboo Mountains through the Goat River watershed to McBride. Estimated cost = \$434.8 million.
3. **Matthew River Road** – An upgrade of a road running south from Barkerville along the Matthew River to Likely, and then west to Williams Lake. Estimated cost = \$10 million.¹⁰

Figure 3 on the following page outlines the approximate locations of these three routes. Each connector road option presents different advantages and disadvantages.

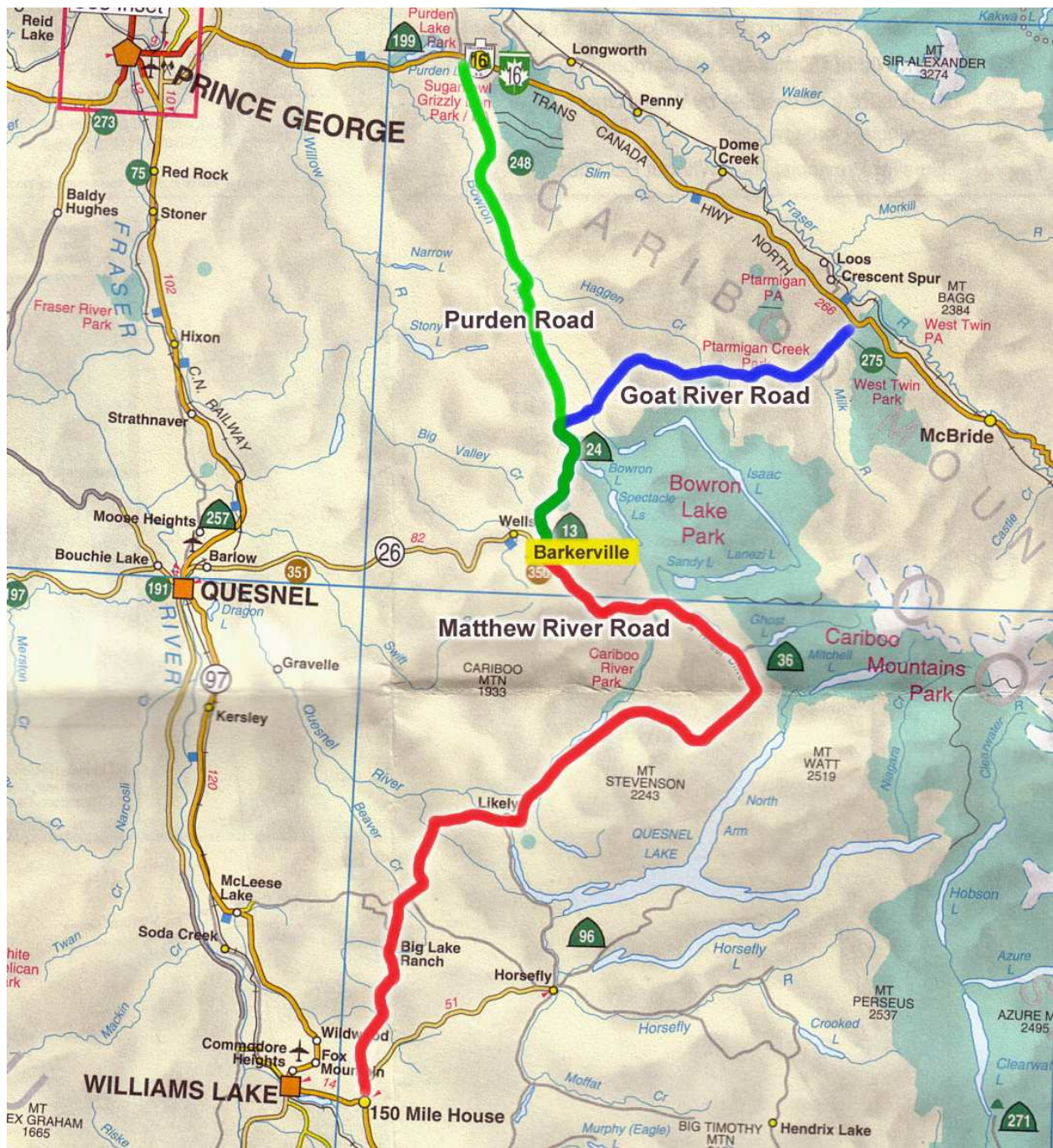
⁷ "Final Report on the Goat River Road Study", Dolmage Campbell Ltd., April 1991, page 2. The original cost was estimated at \$216 million in 1991.

