

Curriculum vitae with track record (for researchers)

* PERSONAL INFORMATION

*Family name, First name:	Muthanna, Tone Merete		
*Date of birth:	04.02.1975	*Sex:	Female
*Nationality:	Norwegian		
Researcher unique identifier(s):	https://orcid.org/0000-0002-4438-2202		
URL for personal website:	https://www.ntnu.edu/employees/tone.muthanna		

* EDUCATION

2007	Ph.D., Department of Hydraulic and Environmental Engineering, NTNU, Norway
2001	Biological Systems Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA
1998	BSc. Biological Systems Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA

* POSITIONS (academic, business, industry, public sector, national or international organisations)

Current Position

2019-now	Professor, Department of Civil and Environmental Engineering, NTNU, Norway
2019-now	Adjunct Professor, Department of Civil Environmental and Natural Resources Engineering, Luleå University of Technology, Sweden

Previous positions held (list)

2013-2019	Associate Professor, Department of Civil and Environmental Engineering, NTNU, Norway
2010-2013	Postdoc at NTNU, Trondheim, Norway Department of Hydraulic and Environmental Engineering
2007-2012	Research Scientist at Norwegian Institute for Water Research (NIVA), Trondheim/Oslo, Norway Environmental Technology Group
2006-2007	Assistant Professor, Department of Hydraulic and Environmental Engineering, NTNU, Norway
2003-2006	PhD candidate at NTNU, Trondheim, Norway Department of hydraulic and environmental engineering
2001-2003	Water resources engineer at CH2M Hill (Civil Engineering consulting and construction), Washington D.C, USA

MOBILITY

Stays abroad related to positions outside academia

2018-2019	Visiting Researcher at Laboratoire DEEP/Institute National des Sciences Appliquées Lyon (INSA Lyon), Lyon, France
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PROJECT MANAGEMENT EXPERIENCE (if applicable)

Projects funded by Research Council of Norway, international research programmes, private or public organisations

2022-2025	Stop-UP - Protecting the aquatic environment from urban runoff pollution "StopUP" Horizon Europe, GAP-101060428),
2020-2024	B-WaterSmart – Accelerating water smartness in coastal Europe H2020 (Grant agreement ID: 869171) Klima2050, WP leader.
2015-2023	Klima2050, (NRC, SFI), NTNU project lead for stormwater and key researcher in WP2.
2017-2021	ExtndMinnow -IntPart w/ Klima2050 (NRC, DIKU), NTNU project manager
2013-2015	Regnbygge3M (NRC), NTNU project manager
2014-2017	Veirens (funding: Statens Vegvesen, NTNU) Project Responsible and Principal Investigator
2015-2019	BINGO – Binging INnovation to onGOing water management – H2020. WP leader and project manager for NTNU
2015-2019	INXCES (JPI Water project), Project Responsible and Principal Investigator
2014-2018	GreenRoof (Public/Governmental PhD w/ Trondheim County), NTNU project responsible
2017-2020	Drensten (NRC Innovation Project in Industry - BIA), Work Package Leader
2012-2014	UrbanWatch (NRC funded Miljø2015) Project Responsible and Principal Investigator

SUPERVISION OF GRADUATE STUDENTS AND RESEARCH FELLOWS (if applicable)

2013-ongoing	12	Ph.D. Students	NTNU, Trondheim, Norway
2018-ongoing	4	Ph.D. Students	LTU, Trondheim, Norway
2010-2023	58	M.S. Students	NTNU, Trondheim, Norway
2010-2023	13	European internship students	NTNU, Trondheim, Norway

TEACHING ACTIVITIES (if applicable)

2013-current	Basic course in water and wastewater engineering: Introduction to design and practice for civil engineering students - Course # TVM4125, Norwegian University of Science and Technology, Trondheim, Norway
2013-current	Water and Environment – part 2 out of 4 introduction to Civil engineering courses # TVM4101, Norwegian University of Science and Technology, Trondheim, Norway
2016-current	Advanced course in water and wastewater engineering: Stormwater management and asset management - Course # TVM4141, Norwegian University of Science and Technology, Trondheim, Norway

