2020 WATER RESEARCH FOUNDATION PROJECTS OF INTEREST TO THE DISTRICT

1. Project 4666, Case Study Compilation on Applying Risk Management Principles and Innovative Technologies to Effectively Manage Deteriorating Infrastructure, Budget - $250,000
2. Project 4668, Managing Water and Wastewater Utility Data to Reduce Energy Consumption and Cost, Budget - $260,000
3. Project 4717, Innovative Technologies to Effectively Manage Deteriorating Infrastructure, Budget - $150,000
4. Project 4729, Mapping Climate Exposure and Climate Information Needs to Utility Business Functions, Budget - $110,000
5. Project 4734, Real-life Enterprise Resilience, Budget - $160,000
6. Project 4742, Probability Management for Water Finance and Resource Managers, Budget - $220,000
7. Project 4745, Implementing Ecosystem Service and Natural and Social Capital Accounting Approaches, Budget - $0
8. Project 4753, Development of Innovative Project Delivery Strategies, Budget - $78,143
9. Project 4760, Establishing Additional Log Reduction Credits for WWTPs, Budget - $400,000
10. Project 4770, Scorecard for Evaluating Opportunities in Industrial Reuse, Budget - $200,000
11. Project 4774, Molecular Methods for Measuring Pathogen Viability/Infectivity, Budget - $349,794
12. Project 4792, Developing Business Cases for Food Waste Co-Digestion at Water Resources Recovery Facilities, Budget - $132,400
13. Project 4797, Designing Sensor Networks and Locations on an Urban Sewershed Scale with Big Data Management and Analytics, Budget - $200,000
14. Project 4798, LCASW1SG16 Community-Enabled Lifecycle Analysis of Storm Water Infrastructure Costs, Budget - $454,643
15. Project 4799, LCASW2SG16 Community-Enabled Lifecycle Analysis of Storm Water Infrastructure Costs, Budget - $500,498
16. Project 4800, LCASW3SG16 Community-Enabled Lifecycle Analysis of Storm Water Infrastructure Costs, Budget - $294,968
17. Project 4801, LCASW4SG16 Community-Enabled Lifecycle Analysis of Storm Water Infrastructure Costs, Budget - $225,000
18. Project 4802, LCASW5SG16 Community-Enabled Lifecycle Analysis of Storm Water Infrastructure Costs, Budget - $150,000
19. Project 4803, LCASW6SG16 Community-Enabled Lifecycle Analysis of Storm Water Infrastructure Costs, Budget - $9,501
20. Project 4813, A Critical Review and Evaluation of Antibiotic Resistance in the Wastewater Environment - A Risk Assessment, Budget - $140,000
21. Project 4814, Evaluation of Data Needs for Nutrient Target-Setting Using the Nutrient Modeling Toolbox, Budget - $249,232
22. Project 4815, Modeling Guidance for Developing Site Specific Nutrient Goals - Demonstration, Screening-Level Application, Budget - $150,000
23. Project 4816, Nutrient Recovery Through Urine Separation, Budget - $44,989

24. Project 4818, Testing a Biofloc Model to Understand Dewatering and Solve Dewaterability Issues Related to Resource Recovery, Budget - $205,000
25. Project 4819, Understanding the Impacts of Low-Energy and Low-Carbon Nitrogen Removal Technologies on Bio-P and Nutrient Recovery Processes, Budget - $215,000
26. Project 4824, Plasmids and Rare Earth Elements from Wastewater, Budget - $56,307
27. Project 4826, Towards Innovation-Stimulating Regulations-Nutrient Regulations: A Global Perspective with Implications for the United States, Budget - $125,000
28. Project 4833, Impact of Wastewater Treatment Performance on Advanced Water Treatment Processes and Finished Water Quality, Budget - $300,000
29. Project 4837, Incorporating Forestry into Stormwater Management Programs: State of the Science and Business Model Evaluation for Nutrient Reduction and Volume Control, Budget - $99,984
30. Project 4839, Annual Update of International Stormwater BMP Database (Urban Component), Budget - $89,984
31. Project 4841, Exploratory Effort of Pathways for Stormwater Harvesting, Budget - $20,000
32. Project 4842, Enhancement of Resilience to Extreme Weather and Climate Events, Budget - $50,000
