

Updated September 2019

CONFERENCE PROGRAMME

Helsinki, Finland
23 – 25 September 2019

NORDIC
WASTE
WATER
CONFERENCE

NORDIWA



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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





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

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 participants of the conference.

Excursions

Five excursions are arranged in co-operation with **Helsinki Region Environmental Services Authority HSY, Helen Ltd and City of Vantaa**. The excursions are organized on the last conference day, Wednesday 25th of September.

Arrival time is estimated *

1. Viikinmäki wastewater treatment plant (2 buses)

- Tour A Nutrient recovery process RAVITA pilot
- Tour B Energy efficient solutions
- Departure from the conference venue at 12:50 and 12:55
- Arrival to the Helsinki Airport at 17:30
- Arrival to the conference venue at 17:20*
- Lunch will be served in Viikinmäki before the visit

2. New wastewater treatment plant to Blominmäki

- Departure from the conference venue at 13:00
- Arrival to the Helsinki Airport at 16:30
- Arrival to the conference venue at 17:00*
- You will have a packed lunch with you on this excursion

3. Katri Vala Heat Pump Plant

- Departure from the conference venue at 13:20
- Arrival to the Helsinki Airport at 15:30
- Arrival to the conference venue at 16:00*
- Lunch will be served at the conference venue before the excursion

4. Three stormwater management sites in Vantaa (2 buses)

- Departures from the conference venue at 13:35 and 13:40
- Arrival to the Helsinki Airport at 15:40
- Arrival to the conference venue at 16:15*
- Lunch will be served at the conference venue before the excursion

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

- Departures from the conference venue at 13:15
- Arrival to the Helsinki Airport at 15:30
- Arrival to the conference venue at 16:05*
- Lunch will be served at the conference venue before the excursion

Other drop-off point arrangements will be handled case-by-case as far as possible. Further information available at the registration desk.

Monday 23 September 2019

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

12:30 12:30-14:00 **Opening session** - Location: BYSA 1-3

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**

Chair: Gyda Mjöll Ingólfssdóttir
Location: BYSA 1-2

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

Chair: Ragnhildur Gunnarsdóttir
Location: BYSA 3

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

Chair: Benny Nielsen
Location: CRUSELL

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

Chair: Arnhild Helene Krogh
Location: SONCK

14:30-14:50 The impact of sensor bias and influent variations on WWTP control performance
Erik U. Lindblom, IVL Swedish Environmental Research Institute

14:30-14:35 Sweden's first beer brewed with recycled water
Christian Baresel, 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 Haghighatafshar, 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
Nena Kroghsbo, 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 and Weixiao Yang, HOFOR and NIRAS A/S

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

15:30-15:50 Water Resource Recovery Facilities of the Future: Preparing for the Unknown
Ivan Vølund, VCS Denmark

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 Reuse of treated wastewater in industrial symbiosis
Kerstin Hoyer, VA SYD

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**

Chair: Arne Haarr
Location: BYSA 1-2

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

Chair: Miriam Feilberg
Location: BYSA 3

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

Chair: Helle Kayerød
Location: CRUSELL

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

Chair: Sigurdur Gretar Sigmarsson
Location: SONCK

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

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
Mats Johansson, Government Offices of Sweden

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 Haghighatafshar, 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 in sewersystem – low tech, cheap and effective
Elin Kusoffsky, Uppsala Water and Waste Ltd

17:20-17:25 FloodMan – A Tool for Sustainable Flood Management
Glen Nivert, 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
Sebastian Engström and 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
Christian Baresel, 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

17:30-17:35 Machine Learning for Better Descriptions of Flow Paths
Morten Revsbæk, SCALGO

17:35-17:40 Bacterial composition in the Hias Process
Torgeir 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 - Location: BYSA 1-3

9:00
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
10:00-11:20 WWTP Process development and experience
 Chair: Marina Graan
 Location: BYSA 1-2

10:00-10:20 Start-up of aerobic granular sludge
 Jennifer Ekholm, Chalmers University of Technology

10:20-10:40 Comparative LCA of conventional and innovative wastewater treatment for the Norwegian context
 Kamal Azrague, SINTEF

10:40-11:00 Improving sludge settling at WWTP Damhusåen
 Dines Thornberg, BIOFOS

11:00-11:05 Sorption capacity of Filtralite HMR materials
 Åsgeir R. Almås, Norwegian University of Life Sciences

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

11:10-11:15 Award-winning technology ready for the Scandinavian market
 Joakim Faxä, EnviDan A/S

