

PROFESSIONAL EDUCATION:

Master of Business Administration, University of Manitoba – 1996
Bachelor of Science (Chemistry), University of Manitoba – 1985
Certificate in Occupational Health & Safety – 1993

PROFESSIONAL AFFILIATIONS:

Canadian Registered Safety Professional (CRSP) designation – 1993

EMPLOYMENT HISTORY:

2011 – Present	Division Manager, Power Projects Development Division, Manitoba Hydro
2004	Manager, Future Generation Partnerships Department & Conawapa Project Manager, Manitoba Hydro
2001	Manager, Generation Strategic Relations Department, Manitoba Hydro
1999	Manager, Corporate Strategic Planning Department, Manitoba Hydro
1996	Quality Improvement Consultant, Power Supply, Manitoba Hydro
1989	Health & Environment Officer, Manitoba Hydro
1985	Laboratory Supervisor, Manitoba Hydro

INTERNATIONAL CONSULTING ENGAGEMENTS:

1999 – Present India, Canada, Bosnia-Herzegovina, Croatia, Serbia, Macedonia and Mozambique



EMPLOYEE NAME: J. (Jane) Kidd-Hantscher

PROFESSIONAL EDUCATION:

Masters in Public Administration – University of Manitoba (1998)

Bachelor of Arts (Communications) – University of North Dakota (1992)

EMPLOYMENT HISTORY:

2004 – Present	Partnership Implementation Supervisor, Manitoba Hydro
1997	Human Resource Professional, Manitoba Hydro/Centra Gas
1994	Strategic Planning Coordinator, Centra Gas
1992	Operations Positions, Centra Gas



Marvin Shaffer & Associates Ltd.
Consulting Economists

1675 Larch Street
Vancouver, B.C. V6K 3N7
Telephone: (604) 7871620
Email: marvshaffer@gmail.com
Website: www.sfu.ca/mpp/marvinshaffer

MARVIN SHAFFER & ASSOCIATES LTD.

Marvin Shaffer & Associates Ltd. (MSA) is a British Columbia-based consulting firm which specializes in energy, transportation and natural resource economics, as well as general project and economic policy analysis. In all undertakings, the primary objective is to apply sound economic principles and theory to practical problems in a rigorous yet readily comprehensible manner.

Dr. Marvin Shaffer, the principal consultant, has a Ph.D. in Economics from the University of British Columbia. He received his B.A., Honours in Economics, from McGill University. Dr. Shaffer has managed MSA for over thirty years, undertaking consulting assignments for both public and private sector clients across Canada. He has successfully negotiated major agreements in the energy and transportation fields. He has held senior positions with the Government of British Columbia (head of the Crown Corporations Secretariat and Chief Executive Officer of the British Columbia Transportation Financing Authority). Dr. Shaffer is currently an Adjunct Professor in the Public Policy program at Simon Fraser University, lecturing on multiple account benefit-cost analysis. As well, he has lectured in economics at the University of British Columbia, and the University of Queensland and the University of Tasmania in Australia.

Dr. Shaffer's resume and a list of representative clients are attached.

MARVIN SHAFFER, Ph.D.

RÉSUMÉ

DATE OF BIRTH: May 1, 1949

PLACE OF BIRTH: Winnipeg, Manitoba

CITIZENSHIP: Canadian

EDUCATION: McGill University, Montreal, Quebec
B.A. (Honours) Economics, 1970.

University of British Columbia, Vancouver, B.C.
Ph.D. Economics, 1974.
Ph.D. Dissertation Topic: The Role of Competition in Macro Models
Areas of Specialization: Industrial Organization - Labour Economics

AWARDS: Woodrow Wilson Fellowship, 1970
U.B.C. Fellowships, 1970-1972
Canada Council Fellowships, 1972-1974

MAJOR ACCOMPLISHMENTS:

- ***Greater Vancouver Transportation Authority:***
 - Negotiated agreement and co-chaired transition team transferring responsibility for BC Transit from the Province to Greater Vancouver within a newly created multi-modal, integrated transportation authority.
- ***Columbia River Treaty:***
 - Negotiated agreements for the return of the power benefits owed to British Columbia under the *Columbia River Treaty* in a manner which minimizes transmission costs and maximizes market opportunities for the province.
- ***Multiple Account Benefit-Cost Analysis:***
 - Developed framework now widely used within British Columbia for the evaluation of major policies and projects, recognizing financial, customer service, environmental and economic development objectives of government.
 - Wrote a book for students and practitioners *Multiple Account Benefit-Cost Analysis: A Practical Guide for the Systematic Evaluation of Project and Policy Alternatives*, published by University of Toronto Press in 2010.