33. Project 4847, Follow-Up Effort on AgBMP Database, Budget - $40,000
34. Project 4849, Exploring Designated Uses to Support Water Quality Compliance, Budget - $50,000
35. Project 4852, Framework and Tools for Quantifying Green Infrastructure Co-Benefits and Linking with Triple Bottom Line Analysis, Budget - $149,785
36. Project 4863, Hybrid Anaerobic Primary and Secondary Treatment with Energy Recovery, Budget - $101,593
37. Project 4864, Bioaugmentation of Activated Sludge with High Activity Nitrifying Granules/Flocs: Population Selection, Survival, Biokinetics, Budget - $130,000
38. Project 4865, Advancing the Oxygenic Photogranule Process for Energy Positive Wastewater Treatment, Budget - $15,000
39. Project 4866, Biofilm-Enhanced Anaerobic Membrane Bioreactor for Low Temperature Domestic Wastewater Treatment, Budget - $15,000
40. Project 4870, Balancing Flocs and Granules for Activated Sludge Process Intensification in Plug Flow Configurations, Budget - $118,926
41. Project 4871, Nationwide Meta-Omics Survey of Anaerobic Digestion and Fermentation Processes for Resource Recovery from Biosolids and Other Organics, Budget - $151,576
42. Project 4876, Next Generation Anaerobic Membrane Bioreactor for Low Temperature Domestic Wastewater Treatment: Pilot, Budget - $163,294
43. Project 4882, Phase-3 Development of Wastewater Pipeline Deterioration Model, Budget - $142,500
44. Project 4884, Estimating the Comammox Contribution to Ammonia Oxidation in Nitrogen Removal Systems, Budget - $122,764
45. Project 4892, Characterizing the Quality of Biogas Derived from Wastewater Solids Co-Digested Organic Wastes and Other Digestion Enhancements, Budget - $100,000
46. Project 4900, Unlocking the Potential of Mixed-Microbial Fermentation for Enhancing Carbonaceous Resource Recovery from Organic "Wastes", Budget - $138,447

47. Project 4901, Combining Nitrite Stunt Anammox Process with the Sidestream Enhanced Biological Phosphorous Removal EBPR Process for Simultaneous and Sustainable Nitrogen and Phosphorous Removal, Budget - $136,099
48. Project 4902, Leveraging Big-Data and Deep Learning for Economical Condition Assessment of Wastewater Pipelines, Budget - $150,000
49. Project 4904, Full Scale Validation of Cryptosporidium and Giardia Log Reduction in Secondary Biological Treatment, Budget - $49,810
50. Project 4907, Leading Water Utility Innovation, Budget - $450,850
51. Project 4915, Characterization and Contamination Testing of Source Separated Organic Feedstocks and Slurries for Co-Digestion at Resource Recovery Facilities, Budget - $390,000
52. Project 4920, Decision Support Framework for Drinking Water Treatment Plants Experiencing Lake Recovery, Budget - $215,000
53. Project 4936, Determining the Fate and Major Removal Mechanisms of Microplastics in Water and Resource Recovery Facilities (Compounds of Emerging Concern/Trace Organics), Budget - $25,000
54. Project 4940, Peer Review on Metagenomics for MWRDGC, Budget - $50,000
55. Project 4941, Multi-Objective Evolutionary Algorithm Application Guidance for Utility Planning, Budget - $180,000
56. Project 4951, Quantitative Microbial Risk Assessment Implementation, Budget - $200,000
57. Project 4952, Pathogen Research, Budget - $618,600
58. Project 4961, The Use of Next Generation Sequencing (NGS) and Metagenomics Approaches to Evaluate Anti-Microbial Resistance, Plant Challenge, Biological Removal Processes, Budget - $300,000
59. Project 4965, Development of a Community-Based Lead Risk and Mitigation Model, Budget - $2,042,031
60. Project 4968, Annual Update of International Stormwater BMP Database and Expanding Communication on the Database, Budget - $85,000
61. Project 4971, Leveraging the Role of Pretreatment Programs in One Water Initiatives: Synthesis of Best Practices and Path Forward, Budget - $100,000
62. Project 4972, Expanding the Use of Wastewater Epidemiology Tools to Identify Population within Service Area under Stress and Explore Potential to Affect Change, Budget - $200,000
