Project Report:
Achieving Value for Money

Britannia Mine
Water Treatment Plant

BRITISH COLUMBIA
Ministry of Sustainable Resource Management

March 2005

partnerships
British Columbia

Purpose of this Document

As part of its commitment to public accountability, the Province releases a project report, demonstrating how value for money has been achieved for each major public private partnership agreement it enters on behalf of British Columbians. Value for money is a broad term that captures both quantitative factors, such as costs, and qualitative factors, such as service quality and protection of public interests.

Value for money is one of six key principles guiding public sector capital asset management in British Columbia. The others are:

- sound fiscal and risk management;
- strong accountability in a flexible and streamlined process;
- emphasis on service delivery;
- serving the public interest; and
- competition and transparency.

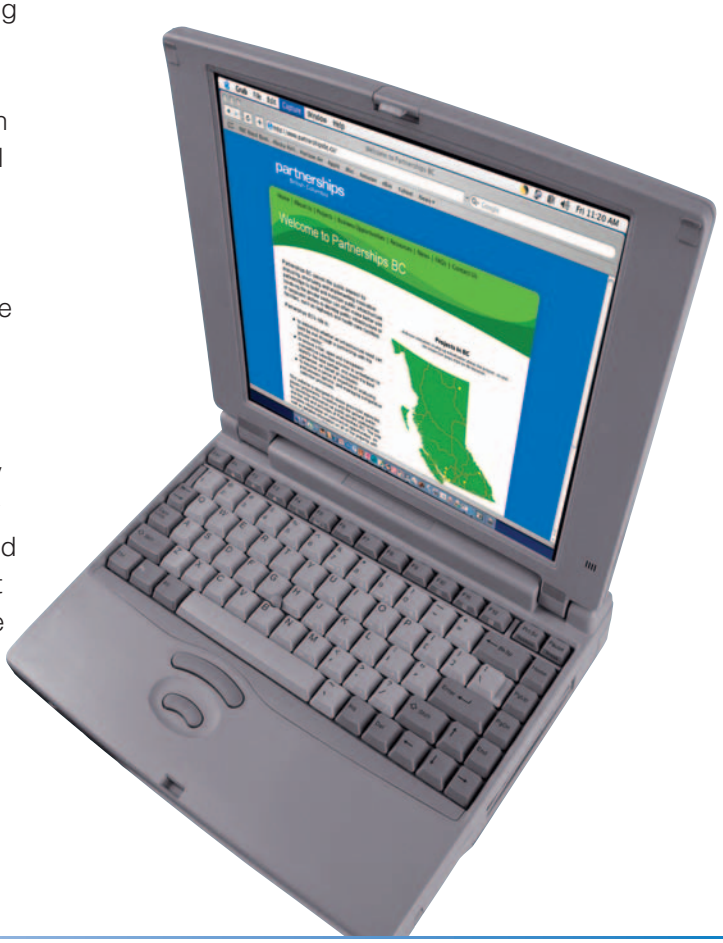
Since 2002, these principles have guided the B.C. public sector's approach to acquiring and managing assets such as roads, bridges and health care facilities. Under the Capital Asset Management Framework, ministries and other public bodies such as health authorities are encouraged to consider all available options for meeting their service objectives. They analyze the options and, after considering the qualitative and quantitative advantages and disadvantages of each, choose the one that overall best meets service delivery needs and makes the best use of taxpayers' dollars.

In some cases, the best option may be traditional procurement – where assets are purchased entirely with taxpayers' money and operated exclusively by the public sector. In other cases, agencies may find innovative ways to meet their service needs without acquiring capital assets. In all cases, agencies are publicly accountable through regular budgeting, auditing and reporting processes.

In all of its procurement processes, including public private partnership agreements, the Province is committed to a high standard of public disclosure to ensure accountability. This report describes the rationale, objectives and processes that led to the use of a public private partnership for the Britannia Mine Water Treatment Plant Project, giving the public a clear sense of how and why the decision was reached to proceed with that option. It explains how value for money was measured, and how it was achieved, in the context of current market conditions. Where applicable, it also compares key aspects of the final agreement to other options considered for the project.