⁸ Staff at the BC Ministry of Transportation and Highways provided updated estimates for each route based on several previous studies, and incorporating cost parameters closer to the realities encountered in 2007. These are high-level estimates only, and do not replace the need for detailed engineering work that is beyond the scope of this cost-benefit analysis.

⁹ The cost estimate for upgrading the Purden route was to a double-seal level, which is presented as the minimum standard is route to be dependably available to RV and touring traffic. The routing was based on that outlined in the study, "Benefit-Cost Analysis, Wells-Purden Road, Highway 26-16", Apex Engineering, February 2004.

¹⁰ A cost estimate for upgrading this route to be dependably available to RV and touring traffic is not available, though work on the road is clearly needed to achieve this outcome. This report assumes that road upgrades yielding a comparable driving experience to the Purden connector would be of a similar order of magnitude, though slightly higher due to the more rugged terrain involved.

Figure 3. Road Connection Options for Barkerville (locations approx.)



Purden Road is shown in green, Goat River Road in blue and Matthew River Road in red.

1. Purden Road

The **Purden Road** connector allows touring traffic along Highway 97 to visit Barkerville and connect to Highway 16 approximately 50 km east of Prince George. From there visitors can head eastwards to Alberta (Jasper and Banff National Parks) or tour Highway 5. The Purden Road also allows North-South Highway 97 touring traffic (ie: Alaska bound) to 'circle' into Barkerville and return to Highway 97 (via Highway 16) to Prince George.

Strengths

- ✓ Connects two major traffic arteries (Highways 97 and 16) close to Prince George – minimizes distance for connecting to North-South and Alberta traffic.
- ✓ Minimal environmental disturbance – this is an upgrade of an existing road. Terrain not challenging.
- ✓ Low construction cost – this is only an upgrade of existing resource roads and associated infrastructure. Surface not paved – upgrade to summer use only.
- ✓ Quickest to implement, as no new road construction is required.

Weaknesses

- ✗ Scenery less compelling than the Goat River Road setting; large scale harvested and regenerating forest areas.
- ✗ Longer distance for connector traffic from Highways 97 and 16 compared to the Goat River Road option; service facilities (fuel etc) not well distributed.

2. Goat River Road

The **Goat River Road** would connect Barkerville with Highway 16 just west of McBride.

Strengths

- ✓ Wide range of scenery for visitors.
- ✓ Shortest connecting distance for traffic along Highways 97 and 16, creates the best "circle tour" experience.

Weaknesses

- ✗ Environmental impact is the highest of the three options, traversing areas of ecological sensitivity and historic environmental concern.
- ✗ Cost is the highest, estimated at in excess of \$434 million.
- ✗ Time to implement is the longest, due to process/permits required to build in sensitive areas, as well as engineering/construction of new roads in challenging terrain.
- ✗ Some terrain challenges. The route through the mountains would be subject to weather considerations that limit its full availability until later in the summer (July-Sept.)

3. Matthew River Road

The **Matthew River Road** connects Barkerville with Likely to the south, and from there looping west to Williams Lake.

Strengths

- ✓ Most scenic route, with good views of nearby mountains and some tourist-oriented services.
- ✓ Medium cost and time to complete – this is an upgrade of an existing road.

Weaknesses

- ✗ Route does not connect major traffic arteries – it is essentially a loop along existing Highway 97 corridor.
- ✗ Some terrain challenges. Portions are not paved, and the existing route is subject to weather considerations that limit its full availability until later in the summer (July-Sept.)

Growth Scenarios.

