

CONFERENCE PROGRAMME

Helsinki, Finland
23 – 25 September 2019

NORDIWA

NORDIC
WASTE
WATER
CONFERENCE



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FIWA, DANVA, Norsk Vann, Samorka and Svenskt Vatten invite all water professionals with an interest in wastewater, sewerage and climate change adaptation to join us at NORDIWA2019.

www.nordiwa.org #nordiwa2019

The leading Nordic event for water professionals – experts and practitioners, managers and operators: utility staff, city planners, researchers, engineers, advisors and others with an interest in wastewater management and climate change adaptation in the Nordic region.



SAMORKA



Svenskt Vatten



Welcome to NORDIWA2019

We look forward to welcoming all of you to Helsinki for the Nordic Wastewater Conference 2019. The Nordic Wastewater Conference is now being arranged for the sixteenth time.

The conference has developed over time and its contents have become broader and more diverse. Wastewater treatment is discussed in the wider context of various new challenges. Climate change adaptation, stormwater management and sewer systems are extensively accommodated in the conference programme. We hope to maintain the conference as a venue for exchanging practical knowledge and latest information, where participants have the opportunity to network and learn from each other's experiences and practices.



On behalf of the Programme Committee
Saijariina Toivikko
Finnish Water Utilities Association (FIWA)

Main Topics

NORDIWA presents a diverse conference with four main topics

1. Sustainable wastewater treatment and challenge of micropollutants
2. Circular economy, resources recycling and recovery
3. Sewer systems – management, models and integrated approaches
4. Adapting to the changing climate and sustainable stormwater management solutions

Also cross-cutting topics are included to the programme.

Key Note Speakers



Future of Water

Kala Vairavamoorthy, IWA Executive Director, Professor, International Water Association



Status and Future of European Directives related to Water

Veronica Manfredi, Director, European Commission, Directorate General for Environment



How Climate Change will Impact Northern Europe?

Hannele Korhonen, Director of Climate Research Programme, Research Professor, Finnish Meteorological Institute



State of the Baltic Sea

Rüdiger Stempel, Executive Secretary, HELCOM



SDG's in the Water Utility Strategy

John Buur Christiansen, CEO, BIOFOS A/S



Technical Tours

Five technical tours in co-operation with **Helsinki Region Environmental Services Authority HSY, Helen Ltd and City of Vantaa**
Wednesday September 25th 12:50–17:00

1. Viikinmäki wastewater treatment plant

- Tour A Nutrient recovery process RAVITA pilot
- Tour B Energy efficient solutions

2. New wastewater treatment plant to Blominmäki

3. Katri Vala Heat Pump Plant

4. Three stormwater management sites in Vantaa

- Natural stormwater management
- Bioretention basins
- Stormwater management in snow disposal site

5. Mäntymäki sewage pumping station and Sanitation Safety Plan in HSY headquarters

Note that the participation in some excursions is limited.

Starting time for the excursions will vary. Excursion 1 and 2 will include lunch outside of the hotel. Bus transportation to Helsinki-Vantaa Airport is arranged from all excursion sites. Excursions 3 and 5 arrive at the airport at 15.30. Excursion 4 arrives at the airport at 15.40. Excursion 2 arrives at the airport at 16.30. Excursion 1 arrives at the airport 17.30. Drop off to Clarion Hotel Helsinki will be about 30 min later.

Young Water Professionals

Young Water Professionals will meet and have the possibility to share ideas and network with each other on Monday September 23rd.

Conference Elements

- Opening of the conference and plenary session with prominent keynote speakers, who illustrate future challenges and new development in the water sector.
- Conference sessions with normal presentations and short presentations highlight key findings of projects and results. Presenters of brief presentations will be available after the session to discuss more deeply with the audience.
- Workshops facilitate knowledge sharing and discussion between the presenters and the participation of the conference.

Monday 23 September 2019

11:30 11:30-12:30 **Registration and lunch**

12:30 12:30-14:00 **Opening session**

Future of Water

Kala Vairavamoorthy, IWA Executive Director, Professor, International Water Association

Status and Future of European Directives related to Water

Veronica Manfredi, Director, European Commission, Directorate General for Environment

How Climate Change will Impact Northern Europe?