For more on the Province's Capital Asset Management Framework, go to **http://www.fin.gov.bc.ca/tbs/camf.htm**

For more on public private partnerships in B.C., go to **www.partnershipsbc.ca**



Highlights

The Britannia Mine water treatment plant is an integral part of the Ministry of Sustainable Resource Management's (MSRM) environmental remediation of an abandoned mine site between Vancouver and Whistler. Left untreated, contaminated water from the mine site would continue to deposit on average, 600 kilograms of metals into Howe Sound on a daily basis. The water treatment plant will treat up to 500,000 cubic metres per year of contaminated mine water before it drains into Howe Sound.

The Province's approach to treating the water at the Britannia Mine site is a remarkable achievement for a number of reasons.

- The project is the first of its kind in B.C. – solving the problem of contaminated water from an abandoned mine site through a public private partnership.
- The private partner, EPCOR Britannia Water Inc. (EPCOR), has introduced innovation related to the water treatment process, plant operation and water quality monitoring.
- The Province has successfully protected taxpayers from the risks involved with developing and implementing ways to effectively treat the mine water, by sharing these risks with EPCOR.
- This project demonstrates that value for money can be achieved with smaller scale public private partnerships. The net present value lifecycle cost of the project is $27.2 million, which is $10 million less than the estimated cost of completing the plant through traditional methods.

Achieving Value for Money

The Britannia Mine water treatment plant will be designed, built, financed and operated as a public private partnership, and is part of a larger remediation effort being managed by the Ministry of Sustainable Resource Management (MSRM).

When compared to traditional delivery of the treatment plant, the partnership agreement with EPCOR:

- reflects lifecycle savings because of EPCOR's experience in water treatment;
- provides technological innovation that reduces costs by, for example, reducing the amount of chemicals needed to treat the water, and reducing site electricity costs by developing a small hydro generation plant that will produce electricity from the contaminated water as it flows from the mine and into the water treatment plant;
- ensures regulatory compliance by transferring the risk of financial penalties for non-compliance to EPCOR.

In short, the Province will have a better water treatment plant, at a lower cost and with less risk to taxpayers, by entering into a partnership with EPCOR Britannia Water Inc.

Key Terms of the Agreement

The Britannia Mine Water Treatment Plant Project involves the design, construction, financing and operation of a water treatment plant, over a 21 year period. Through a public private partnership between MSRM and EPCOR:

- EPCOR will design and build the plant within one year, and operate the plant for 20 years after construction;
- EPCOR will finance the design, construction, operation and maintenance of the plant;
- MSRM will provide performance-based payments to EPCOR, with the amount calculated based on the volume of water processed, and the ability of the plant to meet environmental regulations;
- Performance payments will not begin until the plant is in operation;
- EPCOR will take on responsibility for much of the risk associated with designing, building and operating the plant, such as the risk of incurring financial penalties if the plant is not built and in operation on time, or if the treatment of water is not in compliance with environmental regulations.

EPCOR works with municipalities and companies across western Canada. In B.C., the company provides water and wastewater services to the District of Sooke, the District of Port Hardy and the town of Lytton.

Table of Contents

1. Project Background and Objectives

Background

Contaminated water from the abandoned Britannia Mine site has been flowing into Howe Sound.

The Britannia Mine is located approximately 48 kilometres north of Vancouver at Britannia Beach, on the east shore of Howe Sound. The Britannia Mine was one of the biggest copper producers in the British Empire, operated from 1904 to 1963 by the Britannia Mining and Smelting Company Ltd. and by Anaconda Mining Company from 1963 until permanent shutdown in 1974.

