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Summary

A summary of your involvement with the Water Research Foundation from December 2024 through November 2025 is given below. Your detailed involvement and engagement with our research results follows in the remainder of the report.

- 1 organization included in MWRD Greater Chicago's subscription
- 9 staff served/serving on WRF planning bodies
- 39 products downloaded
- 59 staff viewed webcasts
- 1 staff attended workshops
- 22 active research projects involving MWRD Greater Chicago

WRF Project 05137 - Unregulated Organic Chemicals in Biosolids: Prioritization, Fate and Risk Evaluation for Land Application

WRF Project 05142 - Data-Driven Process Control for Maximization of Energy and Resource Efficiency - A

WRF Project 05171 - Cost-Effective Approaches for Control of Multiple Constituents of Emerging Concern (CECs)

WRF Project 05173 - Feasibility of Full-Scale Implementation of LED UV Disinfection

WRF Project 05176 - Integrating Climate Impacts with Wet Weather Management, Capital Improvement, and Stream Network Enhancement

WRF Project 05178 - Preparing the Water Sector to Embrace Technology: Skillsets and Enterprise Management Approaches for the Digital Age

WRF Project 05180 - Incorporating Equity and Social Dimension into Community Climate Adaptation Planning and Watershed Management

Summary (Continued)

- 22 active research projects involving MWRD Greater Chicago (Cont.)

WRF Project 05181 - Incorporating Community Resilience Concepts into Utility Asset Management Practices

WRF Project 05186 - Diversity, Equity, and Inclusion Best Practices for the Water Sector Workforce

WRF Project 05187 - Beyond Net Zero: Advancing Interdependencies Between Utility Greenhouse Gas Emission Reductions and Water-Energy-Food Nexus

WRF Project 05188 - Establishing Industry-Wide Guidance for Water Utility Life Cycle Greenhouse Gas Emission Inventories

WRF Project 05189 - Artificial Intelligence Adoption Framework for Water and Wastewater Utilities

WRF Project 05206 - Developing an Environmental, Social, and Governance Framework for Water Utilities

WRF Project 05216 - Cured-in-Place-Pipe (CIPP) Rehabilitation Emissions Study

WRF Project 05221 - Impact of Solid Stream Treatment on Microplastics in Biosolids

WRF Project 05251 - Advancing the Understanding of Nitrous Oxide Emissions Through Enhanced Whole-Plant Monitoring and Quantification

WRF Project 05252 - Advancing Anoxic Phosphorus Uptake for Highly Efficient Simultaneous Nitrogen and Phosphorus Removal

WRF Project 05255 - Developing a Greenhouse Gas Emissions Library for Unit Processes by Water Utilities and Decentralized Systems

WRF Project 05271 - Balancing Carbon Management, Energy Management, Energy Production Nutrient Removal and Densification

WRF Project 05286 - Identification and Valuation of Innovative Wastewater Residual Products Beyond Conventional Biosolids

WRF Project 05288 - Tradeoffs Between Process Optimization, Greenhouse Gas Mitigation, and Energy Efficiency

WRF Project 05305 - Operationalizing the Benefits of Nature-based Solutions to Inform Decisions in a Changing Climate



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Subscriber Involvement Report December 2024 to November 2025

Board of Directors (BOD) Membership

2021 - 2025 Perkovich, Brian Member

Planning Committee Membership

2025 - 2027	Zhang, Heng	Tailored Collaboration Review Committee	Member
2022 - 2025	Perkovich, Brian	Finance Committee	Member

Other Project Participation

Funding Year		Project Value
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2024	Identification and Valuation of Innovative Wastewater Residual Products Beyond Conventional Biosolids [#5286]	\$197,200
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Participating Utility

WRF Share: \$0.00
Cost Share: \$0.00
3rd Party In Kind: \$12,300.00

Total Contribution: \$12,300.00

2024	Operationalizing the Benefits of Nature-based Solutions to Inform Decisions in a Changing Climate [#5305]	\$250,000
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Partner

