BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

In the Matter of

United Water New York, Inc.

Case 13-W-0295

November 2013

Prepared Exhibits of:

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Public Utilities Auditor II

State of New York
Department of Public Service
90 Church Street
New York, NY 10007

Case 13-W-0295

Exhibit___ (BLB-1)

United Water New York
Outside Services Employed
For the 12 months Ending May 31, 2015

Description

	Company as Filed	Staff Adjustments	As Adjusted By Staff
Outside Services Employed:			
Accounting & Auditing	$140,682	($30,061)	$110,622
Legal	67,905	(1,150)	66,755
Information Systems	175,257	(2,967)	172,290
Research & Innovation	291,994	(153,475)	138,519
Outside service - Other	331,265	(14,170)	317,095
Total	$1,007,104	($201,823)	$805,280

PUBLIC SERVICE COMMISSION CASE 13-W-0295

STAFF OF THE DEPARTMENT OF PUBLIC SERVICE

INTERROGATORY/DOCUMENT REQUEST

United Water New York

Request No.: STAFF-27 BLB-3

Requested By: Basil Bailey

Date of Request: July 24, 2013

Response Due: August 4, 2013

Witness: Michael Pointing

Subject: Outside Services Employed

Starting on page 22 of your testimony you discuss Research & Innovation Alliance (R+I) and research projects conducted at a total cost of approximately $3.75 million.

1. Please provide a list of all projects included in the $3.75 million. Additionally, for each project, provide all supporting documentation including a cost benefit analysis, the total costs incurred, an explanation for the project and why the cost was necessary.

2. Page 29 of your testimony discusses membranes installed in two wells at a cost of $2.4 million instead of installing membranes using a more conventional approach which would have cost $4.8 million. Please provide all relevant documentation to support the estimate of $4.8 million.

3. Provide support for the approximately $2.7 million contribution to R+I by United Water. Also, provide the allocated amount to each of the United Water companies as well as the method used for determining the allocation methodology.

4. Provide latest annual financial and non-financial data to United Water by R+I.

5. Provide a listing of current projects and their budgeted costs that are being reviewed by the Program advisory committee.

6. Provide listing of projects already approved by the steering committee but not yet started. Include a description of each

project and why it is necessary.

7. Does R+I provide services to non-members, and if so how much revenue was received from non members for the 12 months ended March 31 for 2010, 2012, and 2013, respectively.

8. Provide the affiliate agreement between United Water and United Water New York related to the charges for this alliance as required under PSL 110.

Response:

1. The R+i Alliance was created in 2005. Since then, the Alliance has funded about 200 research projects relating to asset management, energy management, water treatment, wastewater treatment, water quality, water resources, and customer management and metering. Each year, the Alliance publishes a catalogue summarizing the completed projects and the value of each project. Please see "STAFF-27 BLB-3 Confidential Attachment 1" for a copy of the July 2013 Projects Catalogue.

2. One treatment method for removing entrained air from well water is the use of a stilling basin. In this method, water from the well is pumped from the well to a concrete stilling basin where the air is removed as the water is at atmospheric pressure. The water is then disinfected and treated for corrosion control and pumped from the stilling basin into the distribution system. The major elements of this treatment method include re-staging the well pump(s) to pump at a lower head, construction of the concrete stilling basin (underground), re-routing of the disinfectant and corrosion control feed lines and application points, and installation of new high lift pumps. It also involves expansion of the well house or construction of a separate building to house the basin and new pumps. Based on our experience using this method at other wells, we estimated the cost to apply this method at the Willow Tree Well to be about $1.5 million compared to a cost of $0.8 million to install the membranes. At the New Hempstead Wells, we estimated the cost for a stilling basin facility to be $3.3 million compared to $1.6 million for a membrane treatment facility.

3. The contribution of the member companies is set by the governing board of R+i Alliance and totaled €2 Million for

2012. Each member company pays an equal share to the Alliance each year. The allocation (in $s) to each United Water Business unit for 2012 was based on a forecasted exchange rate in 2011 for the 2012 budget and was estimated to be $2.9 Million. STAFF-27 BLB-3 Attachment 2 provides the quarterly invoices paid by United Water in the amount of €500,000 and STAFF-27 BLB-3 Attachment 3 provides the quarterly allocation of the $2.9M to each United Water Business Unit. The factors used to allocate the R&I Alliance costs to the various business units are; 40% Net Utility Plant, 40% Volume of Water Delivered and 20% Fuel/Power/Chemical costs.

4. Response: The financial data are presented to the R+i Alliance Board of Directors, which includes one member from United Water. It is not directly provided to United Water. Any non-financial data are included in the Projects Catalogue mentioned above.

