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**Capital Regional District ("CRD")
Core Area and West Shore Wastewater
Treatment Programs**

*Review of Business Case in Support of Funding
from the Province of British Columbia*

Contents

	<u>Page</u>
1.0 Introduction	1
2.0 Value for Money Assessment.....	3
3.0 Scope of Review.....	4
3.1 Documents Reviewed	4
4.0 Response to CUPE Questions	4
4.1 Extent to Which the Business Case Double-Counts Risk.....	4
4.2 Rationale Provided for the Assumption that the "Traditional" Option will have Higher Operating Costs.....	6
4.3 What Would it Mean for Various Components of the Evaluation if the Discount Rate was 6, 6.5, or 7%	6
4.4 What Would it Mean for the Evaluation if the Standard U.K. Discount Rate of 3.5% was Applied	7
4.5 Rationale for a Discount Rate of 7.5%	8
4.6 Information in the Business Case to Assess the Option of "Design/Build" Construction Matched with Public Operation and Maintenance	9
4.7 Assumption that "Construction Costs" and "Operating Costs" will be Higher in Both the "Traditional" and "Hybrid" Options	9
4.8 Extra "Adjusted General Contingency" Applied to the "Traditional" Option	10
4.9 Assumption that a P3 will have Fewer Employees and Managers than Either of the Other Two Options.....	10
4.10 The "Break-Even" Discount Rate is 7.66%	10
5.0 General Comments and Conclusion	11
6.0 Professional Qualifications.....	12

Capital Regional District ("CRD") Core Area and West Shore Wastewater Treatment Programs

Review of Business Case in Support of Funding from the Province of British Columbia

1.0 INTRODUCTION

Blair Mackay Mynett Valuations Inc. was retained by the Canadian Union of Public Employees ("CUPE") to review and comment on Draft 3.8 of the Business Case referred to above, dated February 23, 2010.

More specifically, we were asked to address the ten questions set out below.

1. To what extent does the Business Case double-count risk? For example, are the categories labelled as "retained approval and construction period risk" duplicated in any other risk calculations elsewhere in the report? Do the risk numbers make sense and if there is duplication, where specifically is risk double-counted?
2. Is there any reasonable rationale provided for the assumption that the "traditional" option will have higher operating costs? If so, to what extent is that transparent and clear?
3. If the discount rate was 6, 6.5, or 7% what would that mean for the various components of the evaluation?
4. What would it mean for the evaluation if the standard U.K. discount rate of 3.5% was applied? (Note: in the U.K., H.M. Treasury applies a consistent 3.5% discount rate to the evaluation of all potential P3 projects.)
5. Please comment on the stated rationale for a discount rate of 7.5%. The Business Case report says the rationale for that rate is "... provincial expectations as an estimate of the average long term project internal rate of return..." Is that explanation reasonable, transparent, substantiated and understandable?

6. Is there sufficient information in the business case to assess the option of "design/build" construction matched with public operation and maintenance? The current definition of the "traditional" option is design/bid/build, but we are interested in breaking out information on design/build/public operation/public maintenance.
7. The Business Case assumes that "construction costs" and "operating costs" will be higher in both the "traditional" and "hybrid" options. Is this assumption substantiated and reasonable?
8. Please comment on the extra "adjusted general contingency" that is applied to the "traditional" option.
9. Is there sufficient explanation or justification for the assumption in the business case that a P3 will have so many fewer employees and managers than either of the other two options?
10. Please comment on the conclusion that the "break-even" discount rate is 7.66%. What does that mean?

The Business Case presents three procurement options for consideration. These are summarized on page 12, as follows:

"Option A: Traditional Approach. The approach generally assumes the Combined Program will be delivered using a design-bid-build approach (DBB) or construction management at risk (CMAR) approach.

Option B: Hybrid Approach. This option uses a variety of procurement approaches from DBB and CMAR to design-build (DB) and also design, build, finance; operate and maintain (DBFO) approaches.

Option C: Public-Private Partnership Approach. This option includes a more extensive use of the DBFO approach to procurement for the major components of the Program (all wastewater treatment facilities and the Energy Centre). Conveyance, outfalls and the tunnel are assumed to be procured using a more traditional approach."

2.0 VALUE FOR MONEY ASSESSMENT

The CRD conducted a financial assessment and value for money ("VFM") analysis, summarized as follows (in \$000 of dollars).

