Puerto Rico Water Resources and Environmental Research Institute

U.S. Geological Survey Department of the Interior

STATE WATER RESOURCES RESEARCH INSTITUTE PROGRAM

FISCAL YEAR 2014 REQUEST FOR APPLICATIONS

under Section 104 of the

Water Resources Research Act of 1984, as Amended

ANNOUNCEMENT 11HQPA0002

Revised November 4, 2013

CLOSING DATE
December 15, 2013

11:59 P.M. Eastern Standard Time

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Expiration Date 10/31/2016

PUERTO RICO WATER RESOURCES AND ENVIRONMENTAL RESEARCH INSTITUTE
(PRWRERI)

STATE WATER RESOURCES RESEARCH INSTITUTE PROGRAM
REQUEST FOR APPLICATIONS
FY 2014

ELECTRONIC FILING OF APPLICATIONS REQUIRED

Applications under this Announcement must be submitted through the Internet site at https://niwr.net/. Institute Directors or their designee(s) are responsible for submitting their applications electronically. Preparation of each application must follow the instructions contained herein and on the Internet site.

I. INTRODUCTION

This Program Announcement is issued under the provisions of section 104 of the Water Resources Research Act of 1984 (Public Law 98-242), as amended by Public Laws 101-397, 104-147, 106-374, and 109-471. Section 104 of the Water Resources Research Act directs the Secretary of the Interior to administer program grants to Institutes and Centers established under the provisions of section 104(a) of the Act. Water Resources Institutes or Centers have been established in each of the 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. The Institute in Guam also serves the Federated States of Micronesia and the Commonwealth of the Northern Mariana Islands. The Institute in Hawaii also serves American Samoa. Responsibility for administration of the State Water Resources Research Institute program has been delegated to the U.S. Geological Survey (USGS).

The PRWRERI contacts for this solicitation are:

Director
Dr. Jorge Rivera-Santos
PR Water Resources and Environmental Research Institute,
University of Puerto Rico at Mayaguez
P.O.Box 9000
Mayaguez, PR 00681
Phone: 787-833-0300
email: Jorge.rivera40@upr.edu

Administrative Assistant
Jesenia Carrero-Lorenzo
PR Water Resources and Environmental Research Institute,
University of Puerto Rico at Mayaguez
P.O.Box 9000
Mayaguez, PR 00681
Phone: 787-832-4040 ext. 3781
email: jesenia.carrerolorenzo@upr.edu
prwreri@uprm.edu

II. PROGRAM OBJECTIVES

Section 104(b) of the Water Resources Research Act of 1984 requires the Institutes or Centers to:

(1) "plan, conduct, or otherwise arrange for competent applied and peer reviewed research that fosters –
   a. improvements in water supply reliability;
   b. the exploration of new ideas that –
      i. address water problems; or
      ii. expand understanding of water and water-related phenomena;
   c. the entry of new research scientists, engineers, and technicians into water resources fields; and
   d. the dissemination of research results to water managers and the public.

(2) "cooperate closely with other colleges and universities in the State that have demonstrated capabilities for research, information dissemination, and graduate training in order to develop a statewide program designed to resolve State and regional water and related land problems." The Act also requires each institute to:

(3) "cooperate closely with other institutes and other organizations in the region to increase the effectiveness of the institutes and for the purpose of promoting regional coordination."

Applications submitted under this Announcement are to be in furtherance of these objectives. Specific areas of emphasis are at the discretion of the individual Institute or Center Directors.as follows.

III. PRWRERI's RESEARCH PRIORITIES

Research and technology transfer will be concentrated on the following areas, in order of priority:

1. **Watershed and Water Sources Management:** Includes conservation strategies, source protection, optimization of water sources, deforestation and reforestation, and riverine zones among others.
2. **Drinking Water Quality Research:** Fluoride as a health agent, control of Trihalomethanes and other disinfections byproducts, TMDL procedures and development, epidemiological studies of water borne illness, effectiveness of water treatment processes.
3. **Climatologic Effects on Water Resources:** Global changes and their effects on water resources, local and regional effects (the Antilles), modeling.
4. **Design of water treatment processes for private systems in small communities:** Design and construction of simple, economic, and easy to operate systems, disposition of treated water and its effects on effluents.
5. **Aquatic Ecosystems:** Flow conditions (quantity, quality, etc.) for aquatic ecosystems support, use of aquatic communities as river quality indicators, ecosystem values and health, and others.

