

NORDIWA

NORDIWA wastewater conference online

28 September – 1 October 2021



Leading Nordic event for water professionals

FIWA, DANVA, Norsk Vann, Samorka and Svenskt Vatten invite all water professionals with an interest in wastewater, sewerage and climate change mitigation and adaptation to join us at NORDIWA 2021.

We and 200 presenters engaged in five parallel tracks, welcome experts and practitioners, managers and operators, city planners, researchers, engineers, advisors and others with an interest in wastewater management, urban drainage and climate adaptation in the Nordic region.

All presentations will be recorded and also available during October and November for the participants at NORDIWA 2021.

www.nordiwa.org #nordiwa2021





Welcome to NORDIWA 2021

We look forward to welcoming all of you to the online format of the Nordic Wastewater Conference 2021. The interest among practitioners, experts and researchers to present and share their latest results, knowledge and experiences, has this pandemic year just been overwhelming. Among all the abstracts we accepted 200 exciting presentations and five workshops. The eagerness to share with others has never been so obvious.

The Nordic Wastewater Conference is now being arranged for the seventeenth time. While longing to meet physically again - we hope to maintain NORDIWA 2021 as a venue for exchanging practical knowledge and the latest information, where participants have the opportunity to network and learn from each other's experiences and practices.

Good news for those who do not have enough split vision to watch five parallel tracks simultaneously - all presentations will be recorded and available to also watch during October and November for participants at NORDIWA 2021.

On behalf of the Programme Committee
Anna Norström, Magnus Bäckström and Anders Finnson
www.svensktvatten.se/om-oss/kontakt/

Svenskt Vatten



Anna Norström



Magnus Bäckström



Anders Finnson



Keynote speakers



Opening of NORDIWA 2021.
Pär Dalhielm, CEO Svenskt Vatten



Future of water, global drivers for change.
Kala Vairavamoorthy, Executive Director
International Water Association



The European Green Deal, the water policy and how it will shape the water industry for the coming decades.
Veronica Manfredi, Director, Quality of Life, Directorate
General for Environment, European Commission



Wastewater-based surveillance of SARS-CoV-2 supports national COVID-19 pandemic response in Finland
Tarja Pitkänen, Chief Specialist, Department of Health
Security, the Finnish Institute for Health and Welfare;
and Associate Professor, Department of Food Hygiene
and Environmental Health, University of Helsinki



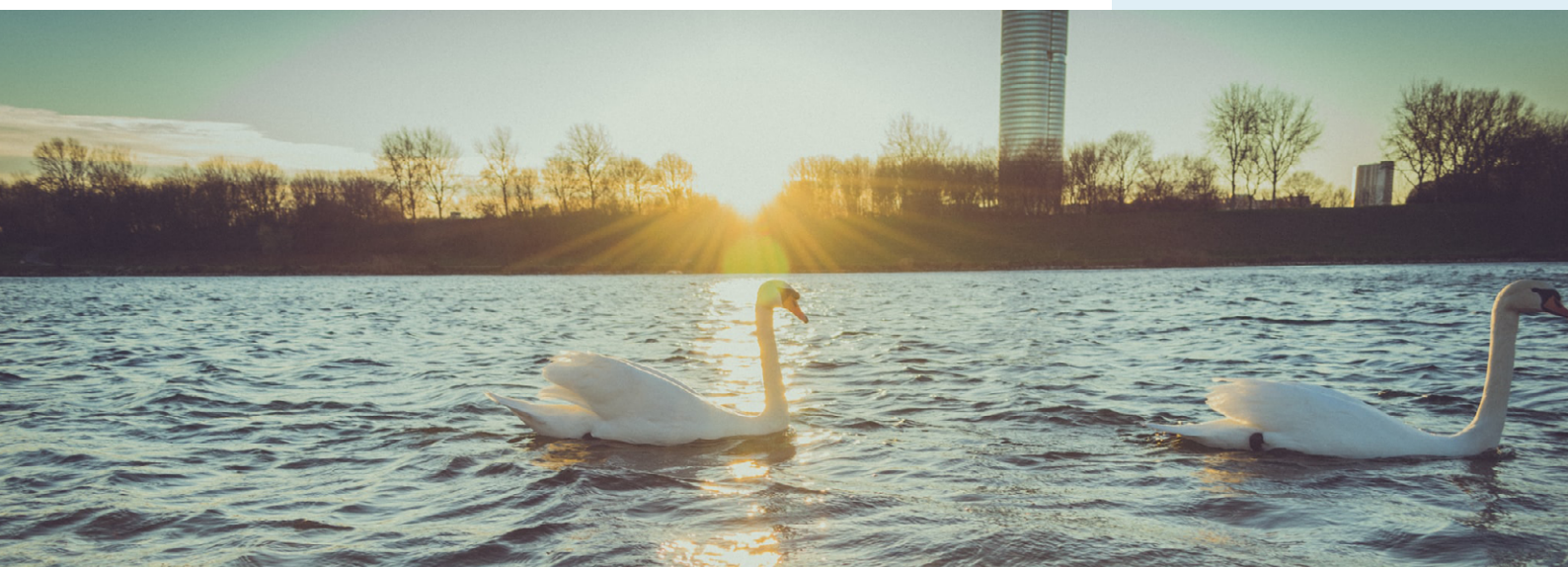
A holistic approach to develop a sustainable concept for a New Sjölund WWTP in a regional system