The historic Britannia Mine site

During operation, approximately 80 kilometres of underground workings and five open pits were excavated, with the ore processed in the milling facilities at Britannia Beach. Exposure of the excavations to air and water results in the generation of acid rock drainage (ARD), which has been flowing into Howe Sound and adversely affecting the marine habitat offshore of Britannia Creek. The heavy metals in the water, such as copper, zinc and cadmium, are toxic to the marine life on the foreshore and to juvenile salmon which use the area for feeding.

In 2001, the Province entered into an agreement with the former mine operators where the operators contributed $30 million toward the remediation of the site, in exchange for a provincial guarantee that they would not be held liable for future issues with the site. This agreement transferred the portion of responsibility for site remediation, which previously belonged to the mine operators, to the Province. Responsibility for managing the Britannia Mine Remediation Project was assigned to the Ministry of Sustainable Resource Management early in 2003, with the Ministry of Water, Land and Air Protection retaining regulatory responsibility under the Environmental Management Act.

The Province is proceeding with a comprehensive remediation project, including the development and operation of a water treatment plant.

One of the key components of the Britannia Mine Remediation Project is the water treatment plant which will treat the ARD before the water enters Howe Sound. Most of the ARD is generated within the mine workings, and requires ongoing treatment. Other remedial actions being implemented by MSRM are addressing other aspects of mine rehabilitation and clean up, leaving water treatment as the primary aspect requiring long term management.

Project Objectives

MSRM defined objectives related to the outcomes the water treatment plant needs to achieve.

In its development of the overall remediation project, MSRM specified objectives for the water treatment plant. These objectives formed the basis for the requirements of the proponents' proposals, as well as for the evaluation criteria used in the competitive selection process. The development and operation of a water treatment plant is expected to achieve the following objectives:

- ensure the quality of treated water is compliant with regulations under the Environmental Management Act;
- minimize any residual potential environmental liabilities to the Province;
- establish public confidence in the treatment of ARD at the site;
- optimize the Province's lifecycle investment; and
- protect taxpayers from cost over-runs, schedule delays, and costs related to water treatment technology and plant operation.

Options Analysis

The government considered two options for designing, building, financing and operating the plant.

Given the size, scope and risks involved with the water treatment plant, two delivery options were considered feasible by MSRM for this project.

Traditional Delivery:

For the water treatment plant, traditional delivery would have involved selecting a private sector firm to work in the Province's best interests to deliver the project as efficiently as possible. The private sector firm would not select the technology to be implemented, but would design the plant based on the technology and effluent standards selected by the Province. The private firm would coordinate engineers, designers and constructors. The long term risks associated with the design, construction and performance of the plant would remain with the Province.

Responsibility for operating the plant would remain with the Province after the completion of the project. Under this model, the Province would likely have contracted operations of the plant to the private sector for short, renewable terms.

Alternative Delivery

Design, Build, Finance, and Operate – Through a long term agreement with the Province, the private sector would finance, design, build and operate the water treatment plant. This alternative delivery model includes the following features:

- private sector teams compete for the work, providing competitive proposals including proposed performance payments to cover their capital and operating costs;
- private sector teams compete to determine the best technology and are incented to apply continuous upgrades as technology evolves;
- because the private partner invests their own equity, and relies on performance-based payments, they have more incentive to deliver the long term outcomes the Province requires. Their return on investment is based on their performance.

Preferred Option

In October 2003, the Province approved the recommendation that delivery of the Britannia Mine water treatment plant be pursued as a public private partnership.

Expected Benefits

As part of the options analysis process, expected benefits of the delivery models were considered. The primary expected benefits of using the public private partnership model were:

- significant cost savings over the life of the project;
- using the financing and payment structures to link payments to performance. This allows effective sharing of the risks associated with treating the water, between the province and the private sector partner; and
- the application of technological innovations related to the design of the plant, the treatment of the water, and the management of the resulting sludge.

2. Competitive Selection Process

EPCOR was chosen from an initial field of six teams.