6. **Water Distribution Systems:** Water losses in hydraulic networks, hydraulic modeling of water quality and quantity in distribution systems, pressure distribution, and water demand determination.
7. **Erosion and Sediment Transport:** Causes, characterization, control, and management of sedimentation in dams and water reservoirs. Innovative design of water intakes with sedimentation problems, control of sediment transport in construction projects, river banks and channel erosion, and local scour in bridges
8. **Development of Education Programs:** Water conservation, water resources and environment protection.
9. **Surface Water Studies:** Morphological studies on gravel and sand extraction and canalizations, Characterization of urban runoff, river restoration.
10. **Groundwater Research:** Availability of water, development of strategies for the north coast unconfined and artesian aquifers, optimization of water withdrawal from aquifers, quantitative management plan for aquifers, salt water intrusion, safe yield, pollutant transport and flow modeling, development of new methodologies for groundwater treatment with high contents of iron and manganese.
11. **Definition, Effects and Prediction of Droughts:** Optimization of water reservoirs and dams operation during extreme dry periods, modeling of droughts, public perception, economic effects, prevention and preparedness.
12. **Programs and Strategies for Reforestation and Their Effects on Low Flows:** Changes in land management and their effects on low flows.
13. **Research on Natural Disasters:** Effects of earthquakes on natural resources, the water treatment and water distribution infrastructure, landslides, and floods.
14. **Estuaries and Associated Wetlands:** Modeling of estuaries and associated wetlands, strip and mixing zones, hydrology and hydraulics, water quality.
15. **Recycling and Reuse of Used Water:** The use of wastewater for irrigation and artificial recharge, recycling of used water for human consumption, characterization of wash flows from water treatment plant filters, and vulnerability of water bodies to assimilate used waters.
16. **Use of sinkholes in the north coast as drainage systems:** Disposal of street and highway runoff and water from other anthropogenic sources, hydraulics, intake capacity, protection structures.
17. **Water Infrastructure for Tropical Areas:** Design criteria for storm water and wastewater drainage systems, energy losses, manhole hydraulics.
18. **Water supply from small wells in alluvial valleys:** Implications of the new regulations for disinfections on well in Puerto Rico, impact of withdrawals on nearby water bodies, head water protection, operation and management by communities.

IV. ELIGIBLE APPLICANTS

Applications will be accepted only from Institutes or Centers established pursuant to the provisions of Section 104 of the Water Resources Research Act of 1984, as amended. The applicant may consider project proposals only from faculty members or affiliates at institutions of higher education in its State.

V. APPLICATIONS NOT ELIGIBLE FOR FUNDING

A. Applications for research on health effects involving human subjects.
B. Applications for research involving oceanography (estuarine research applications are acceptable).
C. Applications submitted by an Institute or Center that has not met reporting requirements on a previous award by the USGS.

VI. FEDERAL FUNDS

As of the date of this Announcement, federal funds have not yet been appropriated for this program. The Government's obligation under this program is contingent upon the availability of appropriated funds.

A. The amount available in FY 2014 for this RFP is anticipated to be approximately $20,000 by project per year.

B. Proposals should be for research and information transfer projects 12 to 36 months in duration and shall not request Federal funding exceeding $60,000 ($20,000 per year).

C. Multiyear projects will be funded a year at a time. Funding in subsequent years will be contingent upon availability of funds and satisfactory performance. No guaranty is made upon funds availability and continuation of a project.

D. Projects begun with prior year funds may be continued provided that each year is based on a revised proposal that incorporates a report of progress to the date of revision. A concise statement including data and analysis of research progress in the previously funded period, which demonstrate acceptable progress on the research project (not to exceed 10 pages single-spaced), should be submitted within 30 days preceding the close of each 12 month budget period.

VII. MATCHING FUNDS

A. Each project must match each Federal dollar provided with not less than two dollars from non-federal sources.

B. The non-federal share must be $2.00 for every $1.00 federal. If the applicant requests academic release time (faculty members only), the proposal must be accompanied by an agreement letter from the department head or authorized official. An agreement letter from an authorized university official must accompany any other in-kind share. The 1:2 Federal-non-Federal fund-matching ratio must be met on each grant award period.

E. Funds available to the applicant from other sources (both private and State appropriations) may be used as matching funds as long as the proposal is accompanied by an official letter from the granter confirming the shared amount. In the event that State appropriations are not adequate to cover the non-Federal share, other contributions must be generated.

