



# Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street  
Chicago, IL 60611

## Legislation Text

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### **TRANSMITTAL LETTER FOR BOARD MEETING OF FEBRUARY 2, 2017**

#### **COMMITTEE ON MONITORING AND RESEARCH**

Mr. David St. Pierre, Executive Director

Authority to Subscribe to the Water Environment & Reuse Foundation for the 2017 Annual Research Commitment in an amount not to exceed \$138,000.00, Account 101-15000-612280

Dear Sir:

Authorization is requested to make payment, by direct voucher, to the Water Environment & Reuse Foundation (WE&RF), formerly Water Environment Research Foundation, for the 2017 Annual Research Commitment, in an amount not to exceed \$138,000.00.

The Metropolitan Water Reclamation District of Greater Chicago (District) is in receipt of the 2017 annual subscription renewal notice from WE&RF for the period January 1, 2017 through December 31, 2017.

WE&RF is currently sponsoring 128 projects totaling approximately \$48 million, of which \$22 million is WE&RF's cost for the projects. Of these 128 projects, 73 projects, totaling about \$26 million of expenditures, are especially applicable to the District and are summarized below.

1. Project 03-SW-1COh, International Stormwater Urban BMP Database (2015-2016), Budget - \$110,000
2. Project ENER10C13, State of the Science and Issues Related to Heat Recovery from Wastewater, Budget - \$130,667
3. Project ENER12R13, Co-Digestion of Organic Waste - Addressing Operational Side Effects, Budget - \$345,875
4. Project ENER13T14, Energy Recovery from Thermal Oxidation of Wastewater Solids - State of the Science Review, Budget - \$615,154
5. Project ENER15C15, WaterWatts: A Modern Look at Wastewater Power-Metering Data, Budget - \$294,460
6. Project ENER16C15, Design and Validation Protocol for UV Disinfection Systems Used in Municipal Wastewater Treatment and Reuse Applications, Budget - \$542,000
7. Project ENER17C15, Barriers and Opportunities for Distributed Energy Resource Integration for Water and Wastewater Utilities and Energy Utilities, Budget - \$232,000
8. Project ENER18C15, Assess Public Private Partnerships and Opportunities for Water and Wastewater Energy Projects, Budget - \$150,000
9. Project ENER5R12, More Juice from Wastewater and Solids Treatment (Task A, USAB), Budget - \$361,840

10. Project ENER8R13, Developing Solutions to Operational Side Effects Associated with Co-Digestion of High Strength Organic Wastes, Budget - \$786,447
11. Project ENER9C13, Co-Digestion of Organic Waste - Addressing Operational Side Effects, Budget - \$299,350
12. Project LCASW1SG16, Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs, Budget - \$454,643
13. Project LCASW2SG16, Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs, Budget - \$580,337
14. Project LCASW3SG16, Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs, Budget - \$294,968
15. Project LCASW4SG16, Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs, Budget - \$225,000
16. Project LCASW5SG16, Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs, Budget - \$150,000
17. Project LCASW6SG16, Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs, Budget - \$11,877
18. Project LIFT11C15, Fostering Research and Innovation within Water Utilities, Budget - \$142,000
19. Project LIFT14T16, Design and Implementation of Peracetic Acid for Municipal Water and Wastewater Related Processes, Budget - \$1,164,779
20. Project LIFT2R14, LIFT Database, Budget - \$50,700
21. Project LIFT8C14, Creating the Space to Innovate, Budget - \$20,000
22. Project LINK1T11a, Applicability Analysis of Existing Models for Site-Specific Water Quality Criteria to Protect Designated Uses from Nutrient Impacts - Outreach, Budget - \$30,000
23. Project NTRY10T15, Nutrient Recovery through Urine Separation , Budget - \$69,992
24. Project NTRY12R16, Unintended Consequences of Resource Recovery on Overall Plant Performance: Solving the Impacts on Dewaterability Properties, Budget - \$490,000
25. Project NTRY13R16, Understanding the Impacts of Low-Energy and Low-Carbon Nitrogen Removal Technologies on Bio-P and Nutrient Recovery Processes, Budget - \$641,826
26. Project NTRY14R16, Quantifying and optimizing performance of reverse osmosis for concentrating nutrients from source-separated urine, Budget - \$24,990
27. Project NTRY1R12, Towards a Renewable Future: Assessing Resource Recovery as a Viable Treatment Alternative, Budget - \$1,040,033
28. Project NTRY4R14, A Multi-Platform Approach to Recovering High Value Carbon Products from Wastestreams, Budget - \$667,348
29. Project NTRY6R14, Production of Bioisoprene from Wastewater, Budget - \$219,358
30. Project NTRY7R15, High Quality Biosolids from Wastewater, Budget - \$1,179,649
31. Project NTRY8R15, Plasmids and Rare Earth Elements from Wastewater, Budget - \$69,217
32. Project NTRY9T15, Sustainable Struvite Control Using Residual Gas from Digester Gas Cleaning Process, Budget - \$492,116
33. Project NUTR1R06-TO5, Efficient, Cost-Effective Nutrient Removal from Wastewater, Budget -