Value for Money Summary Summary Tables	Traditional (PV) \$	Hybrid (PV) \$	PPP (PV) \$
Construction costs for Traditional components of Program	667,234	399,510	117,397
Federal & CRD advances to DBFO components (during construction)	—	145,046	309,094
Land purchases	12,996	12,996	12,996
Provincial ASP principal & interest payments on capital costs	—	143,080	279,874
Retained Approvals and Construction Period Risk	50,559	25,945	23,142
Total PV Capital portion of costs	730,789	726,577	742,503
Operations and Maintenance Costs			
CRD O&M net of resource recovery	188,395	128,649	4,175
CRD ASP components for operations and maintenance	n/a	66,633	182,460
CRD membrane replacement	973	924	—
Total Operations & Maintenance Costs	189,368	196,206	186,635
Total Competitive Neutrality	3,630	1,784	—
Total PV	923,787	924,567	929,138

* All amounts discounted to present using discount rate of 7.5% over 6-year construction period and 25-year operating period.

The Hybrid option included is somewhat unusual as it includes both Traditional and Public Private Partnership ("PPP") components, although the Business Case fails to provide a financial analysis for each of the major components.

We note with interest that even at the discount rate of 7.5%, which we consider too high for reasons to be discussed later in this report, the three options have almost identical present values of relative costs.

Measured in nominal dollars over the life of the project, that is, before discounting to present value, the Summary Tables appear as follows:

Nominal Cost Summary	Traditional (PV) \$	Hybrid (PV) \$	PPP (PV) \$
Total capital costs	941,810	1,534,964	2,341,582
Total operations costs	755,361	528,760	53,580
Revenue offset	(37,759)	(37,759)	(37,759)
Total	1,659,412	2,025,965	2,357,403

Because the payments to the PPP and to some extent the Hybrid options are spread over the life of the project, the capital and operations costs appear skewed. However, the effect of the discount rate application is evident when comparing total nominal costs to present value costs.

3.0 SCOPE OF REVIEW

3.1 Documents Reviewed

While preparing this report, we reviewed the following documents:

- "Capital Regional District Core Area & West Shore Wastewater Treatment Programs: Business Case in Support of Funding from the Province of British Columbia, February 23, 2010 (Draft 3.8)", with Appendices;
- "CRD WWTP Business Case Requirements";
- "Report to Core Area Liquid Waste Management Committee Meeting of Wednesday 10 March 2010. Subject: Peer Review of Draft Business Case for Provincial Funding — Core Area Wastewater Treatment Program ("Peer Review"); and
- "Methodology for Quantitative Procurement Options Analysis Discussion Paper: Partnerships British Columbia, January 2010.

4.0 RESPONSE TO CUPE QUESTIONS

4.1 Extent to Which the Business Case Double-Counts Risk

To what extent does the Business Case double-count risk? For example, are the categories labelled as "retained approval and construction period risk" duplicated in any other risk calculations elsewhere in the report? Do the risk numbers make sense and if there is duplication, where specifically is risk double-counted?

In the Traditional option financial assessment, there are two retained risk components: Retained Approvals and Construction Period Risk of \$61,702,000 and Retained Operating Period Risk of \$40,129,000. These amounts fall to \$29,821,000 and \$33,947,000, respectively, in the Hybrid option, and to \$24,906,000 and \$18,739,000, respectively, in the PPP option.

On page 66 of the Business Case, there is a table that demonstrates how the total quantified construction and operating period risks are transferred in the Hybrid and PPP options.

	Traditional \$	Hybrid \$	PPP \$
Quantified Construction Risk			
Retained "Project Reserve"	61,702,082	29,821,107	24,905,864
Transferred Risk (at cost of transfer)	—	20,335,201	25,269,535
Total Quantified Construction Risks (nominal dollars)	61,702,082	50,156,308	50,175,399
Quantified Operations Phase Risks (total over life cycle)			
Retained	10,588,995	8,957,683	4,944,832
Transferred	—	1,631,311	1,411,041
Total Operations Phase Risks	61,702,082	50,156,308	50,175,399

These numbers suggest that risks transferred to a private partner would have a lower value than in the Traditional option. Partnerships British Columbia ("PBC") states in its methodology that "the potential financial impact of a risk event is determined from the perspective of the party retaining the risk". There is an inherent assumption that in the Traditional option, government does not have available the means to avoid or mitigate risk. We believe that there are forms of traditional procurement such as Design/Build that offer risk mitigation opportunities. Accordingly, valuing the risks in this project constitutes a biased approach that tends to favour the PPP option.