The business management plan being developed for the Barkerville Heritage Trust has targeted 4% annual growth in the number of visitors to the site.¹¹ Given the emphasis on the touring experience, and RV traffic specifically, the need to offer a circle tour to visitors and greater road connectivity is considered of primary importance.

In assessing the importance of the circle tour/connectivity aspect, this report assumes that:

1. Circle routes are significant draws, substantially augmenting the visitor experience, and therefore enhancing efforts to market Barkerville;
2. The route offering the shortest connection points between the major highway corridors (97 and 16) will be the most desirable; and
3. The scenic value of the road is significant, but less so than the ease of connecting directly with main highway corridors.
4. The road expansion is supported by a promotional program that spends at least \$200,000 annually on coordinated, effective marketing tools.

¹¹ "A Framework for Sustaining Barkerville: A Business Management Plan," Barkerville Heritage Trust (April 2006), page 49.

In comparing these road options, this report uses **two scenarios**:

1. *Low growth.* The combined, focused, effective marketing efforts of Barkerville have a greater overall impact than the circle tours themselves. Therefore, the report considers the 4.0% traffic growth forecasted by the BHT management plan as the upper limit, and assigns a maximum of 3.0% annual increase in vehicles to the road connections.
2. *High growth.* A recent study of the Wells-Purden connecting road prepared for the BC government anticipated annual growth in vehicle traffic at potentially up to 8%.¹² This report takes a more cautious approach in considering an optimistic scenario, considering a situation with a 6% annual increase in vehicle traffic.¹³

These scenarios must be contrasted with the “status quo” option of continuing with the existing operational and promotional model. The existing situation is characterized by two main trends:

- a. *Declining market share.* The current traffic of approx. 67,000 people annually is well below the historic levels of over 100,000 annual visitors. While an ageing population is generally more interested in cultural and historic aspects, they also demand a vacation “experience”, which includes exploration/adventure components such as circle tours. Alternative means of having those adventures are well promoted. Hence, Barkerville has steadily lost market share over the past 2-3 decades.
- b. *Little resilience.* The most recent year was not kind to Barkerville. System shocks such as the sinking of “*The Queen of the North*” ferry were compounded by sustained high fuel prices. The result was that, after generating a 3% increase in attendance in 2005, the site saw a 9% decline in attendance for 2006.

Given this background, a baseline scenario of “no growth” is used to compare the options developed in this report against.

This analysis further modifies the growth forecast depending on the road connection option selected, as follows:

Purden Road

- Offers circle tour for traffic between Highways 97 and 16 corridors.
- Ideally situated for North-South traffic, as it joins Highway 16 only 50 km east of Prince George. Appeals to vehicles traveling to and from the Alaska Highway routing.
- Distance from McBride limits its appeal to traffic connecting between 97 and 16. Offers some connection to traffic from Alberta.
- Scenic value is modest, as significant portions of the route are located in valleys and relatively flat sections of terrain.

¹² “Benefit-Cost Analysis, Wells-Purden Road, Highway 26-16”, Apex Engineering, February 2004, page 5.

¹³ All scenarios in this report forecast stronger increases than the 1.3% annual growth used by the BC Ministry of Transportation and Highways. The proposed changes to Barkerville’s marketing efforts and connectivity are expected to generate substantial increases in traffic to the site. Barkerville’s role as a major tourism asset will therefore substantially impact the region.

Goat River Road

- Offers circle tour for traffic between Highways 97 and 16 corridors.
- Poorly situated for North-South traffic, as it joins Highway 16 nearly 200 km east of PG. Limited appeal to touring traffic to the Alaska Highway.
- Strong appeal to traffic between BC and Alberta, as it is the most direct connection between Highways 97 and 16.
- Strong scenic value, as significant portions of route traverse or follow nearby mountains.

Matthew River Road

- Offers connectivity for traffic along Highway 97, but no opportunity for a circle tour experience between the main corridors of Highways 97 and 16.
- Strong scenic value, as it follows the nearby mountains.
- Weak reliability, as snow at higher areas can hamper access to the route for much of the summer season.