\$2,590,910

34. Project NUTR1R06-TO6 (aka NUTR5R14), Efficient, Cost-Effective Nutrient Removal from Wastewater, Budget - \$594,778
35. Project OWSO12PR11, Bay Area Biosolids to Energy Coalition, Budget - \$25,000
36. Project SENG2C14, Integrated Management of Sensor Data for Real Time Decision Making and Response, Budget - \$50,000
37. Project SENG4C15, Focus Area Development Workshop-Defining Attributes and Demonstrating Benefits of Intelligent Distribution Systems (WRF#04614), Budget - \$49,885
38. Project SENG5C16, WaterRF-WSAA Workforce of the Future, Budget - \$0
39. Project SIWM8R14, Economic Pathways and Partners for use of Reclaimed Water and Harvesting Stormwater, Budget - \$109,675
40. Project SIWM9R14, Toolbox for completing an Alternative Analysis as part of an Integrated Planning including Water Quality Compliance, Budget - \$124,576
41. Project STAR\_N1R14 (SG), Nutrient Recovery through Urine Separation , Budget - \$554,034
42. Project STAR\_N2R14 (SG), Development and Implementation of a Process Technology Toolbox for Sustainable Biological Nitrogen Removal Using Mainstream Deammonification, Budget - \$832,052
43. Project STAR\_N3R14 (SG), Manure Nutrient & Resource Recovery: Co-Digestion with Low-Cost Ammonia Stripping, Budget - \$290,504
44. Project STAR\_N3R14A (SG), Manure Nutrient & Resource Recovery: Co-Digestion with Low-Cost Ammonia Stripping, Budget - \$218,348
45. Project STAR\_N4R14 (SG), Enhanced Removal of Nutrients from Urban Runoff with Novel Unit-Process Capture, Treatment, and Recharge Systems, Budget - \$494,000
46. Project TIRR2R15, Hybrid Anaerobic Primary and Secondary Treatment with Energy Recovery, Budget - \$621,446
47. Project TOBI2R15, Developing Exposure and Toxicity Data for Priority Trace Organics in Biosolids, Budget - \$359,049
48. Project U1R11, Effluent Organic Nitrogen Produced within Wastewater Treatment Plants, Budget - \$204,072
49. Project U1R13, Investigate the Mechanism for Optimization and Design of Side-Stream EBPR Process as a Sustainable Approach for Achieving Stable and Efficient Phosphorus Removal, Budget - \$543,239
50. Project U1R14, Balancing Flocs and Granules for Activated Sludge Process Intensification in Plug Flow Configurations, Budget - \$1,855,598
51. Project U1R15, Nationwide Meta-omics Survey of Anaerobic Digestion and Fermentation Processes for Resource Recovery from Biosolids and Other Organics, Budget - \$230,961
52. Project U2R10, Quantifying Nitrous Oxide and Methane Emissions from Biofilm Systems, Budget - \$251,432
53. Project U2R13, Evaluating Fate Mechanisms for Contaminants of Concern in BNR Treatment Systems, Budget - \$159,717
54. Project U2R14, Bench and Pilot Studies of Membrane-Aerated Biofilm Reactors (MABRs) for Energy Efficient Wastewater Treatment, Budget - \$245,494