11:15-11:20 Nitrite formation in continuous backwash filters for post-DN
 Mark de Blois, H2OLAND AB

10:00-11:20 Source control
 Chair: Hans Bertil Wittgren
 Location: BYSA 3

10:00-10:20 What does domestic wastewater contain?
 Cecilia Press, Gryaab

10:20-10:40 Inhibition of Nitrification - Case Viikinmäki WWTP
 Anna Kuokkanen, Helsinki Region Environmental Services Authority HSY

10:40-10:45 Enhanced environmental permitting of pharmaceutical plants
 Jukka Mehtonen, Finnish Environment Institute

10:45-10:50 Pharmaceutical load estimation and reduction from hospitals
 Lauri Äystö, Finnish Environment Institute

10:50-10:55 Increased specific BOD-load to large Swedish WWTPs
 Susanne Tumlin, Gryaab

10:55-11:00 An interactive tool to support upstream work
 Hanadi Makie & Cecilia Sjöb, Northwest Skåne Water and Wastewater AB and VA SYD

11:00-11:20 Discussions between presenters and the audience

10:00-11:20 Sustainable Development Goals Workshop
 Chair: Miriam Feilberg
 Location: CRUSELL

10:00-10:05 Introduction to workshop - Why can SDG's Guide us towards better water?
 Miriam Feilberg, DANVA

10:05-10:10 Power of Principle: Achieving Sustainable Development Goals
 Ivan Vølund, VCS Denmark

10:10-10:15 Sustainable development needs more than goals
 Tsvetana Stoyanova, VA SYD

10:15-10:20 A tool to define and communicate your SDG contributions
 Lea Ravnkilde Møller, Orbicon A/S

10:20-10:25 Examples from a WWTP contributing to the Sustainable Development Goals with a focus on goals 11 and 13
 Mai Riise, Hias Norway

10:25-10:30 SDG-experiences from Iceland
 Helgi Jóhannesson, Norðurorka Ltd

10:30-11:20 Discussions between presenters and the audience

10:00-11:20 Testing innovative solutions
 Chair: Nora Sillanpää
 Location: SONCK

10:00-10:20 Testing stormwater treatment devices – A code of practice
 Matthias Borris, RISE Research Institutes of Sweden

10:20-10:40 Performance of subsurface flow wetlands for the treatment of airport runoff
 Giovanni Chaurand, Aalto University / Sitowise Oy

10:40-11:00 Large-scale biofiltration for stormwater quality management
 Juhani Järveläinen, City of Lahti

11:00-11:05 Aluminum-silicate coagulant for stormwater treatment
 Morten Lykkegaard Christensen, Aalborg University

11:05-11:10 Performance of clinoptilolite filter for copper roof runoff
 Ivan Milovanovic, Luleå University of Technology

10:00-11:20 Digestion Workshop
 Chair: Lise Hughes
 Location: TALLBERG

10:00-10:05 Converting to thermophilic digestion – investigating different strategies
 David l'Ons, Gryaab AB

10:05-10:10 Enhanced biogas production and dewaterability of wastewater sludge by pulsed electric field treatment
 Ivo Achu Nges, Arcaroma Pure AB, Lund, Sweden

10:10-10:15 Start-up of Sweden's first full-scale Temperature Phased Anaerobic Digestion (TPAD)
 Elin Ossiansson, VA SYD

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)

10:20-10:25 Dewatering of conventional and THP digestate
 Kine Svensson, Cambi Group AS

10:25-11:20 Discussions between presenters and the audience

11:20-11:40 Coffee break and networking

11:40
11:40-13:00 Removal of micropollutants
 Chair: Maximilian Lüdtko
 Location: BYSA 1-2

11:40-12:00 Experiences from full-scale ozonation in Linköping
 Robert Sehlén, Tekniska verken i Linköping AB (publ)

12:00-12:20 An innovative operation of MBBR removes micropollutants
 Christina Sund, Krüger Veolia, Denmark

12:20-12:40 Capturing powdered activated carbon from wastewater
 Maija Viilpanen and Paula Lindell, Pöyry Finland Oy and Helsinki Region Environmental Services Authority HSY

12:40-12:45 Demonstration of multipoint ozonation system to remove micropollutant
 Tahereh Faraji, SUEZ

12:45-12:50 Using add-on filter to improve micropollutant removal in on-site wastewater treatment
 Wen Zhang, Sweco Environment AB