EPCOR Water Services Inc. was chosen through a fair, transparent, and competitive selection process, consistent with provincial practices and policies. All competitive selection documents are available at www.partnershipsbc.ca

Competitive Selection Process

Competitive Selection Stage	Process	Number of Proponent Teams	Timing
Request for Expressions of Interest issued	The request for expressions of interest was advertised nationally. Expressions of interest were received, evaluated, and short-listed.	Six	January 2004
Request for Proposals issued	The short-listed teams were invited to submit proposals.	Three	May 2004
Request for Proposals closed	Proposals were evaluated.		September 2004
Preferred proponent selected	The draft concession agreement was produced.	One	November 2004
Negotiations	A final project agreement was negotiated with the proponent.		November 2004 – January 2005
Agreement signed			January 2005

The Expressions of Interest were evaluated by an evaluation committee, accountable to the Britannia Mine Water Treatment Plant Project steering committee. The steering committee included members from Partnerships BC and from MSRM. The evaluation committee included MSRM, Partnerships BC and expert private sector advisors who provided expertise in competitive selection process, water treatment plant engineering and operation, environmental remediation, and project financing. Expressions of Interest were evaluated based on qualifications; experience; use of demonstrated, innovative technology; proponent team organization and structure; and financial capacity.

Three qualified teams were short-listed to move to the next stage in the selection process. The short-listed teams included a combination of local, national and international companies, and are listed below:

- **AMEC Americas Ltd., Ledcor Projects Inc. and Squamish First Nations;**
- **EPCOR Water Services Inc. and Team,** including Stantec Consulting Ltd., Lockerbie Stanley Inc., CEMI and BioteQ Environmental Technologies;
- **Terasen Utility Services Inc.,** including Maple Reinders Inc., Knight Piesold Ltd., Earth Tech Canada Ltd., Toby Russell Buckwell & partners architects, and Unipure Europe Ltd.

The three teams submitted proposals in September 2004. Proposals were reviewed to ensure they met all the mandatory requirements, policies and procedures and were then reviewed by the evaluation committee, reporting to the project steering committee, as described above.

Evaluation was based primarily on cost, with a technical pass/fail component, and a number of qualitative criteria. Evaluation criteria are defined in detail in the Request for Proposals. Evaluation teams completed quantitative and qualitative evaluations, and submitted their recommendations to the evaluation committee. The evaluation committee used these reports to select the preferred proponent.

Fairness Auditor

MSRM and Partnerships BC engaged a fairness auditor to observe the evaluation process. The auditor's mandate was to act as an independent observer to the competitive selection process to ensure the process was fair and without bias. The fairness auditor did not raise any concerns.

A conflict of interest adjudicator was also appointed for the evaluation process, to ensure there were no perceived or actual conflicts of interest.

Competitive selection results

In November 2004, EPCOR Water Services was selected as the preferred proponent and detailed negotiations led to a final agreement being reached on January 12, 2005.

Competitive Selection Costs

True cooperation between MSRM, Partnerships BC, and EPCOR helped to reduce the competitive selection costs.