F. Matching funds may contain indirect costs and non-federal salaries and benefits. The applicant’s negotiated indirect cost rate (NICR) may be applied to both qualifying federal and non-federal direct costs, and the result used to satisfy part of the matching requirement under the non-federal share. The NICR shall not be applied to tuition and equipment costs.

Federal funds shall not be used to pay indirect costs.

G. Matching funds shall be obligated during the period of performance.

H. Charges Allowable to Federal Funds.

a) Costs will be allowable in accordance with OMB Circular A-21, revised, "Cost Principles for Educational Institutions," on file in your university's contract office.

b) The portion of benefits paid to individuals cannot exceed the proportion of their salaries paid from the grant.

c) Regulations pertaining to allowable matching funds are provided in the Code of Federal Regulations at 43CFR12.64 and in the OMB Circular A-21 for Educational Institutions.

VIII. PROJECT DURATION

Projects may be from one to three years duration. Those with duration greater than one year will be approved for continuation of funding contingent upon: (1) the continued availability of funds to the Institute and (2) a revised proposal that demonstrates satisfactory progress for the previous year toward meeting the project's stated objectives. It is very important, therefore, that each year of multiyear projects stands by itself.

All projects will have a start date of March 1, 2014. Projects may be designed to run beyond February 2015 (multiyear projects), provided that they contain a reportable element with conclusive findings to be included in the FY 2014 program report. Funding in subsequent years will be contingent upon availability of funds and satisfactory performance.

The period of performance for the projects will be March 1, 2014, through February 28, 2015. PIs will submit draft copies of completion reports to PRWRERI no later than April 30, 2015 for peer review.

IX. APPLICATION DUE DATE

Research Proposals to be considered for inclusion in the annual application package must be filed by researchers at **https://niwr.net/** prior to **11:59 PM Eastern Standard Time, December 15, 2013**.

X. APPLICATION CONTENTS

Each application shall consist of the following items:

A. Signed Matching Funds Commitment Letter.
B. Project Proposal, including a Budget Breakdown (Attachment C) and Budget Justification (Attachment D).

Attachment C (Budget Breakdown) and Attachment D (Budget Justification) should be considered worksheets. During the proposal submission process, data for Attachments C and D will be entered into a form on the website. Upon completion of the submission process, the actual Attachments will be generated from these form entries and bundled with your application package.

XI. APPLICATION INSTRUCTIONS

Each application must be submitted through the website at **https://niwr.net/** and shall be prepared and submitted in accordance with the specific instructions provided at that site. Submission will require two distinctly different actions: (1) submission of specified information as text directly into a Web form and (2) "depositing" at the website document files containing detailed descriptions of the work being proposed. These files may be prepared using the word processing software of choice, but must be translated to PDF format prior to being deposited **(detailed instructions for preparing and submitting these files, and verifying their submission are provided at the website)**.

Applications must contain the following sections and adhere to the following guidelines:

A. Application for Federal Assistance, SF 424. (Only applicants from other institutions, not UPRM). The SF 424 shall be signed by an authorized representative of the applicant.

B. Assurances Form (Only applicants from other institutions, not UPRM). The Assurances shall be signed by an authorized representative of the applicant.

C. Matching Funds Commitment Letter. The applicant shall provide an institutional cost sharing agreement (letter) signed by an official authorized to commit the applicant to all or part of the matching share or a third party, in-kind contribution signed by an official authorized to commit the third party.

D. Project Proposals. (Includes research, education, information transfer, and information management system proposals. "Graduate Fellowship" and "Seed Grant" projects must each be entered as **separate** research proposals if they support research.)

Each proposal shall consist of the following 20 elements. Items numbered 1 through 12 are to be entered in the Web form provided at the website.

1. Title. Concise but descriptive.
2. Project Type. Choose from the following: Research, Information Transfer, Information Management System, Education, or Other (please specify).
3. Focus Categories. Choose a maximum of three focus categories from the list provided (Attachment F), with the most preferred focus category first.
4. Research Category. Choose from the following the one category that most closely applies: Social Sciences, Ground-water Flow and Transport, Water Quality, Biological Sciences, Engineering, or Climate and Hydrologic Processes.
5. Keywords. Enter keywords of your choice descriptive of the work.
6. Start Date. Enter the actual beginning date for the project (March 1, 2014).
7. End Date. Enter the estimated end date for the project (February 28, 2015).
8. Principal investigator(s). Provide name, academic rank, university, email address and phone number of the principal investigators.
9. Congressional District of the university where the work is to be conducted (N/A).
10. Abstract. Provide a brief (one-page) description of the problem, methods, and objectives in the space provided at the Internet site.
11. Budget Breakdown, as requested by the Web form (See Attachment C).
12. Budget Justification, as requested by the Web form (See Attachment D).