2014-2016	Field course for environmental engineers - Course # VM8702, Cooperation between University of Minnesota and Norwegian University of Science and Technology, Trondheim, Norway
2014-current	- Guest lectures at TU Berlin – teaching collaboration organized in a Spring School in Berlin for NTNU students and a fall/summer school for TU Berlin students in Trondheim - Guest lectures at IMT Atlantique – green infrastructure design

ORGANISATION OF MEETINGS

August 2024	Scientific Committee member for ICUD (Joint IWA/IAHR Conference on Urban Drainage)
July 2023	Scientific Committee member for NovaTech conference on Urban Water (NovaTech)
July 2019	Scientific Committee member for NovaTech conference on Urban Water (NovaTech)
Jun. 2019	Cities, Rain and Risks – “No man is an island – we’re better when we’re together!” - International Conference based on the output from International Research Projects. (Cities Rain and Risks)
Nov. 2005	UNESCO IHP-VI workshop on; “Integrated Urban Water Management in Cold Climate NTNU, 3-4 November 2005 at NTNU i Trondheim, Norway. (http://www.ivt.ntnu.no/docs/ivm/ReportUNESCOworkshop-1.pdf)

INSTITUTIONAL RESPONSIBILITIES (if applicable)

Member of a committee/graduate student advisor etc.

2013-now	Graduate student advisor, NTNU, Norway
2018-now	Graduate student advisor, Luleå University of Technology (LTU), Sweden
2013-2023	Member of 10 Ph.D. Committees
2013-2019	Discussion leader for 2 Licentiate Thesis (Chalmers and LTU)

COMMISSIONS OF TRUST IN ACADEMIC, PUBLIC OR PRIVATE ORGANISATIONS (if applicable)

Scientific advisory board/review board/review panel member/editorial board/scientific advisory board/reviewer/scientific evaluation/etc.

2021-2022	Member of the national appointed expert committee “Gjerdrumutvalget” identifying causes of the quick clay mudslide at Gjerdrum in December 2020.
2021	Member of International Panel of Experts for evaluation of study programmes in the field of Civil engineering at the Vilnius Gediminas Technical University – appointed by The Centre for Quality Assessment in Higher Education (SKVC), Lithuania, December 2021.
2004-now	Reviewer for 13 scientific journals, conferences and workshops (e.g., Water Research, Water Science Technology, Science of the Total Environment, Journal of Hydrology, Urban Water, NovaTech, Int. Conf. on Urban Drainage)
2015 -2022	Joint Committee on Urban Drainage (IWA/IAHR) – committee member
2018-2020	Guest Editor of a Special Issue in MDPI <i>Water</i> on Cold Climate Stormwater Management, and a Special Issue in Natural Hazards and Earth System Sciences (NHESS) on at selected European research sites – from climate and hydrological.
2017-2020	Scientific advisory Board of “MedHeal600” - FRIHUMSAM Project Number: 262424. Medieval Urban Health- From Individual to Public Responsibility, AD 1000-1600 (https://www.ntnu.edu/museum/medieval-urban-health-from-individual-to-public-responsibility-ad-1000-1600-medheal600-)

2016	Member of International Panel of Experts for evaluation of study programmes in the field of Civil engineering at the Vilnius Gediminas Technical University – appointed by The Centre for Quality Assessment in Higher Education (SKVC), Lithuania, December 2016.
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Track record

The total number of peer reviewed publications during the career: 93 publications (2 book chapters, 56 peer reviewed journal articles, more than 35 peer-reviewed conference paper)