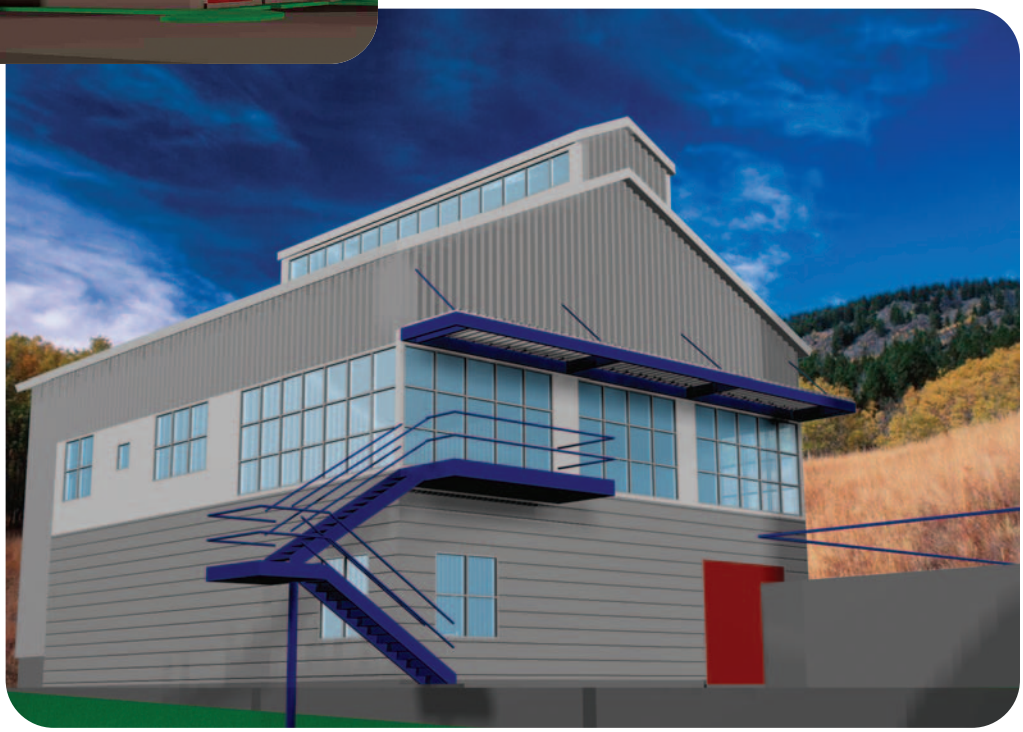
The Ministry engaged a number of advisors to assist in the competitive selection process. The associated cost of all advisors, including Partnerships BC, is approximately $900,000. This represents approximately three per cent of the project's net present value, or six per cent of the project's capital cost. Competitive selection costs are similar to the estimated cost of traditional procurement. The project team developed a draft project agreement as the basis for negotiation with the preferred proponent. By having the agreement at a nearly final stage when negotiations began, and through the cooperative approach of MSRM and EPCOR, the project team was able to keep competitive selection costs relatively low. As a result, the final agreement and the relationship between MSRM and EPCOR reflects strong partnering.

One of the benefits gained in this project is the ability to apply the model developed for the Britannia Mine water treatment plant to similar projects. Partnerships BC expects to apply best practices gained on this project to future projects, thereby reducing costs for future projects.

3. The Final Agreement

The Partner

EPCOR works with municipalities and companies across western Canada. In B.C., the company provides water and wastewater services to the District of Sooke, the District of Port Hardy and the town of Lytton. Visit www.EPCOR.ca for more company details. The EPCOR team includes Stantec Consulting Ltd., Lockerbie Stanley Inc., CEMI and BioteQ Environmental Technologies.



3D renderings of the Water Treatment Plant

Key Terms of the Project Agreement

Terms of Contract	• A one year design and construction term is followed by a 20 year operations and maintenance term. • The total cost of the contract (discounted at 8.12 per cent) is $27.2 million, plus cash allowance items in the amount of $1.9 million. • This cost can fluctuate based on water volume, future prices of specific inputs (such as chemicals, utilities, and transportation costs of sludge) and the actual costs of the cash allowance items which are outside of the scope of the final agreement. • Throughout the term of the agreement, the Province owns the plant and all associated infrastructure involved in the project.
Overall Terms	• EPCOR is solely responsible for obtaining financing as and when it may be required to design, build and operate the plant. • EPCOR will construct the plant within one year. • Once the plant is producing water at the required compliance standard, the Province will pay EPCOR a monthly payment based on volume of water treated and specific performance indicators, such as water quality.
Future Revenue Sharing	• The Province will share in any revenue generated by future innovations.
Legal and Commercial Structure	• EPCOR Britannia Water Inc. is a wholly owned subsidiary of EPCOR Water Services Inc., which is an Alberta company with assets in excess of $740 million. • The B.C. head office of EPCOR Water Services Inc. is located in Richmond, B.C.
Contract Termination Provisions	• The project agreement can be terminated by the Province, by operator default or by mutual agreement.
End of Term Provisions	• The plant must be in an acceptable condition at the end of the agreement, recognizing that it will be a 20 year old plant. • At the end of the agreement, the Province can: - renew the contract with EPCOR; - assume operational responsibility for the plant; or - put the contract out to tender, using a traditional or alternative delivery model.
Guarantees and Indemnities	• EPCOR Water Services has provided a parental guarantee to EPCOR Britannia Water Inc. • The permits for the effluent discharge and sludge disposal will be in the Province's name; however, EPCOR assumes full responsibility for its actions under these permits.
Intellectual Property	• In the event of a default, the Province has all rights to intellectual property involved in the Britannia Mine water treatment plant – to be used only in the Britannia Mine plant. • The Province has the right to conduct spot audits on the plant whenever it likes, providing a notice period of approximately 24 hours.
Audits	• The Province will complete annual reviews as specified in the project agreement.