The discount rate chosen to assess the present value costs under the three options was 7.5%. As stated in the Peer Review, "The discount rate is intended to take into account the time value of money as well as the risk premium that an investor would require to be fairly compensated for the expected risk of the project, given that they have the alternative of investing in other projects." This is suitable from the point of view of the private sector, which is concerned with the profitability of a project, but not for the purpose of assessing VFM of different procurement options, particularly as the risk premium (in the form of the value of retained risks) is added to the Traditional option before the discount rate is applied. Therefore, the risk is effectively double-counted.

The alternative is to use a discount rate which takes into account the time value of money as reflected in a rate in line with the government's cost of borrowing, or if using the discount rate as prescribed by PBC and the Peer Review, avoid adding the value of retained risks to the Traditional model.

Eliminating the value of retained risk from the VFM assessment, while retaining the 7.5% discount rate, would reduce the present value costs of the options as follows:

	Total PV per CRD \$	Total PV without retained risk \$
Traditional	923,787	873,228
Hybrid	924,569	902,951
PPP	929,138	905,996

Our preference, however, is to add the quantified retained risk to the option and then discount to present value using a rate approximating the taxpayers cost of borrowing. The Municipal Finance Authority rate of 5.19% is more appropriate than the 7.5% used by the CRD.

4.2 Rationale Provided for the Assumption that the "Traditional" Option will have Higher Operating Costs

Is there any reasonable rationale provided for the assumption that the "traditional" option will have higher operating costs? If so, to what extent is that transparent and clear?

The rationale for this assumption is that the private partner will bring innovation and efficiency to the project that will serve to lower future operating costs. In addition, some efficiencies were identified in the procurement of labour and management services, but these assumptions are not well supported in the Business Case.

4.3 What Would it Mean for Various Components of the Evaluation if the Discount Rate was 6, 6.5, or 7%

If the discount rate was 6, 6.5, or 7% what would that mean for the various components of the evaluation?

The CRD presented a sensitivity analysis on page 74 of the Business Case which demonstrates the effect of using discount rates ranging from 6% to 9.5%.

	Traditional \$	Hybrid \$	PPP \$
Discount Rate Sensitivity Analysis			
6.000%	1,012,877	1,045,151	1,079,523
6.500%	981,116	1,001,706	1,025,127
7.000%	951,488	961,625	975,149
7.500%	923,787	924,566	929,139
8.000%	897,827	890,229	886,698
8.500%	873,444	858,346	847,474
9.000%	850,494	828,682	811,153
9.500%	828,848	801,025	777,457
Break even-discount rate (Traditional vs. PPP) – 7.66%			

We noted, also from page 74, that "The CRD believes a lower discount rate may be more appropriate for the evaluation of this project; however, for the purposes of this provincial submission in support of funding of over \$300-million the CRD includes analysis based upon provincial expectations."

We prepared a present value cost comparison using a 5.19% discount rate, which we understand is the cost of borrowing of the Municipal Financing Authority ("MFA"). Our analysis resulted in present value costs as follows:

Traditional	\$1,063 million
Hybrid	\$1,121 million
PPP	\$1,179 million

At a discount rate of 5.19%, the preferred option is the Traditional, by an advantage of \$58 million over the Hybrid, and \$116 million over the PPP, all very significant differences.

4.4 What Would it Mean for the Evaluation if the Standard U.K. Discount Rate of 3.5% was Applied

What would it mean for the evaluation if the standard U.K. discount rate of 3.5% was applied? (Note: in the U.K., H.M. Treasury applies a consistent 3.5% discount rate to the evaluation of all potential P3 projects.)

In the United Kingdom, the recommended discount rate for projects up to thirty years duration is 3.5%. This rate, referred to as the "Social Time Preference Rate", is derived from the value society attaches to present, as

opposed to future, consumption. The rate has two components which can vary from time to time:

- the rate at which individuals discount future consumption over present consumption, on the assumption of no change in per capita consumption; and
- an additional element which in lay terms reflects inflation in per capita consumption.

We found that using a 3.5% discount rate resulted in present value costs as follows:

Traditional	\$1,202 million
Hybrid	\$1,323 million
PPP	\$1,439 million

The Traditional option, using a 3.5% discount rate, is preferable by an advantage of \$121 million over the Hybrid, and \$237 million over the PPP.