EMPLOYMENT:

- 1976-1992, 1995-Present *Consulting Economist* - President and senior consultant for Marvin Shaffer & Associates Ltd., a consulting firm specializing in energy, transportation and environmental economics.
- 2004-Present *Adjunct Professor, Public Policy Program, Simon Fraser University* – lecture on benefit-cost analysis.
- 1987, 1989, 1997-2003 *Sessional Lecturer in Economics, University of British Columbia* - macroeconomics and benefit-cost analysis.
- 1985,1988,1992,2000,2003 *Visiting Senior Lecturer in Economics, University of Tasmania and University of Queensland* -Lectured in benefit-cost analysis, natural resource economics, macroeconomics, econometrics and other subjects.
- June 1994-June 1995 *Chief Executive Officer, British Columbia Transportation Financing Authority*, a Crown corporation responsible for integrated transportation planning and the financing of provincial highway and other transportation infrastructure investments.
- Aug. 1993-June 1995 *Secretary Responsible for the British Columbia Crown Corporations Secretariat*, a central agency responsible for reviewing strategic and business plans, and monitoring the performance of British Columbia's Crown corporations.
- June 1992-Aug. 1993 *Assistant Secretary, Capital Evaluation and Economic Analysis, British Columbia Crown Corporations Secretariat* -- Developed Multiple Account Guidelines for British Columbia's Crown corporations to ensure systematic evaluation of major investments; served as British Columbia's Chief Negotiator for the return of the Downstream Benefits owed to British Columbia under the Columbia River Treaty.
- 1976-present *Freelance Writer* - Freelance writer on economics and energy issues for major newspapers in Western Canada
- 1974-1976 *Senior Economist, B.C. Energy Commission* - Researched and prepared reports on a wide range of energy topics, including future energy demand, utility rate structure, energy supply, field pricing and resource taxation.

MARVIN SHAFFER & ASSOCIATES LTD.

REPRESENTATIVE CLIENTS

Governments

Federal

Auditor General
Employment and Immigration Canada
Energy, Mines & Resources Canada
External Affairs
Finance
Fisheries & Oceans Canada
Health & Welfare Canada
Indian and Northern Affairs
Public Works Canada
Science Council of Canada
Transport Canada

Provincial

Province of British Columbia
Crown Corporations Secretariat
Environment & Land Use Secretariat
Marine Resources Branch
Ministry of Agriculture
Ministry of Economic Development
Ministry of Employment and Investment
Ministry of Energy, Mines & Petroleum Resources
Ministry of Environment
Ministry of Forests
Ministry of Lands, Parks & Housing
Ministry of Social Services & Housing
Government of the Northwest Territories
Manitoba Energy Authority
Yukon Territorial Government

Other

City of Kitimat
City of Surrey
Greater Vancouver Regional District
GVTA (Translink)

Public Sector / Crown Corporations

B.C. Ferries
B.C. Hydro
B.C. Resources Investment Corp.
B.C. Transportation Financing Authority
Columbia Power Corporation
Manitoba Hydro
New Brunswick Electric Power Commission
Ontario Waste Management Corporation
Partnerships B.C.
Powerex
Saskatchewan Crown Investments Corporation
Saskatchewan Power Corporation
Vancouver Public Library

Indian Organizations

Ft. Nelson Indian Band
Gitksan Tribal Council
Lake Babine Band
Lax Kw'alaams Indian Band
Musqueam Indian Band
Nisga'a Tribal Council
Katzie First Nation
Tahltan Tribal Council

Public Task Forces and Inquiries

B.C.-Environment Assessment Office
Salmon Aquaculture Review
B.C.-Gasoline Pricing Inquiry
B.C.-Port Hardy Ferrochromium Review Panel
B.C.-States Oil Spills Task Force
B.C. Utilities Commission
Ontario Energy Board
West Coast Oil Ports Inquiry
Western Grid Study Agreement