Financial Summary

The Britannia Mine Water Treatment Plant Project achieves value for money because EPCOR Water Services Inc. has committed to finance, design and build the plant in one year, and operate it for 20 years, for a cost of $27.2 million (net present value). This compares favourably to the Province's estimate of $39.7 million to complete and operate the plant under traditional delivery methods. In addition, as explained throughout this report, the public private partnership model is expected to deliver better results for the key criteria for this project: regulatory compliance, innovation and creativity, risk management and lifecycle cost.

Comparison of Costs

	Capital Cost	Operating Cost	Total*
EPCOR	$15.5 million	$11.6 million	$27.2 million
Traditional Delivery	$18.2 million	$21.5. million	$39.7 million

**Net present value, discounted at 8.12 per cent.*

The table above shows the final net present value[1] for both traditional delivery and the final agreement negotiated with EPCOR. Costs of traditional delivery are estimated through the use of a public sector comparator (PSC). A PSC is a risk-adjusted estimate of overall project costs in today's dollars, if the project were delivered wholly by the public sector. Net present value was calculated with a discount rate of 8.12 per cent. In developing public sector comparators, Partnerships BC recommends using a discount rate that is as close as possible to the estimated private sector weighted average cost of capital for projects with a similar scale, business type and comparable risk profile. The discount rate used in this analysis is based upon an assumed real risk rate of six per cent per year plus annual average inflation of two per cent per year. The PSC was discounted at a rate of 8.12 per cent, to account for a higher level of risk. This rate was provided to the proponents and they were required to use it in the financial component of their proposals.

The public sector comparator capital costs were defined in June 2004 and adjusted for inflation to align with the date provided to proponents. EPCOR capital costs are as proposed, including changes as a result of negotiations.

Operating costs of the water treatment plant during the first year of operations were developed for the PSC and then compared to the proposals received. The operating term for both EPCOR and the PSC is 20 years and operating costs are inflated by two per cent per year. The project agreement links operations payments to the Vancouver-based Consumer Price Index, as published by Statistics Canada.

Changes to the Project

Major public sector capital projects are typically approved at the business case stage. During the time between this approval and signing the final agreement, various factors affecting the project cost may change. Changes are generally in the areas of scope, market and negotiated changes.

For this project, there were no significant changes in the market. However, two changes were made related to scope, resulting in increased costs:

- An increase in the capital costs for enhanced architectural design for the plant;
- An alternative plan for sludge disposal which increased transportation costs, and was required because of geotechnical concerns with the initial proposed site.

[1] Net present value means the discounting of projected cash flows to express future amounts in today's dollars.