Hannele Korhonen, Director of Climate Research Programme, Research Professor, Finnish Meteorological Institute

14:00 14:00-14:30 **Coffee break and networking**

14:30 14:30-15:50 **Sustainable WWTP**

14:30-15:50 **Circular economy solutions**

14:30-15:50 **Future city planning**

14:30-15:50 **Design criteria and guidance**

14:30-15:50 **Young Water Professionals Workshop**

14:30-14:50 The impact of sensor bias and influent variations on WWTP control performance
Erik Lindblom, Stockholm Vatten och Avfall

14:30-14:35 Sweden's first beer brewed with recycled water
Staffan Filipsson, IVL Swedish Environmental Research Institute

14:30-14:50 Future City Flow, a decision support system for long term planning
Glen Nivert, Kretslopp och vatten Göteborgs stad

14:30-14:50 Urban floods – from return period to tolerable consequence
Salar Haghigatafshar, Lund University

14:50-15:10 Innovative public procurement of WWTP
Maria Arjonen, Law and Water Ltd

14:35-14:55 Potable water reuse in Mörbylånga, Sweden
Peter Asteberg, Mörbylånga Municipality, Sweden

14:50-15:10 Holistic approach to planning and prioritizing investments
Per Hallager, VCS Denmark

14:50-15:10 New guidelines and certification system for SUDS
Stian Bruaset, SINTEF

15:10-15:30 Environmental impact of future influent scenarios to WWTPs
Sofia Lovisa Andersson, IVL Swedish Environmental Research Institute

14:55-15:15 Sustainable Wastewater Reuse Solutions for Managed Aquifer R
Christian Baresel, IVL Swedish Environmental Research Institute

15:10-15:30 Paradigm Shift in Management of Pipe Rehabilitation
Thor Danielsen, HOFOR

15:10-15:30 Three Step Strategy for Stormwater Management and Design Rain Values
Kim H Paus, Asplan Viak AS

15:30-15:35 Water Resource Recovery Facilities of the Future: Preparing for the Unknown
Ivan Vølund, Vandcenter Syd

15:15-15:35 Circular economy in urban wastewater management – the need for business as unusual
Elisabeth Kvarnström, RISE Research Institutes of Sweden

15:30-15:50 Pipeline to becoming a separate sewer system city
Freya Mosbæk, Aalborg Forsyning

15:30-15:50 The role of stormwater and the environmental quality standards
Linnea Lundberg, Kretslopp och vatten Göteborgs stad

15:35-15:40 The true purpose of controls models is insight; how the process modelling effort helps VEAS WRRFs in Norway
Jonas Pettersen, VEAS

15:35-15:40 Reuse of treated wastewater in industrial symbiosis
Kerstin Hoyer, VA SYD

15:30-15:50 Pipeline to becoming a separate sewer system city
Freya Mosbæk, Aalborg Forsyning

15:40-15:45 Microalgae for wastewater treatment and resource recovery
Amit Bhatnagar, University of Eastern Finland

15:45-15:50 Sustainability analysis of resource recovery systems in the Baltic Sea Region
Erik Kärrman, RISE Research Institutes of Sweden

15:50 15:50-16:20 **Coffee break and networking**

16:20 16:20-17:40 **WWTP Process development and experience**

16:20-17:40 **Resources recovery and sustainable solutions**

16:20-17:40 **Sewer network challenges Workshop**

16:20-17:40 **Tools for design and decision making**

15:50-17:40 **Young Water Professionals Workshop**

16:20-16:40 Nordic experiences with hydro cyclones in the main stream
Laura Bailón Allegue, Aarhus Vand A/S

16:20-16:40 The resource recovering WWTP in full scale
Nick Ahrensberg, BIOFOS

16:20-16:25 Hydrogen sulfide problems in sewer systems, case Turku
Jarmo Sallanko, Pöyry Finland Oy

16:20-16:40 Sustainability Analysis of Stormwater Solutions
Lisa A. Peterson, Drexel University & Aftan Engineering LLC

Envisioning the wastewater professional of the future

16:40-17:00 Performance of MBBR at Ruka Ski Resort
Kristian Sahlstedt, Pöyry Finland Oy

16:40-17:00 Modelling household wastewater generation for evaluation of heat recovery potential
Christoffer Wärf, RISE Research Institutes of Sweden

16:25-16:30 Could thermal loggers help you detect inleaks and infiltration in your sewer system?
Margrét María Leifsdóttir, Veitur

16:40-17:00 Infiltration measurement and GIS analysis for SUDS placement
Tone M. Muthanna, Norwegian University of Science and Technology

What are the biggest challenges facing the wastewater sector of tomorrow?

17:00-17:20 Primary treatment in Norway-10 years of experience & status
Jan Stenersen, TroVA AS

17:00-17:20 Circular and non-toxic reuse of phosphorus from sewage sludge
Representative of the Swedish Government Inquiry

16:30-16:35 Rapid problem detection in sewer networks with data analytics
Tomi Lukkarinen, Helsinki Region Environmental Services Authority HSY

17:00-17:20 SuDS and sewer interaction at city-scale for flood control – An optimization study
Salar Haghigatafshar, Lund University

What are the key competencies needed to respond to these challenges?

