

SUE "VODOKANAL  
OF ST. PETERSBURG"

2015



ANNUAL REPORT

SUSTAINABILITY  
REPORT

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# DIRECTOR GENERAL'S ADDRESS

DEAR ALL,

**As concerns project development and plans for the future, the year 2015 was far from easy for us like for many others. Nevertheless, we could quickly adapt ourselves to the new reality and revise our key projects without impairing their quality or extending completion periods.**

**THE PRIORITIZED AREAS OF VODOKANAL ST. PETERSBURG ARE: ENVIRONMENT PROTECTION, CONSERVATION OF THE BALTIC SEA, AND RESPONSIBILITY TOWARDS FUTURE GENERATIONS FOR ITS ACTIONS. THEREFORE, WE CONTINUED TO FOCUS ON SUCH ACTIVITIES.**

Our company performance in 2015 was highly appraised at the federal level. On 6 November, following the Decree of the Russian Government, we were awarded the prize "For achieving good quality of products and services, and for implementation of highly-efficient quality management methods". It is the second quality prize we have received (we got the first one in 2006). The prize is of paramount importance for us because it means that the company performance and the results of all staff's everyday work – not only throughout 2015 but also in the previous years – are highly appreciated.

An essential phase of the untreated wastewater discharge closure programme: construction of sewage collector on Admiralteyskaya embankment from Dvortsovyi Proyezd to the Senatskaya Square, was completed in April. With Admiralteyskiy Collector in place, six direct discharges through which about 1000 m<sup>3</sup>/day of untreated wastewater had been discharged into the Neva in the downtown area, could be closed. Moreover, in 2015, the sewer network in the Repina Square was completed with the direct discharges diverted, and the reconstruction of the wastewater treatment plant in Kronstadt was finished. In 2015, reconstruction of Northern and Central WWTPs was going on to implement the enhanced nutrient removal technology; the looped tunnel collector in Aviakonstruktorov st. was put into operation; the construction of sewage collector to divert wastewater from the hydraulic-fill areas in Vasilievskiy Island continued.

Undoubtedly, the construction of Okhta Tunnel Collector will be a significant environmental project. The new collector will enable us to close dozens of direct discharges and divert the waste-

water to Northern WWTP for treatment. Besides, the collector will provide possibilities for the development of areas along the Okhta River banks.

The water supply system was also improving in 2015. It is gratifying to mention that, every year, more and more citizens begin to understand the value of water and use it more sparingly. Today, each inhabitant of St. Petersburg consumes 131 liters of cold water a day (as compared to 140 l/day in 2004).

This leads to reduction of the main components of water balance: water supply service sales and water volumes supplied into the water distribution network, as compared to the year 2014. At the same time, the water quality indicators are maintained at a high level. The drinking water supplied into the distribution network fully meets the regulatory requirements in terms of physical, chemical and microbiological parameters.

More specifically, we implemented ultraviolet disinfection at Sestroretsk water treatment plant and "Gantulovskaya Gora" water treatment facilities; and modernized the UV disinfection systems at Northern, Southern, Main and Volkovskaya WTPs under the Investment Program in 2015.

Furthermore, we have completed preparatory works (design) for the reconstruction of Main WTP. This project is of paramount importance for the city: a new 500,000 m<sup>3</sup>/day water treatment block will be built at the plant. The reconstruction of Main WTP will ensure stable supply of drinking water to the inhabitants of the city's central districts and improve energy efficiency of the plant.

Among the most significant projects, the automated water supply management system is worth mentioning. We are Russia's first company to create such an innovative system. The pilot pro-

ject implemented in Southern Water Supply Zone has already proved effective: energy consumption reduced by 21%, the number of water network breakdowns – by 44%, and water distribution losses – by 22%. We plan to extend the water supply management system coverage to all St. Petersburg in the next years.

In parallel, the Southern Zone is making a step-by-step transition to the billing for water consumption on the basis of remotely-transferred meter readings. Moreover, Vodokanal has designed and launched a Consumer Personal Account service on its official website where one can quickly find reliable information on cold water consumption and effected payments, send meter readings, and do many other things. Another remarkable event was the opening of a new customer service center in 19, Komsomola st.

Our company has done a good job in the sphere of import substitution. In 2015, we reduced reliance on foreign suppliers and could decrease the percentage of imported equipment, spare parts and materials in our total procurement volume from 30% (as of the end of 2014) to 1.8%. The economic benefit amounted to 258 million roubles.

One of the key projects 2015 was the Water Cluster. The Water Cluster concept was approved by the meeting of the St. Petersburg Governor's Investment Council in April. The Cluster consists of three segments: technological (in fact, it is a competence center preparing the Cluster's projects for industrial and commercial use, an engineering center and consulting center), industrial (manufacturers – the Cluster participants), and educational (the Water Academy) segments.

The Water Academy inaugurated at Vodokanal premises in September 2015 is destined to become the key element of the Cluster specializing in the training and development of

water specialists giving them practical knowledge and skills, and providing high-caliber professionals for the water sector.

In November 2015, the Water Cluster's Demonstration & Exhibition Center was opened at Northern WWTP. The purpose of the Center is to streamline innovative development of the water sector. The Centre's exhibition area showcases hundreds of specimens of domestic products and equipment.

In 2015, Vodokanal continued its tradition of paying considerable attention to environmental awareness-raising and professional training. Fostering responsible attitude to the Nature is of great importance for us. The specialists of Vodokanal's Youth Environmental Centre have developed new awareness-building programs to teach school children and youth how to take good care of natural resources. One of such tools targeted to active Internet users is the Da-Voda website (da-voda.com) where the visitors can find tips for water saving, get knowledge of water properties and learn other interesting facts about the water world.

One more important environmental project, Helping the Pinnipeds, aimed at the rescue of seal pups gained momentum in 2015. Vodokanal became involved in these activities in 2013 having supported the zoologists Vyacheslav Alexeyev and Elena Andriyevskaya, the authors of a unique marine mammals rehabilitation method. In 2014, the Marine Mammals Research and Conservation Center was opened at Repino treatment plant, and the Baltic Ringed Seal Friends Fund was legally registered. In this period, we joined our efforts to save and release into the wild 47 grey and ringed seals. The Petersburg citizens helped the zoologists too. I think that we who live in St. Petersburg have every reason to feel pride in this important environmental project.

**FELIX V. KARMAZINOV  
SUE "VODOKANAL  
OF ST. PETERSBURG"  
DIRECTOR GENERAL**



2015

# CALENDAR OF EVENTS

## JANUARY

In mid-January, Vodokanal’s permanent snow-melting stations (PSMS) melted the jubilee, one-millionth, cubic meter of snow for the first time in the history of snow-melting stations in Petersburg (since 2012).

The construction of sewer networks in the Senatskaya Square and Admiralteyskaya Embankment went on with the aim to close the existing six direct wastewater discharges in Admiralteyskaya emb.

## FEBRUARY

Vodokanal reduced the PSMS snow disposal tariffs for building management agencies, municipal service companies and other types of housing organizations, thus making the PSMS services more affordable.

## MARCH

On 12 March, Petersburg hosted the forum dedicated to the closure of the international project “Gulf of Finland Year 2014” implemented in Russia, Finland and Estonia. Vodokanal St. Petersburg was an active participant of the Project events. Summarizing the Project outcome, the Minister of Natural Resources and Environment of the Russian Federation S.E. Donskoy, the Governor of St. Petersburg G.S. Poltavchenko, and delegates from Finland and Estonia visited the Marine Mammals Research and Conservation Center in the town of Repino and evaluated its readiness for the new season.

Vodokanal’s website launched a new useful service for pedestrians and car drivers: OPEN HATCH? ALERT!

Vodokanal announced the winners of the annual Crystal Drop competition in the nomination “Best Customer among Providers of Municipal Services”. For the second year in a row, the winners were awarded in the framework of the International Professional Exhibition and Conference “Russian Public Utilities”.

On the last day of March, a new seal rescue season was opened. The Marine Mammals Research and Conservation Center in Repino admitted its first patient, a female grey seal found by the St. Petersburg citizens on the southern coast of the Gulf of Finland near Shepelevskiy Lighthouse.

## APRIL

Vodokanal’s official pages were opened in the popular social networks Facebook and VKontakte.

The first technical exhibition and workshop dedicated to import substitution were held at Vodokanal’s Information & Training Centre. At the exhibition, Russian manufacturers could take a look at the new technologies and equipment used in Vodokanal’s production process and, for their part, demonstrated specimens of their equipment and told about their production capabilities. The exhibition was a tremendous success. Forty-nine Russian companies displayed their products and 41 firms made presentations at the technical workshop.

The multimedia exhibition “Underground World of St. Petersburg” with a renovated city miniature map and new illumination system was opened in the Water Museum after reconstruction. The Red Sails ship, the symbol of Petersburg school leavers, appeared on the River Neva on the miniature map.

Vodokanal together with the Marine Mammals Research and Conservation Center organized an annual event “Towels for Baby Seals”. Just in three days, they filled two big containers and over 60 big (120 litre) packs with terry towels and bathrobes to be used during seal pups rehabilitation. Children, adults and different organizations participated in the collection of things for animals.

The awarding of Crystal Drop competition winners continued in April. Sixteen best customers got awards in different nominations.

The inter-museum citywide interactive project “Order to Survive” contrived and organized by the Water Museum was launched in the framework of the 70th anniversary of the Great Victory. The project was implemented at 11 city’s museum sites to give the participants knowledge about the work of life-supporting enterprises in Leningrad during the war.