Performance Payments

The Province will pay EPCOR a monthly payment which is comprised of:

- A base payment to cover predefined lifecycle capital costs. These costs include return on and return of capital, repair and replacement, labour costs and overhead. This amount was competitively bid and EPCOR is contractually bound to deliver and maintain the water treatment plant within the boundaries of this price. EPCOR will pay for any cost over-runs and will retain any savings. Effectively, the capital cost risk of the plant has been transferred to EPCOR.
- In addition to the monthly base payment, adjustments will be made with respect to operating costs related to chemicals, utilities and the cost of sludge transportation and disposal. These costs are all variable inputs to the process. The levels of usage are directly related to the volume of water the plant processes. The more water processed, the higher the usage of chemicals, utilities and sludge transport and disposal. The above listed operating costs are based on efficiency factors which were competitively bid during the selection process. For example, EPCOR will use no more than a specified volume of lime per cubic meter of water processed. If EPCOR has underestimated this ratio, it must pay the cost of additional lime. This protects the Province from expenses related to an inefficiently operated plant. If EPCOR can increase its efficiencies and in effect, lower its costs, it can retain the revenue gained as a result.
- A performance payment linked to the water quality and other performance specifications.

Risk Allocation

Risks have been allocated to the partner best able to cost-effectively manage them.

Sharing risks between the public and private partners is a fundamental goal of public private partnerships. Sharing of risks leads to a more cost-effective project overall, because the partner who bears the risk has a strong financial incentive to reduce the probability or severity of the risk wherever possible.

For example, the public sector is better able to assume the risks of long term environmental liabilities, the possibility of major catastrophic events, changes to laws and regulation, and the unpredictable nature of the amount of water that will flow through the plant. Similarly, the private partner is better able to manage construction, operations, maintenance and repair costs related to the plant; issues with the water treatment technology, and financing of the project.

The following table provides an overview of risk allocation. Detailed risk allocation is defined in the project agreement.

Risk Description	EPCOR	Province
Operations, maintenance and repair costs	✔	
Construction costs and schedules	✔	
Water treatment technology (effectiveness and efficiency)	✔	
Project financing	✔	
Catastrophic events		✔
Project scope definition and changes, including changes to government regulations		✔
Risks associated with the existing mine infrastructure, such as the possible collapse of the inner workings		✔
Volume Risk: the performance payment to EPCOR is dependent on the volume of water treated. This means that as volume of water treated increases, so does the payment to EPCOR.		✔
Environmental Liability: EPCOR is environmentally liable throughout the water treatment process. Once the treatment process is complete and the sludge is disposed of in an appropriate manner, the Province remains ultimately liable under the Energy and Mines Act as owner of the site.	✔	✔
Inflation Risk	✔	✔
Risk associated with the water chemistry	✔	✔
Geotechnical Risk • Unanticipated subsurface conditions for plant site only transferred to EPCOR • Geotechnical risk associated with outfall (the pipe that discharges the treated water into Howe Sound) remains with the Province.	✔	✔

Comparisons

Proposals received were compared to a hypothetical traditional delivery model to assess whether value for money could be achieved.

Value for money is a term that captures both quantitative factors, such as costs, and qualitative factors such as service quality. Partnerships BC recommends looking at a broad range of factors in determining whether a project offers value for money. For the water treatment plant project, proposals received were compared against the expected results of a hypothetical traditional public sector delivery model, to confirm the expected benefits of the public private partnership approach.

The criteria used in this analysis, based on the project objectives, were:

- regulatory compliance;
- innovation and creativity;
- risk management; and
- financial analysis.

Regulatory Compliance

Both the traditional and alternative delivery models provided financial incentive to ensure the plant would meet the permit requirements for water quality, because the operator would be paid for achieving compliance and financially penalized for non-compliance. The approximate daily penalty for not complying with the permit is $7,700.

However, under the traditional model, the operator would not have made a capital investment in the project. Under the alternative model, the financial penalty would directly affect the private partner's return on investment.

Additionally, under the alternative delivery model, the private partner would have the ability to influence the design and construction of the plant, resulting in a more effective transfer of risk with less opportunity for the operator to dispute plant non-compliance.

MSRM and Partnerships BC concluded that the agreement with EPCOR would result in the best regulatory compliance because EPCOR would have the responsibility to design, construct, and operate the plant over the long term, and would bear the financial risk of non-compliance.

