

Sunday November 3	
12:00 pm	Exhibitor set up available(Van Horne C)
1:00 – 6:30 pm	Speakers ready room available. (David O’Brien Room #2518 located on 3 rd Floor of the Convention Centre)
3:00 - 6:30 pm	Conference registration opens. (Foyer)
6:30 pm	Opening Reception at the Fairmont Banff Springs (Mount Stephen Hall) Sponsored by the City of Calgary

Monday November 4	
7:30 am	Registration (foyer) and Breakfast (Van Horne AB)
8:30 am	<p>Opening Plenary (Van Horne AB) Featuring opening remarks, a word from our Sponsor and President</p> <div style="background-color: #4CAF50; color: white; padding: 10px;"> <p style="font-size: 1.5em; margin: 0;">Keynote Speaker: Grant Ainsley</p> <p style="margin: 0;">Telling our Story - How to use our Collective Voices</p> <p style="margin: 10px 0 0 20px;">Communications expert Grant Ainsley will provide the keynote address for our conference and talk about ways we can communicate better to the media, the public and to each other. Whether we’re doing an interview with a reporter, making a public presentation, or using social media or digital advertising to communicate, we can do a better job telling our story.</p> <p style="margin: 10px 0 0 20px;">Ainsley’s presentation will give you a number of takeaways that you can implement right away to start telling our story the way we want it to be heard.</p> </div>
10:00	Refreshment break (Van Horne C)

	Van Horne B	Shaughnessy	Beatty	D.C.Coleman	Van Horne A
10:30	<p>A1: Interactive Panel Discussion- How to Map the Flood Risk for Every Building in a City</p> <p>Moderator: Hiran Sandanayake, City of Ottawa</p> <p>Ottawa's City-wide Flood Risk Profile</p> <p>Brad Cooper, City of Ottawa Stephane D'Aoust, Stantec Bobby Pettigrew, J.L. Richards & Associates Ltd Leila Pieper, City of Ottawa (Eligible for Phillip H. Jones Award)</p>	<p>A2: Biosolids</p> <p>Moderator: Roland Richard, ACWWA</p> <p>Nutrient Recovery & Reuse (NR2) – A Case Study of Two Canadian Technologies in the Circular Economy Ajay Singh, Lystek International Inc.</p> <p>Taking the Nova Scotia N-Rich Model across Canada Lise LeBlanc, Walker Environmental/LP Consulting</p> <p>Southgate Organic Materials Recovery Centre: A Regional Resource Recovery Success Story Simon Meulendyk, Lystek International Inc. (Eligible for Phillip H. Jones Award)</p>	<p>A3: Greywater- Stormwater- Receiving Water</p> <p>Moderator: Khizar Mahmood, City of Calgary</p> <p>Performance of unsaturated/saturated granular activated carbon biofilter in treating greywater Ahmed Sharaf, University of Alberta (Eligible for Phillip H. Jones Award)</p> <p>3-D Hydrodynamic Modelling of Lower Fraser River and Burrard Inlet Shaheli Masoom, Metro Vancouver</p> <p>Purification Of Storm Water & Urban Run-Off For Reuse Using Ceramic Membrane Technology Brian Butters, Purifics Water Inc.</p>	<p>A4: Water System Safety and Management</p> <p>Moderator: Steve Craik, EPCOR</p> <p>Applying Quantitative Microbial Risk Assessment (QMRA) to Public Non-Residential Drinking Water Systems and Best Practice, and Needs: a Survey of Public Health and Utilities Perspectives on Interagency Watermain Incident Response, Adverse Water Quality Incidents and Advisories John Minnery, Public Health Ontario</p> <p>Drinking Water Safety Plan for the Capital Regional District, Victoria Garry Drachenberg, Associated Engineering and Christoph Moch, Capital Regional District</p>	
12:00	Lunch (Van Horne C)				