Given these relative factors, the Goat River Road scores strongest, followed by the Purden and Matthew. These are assigned values as follows:

Table 3. Growth Forecasts for Each Connecting Route

Road Connector	Annual Growth Forecast	
	Low Growth	High Growth
Purden Road	2.5%	5.00%
Goat River Road	3.0%	6.00%
Matthew River Road	1.0%	2.00%

At the rates shown in Table 3, the combination of greater connectivity to traffic corridors and an effective marketing program would increase tourism traffic over a twenty year period as follows:

**Table 4. Volume of Traffic Increase by Route (Projected) – Years 1-20 after expansion
Low Growth Scenario**

Road Connector	Growth Forecast	Baseline: 2006	Increase over 2006		
			2011	2016	2026
Purden	2.5%	67,000	25,978	99,392	414,279
Goat River	3.0%	67,000	31,383	121,122	514,324
Matthew	1.0%	67,000	10,185	37,977	150,026

**Table 5. Volume of Traffic Increase by Route (Projected) – Years 1-20 after expansion
High Growth Scenario**

Road Connector	Growth Forecast	Baseline: 2006	Increase over 2006		
			2011	2016	2026
Purden	5.0%	67,000	53,728	214,854	986,189
Goat River	6.0%	67,000	65,346	266,100	1,272,512
Matthew	2.0%	67,000	20,644	78,303	320,482

The direct increase in spending of that increased traffic is estimated as follows:

Table 6. Direct Spending by Increased Visitor Volume by Route

Purden

	2011		2016		2026	
	Low Growth	High Growth	Low Growth	High Growth	Low Growth	High Growth
Increased visitor traffic during period	25,978	53,728	99,392	214,854	414,279	986,189
Days per visitor	2	2	2	2	2	2
Daily spending (no park fees)	\$153	\$153	\$153	\$153	\$153	\$153
Total Economic Impact on Region	\$7,949,268	\$16,440,768	\$30,413,952	\$65,745,324	\$126,769,374	\$301,773,834

Goat River

	2011		2016		2026	
	Low Growth	High Growth	Low Growth	High Growth	Low Growth	High Growth
Increased visitor traffic during period	31,383	65,346	121,122	266,100	514,324	1,272,512
Days per visitor	2	2	2	2	2	2
Daily spending (no park fees)	\$153	\$153	\$153	\$153	\$153	\$153
Total Economic Impact on Region	\$9,603,198	\$19,995,876	\$37,063,332	\$81,426,600	\$157,383,144	\$389,388,672

Matthew

	2011		2016		2026	
	Low Growth	High Growth	Low Growth	High Growth	Low Growth	High Growth
Increased visitor traffic during period	10,185	20,644	37,977	78,303	150,026	320,482
Days per visitor	2	2	2	2	2	2
Daily spending (no park fees)	\$153	\$153	\$153	\$153	\$153	\$153
Total Economic Impact on Region	\$3,116,610	\$6,317,064	\$11,620,962	\$23,960,718	\$45,907,956	\$98,067,492

Source of data for Daily Spending is the "BC Visitor Study, 2002", Tourism BC, 2002, Page 7

Cost-Benefit Analysis

As noted earlier in this report, the nature of visitor traffic is such that Barkerville is particularly applicable to touring, RV and family segments, and plays an important ‘anchoring’ role in helping other firms draw traffic to the region – which increases the volume of visitors that come and the length of time they stay. This in turn increases the economic benefit to the tourism sector.

In assessing the economic impact of traffic increases, this analysis regards exports as the engine of the economy.¹⁴ Data on direct economic activity was estimated in previous section of this report, with spinoff effects determined using the provincial government’s official economic impact model.¹⁵

It is important to outline the financial benefit of that activity within the provincial government context, since the responsibility and costs associated with any road connection option would be borne by them.

The financial benefit to senior governments is estimated in two ways:

- Up-Front Taxes on incremental activity – primarily the GST and PST.
- Revenue generated from the resulting economic activity (after up-front taxes) and costs saved due to less reliance on government support programs.