Obviously the lower the discount rate, the greater the advantage the Traditional option has over the Hybrid and PPP options in present value cost terms.

4.5 Rationale for a Discount Rate of 7.5%

Please comment on the stated rationale for a discount rate of 7.5%. The Business Case report says the rationale for that rate is "...provincial expectations as an estimate of the average long term project internal rate of return..." Is that explanation reasonable, transparent, substantiated and understandable?

As we discussed earlier in this report, when the value of quantified risks is added to the various financial models prior to the discounting process, then the discount rate should not include a risk premium over and above the time value of money.

The project internal rate of return may be very critical for the private investor who must choose among alternative investments, but it is not pertinent to the taxpayers who we presume are borrowing to pay for the project.

PBC argues that their discount rate takes into account the overall risk of a project, but it is not directly related to the specific quantified risks in the

analysis. In other words, the risk premium in their discount rate is associated with some rather nebulous risks which seem impossible to explain clearly. Presumably these include financing risks, but we would argue that the risk of non-payment is very low because the taxpayers are essentially guaranteeing the payments to be made over the life of the project. In other words, the underlying financing of the project is near risk-free.

4.6 Information in the Business Case to Assess the Option of "Design/Build" Construction Matched with Public Operation and Maintenance

Is there sufficient information in the business case to assess the option of "design/build" construction matched with public operation and maintenance? The current definition of the "traditional" option is design/bid/build, but we are interested in breaking out information on design/build/public operation/public maintenance.

The Peer Review is critical of the Business Case in that there is no consideration of a Design/Build option, an option that the Peer Review contends would result in lower financing costs than PPP, which in turn would lead to lower present value costs. This option offers opportunities for risk mitigation that normally have been considered to be exclusive to PPP options.

We concluded that the Business Case did not contain sufficient information to assess this option.

4.7 Assumption that "Construction Costs" and "Operating Costs" will be Higher in Both the "Traditional" and "Hybrid" Options

The Business Case assumes that "construction costs" and "operating costs" will be higher in both the "traditional" and "hybrid" options. Is this assumption substantiated and reasonable?

As discussed in 4.2 above, there is no substantiation of these assumptions in the Business Case. This is reasonable only if one accepts the general assumption that the private sector can always do things for less than government can, without consideration of alternative models of traditional procurement such as Design/Build in the case of construction. With regard to operating costs, the assumption of lower labour and management services costs is not substantiated.

4.8 Extra "Adjusted General Contingency" Applied to the "Traditional" Option

Please comment on the extra "adjusted general contingency" that is applied to the "traditional" option.

The adjusted general contingency appears to be an amount added to the Traditional option to bring the total general contingency into line with the other options. The general contingency is designed to account for unknown/unidentified risks.

4.9 Assumption that a P3 will have Fewer Employees and Managers than Either of the Other Two Options

Is there sufficient explanation or justification for the assumption in the business case that a P3 will have so many fewer employees and managers than either of the other two options?

We found no justification or explanation for this assumption that the PPP would require 30% fewer managers and staff than the Traditional option. This assumption may be quite unreasonable given that the "CRD anticipates that if the Program is operated by CRD staff then the actual number of people may vary from these estimates since operation of the program would be integrated into the existing operations and management structure (thus fewer new staff would be required)". It is therefore the incremental staff that should be factored into the analysis.

4.10 The "Break-Even" Discount Rate is 7.66%

Please comment on the conclusion that the "break-even" discount rate is 7.66%. What does that mean?

The break-even discount rate of 7.66% is the rate at which the present value costs of the three options are the same; that is, no one option is preferable in financial terms.

5.0 GENERAL COMMENTS AND CONCLUSION

In summary, our responses and comments are as follows:

- The Business Case effectively double-counts risk by adding the value of retained risk to the options and then proceeding to use a discount rate which includes a risk premium.
- There is no reasonable rationale provided for the assumption that the Traditional option will have higher operating costs.
- Generally, the higher the discount rate used in assessing VFM, the more a PPP option is favoured. The CRD employed a discount rate of 7.5% because of "provincial expectations" even though they believe a lower rate may be more appropriate.
- If the standard U.K. discount rate of 3.5% was applied, the Traditional option would be preferable by \$237 million present value costs.
- We do not agree with the rationale for a discount rate of 7.5% because we believe the rate used should reflect the public's cost of borrowing, not the rate of return expected by the private sector.
- There is insufficient information in the Business Case to assess the Design/Build option.
- The assumption of higher construction and operating costs in the Traditional and Hybrid options is not substantiated, and seems based on the general assumption that the private sector can always do things for less than government can.
- The general contingency is designed to account for unknown/unidentified risks and it is almost the same amount for each option.
- The assumption of fewer staff in the PPP option appears to ignore the fact that CRD staff would be integrated into existing operations. Accordingly, it is the incremental additional staff that should be factored into the Traditional option.
- The break-even discount rate of 7.66% is the rate at which the present value costs of the three options are the same.