	Van Horne B	Shaughnessy	Beatty	D.C.Coleman	Van Horne A
1:30	<p>B1: Panel Discussion- Climate Change and Asset Management Case Studies Moderator: Bobby Pettigrew, JL Rickards</p> <p>Panelists: Rodney Bouchard, Manager, Union Water Supply System</p> <p>Susan Ancel, Director Stormwater Strategies, EPCOR</p> <p>Kim Jusek, Municipal Program Manager, Canadian Water Network</p> <p>Anissia Nasr, Capacity Development Officer, FCM</p> <p>Tyler Sutton, GM Research & Marketing, PSD</p>	<p>B2: Distribution System Management</p> <p>Moderator:Klas Ohman, Associated Engineering</p> <p>Critical Valves Risk-Based Asset Management Analysis Tahmina Hossain and Janelle Price, EPCOR Water Services Inc.</p> <p>Best Practices for Predicting Water Main Breaks Rebecca Dziejic, Concordia University</p> <p>The Theory and Reality of Modernizing Calgary's Distribution Monitoring Program Mimi Luong, City of Calgary</p>	<p>B3: Research: Drinking Water Treatment</p> <p>Moderator: Yves Comeau, Polytechnique Montreal</p> <p>Manganese Biofiltration in Low-Temperature Groundwater: An Environmental, Process, and Technology Perspective Sandeep Raja Dangeti, DelcoWater, A Division of Delco Automation Inc. (Eligible for Phillip H. Jones Award)</p> <p>Application of Biofiltration Technology for Sustainable Drinking Water Production Babak Roshani, Delco Automation</p> <p>Redefining Surface Water Treatment Using Ceramic Membranes: Pre-Treatment Elimination Brian Butters, Purifics Water Inc.</p>	<p>B4: Water Demand Management</p> <p>Moderator: Diana Qing Tao, Tetrattech</p> <p>Whodunnit? Using Real Time Data to Solve Water Consumption Mysteries Neal Klassen, City of Vancouver</p> <p>Deferring or Eliminating Multi-Million Dollar Sewer Upgrades Using Successful Fixture and Appliance Rebate Programs: The CRD Experience Colwyn Sunderland and Chris Johnston, Kerr Wood Leidal</p> <p>Water Demand Forecast Modelling in Calgary: Then and Now Aaron Boulton-Chaykowski and Kyle White, City of Calgary</p>	<p>B5: Communications Workshop Grant Ainsley</p> <p>A continuation of the discussion during our Opening Plenary, this interactive workshop for utility leaders on how we tell our story.</p>