Göran Johnsson, project manager VA SYD
Maria Jonstrup, R&D manager, EnviDan AB



Conference Elements

- Opening of the conference and plenary session with keynote speakers, who will illustrate challenges and new development in the water sector.
- Conference sessions with full presentations (15 minutes) and speed talks (5 minutes) highlighting key findings of projects and results. Possibilities for a broad digital interactivity between presenters, participants and moderators.
- All presentations will be recorded and being available during October and November for all the participants at NORDIWA 2021.
- Workshops facilitate knowledge sharing and discussion between the presenters and the participants of the conference.
- Every morning starts with 30 minutes summary of the highlights from the previous day.



Workshops

- Power of positivity - the road towards a Nordic carbon and energy positive future
- The "not so clear" crystal ball - the water resource Recovery Facility of the future must be adaptable
- Paradigm shift within stormwater and cloudburst management
- On-site and fast DNA-analyses of microbial communities for surveillance and control
- From online NORDIWA 2021 to IWA Copenhagen 2022

Young Water Professionals

A special session will be organised for Young Water Professionals in the Nordic region.

Digital technical tour

Gothenburg is celebrating 400 years as a city this year and since 1621 the city has developed into a modern industrialized city with a population of 600 000. In the middle of the 1800's the sewer systems began to be built to transport wastewater from the city center and into the Göta estuary that flows through the city towards the sea.

In 1972 The Rya WWTP was commissioned which included a 130 km tunnel system. Since then the plant has grown and today it serves a population equivalent of 800 000 from eight municipalities. Looking towards the future the population within the region is increasing and more stringent

discharge consents are also expected. To handle our future challenges Gryaab has started an expansion project called New Rya with the objective that new treatment processes will be ready for action in 2036.

Social program

- Welcoming digital reception on Tuesday, 28 September.
- Digital surprises

Digital Exhibition

Showcase of companies and solutions. To enable networking a digital area will be created for exhibitors.

Key dates

- 1 June, registration opens for the conference.
- 21 September, last date for registration.
- 28 September - 1 October, Conference take place.

Programme Committee NORDIWA 2021

Lise Hughes, Aarhus Vand A/S, (IWA) • Miriam Feilberg, DANVA • Marina Graan, Helsinki Region Environmental Services Authority, (IWA) • Mika Rontu, FIWA • Paula Lindell, FIWA • Fjóla Jóhannesdóttir, Veitur (IWA) • Magnar Sekse, Bergen (IWA) • Arne Haarr, Norsk Vann • Anna Norström, Svenskt Vatten (IWA) • Magnus Bäckström, Svenskt Vatten • Anders Finnson, Svenskt Vatten



Registration and participant fees

Registration

www.nordiwa.org

Category	Fee
Delegates	9 375 SEK (7 500 excl. VAT)
Speaker (Full presenter/Speak talk)	5 625 SEK (4 500 excl. VAT)
Moderator/Workshop	5 625 SEK (4 500 excl. VAT)
Exhibitor package incl 1 person	10 000 SEK (8 000 excl. VAT)
Extra exhibitor (not included in the package)	9 375 SEK (7 500 excl. VAT)
Student	4 994 SEK (3 995 excl. VAT)

Registration includes

- Admission to the digital program with presentations, exhibition and abstracts, available for two months after the conference has taken place.