Private Sector Firms and Associations

Alcan Ltd.
Amoco Canada Ltd.
Arlon Tussing & Associates
Berger & Nelson, Barristers & Solicitors
BC Gas
Cassels, Brock & Blackwell, Barristers & Solicitors
Golder & Associates
Gulf Canada Ltd.
Industrial Gas Users Association
Inland Pacific Energy Services (B.C. Gas)
Mobil Oil Inc.
Monenco Consultants Ltd.
Montenay Inc
Natural Gas Pipeline Company of America
Niagara Mohawk Power Corporation
Petro-Canada Inc.
Progas Limited
RBC Dominion Securities
Reid Crowther & Partners Inc.
Sandwell, Swan Wooster
Shell Canada Ltd.
SNC Lavalin
Westcoast Transmission Ltd.
Western Gas Marketing Limited

Non-Profit Organizations

BC Public Interest Advocacy Centre
Canada West Foundation
Canadian Wildlife Service
Canadian Energy Research Institute
Friends of Nemaiah Valley
YWCA

MSA



**ASSIGNMENTS COMPLETED
SINCE 1990**

Energy

AECOM:-Analyzed the economics of alternative waste management strategies in MetroVancouver, including waste-to-energy plants, 1999.

BC Gas:- Analyzed the implications and provided policy advice on alternative regulatory policies respecting the pricing of natural gas and electricity, 2000-2001.

BC Hydro:-With Alchemy Consulting and Constable Consultants, analyzed the opportunities and economic efficiency of NOx offset measures for the Burrard Thermal Power plant, 1999.

_____-: Prepared a report on the implications of commitments in the B.C. government's New Era document in relation to the Burrard Thermal plant, and reviewed and helped draft a response to a critique of BC Hydro's proposed Vancouver Island gas pipeline, 2001.

BC Ministry of Employment and Investment:- Provided advice on long term sales opportunities for the downstream power benefits owed to the province under the Columbia River Treaty. Also advised on the costs and benefits of long term power sales to proposed aluminum smelters in the province, 2001.

_____-: Analyzed the economic implications for the energy and mines sectors in a multiple account evaluation of alternative Mackenzie area land and resource management plans, 2000.

_____-: Reviewed analyses of the economic impacts, costs and benefits to the province and BC Hydro of a proposed aluminum smelter at Port Alberni, 2001.

BC Ministry of Energy, Mines and Petroleum Resources:- Acted as an advisor in the preparation of MEMPR's Energy Policy Paper "Our Energy Future", March, 1991.

_____-: Prepared a report "Integrating Environmental and Energy Values -- An Economic Perspective on Energy Policy for the 90's", April, 1990.

_____-: Prepared a report "Environmental and Economic Issues Related to Fuel Choice in Space and Water Heating in British Columbia", December, 1990.

BC Ministry of Environment, Lands & Parks:- Undertook a study entitled “Supply and Price Impact of Cleaner Gasoline Standards in British Columbia” 1995.

BC Ministry of Finance:- With Alchemy Consulting and Constable Consultants, prepared a multiple account benefit-cost evaluation of alternative strategies with respect to the operation or closure of the Burrard Thermal Power plant, 2000-2001.

BC Ministry of Small Business and Economic Development:- Prepared a report on the economic and social benefits associated with the development of a Cold Water Release Facility at or near Kenney Dam on the Nechako Reservoir, 2004.

BC Ministry of Water Lands and Air Protection:- Prepared a report on the economic implications of alternative Kyoto implementation scenarios on Tech Cominco’s Trail smelter and Elkford mine, 2002.

BC Public Interest Advisory Centre:- Prepared a report and appeared as an expert witness on marginal cost pricing at the BCUC Hearing on BC Hydro’s Rate Design Application, 2007.

_____-: Prepared a report and testified at a BC Utilities Commission hearing on the rationale, impacts, economic efficiency and equity of BC Hydro’s Power Smart program, 2004.