3:00	Refreshment Break (Van Horne C)				
	Van Horne B	Shaughnessy	Beatty	D.C.Coleman	Van Horne A
3:30	<p data-bbox="268 180 623 280">C1: Climate, Risk, and Our Responses</p> <p data-bbox="268 326 558 427">Moderator: Hiran Sandanayake, City of Ottawa</p> <p data-bbox="268 469 590 605">National Standards and Guidelines on Flood Resiliency Lynn Barber, CSA Group</p> <p data-bbox="268 647 621 820">Implementation of an IRP approach for Stormwater Management in Edmonton Susan Ancel, EPCOR</p> <p data-bbox="268 862 623 1066">Waterford River Project – Federal Floodplain Mapping Framework Lindsay Wilcott, CBCL (Eligible for Phillip H. Jones Award)</p>	<p data-bbox="653 180 953 456">C2: Water Safety Planning to reduce Legionnaires' disease risk</p> <p data-bbox="653 501 890 570">Moderator: Patsy Root, Idexx</p> <p data-bbox="653 612 932 816">State of Legionella Management across Canada Natalie Prystajecy, BCCDC Public Health Laboratory</p> <p data-bbox="653 859 957 995">How did Regs change Quebec Patrick Racine, Dubois Canada</p> <p data-bbox="653 1037 953 1349">ASHRAE 188 Standard to manage Legionnaires' disease risk in buildings; where utilities add value & expertise and have risk Patsy Root, IDEXX Water</p> <p data-bbox="653 1391 848 1421">Panel Discussion</p>	<p data-bbox="989 180 1253 339">C3: Research – Wastewater Treatment</p> <p data-bbox="989 410 1289 511">Moderator: Anna Comerton, Associated Engineering</p> <p data-bbox="989 553 1304 829">Use of Activated Sludge Sewage Treatment Plants with Extended Aeration for Commercial Wastewater Treatment Brenda Martinez, Delta Treatment Systems</p> <p data-bbox="989 872 1295 1115">Two things you should know about grit removal, but probably don't Chris Howorth, Veolia Water Technologies Canada Inc.</p> <p data-bbox="989 1157 1299 1469">Anaerobic codigestion of blackwater and kitchen organic waste: alternative energy surplus onsite treatment Lei Zhang, Department of Civil and Environmental</p>	<p data-bbox="1337 180 1682 225">C4: Leak Reduction</p> <p data-bbox="1337 267 1656 368">Moderator: Colwyn Sunderland, Kerr Wood Leidal</p> <p data-bbox="1337 410 1688 829">Development of a Private Side I/I Reduction Program in an Upper-Tier Municipal Structure – a Pilot Study Aimed at Minimizing Risks and Maximizing Participation Rates Ranin Nseir, Regional Municipality of York and Hazem Gheith, ARCADIS U.S Inc.</p> <p data-bbox="1337 872 1686 1008">The Leak Brigade: Lots of Leaks on Lots of Lots Neal Klassen, City of Vancouver</p> <p data-bbox="1337 1050 1692 1369">Showcasing Water Conservation & Leak Detection: Smart Water Initiative and Water Efficiency Improvement in the City of Cambridge Sam Ziemann, C3 Water and Jason Alexander, City of Cambridge</p> <p data-bbox="1337 1411 1646 1505">Real Time Distribution System Monitoring for Leaks and Pressures</p>	<p data-bbox="1726 180 2039 342">C5: Asset Management and Optimization</p> <p data-bbox="1726 384 2009 488">Moderator: Rebecca Dziedzic, Concordia University</p> <p data-bbox="1726 531 2032 807">The Building Blocks of Asset Management – How to get started in your municipality? Anissia Nasr, Federation of Canadian Municipalities</p> <p data-bbox="1726 849 2032 1053">Facility Optimization - Our Water and Wastewater Journey Towards Compliance Ted Bailey, Aureus Solutions Inc</p> <p data-bbox="1726 1096 2032 1268">Condition Assessment of the Airdrie Feedermain Justin Hebner, Pure Technologies Ltd.</p>

			<p>Engineering, University of Alberta</p> <p>Enrichment of microbial consortia for anaerobic digestion of source-diverted blackwater collected from conventional and vacuum toilets</p> <p>Bing Guo and Mengjiao Gao, University of Alberta (Eligible for Phillip H. Jones Award)</p>	<p>Sam Ziemann, C3 Water Inc and Todd Chapman, City of Waterloo</p>	
5:45 pm	CWWA Annual General Meeting (Shaughnessy)				
5:45	Power Hour (Van Horne C)				

Tuesday November 5

7:30 Registration (foyer) and Breakfast (Van Horne C)

	Van Horne B	Shaughnessy	Beatty	D.C.Coleman	Van Horne A
8:30	<p>D1: Cybersecurity</p> <p>Moderator: Ian McIlwham, Region of Durham</p> <p>Resilient Design and the Interaction between Engineering, Security and Emergency Management Shawn Corrigan, Calian and Dave Sobeck, Carollo and John Saunders, Enterprise Protection Associates</p> <p>The Region of Waterloo's SCADA Upgrade Program Leigh McDermott, Region of Waterloo</p> <p>The Evolution and Emerging Future of SCADA/ICS Networking Bob George and Mitch Dobson, Tetra Tech</p>	<p>D2: Pathogen Removal and Testing</p> <p>Moderator: Klas Ohman, Associated Engineering</p> <p>Removal of Cyanobacteria through Processes in a Water Treatment Plant Jill Crumb, TreeFrog Environmental</p> <p>Methods for laboratory investigations of Legionella outbreaks: a public health laboratories perspective Natalie Prystajecy, BCCDC Public Health Laboratory</p> <p>Testing drinking water for Legionella pneumophila; outcomes of a national US study Patsy Root, IDEXX Water</p>	<p>D3: Research - Wastewater Treatment</p> <p>Moderator: Ed McBean, University of Guelph</p> <p>A new approach to predict the performance and proposals for practical solutions to optimize facultative aerated lagoons Yves Comeau, Polytechnique Montreal</p> <p>How to keep your lagoons and achieve your effluent ammonia and phosphorus limits Chris Howorth, Veolia Water Technologies</p> <p>Achieving stringent nutrient discharge limits using innovative technologies for Nitrogen and Phosphorus Removal Kevin Bossy, Bishop Water Technologies</p>	<p>D4: Water Reuse – Interactive Panel Discussion</p> <p>Moderator: Jacqueline Noga, University of Alberta</p> <ul style="list-style-type: none"> • Dr. Nicholas Ashbolt (University of Alberta) • Theresa MacIntyre-Morris (York Region) • Joey Hurley (Alberta Environment and Parks) • Kim Jusek (Canadian Water Network) • Dean Shiskowski (Associated Engineering) 	<p>D5: Effective Utility Management (EUM)</p> <p>Valerie Jenkinson, World Water and Wastewater Solutions</p> <p>Effective Utility Management (EUM) concept is a tool to help water and wastewater managers enhance the stewardship of their infrastructure, improve performance in critical areas and respond to current and future challenges. This session will provide an overview of the program and how it can benefit your utility</p>