The Water Museum opened the exhibition “I am with Vodokanal: I have memories and pride!”. The exhibition showed photos, documents, letters, and personal belongings of the people who fought in the Great Patriotic War or worked on the home front: relatives, friends, and family members of Vodokanal employees, as well as materials from family archives.

The construction of Admiralteyskiy sewage collector was completed. As a result, the discharge of nearly 1,000 m³/day of untreated wastewater into the Neva was stopped.

The construction of sewer networks in the Repina Square began with the aim to close the untreated wastewater discharge into the River Fontanka near Lotsmanskaya str.

## MAY

Official events dedicated to the 70th anniversary of the Great Victory were held in Piskarevskoye Cemetery and at the Memorial to Vodokanal workers who had died during the Siege of Leningrad. Veterans and Vodokanal employees laid wreaths to the Motherland Monument and to the commemorative installation in the Alley of Glory, and held a commemorative meeting at the memorial in 56, Shpalernaya str.

The Universe of Water museum complex participated in the Museums at Night event for the eighth time. The night program “We’ve gone through fire to save water” lasted for 12 hours in a row. It was visited by nearly 8,000 people.

## JUNE

On the Children’s Day, the Water Museum organized a gaming program: “The Engineer’s Secret Archive” quest. Children from orphanage no. 23 supported by Vodokanal and from the city-based summer camp hosted by School no. 515 took part in the program.

Three patients of the Marine Mammals Research and Conservation Center in Repino were the first to be released into the Gulf of Finland at Kurgalskiy Peninsula in the season 2015. Three grey seals, the Centre leavers, had been rehabilitated in record-breaking time due to the Centre’s new facilities.

On the last day of June, the Baltic grey seal cow, Shepeleva by name, went to freedom after successful rehabilitation at the Marine Mammals Research and Conservation Center.

# JULY

By 1 July, the construction of sewer network in the Repina Square has been completed. With the new sewer network in place, the direct discharge into the Fontanka near Lotsmanskaya str. could be closed with the wastewater diverted to Central WWTP for treatment.

A new sewage treatment plant and a new water treatment facility, 350 m³/day each, were put into full-scale operation on the Isle of Valaam. Now the island treats all its wastewaters in an effective and reliable way; any negative impact on Lake Ladoga is eliminated. The symbolical start button was pressed by Kirill, the Patriarch of Moscow and All Russia.

On 21 July, six Ladoga ringed seals were released into Lake Ladoga near the Valaam Archipelago, and a week later, on 29 July, the season’s last “leaving event” took place.

# AUGUST

For the customers’ convenience, Vodokanal’s website, [www.vodokanal.spb.ru](http://www.vodokanal.spb.ru), launched a new service: a centralized water distribution/sewer networks connection cost calculator.

An on-site meeting with participation of Vice-Governors I.N. Albin and O.A. Markov was held at Northern WWTP. The Vice-Governors were shown the process of Northern WWTP reconstruction implemented as one of the main projects under the Neva Untreated Wastewater Discharge Closure Programme.

The educational programs developed by the Youth Environmental Centre and the Water Museum and targeted to teachers and 1 – 11 year school students are supported by the St. Petersburg Education Committee. These projects will complement other programs for non-school hours which are put into practice at schools in compliance with the new federal education standard.

The workshop on “Twenty-five years of cooperation between Vodokanal and European financial institutions in the field of environmental enhancement” held on 27 August, marked a quarter century of successful, fruitful interaction between Vodokanal and European financial institutions aimed at the protection and recovery of the Baltic Sea.

The Marine Mammals Research and Conservation Center summarized the results of the season. The zoologists helped 13 patients, many of which had been admitted with serious injuries or illnesses. The Baltic ringed seal Little Inger stayed in the Centre till spring, – her injured eye required continuous supervision by the zoologists.

# SEPTEMBER

On 1 September, festival programs “The Day of Knowledge at Vodokanal” were implemented in 56, Shpalernaya str. for students of the Water College and city schools, as well as for children from orphanage no. 23 supported by Vodokanal.

Vodokanal was among the winners of the International Competition of organizations for the best youth outreach, having received a grant in the nomination “Career Guidance” for the best project in the field of vocational guidance of school students, promotion of technical professions and collaboration with educational institutions.

Two Vodokanal’s facilities celebrated their tenth anniversary on the same day. 22 September marked ten years since South-West WWTP and the fountain complex near Finlyandskiy Station were put into operation.

# OCTOBER

On 10 October, SUE “Vodokanal of St. Petersburg” celebrated its 157th anniversary. Traditionally, this date was marked by an exhibition of creative works by Vodokanal employees and members of their families: “Water – Source of Inspiration!” It was the 12th exhibition of the kind set up in the exhibition room of the Universe of Water museum complex, and it had a record-breaking number of exponents. Over 500 works of art by 116 people, their age ranging from 6 to 79, were displayed at the exhibition.

A new advanced Customer Service Centre in 19, Komsomola str. was opened. The Centre offers a full range of services to customers; an electronic queuing system is used for convenience of customers, and service is provided on the “one stop” principle.

In late October, the Water Museum opened the exhibition “Finding at the Far Side of the World”. The exhibition showed exhibits from archaeological, ethnographical and natural science collections of the Yamal Museum and Exhibition Complex named after I.S. Shemanovskiy; the gem of the exhibition was a replica of the baby mammoth Lyuba. The exhibition stirred a great interest among children and adults.

# NOVEMBER

A new service, Personal Account, was created on Vodokanal’s website for customers’ convenience. Through the Personal Account, customers can quickly retrieve information on water consumption volumes and charges, communicate meter readings, or send applications for technical specifications, conclusion or amendment of cold water supply contracts and/or wastewater disposal contracts.

The Demonstration & Exhibition Centre opened at the premises of northern WWTP in Olgino in the framework of the Water Cluster activities. The Centre has permanently functioning exhibition areas to demonstrate domestic products and state-of-the-art technologies and materials used

in the water sector. The official inauguration was attended by the Governor of St. Petersburg G.S. Poltavchenko and members of the city government.

Vodokanal St. Petersburg was awarded of the Quality Prize 2015 of the Russian Government for “achieving good quality of products and services, and for implementation of highly efficient quality management methods”. The company received a similar award in 2006.

# DECEMBER

Vodokanal started a trial operation of the new snow volume measuring system at its snow-melting stations. The concept of the system is based on contactless laser scanning of snow in a truck.

For the first time ever, water tariffs in Petersburg were established for a five-year period: 2016-2020. A separate tariff for storm water sewerage service was another novelty.

The Universe of Water museum began to give children’s New Year parties. Vodokanal has a long-standing tradition of organizing children’s parties in the old water tower in 56, Shpalernaya str. The museum’s New Year programs are interactive: it means that children are more than just spectators, – they become active participants of the performance. During the festival period (till 6 January 2016), 4,405 children visited the New-Year program.





**ABOUT THE COMPANY**



# VODOKANAL HISTORY

**The history of the city's centralized water supply goes back to 10 October, 1858, when the Charter of "St. Petersburg Water Pipelines Joint-Stock Company" was approved by the Russian Emperor Alexander II.**



**AMONG THE FOUNDERS OF THE JOINT-STOCK COMPANY WERE ENGINEERS, SUCH AS A.N. ERAKOV, P.I. PALIBIN, A.A. PERETZ, E.I. OKEL, AND PROMINENT BUSINESSMEN – I.I. GLAZUNOV, M.I. YAKUNCHIKOV, I.N. KUSHINNIKOV.**

## 1858–1917

The JSC faced huge financial and technical problems at the initial stage. **In early 1863**, the construction of water networks was, practically, suspended. By then, the water tower in Shpalernaya str. (architects I.A. Merz and E. Shubersky) has been built and several kilometers of water distribution networks have been laid. The JSC's registered capital was spent, the shares sold badly, and even the government subsidy could not alter the situation. **In March 1863**, the 1 Guild merchant A.I. Kron from St. Petersburg joined the JSC, contributed the lacking sum (approximately, RUB 900,000) and took up completion of the long-drawn works.

Water supply to the first customers started **by the end of 1863**.

Some modifications were made to the initial design during the construction period. At first, it was decided to take water from a sort of a "ladle" – the artificial water body near Tavrichesky Palace connected with the Neva. However, the "ladle" proved to be unsuitable for this purpose, and the JSC had to arrange water intake from the Neva.

**Before mid-1870s**, the water network was only used by the citizens on the left-bank side. The new joint-stock company (Partnership) was established **in 1873** (to be managed by English contractors) to supply water to Peterburgskaya (Petrogradskaya) and Vyborgskaya areas.

**In 1890**, the State Duma took a decision to buy out the assets owned by the St. Petersburg Water Pipelines Joint-Stock Company, and **in 1892** – to buy out also the assets of the New Water Networks Partnership. The City Executive Commission for water supply of St. Petersburg was established to manage the water networks and was subordinated to the city administration. The manager of city water networks was appointed on a submission from the chairman of the Executive Commission.

During the first decades of the centralized water supply operation in St. Petersburg all customers received water which passed only coarse mechanical treatment. **In 1889**, sand filters were put into operation at the Main Waterworks. The filters had been built by the St. Petersburg Water Pipelines Joint-Stock Company as strongly demanded by the city authorities.

**In 1911**, the filtration station with water ozonation was built in Peterburgskaya (Petrogradskaya) area. Chlorine disinfection of drinking water was implemented at the Main Waterworks (the first chlorination experiments were made in Kronstadt **in 1909**). The Executive Commission for sewerage construction and water supply rehabilitation in St. Petersburg established by the City Duma had worked **since 1911** and took over most of the functions in relation to water supply development.