- 55. Project U3R12, Nationwide Meta-omics Survey of Denitrifying Microbial Communities in Wastewater Treatment Systems, Budget - \$218,882
- 56. Project U3R14, Carbon Capture and Management Strategies for Energy Harvest from Wastewater, Budget - \$586,471
- 57. Project U3R15, Evaluating Fate of Coliphages in WRRFs and Potential Costs to Reduce Coliphages in WRRF Effluents, Budget - \$370,745
- 58. Project U4R12, Stabilization of Main Plant Nitrification/Denitrification Performance, Budget - \$403,855
- 59. Project U4R13, Simple and Fast Detection of Bacteria in Recreational Water, Budget - \$195,816
- 60. Project U4R14, Development of Protocols and Methods for Predicting the Remaining Economic Life of Wastewater Pipes, Budget - \$229,077
- 61. Project U5R12, Conveyance Asset Prediction System (CAPS): Modeling and Mitigation, Budget - \$750,948
- 62. Project U5R14, Stream Restoration: A Crucial New BMP Database Module, Budget - \$145,000
- 63. Project WERF1C15, Occurrence, Proliferation, and Persistence of Antibiotics and Antibiotic Resistance during Wastewater Treatment, Budget - \$158,180
- 64. Project WERF2C16, Cooperative Research Project: Report and Resource Guide Examining of Rate Subsidization Programs to Help Low-Income Ratepayers Afford Water and Wastewater Bills, Budget - \$5,000
- 65. Project WERF5C15, The Survival of Surrogates for Ebola in Sewage and Wastewater Treatment (University of Arizona), Budget - \$35,000
- 66. Project WRRF-12-05, Management of Legionella in Water Reclamation Systems, Budget - \$355,164
- 67. Project WRRF-13-08, Impact of Main Stream Low-DO conditions at a Full-scale MBR Water Reuse Plant, Budget - \$365,777
- 68. Project WRRF-13-11, Developing Tools for Surface Water Nutrient Loading Attributable to Reclaimed Water , Budget - \$473,716
- 69. Project WRRF-14-01, Integrated Management of Sensor Data for Real Time Decision Making, Budget - \$903,380
- 70. Project WRRF-14-02, Establishing Additional Log Reduction Credits for WWTPs, Budget - \$590,546
- 71. Project WRRF-14-17, White Paper on the Application of Molecular Methods for Pathogens for Potable Reuse, Budget - \$50,000
- 72. Project WRRF-15-07, Molecular Methods for Measuring Pathogen Viability/Infectivity, Budget - \$350,000
- 73. Project WRRF-15-09, Survey of Effective Statutes and Regulatory Policies, Budget - \$59,114

By remaining a subscriber to WE&RF, the District will reap the benefits of the findings from various projects in a timely manner through WE&RF's excellent progress reports and final reports. The information that will be gathered particularly in the areas of water quality, wastewater treatment, energy recovery, sludge processing, and nutrient removal will be highly beneficial to the District's current operations and future planning of capital improvement projects. It is estimated that the District's annual investment of \$138,000.00 for a WE&RF subscription saves the District many times that amount if this research were to be conducted in-house.

WE&RF, the sole-source of supply, has submitted pricing for the amount of the research commitment requested. Inasmuch as the research benefits are not available through any other source of supply, nothing would be gained by advertising for bids (Section 11.4 of the Purchasing Act).

It is hereby recommended that the Board of Commissioners authorize payment, by direct voucher, to WE&RF, in an amount not to exceed \$138,000.00. Funds are available in Account 101-15000-612280.

Requested, Thomas C. Granato, Director of Monitoring and Research, TCG:EWP:MPC:KB:HZ:AC:mb

Recommended, Eileen McElligott, Administrative Services Manager

Respectfully Submitted, Kari K. Steele, Chairman Committee on Monitoring and Research

Disposition of this agenda item will be documented in the official Regular Board Meeting Minutes of the Board of Commissioners for February 2, 2017