17:20-17:25 Aggressive SBR - a new way of operating SBR plants
Mark de Blois, H2OLAND AB

17:20-17:25 Co-digestion of Aquaculture Waste in Existing Biogas Plants
Hilde Hatland, Agency for Water and Sewerage Works, Bergen Norway

16:35-16:40 Oil tracing i sewersystem – low tech, cheap and effective
Elin Kusofsky, Uppsala Water and Waste Ltd

17:20-17:25 FloodMan – A Tool for Sustainable Flood Management
Dick Karlsson, City of Gothenburg

This workshop provides a platform for both younger and more experienced professionals to come together, challenge their understandings and learn from each other in a supportive and relaxed environment. Participants will build a better understanding of the future challenges they will meet during their career, and ultimately, prepare the wastewater sector for the future. The Workshop is organized by Young Water Professionals from the Nordics.

17:25-17:30 Wastewater from fish processing industries as carbon source
Mark de Blois, H2OLAND AB

17:25-17:30 Reduction of heat consumption in mesophilic digestion
Johanna Andersson, Uppsala Water and Waste Ltd

16:40-16:45 Microplastics discharge from sanitary sewer overflow events
Mikael Olshammar, IVL Swedish Environmental Research Institute

17:25-17:30 RAINTOOL – an automated urban water management WEB-GIS for Prague city watershed
Petr Fučík, Research Institute for Soil and Water Conservation

17:30-17:35 Effectiveness of organic coagulants as solo precipitation agents in sewage treatment (NutriSludge project)
Elisangela Heiderscheidt, University of Oulu

17:30-17:35 Energy efficient aeration in the Swedish wastewater sector
Simon Bengtsson, Promiko AB

16:45-16:50 Climate change means challenge caused by rising groundwater
Benny Nielsen, Herning Water A/S

17:25-17:30 RAINTOOL – an automated urban water management WEB-GIS for Prague city watershed
Petr Fučík, Research Institute for Soil and Water Conservation

17:35-17:40 Bacterial composition in the Hias Process
Torger Saltnes, Hias IKS

17:35-17:40 Biogas Upgrading benefits the Energy Balance at BIOFOS WWTP
Lars Krogsgaard Nielsen, BIOFOS

16:50-16:55 Increasing the outlet pipe capacity of the Turku WWTP
Guido Nuijten, Pöyry Finland Oy

16:55-17:40 Discussions between presenters and the audience

19:00 19:00-20:30 **Reception in the Helsinki City Hall**

Tuesday 24 September 2019

Plenary

9:00-9:40 State of the Baltic Sea
Rüdiger Stempel, Executive Secretary, HELCOM

SDG's in the Water Utility Strategy
John Buur Christiansen, CEO, BIOFOS A/S

9:40-10:00 Coffee break and networking

10:00-11:20	10:00-11:20	10:00-11:20	10:00-11:20	10:00-11:20
WWTP Process development and experience	Source control	Sustainable Development Goals Workshop	Testing innovative solutions	Digestion Workshop
10:00-10:20 Start-up of aerobic granular sludge Jennifer Ekholm, Chalmers University of Technology	10:00-10:20 What does domestic wastewater contain? Cecilia Press, Gryaab	<p>How are utilities doing and how do we get better?</p> <p>In this workshop we will hear how SDG's have been implemented in water utilities and discuss how can working with the SDG's improve our performance.</p> <p>We will discuss if and where there are challenges related to Goal 6, and whether utilities can improve their contribution to targets such as:</p> <ul style="list-style-type: none"> - 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all - 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally - 6.B Support and strengthen the participation of local communities <p>Some other goals and targets are highly relevant for the water utilities e.g.</p> <p>11 Sustainable cities and communities, 12 Responsible consumption and production, 13 Climate action</p>	10:00-10:20 Testing stormwater treatment devices – A code of practice Matthias Borris, RISE Research Institutes of Sweden	10:00-10:05 Converting to thermophilic digestion – a pilot scale study David l'Ons, Gryaab AB
10:20-10:40 Comparative LCA of conventional and innovative wastewater treatment for the Norwegian context Kamal Azrague, SINTEF	10:20-10:40 Inhibition of Nitrification - Case Viikinmäki WWTP Anna Kuokkanen, Helsinki Region Environmental Services Authority HSY		10:20-10:40 Performance of subsurface flow wetlands for the treatment of airport runoff Giovanni Chaurand, Aalto University / Sitowise Oy	10:05-10:10 Enhancement of biogas production and dewaterability of wastewater by pulsed electric field treatment Ivo Achu Nges, Arcaroma Pure AB, Lund, Sweden
10:40-11:00 Improving sludge settling at WWTP Damhusåen Dines Thornberg, BIOFOS	10:40-10:45 Enhanced environmental permitting of pharmaceutical plants Jukka Mehtonen, Finnish Environment Institute		10:40-11:00 Large-scale biofiltration for stormwater quality management Juhani Järveläinen, City of Lahti	10:10-10:15 Start-up of Sweden's first full-scale Temperature Phased Anaerobic Digestion (TPAD) Elin Ossiansson, VA SYD
11:00-11:05 Sorption capacity of Filtralite HMR materials Åsgeir R. Almås, Norwegian University of Life Sciences	10:45-10:50 On-site reduction of pharmaceutical load at a hospital ward Lauri Äystö, Finnish Environment Institute		11:00-11:05 Aluminum-silicate coagulant for stormwater treatment Morten Lykkegaard Christensen, Aalborg University	10:15-10:20 Problem solving bio-fertilizers: Mitigating N2O emissions from soil by growing N2O reducing bacteria in digestates Kjell Rune Jonassen, Vestfjorden Avløpsselskap (VEAS)
11:05-11:10 Removal of fecal microbes from secondary treated sewage effluent by using a constructed wetland and UV LED's Anna-Maria Hokajärvi, National Institute for Health and Welfare, Finland	10:50-10:55 Increased specific BOD-load to large Swedish WWTPs Susanne Tumlin, Gryaab		11:05-11:10 Performance of clinoptilolite filter for copper roof runoff Ivan Milovanovi, Luleå University of Technology	10:20-10:25 Predicting dewaterability with and without THP Oda Kjølraug Svennevik, Cambi Group AS
11:10-11:15 Award-winning technology ready for the Scandinavian market Jeanette Agertved Madsen, EnviDan A/S	10:55-11:00 An interactive tool to support upstream work Hanadi Makie & Cecilia Sjöb, Northwest Skåne Water and Wastewater AB and VA SYD			10:25-10:30 Experience with anammox sludge liquor treatment in Växjö Anneli Andersson Chan, Växjö kommun
11:15-11:20 Nitrite formation in continuous backwash filters for post-DN Mark de Blois, H2OLAND AB	11:00-11:20 Discussions between presenters and the audience			10:30-11:20 Discussions between presenters and the audience