BC Utilities Commission:- Acted as Head of Inquiry Research in the BC Utility Commission Inquiry into Gasoline Pricing in British Columbia, 1996

Berger & Nelson, Barristers & Solicitors:- Reviewed and advised on a report by Fisher Energy Consultants entitled “Economics for the Development of Oil and Gas Resources in Lot 9 and 27 of the Former Fort St. John Indian Reserve No. 172” in preparation for a trial -- *Apsassin v. The Queen*, 1997.

Canadian Office and Professional Employees Union:- Prepared a series of policy papers (*Lost in Transmission*) critiquing the self-sufficiency, pricing and supply side provisions in the BC Government’s Energy Plan, 2007.

_____-: Prepared evidence and testified as an expert at a BC Utilities Commission hearing on BC Hydro’s 2008 Long Term Acquisition Plan, 2009.

City of Kitimat:- Analyzed the provisions in the BC Hydro-Alcan LTEPA+ and 2007 Energy Purchase Agreements and appeared as an expert witness at BCUC’s hearings reviewing those contracts, 2006 and 2007.

Columbia Power Corporation:- Reviewed evidence and assisted in the preparation for Columbia Power's intervention at a BC Utility Commission hearing into BC Hydro's Integrated Electricity and Long Term Acquisition Plans, 2006.

_____-: Prepared a report and testified at a BC Utility Commission hearing on BC Transmission Corporation's proposed Open Access Transmission Tariff, 2005.

_____-: Analyzed the financial and environmental costs of a proposed coal-fired power plant compared to gas-fired combined cycle and hydro alternatives available in British Columbia, 1999.

_____-: Reviewed assumptions, methodology and report on a benefit-cost analysis of the Keenleyside 150 MW Power Plant project, 1998.

Electricity Table-National Climate Change Process:- Prepared a report on the environmental and health-related impacts of various options to meet target reductions in greenhouse gas emissions, 1999.

Greater Vancouver Regional District (MetroVancouver):- Reviewed existing provisions and alternatives respecting an agreement with BC Hydro to use water from the Coquitlam reservoir for domestic purposes. Prepared a report on specific alternatives for detailed discussion and negotiation with BC Hydro. Assisted in the renegotiation of the Coquitlam water purchase arrangements 2003-2006.

_____-: Provided advice on the market pricing of the electricity output from a proposed municipal waste incinerator turbogenerator project, 2001.

Inland Pacific Enterprises Corporation:- Provided strategic advice on electricity marketing, independent power project developments, public-private partnerships, and other related matters, 1995-1997

Manitoba Hydro:- Developed a multiple account framework for the analysis of alternative resource development plans, in preparation for submission to a Manitoba government Needs for and Alternative Hearing, 2011-12.

_____-: Prepared a presentation and led a workshop on Triple Bottom Line Assessment and Accounting, 2005.

_____-: Prepared a multiple account benefit-cost report on the development of a cooling tower at the Selkirk gas-fired thermal plant, 2004.

_____-: Prepared a multiple account benefit-cost comparison of developing the Wuskwatim hydro project versus a comparable amount of wind capacity, 2004.

_____-: Prepared a multiple account benefit-cost report on advancing the Wuskwatim hydro project for export, 2003

_____-: Reviewed participation and benefit agreements between energy sector companies and First Nations and advised on participation options for Manitoba Hydro's hydro projects, 2001-2006.

_____-: Prepared a contingent valuation study with the assistance of Prairie Research Associates Inc. entitled "Transmission Line Impacts on Wilderness Values – Phase III Report", March, 1992.

_____-: Prepared a report "Environment and Economic Trade-Offs of Alternative Expansion Plans", March, 1990.

Mobil Oil Inc.:- With Brent Friedenbergs & Associates, prepared a benefit-cost analysis and testified before an Environmental Assessment Panel on Mobil Oil's Sable Offshore Energy Project and the Maritime and Northeast Pipeline Project, 1997.

Powerex:- Chief Negotiator for the Province of British Columbia leading to agreements regarding the return of the Downstream Power Benefits under the *Columbia River Treaty*, 1995-1998.

_____-: Prepared report on the evolution of western North America electricity markets in support of an application for a provincial energy removal certificate, 1999.