Exhibitor package includes

- Infopage with text, image and/or film
- Contact information
- Links to the company's social media
- Live chat with the participants
- Live meeting in the exhibitor booth
- Notice of interest from the participants
- 1 registered company representative
- Access to the scientific sessions for 1 registered company representative

Themes at NORDIWA 2021

Main Topics

NORDIWA presents a diverse conference with five main topics

-  1. Climate challenges, mitigation and adaptation
-  2. Sewer systems, management, models and integrated approaches
-  3. Sustainable wastewater treatment and challenge of micropollutants
-  4. Circular economy, resources and reuse
-  5. Sustainable management and communication

For more information and updates
please visit us at nordiwa.org

09:00 Plenary 09:00-10:30 Chair: Anders Finnson Opening of NORDIWA 2021. Pär Dalhielm, CEO Svenskt Vatten Future of water, global drivers for change. Kala Vairavamoorthy, Executive Director International Water Association The European Green Deal, the water policy and how it will shape the water industry for the coming decades. Veronica Manfredi, Director, Director, Quality of Life, Directorate General for Environment, European Commission Wastewater-based surveillance of SARS-CoV-2 supports national COVID-19 pandemic response in Finland Tarja Pitkänen, Chief Specialist, Department of Health Security, the Finnish Institute for Health and Welfare; and Associate Professor, Department of Food Hygiene and Environmental Health, University of Helsinki A holistic approach to develop a sustainable concept for a New Sjölanda WWTP in a regional system Göran Johnsson, project manager VA SYD Maria Jonstrup, R&D manager, EnviDan AB					
11:00 11:00-12:30 Chair: Per Henrik Nielsen	Upstream diffuse sources 11:00-12:30 Chair: Per Henrik Nielsen New hazardous substances in Finnish wastewater treatment plants Niina Vieno Characteristics of household wastewater in Skarpnäck 2014-2019 Anders Ljung Mapping microplastics in urban waters - flows, solutions, and actor responsibility Emma Fältström Photodegradation of macroplastics into microplastics – a laboratory study of four plastic debris Lisa Öborn	Communicating risks and opportunities 11:00-12:30 Chair: Fjóra Jóhannesdóttir Stormwater management – get citizens on board! Isabel Seifert-Dähnn Digitalization – communicating flood and pollution risks to stakeholders Hanna Rissanen Implementation of Sustainable Drainage Systems - How to change a mindset? Halldora Hreggvidsdóttir	Reuse of wastewater 11:00-12:30 Chair: Maj Møller Sørensen Which Water Source Should be Used for Different Water Usages? Esmeralda Frihammar Possibilities of large-scale wastewater reclamation for potable use in Scania, Sweden Olivia Söderman Removal of pharmaceutical residues from RO-concentrates from water reuse facility on Gotland island Christian Baresel Utilization of water from rainwater basins at industrial laundry applications Stinne Plesner Skårup	Sewer management to reduce overflow 11:00-12:30 Chair: Peter Underlin Experiences in rising main monitoring in wastewater pumping stations Perttu Saarinen Managing infiltration and inflow to wastewater systems – Key aspects in a risk-based approach Anna Ohlin Saletti Localizing Intruding Rainwater in Separated Sewer Systems Ørjan Heggdal Fractionation of Unwanted Water using Machine Learning and Time Series Analysis Christian Svensson The roles of model-based simulation and direct flow measurements in CSO data-analytics Hannes Björninen Data driven detection of extraneous water using AI for intelligent investment planning Torben Bach Reykjavik- Covid-19 - operational problems due to wet wipes in the sewage system Páll Ragnar