10:00	Refreshment Break (Van Horne C)				
	Van Horne B	Shaughnessy	Beatty	D.C.Coleman	Van Horne A
10:30	<p>E1: The threat from within: A panel discussion on insider risk</p> <p>Robert Pitcher, Public Safety Canada and Jule Wyrwal, RCMP</p> <p><i>What if</i> the keys to the castle were in the hands of those that you were trying to defend against? <i>What if</i> the contractor building your IT infrastructure was working for your competitor? <i>What if</i> your most important asset was also your biggest vulnerability? Insider risk relates to people working within an organization to subvert the confidentiality, integrity, and availability of the information contained within the walls of that entity. Please join representatives from Public Safety Canada and</p>	<p>E2: Drinking Water Regulation and Standards</p> <p>Moderator: Laurent Laroche, Ville de Montréal</p> <p>Learnings from Auditor General for Local Government Lori Berndt, Auditor General for Local Government, BC</p> <p>Regulatory oversight of municipality owned water utilities Eric Kirby, Nova Scotia Utility and Review Board</p> <p>The National Standards of Canada: NSF/ANSI/CAN 60 and 61 Kathryn Foster, NSF International</p>	<p>E3: Research: Pathogens, Microbial Source Tracking and Natural Organic Matter</p> <p>Moderator: Clayton Tiedemann, EPCOR</p> <p>Bacteroides genetic markers for microbial source tracking fecal pollution in Ontario waters Jeffrey Avedesian, University of Guelph (Eligible for Phillip H. Jones Award)</p> <p>Removal of Natural Organic Matter from the sources of drinking water in NL by metal impregnated activated carbon: investigation of mechanism and optimization Hoda Tafvizi, Memorial University of Newfoundland</p> <p>A Novel On-Site qPCR Legionella Detection</p>	<p>E4: Source Water Protection/Pollution Prevention</p> <p>Moderator: Beth Weir, Region of York</p> <p>Mitigating Operational Risk by Improving Resiliency to Changing Source Water Conditions Jeff Huber, Associated Engineering</p> <p>The City of Calgary Source Water Protection Plan Harpreet Sandhu, City of Calgary</p> <p>Drinking water source protection in Québec: approach and preliminary outcomes Philippe Grégoire, Ministère de l'Environnement et de la Lutte contre les changements climatiques (Eligible for Phillip H. Jones Award)</p>	<p>E5: Affordability in Pricing: Developing A New Framework for Household Affordability and Financial Capability Assessment in the Water Sector</p> <p>Moderator: Nancy Kodousek, Region of Waterloo</p> <p>Joint presentation and discussion by:</p> <p>Tim Williams, Water Environment Federation</p> <p>Chris Hornback, NACWA</p> <p>Cathie O'Toole, Halifax Water</p>