Participant - Other

WRF Share: \$0.00
Cost Share: \$0.00
3rd Party In Kind: \$17,500.00

Total Contribution: \$17,500.00



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Other Project Participation (Continued)

Funding Year

Project Value

2024

Tradeoffs Between Process Optimization, Greenhouse Gas Mitigation, and Energy Efficiency [#5288]

\$200,000

Participating Utility

WRF Share: \$0.00

Cost Share: \$0.00

3rd Party In Kind: \$9,676.00

Total Contribution: \$9,676.00

Total Project Value: \$647,200

Project Advisory Committee (PAC) Participation

Project Value

2025 -	Waller, Sharon	Data Centers: Understanding Economic Considerations and Opportunities for Water and Wastewater Utilities [#5367]	TBD
2025 - 2027	Zhang, Heng	Practical Considerations for the Application of Phosphorus Recovery in Biosolids Utilizing Struvite-Based Mineral Production [#5347]	\$403,060
2025 - 2027	Zhang, Heng	Process Intensification and Decarbonization via Carbon Management: Pilot-scale Demonstration of the Triple A Settler Technology in Municipal Wastewater Treatment [#5346]	\$316,000
2023 - 2026	Straka, Levi	Enhanced Aeration and Scum Recovery for Physical Removal of PFAS from Wastewater [#5212]	\$251,844
2021 - 2025	Brose, Dominic	Acid+ (Full Acid + Process Lab Scale Testing) [#5108]	\$290,000
2021 - 2024	Zhang, Heng	Advancement in Continuous Flow Densified Sludge System Design and Operation [#5130]	\$200,000
2021 - 2024	Zhang, Heng	Biorecovery of Nutrients from Municipal Wastewaters with Co-production of Biofuels and Other Bioproducts [#5146]	\$0



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Subscriber Involvement Report December 2024 to November 2025

52 www.waterrf.org Downloads

11/02/2025	Zhang, Heng	Data Driven Process Control for Maximizing Resource Efficiency [5141]
10/20/2025	Mellin, Jason	Guidelines for Optimizing Nutrient Removal Plant Performance [4973]
10/20/2025	Mellin, Jason	Guidelines for Optimizing Nutrient Removal Plant Performance [WEBTOOL 4973]
10/06/2025	Patterson, Kaylyn	RT-ddPCR for EBPR Biomonitoring [PROJ UPDATE 5273]
10/02/2025	Kozak, Joseph	Advancing the Understanding of Nitrous Oxide Emissions Through Enhanced Whole-Plant Monitoring & Quantification [PROJ UPDATE 5251]
09/16/2025	Oskouie, Ali K	Testing a Biofloc Model to Understand Dewatering and Solve Dewaterability Issues Related to Resource Recovery [4818]
09/16/2025	Oskouie, Ali K	Understanding Factors Affecting Polymer Demand for Conditioning and Dewatering [1043]
09/09/2025	Patterson, Kaylyn	Feasibility of Full-Scale Implementation of LED UV Disinfection [5173]
09/09/2025	Patterson, Kaylyn	Wastewater-Based Epidemiology and Clinical Surveillance for Antimicrobial Resistance [5182]
09/05/2025	Moran-Andrews, Judith	Understanding Gasification for PFAS Removal [5107]
07/21/2025	Zhang, Heng	Advancing Anoxic Phosphorus Uptake for Highly Efficient Simultaneous Nitrogen and Phosphorus Removal [PIS-5252]
07/10/2025	Brose, Dominic	Artificial Intelligence Applications in the Water Sector [4797B]
07/09/2025	Brose, Dominic	Building Workforce Skills for Intelligent Water Operations [4663]
07/09/2025	Brose, Dominic	Definition, Framework, and Maturity Assessment for Intelligent Water Systems: A Review of Existing Frameworks and Maturity Models [5039]
05/28/2025	Zhang, Heng	Assessing Per- and Polyfluoroalkyl Substance Release from Finished Biosolids [5042]
05/19/2025	Zhang, Heng	A State of Knowledge: Exploring the Densification Continuum [PROJECTPAPER-5130-1]
05/19/2025	Zhang, Heng	Advancement in Continuous Flow Densified Sludge System Design and Operation [5130]



