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Education:

May 1988 - University of Victoria - Bachelor of Science (Physical Geography)

Competencies and Skills:

- Strategic Analysis – skilled at analysis and plan development
- Sustainability Analysis – skilled at valuing the triple bottom-line
- Problem Solving – skilled in analyzing complex issues
- Project Management – small to large projects
- Stakeholder Engagement – skilled at conducting stakeholder input and educational outreach
- Networking – building trusting relationships and strategic partnerships

Employment History:

January 2021-April 2021: University of Victoria, Engineering Department

- Co-creating the design of a new program in Industrial Ecology Master's Program by teaming up with an associate professor teaching green chemistry and another sectional lecturer teaching biomimicry. I teach the industrial symbiosis component and the role extended producer responsibility plays in producers collecting materials from end-of-life products and packaging for the circular economy.

September 2018-Present: E5 Solutions, Principal

- Consultancy expertise in circular economy-extended producer responsibility (EPR) programs, industrial symbiosis and bioeconomy, clean technology research, development and commercialization, climate change integrated systems project planning and efficiencies in operational environmental management.
- ***Eagleridge Innovations Corporation*** – Consultancy support for the business development of research and development and commercialization of Eagleridge's MicroPoP system for WAS (Waste Activated Sludge - excess waste bacteria for disposal from organic treatment processes) and phosphorus recovery technology developed by partner company ***Muddy River Technologies Inc.*** Technology application for municipal wastewater, oil refining, pulp and paper, food industry, pharmaceutical industry, and meat processing. Promoting the business case for the sustainable resource recovery technology to municipal, industrial and business users related to cost saving benefits, elimination of biosolids handling and disposal, reduced GHGs, and enhancement of biogas production for renewable natural gas or cogeneration projects.

September 2018-Present: Ministry of Environment and Climate Change Strategy, Environmental Management officer, Environmental Protection Division

- EPR policy development supporting continuous improvement of producers reporting with respect to improved financial reporting and performance measures.

- Updating EPR Guidance document for producers.
- Project manage the transition of Extended Producer Responsibility compliance program to new governance model to increase producer compliance in packaging and printed paper, including compliance in other household hazardous waste programs.
- Lead coordinating responses to public enquires and briefing materials related to waste issues in the province and expansion of EPR for various products, including single use plastics.
- Develop EPR presentations for senior management for delivery to recycling industry and other stakeholders.
- Compile EPR data sets and work with other project teams on reporting recycling performance through State of the Environment indicators.
- Lead in research of transformative technologies for converting fossil and natural carbon wastes into resources.

May 2018–August 2018: Ministry of Environment and Climate Change Strategy, Environmental Management Analyst, Clean Air Section, Environmental Standards Branch

- Design a new survey of local government bylaws to develop an inventory of clean air regulation in bylaws related to smoke from open burning and wood burning appliances.
- Develop a categorization system for the bylaws to determine the level of regulation protecting human health from smoke.
- Conduct a regulatory analysis looking for similarities and differences between the federal Ozone Depleting Substances and Halon Alternatives Regulation and the BC Ozone Depleting Substances Regulation.

October 2017–April 2018: Ministry of Environment and Climate Change Strategy, A/Section Head Business Services Branch

- Implementation of EPR planning into the Authorization Management System workflow for compliance.
- Supervising (6) staff and ensuring resources are being deployed appropriately for the workload;
- Providing leadership and project management to standardize and document our authorization processes and workflows

September 2014 –September 2017: Ministry of Environment (MOE), Environmental Management Analyst

- **Regulatory Effectiveness and Continuous Improvement Strategy for Product Stewardship** – work with Executive Director and Directors to develop a comprehensive review of current stewardship programs and develop recommendations related to policy, SMART Measures and regulatory amendments for continuous improvement to industry product stewardship programs. Developed program evaluation and grading system for 22 EPR programs.
- **Third Party Assurance Verification** – oversee consulting services providing third party non-financial assurance on 23 stewardship program annual reports prepared by audit agencies for industry stewardship organizations. Review results of Ministry’s hired auditor and develop an internal discussion paper evaluating the effectiveness of third party verification testing.
- **Re-TRAC Project** – lead in the development of a new on-line compliance reporting system. Goal is to make industry regulatory reporting efficient and effective by combining assurance and annual reporting into a web-based system.

- **Zero Waste Business Plan** – participate in review of plan in groups and strategize and prioritize new business areas to pursue waste reduction under the regulatory framework.
- **Climate Leadership Plan Working Group** – participate on government wide committee as waste expert providing input on new research, program and project proposals that contribute to further greenhouse gas (GHG) reductions in waste and other sectors. Developing proposals for integrated resource recovery projects from waste and proposing policy and programs supporting industrial and commercial operational efficiencies that create employment, save money and achieves GHG reductions.