	the Royal Canadian Mounted Police for an engaging and informative presentation on Insider Risk, where you will hear case studies of actual events, and learn what organizations can do to protect their systems from the “threat from within”.		Technology Accurately Quantifies Legionella Contamination in HVAC Cooling Towers Shaimaa Ahmed, Spartan Bioscience Inc (Eligible for Phillip H. Jones Award).		
12:00	Lunch (Van Horne C)				
	Van Horne B	Shaughnessy	Beatty	D.C.Coleman	Van Horne A
1:30	F1: Storm Drainage Infrastructure Benefit-Cost Analysis Workshop This project will culminate in the development of guidelines to assist municipalities in developing benefit-cost analyses for storm drainage infrastructure investments in light of the various factors that affect their design, including those related to climate change. This workshop provides an opportunity for interested conference delegates to participate in this project, at an interim point thereof, and whose purpose is to help shape project activities going forward, and whose objectives are as follows:	F2: Smart Water Moderator: Vicki Campbell, EPCOR Smart Data Strategy, Developing a Goldmine John Presta, Region of Durham St. Albert’s Transformation with a Smart Water Network Angela Zapp, Neptune Technology Group and Brian Brost, City of St. Albert Planning and Problem Solving with a Smart Water System: City of Guelph Case Study	F3: Wastewater Management Moderator: Tony Van Rossum, City of London Barrie WwTF Optimization - Beyond the Mixing Zone Sandy Coulter and Dane Reynolds, City of Barrie Performance Review of Wastewater Treatment Plants Fengqin Wang, Red Deer/North Saskatchewan Region Alberta Environment and Parks	F4: Wastewater Management Moderator: Clayton Tiedemann, EPCOR Lagoons and Ammonia: Meeting Federal and Provincial Toxicity Requirements Tanner Devlin, Nexom (Eligible for Phillip H. Jones Award) Decentralized Wastewater System Design: Collection, Treatment, and Dispersal Chris Strycharz, Infiltrator Water Technologies (Eligible for Phillip H. Jones Award)	F5: Climate Change – how it will impact water systems Moderator: Jesse Hulsman, Municipality of East Hants Climate Change Impacts on Water and Wastewater Systems in the Arctic Ken Johnson, AECOM Climate Change, Harmful Algal Blooms and Cyanotoxins In the Great Lakes Saad Jasim, SJ Environmental Consultants

	<ul style="list-style-type: none"> To share the initial insights and findings of the project and how the guidelines may be influenced by them; To solicit feedback on the work to date; To solicit input on the remaining work, including relevant case studies from across Canada and of various scales; and <p>To share experiences that will help inform and strengthen the work supporting the guideline development.</p>	<p>Emma Thompson, C3 Water Inc (Eligible for Phillip H. Jones Award)</p>	<p>Gold Bar Wastewater Treatment Plant Secondary Treatment Upgrade - Technology Overview and Path Forward</p> <p>Sadra Heidary-Monfared, EPCOR Water Services</p>	<p>Twin Rivers Effluent Pipeline Replacement</p> <p>Garrett Proud, Stantec Consulting Ltd. (Eligible for Phillip H. Jones Award)</p>	<p>Approaches for Water Utilities to Manage Risk Uncertainty associated with Extreme Events resulting from Climate Change</p> <p>To be confirmed</p>
3:00	Refreshment Break (Van Horne C)				
	Van Horne B	Shaughnessy	Beatty	D.C.Coleman	Van Horne A
3:30	<p>G1: Water and Wastewater Planning in a Changing Climate</p> <p>Moderator: Bobby Pettigrew, JL Richards</p> <p>Climate change resiliency planning for water and wastewater services</p> <p>Jamee DeSimone, Dillon Consulting</p> <p>Considering Climate Change Risk in Water System Planning and Design</p> <p>Anna Comerton, Associated Engineering</p>	<p>G2: Drinking Water Management</p> <p>Moderator: Steve Craik, Epcor</p> <p>Evaluating Perfluoroalkyl Substances and Water Quality – An Evolving Challenge</p> <p>Karen Phillipps, Intrinsik Corp</p> <p>Removal of Arsenic and Manganese from the City of White Rock Drinking Water</p>	<p>G3: Energy Efficiency and Recovery</p> <p>Moderator: Rebecca Dziedzic, Concordia University</p> <p>London FOG to Generate Electricity for the Greenway WWTP</p> <p>Tony Van Rossum, City of London and Dana Lauder, GHD</p> <p>Anaerobic treatment of source-diverted blackwater: Energy</p>	<p>G4: Water Demand Management</p> <p>Moderator: Rodney Bouchard, Union Water Supply</p> <p>Developing Sustainable Urban Landscapes: AWWA’s Research And Programs</p> <p>Mary Ann Dickinson, Alliance for Water Efficiency</p> <p>A tale of seventeen households - field testing of alternatives to traditional water softeners</p>	<p>G5: Smart Data Solutions for System Management</p> <p>Moderator: Tony Longo, City of Toronto</p> <p>Geographical Artificial Intelligence for Condition Assessment of Water & Wastewater Distribution Networks (case studies of the City of London, the City of Guelph, , and the City of Kitchener)</p>