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05/09/2025	Mellin, Jason	Greenhouse Nitrogen Emissions from Wastewater Treatment Operation: Phase I - Molecular Level through Whole Reactor Level Characterization [U4R07PDF]
05/09/2025	Mellin, Jason	Greenhouse Nitrogen Emissions from Wastewater Treatment Operations: Molecular Level through Whole Reactor Level Characterization - Phase II [U4R07BPDF]
05/09/2025	Mellin, Jason	Methane Evolution from Lagoons and Ponds [U2R08CPDF]
03/25/2025	Zhang, Heng	When a Detour Becomes a Shortcut: Going Full-Scale with PdNA Strategy for Mainstream Deammonification and Incorporating Biological Phosphorus Removal - Practitioner's Blueprint/Guidance Document [5095]
03/17/2025	Grabowy, Jonathan	Balancing Carbon Management, Energy Management, Energy Production, Nutrient Removal, and Densification [PIS-5271]
03/17/2025	Pluth, Thais	Data-Driven Process Control for Maximizing Resource Efficiency [PIS-5141]
03/17/2025	Pluth, Thais	Data-Driven Process Control for Maximizing Resource Efficiency [PRESENTATION-5141-1]
03/10/2025	Chaffin, Adam	Investigation of Alternative Management Strategies to Prevent PFAS from Entering Drinking Water Supplies and Wastewater [5082-A]
03/04/2025	Mellin, Jason	Tracer Studies in Water Treatment Facilities: A Protocol and Case Studies [90692]
02/28/2025	Sinche Chele, Federico	Autonomous in situ Monitoring of Harmful Algal Blooms [5154]
02/28/2025	Sinche Chele, Federico	Designing Sensor Networks and Locations on an Urban Water Sewershed Scale with Big Data Management and Analytics [4797A]
02/28/2025	Sinche Chele, Federico	Investigation of Treatment Alternatives for Short-Chain Per- and Polyfluoroalkyl Substances [4913]
02/28/2025	Sinche Chele, Federico	Linking Nutrient Reductions to Receiving Water Responses [5078]
02/21/2025	Brose, Dominic	EPA Research Grant Annual Report Summary: Unregulated Organic Chemicals in Biosolids [PROJECTPAPER-5125-2]
02/18/2025	Cox, Albert	Occurrence of PFAS Compounds in US Wastewater Treatment Plants [5031]
02/07/2025	Chaffin, Adam	Autonomous in situ Monitoring of Harmful Algal Blooms [5154]
01/29/2025	Chaffin, Adam	Determining the Fate and Major Removal Mechanisms of Microplastics in Water and Resource Recovery Facilities [4936]
01/29/2025	Chaffin, Adam	White Paper - Microplastics in Aquatic Systems: An Assessment of Risk [CEC7R17PDF]
12/30/2024	Chaffin, Adam	Determining the Fate and Major Removal Mechanisms of Microplastics in Water and Resource Recovery Facilities [4936]



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12/17/2024	Olszewski, Idalis	Transformation of EDCs/PPCPs During Drinking Water Disinfection [4396]
12/03/2024	Cox, Albert	Standardizing Methods with QA/QC Standards for Investigating the Occurrence and Removal of Antibiotic Resistant Bacteria/Antibiotic Resistance Genes (ARB/ARGs) in Surface Water, Wastewater, and Recycled Water [5052]
12/03/2024	Cox, Albert	The Use of Next Generation Sequencing (NGS) Technologies and Metagenomics Approaches to Evaluate Water and Wastewater Quality Monitoring and Treatment Technologies [4961]