Items 13 through 20 are to be "deposited" as a file document in PDF format at the website. Note: This document shall not exceed 10 single-spaced pages - 12 point font, exclusive of resumes (item 20). You are responsible for verifying that your proposal meet the guidelines, including compliance with the 10-page limit. If editing is required, you must edit the problem document(s) using your word processor and resubmit that application component.

13. Title. Please use the same title as was entered in the Web form under item 1, above.
14. Statement of regional or State water problem. Include an explanation of the need for the project, who wants it, and why.
15. Statement of results or benefits. Specify the type of information that is to be gained and how it will be used.
16. Nature, scope, and objectives of the project, including a timeline of activities.
17. Methods, procedures, and facilities. Provide enough information to permit evaluation of the technical adequacy of the approach to satisfy the objectives.
18. Related research (Research projects only). Show by literature and communication citations the similarities and dissimilarities of the proposed project to completed or on-going work on the same topic.
19. Training potential. Estimate the number of graduate and undergraduate students, by degree level, who are expected to receive training in the project.
20. Investigator's qualifications. Include resume(s) of the principal investigator(s). No resume shall exceed two pages or list more than 15 pertinent publications.

XII. REPORTING REQUIREMENTS

TECHNICAL REPORTING REQUIREMENTS

A. The recipient shall prepare an Annual Report summarizing its activities during the reporting. **The reporting period for the annual report is March 1, 2014 through February 28, 2015.**

B. The Annual Report is to be filed electronically (MS-Word editable file) by email to prwreri@uprm.edu by April 30 of each year.

C. **The Annual Report** for each project shall consist of the following components and shall be in the format specified in the Annual Report guidelines provided at https://niwr.net/.

(1) **RESEARCH**: A synopsis of the research project ongoing and/or completed during the reporting period.
(2) **PUBLICATIONS**: A list of all reports published during the reporting period as a result of projects.
(3) **STUDENT SUPPORT**: A summary of the number of students supported with section 104 and required matching funds.
(4) **NOTABLE ACHIEVEMENTS AND AWARDS**: Provide a brief description of any especially notable achievements and awards resulting from work supported with section 104 and required matching funds during the reporting period.

BUDGET BREAKDOWN*

Project Number: (Number will be provided by the application system)
Project Title:

Cost Category	Federal	Non-Federal	Total
1. Salaries and Wages - Principal Investigator(s) - Graduate Student(s) - Undergraduate Student(s) - Others Total Salaries and Wages	$	$	$
2. Fringe Benefits - Principal Investigator(s) - Graduate Student(s) - Undergraduate Student(s) - Others Total Fringe Benefits			
3. Tuition - Graduate Student(s) - Undergraduate Student(s) Total Tuition			
4. Supplies			
5. Equipment			
6. Services or Consultants			
7. Travel			
8. Other direct costs			
9. Total direct costs			
10a. Indirect costs on federal share	XXXXXXXX XXXXXXXX		
10b. Indirect costs on non-federal share	XXXXXXXX XXXXXXXX		
11. Total estimated costs	$	$	$
Total Costs at Campus of the University on which the Institute or Center is located.	$	$	$
Total Costs at other University Campus Name of University:	$	$	$

* This form is provided as a worksheet only

Budget Justification

Attachment D

BUDGET JUSTIFICATION*

Project Number: (Number will be provided by the application system)
Project Title