Pálsson Development of parametric tools for the evaluation of the physical integrity of sewage networks Axumawit Tesfamariam	Workshop The power of positivity – the road towards a Nordic climate and energy positive future 11:00-12:30 Chair: Miriam Feilberg The Nordic water and wastewater associations are organizing a joint workshop where we will discuss experiences, ambitions and cooperation in the Nordic countries and in Europe towards meeting the climate goals. Currently 30-50% of municipalities' energy consumption is used in the water sector, and in total, the water sector takes up 3% of total electricity in Europe and 4% globally. The water sector has an important role to play in meeting the global climate goals from the Paris agreement.
14:00 14:00-15:30 Chair: Niels Vinderslev Bjerregaard	Asset management tools 14:00-15:30 Chair: Niels Vinderslev Bjerregaard Rehab-IT: An Asset Management Tool for Renewal Planning Mads Uggerby 7 years of experience with Asset Management and long-term operation and investment planning Benny Nielsen Asset Management in Swedish Water and Wastewater sector – results from a research project Magnus Montelius From key figures to key performance indicators with spatial data Jukka Heinonen	Enhanced nutrient removal 14:00-15:30 Chair: Dines Thornberg Full scale study – Sludge capacity test on sand filter for polishing of municipal wastewater Sofia Bramstedt Where did the phosphorus go? Mayumi Narongin Densadeg XRC technology to reduce phosphorus discharge from Skanderborg wastewater treatment plant Clara Barret Effect of coagulants agent on sewage water treatment and sludge production: A pilot study Annaliza Cainglet Effect of VFA rich hydrolysates from different substrates in the denitrification process Andrea Carranza Muñoz Design approach for Moving Bed Biofilm Reactor to achieving low effluent nutrient concentrations Stefan Erikstam Preparing wastewater for resource efficient treatment: pre-filtration and carbon source production Elin Ossiansson	Upstream point sources 14:00-15:30 Chair: Ann Mattsson Results from testing program for pharmaceuticals at Egea WWTP and at the hospital of Aarhus, Denmark Laura Bailón Allegue Treatment of landfill leachate from PFAS: process selection based on pilot-scale tests Andriy Malovanyy Innovative technology concept removes and destructs perfluorinated-acids from water Maria Nymann Tire and road wear particles in roadside snow banks: Quantities and dynamics of release Arya Vijayan	Stormwater pollutants 14:00-15:30 Chair: Fjóra Jóhannesdóttir Removal of particles, heavy metals and detergents from tunnel wash water Hanne Vistnes Occurrence and treatment of microplastics and car tire rubber in stormwater Jes Vollertsen An overview of continuous stormwater quality monitoring technologies Nikita Razguliaev A large-scale mapping of stormwater runoff from heavily trafficked areas. Case study Gothenburg Helén Galfi Removal of dissolved metals from road runoff – Initial observations and implications for operation Magnus Hallberg	Workshop On-site and fast DNA-analyses of microbial communities for surveillance and control 14:00 - 15.30 Chair: Per Halkjær Nielsen We will demonstrate the newest knowledge about identification, quantification and surveillance of microorganisms in wastewater treatment systems based on DNA sequencing. Special focus is on the new hand-held technologies that allows on-site sequencing in few hours. What sort of data do we get and how can they be used for troubleshooting, surveillance and control? Case stories will demonstrate the use of DNA sequencing and there will be time for discussion of future applications.
15:45 Digital welcome reception, digital surprises and mingle 15:45-17:00					