11:20-11:40 Coffee break and networking

11:40-13:00	11:40-13:00	11:40-13:00	11:40-13:00	11:40-13:00
Removal of micropollutants	Greenhouse gases	Sewer network inspection	Water quality monitoring	Small WWTP Workshop
11:40-12:00 Experiences from full-scale ozonation in Linköping Robert Sehlén, Tekniska verken i Linköping AB (publ)	11:40-12:00 Full-scale N2O emission mitigation at Slotshagen WWTPs Christian Baresel, IVL Swedish Environmental Research Institute	11:40-12:00 Accurate inspections of sewer pipelines Tiia Lampola, WSP Finland Oy	11:40-12:00 Performance monitoring of a nature-based stormwater management system in Tampere Finland Salla Leppänen, City of Tampere	11:40-11:45 Governance, efficiency, resources recovery and impacts of small wastewater treatment systems (ON-SITE) Pekka M. Rossi, University of Oulu
12:00-12:20 An innovative operation of MBBR removes micropollutants Christina Sund, Krüger Veolia, Denmark	12:00-12:20 Full-scale testing of N2O mitigation strategies at a WWTP Kati Blomberg, Pöyry Finland Oy	12:00-12:20 SmartTV - optimizing the workflow of sewage CCTV Mette Godsk Nicolajsen & Morten Hass Rasmussen, Aalborg Forsyning & EnviDan A/S	12:00-12:20 Traditional and advanced monitoring of biofiltration Joel Kerkkänen, Aalto University	11:45-11:50 Passive hybrid solutions to remove nitrogen from sewage Heini Postila, University of Oulu
12:20-12:40 Capturing powdered activated carbon from wastewater Maija Vilpanen and Paula Lindell, Pöyry Finland Oy and Helsinki Region Environmental Services Authority HSY	12:20-12:40 GHG emissions from the wastewater system of Oslo Elisabeth G. Hiis, Norwegian University of Life Sciences	12:20-12:40 Automated Sewer Inspection Robot (ASIR) – Early results David Getreuer Jensen & Peter Hjortdal, Aarhus Water A/S & EnviDan A/S	12:20-12:40 Can turbidity be used as a proxy for pollutants in storm water? Maria Khalili, Uppsala Water and Waste Ltd	11:50-11:55 Removal of nutrients and microplastics in treatment wetlands purifying sewage water in cold climate regions (RaMiKo project) Elisangela Heiderscheidt, University of Oulu
12:40-12:45 Demonstration of multipoint ozonation system to remove micropollutant Tahereh Faraji, SUEZ	12:40-12:45 Greenhouse gases on waste water treatment plants: focal points for lowering emissions Marjoleine Weemaes, Aquafin	12:40-12:45 Efficient rehabilitation process Sari Pietilä, WSP Finland Oy		11:55-12:00 Direct membrane filtration of municipal wastewater in Norway Tobias Hey, COWI Aquateam, Norway
12:45-12:50 Using add-on filter to improve micropollutant removal in on-site wastewater treatment Wen Zhang, Sweco Environment AB	12:45-12:50 N2O reduction from sludge liquor treatment - Nordic outlook Linda Kanders, Purac AB	12:45-12:50 Picote enables pipeline rehabilitation using waterless High Speed Cleaning Lauri Kellokumpu / Richard Swan, Picote Solutions Oy Ltd	12:40-13:00 On-site analysis of metal concentrations of natural waters Tommi Tiihonen, University of Eastern Finland	12:00-12:05 Ecological sanitation in the area of Lake Myvatn in Iceland Ragnhildur Gunnarsdóttir, EFLA Consulting Engineers, Iceland
12:50-12:55 Micropollutants removal from wastewaters at low temperatures Antonina Kruglova, Aalto University	12:50-12:55 GHG-emissions from a pilot scale MBR-process Niclas Bornold, IVL Swedish Environmental Research Institute			12:05-12:10 New Swedish guidelines for permitting small-scale wastewater treatment systems Bodil Forsberg & Åsa Gunnarsson, Swedish Agency for Marine and Water Management Sweden
				12:10-13:00 Discussions between presenters and the audience