	<p>Is climate change impacting your system - Are you ready for One Water? Nancy Kodousek, Region of Waterloo</p> <p>Resilient and Adaptable – Two Keys to Future Survival Chris Howorth, Veolia Water Technologies Canada Inc.</p>	<p>Saad Jasim, City of White Rock, BC</p> <p>PFOS, PFOA and ESOCs in Saskatchewan Water Ondiveerapan Thirunavukkarasu (Arasu), Water Security Agency</p> <p>Using Pilot-Scale Results to Inform the Design of Orthophosphate Corrosion Inhibitor Dosing Systems Wendell James and Michael McCracken, EPCOR Water Services</p>	<p>recovery from human excreta Mengjiao Gao, University of Alberta (Eligible for Phillip H. Jones Award)</p> <p>Power and Water Industry Collaboration for Water Loss Reduction Fabian Papa, HydraTek & Associates and Bradley Jenks, University of Toronto</p>	<p>Heather Yates, City of Guelph and Dave Kains, Metroline Research Group Inc.</p> <p>Getting Ahead of the Wave with Water Conservation Kendra Vander Kooy, Strathcona County, AB (Eligible for Phillip H. Jones Award)</p> <p>International Initiatives For Water Efficiency And Conservation Mary Ann Dickinson, Alliance for Water Efficiency</p>	<p>Mehrdad Varedi, Waterlix Inc. and Daryush Esmaili, City of Guelph, ON and Aaron Rozental, City of London</p> <p>Central Event Management - Shifting Toward a Predictive, Data-Driven Operations Strategy Peter Williams, TaKaDu Advisory Board</p> <p>Remote Pressure Monitoring for the Water Distribution System Tim J. Sutherns, Eramosa Engineering</p> <p>High-Quality High-Frequency Water Quality Data for Process Optimisation and Control: Getting it Right John B. Copp, Primodal Inc.</p>
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Evening Conference Party Sponsored by Epcor

Join us at Brewsters Mount View BBQ for a night of traditional western hospitality.

Sponsored by EPCOR

Wednesday November 6

7:30 Registration (foyer) and Breakfast (Van Horne C)