## The Soviet Period

World War I and the Civil War had a negative impact on the technical condition of the city's water supply system, including its plants, equipment and networks. **In 1920s – early 1930s** wood pipes were sometimes used for construction of water networks due to the lack of more suitable materials. It was only **by 1935** that the pre-revolution level of water supply to the city network had been reached.

However, there were also some achievements at that time. First of all, construction of the Southern Waterworks (stage I was put into operation **in 1933**, a part of stage II – **in 1940**) and modernization of the Main Waterworks treatment facilities should be mentioned.

**In 1923–1924** construction of sewer networks was resumed. **In 1925**, the city authorities approved the major sewerage plans for Leningrad (separate system with four independent sewer basins). Vasilevsky Island was selected as experimental district for the construction of a new sewerage system. Construction of sewers in Vasilevsky Island (total length of street networks – 153.3 km) had lasted for 10 years. Vasileostrovskaya sewage pumping station was completed **by 1930**. Wastewater was discharged to the Neva Bay without any treatment.

**In the 1930s**, more and more sewers were built in other city districts. The length of sewer networks in Leningrad reached 1130 km which exceeded twice the pre-revolutionary level. **In 1940** a new sewerage scheme of Leningrad was adopted. It was also based on a separate sewerage system. The scheme envisaged mechanical treatment and precipitation followed by discharge to four channels of the Neva Bay. Stormwater ought to be discharged to all watercourses in the city. It was planned to use the tunneling method to build the main sewers.

A special page in Vodokanal's history is related to World War II and the blockade of Leningrad. The waterworks and facilities, clean water tanks, treatment plants, water networks and sewers were subject to intensive bombings and shelling. As many as 955 shells exploded within the area of the Southern WTP alone. The personnel of the most important facilities were put on a war footing. Destruction of networks caused the flooding of basements, streets and squares and sometimes even the whole city districts. Nevertheless, both the city water networks and the sewerage system were working without interruption except **25-26 January 1942** when the electricity supply was cut off.

**Over the period between 1950 and 1970** the annual average water supply to the city has grown more than twice – from 912,800 m<sup>3</sup> to 2,057,600 m<sup>3</sup>. The Southern WTP stage II was put into operation **in 1948**, Volkovskaya WTP – **in 1964**, and the Northern WTP stage I – **in 1971**. Wide-scale construction of water pumping stations was underway too. **In 1952**, the State Committee of the Council of Ministers of the USSR approved the project of sewerage construction in the central part of Leningrad where a combined sewerage system was proposed instead of separate sewerage. The first stage of sewerage in the city centre including the Main Pumping Station was put into operation **in 1958**.

**In 1966**, the General Scheme of Leningrad Sewerage was approved which included, among other things, three big complexes of wastewater treatment facilities. The first one – Central WWTP – was put into operation **in 1978** (stage I). Before that, all city wastewater was discharged to the water bodies almost without any treatment. The Central WWTP, stage II, was put into operation **in 1984**, and the Northern WWTP, stage I, – **in 1987**. The construction of the South-West WWTP started **in 1986**.

## Contemporary History

In the 1990s, SUE “Vodokanal of St. Petersburg” developed and implemented a novel-for-Russia concept of strategic planning of the public utilities’ financial operations and business. Creation of a management system based on the corporate development planning was a crucial step to implementation of this concept in the company.

It is the implementation of the strategic planning concept that ensured sustainable development of SUE “Vodokanal of St. Petersburg”.

In 1992, the company was able to become self-sufficient and raise the necessary investments for reconstruction and development. In 2004, the St. Petersburg Water and Wastewater Systems Reconstruction and Development Programme for 2004-2011 was worked out. The South-West WWTP was inaugurated on 22 September 2005 in the presence of the President of the Russian Federation V.V. Putin, the President of Finland Tarja Halonen and the Swedish Prime-Minister Göran Persson.

Alongside with the construction of new facilities using the best advanced technologies, wide-scale reconstruction of the existing WWTPs was implemented. By 2006, three “hot spots” in the Baltic Sea catchment basin have been eliminated. The reconstruction of the Central WWTP in 2007 made it possible to meet, and even surpass the HELCOM standards of nutrient concentrations. By commissioning two sludge incineration plants – at the Northern WWTP and South-West WWTP – in 2007, St. Petersburg became the first megalopolis to fully solve the problem of sewage sludge utilization.

In 2008, Vodokanal St. Petersburg celebrated its 150th anniversary. One of the biggest events of the jubilee year was the commissioning of the first section of Northern Tunnel Collector extension.

The year 2009 was marked by the 20th anniversary of cooperation with the Ministry of the Environment of Finland. “The Baltic. Common Sea. Common Concern” Conference was dedicated to this date.

In June 2009, the official ceremony of the last chlorine container removal from Northern Water Treatment Plant symbolized that Vodokanal stopped using liquid chlorine for water disinfection replacing it with hazard-free sodium hypochlorite.

In December 2009, the second stage of Northern Tunnel Collector Extension was completed which enabled to reach 91% of wastewater treatment.

In June 2010, one of the biggest plants – Southern WTP started pre-commissioning of its new water treatment block designed for 350,000 m<sup>3</sup>/day of potable water production (water supply to the city from this block began in January 2011).

In 2010, Vodokanal summarized the results of the pilot project aimed to create a water supply management system and started to implement the system in the southern districts of the city.

By the end of 2010, the next stage of Northern Tunnel Collector Extension has been completed, and the official ceremony of connecting 12 more direct discharges to the Collector was held in January 2011. As a result, the wastewater treatment level in the city reached 93%.

In 2011, Vodokanal could already treat 94% of all wastewater having re-channeled five direct discharges to Northern Tunnel Collector and closed down seven small WWTPs (the wastewater formerly collected by them was re-channeled to Northern WWTP). The ceremony dedicated to this event was attended by the Governor of St. Petersburg G.S. Poltavchenko.

In 2011, St. Petersburg was finally crossed out from the list of Baltic Sea polluters. Since then the city has fully met the HELCOM recommendations on wastewater treatment quality: phosphorus concentrations in the total wastewater volume discharged in St. Petersburg do not exceed 0.5 mg/l. The official ceremony marking the completion of the Clean Baltic Sea Project was held at Northern WWTP in June in the presence of the President of Finland Tarja Halonen.

In 2011, Vodokanal expanded its biomonitoring system by implementing it at wastewater treatment plants: since the beginning of the year the composition of flue gases at the South-West Incineration Plant has been monitored by African snails, and since July the effluent quality at South-West Treatment Plant has been checked by Australian red-claw crayfish.

In 2011, Vodokanal St. Petersburg became one of the finalists for the prestigious award of the European Foundation for Quality Management (EFQM) – Excellence Award-2011.

Since 2011, the International Advanced Water Technologies Centre, a joint project of Vodokanal and Lahti Science and Business Park (Finland), has been working at the premises of SUE “Vodokanal of St. Petersburg”.

Since 2012, Vodokanal St. Petersburg has started a new type of activity: construction and operation of permanent snow-melting stations (PSMS).

In 2012, the next-to-last stage of the Northern Tunnel Collector was completed (the wastewater streams was diverted to the collector and then to Northern WWTP for treatment) which resulted in the closure of five direct discharges and the treatment of as much as 97% of all wastewater.

In autumn 2012, the cooperation between St. Petersburg and the Leningrad Region got a new impetus: the joint meeting of the city and region took a decision to establish the Steering Committee of St. Petersburg and the Leningrad Region in the sphere of social and economic development. In particular, the Committee would deals with the provision of water supply and sewerage services to the fast-growing developments at the border line between the city and the Leningrad Region.

The first result of the joint environmental actions was diversion of wastewater in the town of Sertolovo (in the Leningrad Region) to Northern WWTP (in St. Petersburg). Due to that, the discharge of pollutants into the Lake Razliv could be reduced by 58.8%.

In 2013, Vodokanal celebrated its 155th anniversary. Besides, this year was announced the Environmental Protection Year in Russia. The main event of the year took place on Vodokanal’s birthday, 10 October 2013: the large-scale environmental project, construction of Northern Tunnel Collector, was completed in Petersburg. Ten untreated wastewater discharges were closed. Since then, 98.4% of wastewater has been treated.

In 2013, Vodokanal put three more permanent snow-melting stations in operation. The total number of such stations increased to ten. Snow is melted by the heat of wastewater fed into the melting chambers.

In 2013, Vodokanal launched a new social project: in cooperation with the not-for-profit partnership “Marine Mammal Rehabilitation Centre of Leningrad Region” and 2PR public relations agency, it was saving rare animals of the Baltic Sea Region, ringed seals and grey seals. These activities were followed up in 2014. During the season, the specialists cured and

released 29 patients, among them – five very rare Baltic ringed seals. In September 2014, the Marine Mammals Research and Conservation Centre was opened, and the Baltic Seal Friends Fund was established.

It was one of the most exiting events in the Gulf of Finland Year announced in 2014 by decision of Russia, Finland and Estonia. During the year, a wide range of events dedicated to the Gulf of Finland challenges were organized in Petersburg both for specialists and for the general public. In particular, the festival “Gulf of Finland – Area of Cooperation” was held with Vodokanal as an active participant. At the festival, an official meeting of the Gulf of Finland Year public councils from the three countries was conducted.

Pre-commissioning of a new 500,000 m<sup>3</sup>/day first-lift pumping station began at Main WTP. Construction of the first-lift pumping station and new intake facilities was the initial phase of the Main WTP Reconstruction Project.