12:50-12:55 Micropollutants removal from wastewaters at low temperatures
 Antonina Kruglova, Aalto University

11:40-13:00 Greenhouse gases
 Chair: Anna Mikola
 Location: BYSA 3

11:40-12:00 Full-scale N2O emission mitigation at Slottshagen WWTPs
 Christian Baresel, IVL Swedish Environmental Research Institute

12:00-12:20 Full-scale testing of N2O mitigation strategies at a WWTP
 Kati Blomberg, Pöyry Finland Oy

12:20-12:40 GHG emissions from the wastewater system of Oslo
 Elisabeth G. Hiis, Norwegian University of Life Sciences

12:40-12:45 Greenhouse gases on waste water treatment plants: focal points for lowering emissions
 Marjolaine Weemaes, Aquafin

12:45-12:50 N2O reduction from sludge liquor treatment - Nordic outlook
 Linda Kanders, Purac AB

12:50-12:55 GHG-emissions from a pilot scale MBR-process
 Christian Baresel, IVL Swedish Environmental Research Institute

11:40-13:00 Sewer network inspection
 Chair: Fjóla Jóhannesdóttir
 Location: CRUSELL

11:40-12:00 Accurate inspections of sewer pipelines
 Tiia Lampola, WSP Finland Oy

12:00-12:20 SmartTV - optimizing the workflow of sewage CCTV
 Mette Godsk Nicolajsen & Morten Hass Rasmussen, Aalborg Forsyning & EnviDan A/S

12:20-12:40 Automated Sewer Inspection Robot (ASIR) – Early results
 David Getreuer Jensen & Peter Hjortdal, Aarhus Water A/S & EnviDan A/S

12:40-12:45 Efficient rehabilitation process
 Tiia Lampola, WSP Finland Oy

12:45-12:50 Picote enables pipeline rehabilitation using waterless High Speed Cleaning
 Kalle Kuusisto and Riitta Virtanen, Picote Solutions Oy Ltd and RE4MGlobal

11:40-13:00 Water quality monitoring
 Chair: Juhani Järveläinen
 Location: SONCK

11:40-12:00 Performance monitoring of a nature-based stormwater management system in Tampere Finland
 Salla Leppänen, City of Tampere

12:00-12:20 Traditional and advanced monitoring of biofiltration
 Joel Kerkkänen, Aalto University

12:20-12:40 Can particle concentration be used as a proxy for pollutants in storm water? Challenges and potential when sampling storm water
 Irina Persson and Maria Khalili, Uppsala Water and Waste Ltd

12:40-13:00 On-site analysis of metal concentrations of natural waters
 Tommi Tiihonen, University of Eastern Finland

11:40-13:00 Small WWTP Workshop
 Chair: Riikka Malila and Johanna Kallio
 Location: TALLBERG

11:40-11:45 Governance, efficiency, resources recovery and impacts of small wastewater treatment systems (ON-SITE)
 Pekka M. Rossi, University of Oulu

11:45-11:50 Passive hybrid solutions to remove nitrogen from sewage
 Heini Postila, University of Oulu

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

11:55-12:00 Direct membrane filtration of municipal wastewater in Norway
 Tobias Hey, COWI Aquateam, Norway

12:00-12:05 Ecological sanitation in the area of Lake Mývatn in Iceland
 Ragnhildur Gunnarsdóttir, EFLA Consulting Engineers, Iceland