- 56 Elhadi Mohsen Hassan Abdalla, Knut Alfredsen, Tone Merete Muthanna, (2024). "Impacts of slope and length on the hydrological performance of green roof drainage mats", *Journal of Hydrology*(632), <https://doi.org/10.1016/j.jhydrol.2024.130974>
- 55 N. Razguliaev, K. Flanagan, T. Muthanna, M. Viklander. (2024). "Urban stormwater quality: A review of methods for continuous field monitoring", *Water Research* (249) <https://doi.org/10.1016/j.watres.2023.120929>
- 54 Wei, H., Lundy, L., Muthanna, T.M., Viklander, M. (2023). "Influence of seasonal activities and traffic conditions on the accumulation and particle size distribution of gully pot sediments» *Journal of Environmental Management*, 2023, 348, <https://doi.org/10.1016/j.jenvman.2023.119336>
- 53 Skrede, T.I., Tørudstad, V., Pons, V., Alfredsen, K., Muthanna, T.M.. (2023). "From flood paths to floodways, an efficient method to map, identify and evaluate suitable floodways: A case study from Trondheim, Norway» *Journal of Environmental Management*, 2023, 346, <https://doi.org/10.1016/j.jenvman.2023.118672>
- 52 Wei, H., Flanagan, K., Lundy, L., Muthanna, T.M., Viklander, M. (2023). "A study of 101 organicsubstances in gully pot sediments accumulated over a one-year period in Stockholm, Sweden" *Science of the Total Environment*, 2023, 894, <https://doi.org/10.1016/j.scitotenv.2023.165028>
- 51 Pons, V., Abdalla, E.M.H., Tscheikner-Gratl, F., ...Bertrand-Krajewski, J.-L., Muthanna, T.M. (2023). "Practice makes the model: A critical review of stormwater green infrastructure modelling practice" *Water Research*, 2023, 236, <https://doi.org/10.1016/j.watres.2023.119958>
- 50 Lohne, J.; Solheim, A.; Muthanna, T.M.; Time, B.; Hauge, Å.L.; Kalsnes, B.G.; Lædre, O.; Kvande, T. Ethics of Climate Change Adaptation—The Case of Torrential Rains in Norway. *Buildings* **2023**, *13*, 1111. <https://doi.org/10.3390/buildings13051111>
- 49 Mantilla, I., Flanagan, K., Muthanna, T.M., Blecken, G.T., Viklander, M. (2023) [Variability of green infrastructure performance due to climatic regimes across Sweden. Journal of Environmental Management vol. 326, Part B. \(https://doi.org/10.1016/j.jenvman.2022.116354\)](https://doi.org/10.1016/j.jenvman.2022.116354)
- 48 Hassan Abdalla, Elhadi Mohsen; Alfredsen, Knut; Muthanna, Tone Merete. (2023) [On the use of multi-objective optimization for multi-site calibration of extensive green roofs. Journal of Environmental Management. Vol. 326, Part A \(https://doi.org/10.1016/j.jenvman.2022.116716\)](https://doi.org/10.1016/j.jenvman.2022.116716)
- 47 Hassan Abdalla, Elhadi Mohsen; Alfredsen, Knut; Muthanna, Tone Merete. (2022) [Towards improving the calibration practice of conceptual hydrological models of extensive green roofs. Journal of Hydrology. vol. 607.](https://doi.org/10.1016/j.jhydrol.2022.607)
- 46 Pons, Vincent; Benestad, Rasmus; Sivertsen, Edvard; Muthanna, Tone Merete; Bertrand-Krajewski, Jean-Luc. (2022) [Temporal downscaling of precipitation time-series projections to forecast green roofs future detention performance. Hydrology and Earth System Sciences.](https://doi.org/10.1016/j.hydro.2022.100000)