63. Project 4973, Guidelines for Optimizing Nutrient Removal Plant Performance, Budget - $130,000
64. Project 4974, New Regulatory Approaches for Improved Nutrient Removal, Budget - $150,000
65. Project 4975, Practices to Enhance Internal Fermentation, Budget - $125,000
66. Project 4976, New Approaches for Reduced Aeration Energy Plus Nutrient Removal, Budget - $30,000
67. Project 4978, Application of Big Data for Energy Management at Water Utilities, Budget - $50,000
68. Project 4980, Toolkit to Communicate Technical Findings to a Non-Expert Audience, Budget - $80,000
69. Project 4982, Strategic Workforce Plan and Employee Value Proposition, Budget - $41,271
70. Project 4984, Impact of Intermittent Operation on Biofilter Performance, Budget - $196,980
71. Project 4988, Pathogen Prescreening Method Optimization Study, Budget - $24,500
72. Project 4989, Measure Pathogens in Wastewater, Budget - $174,900
73. Project 4992, Low Molecular Weight Unknown Compounds, Budget - $32,000

74. Project 4996, Co-Digestion of Organic Waste-Addressing Operational Side-Effects, Budget - $253,022
75. Project 5004, Demonstrating the CalPrex System, Budget - $75,000
76. Project 5011, ESTCP PFASs Groundwater, Budget - $990,451
77. Project 05018, Evaluation and Life Cycle Comparison of Ex-Situ Treatment Technologies for Poly- and Perfluoroalkyl Substances (PFASs) in Groundwater, Budget - $298,136
78. Project 05019, Evaluation and Life Cycle Comparison of Ex-Situ Treatment Technologies for Poly- and Perfluoroalkyl Substances (PFASs) in Groundwater II, Budget - $200,011
79. Project 05020, Evaluation and Life Cycle Comparison of Ex-Situ Treatment Technologies for Poly- and Perfluoroalkyl Substances (PFASs) in Groundwater III, Budget - $466,468
80. Project 05027, Partial Denitrification Anammox as Alternative Pathway to Achieve Mainstream Short-Cut Nitrogen Removal, Budget - $147,161
81. Project 05028, Fate of Antibiotic Resistance Genes ARGs and Antibiotic Resistant Pathogens in Full-Scale Activated Sludge Processes and the Optimization of Activated Sludge Processes for Reducing ARGs, Budget - $144,102
82. Project 05030, New Approaches for Improved Nutrient Management-Workshop, Budget - $50,000
83. Project 05031, Occurrence of PFAs Compounds in US Wastewater Treatment Plant, Budget - $250,000
84. Project 05034, Assessing the Microbial Risks and Potential Impacts from Stormwater Collection and Uses to Establish Appropriate Best Management Practices, Budget - $75,000
85. Project 05036, Technical Brief: Compounds of Current and Future Interest and Implications for One Water, Budget - $75,000
86. Project 05038, 2019 Roadmap Workshop on Prioritizing Permitting and Linkages Research in Water Quality, Budget - $75,000
87. Project 05039, Definition of a Smart Utility - How to Be a Digital Utility and the Framework for an Intelligent Water System, Budget - $75,000
88. Project 05042, Assessing Poly- and Perfluoroalkyl Substance Release from Finished Biosolids, Budget - $104,000
89. Project 05043, Assessing the Impacts of Backwash Practice on Biofiltration Operation and Performance, Budget - $50,000
90. Project 05044, Modernizing the Biological Nutrient Removal Monitoring Tool Kit, Budget - $44,074
91. Project 05045, Biogas Harvester Pilot Test, Budget - $66,516
92. Project 05047, Guidelines for the Demonstration of Pathogen Log Removal Credits in Wastewater Treatment, Budget - $80,000
93. Project 05052, 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, Budget - $200,000
94. Project 05055, Biosolids Research Roadmap Workshop, Budget - $50,000
95. Project 05056, Test and Enhance Water Utility Business Risk and Opportunity Framework and Guidebook, Budget - $59,610
96. Project 05058, Summary of Opportunities for the Water Sector to Advance Integrated and Climate Resilient Infrastructure Management, Budget - $5,000
97. Project 05060, QAQC Lab Pathogen Project, Budget - $37,000