Innovation and Creativity

Under traditional delivery, the Province's project team would determine and define the water treatment technology and the contractor would manage the design and construction process, working in the Province's best interests to deliver the project as efficiently as possible. However, the eventual plant operators would have no input into the design and construction of the plant. In addition, due to the short term nature of such operating contracts, the operator would not have a sufficient period of time to introduce, and realize gains from, efficiencies in operations.

Under alternative delivery, the competitive selection process would be managed to maximize innovation in both plant design and water treatment technology.

The private partner would be financially motivated to design, build and maintain the plant so that it could be operated as efficiently as possible.

The final agreement with EPCOR provided the best opportunity for innovation.

- EPCOR will install a state of the art SCADA (supervisory control and data acquisition) system which will use computers to monitor the plant operations and water quality on a continuous basis. The system displays data in real-time and this data will be available to the Province on a secure website. Additionally, historic data and analysis will be available to the public, over the Internet.
- EPCOR will use a standard high density sludge process to treat the water, but expects to minimize the use of treatment chemical (lime) and lower overall costs.
- EPCOR will build and operate a small hydro electric plant that will use the contaminated water flowing from the mine workings to generate some of the electricity needed to run the treatment plant. This clean power source will substantially reduce the costs of electricity for the plant.
- EPCOR will test the feasibility of metal recovery and sludge re-use.

Risk Management

Under traditional delivery, there would be minimal transfer of risk during the design and construction phase of the project. Although the contractor would work to provide the best value to the Province, the company would not be financially accountable for long term construction and design risks to the same extent as a partner under a DBFO agreement. Under traditional delivery, during periods of plant non-compliance, the operator could claim that the non-compliance was the result of either the design or construction of the plant.

Under the alternative delivery process, the operator would have involvement in the design and construction of the plant on a whole lifecycle costing basis, resulting in a more effective allocation of risk.

Based on this analysis, Partnerships BC concluded that the final agreement with EPCOR provided better risk management, since risk sharing is inherent in the public private partnership model.

Financial Analysis

Financial analysis was completed through the use of a public sector comparator, or PSC.

The PSC estimated that the net present value lifecycle cost of the project under traditional delivery would be $39.7 million. EPCOR's final price was $27.2 million. Additionally, the alternative delivery model would result in the private partner being financially motivated to guarantee regulatory compliance. Use of the alternative delivery model would commit the private partner over the long term, providing stability to the project.

Budget and Accounting Treatment

A liability associated with the remediation has already been recorded on the Province's financial statements. This means that all expenses associated with the project are classified as operating expenses since the funds will be used to work towards restoring the land to its original state. Due to the remediation aspect of this project, the plant will not be a capital asset and annual depreciation expenses are not required.

The impacts of the Britannia Mine water treatment plant on government financial reporting would have been the same under either the traditional or alternative delivery model.

4. Ongoing Monitoring

MSRM is responsible for ongoing management of the project agreement, to ensure delivery and operation of the plant, and compliance with environmental standards.

The Province will receive monthly reports from EPCOR detailing the operation of the plant. These reports will provide information about the volume of water treated, and the quality of the water. The required water quality is defined in the Province's discharge permit, issued and managed by the Ministry of Water, Land and Air Protection.

EPCOR will continuously measure and electronically record the volume of water processed by the plant. EPCOR is required to perform frequent analysis for levels of copper, zinc and aluminum, and for ph levels and turbidity. All analysis will be completed in compliance with provincial regulations and requirements. All of these measurements will be available online in real time; historical results will also be available online. If EPCOR fails to meet monitoring and reporting requirements as defined in the final agreement, it will be subject to adjustments to the monthly payment formula, resulting in a lower payment.

The Province will conduct long term monitoring to ensure that the overall remediation activities are effective.


BRITISH
COLUMBIA
Ministry of Sustainable
Resource Management


partnerships
British Columbia