	Van Horne B	Shaughnessy	Beatty	D.C.Coleman	Van Horne A
8:30	<p>H1: Climate Science and Engineering</p> <p>Moderator: Hiran Sandanayake, City of Ottawa</p> <p>City of Saskatoon IDF Curves Update in Light of Climate Change with Consideration of Stormwater Collection Systems Cost-Risk Analysis Claudia Vesga Rodriguez, University of Saskatchewan</p> <p>Climate Change: Current and Future Impacts on Erosive Rainfall in Calgary, Alberta Ben Ethier, City of Calgary (Eligible for Phillip H. Jones Award)</p> <p>Government of Canada Climate Lens assessment for WWTP upgrades in the City of Powell River Michal Simhon, Associated Engineering</p>	<p>H2: Mobilizing Innovative Solutions as a Service</p> <p><u>Moderator:</u> Dr. Kerry Black, University of Calgary</p> <p><u>Presenters:</u> Irving Leblanc, Director, Assembly of First Nations</p> <p>Mario Swampy, Council Member, Samson Cree Nation and Chair of the Nipiy (Water) Committee</p> <p>Kathleen Padulo, Director of the Environment, Chiefs of Ontario</p> <p>Dennis Sterritt, Housing and Infrastructure, Gitksan Government Commission</p> <p>Monica Bradley, Alberta Technical</p>	<p>H3: Energy Efficiency in Wastewater and Food Waste Treatment Processes</p> <p>Moderator: Qing Zhang, Epcor</p> <p>Impacts of Food Wastes on Wastewater Treatment Plants Michael Keleman, Emerson</p> <p>Decentralized Domestic Wastewater Treatment for Energy Recovery Yingdi Zhang, University of Alberta (Eligible for Phillip H. Jones Award)</p> <p>Struvite Prevention/Elimination in Guelph WWTP Dewatering Belt Press application Bill Carroll, Hydroflow</p>	<p>H4: Wastewater Management – Miscellaneous</p> <p>Moderator: Cindy Shepel, EPCOR</p> <p>Building Community Resiliency – How Bordeaux Manages Both Flood and Pollution Control Diana Qing Tao, Tetrattech</p> <p>Own Your Throne – Only Flush the 3Ps (pee, poo and toilet paper) Rob Richarz, City of Hamilton</p> <p>Industrial Plastics Pollution: An Emerging Issue in Calgary Waterways Rick Robinson, City of Calgary</p>	<p>H5: Smart Water Networks</p> <p>Moderator: Richard Szigeti, City of Toronto</p> <p>Water Demand Analysis using Artificial Intelligence Mehrddad Varedi, Waterlix Inc. and Ron Begg, Jackson Begg Ltd.</p> <p>Next Century Technology Applied to Last Century's Infrastructure Rich Loeffler, Xylem (Eligible for Phillip H. Jones Award)</p> <p>Improved Process Resilience Through Automated Anomaly Detection using Machine Learning John B. Copp, Primodal Inc.</p>

		Services and Advisory Group (TSAG)			
10:00	Refreshment Break (Van Horne C)				
	Van Horne B	Shaughnessy	Beatty	D.C.Coleman	Van Horne A
10:30		<p>I1: First Nations and Small System Challenges</p> <p>Moderator: Michéle Grenier, OWWA</p> <p>Assembly of First Nations national update-First Nations Safe Drinking Water Legislative Reform 2019-2020 Caleb Behn, Assembly of First Nations</p> <p>Ontario First Nations Technical Services Corporation Melanie Debassige and Tricia Hamilton, Ontario First Nations Technical Services Corporation</p> <p>Achieving better outcomes for Indigenous Water Systems through Streamlined Approach</p>	<p>I2: Energy Efficiency Assessment Tools for Municipalities</p> <p>Moderator; Qing Zhang, EPCOR</p> <p>Improving Electricity Conservation in Small-Medium Municipal Water Distribution Systems Rebecca Dzedzic, Concordia University (Eligible for Phillip H. Jones Award) and Geneva Starr, Canadian Urban Institute</p> <p>Assessing Pumping Energy Costs: Basis for Decision Making Bob Hawboldt, Associated Engineering</p> <p>City of Calgary Water Treatment Plants Energy Management Shane Thompson, Associated Engineering</p>	<p>I3: Miscellaneous</p> <p>Moderator: David Main, AECOM</p> <p>Canada's Most Southern Point – Managing Increasing Greenhouse Demands Emma Thompson, C3 Water Inc. and Rodney Bouchard, Union Water Supply System (Eligible for Phillip H. Jones Award)</p> <p>Case Study: Robust Consultative Process to Update the Region of Waterloo's Raw Water Intake Protocol during Grand River Watershed Upsets Dennis Mutti, C3 Water</p> <p>Water Efficiency and Conservation Programs : An International Comparison Heather Yates, Chair of CWWA's Water Efficiency Committee</p>	

		Irfan Gehlen, Kerr Wood Leidal (KWL) Engineering and Madjid Mohseni, RESEAU and University of British Columbia			
12:00	<p>Lunch and Closing Plenary-</p> <p><i>Learning from the Burning: Maintaining Water System Function in an Epoch of Abrupt Global Change</i></p> <p>Featuring Bob Sandford, EPCOR Chair in Water and Climate Security at the United Nations University Institute for Water Learning from the Burning: Maintaining Water System Function in an Epoch of Abrupt Global Change</p> <p>This presentation explores how we came to so underestimate how soon climate disruption would dangerously impact humanity; outline what we know now about how fast nature can change; and what we can do to slow and moderate climate and related impacts where we have the most power to do so: in the communities in which we live.</p>				