08:15	Highlights from Day1 08:15-08:45				
09:00	Management for sustainability 09:00-10:30 Chair: Halldóra Hreggviðsdóttir	H2S 09:00-10:30 Chair: Per Henrik Nielsen	Recycling and recovery of nutrients 09:00-10:30 Chair: Torgeir Saltnes	Strategies for digitalisation 09:00-10:30 Chair: Erik Lindblom	Workshop Paradigm shift within stormwater and cloudburst management 09:00-10:30 Chair: Marinette Hagman We are expecting more intense cloudbursts and cities need to prepare for the effects of climate change. The amount of stormwater will increase dramatically. In this workshop we will discuss how to plan for the future and what switches in our mind sets that are needed in order to accomplish a paradigm shift within stormwater and cloudburst management.
	Advanced Hydraulic Representation of Blue Green Infrastructure Jessica Jefferys	Cost efficient and sustainable reduction of hydrogen sulphide Christian Svensson	Innovative technology to remove nitrogen and produce climate smart fertilizers Carl-Johan Högberg	Metadata and their role in the digital transformation of Water Resource Recovery Facility operations Oscar Samuelsson	
	Survey on Sustainability and the SDGs Niina Vieno	Novel sensor for hydrogen sulfide monitoring in sewers enables improved odor and corrosion control Søren Porsgaard	Comprehensive nutrient recovery at wastewater treatment plant by RAVITA process Sini Reuna	Catchment overview for cross-boundary corporation flood risks Peter Rasch	
	Swedish utilities and their contributions to the SDG:s – status and recommendations for the future. Magnus Arnell	Sewer Process Modelling as a Tool to Predict and Manage Odour and Corrosion in a Drainage System Esther Vollertsen	Is it safe to use sewage sludge-based fertilizers in agriculture? Katri Senilä	VeVa – a Danish water utility association utilising weather radar data for watersector applications Malte Ahm	
	Learning from a resource-recovery game for collaborative urban sanitation planning Jennifer R. McConville	Biological pre-treatment upstream the WWTP – using the sewers as a process volume Mark de Blois	Recovering phosphorus from chemical phosphorus removal sludge: A techno-economic comparison Juho Uzkurt Kaljunen	Stormwater data management in the Helsinki Capital Region Maiju Happonen	
	Benefits of water sector integration to energy systems Dominik Franjo Dominković	Advanced digital solution to control hydrogen sulfide in sewers Johan Egsgaard Thomsen	Ash2®Phos: Closing the phosphorus cycle: Value added recycling from incinerated sewage sludge Yariv Cohen Anna Lundbom		
		Evaluating the effectiveness of lime-based filter-media on sewer air hydrogen sulphide Asbjørn Haaning Nielsen	The Road to Full-Scale Biochar Production Per Henrik Nielsen		
11:00	An overview of possibilities for resource recycling and recovery 11:00-12:30 Chair: Maj Møller Sørensen	Anammox and Aerobic Granular Sludge 11:00-12:30 Chair: Sofia Andersson	Dealing with uncertainty 11:00-12:30 Chair: Hlodver Stefan Thorgeirsson	Digital tools 11:00-12:30 Chair: Hannes Björninen	Workshop Young Water Professionals - Knowledge transfer in the Nordic Water Sector: bringing research to practice 11:00-12:30 Chair: Christoffer Wærff The water/wastewater sector is sometimes seen as conservative towards innovation. To accelerate the rate of change and solve the many challenges the water sector is facing it is important to understand the process of bringing research into practice and the challenges and opportunities that it brings. The topic has been expressed as of great interest among YWPs in the Nordic countries, making Nordiwa an ideal place to discuss it across national borders.
	Experimental and desktop assessment of wastewater treatment solutions for resource recovery Herman Helness	Supervising and observing the implementation of granular sludge technology, S:Select® Ditte Marie Hansen	Vital climate change solutions integrated in major Norwegian infrastructure project Linea Sofia Skov	Protection and warning against faecal bacteria and toxic algae in bathing lakes Rikke Markfoged	
	From Urban Biowaste to Animal Feed - Proteins from Biogas Jacob Kragh Andersen	Stable operation of the first AGS application in the Nordic countries Mark de Blois	Planning Sustainable Infrastructure using BREEAM Communities Vala Jónsdóttir	IoT as an enabler for Distributed Online Monitoring of the Urban Water Cycle Malte Ahm	
	Recommendations for improved life cycle assessments of sewage sludge as fertilizer Magdalena Svanström	Installation and Start-up of the first MABR Drop In solution in UK Josep Manzano	Drilling within Reykjavik's city limits – improving understanding of groundwater levels and shallow subsurface permeability Sigrún Tómasdóttir	Model predictive control for the sewer system in Kolding, Denmark Nikolaj Mølby	
	Circular economy and the potential of source-separating sanitation in northern Finland and Sweden Vuokko Laukka	Start-up of partial denitratation-anammox MBBR systems with a partial nitritation-anammox inoculum David J. I. Gustavsson	Citizen science can help solve climate-derived groundwater problems Anja Sloth Ziegler	The Living Digital Twin of the urban drainage system in Odense, Denmark Agnethe Nedergaard Pedersen	
	From WWTP to a WRRF with the Hias Process Torgeir Saltnes		Monitoring of water runoff from construction sites and in the stormwater system Anton Jacobson	3D Visualization, Cloudburst Modeling and Planning Bo Kempel	
	A review on the environmental impact of dairy wastewater treatment and the prospects for P- recovery Behjat Marta		Multi-objective assessment of nature-based climate adaptation considering future uncertainty Ida Linde Hansen	The Digital Water Cities project Dines Thornberg	
			Challenges of the coastal urban drainage system under climate change in Trelleborg, Sweden Salar Haghghatafshar	Automatic Anomaly Detection for Sewage Network Sensors Peter Rasch	