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 Chair: Lise Hughes Location: BYSA 1-2	14:00-15:20 Microplastics Chair: Anders Finnson Location: BYSA 3	14:00-15:20 Reducing sewer overflow Chair: Magnar Sekse Location: CRUSELL	14:00-15:20 Digitalization in WWTP Chair: Anna Kuokkanen Location: SONCK
	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
	14:20-14:40 Full-Scale MABR Demonstration at Ejby Mølle WRRF Ivan Vølund, VCS 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 Environmen	14:20-14:40 Experiences with AI in wastewater treatment Anna Sipilä, Ramboll Finland Oy
	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
	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
	15:05-15:10 Citric vs Oxalic Acid for Membrane Cleaning in MBRs Sofia Andersson, Stockholm Vatten och Avfall	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 Marit Kleven, VEAS
		15:10-15:15 Chemically Enhanced Removal of Microplastics Katriina Rajala, Kemira Oyj		
15:20	15:20-15:50 Coffee break			
15:50	15:50-17:10 Micropollutant Workshop Chair: Anna Mikola Location: BYSA 1-2	15:50-17:10 Nutrient recycling and recovery Chair: Mari Heinonen Location: BYSA 3	15:50-17:10 Future Nordic plastics sewage and drainage systems Chair: Vesa Kärhä Location: CRUSELL	15:50-17:10 Planning and implementation of stormwater system Workshop Chair: Helle Kayerød Location: SONCK
	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, Uponor, Finland	15:55-16:00 The Collaboration Process of Biofilter Implementation in a Cold Climate Cityscape Sara Eklund, AF 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 Marjoleine Weemaes, Aquafin NV	16:40-16:50 Future Nordic quality – what is it? Osma Seppälä, FIWA	16:05-16:10 From combined sewer to SUDS-solutions in a large residential area (Risvangen, Aarhus) Jan Jeppesen, 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 David Kuhn, 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			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	<p>09:00-10:20 Removal of Micropollutants Chair: Susanne Tumlin Location: BYSA 2</p> <p>09:00-09:20 Advanced wastewater treatment – update from SEPA Maximilian Lütke, Swedish Environmental Protection Agency</p> <p>09:20-09:40 Discharge of antibiotic resistance genes from three WWTPs Carsten Ulrich Schwermer, Norwegian institute for water research</p> <p>09:40-10:00 Antibiotic resistance dissemination via wastewater treatment Antonina Kruglova, Aalto University</p> <p>10:00-10:05 CWPharma tests in Kalundborg: Full Stream API Removal with Ozonation Preben Thisgaard, Kalundborg Utility</p> <p>10:05-10:10 Removal of antibiotic resistant bacteria from hospital WW Michelle Lison Rebsdorf, Danish Technological Institute</p>	<p>09:00-10:20 Looking for sustainable sewage sludge utilization Chair: Saijariina Toivikko Location: BYSA 3</p> <p>09:00-09:20 Effects of long-term application of sewage sludge to arable land in southern Sweden Hans Bertil Wittgren, VA SYD</p> <p>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</p> <p>09:40-10:00 LCA-study on future sludge strategies Catharina Grundestam, IVL Swedish Environmental Institute</p> <p>10:00-10:05 The occurrence of Legionella bacteria in circular economy products Liisa Maunukela, Finnish Food Authority</p> <p>10:05-10:10 Tool for promoting safe circular economy of sludge biosolids Katri Senilä, Finnish Environment Institute and University of Eastern Finland</p> <p>10:10-10:15 Thermal Sludge Treatment Methods - Applicability in Finland Petri Nissinen, Pöyry Finland Oy</p> <p>10:15-10:20 Pyrolysis in sludge treatment: plans for a pilot scale plant Aino Kainulainen, Helsinki Region Environmental Services Authority HSY</p>	<p>09:00-10:20 Sewer network management Chair: Mika Rontu Location: BYSA 1</p> <p>09:00-09:20 The impact of data availability on the estimated need for network renovations Tuija Laakso, Aalto University</p> <p>09:20-09:40 Smart platform for smart network management Kia Aksela, Helsinki Region Environmental Services Authority</p> <p>09:40-10:00 Using operational data to improve sewer asset management Morten Grum, WaterZerv</p> <p>10:00-10:20 Serito: Accelerating the right investments by connecting risk and economy. Jens Højberg, Middelfart Wastewater A/S and Kouno</p>	<p>09:00-10:20 High resolution rainfall Chair: Tero Niemi Location: SONCK</p> <p>09:00-09:20 Weather radar open source data processing chain and tools David Getreuer Jensen, EnviDan A/S</p> <p>09:20-09:40 Experiences of X-band radar in Skåne Nicholas South, VA SYD</p> <p>09:40-10:00 Improved on-line catchment simulation with new rain forecast tools Douglas Lumley, Gryaab AB</p>
10:20	10:20-10:50 Coffee break and networking			
10:50	<p>10:50-12:10 Planning for the future WWTP Chair: Jan Stenersen Location: BYSA 2</p> <p>10:50-11:10 A systematic concept for extension of Copenhagen WWTP's Jeanette Agertved Madsen, EnviDan A/S</p> <p>11:10-11:30 A sustainable concept for the new Sjölanda WWTP Maria Jonstrup, VA SYD</p> <p>11:30-11:50 Collaborative planning for sustainable wastewater treatment in Gothenburg 2030-2070 Maria Neth, Gryaab/Chalmers University of Technology</p> <p>11:50-12:10 Green field plant with ambitious goals, Peter Underlin, Hillerød Forsyning</p>	<p>10:50-12:10 Recycling and recovery of resources Workshop Chair: Peter Balslev Location: BYSA 3</p> <p>10:50-10:55 Ammonium recovery from municipal reject water using various adsorbents Aubrey Beckinghausen, Mälardalen University</p> <p>10:55-11:00 From bio-sludge to bio-carbon using zero-energy hydrothermal carbonization Peter Axegård, C-Green Technology AB</p> <p>11:00-11:05 Biodegradable polymers as by-products from wastewater treatment Simon Bengtsson, Promiko AB</p> <p>11:05-11:10 Biological upgrading of biogas and production of Single Cell Proteins Joakim Faxå, EnviDan A/S</p> <p>11:10-11:15 Changes of water infrastructure in building stock Stefan Rettig and Alexander Wrieger-Bechold, Technical University of Berlin</p> <p>11:15-11:20 Concentration of municipal wastewater by FO for recovery of nutrients Willy Røstum Thelin, SINTEF</p> <p>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</p> <p>11:25-12:10 Discussions between presenters and the audience</p>	<p>10:50-12:10 Digitalization Workshop Chair: Jon Røstum Location: BYSA 1</p> <p>10:50-10:55 Fishing for values in the local data-lake in Bergen Kristine Akervold, Agency for Water and sewerage Works, Bergen Norway</p> <p>10:55-11:00 Making water infrastructure smart with the Internet of Things (IoT) Kristine Akervold, Agency for Water and sewerage Works, Bergen Norway</p> <p>11:00-11:05 Machine Learning for Value Creation in the Water Sector Bolette Dybkjær Hansen, EnviDan A/S</p> <p>11:05-11:10 Autonomous cyber security solution for water supply and sewer network Erkki Viitala, Emtele Oy</p> <p>11:10-12:10 Discussions between presenters and the audience</p>	<p>10:50-12:10 Stormwater management and climate change adaptation Chair: Anna Norström Location: SONCK</p> <p>10:50-11:10 The performance and role of green roofs during extreme event Tone Muthanna, Norwegian University of Science and Technology</p> <p>11:10-11:30 Nature-based solutions to restore or maintain hydrologic connectivity Maria Dubovik, VTT Technical Research Centre of Finland Ltd.</p> <p>11:30-11:50 Guide on how to invest in climate adaptation Jan Jeppesen, EnviDan A/S</p> <p>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</p> <p>11:55-12:00 Towards natural water cycle in urban areas Ambika Khadka, Aalto University</p> <p>12:00-12:05 Benefits from climate adaptation projects Helena Åström, Orbicon A / S</p>
12:20	12:20-12:40 Closing of the conference - Location: BYSA 1-3			
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) district. The address is [Tynnenmerenkatu 2, 00220 Helsinki](https://www.clarion.com/en/locations/helsinki).