13:00-14:00: Lunch

Tuesday 24 September 2019

13:00 **13:00-14:00: Lunch**

14:00 **14:00-15:20 MBR and MABR**

14:00-15:20 Microplastics

14:00-15:20 Reducing sewer overflow

14:00-15:20 Digitalization in WWTP

14:00-15:20 Protection and co-operation around the Baltic Sea Workshop

14:00-14:20 Membrane Bioreactors (MBR) in municipal WWTPs
Christian Baresel, IVL Swedish Environmental Research Institute

14:00-14:20 Micropollutants and Microplastics in MBR
Klara Westling, IVL Swedish Environmental Research Institute

14:00-14:20 CSO Modelling HSY
Leena Sänkiäho, The Helsinki Region Environmental Authority HSY

14:00-14:20 Use of process modelling for WWTP redesign
Maria Neth, Gryaab/Chalmers University of Technology

The coasts and seas in the Baltic Sea Region are still threatened by pollution and eutrophication. Improving cooperation between all stakeholders and knowledge sharing across the region may be important to overcome the challenges.

14:20-14:40 Full-Scale MABR Demonstration at Ejby Mølle WRRF
Lise Havsteen, Vandcenter Syd Denmark

14:20-14:40 The fate of microplastics at a large WWTP
Susanne Tumlin, Gryaab

14:20-14:40 Holistic modelling of pump performance by utilizing real-time SCADA data, case Bergen and Tromsø
Jon Røstum, Powel Environment

14:20-14:40 Experiences with AI in wastewater treatment
Anna Sipilä, Ramboll Finland Oy

In this workshop, we will discuss:

14:40-15:00 MBR at the Taskila WWTP: Findings from the first year of operation
Henri Haimi, FCG Design and Engineering Ltd

14:40-15:00 Measurement of Microplastics in Rainwater
Michelle Lison Rebsdorf, Danish Technological Institute

14:40-15:00 Strategic redevelopment of Reykjavik's combined sewers
Sigurdur Gretar Sigmarsson, Verkis

14:40-15:00 Instrumentation at WWTP - how to get it right?
Sofia Lovisa Andersson, IVL Swedish Environmental Research Institute

1. What are the most burning water and coast related challenges in our region?
2. How do we cooperate at local, national and transboundary level?
3. What is the role of cities, utilities, companies and other stakeholders?
4. How can we improve cooperation between utilities, cities, industries and countries towards meeting SDG 14?
5. What can others learn from us – and we from them.

15:00-15:05 Actions at Syvab during the transition to MBR
Victor Kärelid, SYVAB

15:00-15:05 Microplastics and traffic related particles in stormwater
Helen Galfi, Sustainable Waste and Water, City of Gothenburg, Sweden

15:00-15:20 Separation of stormwater from combined sewers using LID-techniques on private properties
Bent C. Braskerud, Agency for Water and Wastewater Services, City of Oslo

15:00-15:05 Active fault detection in DO sensors - automated tuning
Oscar Samuelsson, IVL Swedish environmental research institute / Uppsala university

This workshop is thought as a preparatory workshop for IWA-2020 in Copenhagen. It will aim at gathering various stakeholders to discuss our experiences. We will do so with the aim to identify key lessons learned to take forward to Copenhagen.