08:15	Highlights from Day 2 08:15-08:45			
09:00	<p>Micropollutants - an overview 09:00-10:30 Chair: Arne Haarr</p> <p>Full scale removal of Active Pharmaceutical Ingredients from wastewater treatment plants Preben Thisgaard</p> <p>Micropollutant contamination of soil and groundwater at two wastewater drainage fields Rasmus Klapp</p> <p>Selection of Process Design for Micropollutant Reduction – with Unclear Legal Requirements Jacob Kragh Andersen</p>	<p>Sludge management 09:00-10:30 Chair: Herman Helness</p> <p>Semi full-scale study - High loaded mesophilic anaerobic digestion of primary sewage sludge Gustav Björk</p> <p>Post-digestion thermal hydrolysis for a more cost-efficient sludge drying and incineration Norman Weisz</p> <p>Temperature transition from mesophilic to thermophilic anaerobic digestion and control of the experimental data against the ADM1 model Ted Lundwall</p> <p>Comparison of sludge management alternatives and resource recovery Blanca Magdalena Gonzalez Silva</p> <p>Continuous solids measurements and an optimization control application enhance sludge drying Heii Karaila</p> <p>How low can we go? – mesophilic and thermophilic digestion of WWT sludge at short retention times Jesper Karlsson</p> <p>Circular Economy with Sludge - A Novel Solution Manish Verma</p>	<p>MBR and membrane based treatment 09:00-10:30 Chair: Marina Graan</p> <p>Stockholm's Future Wastewater Treatment – Introduction and Background Sofia Andersson</p> <p>Stockholm's Future Wastewater Treatment – long term pilot trials with an MBR process Christian Baresel</p> <p>How low can you go – Resource efficient membrane cleaning in municipal membrane bioreactor pilot Christian Baresel</p> <p>Commissioning of Swedens first large scale MBR-process - setbacks and successes Sofia Andersson</p> <p>Testing Membrane-Aerated Biofilm Reactors under Nordic conditions Nerea Uri-Carreño</p> <p>Investigating direct membrane filtration (DMF) as a treatment concept for municipal wastewater Eline Klaastad</p> <p>Fouling mechanisms and mitigation during direct membrane filtration of primary municipal wastewater Selina Hube</p>	<p>CCTV and data for asset management 09:00-10:30 Chair: Hans Bäckman</p> <p>Digital materials and methods in water distribution and sewage network asset management in Finland Heini Postila</p> <p>Novel Sewer Surveys Jussi Kuikka</p> <p>In depth analysis of the features contributing to the performance of sewer deterioration models Bolette Hansen</p> <p>Input data induced uncertainty in sewer deterioration models Franz Tschekner-Gratl</p> <p>Wastewater Components Determine Renovation and Maintenance Plans Tomi Lukkarinen</p>
11:00	<p>Stormwater planning 11:00-12:30 Chair: Lena Blom</p> <p>New Tool Enables Early Integration of Nature Based Stormwater Solutions in Urban (re)Developments Sara Maria Lerer</p> <p>Combined impacts of sustainable stormwater systems and climate change on runoff and pollutant loads Nora Sillanpää</p> <p>Mapping land cover with Machine Learning provides new possibilities in surface water planning Jonas Tranberg</p> <p>Redefining boundaries – A Nordic collaboration for streamlined and accessible catchment modelling Hannes Björninen</p>	<p>Micropollutants with a focus on microplastics and antibiotics 11:00-12:30 Chair: Peter Tychsen</p> <p>Prevalence of Antibiotic Resistance in Full-Scale Sewage Sludge Treatment Processes Maria Valtari</p> <p>Fate and removal efficiency of microplastics in a wastewater treatment plant Rupa Chand</p> <p>Micropollutants and Microplastics in a Membrane BioReactor (MBR) Katja Närhi</p> <p>Comparison of activated sludge processes for antibiotics removal from wastewater at cold temperature Antonina Kruglova</p> <p>Minimization of plastic emissions from WWT plants through development of biodegradable flocculants Laura Agneessens</p> <p>Sundsvall's different wastewater management strategies, needs for and effects on advanced treatment Malin Tuveesson</p>	<p>Wastewater treatment 11:00-12:30 Chair: David l'Ons</p> <p>Effect of cold climate conditions on municipal wastewater treatment in constructed wetlands Lina Büngener</p> <p>Experiences of low pressure sewer (LPS) systems in Sweden Solveig Johannesdottir</p> <p>The Bromma WWTP strikes back Hanna Gottås</p> <p>Characteristics of municipal wastewater in south-west Sweden Mark de Blois</p> <p>Treatment efficiency of small-scale package plants in northern Sweden and Finland Brenda Vidal</p> <p>Factors affecting effluent quality from on-site wastewater treatment systems in Nordic countries Juho Kinnunen</p> <p>Joint Procurement of Ferrous Sulphate - Cooperation Between Water Management Utilities Marina Graan</p>	