5. During the PAC meetings held earlier this year, the following research ideas were reviewed by the various PACs. Each is listed below along with their estimated budget:

- Nitrogen dioxide controls for wastewater treatment plants to control energy and greenhouse gas emissions 200-600 K€
- Optimization of coagulant dosage for reuse plants – is real time control possible? 200 K€
- Insitu Production of a Biological Sludge Conditioning Flocculant. < 200 K€
- Assessment of the efficiency of green polymers at full scale. 200-300 K€
- Multidetection of Emerging Gastro Intestinal Pathogens in DW 265 K€
- How to select the most appropriate and cost-effective carbon for the removal of organic contaminants 100 K€
- Development of performance metrics for watershed management programs 200-400 K€
- Assessment of treatment possibilities for nitrosamines removal in DW 120 K€
- Assessment of treatment technologies for removal of Hexavalent Chromium from water 80 K€
- Assessing the benefits of water safety plans (cost not provided)

- Fire Hydrant follow-up through VHG 280-400 K€

- Cost-effective techniques and technologies for large sewer cleaning activities 270 K€
- Design methodologies for sediment interception structures in rural catchments headwaters of a sewerage system < 200 K€

Quantitative and qualitative modelling of sediments life cycle in urban drainage networks 200-600 K€

6. Of these, eight projects were chosen by the Steering Committee for proposal development. A brief description including the objective of each is provided below:

    - Cost-effective techniques and technologies for large sewer cleaning activities. 280K€

    The construction of new wastewater interceptors during the last 20 years has significantly increased the length of large sewers. That trend is confirmed in many countries where Suez Environment subsidiaries have operations (United States: Indianapolis, Spain: Barcelona, Saudi Arabia: Jeddah, Morocco: Casablanca, Algeria: Algiers, France: Paris (and its suburb), Bordeaux, Marseille, etc.). Additionally, in some areas, former streams have also been converted into large combined sewers, prone to naturally accumulate solids. This project will provide Business Units with guidance on how to best clean these interceptors.

    - Quantitative and qualitative modeling of sediment life cycle in urban drainage networks 370 K€

    Sediment inputs into the sewerage network cause several operational risks. It can cause blockage or limited conveyance capacity, causing flooding (health risk and economic damage), hydrogen sulphide formation, corrosion of conduits and odor problems. Moreover, the presence of sediment in sewers can also lead to impacts on the water quality of the receiving bodies due to CSO (with sediment and attached pollutants). Some research studies have demonstrated that up to 50% of pollution spilled in wet weather can come from sediments. Finally, sediment transport can also increase sewer and pumps degradation, and treatment costs in Waste Water Treatment Plants

For all these reasons it is clear the importance to acquire specific technical skill to perform sewer cleaning in the best methods and to provide innovative solutions reducing costs of network maintenance and improving performances of the drainage system. One of the most important technical skills required to achieve these goals is the modeling and forecasting to simulate and predict sediment transport and loads in networks. The modeling of sediment transport is still at an early stage and future improvements are expected due to enhancement of field data acquisition and refinement of the modeling approaches. This project will focus on improving forecasting methods.

- Greenpolymers as alternative sludge conditioning flocculants 370 K€

In the field of sewage sludge, the main stake is to ensure the sustainability of the land spreading of sludge because this route is at the moment cheaper than thermal disposal. Considering the current costs of agricultural sludge disposal (20 - 40 €/T raw sludge) and thermal treatment (70 - 100 €/T raw sludge) the total increase of cost for the group if sludge was totally banned for land spreading might be 40 – 50 M€ / year.

The use of green polymers for sludge thickening and dewatering will also contribute to increase the ecofriendly image of the group. It will also help the promotion of new processes associated with the new chemicals.

- Optimization of coagulant dosage for challenging water treatment – Is real time control possible? 260 K€

Coagulation and flocculation are essential processes in the treatment of raw water from various sources such as secondary effluent for reuse, storm water, combined sewer overflow, sanitary sewer overflows, river water and other types of water that may be described as “challenging waters”. Changes in influent water quality require adjustments to the amounts of added coagulants. Most operators rely on jar testing to determine the necessary coagulant dose for specific influent conditions. Jar tests are time consuming and cannot be performed continuously to coincide with rapidly changing water quality. As a result most operators resort to overdosing. The additional chemical dose acts as a buffer in anticipation of

degradation in water quality. The excess coagulant is expensive in terms of the costs of coagulant and additional sludge disposal. An automated coagulant dosing system that adapts to rapidly changing influent water quality would result in significant cost savings for a number of BUs that treat drinking water, wastewater, and water for reuse.