15:05-15:10 Citric vs Oxalic Acid for Membrane Cleaning in MBRs
Klara Westling, IVL Swedish Environmental Research Institute

15:05-15:10 Full scale mass balance of microplastics at Bekkelaget WWTP
Christian Vogelsang, Norwegian Institute for Water Research

15:05-15:10 In CFD* we trust, but you better bring data; the unescapable model validation
Luca A. Piciaccia, VEAS

15:10-15:15 Replicable, inexpensive methods for microplastics monitoring
Jamie McQuilkin, ReSource International

15:15-15:20 Chemical enhanced removal of microplastics
Katriina Rajala, Kemira Oyj

15:10-15:15 Replicable, inexpensive methods for microplastics monitoring
Jamie McQuilkin, ReSource International

15:10-15:15 Automated anomaly detection in wastewater processes,
Pedram Ramin, DHI, DKURB

15:20 **15:20-15:50 Coffee break**

15:50 **15:50-17:10 Micropollutant Workshop**

15:50-17:10 Nutrient recycling and recovery

15:50-17:10 Future Nordic plastics sewage and drainage systems

15:50-17:10 Planning and implementation of stormwater system Workshop

15:50-15:55 Monitoring efficiency of wastewater effluent post-treatment
Tuula Tuhkanen, University of Jyväskylä

15:50-16:10 Running-in of the P-recovery plant in Marselisborg WWTP
Peter Balslev, Aarhus Vand A/S

15:50-16:00 New value chains for plastics products
Vesa Kärhä, FIPIF

15:50-15:55 When stormwater management interferes with flight safety
Anja Sloth Ziegler (YWPDK), Aalborg Forsyning

15:55-16:00 Application of AOPs for wastewater treatment
Irina Levchuk, Aalto University

16:10-16:30 Phosphorus recovery by RAVITA process- 1000 PE piloting
Laura Rossi, Helsinki Region Environmental Services Authority HSY

16:00-16:20 INSTA-CERT and NPM – 15 years of Nordic certification system and quality mark
Anders Andtbacka, Upponor, Finland

15:55-16:00 The Collaboration Process of Biofilter Implementation in a Cold Climate Cityscape
Sara Eklund, ÅF Infrastructure AB, Water & Environment

16:00-16:05 Degradation of pharmaceuticals with UV/H2O2
Karin Walter, Nouryon

16:30-16:50 Phosphorus Recovery Strategy for BIOFOS WWTPs
Lars Krogsgaard Nielsen, BIOFOS

16:20-16:40 Plastics sewage and drainage systems product environmental footprint (PEF)
Zoran Davidovski, Pipelife

16:00-16:05 Cloudburst resiliency in an urban district scale -Copenhagen
Henrik Sønderup, Rambøll Water

16:05-16:10 Micropollutant abatement and wastewater reuse
Simon Gidstedt, Sweden Water Research/Lund University

16:50-16:55 P-Recovery as Struvite from Digested Sludge
Bart Saerens, Aquafin NV

16:40-16:50 Future Nordic quality – what is it?
Osma Seppälä, FIWA

16:05-16:10 From cobined sewer to SUDS-solutions in a large residential area (Risvangen,Aarhus)
Mads Uggerby, EnviDan A/S

16:10-16:15 Presence of pharmaceuticals residues in the aquatic environment and in wastewater treatment plants in Norway. Challenges and technology needs.
Renata Tomczak-Wandzel, Aquateam COWI AS

16:55-17:00 Sustainable Fertilizers from Reject Waters with NPHarvest
Irene Konola, Aalto University

16:50-17:10 Discussions between presenters and the audience

16:10-16:15 Stormwater management on construction sites in Nordic clay soils
Piia Leskinen, Turku University of Applied Sciences

16:15-16:20 Micropollutant Removal on large Scale - with Ozone in Zurich
Thomas Franz, Xylem Services GmbH

17:00-17:05 Ecosystem and partnerships for viable nutrient recycling business
Mari Saario, Gaia Consulting

16:15-16:20 Multi-use Areas for Stormwater Management and S. I.
Emmi Vesala, Sitowise Oy

16:20-16:25 MBBRs for degradation of organic micropollutants and transformation products from ozonation
Ellen Edefell, Sweden Water Research, Lund University

17:05-17:10: Circular economy with sludge - a novel solution
Prem Verma, Swedish Exergy AB

16:20-17:10 Discussions between presenters and the audience

16:25-16:30 Strict biological removal of pharmaceuticals in wastewater effluent
Christina Sund, Krüger, Veolia