Within the frame of the project on the closure of the untreated wastewater discharges into the water bodies of St. Petersburg, direct discharges from Petrovskiy Stadium and along Petrogradskaya Embankment were eliminated in 2014. In the same year the construction of sewage collector at Admiralteyskaya Embankment (next to the Bronze Horseman) began.

In April 2015, an important stage of the Neva Untreated Wastewater Discharge Closure Programme – the construction of the sewage collector along the part of Admiralteyskaya Embankment from Dvortsovy Proezd to the Senatskaya Square was completed. It made it possible to close six untreated wastewater discharges, equivalent to approx. 1000 m<sup>3</sup>/day, into the Neva. Alongside with the completion of works at the Senatskaya Square, construction of the sewage network at the Repina Square was started. New sewage network will enable to close the direct discharge to the Fontanka River in Lotsmanskaya Street and to channel wastewater for treatment to the Central Wastewater Treatment Plant. Today, 98.5% of wastewater undergoes treatment in St. Petersburg.

In the same year, a new wastewater treatment facility and water supply plant were set into operation on the Isle of Valaam, thus allowing for efficient treatment of all wastewater and no adverse impact on the Ladoga Lake.

On 6 November 2015, the Exhibition Centre was opened in the presence of St. Petersburg Governor G.S. Poltavchenko and members of St. Petersburg Government to present products, up-to-date technologies and materials of local companies in water supply and wastewater disposal sector. The opening ceremony took place at the Northern Wastewater

Treatment Plant in the settlement of Olgino within the frame of the Water Cluster activities. The Water Cluster concept was approved by the meeting of the St. Petersburg Governor’s Investment Council on 6 April 2015. The Water Cluster is established to speed up development and implementation of modern technologies and innovations in water supply and wastewater disposal sector; secure supply orders for the companies of the Cluster in the long run; enjoy the advantages of home industry enterprises, building companies, R&D and educational institutes.

**SINCE THE BEGINNING OF 2015, THE COMPANY HAS PURSUED THE IMPLEMENTATION OF THE IMPORT PHASE-OUT POLICY IN A CONSISTENT MANNER. DURING THE YEAR, THE SHARE OF FOREIGN MANUFACTURE EQUIPMENT IN THE OVERALL PURCHASE AMOUNT OF VODOKANAL REDUCED FROM 30% TO 1.8%. IN THE END OF 2015, VODOKANAL WAS GIVEN THE RUSSIAN FEDERATION GOVERNMENT QUALITY AWARD 2015 FOR ACHIEVEMENTS IN THE SPHERE OF PRODUCT AND SERVICE QUALITY AND FOR IMPLEMENTING HIGHLY-EFFICIENT METHODS OF QUALITY MANAGEMENT. THE SIMILAR AWARD WAS GIVEN TO THE COMPANY IN 2006.**





# MISSION AND VALUES

## MISSION

Provision of high-quality water and sewerage services ensuring good quality of life for customers, sustainable development of the city, creation of water consumption culture and conservation of the Baltic Sea water environment.

## VALUES

### • Responsibility to future generations

Careful and efficient use of natural resources including water, energy, forests, etc.

### • Responsibility to the customers

Continuous studies of the customers' expectations and requirements, improvement of customer interaction procedures to raise the level of satisfaction with the water and sewerage services.

### • Responsibility to the staff

Continuous improvement of labour safety, decent salaries and wages, social security for the company staff and their families and for the retired employees.

### • Innovative approach

Incorporation of international best practices in the company management, the use of advanced technologies and creation of know-how in different fields of activities – that is the only way to reach success and to be a leading company.

### • Openness to the public and responsibility to the society

Transparency of the company activities, access to reliable information on the company work and history, close contacts with the mass media, educational institutions and public and environmental organizations – all that constitutes the basis of our information policy.

## VISION

We see Vodokanal among the world's best providers of water and sewerage services due to the quality of its services and environmental awareness.





# CORPORATE MANAGEMENT SYSTEM BUILDING PHILOSOPHY

## CORPORATE MANAGEMENT SYSTEM BUILDING PHILOSOPHY

**The corporate management of SUE “Vodokanal of St. Petersburg” is based on the following principles:**

### Accountability

The company’s executive body shall be accountable to the owner (City of St. Petersburg), the state authorities and control bodies in compliance with the applicable law.

### Transparency

The company shall ensure timely disclosure of reliable information on any material facts in relation to its activities, including its financial standing, social and environmental performance and operating results, as well as provide free access to such information (annual reports, Internet site, management addresses in the mass media, Internet portal, panel discussions, conferences etc.) for all stakeholders.

### Responsibility

The company shall acknowledge the rights of all stakeholders as provided by the applicable law and shall seek collaboration with the stakeholders to reach the company goals and to maintain financial sustainability and social stability.

### Efficiency

The company will only reach its goal if each employee – from director general to ordinary officer – works efficiently.

Vodokanal’s corporate governance system is continuously developing and improving due to the strategic initiatives of the company manage-

ment and its sole owner – City of St. Petersburg; benchmarking studies of the best peers in Russia, Europe and other parts of the world; participation of managers in international and Russian conferences, seminars and meetings; regular self-assessment of activities (since 2006 – against the RF Quality Award Model, since 2009 – against the EFQM Model); re-engineering of business processes; and internal audits.

The corporate governance system relies on the principles and approaches set by the international standards: ISO 9001 Quality Management System, ISO 14001 Environmental Management System, OHSAS 18001 Occupational Health and Safety System, ISO 27001 Information Security System and ISO 50001 Energy Management System.

At present, the organizational structure of the Company is aimed to implement the adopted functional-zonal management principle for water supply and wastewater disposal (area water supply management offices and area wastewater disposal systems, each of them serving several city districts). The major principles of the corporate management system building philosophy are the process-based approach, personification of the responsibility and authority.

Specific nature of the Company’s activities related to the continuous provision of vitally important services with the involvement of a great number of the stakeholders makes the Company’s operations more responsible and transparent. Stakeholders’ interaction rules are defined in the Corporate Management Code and the Corporate Ethics Code.

The Company’s strategy is based on a clear understanding of present and future demands of the stakeholders, cost-benefit and mutually advantageous cooperation principles. The company’s strategic planning horizons are harmonized with perspective plans of municipal and regional development. St. Petersburg Water and Wastewater Master Plan till 2025 with an outlook to 2030 was approved by the St. Petersburg Government Resolution no. 856 dated 25 September 2015 and formed the basis for Water and Wastewater Investment Programme of SUE “Vodokanal of St. Petersburg” for 2015-2017 approved by the Order of the St. Petersburg Tariff Committee.

The updated Master Plan incorporates various city development scenarios taking into account the available estimates of future population growth and water demand per capita. The Master Plan gives considerations to the economic and social development strategy of St. Petersburg till 2030, the General Plan of the city, land use and development rules, site planning schemes, master plans of municipalities of the Leningrad Region bordering on the city of St. Petersburg within the Big St. Petersburg, etc.

Vodokanal also takes into account requests of the interested parties and, therefore, it undertakes at its own discretion additional obligations which are incorporated in the strategic planning and relates, in particular, to social responsibility to the customers, society and personnel.

The Company strategy includes the targets in five areas: finance and investments; consumers; city/region/community environment; main business processes; and the Company personnel and development. Medium-term strategic and tactical goals for each of the strategic areas are set to achieve the targets. A special focus is on energy saving and improvement of energy efficiency.

The Company’s strategic goals are achieved by fostering the corporate culture aimed at the orientation of the personnel to the achievement of such goals, support of new ideas and innovations and allocation of necessary resources. The personnel are viewed by the leaders as a strategic potential for sustainable development of the Company and as a major resource determining the economic performance. For this reason, the personnel management policy is focused on the continuous training and professional development of the personnel and motivates employees to productive and efficient labor.

The key indicators framework is implemented and improving steadily to ensure better understanding of internal processes and to take the necessary managerial decisions at the Company. The KPI (key performance indicators) framework is a set of interrelated measurable indicators of actual results. The KPI framework helps achieve the efficiency of both business processes and each staff member at his work place, and, eventually, raise the efficiency of the Company. The indicators are cascaded to the structural unit level.

The information systems (IS), such as IS “Water Balance”, Favordata, IS “Baltika” and IS “Hotline”, to support the keeping of daily statistics are implemented at the Company as a tool of continuous online performance monitoring.

Systematic satisfaction surveys of all stakeholders including the assessment of satisfaction among the main customer categories, satisfaction and awareness of the public, and staff satisfaction including assessments of commitment and loyalty, are an integral part of Vodokanal’s continuous improvement. Together, the studies give an unbiased assessment of the company performance in respect of the key stakeholders.