Friday 1 October 2021

08:15 Highlights from Day 3 08:15-08:45					
09:00 09:00-10:30 Chair: Anna Mikola	Management of N2O N2O Emissions from Danish WWTPs – National Emissions and Reduction Potential Jeanette Agertved Madsen	Micropollutants advanced treatment #1 09:00-10:30 Chair: Lise Karstenskov Hughes Tracking the adsorption profiles of organic micropollutants in a granular activated carbon filter Ellen Edefell	Modelling and control #1 09:00-10:30 Chair: Maria Valtari Improving data quality with mass balances and data reconciliation Oscar Samuelsson	Performance of stormwater facilities 09:00-10:30 Chair: Nora Sillanpää Mini-raingardens for managing stormwater from rooftops Johanne Grøndahl Klausen	Workshop The "not so clear" crystal ball: why the water resource Recovery Facility of the future must be adaptable 09:00-10:30 Chair: Dines Thornberg Participants will take home a clearer and more realistic picture of the opportunities and challenges associated with the adoption of a resource recovery paradigm within the context of a circular economy. Armed with these new perspectives, they will be able to see how they need to change the way they conceptualize and implement solutions for their facilities to deal with the many challenges they face today in urban used water management, while properly positioning for a very uncertain future in terms of climate adaptation needs, population dynamics, constrained resources, increase regulatory requirements, and accelerated technology developments.
	Nitrous Oxide Emissions - Lessons Learned at Ejby Mølle Nerea Uri-Carreño	The challenge of simultaneous removal of pharmaceutical residues and PFAS at Uppsala WWTP Anna Maria Sundin	Integrating COD and SS for prediction of organic micropollutant removal in ozonation of wastewater Rubén Juárez	Roadside trees drink stormwater in innovative solution for urban climate adaptation Esben Ravn Iversen	
	Identifying Nitrous Oxide Emissions in different scenarios in Henriksdal Wastewater Treatment Plant Kristina Stark Fujii	Pilot trials with pulverized activated carbon in combination with Membrane BioReactor (PAC-MBR) Christian Baresel	Plant-wide dynamic WWTP modelling for sustainability evaluation of phosphorus removal techniques Magnus Rahmberg	Occurrence and concentrations of organic micropollutants in bioretention filter media Robert Furén	
	Update for the full-scale testing of N2O mitigation strategies at the Viikinmäki WWTP Kati Blomberg	Direct membrane filtration followed by granular activated carbon filtration for wastewater treatment Simon Gidstedt	This carpark is also a retention basin for rainwater Esben Ravn Iversen	Applicability of using sedimentation and membrane filtration for stormwater treatment Saida Kaykhai	
	Quantification and reduction of nitrous oxide emissions from Wastewater Treatment plants Anders Lynggaard-Jensen	Large-scale pilot tests using an MBR-GAC configuration for micropollutant removal at Syvab Ross Roberts	Efficient dewatering of sediment from rainwater basins Simon Østergaard Jensen	Evaluation of the hydraulic capacity and maintenance of nine rain gardens in Oslo Nevedda Sivakumar	