16:30-17:10 Discussions between presenters and the audience

19:00 **19:00 Dinner**

Wednesday 25th of September 2019

9:00	09:00-10:20	Removal of Micropollutants	09:00-10:20	Looking for sustainable sewage sludge utilization	09:00-10:20	Sewer network management	09:00-10:20	High resolution rainfall
	09:00-09:20	Advanced wastewater treatment – update from SEPA Maximilian Lütke, Swedish Environmental Protection Agency	09:00-09:20	Effects of long-term application of sewage sludge to arable land in southern Sweden Hans Bertil Wittgren, VA SYD	09:00-09:20	The impact of data availability on the estimated need for network renovations Tuija Laakso, Aalto University	09:00-09:20	Weather radar open source data processing chain and tools David Getreuer Jensen, EnviDan A/S
	09:20-09:40	Discharge of antibiotic resistance genes from three WWTPs Carsten Ulrich Schwermer, Norwegian institute for water research	09:20-09:40	Risk assessment of harmful substances and pathogens in sewage sludge-based fertilizers applied on Finnish soils Niina Vieno, Law and Water Ltd	09:20-09:40	Smart platform for smart network management Kia Aksela, Helsinki Region Environmental Services Authority Services	09:20-09:40	Experiences of X-band radar in Skåne Nicholas South, VA SYD
	09:40-10:00	Antibiotic resistance dissemination via wastewater treatment Antonina Kruglova, Aalto University	09:40-10:00	LCA-study on future sludge strategies Catharina Grundestam, IVL Swedish Environmental Institute	09:40-10:00	Using operational data to improve sewer asset management Morten Grum, WaterZerv	09:40-10:00	Urban modelling with high resolution weather radar data Peter Rasch, InforMetrics
	10:00-10:05	CWPharma tests in Kalundborg: Full Stream API Removal with Ozonation Preben Thisgaard, Kalundborg Utility	10:00-10:05	The occurrence of Legionella bacteria in circular economy products Liisa Maunukela, Finnish Food Authority	10:00-10:20	Serito: Accelerating the right investments by connecting risk and economy. Peter Hartwig, Middelfart Wastewater A/S and Kouno	10:00-10:20	Improved on-line catchment simulation with new rain forecast tools Douglas Lumley, Gryaab AB
	10:05-10:10	Removal of antibiotic resistant bacteria from hospital WW Michelle Lison Rebsdorf, Danish Technological Institute	10:05-10:10	Tool for promoting safe circular economy of sludge biosolids Katri Senilä, Finnish Environment Institute and University of Eastern Finland				
	10:10-10:15	High-dosage UV treatment to degrade antibiotics in hospital wastewater André Olafsson, BlueShift AS	10:10-10:15	Thermal Sludge Treatment Methods - Applicability in Finland Petri Nissinen, Pöyry Finland Oy				
			10:15-10:20	Pyrolysis in sludge treatment: plans for a pilot scale plant Christoph Gareis, Helsinki Region Environmental Services Authority HSY				
10:20	10:20-10:50	Coffee break and networking						
10:50	10:50-12:10	Planning for the future WWTP	10:50-12:10	Recycling and recovery of resources Workshop	10:50-12:10	Digitalization Workshop	10:50-12:10	Stormwater management and climate change adaptation
	10:50-11:10	A systematic concept for extension of Copenhagen WWTP's Jeanette Agertved Madsen, EnviDan A/S	10:50-10:55	Ammonium recovery from municipal reject water using various adsorbents Aubrey Beckinghausen, Mälardalen University	10:50-10:55	Water industry facing cyber security challenges Anni Karinsalo, VTT Technical Research Centre of Finland	10:50-11:10	The performance and role of green roofs during extreme event Tone Muthanna, Norwegian University of Science and Technology
	11:10-11:30	A sustainable concept for the new Sjölanda WWTP Maria Jonstrup, VA SYD	10:55-11:00	From bio-sludge to bio-carbon using zero-energy hydrothermal carbonization Peter Axegård, C-Green Technology AB	10:55-11:00	Fishing for values in the local data-lake in Bergen Kristine Akervold, Agency for Water and sewerage Works, Bergen Norway	11:10-11:30	Nature-based solutions to restore or maintain hydrologic connectivity Maria Dubovik, VTT Technical Research Centre of Finland Ltd.
	11:30-11:50	Collaborative planning for sustainable wastewater treatment in Gothenburg 2030-2070 Maria Neth, Gryaab/Chalmers University of Technology	11:00-11:05	Biodegradable polymers as by-products from wastewater treatment Simon Bengtsson, Promiko AB	11:00-11:05	Making water infrastructure smart with the Internet of Things (IoT) Kristine Akervold, Agency for Water and sewerage Works, Bergen Norway	11:30-11:50	Guide on how to invest in climate adaptation Mads Uggerby, EnviDan A/S
	11:50-12:10	Green field plant with ambitious goals, Peter Underlin, Hillerød Forsyning	11:05-11:10	Biological upgrading of biogas and production of Single Cell Proteins Jacob Kragh Andersen, EnviDan A/S	11:05-11:10	Machine Learning for Value Creation in the Water Sector Bolette Dybkjær Hansen, EnviDan A/S	11:50-11:55	How can blue-green/grey roof solutions contribute to runoff reductions in urban catchments? Vladimir Hamouz, Norwegian University of Science and Technology
			11:10-11:15	Changes of water infrastructure in building stock Alexander Wrieger-Bechtold and Stefan Rettig, Technical University of Berlin	11:10-11:15	Machine Learning for Better Descriptions of Flow Paths Hampus Åkerblom, SCALGO	11:55-12:00	Benefits from climate adaptation projects Helena Åström, Orbicon A / S
			11:15-11:20	Concentration of municipal wastewater by FO for recovery of nutrients Willy Røstum Thelin, SINTEF	11:15-11:20	Autonomous cyber security solution for water supply and sewer network Jouko Koskinen, Emtele Oy		
			11:20-11:25	Nutrient recovery from wastewater in urban environment – Case Hiedanranta in the city of Tampere Eeva-Liisa Viskari, Tampere University of Applied Sciences	11:20-11:25	Towards watermass balance as a service across catchments Peter Rasch, InforMetrics		
			11:25-12:10	Discussions between presenters and the audience	11:25-12:10	Discussions between presenters and the audience		
12:10	12:10-12:40	Closing of the conference						
12:40	12:40-13:30	Lunch						
12:50	12:50-17:00	Excursions - Note: Timetable for the start of excursions will vary						