**THE CORPORATE CULTURE DEVELOPMENT APPROACHES AND THE PRINCIPLES OF CORPORATE SOCIAL RESPONSIBILITY ARE USED BY MANAGERS IN THEIR DAY-TO-DAY ACTIVITIES AT ALL MANAGEMENT LEVELS FOR THE PURPOSE OF TAKING MANAGERIAL DECISIONS AND PROVIDING SOCIAL SUPPORT FOR THE COMPANY EMPLOYEES.**



# OVERVIEW OF MANAGEMENT APPROACHES

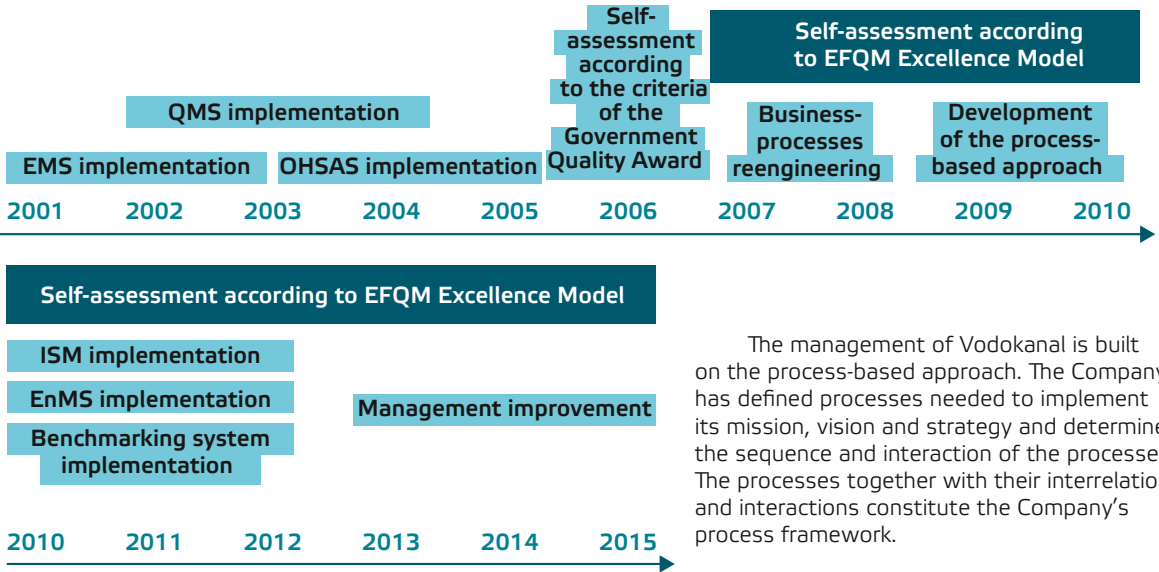
To improve the Company operations, Vodokanal uses such management approaches as:

- self-assessment;
- reengineering of processes;
- process-based approach;
- satisfaction surveys of the internal process users;
- certification of the management systems according to the international standards

ISO 9001, 14001, 50001, 27001 and OHSAS 18001;

- industry-specific benchmarking and functional studies;
- implementation of innovative instruments for management improvement.

### STAGES OF THE COMPANY MANAGEMENT IMPROVEMENT

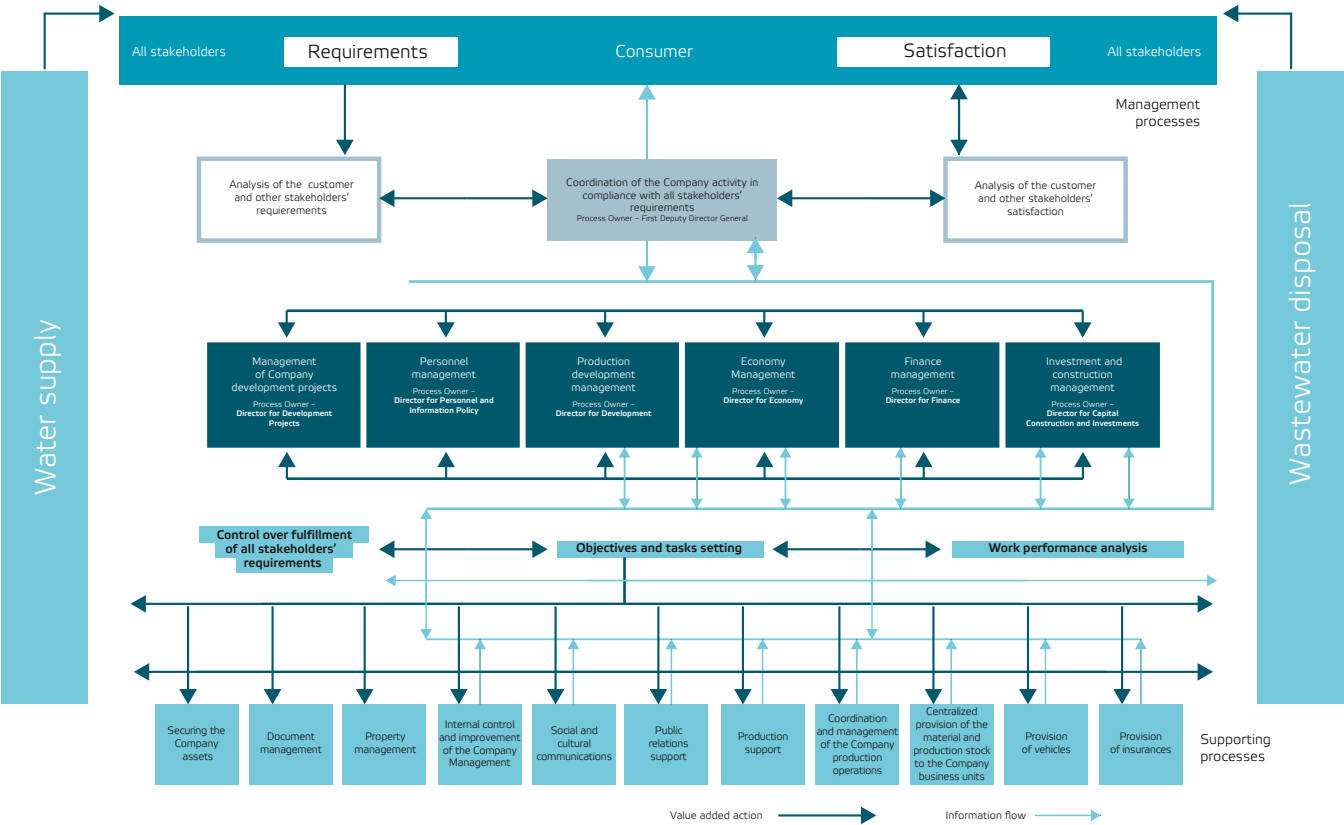


Annually, the Company management is evaluated by its senior executives (the annual operation analysis reports are issued). The internal audit process has been developed and implemented to assess the conformity of the Company management systems to ISO 9001, ISO 14001, ISO 50001, OHSAS 18001 and ISO 27001 and to provide the Company's senior executives with reliable information. Such internal audit process is an important element of improving the performance and efficiency of the Company's management system.

The management of Vodokanal is built on the process-based approach. The Company has defined processes needed to implement its mission, vision and strategy and determined the sequence and interaction of the processes. The processes together with their interrelations and interactions constitute the Company's process framework.

For many years, Vodokanal has passed successfully the management system compliance audits carried out by the National Certification Association "Russian Register" and the international company SAI Global. Since 2006, Vodokanal has self-assessed its activities against the Russian Federation Government Quality Award Model, and since 2009 – against the EFQM Model-based methodology developed in-house, and participated in regional and European competitions. Regular self-assessments enabled to integrate management processes and link them with strategic planning processes.

### PROCESS INTERACTION PATTERN IN ST. PETERSBURG VODOKANAL AS OF 1 OCTOBER 2015



Participation in quality management competitions gives the Company opportunities not only to evaluate the maturity of its own management system and to compare it with best companies in Russia and Europe but also to involve Company's employees in the process of continuous improvements and search for new paths of development and performance enhancement.

In 2006, Vodokanal got the RF Government Quality Award. In 2009, the Company passed an independent expert assessment for compliance with the EFQM Recognized for Excellence level (5 stars). In 2010, it confirmed compliance with the Recognized for Excellence level (5 stars) at the Central and Eastern Europe Countries Contest. As of the end of 2011, Vodokanal joined the ranks of finalists of the prestigious European Foundation for Quality Management (EFQM) Excellence Award-2011.

At present, the Company intends to develop and implement its own production management system with a tentative name "4E: Efficiency, Environment, Economy, Evolution". 4E system will become an integrated concept which unites all processes and approaches to management improvement. The production system should ensure a streamlined interaction of all process owners at the Company and create a transparent reporting framework based on key performance indicators of each employee.

The Company's intention is to develop further its strengths, come close to the model of an ideal organization and participate in international quality-related events. We see Vodokanal among the world's best companies.

Using its own experience and the practices of its foreign and domestic peers in water sector, Vodokanal is developing the "Ideal Water Company" concept. It is now formulated in the Strategic Plan of the Company and addresses all spheres of activity: interaction with customers; development and management of water services and infrastructure; environment and society; financial sustainability and investments; staff development and social support. The Ideal Water Company Concept is revised in its form and substance from time to time according to the results of self-assessment for the previous year and in consideration of external factors, including new regulatory acts, the outlook for city development, and customer expectations.

**IN 2015, VODOKANAL RECEIVED THE RF GOVERNMENT QUALITY AWARD. THIS AWARD IS A RESULT OF A CONTINUOUS WORK OF ALL PERSONNEL TARGETED TO THE SEARCH FOR DEVELOPMENT PATHS, IMPLEMENTATION OF THE MOST ADVANCED TECHNOLOGICAL INNOVATIONS AND IMPROVEMENT OF MANAGEMENT PROCESSES.**

### The use of management approaches enables to:

- ensure continuous improvement of water/wastewater service quality;
- find new forms of interaction with all stakeholders on the grounds of trust, respect and openness;
- meet the challenges and solve the problems faced by Vodokanal;
- enlarge the Company's contribution to the sustainable future of the region and the Baltic Sea basin.

# KEY PERFORMANCE MANAGEMENT PROCESSES

In parallel with the process improvements, the Company is upgrading its set of indicators for strategic and day-to-day monitoring of processes. The assessment tools are: internal and external audits of management systems, self-assessment based on the EFQM Excellence Model, benchmarking and corporate management rating criteria. Process performance is monitored using relevant key indicators.