Spinoff activities are estimated using the current provincial input-output model, as follows:

Table 7. Government Revenue Multipliers (with Safety Net Scenario)

	Federal Taxes			Provincial Taxes		
	Direct	Indirect	Induced	Direct	Indirect	Induced
50 Accommodations	0.024	0.011	0.011	0.051	0.013	0.014
51 Food & Beverage	0.018	0.011	0.011	0.030	0.015	0.014
35 Local Transportation	0.026	0.012	0.011	0.049	0.014	0.013
49 Recreation	0.032	0.014	0.013	0.033	0.017	0.016
32 Retail	0.029	0.012	0.014	0.032	0.015	0.017
Other Expenses	Excluded - no category applies					

Source: 2000 BC Input-Output Model.

¹⁴ Export is production geared to markets outside the local economy. Visitors’ incomes are based on markets beyond the Barkerville / Wells / Quesnel economy.

¹⁵ The economic impact uses the 2000 BC Provincial Input-Output Model, as detailed in the two reports by Garry Horne cited in the Bibliography.

To estimate how much additional spending will occur in each category that serves tourism, this report uses the average distribution of total expenditures established by provincial government studies, and shown in Table 8. Data on expenditures by BC residents is used for simplicity, as they comprise the large majority of Barkerville’s visitors, historically and currently.

Table 8. Distribution of Total Expenditures by BC Resident Tourists (1996 data)

BC Visitor Study Tourism Area	Accommodations	Food & Beverage	Local Transportation	Recreation	Retail	Other Expenses
7. Cariboo	18%	32%	18%	9%	3%	20%

Source: BC Local Area Economic Dependencies and Impact Ratios – 1996, taken from British Columbia Visitor Studies, cited in Horne (2), page 26.

In calculating the overall impact, government sales taxes must first be removed. Table 9 shows the Input-Output multiplier estimates of government taxes on tourism activity:

Table 9. Front-End Taxes on Tourist Spending

	(% of total)	Federal	Provincial	Federal	Provincial
Accommodation	18%	3.64%	7.10%	0.655%	1.278%
Food & Beverage	32%	6.05%	1.30%	1.936%	0.416%
Local Transport	18%	5.64%	0%	1.015%	0.000%
Recreation	9%	4.96%	0%	0.446%	0.000%
Retail Trade ¹⁶	3%	11.10%	12.30%	0.333%	0.369%
Total ¹⁷	80%			4.386%	2.063%

Source: Horne (2) Page 16.¹²

Finally, the model adjusts for two additional factors:

1. Public spending on marketing efforts for Barkerville, which is assumed to be \$200,000 annually. Since tax revenues are not adjusted for inflation, neither is the marketing spending – the numbers are “real”, or “equivalent to 2006 dollars”.
2. Economic activity will include spending by BC residents and non-residents. Only the spending by non-residents is included in the analysis of incremental taxes to the provincial treasury. Therefore, while the economic impact to the region is measured on overall increase in traffic, the provincial tax stream is based on new traffic to BC.
 - The out-of-province component is estimated at 35% of the incremental traffic, based on the profile of Alberta and long-haul traffic in the marketing plan.

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¹⁶ The provincial Input-Output Multiplier estimates provincial taxes on retail beyond the 7% PST due to taxes on tobacco products.

¹³ The total is 80% because 20% is forecasted as “Other Expenditures”, which are not captured in the Input-Output Multiplier. Spending on “Other” is ignored in this calculation.

Therefore, the economic benefit to the Barkerville area of the additional activity is as follows:

Table 10. Increase in Economic Activity due to Additional Visitor Traffic (Projected)