Based solely on the Business Case, and without consideration of other options such as Design/Build, we believe the VFM assessment favours the Traditional option, even using a discount rate we consider to be far too high.

The Multi-Criteria Assessment conducted by CRD (page 108 of the Business Case) results in a somewhat ambivalent position on the three options; however, some of the expected cost savings for construction and operating in the Hybrid and PPP options may be suspect. Additionally, more consideration should be given to the issue of competition; there may not be the requisite number of bidders for a PPP option that would result in the lower costs and efficiencies projected, which in turn could have a considerable effect on the VFM assessment for the taxpayers.

6.0 PROFESSIONAL QUALIFICATIONS

The statement of professional qualifications of Ronald H. Parks, FCA, CA•IFA, who had principal responsibility for the content and preparation of this report, is set out in Appendix A.

BLAIR MACKAY MYNETT VALUATIONS INC.



Ronald H. Parks, FCA, CA•IFA

RHP/bca

Ronald H. Parks

BA, FCA, CA•IFA

Background

Ronald Parks is an Investigative and Forensic Accountant at Blair Mackay Mynett Valuations Inc.. He qualified as a Chartered Accountant in 1983 and began specializing as an Investigative and Forensic Accountant in 1987 with Ernst & Young. In 1994 Ron joined Lindquist Avey Macdonald Baskerville and opened their Vancouver office, where he focused on criminal fraud investigations, damages quantification in civil litigation, special purpose audits, financial reviews and inquiries, and statutory compliance and process reviews. In 2004, he joined PricewaterhouseCoopers as a Director of Investigations and Forensic Services. He has been at Blair Mackay Mynett Valuations Inc. since February 2006.

Ron is recognized throughout British Columbia and Western Canada for the "Parks Report", the result of his investigation into the affairs of the Nanaimo Commonwealth Holding Society and related parties, which was prompted by allegations of the misuse of charitable donations, lottery commissions, and bingo proceeds. The "Parks Report" presented detailed findings that led to an RCMP investigation and criminal charges as well as a Commission of Inquiry.

For an international assignment, Ron prepared and facilitated training in an Inter-Agency Anti-Graft Program in the Philippines. This project was sponsored by the Canadian International Development Agency to assist the Philippines government in detecting, investigating and prosecuting graft and corruption cases.

Ron has been a frequent lecturer and seminar presenter to the Institute of Chartered Accountants of BC, the Institute of Internal Auditors, the Justice Institute of BC, police, legal and regulatory organizations, and various corporations and not-for-profit groups. He co-designed and taught a continuing-education program on investigative and forensic accounting at British Columbia Institute of Technology.

Ron was designated a specialist in investigative and forensic accounting (CA•IFA) in 2000 and was elected a Fellow of the Institute of Chartered Accountants of BC (FCA) in 2002. He is a former member of the board of directors of the Alliance for Excellence in Investigative and Forensic Accounting.

Areas of Specialization

- Fraud investigations
- Funds tracing
- Financial reviews
- Fidelity insurance claims
- Election financing investigations
- Wrongful dismissals
- Government inquiries
- Partnership and shareholder disputes
- Breach of contract claims
- Damage quantification

Professional Assignments

- Assisted the Department of Justice, Canada Customs and Revenue Agency in tax evasion cases by reviewing evidence, recommending methods for the presentation of accounting evidence and preparing counsel for potential defenses.
- Investigated, pursuant to the Society Act of British Columbia, the Nanaimo Commonwealth Holding Society for alleged misuse of charitable donations, lottery commissions and bingo proceeds. Wrote the "Parks Report".
- Assisted Elections BC and Elections Manitoba in the investigation of alleged election financing regularities.
- Investigated the Recall Campaigns in Prince George North, Skeena and Comox Valley for Elections BC.