- 45 Pons, Vincent; Muthanna, Tone Merete; Sivertsen, Edvard; Bertrand-Krajewski, Jean-Luc. (2022) [Revising green roof design methods with downscaling model of rainfall time series. *Water Science and Technology*. vol. 85 \(5\).](#)
- 44 Langeveld, J.G., Cherqui, F., Tscheikner-Gratl, F., Muthanna, T.M., Juarez, M.F.D, Leitão, J.P., Roghani, B., Kerres, K., doCéu Almeida, M., Werey, C., and Rulleau, B. (2022). [Asset management for blue-green infrastructures: a scoping review](#), *Blue-Green Systems* vol. 4(2), Pages 272 – 290. DOI: <https://doi.org/10.2166/bgs.2022.019>
- 43 Abdalla, Elhadi Mohsen Hassan; Pons, Vincent; Stovin, Virginia; De-Ville, Simon; Fassman-Beck, Elizabeth; Alfredsen, Knut; Muthanna, Tone Merete. (2021) [Evaluating different machine learning methods to simulate runoff from extensive green roofs. *Hydrology and Earth System Sciences*. vol. 25 \(11\)](#)
- 42 Andenæs, Erlend; Time, Berit; Muthanna, Tone Merete; Asphaug, Silje Kathrin; Kvande, Tore. (2021) [Risk Reduction Framework for Blue-Green Roofs. *Buildings*. vol. 11 \(5\).](#)
- 41 Hassan Abdalla, Elhadi Mohsen; Selseth, Ingrid; Muthanna, Tone Merete; Helness, Herman; Alfredsen, Knut; Gaarden, Terje; Sivertsen, Edvard. (2021) [Hydrological performance of lined permeable pavements](#) in Norway. *Blue-Green Systems*. vol. 3 (1).
- 40 Vladimír Hamouz , Per Møller-Pedersen & Tone Merete Muthanna (2020) “Modelling runoff reduction through implementation of green and grey roofs in urban catchments using PCSWMM”, *Urban Water Journal*, 17:9, 813-826, <https://DOI.org/10.1080/1573062X.2020.1828500>
- 30 Aynalem T. Tsegaw, Marie Pontoppidan, Erle Kristvik, Knut Alfredsen, and Tone M. Muthanna (2020). “Hydrological impacts of climate change on small ungauged catchments – results from a global climate model–regional climate model–hydrologic model chain”. *Nat. Hazards Earth Syst. Sci.*, 20, 2133–2155, 2020. <https://doi.org/10.5194/nhess-20-2133-2020>
- 38 Wei, H., Muthanna, T.M., Lundy, L., Viklander, M. (2021). “An assessment of gully pot sediment scour behaviour under current and potential future rainfall conditions”. *Journal of Environmental Management*, 2021, 282, 111911. <https://doi.org/10.1016/j.jenvman.2020.111911>
- 37 Parnas, Frida Elisif Ågotnes; Hassan Abdalla, Elhadi Mohsen; Muthanna, Tone Merete. (2021) [Evaluating three commonly used infiltration methods for permeable surfaces in urban areas using the SWMM and STORM. *Hydrology Research*.](#)
- 36 Hernes, R.R., Grgne, A.S., Abdalla, E.M.H., Braskerud, B.C., Alfredsen, K., Muthanna, T.M. (2020). Assessing the effects of four SUDS scenarios on combined sewer overflows in Oslo, Norway: evaluating the low impact development module of the Mike Urban model”. *Hydrology Research – In press*. <https://doi.org/10.2166/nh.2020.070>
- 35 Tsegaw, A.T., Pontoppidan, M., Kristvik, E., Alfredsen, K., Muthanna, T.M. (2020). Hydrological impacts of climate change on small ungauged catchments – results from a global climate model – regional climate model – hydrologic model chain. *NHESS*. Vol.20 (8). <https://doi.org/10.5194/nhess-20-2133-2020>
- 34 Hamouz, V., Pons, V., Sivertsen, E., Raspati., Bertrand-Krajewski, J.L., Muthanna, T.M. (2020). Detention-based green roofs for stormwater management under extreme precipitation due to climate change. *Blue-Green Systems*. *Blue-Green Systems*. Vol. 2(1). <https://doi.org/10.2166/bgs.2020.101>