_____-: Facilitated discussions between Whatcom County, Intalco and Powerex leading to commercial negotiation of a power supply contract, 2001.

_____-: Reviewed application of risk capital concepts to the evaluation of gas plant tolling opportunities, 2003.

_____-: Helped organize workshops on risk management, trading strategies, and accountability framework presented to Hydro Tasmania Board and staff, 2003.

RBC Dominion Securities:- Assisted in the economic and financial evaluation of alternative natural gas pipeline proposals and other matters, including the restructuring of BC Hydro and proposed purchases of energy sector firms, 1999-2001.

SNC Lavalin:- Reviewed a multi-criteria analysis of power supply options in Central Equatorial Africa that SNC prepared for the World Bank, 2005.

Tsawwassen First Nation:- Prepared a multiple account benefit-cost assessment of a proposed waste-to-energy project on Tsawwassen lands, 2012.

Fisheries

British Columbia Environmental Assessment Office:- Prepared a report and advised the Salmon Farming Review Committee on the Social and Economic Impacts from Current Salmon Farming Activity in B.C., 1997.

Fisheries & Oceans Canada, Pacific Region:- Prepared a study identifying linkages between the *Pacific Salmon Treaty* and Salmon Rebuilding Efforts in the Pacific Northwest, 1997-1998.

_____- Participated in an evaluation of DFO's Response to the **Report of the Fraser River Sockeye Public Review Board**, 1996.

_____- Prepared a report "Columbia River Salmon Rebuilding Program" that documented the objectives, nature and costs of United States efforts to rebuild salmon (and steelhead) in the Columbia River Basin, 1996.

_____- Together with LGL Limited prepared a report on the Evaluation Framework for the At-Sea Export Program, March, 1991.

_____- Prepared an update of the report "Long Term Salmon Price Forecasting Model," March, 1991.

_____- Prepared a report "Evaluation of Pacific Licensing, License Fee Policy and Their Impact on the Catching Power and Economic Performance of the Fleet", May, 1991.

Fisheries & Oceans Canada and Indian Affairs Canada:- Prepared a report "Potential Economic Benefits of SEP for Native Indians", April, 1990.

Musqueam Indian Band:- Prepared a report on the valuation of adverse fisheries-related impacts on the Musqueam due to a new Fraser River crossing for the RAV-Canada Line rapid transit project, 2006.

Nisga'a Tribal Council:- Assisted in the negotiations for a settlement of fisheries issues in the Nisga'a Land Claim.

_____- Prepared a report "Nisga'a Long Term Economic Development Plan", April, 1990.

Transportation

BC Ferry Corporation:- Provided advice on subsidy policy issues and rate impacts related to the possible restructuring of BC Ferries Corporation, 2002.

_____- Prepared analyses of financial and regulatory requirements for achieving commercial status for BC Ferries, 1995

_____- Prepared a report on options for an explicit BC Ferry Subsidy Policy, 1992.

BC Transportation Financing Authority:- Advised on various matters including tolling policy, revenue strategy for the Vancouver Island Highway Project, 1995-1997.

Canada Ministry of Finance, Personal Income Tax Division:- Prepared a report and workshop presentation on the price elasticity of transit demand and the impacts of transit benefit tax exemptions on transit's market share, 2005.

City of Coquitlam:- Reviewed terms of access agreements in the development of the Millennium Skytrain line, 2000.

Greater Vancouver Transportation Authority:- Presented a two-day workshop on Multiple Account Benefit-Cost Analysis of major transportation projects, January, 2008.

_____-:- Led technical team analyzing the feasibility, desirability, financing and implementation strategy for a new crossing of the Fraser River, 2000-2002.

_____-:- Prepared paper on bus service delivery options to improve cost effectiveness and performance, 2001.

_____-:- Prepared paper on the economic efficiency, potential revenues, administrative complexity and other characteristics of alternative pricing and taxation options available under the GVTA Act, 1999.

Greater Vancouver Regional District:- Co-Chaired GVTA Transition Team responsible for implementing the GVTA agreement and *Greater Vancouver Transportation Authority Act*, 1998

_____-:- Chief Negotiator for the GVRD leading to agreements creating the Greater Vancouver Transportation Authority, 1997-1998.