Metro or tram to the center of Helsinki (and back)

Metro: Ruoholahti/Gräsviken station

Tram: Line 6T, 7 or 9 to Huutokonttori/Uppropskontoret

From Helsinki Airport

Train (I or P train) to the Helsinki central railway station

Finnair City Bus: Every ten or twenty minutes from the airport to the Helsinki central railway station

The schedules and details for metro, train, tram and buses can be found on [HSL website](https://www.hsl.fi/en).

Parking

We recommend that you use the public transportation to arrive to the conference venue. If you will be arriving by car, parking is available at a local under-ground garage (Rokkiparkki, parking fees apply), located approximately 400m away from the hotel. Please follow this link to our [Parking Instructions](#).

Social Program

There will be a Helsinki City reception at the Helsinki City Hall on Monday 23rd of September 2019. The address of the City Hall is [Pohjoisesplanadi 11-13, 00170 Helsinki](https://www.helsinki.fi/en/city-hall). The reception will take place between 19:00 and 20:30. Bus transportation will be organized from the conference venue to the reception. Alternatively, you can choose to take a one-hour walk tour to the Helsinki City Hall with an official guide starting at 18:00 from the conference venue. After the reception, there are buses reserved to transport you back to the conference venue directly after the reception ends.

The conference dinner will be held at the conference venue, Clarion Hotel Helsinki on Tuesday 24th of September 2019 starting at 19:00.

During the conference, lunch will be served each day in the 1st and 2nd floor.

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/>
Registration to the conference is open until 16th of September.

CONFERENCE PROGRAMME

NORDIWA



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Programme Committee

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Helle Kayerød, DANVA
Marina Graan, Helsinki Region Environmental Services Authority, (IWA)
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Further Information

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