- Reviewed the financial implications of the privatization of highway maintenance in British Columbia.
- Reviewed hospital purchasing practices in British Columbia for the Ministry of Health.
- Assisted in the investigative accounting and financial review of Ridge Meadows Hospital and Health Care Centre.
- Conducted a forensic accounting and archival research study of the Touchwood Agency Mismanagement (1920 – 24) Specific Claim. This case involved quantifying a fraud that was alleged to have occurred in this Indian Agency between 1920 and 1924.
- Conducted a public inquiry for the City of Quesnel into cost estimate inflation of the Place St. Laurent project.
- Conducted an investigation and review of roles and responsibilities and the process followed in the Downtown Core Project for the District of Maple Ridge.
- Reviewed the Initial Evaluation of the Public Private Partnership (P3) for the Fraser Valley Health Centre/Eastern Fraser Valley Cancer Centre and the Request for Proposals that followed.
- Provided an expert report covering accounting and reporting issues over a forty-year period in Canada's largest First Nations civil case. (Samson et al v. HMTQ and Ermineskin et al v. HMTQ Trust Accounting and Reporting Standards).
- Conducted an investigation of CareNet Technology Society and the British Columbia Government's dealings with Douglas F. Walls, for the office of the Comptroller General of B.C.

Recent Presentations

- "Fraud and Error", Institute of Chartered Accountants of BC.
- "Fraud in the Retail Environment", Institute of Chartered Accountants of BC.
- "Fraud Investigation Protocol for Internal Auditors", Institute of Internal Auditors
- "Effective Prevention and Detection of Money Laundering", Mexican Bankers Association, Mexico City, Mexico, 1997.
- "Fraud Auditing and Forensic Accounting", Conference on Governance, Manila, Philippines, 1997.
- "Fraud Awareness for Chartered Accountants in Public Practice", Institute of Chartered Accountants of BC.
- "Risk Management for Chartered Accountants in Public Practice", Institute of Chartered Accountants of BC.
- "Forensic Accounting and Accounting Evidence", Justice Institute of BC.
- "Forensic and Investigative Accounting", Resources Development Canada Major Investigation Workshop.
- "Investigating Employee Fraud", Association of Certified Fraud Examiners Forum on Fraud.
- "Fraud and Theft Prevention and Detection in a Down-sized Workplace", Canadian Controllers' Summit.
- "Fraud Auditing and Forensic Accounting", Chinese Auditor Training Program: Canadian International College.
- "P3 Project Delivery – A Forensic Accountant's Point of View", Council of Educational Facilities Planners International, Whistler, BC, July 2003
- "Employee Fraud Investigations", Privacy Laws & Effective Workplace Investigations, Vancouver, BC, April 2003
- "School Generated Funds: Assessing and Mitigating Risk of Fraud and Misstatement", BC School District Secretary – Treasurer's Association, November 2004

Publications

- "Lost Income", Recovery (a publication of the Insurance Corporation of British Columbia), April 1991. (Co-author)
- "Fraud and Theft Prevention and Detection in a Downsized Workplace", Insight Canadian Controllers' Summit, March 1996. (Co-author)
- "The Proliferation of White Collar Crime and the Role of the Auditor", Beyond Numbers (a publication of the Institute of Chartered Accountants of BC), April 2002. (Co-author)
- "A Protocol for the Conduct of Fraud Investigations", The Balance Sheet (a publication of the Alliance for Excellence in Investigative and Forensic Accounting), Fall 2003. (Co-Author)

Education and Professional Memberships

- 2002 – Elected a Fellow (FCA) of the Institute of Chartered Accountants of British Columbia
- 2000 – Specialist Designation in Investigative and Forensic Accounting (CA•IFA), Canadian Institute of Chartered Accountants
- 1983 – Chartered Accountant (CA), Canadian Institute of Chartered Accountants
- 1981 – Extended Studies in Accounting and Business, Simon Fraser University
- 1964 – Bachelor of Arts (BA), University of Alberta
- Institute of Chartered Accountants of British Columbia (ICABC)
Canadian Institute of Chartered Accountants (CICA)
Alliance for Excellence in Investigative and Forensic Accounting (IFA)

Expert Testimony

Ron has qualified as an expert witness in both criminal and civil trials in British Columbia Provincial Court, British Columbia Supreme Court, and the Federal Court of Canada. He has also provided depositions in the United States District Court and testimony in arbitration and mediation hearings.