Regular monitoring of the processes by middle and top management enables to keep a close watch on approaching to the set goals and timely adjust the progress of the process. Quality targets for the next three years, environmental management program for one year and the form "Quality Targets for the Current Year Split by Months" have been developed to support regular monitoring of Vodokanal's progress to the (water supply and wastewater disposal) quality goals.

## The key performance indicators of the Water Supply process are:

- percentage of potable water samples at the plant inlet not complying with the applicable regulatory values;
- percentage of potable water samples in the distribution network not complying with the applicable regulatory values;
- number of breakdowns on water distribution networks per 10 km of pipelines per year;
- water consumption and distribution losses;
- number of recorded reasoned complaints about low water head;

- number of interruptions of water supply occurred as a result of emergencies, damages or other technological disturbances;
- the improvement of maintenance function alongside with reconstruction works lead to higher reliability of network operation and lower breakdown rates.

## The key performance indicators of the Wastewater Disposal process are:

- percentage of wastewater treated at wastewater treatment plants;
- reduced number of blockages per unit length of the combined municipal sewage network;
- reduced number of blockages per unit length of the separate storm water network;
- permitted concentrations of total nitrogen in the treated effluent;
- permitted concentrations of total phosphorus in the treated effluent;
- percentage of dewatered sludge to be incinerated.

## The process performance management process is based on Deming-Shewhart-Taylor cycle (PDCA):

**1. Plan (P)** – key process performance targets are planned for the next year in January, on the basis of the strategic indicators, required resources and result analysis of the previous year. The cause-and-effect relationships between the approaches applied and the results we want to achieve are determined at this phase.

**2. Do (D)** – the service is provided and monitored at all process levels (management processes, life cycle processes and supporting processes); daily operational indicators are checked. At this phase, management is limited to ensuring the achievement of tactical (monthly) targets split by types of activities within the process.

**3. Check (C)** – the progress in achieving the key performance indicators is checked using the daily and weekly data.

**4. Act (A)** – the progress in achieving tactical targets and the reasons for deviation from targets are analyzed, and the necessary corrective actions are worked out at weekly working meetings. Such actions help adjust the existing approaches to achieve the targets.

Process performance measurements are the basis of the integrated operation monitoring system maintained and developed in a systematic way, and used to identify the key problems to be analyzed. Performance indicators are monitored using special scorecards (IS "Water Balance", Favordata, IS "Baltika" and IS "Hotline") and continuously analyzed at all management levels.

Reporting forms are developed within the management accounting system to ensure permanent performance analyses.

Potential areas of process management improvement are identified in the course of internal audit results and performance evaluation reports for EMS, QMS, OHSAS, EnMS and ISMS as well as self-assessment. The results of analysis are used to identify areas for improvements and to work out the necessary corrective measures and actions for the existing approaches in order to achieve the strategic targets.

Vodokanal compares its performance indicators with KPI of water companies in Russia and Europe, analyzes the operation of partner-companies to identify best practices and share the experience. The corporate portal "Benchmarking" functions on the Company's website and contains the data on key performance indicators of the leading local and foreign water companies collected from public information sources.

In 2015, St. Petersburg Vodokanal participated in the programme "International benchmarking in water supply and sewerage services" organized by the European Benchmarking Co-operation (EBC). EBC has been arranging benchmarking programmes for water companies since 2007. Yearly, about 50 companies from 20 countries, accounting for over 100 million people in Europe, America and Asia, took part in the programmes. EBC Benchmarking Programme is approved by the International Water Association (IWA) and American Water Works Association (AWWA).

Within the frame of the programme EBC compares key performance indicators of water companies as of the end of reporting year. EBC developed and circulated among the participants its own unique methodology for the calculation of key performance indicators based on IWA indicators. The indicators are divided by groups: production operations, personnel, economy, finance, customers and environment. The final report with recommendation on improving the performance in difference areas is used by the management to make the Company's operations better.

The system of internal benchmarking based on the rating of production performance of water supply and wastewater disposal areas is introduced to optimize production and management structure of the Company. Rating assignment and benchmarking are carried out by analyzing key performance indicators. Learning the experience of the best production unit is a tool for improving the operation of other divisions.

**EACH YEAR, A REPORT ON THE COMPANY PERFORMANCE RESULTS AND PLANS FOR THE NEXT YEAR ARE PRESENTED TO THE CITY ADMINISTRATION. THE PERFORMANCE RESULTS OF THE COMPANY ARE APPROVED BY THE PROTOCOL OF THE SPECIAL COMMISSION OF THE ST. PETERSBURG COMMITTEE FOR ENERGY AND ENGINEERING SUPPORT.**





# MAIN PROVISIONS ON CORPORATE CULTURE

The development of corporate culture at the company is based on the unity of personnel in achieving the strategic targets, identification and support of social standards and values. For this purpose, regular companywide professional and cultural events are organized.

Vodokanal management realizes the priority of social responsibility to the personnel. This realization is based on the company's internal standards and supported through the implementation of different social support programmes including the improvement of remuneration mechanisms, medical care and voluntary medical insurance, subsidized catering, recreation opportunities for the employees and members of their families, organization of corporate events, and support of the company veterans and pensioners.

The company has defined and is following its policy in the field of information and knowledge. This policy is based on the principles of openness, completeness, regularity, timeliness, objectiveness, reliability, the raising of staff competence and improvement of corporate culture.

Values and ethical standards have been defined and are followed to develop the corporate culture. The leaders demonstrate to the staff, by personal example, the standards of ethical behaviour towards every stakeholder, support the learning of values by employees during the adaptation period, and promote corporate unity at different levels by initiating, and participating in, joint events.

The key approaches to the development of corporate culture and the principles of corporate social responsibility are used in the day-to-day activities at all company management levels for the purpose of taking managerial decisions, organizing recreation and providing social support for Vodokanal employees.

Internal communications are effected in the company's integrated information space including, on the one hand, a set of IT resources and the corporate newspaper and, on the other hand, individual meetings between the company managers of any level with the Company employees.

The company employees adhere to the corporate values (see the section "Mission and Values" above), and maintain and develop the corporate culture as required to achieve the highest level of performance.

The corporate values are obligatory for all Vodokanal staff and are proposed to all those who cooperate with Vodokanal.

The company's ethical principles are based on the corporate values, compliance with law, and respect for the rights of Vodokanal employees and partners. They govern both in-company relations and the relations between Vodokanal and its partners and customers including behavior in the situations where conflicts of interests arise.

## The main provisions of corporate culture adopted by SUE "Vodokanal of St. Petersburg" are set out in the company standard STO Vodokanal SPB 1.4-2010 Management system. Code of Corporate Ethics.

The principles are (but not limited to):

- **Focus on creation of value.** Vodokanal employees work in line with the company strategy and strive to fulfil important strategic tasks. When implementing various actions, Vodokanal employees realize what value they create for customers, their company and the society in general.

- **Professional skills and teamwork.** Vodokanal employees are good professionals. They build relations with their colleagues on the basis of confidence, collaboration, corporate solidarity and mutual assistance. The employees take a proactive approach in their teamwork focusing on the result of joint activities. Those who are capable of improving the company performance are offered career promotion, and, moreover, implementation of essential projects is entrusted to them.

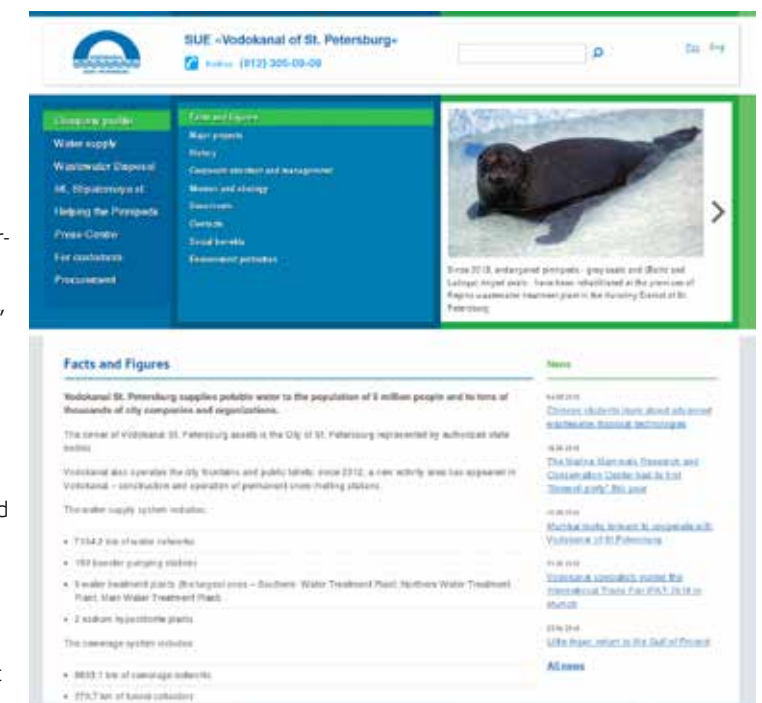
- **Strategic flexibility.** Vodokanal operates in the environment where governmental regulation of tariffs and fluctuating prices for the suppliers' products are a reality and have a significant impact on the implementation of the company strategy.

- **Social responsibility.** The company bears responsibility for the social well-being of its employees. The value created by Vodokanal staff is a huge contribution to the improvement of the living standards in St. Petersburg, the Baltic Sea Region and society in general.