Webcasts

07/01/2025	Bai, Junli Moran-Andrews, Judith Pluth, Thais Sinche Chele, Federico Tsega, Atakilt	Quantifying the Impact of Artificial Intelligence/Machine Learning-Based Approaches to Utility Performance [WEBCAST_5189_070125]
05/29/2025	Fontana, Anthony Moran-Andrews, Judith Pluth, Thais Sinche Chele, Federico Tsega, Atakilt	Understanding Gasification for PFAS Removal [WEBCAST-5107-052925]
05/28/2025	Zhang, Heng	PFAS in Biosolids Under a Land Application Scenario: Biotic Weather, Leaching, and Transport [WEBCAST-5042-1]
05/13/2025	Moran-Andrews, Judith Pluth, Thais Sinche Chele, Federico	PdNA Webcast Series, Part 1: What is PdNA and Is My Facility a Good Candidate for It? [WEBCAST-051325]
05/06/2025	Bai, Junli Brose, Dominic Cox, Albert Moran-Andrews, Judith Oladeji, Olawale Pluth, Thais Sinche Chele, Federico Tsega, Atakilt Weizhe, An	The Role of Generative AI (GenAI) for the Global Water Sector [WEBCAST-5321-050625]
04/10/2025	Kowalski, Shawn Moran-Andrews, Judith Pluth, Thais Sinche Chele, Federico	2025 Tailored Collaboration Program Overview [WEBCAST-041025]



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03/27/2025	Moran-Andrews, Judith Sinche Chele, Federico	Utility Field Guide for Developing a Cyanobacteria and Cyanotoxin Monitoring Program [WEBCAST_5120_032725]
03/18/2025	Chaffin, Adam Moran-Andrews, Judith Pluth, Thais Tsega, Atakilt	Implementing Machine Learning Process Controls at WRRFs [WEBCAST_5141_031825]
02/27/2025	Kowalski, Shawn Moran-Andrews, Judith Sinche Chele, Federico	Autonomous in situ Monitoring of Harmful Algal Blooms [WEBCAST-5154-022725]
01/30/2025	Kowalski, Shawn Moran-Andrews, Judith Sinche Chele, Federico	Implementation of Innovative Biological Nutrient Removal Processes through Improvement of Control Systems and Online Analytical Measurement Reliability and Accuracy [WEBCAST-5087-013025]
01/23/2025	Kowalski, Shawn Moran- Andrews, Judith Sinche Chele, Federico Straka, Levi	Diversifying Water Portfolios through Stormwater Capture and Use: Contributing to a Water Resilient Future [WEBCAST-5236-012325]
12/19/2024	Bai, Junli Brose, Dominic Kowalski, Shawn Moran-Andrews, Judith Sinche Chele, Federico	Doing More with Less Using Open-Source Code: Mapping Water Challenges for Water Reuse Potential [WEBCAST-5197-121924]
12/12/2024	Bai, Junli Kozak, Joseph Moran-Andrews, Judith Sinche Chele, Federico Tsega, Atakilt	Opportunities for Mitigation [WEBCAST-121224]



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12/10/2024	Cox, Albert Kowalski, Shawn Moran-Andrews, Judith Patterson, Kaylyn	Surveillance of Antimicrobial Resistance Emergence in the Environment [WEBCAST_5182_121024]
12/05/2024	Bai, Junli Kowalski, Shawn Sinche Chele, Federico	Leading Water Utility Innovation [WEBCAST_4907_120524]



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Subscriber Involvement Report December 2024 to November 2025

Workshops

10/22-23/2025 Zhang, Heng

WRF 2025 Water Utility Research Community
Workshop

Involvement Report Glossary

3rd Party In Kind. The value of non-cash contributions that a participant provides to a WRF project.

Co-Funding Organization. An organization that contributes cash to fund a research project payable to WRF.

Co-Principal Investigator (Co-PI). An individual involved with the Principal Investigator in the execution of a project.

Cost Share. The portion of allowable costs that the contractor, subcontractor or third-party participant contributes to a WRF project.

Participating Utility. An organization that provides third-party contributions or other material support to a WRF research project but does not enter into a contractual relationship with WRF, the contractor or a subcontractor.

Principal Investigator (PI). The contractor's employee with primary responsibility to ensure that all terms and conditions of a contract are met.

Project Advisory Committee (PAC). A group of independent volunteers assembled by WRF to provide an independent technical review, assistance, and/or expertise to a WRF project.

WRF Share. The amount of money the Co-Funding Organization contributes to fund a research project.