Conference Venue

The conference will be held at the Clarion Hotel Helsinki, located in the new Jätkäsaari (Busholmen) urban investment district in the central West Harbour area.

Helsinki's city centre, shops and metro station are just a short walk away. Alternatively, you can hop on a tram right next to the hotel.

Participants who wish to book accommodation should contact the conference hotel directly.
reservations.cl.helsinki@choice.fi or via tel. +358 10 850 3820. When booking hotel rooms, remember to refer to the allocation name NORDIWA.

Social Program

There will be a Helsinki City reception at The Helsinki City Hall on Monday 23rd September 2019.

The conference dinner will be held at the conference venue, Clarion Hotel Helsinki on Tuesday 24th September 2019.

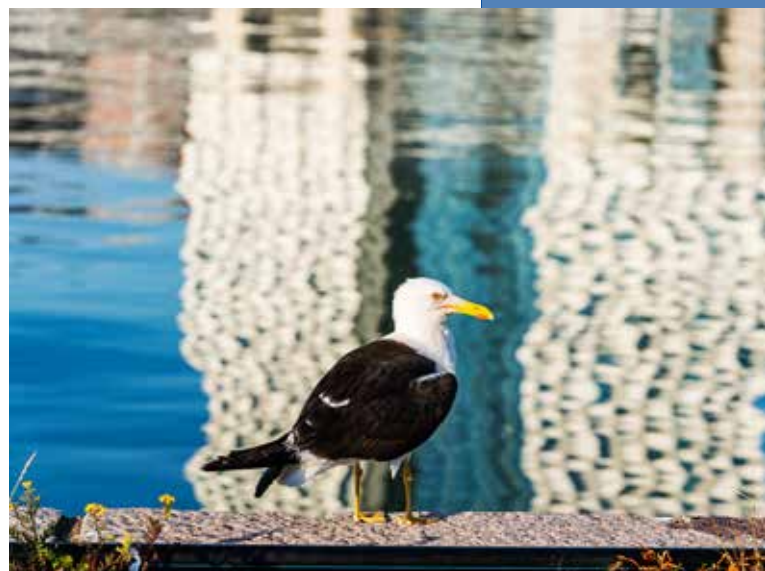
Hotels and Tourism

Information about hotel booking and being a tourist in Helsinki: <https://www.myhelsinki.fi/en>

Please register online
<https://www.nordiwa.org/>

Programme Committee

- Lise Hughes**, Aarhus Vand A/S, (IWA)
Helle Kayerød, DANVA
Marina Graan, Helsinki Region Environmental Services Authority, (IWA)
Mika Rontu, FIWA
Saijariina Toivikko, FIWA
Sigurjón Norberg Kjærnested, Samorka
Fjóla Jóhannesdóttir, Veitur Utilities (IWA)
Magnar Sekse, Norsk Vann
Arne Haarr, Norsk Vann
Anders Finnson, Svenskt Vatten
Anna Norström, Svenskt Vatten (IWA)
Pille Aarma, Estonian Waterworks Association



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Conference Fee

all prices include VAT

Early Bird Discount until 1st August	1023 €
Standard Conference fee	1122 €
Early Bird Conference fee	
for platform presenters	682 €
Standard Conference fee	
for platform presenters	748 €
Early Bird Conference fee for	
brief and workshop presenters	920 €
Standard Conference fee for	
brief and workshop presenters	1010 €
Early Bird Conference fee for	
full-time students	460 €
Standard Conference fee for	
full-time students	540 €

The conference fee includes lunches, coffee, Helsinki city reception and conference dinner as well as excursions.

Further Information

For more information, see www.nordiwa.org or contact nordiwa2019@vvy.fi