- Fire Hydrant Follow-up through VHF 350 K€

Water spillage and / or theft on fire hydrants contribute to NRW (up to 300m3 for a single hydrant, in total 0.2-0.4% of the total volume), and generate related costs, whether direct or indirect (e.g. cost of penalties that are to be paid on some contracts when NRW targets are not reached ; in France we
are subject to penalties up to 1€/m3 of losses over the target).
In order to reduce both costs and risks of misuse, there is a need to develop / integrate sensors and VHF transmitters that allow a follow-up of the use of standard fire hydrants already installed as well as new fire hydrants.
This will also reduce maintenance costs and increase reliability of fire hydrants, since less unauthorized people will operate them. United Water for example is owner of fire hydrants connected to the network, and responsible if they fail. These sensors would contribute to reduce their risk, by allowing better control of users, and prevention of misuses.
The company Bayard has already developed sensors for washing connexions, but these sensors don’t work on fire hydrants and they are on the way to develop new sensors.

- Advanced Pilot Testing of Treatment Processes for Removal of EDCs and PPCPs 554 K€

The presence of pharmaceuticals and personal care products (PPCPs) in the aquatic environment has become a recent worldwide issue. Various studies reveal observations of many classes of PPCPs with concentrations ranging from nanograms per liter (ng/L) to micrograms per liter (µg/L). PPCPs have been found throughout the water cycle, in wastewater treatment plant (WWTP) influents and effluents, surface water, and even in drinking water systems. Furthermore, once released, these products pose a potential threat to aquatic organisms and water

resources. As these unregulated contaminants make their way into source water for drinking water systems, tracking their removal, transformation, and degradation becomes increasingly important, as they are an important component of emerging regulations in the US and elsewhere.

The presence of PPCPs in water supplies has prompted federal and state regulatory agencies in the US and elsewhere to consider potential maximum contaminant levels that should be maintained in drinking water. This has been fueled by public concern over the detection of PPCPs in tap water. Considering the potential for future regulations and public concern, water utilities require information on treatability of PPCPs to be prepared for future regulations and to address public concerns.

This research project will provide the information that is needed for utilities to optimize existing water treatment plants for removing PPCPs in advance of potential regulations that could require more advanced treatment processes to achieve low concentrations in the finished water. Such information will help to reduce potential health risks associated with these compounds. Also, by developing this information, we would demonstrate our leadership in this area and enhance our reputation for striving to provide safe, high quality drinking water.

- Use of CDs, DVDs supports for effective residues multi detection in surface water and wastewater matrices 300 K€

The main driver to launch this project is developing low-cost effective multi-analysis methods for priority
pollutants which are convenient and reliable to use. This application is not devised to replace laboratory analyses, but to complement them and to improve water quality control and surveillance. It will therefore be used as a screening tool to take fast decisions in-situ, and if necessary to activate the analytical and operational protocols.

- Selection of the most appropriate and cost-effective carbon for the removal of organic contaminants 250 K€

When facing the task of selecting a suitable activated carbon for the removal of trace organic compounds, water treatment professionals are faced with the problem of having to choose from a wide array of activated carbons that are marketed by numerous manufactures.

These activated carbons could have some large differences in their structures : powdered and granular activated carbons are typically manufactured from relatively heterogeneous base materials such as bituminous coal, lignite, coconut shells, or wood while more recently developed activated carbon fibers (ACFs) are prepared from homogeneous polymeric base materials such as polyacrylonitrile, cellulose or phenolic resin.

Following carbonization of the base material, further development of the internal pore structure is typically achieved by thermal oxidation using steam CO2 or chemical oxidation using phosphoric acid. Both the base material and activation conditions affect the pore structure and surface chemistry.

Their structure will impact their capacities of adsorption of different families of molecules, and so their life time. The main criteria used to evaluate the activated carbon quality are usually : Iodine number, which is representative of the total surface of the pores; Ash content, which is an indication of the quality of the raw material; Hardness for granular material, which is an indication of its ability for frequent backwashes. Some specific tests can also be done for specific micropollutants (organic matter, pesticides, etc.), such as pilot plant trials or laboratory tests and computer model. These tests are often expensive and site specific. The objective of this project is to provide BU’s with appropriate guidance for choosing granular activated carbon for the particular applications.

The costs provided above are estimates and may include in-kind contributions as well.

7. Response: R+i Alliance only supports research to its member companies. It does provide funding to non-members.

8. The factors used to allocate the R&I Alliance costs between UWM&S and UWNY are; 40% Net Utility Plant, 40% Volume of Water Delivered and 20% Fuel/Power/Chemical costs. These are the same allocation factors the M&S Company uses to allocate time from Operations and Engineering Departments when employees from those departments charge time to an allocation level.