	Nitrous oxide emissions and carbon harvesting by prefiltration. Case of Avedøre WWTP (VARGA project) Artur Tomasz Mielczarek	Comparison of UV-H2O2 and ozone oxidation for the removal of pharmaceutical residues Anneli Andersson Chan	Workshop From online NORDIWA 2021 to IWA Copenhagen 2022 11:00-12:30 Chair: Miriam Feilberg The purpose is to convey the Nordic key water messages from Nordiwa 2021 to the global water audience at the IWA World Water Congress and Exhibition in Copenhagen, 11-15 September 2022. We will discuss outcomes related to the topic for IWA 2022: Water for smart liveable cities and in particular related to the IWA 2022 tracks on wastewater and climate. IWA 2022 will be the leading water sector event in the Nordic regions for many years to come. The Nordic regions is very advanced in water management and has many lessons learned that will be beneficial for solving global water challenges. It is therefore relevant to discuss key messages to take from the Nordic region to the rest of the world to ensure that our experiences will be useful for other countries in shaping their water future.		
	11:00 11:00-12:30 Chair: Peter Tychsen	Wastewater and the climate, our contribution to lowering global emissions 11:00-12:30 Chair: Lovisa Gelotte	Modelling and control #2 11:00-12:30 Chair: Oscar Samuelsson	Stormwater management in a challenging cold climate 11:00-12:30 Chair: Lena Blom	
Removal of micropollutants from wastewater effluent using a mobile pilot E-peroxone and ozonation Majid Mustafa	ARES Active Reduction of Emissions from wastewater Systems Per Henrik Nielsen	The AMOZONE O3 digital twin of the Linköping WWTP, Sweden: prediction of pharmaceuticals removal Giacomo Bellandi	Improving winter environmental practices: Urban snow management tool (SMT) Jiri Marsalek		
Can bromate reduction in anoxic MBBRs enable ozonation of bromide rich-wastewater in coastal areas? Per Falås	Carbon footprint assessment of wastewater treatment plants: Case studies from Finland Alexis Awaitey	Digital twins enable virtual acceptance tests (VAT) of wastewater treatment plant control systems Erik U. Lindblom	Retention of snowmelt and rain from extensive green roofs during the snow-covered period Bent Braskerud		
Tracking 14C-labeled micropollutants to separate degradation from adsorption in carbon filters Alexander Betsholtz	Greenhouse gases - How do we deal with them? Mikkel Algren Stokholm-Bjerregaard	Flexible Management of WRRF Objectives Using Nonlinear Model Predictive Aeration Control Peter Alexander Stentoft	Variability of the hydrologic performance of green infrastructures due to Swedish climatic regimes Ivan Mantilla		
Micropollutant Removal by Multiple Point Ozone Injection in Full-scale Municipal WWTP Nana Wirenfeldt Jensen	Greenhouse Gas Reduction through Holistic Approach to Sludge Digestion Jan Høgh				
	Low pressure - High impact. Climate and operational value from vacuum degassing of digested sludge Maria Dittmann				
12:40 Closing remarks 12:40-12:55					