Salaries and Wages for PIs. Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual.
Salaries and Wages for Graduate Students. Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual. (Other forms of compensation paid as or in lieu of wages to students performing necessary work are allowable provided that the other payments are reasonable compensation for the work performed and are conditioned explicitly upon the performance of necessary work. Also, note that tuition has its own category below and that health insurance, if provided, is to be included under fringe benefits.)
Salaries and Wages for Undergraduate Students. Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual. (Other forms of compensation paid as or in lieu of wages to students performing necessary work are allowable provided that the other payments are reasonable compensation for the work performed and are conditioned explicitly upon the performance of necessary work. Also, note that tuition has its own category below and that health insurance, if provided, is to be included under fringe benefits.)
Salaries and Wages for Others. Provide personnel, title/position, estimated hours and the rate of compensation proposed for each individual.
Fringe Benefits for PIs. Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. . Note: include health insurance here, if applicable.
Fringe Benefits for Graduate Students. Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. Note: include health insurance here, if applicable.
Fringe Benefits for Undergraduate Students. Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. Note: include health insurance here, if applicable
Fringe Benefits for Others. Provide the overall fringe benefit rate applicable to each category of employee proposed in the project. . Note: include health insurance here, if applicable.
Tuition for Graduate Students.
Tuition for Undergraduate Students
Supplies. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies. Provide a breakdown of the supplies in each category.
Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than $5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items. A detailed breakdown is required.
Services or Consultants. Identify the specific tasks for which these services, consultants, or subcontracts would be used. Provide a detailed breakdown of the services or consultants to include personnel, time, salary, supplies, travel, etc.
Travel. Provide purpose and estimated costs for all travel. A breakdown should be provided to include location, number of personnel, number of days, per diem rate, lodging rate, mileage and mileage rate, airfare (whatever is applicable).
Other Direct Costs. Itemize costs not included elsewhere, including publication costs. Costs for services and consultants should be included and justified under "Services or Consultants (above). Please provide a breakdown for costs listed under this category.
Indirect Costs. Provide negotiated indirect ("Facilities and Administration") cost rate.

* This form is provided as a worksheet only.

Keywords Attachment F

Note : The keywords describe areas of interest as related to water; e.g. "Cooling" refers to water as used in cooling. "Fertilizers" implies the effect of fertilizer on water characteristics, etc.

A
1. Acid Deposition
2. Acid rain
3. Activated Carbon
4. Activated Sludge
5. Adsorption and Exchange
6. Aeration
7. Agriculture
8. Algae
9. Alkaline Scale
10. Anaerobic Treatment
11. Animal Waste
12. Aquaculture
13. Arid Climates
14. Aquatic Plants
15. Aquifer Characteristics
16. Aquifer Parameters
17. Atmospheric Models
18. Atmospheric Processes
B
19. Bacteria
20. Basalt Hydrology
21. Base Flow
22. Bays
23. Beaches
24. Benefit-Cost Analysis
25. Benthos
26. Biodegradation
27. Bioindicators
28. Biological Control
29. Biological Treatment
30. Biomonitoring
31. Biotechnology
32. Birds
33. Boating
34. Brackish Water
35. Brines
C
36. Cartography
37. Channels
38. Chemigation
39. Chlorination
40. Climate
41. Cloud Seeding
42. Coastal Engineering
43. Coastal Zone
44. Computers
45. Conflict Managements
46. Conjunctive Use
47. Conservation
48. Contaminant Transport
49. Conveyance Systems
50. Cooling
51. Crop Water Use
52. Crustaceans
D
53. Dairy Waste Management
54. Dams
55. Data Analysis
56. Data Storage and Retrieval
57. Decision Model
58. Demand Management
59. Denitrification
60. Desalination
61. Developing Countries
62. Disinfections
63. Distillation
64. Distribution System
65. Drainage
66. Drilling
67. Drought
68. Dynamic Programming
E
69. Earth Dams
70. Economics
71. Ecosystems
72. Education
73. Energy Budget
74. Energy Use and Conservation
75. Environmental Sanitation
76. Epidemiology
77. Estuaries
78. Estuarine Modeling
79. Eutrophication
80. Evaporation
81. Evapotranspiration