General Resource/ Other

BC Ministry of Agriculture and Fish:- Prepared an analysis of the principles and limitations of policy proposals to provide payments in recognition of the ecological goods and services generated by the agriculture sector, 2005.

____:- Prepared an assessment of the underlying factors and policy implications of farm income trends in British Columbia and Canada, 2005-6.

BC Ministry of Environment:- Prepared an assessment and testified at Environmental Assessment Hearings on the social and environmental impacts of a ferrochromium plant proposed by Sherwood Metallurgical British Columbia Corporation for the Port Hardy Review Panel, 1992.

____:- Prepared an evaluation of an expanded deposit/refund system and the Blue Box system for beverage container recovery, 1992.

BC Ministry of Environment, Lands & Parks:- Assisted and advised Gary Holman in his report on the methodology for estimating the economic impacts of BC Lands' Sales and Tenure Program, 1996.

BC Ministry of Forests, Old Growth Values Team of the British Columbia Old Growth Strategy Project:- Prepared a report "Socio-Economic Evaluation of Old Growth Conservation Strategies - Demonstration of a Multiple Account Approach", May, 1991.

Canadian Council of Ministers of the Environment:- With Dillon Consulting Limited prepared a study to develop and apply an evaluation methodology identifying benefits of specific environmental programs, June, 1997.

Canadian Centre for Policy Alternatives:- Prepared a multiple account benefit-cost evaluation of the Vancouver-Whistler 2010 Olympic and Paralympic Games, 2003.

City of Surrey:- Reviewed the evaluation process used in the selection of a private partner in a Water Metering Incentive Program, 2000.

CUPE:- Reviewed Partnership BC's report outlining its methodology for assessing the value for money of P3 contracts versus traditional public sector procurement of major, 2009.

Friends of Nemaiah Valley:- Prepared a report on the social benefits and costs of the proposed Prosperity mine project, 2009.

Gitxsan Tribal Council:- Prepared a report on the social benefits and costs of the proposed Kemess North Mine extension projects, 2006.

Golder Associates:- Prepared a report “Socio-Economic Assessment of Saskatchewan Wheat Pool/Cargill’s Proposed Grain Terminal at Roberts Bank”, 1996.

Greater Vancouver Regional District:- Provided advice on the implementation of the financial component of the comprehensive transfer station, hauling and waste disposal agreement with Wastech Services, 2003-2005.

____:- Assisted in the negotiation of a comprehensive transfer station, hauling and waste disposal agreement with Wastech Services 1997.

Greystone Properties Ltd.:- Conducted a multiple account evaluation of its proposal for a new trade and convention facility in Vancouver, 1997.

Human Early Learning Project (HELP):- Developed a multiple account framework for the evaluation of HELP’s comprehensive set of proposals to reduce the number of at-risk children in British Columbia., 2010.

Indian and Northern Affairs Canada:- Provided advice on the multiple account benefit-cost analysis of alternative provisions for post-Treaty Own Source Revenues and other issues arising from Treaty negotiations, 2005- 2008.

Miramar Mining:- Reviewed a contingent valuation study to establish the value of a lake proposed to be used in a mining operation, 2004.

Montenay Inc:- Assisted in the valuation of the lifecycle unit costs of waste-to-energy management of municipal wastes and advised on related matters for Montenay’s Expression of Interest to develop a new waste-to-energy facility in Greater Vancouver, 2006.

Nisga’a Tribal Council:- Developed guidelines for the assessment of the social economic and cultural impacts of major projects on Nisga’a lands, in accordance with provision 8f of the Nisga’a Treaty and assisted with the application of those guidelines to two proposed mine projects, 2010-2012.

Partnerships BC:- Prepared a report on the appropriate tipping fee for the use of Crown land for Britannia mine waste treatment sludge disposal, 2004.

____:- With Robin Hanvelt Consultants, prepared a report on the distributional implications of the relocation of St Paul's hospital and Mount St Joseph's hospital to a new centralized facility, 2004.

Tech BC:- Conducted a multiple account evaluation, including consideration of financial, university and local development impacts, of alternative facility development strategies, 1999.

YWCA:- Prepared a report on the methodology and findings in existing studies of the benefits and costs of high quality childcare, 2005.