July 2013 - August 2014: Leave for International Travel

October 2012–June 2013: Ministry of Environment (MOE), Environmental Management Analyst

- **Industry Product Stewardship Program Delivery**- explored innovative ways to improve industry stewardship program compliance with the Recycling Regulation. Focus on improving performance metrics and reporting requirements for industry.
- **Product Stewardship Public Awareness Project** - chaired industry and ministry stewardship committee to enhance education and awareness of regulated stewardship programs.
- **Ozone Depleting Substances (ODS) Regulation** – liaised with Environment Canada in advising on industry compliance with ODS Regulation. Educated industry with the concern of ODS as greenhouse gases requiring industry stewardship responsibility.

September 2010 – September 2012 (Secondment): Ministry of Agriculture, Innovation and Climate Action, Bioeconomy Analyst

- Managed transfer agreement funding contracts to third-party organizations to deliver on specific innovative projects under the Agricultural Canada/Provincial Growing Forward Agreement. Led and participated in the following projects and initiatives under the agreement:
 - **Renewable Energy Feasibility Studies Project**– participated on the planning steering committee to deliver feasibility assessments for geothermal and solar thermal technology applications for the agriculture and agrifoods sector. The goal of the project was to make urge the agriculture and agrifoods sector to value new technology integration into operations to save money and provide a 3-5 year return on investment.
 - **Bio-Trader Project** – Led and managed contract with Farm Folk City Folk to deliver an online biomass trading system for communities.
 - **Agri-Tech Competition Design Project** – provided planning and program design support to New Ventures BC design competition for new agriculture and food processing businesses.
 - **Food, Fuel and Fibre Initiative Project**– participated in the planning of workshops, promoted integrated systems thinking and applied technology and process innovation to address sustainability issues in communities. Prepared materials for inaugural workshop held for provincial government employees. Organized keynote speakers for other regional workshops showcasing technology integration in communities to produce food, fuel and fibre systems.
 - **BC Agrifoods Innovation Strategy** – assisted with the planning, development and writing of strategy with input from ministry agricultural experts, and ensured strategy was aligned with Ministry Service Plan, BC Agri-Foods Strategy for Growth and the Provincial Jobs Plan.
 - **Algae Demonstration Project** – formed industry consortia group to lead planning an integrated systems project to showcase food, feed and fuel from an algae biorefining technology.

- **Strategic Partnership Development** – developed strategic partnerships to ensure the success in the delivery of programs under the Growing Forward Federal/Provincial Agreement. This agreement supports the development of new products and practices in BC's agrifoods industry. Relationships were built with Agricultural Council, Agricultural and Research Development Corporation, Life Sciences BC, National Research Council and academic institutions.

April 2009 – August 2010: MOE, Senior Environmental Analyst

- **Industry Product Stewardship** - managed various industry product stewardship programs to ensure compliance with the Recycling Regulation.
- **Public Education and Outreach Program** – led and managed a working group tasked to develop a plan for public education and outreach, and developed display materials, banners, brochures and a new website for product stewardship programs.

September 2008 – March 2009 (Temporary Assignment): Ministry of Small Business, Technology, and Economic Development, Clean Technology Senior Advisor

- **Innovative Clean Energy Fund** – initiated call for proposals for clean technology innovation projects. Reviewed technology business plans, conducted technology assessments and prepared project summaries making recommendations for Board for approval.

January 1994 – August 2008: MOE, Industry Business Relations Officer

- **Compliance Framework for the BC Recycling Regulation** – led the planning and design of a new compliance framework for Recycling Regulation in alignment with the Ministry's Compliance Strategy. Developed compliance tools covering warning letters, tickets and fines.
- **BC Recycling Regulation Development** – team member in drafting of new performance-based regulation.
- **Financial Incentives for Recycling Tires and Lead-Acid Battery Collection Programs** – Program Administrator for managed provincial led product stewardship for scrap tire and battery recycling. Led program transition from government program to an industry led product stewardship program.

June 1988 - December 1993: Ministry of Energy, Mines and Petroleum Resources, Project Officer

- **Energy Project Review Process and Mine Development Review Process** – Led project reviews across government to assess the social, environmental and economic impacts of new mine and energy projects, including conducting public and Indigenous stakeholder consultations.

Professional Memberships:

International Society of Industrial Ecology
 Caribbean Water and Wastewater Association (CWWA)
 Operators without Borders

Supplemental Learning & Training, Webinars and Conferences:

October 2020 – Presenter at CWWA hosted by St. Kitts and Nevis
 November 2019 – Ecomondo Conference and Trade Show, Rimini Italy
 October 2019 – Presenter at CWWA Virtual Conference hosted by St. Lucia
 April 2019 – Environmental Engineering for the 21st Century Addressing Grand Challenges, Victoria

References: Available Upon Request