# DISCLOSURE OF INFORMATION ABOUT ACTIVITIES OF THE COMPANY

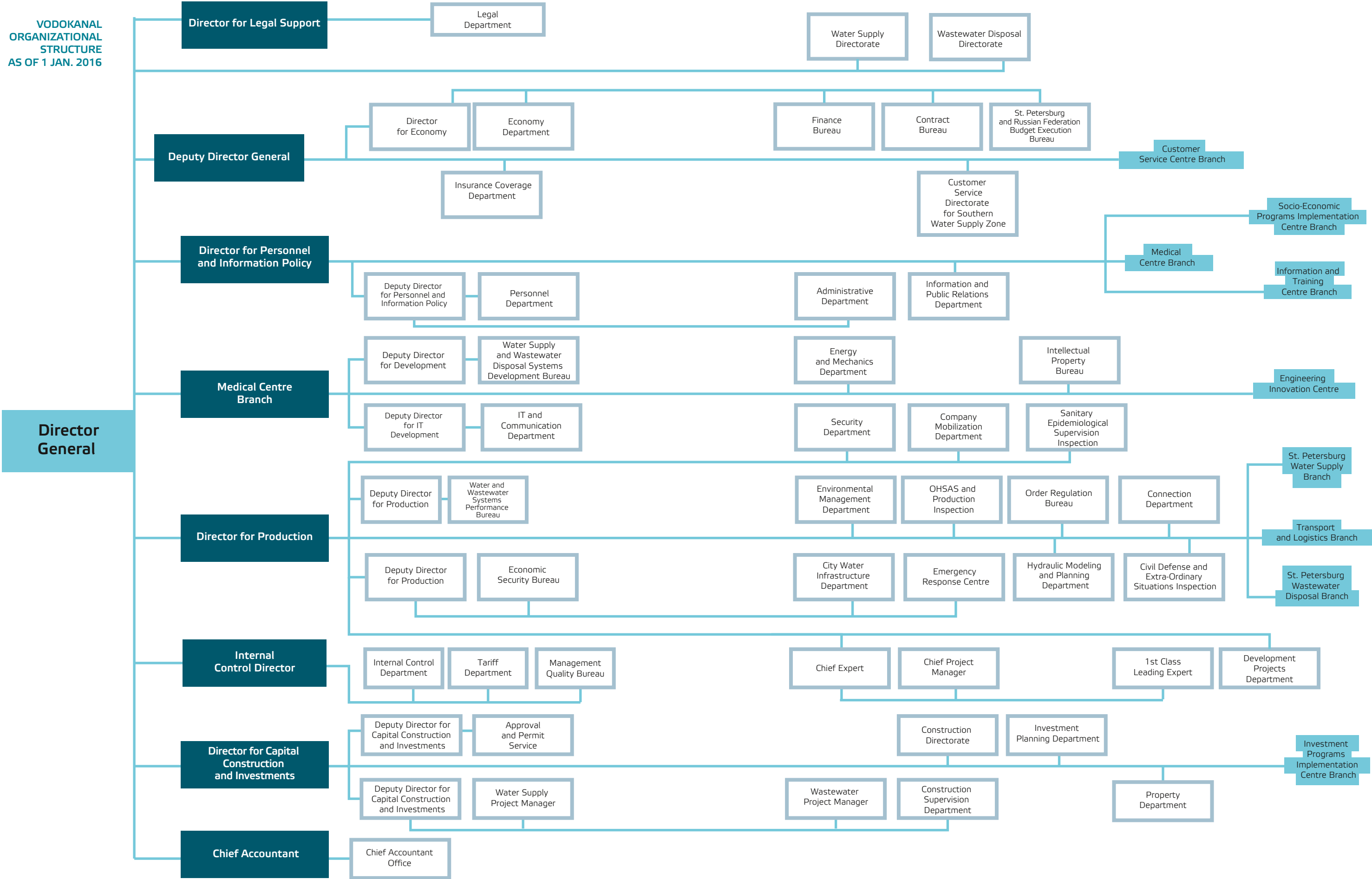
SUE "Vodokanal of St. Petersburg" discloses information on its water supply and sewage operations in accordance with the Decree no. 6 of the Government of the Russian Federation dated 17 January 2013 "On Disclosure Standards for the Water Sector". Any disclosure of information in the field of heat supply shall be performed in accordance with the Decree no. 570 of the Government of the Russian Federation dated 5 July 2013 "On Disclosure Standards by Heat Supply Organizations, Heat Networks Organizations and Regulatory Authorities" (hereinafter, Information Disclosure Standards).

The Company has consistently pursued the policy to increase the transparency aimed at facilitating the access to information subject to disclosure. All necessary information within the Information Disclosure Standards and information related to the process of establishing and application of tariffs in St. Petersburg is available on the official websites of St. Petersburg Vodokanal, the St. Petersburg Tariff Committee, on the Internet and in the pages of a single specialized publication – Vestnik Journal of St. Petersburg Tariff Committee (the official print publication according to the Decree of St. Petersburg Government no. 223 dated 21 February 2011; the mass media registration certificate no.TU 7800675 dated 27 August 2010).



THESE RESOURCES ARE CONVENIENT OFFICIAL PLATFORMS FOR CENTRALIZED, UNIFORM AND TIMELY DISCLOSURE OF INFORMATION IN ACCORDANCE WITH THE INFORMATION DISCLOSURE STANDARDS.

VODOKANAL  
ORGANIZATIONAL  
STRUCTURE  
AS OF 1 JAN. 2016





# VODOKANAL TODAY

## COMPANY PROFILE



**The State Unitary Enterprise (SUE) “Vodokanal of St. Petersburg” provides water supply and sewerage services to the city of St. Petersburg. It is the country’s biggest public utility and one of the key municipal companies in St. Petersburg.**

**AS OF 31 DECEMBER 2015, THE STAFF OF SUE “VODOKANAL OF ST. PETERSBURG” NUMBERED 8,514 PEOPLE.**

Vodokanal’s assets are owned by the City of St. Petersburg represented by relevant public authorities. Vodokanal provides its services to the city inhabitants (over 5 million people) and to many thousands of companies and organizations in St. Petersburg.

**The water supply system comprises:**

- 7,104.2 km of water supply networks;
- 193 boosting pumping stations;
- 9 water treatment plants (the biggest are Southern WTP, Northern WTP and Main WTP);
- 2 sodium hypochlorite production plants.

**The sewerage system comprises:**

- 8,603 km of sewer networks;
- 270,7 km of tunnel collectors;
- 176 sewage pumping stations;
- 15 wastewater treatment plants including 13 – for municipal sewage and 2 – for surface runoff. The biggest are: Central WWTP, Northern WWTP and South-West WWTP;
- 3 sludge incineration plants.

### Main achievements of SUE “Vodokanal of St. Petersburg” in the field of water treatment:

- all potable water supplied to the city is UV-treated to ensure epidemiologic safety;
- liquid chlorine is not used for water disinfection, it is replaced by hazard-free, non-toxic sodium hypochlorite;
- hazard-free, non-toxic ammonia sulfate is used for water ammoniation instead of ammonia solutions;
- a unique biomonitoring system (crayfish) is used at all water intakes to check water condition in the water source, the Neva;
- PAC (powdered activated carbon) dosing is implemented to remove odors and oil.

### Main achievements of SUE “Vodokanal of St. Petersburg” in the field of wastewater treatment:

- 98.5% of wastewater is treated in Petersburg now;
- Petersburg entirely meets the HELCOM recommendations: phosphorus concentrations in the total volume of the city wastewater discharge do not exceed 0.5 mg/l, nitrogen concentrations – 10 mg/l;
- Petersburg has solved the sludge disposal problem: three sludge incineration plants are in operation in the city;
- Biomonitoring technologies are implemented to check the quality of treated effluent (by means of Neva crayfish and Australian red-claw crayfish) and concentrations of flue gases at the sludge incineration plant (by means of gigantic African snails);
- A snow disposal technology is implemented in Petersburg: ten permanent snow-melting stations and six technically equipped snow-melting points.

Moreover, Vodokanal is in charge of the city fountains and public toilets.

Vodokanal is strongly focused on occupational guidance and awareness-raising activities. It has its Information and Training Centre including the Universe of Water Museum Complex and the Youth Environmental Centre.

Another social awareness-raising project implemented by Vodokanal is the web-portal [da-voda.com](http://da-voda.com) which promotes the ideas of careful water use.

Vodokanal promotes its values by means of such social networks as Facebook, VKontakte and the Company has its own accounts there.

An important field of activities is the occupational guidance for the youth. Vodokanal actively cooperates with higher education institutions and secondary vocational schools, develops and conducts educational career-guidance programs for students at the premises of the Youth Environmental Centre, the Water Museum and the College of Water Resources.

Vodokanal St. Petersburg is one of the founders of the Water Cluster, which began its work in St. Petersburg in 2015. The Exhibition Center and the Water Academy, being a part of the Water Cluster, were established at the premises of Vodokanal. At the same time, the International Advanced Water Technologies Centre, which was founded in conjunction with Lahti Region Business Development Centre (Finland), keeps on its operation under the aegis of Vodokanal.

Vodokanal together with zoologists has been involved in the project on rescuing marine mammals of the Baltic Sea Region. The Marine Mammals Research and Conservation Centre was opened at Vodokanal premises.