- 33 Schärer, L. A., Buskley, J.O., Sivertsen, E., Muthanna, T.M., (2020). "Limitations in using runoff coefficients for green and gray roof design". *Hydrology Research* (2020) 51 (2): 339–350. DOI: <https://doi.org/10.2166/nh.2020.049>
- 32 Skrede, T.I., Muthanna, T.M., Alfredsen, K. (2020). «Applicability of urban streets as temporary open floodways". *Hydrology Research*. <https://doi.org/10.2166/nh.2020.067>
- 31 Monrabal-Martinez, C., Scibilia, E., Maus, S., Muthanna, T.M. (2019). "Infiltration response of adsorbent amended filters for stormwater management under Freezing/Thawing conditions". *Water*. 11(12),2619. <https://doi.org/10.3390/w11122619>
- 30 Hamouz, V., Muthanna, T.M, (2019). «Hydrological modelling of green and grey roofs in cold climates with the SWMM model», *Journal of Environmental Management*. vol. 249. <https://doi.org/10.1016/j.jenvman.2019.109350>
- 29 Tsegaw, A.T., Alfredsen, K., Skaugen, T., Muthanna, T.M. (2019). «Predicting hourly flows at ungauged small rural catchments using a parsimonious hydrological model». *Journal of Hydrology*. Volume 573, June 2019, Pages 855-87. <https://doi.org/10.1016/j.jhydrol.2019.03.090>
- 28 Kristvik, E., Johannessen, B.G., Muthanna, T.M., (2019). Temporal Downscaling of IDF Curves Applied to Future Performance of Local Stormwater Measures. *Sustainability* 11(5), 1231; <https://doi.org/10.3390/su11051231>
- 27 Johannessen, B.G., Hamouz, V., Gragne, A.S., Muthanna, T.M. (2019). The transferability of SWMM model parameters between green roofs with similar build-up. *Journal of Hydrology* 569, pp. 816-828. <https://doi.org/10.1016/j.jhydrol.2019.01.004>
- 26 Muthanna, T.M., Sivertsen, E., Kliewer, D., Jotta, L. (2018). Coupling field observations and Geographical Information System (GIS)-based analysis for improved Sustainable Urban Drainage Systems (SUDS) performance. *Sustainability* 10(12),4683. <https://doi.org/10.3390/su10124683>
- 25 Monrabal-Martinez, C; Meyn, T; Muthanna, T.M. (2018). Characterization and temporal variation of urban runoff in a cold climate - design implications for SuDS. *Urban Water Journal*. (<https://doi.org/10.1080/1573062X.2018.1536758>)
- 24 Johannessen, B G.; Muthanna, T M.; Braskerud, B.C. (2018). [Detention and retention behavior of four extensive green roofs in three Nordic climate zones](https://doi.org/10.3390/w10060671). *Water*. Vol 10(6). <https://doi.org/10.3390/w10060671>
- 23 Monrabal-Martinez, C; Aberle, J; Muthanna, T M., Orts-Zamorano, M. (2018) [Hydrological benefits of filtering swales for metal removal](https://doi.org/10.1016/j.watres.2018.08.051). *Water Research*. Vol. 145. <https://doi.org/10.1016/j.watres.2018.08.051>
- 22 Andenæs, Erlend; Kvande, Tore; Muthanna, Tone Merete; Lohne, Jardar. (2018) *Performance of Blue-Green Roofs in Cold Climates: A Scoping Review*. *Buildings*. vol. 8 (4). <https://doi.org/10.3390/buildings8040055>
- 21 Raspati, G.S., Lindseth, H.K.H., Muthanna, T.M., Azrague, K. (2018). «[Potential of Biofilters for Treatment of De-Icing Chemicals](https://doi.org/10.3390/w10050620)» *Water* 10(5), 620; <https://doi.org/10.3390/w10050620>
- 20 Russwurm, I., Johannessen, B.G., Gragne, A.S., Lohne, J., Muthanna, T.M. (2018). «Modelling Green Roof Detention Performance in Cold Climates»