Keywords

F
82. Fertilizers
83. Fish Ecology
84. Fisheries
85. Flood Control
86. Flood Plain Management
87. Fluid Flow
89. Fluid Mechanics
G
90. Geochemistry
91. Geographic Information Sys.
92. Geomorphology
93. Geophysics
94. Geothermal Power
95. Glaciers
96. Great Lakes
97. Groundwater Hydrology
98. Groundwater Management
99. Groundwater Modeling
100. Groundwater Movement
101. Groundwater Quality
102. Groundwater Recharge
H
103. Hazardous Waste
104. Health Effects
105. Heal Budget
106. Heavy Metals
107. Herbicides
108. History
109. Hydraulic Structures
110. Hydraulics
111. Hydrobiology
112. Hydrogeology
113. Hydrologic Models
114. Hydropower
115. Hypothermia
I
116. Ice
117. Impoundments
118. Indian Water Issues
119. Industrial Wastewater
120. Infiltration
121. Information Dissemination
122. Insecticides
123. Insects
124. Institutional Relationships
125. In-stream Flow
126. Inter-basin Transfers
127. Invertebrates
128. Ion Exchange
129. Irrigation
130. Irrigation Management
131. Irrigation Scheduling
132. Irrigation System
133. Isotopes
K
134. Karst Hydrology
L
135. Lagoons
136. Lakes
137. Land Use
138. Landscape Management
139. Land-Water Interactions
140. Law
141. Leaching
M
142. Marketing
143. Marinas
144. Marine Resources
145. Marshes
146. Mathematical Models
147. Membranes
148. Microclimatology
149. Mineralogy
150. Mining
151. Model Studies
152. Moisture Uptake
153. Mountain Lakes/Streams
154. Multiple-Objectives Planning
N
155. Navigation
156. Nitrogen
157. Numerical Analysis
158. Nutrients
O
159. Oil-Water Interfaces
160. Open Channels
161. Operation Research
162. Optimization
163. Organic Compounds
164. Osmosis
165. Oxidation
166. Ozonation

Keywords

P

167. Perched Water Table
168. Percolation
169. Pest Management
170. Pesticides
171. Phosphorus
172. Photosynthesis
173. Phreatophytes
174. Physical Chemistry
175. Planning
176. Plant Growth
177. Plant Pathology
178. Plant Stress
179. Plant-Water Relationships
180. Policy Analysis
181. Pollutants
182. Pollution Control
183. Ponds
184. Port Facilities
185. Power Plants
186. Public Health
187. Pumps

R

188. Rainfall
189. Rainfall-Runoff Models
190. Rainfall-Runoff Processes
191. Range Management
192. Recreation
193. Reefs
194. Regulatory Permits
195. Remote Sensing
196. Reservoir Management
197. Reservoir Modeling
198. Resource Development
199. Resource Planning
200. Reverse Osmosis
201. Riparian Vegetation
202. Risk Analysis
203. Risk Management
204. River Basin Development
205. River Beds
206. Rivers
207. Runoff

S

208. Saline Soils
209.Saline-Freshwater Interfaces
210. Salinity
211. Sanitary Landfills
212. Saturated Flow
213. Seawater
214. Sedimentation
215. Seismology
216. Septic Tanks
217. Sewer Systems
218. Shellfish
219. Shipping
220. Shore Birds
221. Shore Protection
222. Sludge
223. Snow
224. Socioeconomic Issues
225. Soil Chemistry
226. Soil Erosion
227. Soil Microbiology
228. Soil Physics
229. Soil-Water Relationships
230. Solar Energy
231. Solute Transport
232. Springs
233. Statistics
234. Stochastic Hydrology
235. Stochastic Processes
236. Storm Water Management
237. Streams
238. Subsidence
239. Subsurface Drainage
240. Surface Drainage
241. Surface-Groundwater Relationships
242. Suspended Sediments
243. Synthetic Hydrology
244. Synthetic Organics
245. Systems Analysis
246. Systems Engineering

T

247. Thermodynamics
248. Tideland
249. Time-Series Analysis
250. Tourism
251. Toxic Substances
252. Trace Elements
253. Trace Organics
254. Tropics

U

Keywords

255. Underground Storage Tanks
256. Unsaturadted Flow
257. Urban Drainage
258. Urban Hydrology
259. Urban Planning
260. Urban Water Systems
V
261. Viruses
W
262. Waste Disposal
263.Wastewater
264. Wastewater Irrigation
265. Wastewater Treatment
266. Water Chemistry
267. Water Demand
268. Water Harvesting
269. Water Law
270. Water Levels
271. Water Quality
272. Water Quality Control
273. Water Quality Management
274. Water Quality Modeling
275. Water Quality Monitoring
276. Water Quality Standards
277. Water Resources Development
278. Water Reuse
279. Water Rights
280. Water Softening
281. Water Treatment
282. Water Treatment Facilities
283. Water Use Data
284. Water Use Efficiency
285. Water Use Monitoring
286. Watershed Management
287. Waves
288. Weather Data Collection
289. Weather Forecasting
290. Weather Modification
291. Weeds
292. Well Hydraulics
293. Wetlands
294. Wildlife Management
Z
295. Zooplankton
296. Zoning