Tax Benefit to BC	Route Option					
	1. Purden		2. Goat River		3. Matthew	
	Low	High	Low	High	Low	High
Increased visitor traffic over 20 years	414,279	986,189	514,324	1,272,512	150,026	320,482
Days per visitor	2	2	2	2	2	2
Daily spending (no park fees)	\$153	\$153	\$153	\$153	\$153	\$153
% of new traffic from outside BC	35%	35%	35%	35%	35%	35%
Taxable Economic Activity - Years 1-20	\$44,369,281	\$105,620,842	\$55,084,100	\$136,286,035	\$16,067,785	\$34,323,622
Front-End Taxes on Visitor Spending - BC	2.063%	2.063%	2.063%	2.063%	2.063%	2.063%
Front-End Taxes Paid to BC	\$915,338	\$2,178,958	\$1,136,385	\$2,811,581	\$331,478	\$708,096
Economic Benefit to Region in Yrs 1-20	\$43,453,943	\$103,441,884	\$53,947,715	\$133,474,454	\$15,736,306	\$33,615,526
Incremental Spend on Accommodation (18%)	\$7,821,710	\$18,619,539	\$9,710,589	\$24,025,402	\$2,832,535	\$6,050,795
Incremental Spend on Food & Bev (32%)	\$13,905,262	\$33,101,403	\$17,263,269	\$42,711,825	\$5,035,618	\$10,756,968
Incremental Spend on Local Transport (18%)	\$7,821,710	\$18,619,539	\$9,710,589	\$24,025,402	\$2,832,535	\$6,050,795
Incremental Spend on Recreation (9%)	\$3,910,855	\$9,309,770	\$4,855,294	\$12,012,701	\$1,416,268	\$3,025,397
Incremental Spend on Retail (3%)	\$1,303,618	\$3,103,257	\$1,618,431	\$4,004,234	\$472,089	\$1,008,466

As noted earlier in Table 7, the provincial government generates tax revenue from this economic activity as follows:

	Federal Taxes			Provincial Taxes		
	Direct	Indirect	Induced	Direct	Indirect	Induced
50 Accommodations	0.024	0.011	0.011	0.051	0.013	0.014
51 Food & Beverage	0.018	0.011	0.011	0.030	0.015	0.014
35 Local Transportation	0.026	0.012	0.011	0.049	0.014	0.013
49 Recreation	0.032	0.014	0.013	0.033	0.017	0.016
32 Retail	0.029	0.012	0.014	0.032	0.015	0.017
Other Expenses	Excluded - no category applies					

The estimated increase in taxes to the provincial government for each road option over the first five years of the expansion can thus be projected, and are shown in Table 11 on the following page.

Table 11. Provincial Tax Revenue Generated, by Road Option (Projected)

	Route Option					
	1. Purden		2. Goat River		3. Matthew	
	Low	High	Low	High	Low	High
Increased visitor traffic over 20 years	414,279	986,189	514,324	1,272,512	150,026	320,482
Days per visitor	2		2		2	
Daily spending (no park fees)	\$153		\$153		\$153	
% of new traffic from outside BC	35%		35%		35%	
Total Economic Impact on Region	\$44,369,281	\$105,620,842	\$55,084,100	\$136,286,035	\$16,067,785	\$34,323,622
Front-End Taxes on Visitor Spending - BC	2.063%	2.063%	2.063%	2.063%	2.063%	2.063%
Front-End Taxes Paid - Provincial	\$915,338	\$2,178,958	\$1,136,385	\$2,811,581	\$331,478	\$708,096
Economic Benefit to Region in Yrs 1-5	\$43,453,943	\$103,441,884	\$53,947,715	\$133,474,454	\$15,736,306	\$33,615,526
Incremental Spend on Accom (18%)	\$7,821,710	\$15,643,419	\$9,710,589	\$19,421,178	\$2,832,535	\$6,050,795
Provincial Taxes Generated (.051+.013+.014)	\$610,093	\$1,220,187	\$757,426	\$1,514,852	\$220,938	\$471,962
Incremental Spend on Food & Bev (32%)	\$13,905,262	\$27,810,523	\$17,263,269	\$34,526,538	\$5,035,618	\$10,756,968
Provincial Taxes Generated (.030+.015+.014)	\$820,410	\$1,640,821	\$1,018,533	\$2,037,066	\$297,101	\$634,661
Incremental Spend on Local Transport (18%)	\$7,821,710	\$15,643,419	\$9,710,589	\$19,421,178	\$2,832,535	\$6,050,795
Provincial Taxes Generated (.049+.014+.013)	\$594,450	\$1,188,900	\$738,005	\$1,476,009	\$215,273	\$459,860
Incremental Spend on Recreation (9%)	\$3,910,855	\$7,821,710	\$4,855,294	\$9,710,589	\$1,416,268	\$3,025,397
Provincial Taxes Generated (.033+.017+.016)	\$258,116	\$516,233	\$320,449	\$640,899	\$93,474	\$199,676
Incremental Spend on Retail (3%)	\$1,303,618	\$2,607,237	\$1,618,431	\$3,236,863	\$472,089	\$1,008,466
Provincial Taxes Generated (.032+.015+.017)	\$83,432	\$166,863	\$103,580	\$207,159	\$30,214	\$64,542
Provincial Taxes Generated on Activity	\$2,366,502	\$4,733,003	\$2,937,993	\$5,875,985	\$856,999	\$1,830,702
Provincial Taxes Generated Up-Front	\$915,338	\$1,830,677	\$1,136,385	\$2,272,770	\$331,478	\$708,096
Provincial Taxes Generated in Years 1-20	\$3,281,840	\$6,563,680	\$4,074,378	\$8,148,755	\$1,188,478	\$2,538,798