- 19 Rognstad, A.B., Ilyas, A., Lohne, J., Muthanna, T.M. (2018). "Treatment of stormwater using the large particle size fraction of incineration bottom ash". Vann. Vol 53(2).
- 18 Balstad, S.; Lohne, J.; Muthanna, T.M.; Sivertsen, E.; (2018). Seasonal variations in infiltration in cold climate raingardens – a case study from Norway. Vann. vol. 53 (1).
- 17 Hamouz, Vladimir; Lohne, Jardar; Wood, Jaran R.; Muthanna, Tone Merete. (2018). Hydrological Performance of LECA-Based Roofs in Cold Climates. Water. vol. 10 (3).
- 16 Kristvik, Erle; Kleiven; Guro Heimstad; Lohne, Jardar; Muthanna, Tone Merete. (2018). Assessing the robustness of raingardens under climate change using SDSM and temporal downscaling. Water Science and Technology, Vol. 77(6), March 2018, Pages 1640-1650. doi: 10.2166/wst.2018.043
- 15 Kristvik, Erle; Muthanna, Tone Merete; Alfredsen, Knut. (2019). Assessment of future water availability under climate change, considering scenarios for population growth and ageing infrastructure. Journal of Water and Climate Change, Vol. 10(1).
<https://doi.org/10.2166/wcc.2018.096>
- 14 Ilyas, Aamir; Muthanna, Tone Merete. (2017). Assessment of upscaling potential of alternative adsorbent materials for highway stormwater treatment in cold climates. Environmental technology. Vol. 38 (6). DOI: 10.1080/09593330.2016.1209567
- 13 Ilyas, Aamir; Muthanna, Tone Merete. (2017). [Metal removal efficiency, operational life and secondary environmental impacts of a stormwater filter developed from iron-oxide-amended bottom ash](#). Journal of Environmental Science and Health. Part A: Toxic/Hazardous Substances and Environmental Engineering. vol. 52 (14).
<https://doi.org/10.1080/10934529.2017.1362291>
- 12 Johannessen, Birgitte Gisvold; Hanslin, Hans Martin; Muthanna, Tone Merete. (2017). [Green roof performance potential in cold and wet regions. Ecological Engineering: The Journal of Ecotechnology](#). Vol. 106. <https://doi.org/10.1016/j.ecoleng.2017.06.011>
- 11 Monrabal-Martinez, Carlos; Ilyas, Aamir; Muthanna, Tone Merete. (2017). Pilot Scale Testing of Adsorbent Amended Filters under High Hydraulic Loads for Highway Runoff in Cold Climates. Water Vol. 9 (230). <https://doi.org/10.3390/w9030230>
- 10 Becker, Mareike A.; Muthanna, Tone Merete; Braskerud, Bent C. (2016). Trinn 1: Reduser overvannet i avløpsnett ved å frakoble taknedløp. Vann. vol. 51 (4).
- 9 Moghadas, Shahab; Gustavsson, A.M.; Muthanna, Tone Merete; Marsalek, Jiri; Viklander, Maria. (2016). Review of models and procedures for modelling urban snowmelt. Urban Water Journal. vol. 13 (4). DOI: 10.1080/1573062X.2014.993996
- 8 Paus, Kim Aleksander Haukland; Muthanna, Tone Merete; Braskerud, Bent C.. (2016). [The hydrological performance of bioretention cells in regions with cold climates: Seasonal variation and implications for design. Hydrology Research](#). vol. 47 (2).
<https://doi.org/10.2166/nh.2015.084>
- 7 Moghadas, shahab; Paus, KH; Muthanna, Tone Merete; Herrmann, I; Marsalek, Jiri; Viklander, Maria. (2015). Accumulation of Traffic-Related Trace Metals in Urban Winter-Long Roadside Snowbanks. Water, Air and Soil Pollution. vol. 226 (12). DOI 10.1007/s11270-015-2660-7
- 6 Hovik, Sissel; Naustdalslid, Jon; Reitan, Marit; Muthanna, Tone Merete. (2014). Adaptation to Climate Change – Professional Networks and Reinforcing Institutional Environments. Environment and Planning. C, Government and Policy. vol. 33 (1).

- 5 Tryland, Ingun; Braathen, Henrik; Beschorner, Anna-Lena; Muthanna, Tone M. (2012). Vurdering av metoder for overvåking av hygienisk badevannskvalitet. Vann. vol. 47 (2).
- 4 Muthanna, Tone Merete; Viklander, M; Thorolfsson, Sveinn T. (2008). Seasonal climatic effects on the hydrology of a rain garden. Hydrological Processes. Vol. 22 (11).
<https://doi.org/10.1002/hyp.6732>
- 3 Muthanna, Tone Merete; Viklander, M; Gjesdahl, N; Thorolfsson, Sveinn T. (2007). Heavy metal removal in cold climate bioretention. Water, Air and Soil Pollution. vol. 183 (1-4).
<https://doi.org/10.1007/s11270-007-9387-z>
- 2 Muthanna, Tone Merete; Viklander, Maria; Blecken, Godecke; Thorolfsson, Sveinn T. (2007) Snowmelt pollutant removal in bioretention areas. Water Research. vol. 41 (18).
<https://doi.org/10.1016/j.watres.2007.05.040>
- 1 Muthanna, Tone Merete; Viklander, Maria; Thorolfsson, Sveinn T. (2007) An evaluation of applying existing bioretention sizing methods to cold climates with snow storage conditions. Water Science and Technology. vol. 56 (10). <https://doi.org/10.2166/wst.2007.745>