Again, these amounts represent incremental income to the provincial treasury based on out-of-province visitors.

The estimated traffic volumes, factoring in the net new revenue from out-of-province visitors, results in a return on investment for each options as follows:

Table 12. Return on Investment, by Road Option (Projected)

Low Scenario	Route Option		
	Purden	Goat River	Matthew
Capital Cost (estimated)	\$15,045,800	\$434,786,111	\$10,000,000
Provincial Taxes generated in Years 1-20	\$3,281,840	\$4,074,378	\$1,188,478
Return on Investment	21.8%	0.9%	11.9%

High Scenario	Route Option		
	Purden	Goat River	Matthew
Capital Cost (estimated)	\$15,045,800	\$434,786,111	\$10,000,000
Provincial Taxes generated in Years 1-20	\$6,563,680	\$8,148,755	\$2,538,798
Return on Investment	43.6%	1.9%	25.4%

Based on the figures presented in Table 12, the Purden Road offers the best overall return on any government investment in road infrastructure.

Operating costs for a new road need to be factored into the calculation. On public roads, these take two forms:¹⁶

- Maintenance costs refer to the maintaining of a public road for predominantly summer use. While the precise amount will vary with the specific road in question, an average of \$4,500/km is used.
- Rehabilitation costs refer to the regular resurfacing and related repairs on the road. The amount depends on the type of surface:
 - Paved surfaces require rehabilitation every 15 years, at \$100,000/km.
 - Sealed surfaces require rehabilitation every 7-9 years (8 years used as an average), at \$30,000/km.

The clear superiority of the Purden route results in the calculation of operating costs being calculated on that route alone. Over the 20-year period used in this analysis, the costs are as follows:

Table 13. Provincial Operating Costs for the Purden Road Option (Projected)

	Low	High
Provincial Taxes generated over 20 years	\$3,281,840	\$6,563,680
Maintenance costs of 100 km route over 20 years	(\$9,000,000)	(\$9,000,000)
Rehabilitation costs of 100 km route @ 2.5 cycles	(\$7,500,000)	(\$7,500,000)
Net Costs to the Province	(\$13,218,160)	(\$9,936,320)

¹⁶ These costs are based on general estimates used by the BC Ministry of Transportation and Highways for planning at an overall level. Precise estimates are compiled once the specific route is determined.

Compared to the Goat River Road, the Purden Road offers 81% of the traffic potential and financial return to the provincial government, for only 3.5% of the capital cost;

- It creates a circle tour experience, which is an important aspect given the tourist profile that Barkerville is pursuing;
- It has the least environmental impact, being an upgrade of an existing route; and
- It offers the fastest option to implement, as the base route already exists.

The Matthew River Road, while providing a highly scenic route, does not connect the two primary traffic corridors of Highways 97 and 16. This is particularly significant given the importance of drawing more Alberta visitors to Barkerville, and in offering the opportunity for visitors starting their tour in BC to connect to Alberta.