**SUE “VODOKANAL OF ST. PETERSBURG” HAS BUILT AN EFFECTIVE CUSTOMER FEEDBACK SYSTEM. SINCE 2004, A 24-HOUR HOT LINE SERVICE HAS BEEN IN OPERATION PROVIDING ALL KINDS OF INFORMATION ABOUT VODOKANAL WORK. THE HOT LINE SERVICE PHONE NUMBER IS +7 (812) 305-09-09.**

# REMARKABLE EVENTS 2015

**ON 12 MARCH 2015, THE INTERNATIONAL FORUM IN ST. PETERSBURG SUMMARIZED THE RESULTS OF THE GULF OF FINLAND YEAR 2014. AMONG THE FORUM PARTICIPANTS WERE: THE MINISTER OF NATURAL RESOURCES AND ENVIRONMENT OF THE RUSSIAN FEDERATION S.E. DONSKOY, THE GOVERNOR OF ST. PETERSBURG G.S. POLTAVCHENKO, THE GOVERNOR OF THE LENINGRAD REGION A.YU. DROZDENKO, THE DIRECTOR GENERAL OF SUE "VODOKANAL OF ST. PETERSBURG" F.V. KARMAZINOV, AND DELEGATES FROM FINLAND AND ESTONIA.**

In his presentation at the Forum, G.S. Poltavchenko pointed out that Petersburg had been involved in environmental protection activities over many years, and Vodokanal was the city's strategic partner in this field.

The opening, with a strong support from Vodokanal, of the Marine Mammals Research and Conservation Center in Repino was referred to by the Governor as one of the most important events of the Gulf of Finland Year. Moreover, three countries made a joint declaration at the Forum stating the need to "continue the cooperation in a trilateral format for the purpose of fulfilling national and international commitments on protecting the marine environment of the Gulf of Finland and the Baltic Sea". Many actions under the company's investment program till 2025 are directly related to rehabilitation of the Gulf of Finland. In particular, the plan is to ensure 100% treatment of not only municipal sewage, but also storm water.



In 2015, the construction of Admiralteyskiy sewage collector was completed. As a result, six outlets discharging nearly 1,000 m<sup>3</sup>/day of untreated wastewater into the Neva were closed. Moreover, new sewer networks in the Repina Square were constructed with the aim to close the untreated wastewater discharge into the River Fontanka near Lotsmanskaya str. In 2015, the construction of Okhta tunnel collector began with the purpose to eliminate the discharge of untreated wastewater into the River Okhta. Construction of a new wastewater treatment plant was launched in the settlement of Molodezhnoye near St. Petersburg. It will be the city's first plant to implement a new treatment technology based on membrane bioreactors.

**THE UNTREATED WASTEWATER DISCHARGE CLOSURE PROJECT WHICH ENABLED THE TREATMENT OF 98.5% OF WASTEWATER IN PETERSBURG IN 2015, WAS GOING ON SUCCESSFULLY. NOW THE WASTEWATER IS DIVERTED TO TREATMENT PLANTS WHERE IT UNDERGOES A FULL TREATMENT CYCLE IN COMPLIANCE WITH THE HELCOM RECOMMENDATIONS.**

**IN THE FRAMEWORK OF THE 70TH ANNIVERSARY OF THE GREAT VICTORY, VODOKANAL'S WATER MUSEUM CONTRIVED AND ORGANIZED THE INTER-MUSEUM CITYWIDE INTERACTIVE PROJECT "ORDER TO SURVIVE". THE PROJECT WAS IMPLEMENTED AT 11 CITY'S MUSEUM SITES TO GIVE THE INHABITANTS AND GUESTS OF THE CITY KNOWLEDGE ABOUT THE WORK OF LIFE-SUPPORTING ENTERPRISES IN LENINGRAD DURING THE WAR.**

Simultaneously, the Water Museum opened the exhibition "I am with Vodokanal: I have memories and pride!" The exhibition showed photos, documents, letters, and personal belongings of the people who fought in the Great Patriotic War or worked on the home front: relatives, friends, and family members of Vodokanal employees, as well as materials from family archives.

The Universe of Water museum complex participated in the Museums at Night event for the eighth time. The night program "We've gone through fire to save water" lasted for 12 hours in a row. It was visited by nearly 8,000 people.



**A NEW SEWAGE TREATMENT PLANT AND A NEW, TWO-STAGE WATER TREATMENT FACILITY, 350 M<sup>3</sup>/DAY EACH, WERE PUT INTO FULL-SCALE OPERATION ON THE ISLE OF VALAAM IN EARLY JULY 2015.**

The symbolical start button was pressed by Kirill, the Patriarch of Moscow and All Russia. Now the island treats all its wastewaters in an effective and reliable way, and any negative impact on Lake Ladoga is eliminated. The studies demonstrated that the treatment quality, in terms of all monitored parameters, including nutrients – nitrogen and phosphorus, complies with the Russian regulatory requirements and the HELCOM (the Baltic Marine Environment Protection Commission) Recommendations. The wastewater treatment modernization programme for Valaam got a support from BASE (Implementation of the HELCOM's Baltic Sea Action Plan) Project.





**VODOKANAL WAS AMONG THE WINNERS OF THE INTERNATIONAL COMPETITION OF ORGANIZATIONS FOR THE BEST YOUTH OUTREACH, HAVING RECEIVED A GRANT IN THE NOMINATION "CAREER GUIDANCE" FOR THE BEST PROJECT IN THE FIELD OF VOCATIONAL GUIDANCE OF SCHOOL STUDENTS, PROMOTION OF TECHNICAL PROFESSIONS AND COLLABORATION WITH EDUCATIONAL INSTITUTIONS.**



The educational programs developed by the Youth Environmental Centre and the Water Museum and targeted to teachers and 1–11 year school students are supported by the St. Petersburg Education Committee. These projects will complement other programs for non-school hours which are put into practice at schools in compliance with the new federal education standard. Moreover, Vodokanal got the Trajectory 2015 Award in the nomination "Senior Teenagers" at the All-Russian Forum "Trajectory of Success" dedicated to professional identity of youth.

**ON 17 SEPTEMBER 2015, THE WATER ACADEMY WAS LAUNCHED AS A PILOT PROJECT AT VODOKANAL'S INFORMATION & TRAINING CENTRE. THE FIRST STUDENTS OF THE WATER ACADEMY WERE VODOKANAL EMPLOYEES.**

The Russian Water Association is a partner of the Water Academy. In future, the Water Academy will play the role of an educational and methodological centre for the Water Cluster and the water sector in general, offering programs of higher/supplementary professional education and making scientific research. The task of the Water Academy is to satisfy the sector's demand for qualified personnel having special knowledge and competences.



**IN NOVEMBER 2015, THE DEMONSTRATION & EXHIBITION CENTRE OPENED AT THE PREMISES OF NORTHERN WWTP IN OLGINO IN THE FRAMEWORK OF THE WATER CLUSTER ACTIVITIES.**



The official inauguration was attended by the Governor of St. Petersburg G.S. Poltavchenko and members of the city government. The aim of the Demonstration & Exhibition Centre is to accumulate the national equipment and technologies which have a good record of operation or are used successfully by Vodokanal or other Russian water companies. The Centre's exhibition area showed over 300 specimens of domestic products and equipment in line with the import substitution policy. Due to systematic activities implemented in this sphere under the aegis of the St. Petersburg Committee for Energy and Engineering Support, Vodokanal could reduce significantly the percentage of imported equipment in the total procurement volume of Vodokanal. In 2015, the share of imports in the procurement volume reduced from 30% to 1.8%. It is in 2015 that the import substitution activities of Vodokanal became systematic and all-embracing.



**FOR THE FIRST TIME IN THE HISTORY OF JOINT PINNIPEDS RESCUE ACTIVITIES OF THE MARINE MAMMALS RESEARCH AND CONSERVATION CENTRE IN REPINO AND VODOKANAL ST. PETERSBURG, THE BALTIC RINGED SEAL LITTLE INGER HAS STAYED FOR CONTINUED REHABILITATION IN THE CENTRE OVER THE WINTER PERIOD.**

In April 2015, the ringed seal was admitted to the Marine Mammals Research and Conservation Centre in a very bad condition and could not be released into the wild together with other patients of the Centre. All in all, 4 Baltic grey seals and 9 Ladoga ringed seals were rehabilitated and released by the Centre in 2015. All fosterlings had put on weight and got prepared to the life in the wild. The concerned citizens contributed more than RUB 250,000 for the Centre's care of the ringed seal.

**VODOKANAL ST. PETERSBURG WAS AWARDED THE QUALITY PRIZE 2015 OF THE RUSSIAN GOVERNMENT FOR "ACHIEVING GOOD QUALITY OF PRODUCTS AND SERVICES, AND FOR IMPLEMENTATION OF HIGHLY-EFFICIENT QUALITY MANAGEMENT METHODS".**

The Prize is a grand-scale national project aimed to promote the quality management principles in Russia. The Decree of the Russian Government dated 6 November 2015 no. 1202 "On awarding the Russian Government's quality prizes in 2015" was published on the Russian Government's website on 12 November 2015. Twelve more organizations were awarded together with Vodokanal. The company received a similar award in 2006.



# INVESTMENTS IN 2015

**In 2015, Vodokanal invested RUB 13 billion in the development and reconstruction of water supply and wastewater disposal systems. The works were performed under the adopted investment programme for 21015-2017.**

THE INVESTMENT PROGRAMME OBJECTIVES ARE GROUPED IN LINE WITH THE CORE PRODUCTION ACTIVITIES OF VODOKANAL.

**The water supply objectives are:**

- supply of safe potable water to the customers;
- improvement of energy efficiency and implementation of energy saving measures at water supply facilities;
- access to centralized water supply services.

**The main wastewater disposal objectives are:**

- mitigation of wastewater system's negative impact on the environment;
- provision of reliable wastewater disposal services;
- improvement of energy efficiency and implementation of energy saving measures at wastewater collection and treatment facilities;
- access to centralized sewerage.

**The investment programme was funded from the following sources:**

- St. Petersburg budget – RUB 1.3 billion;
- corporate funds – RUB 5.1 billion;
- connection fee – RUB 6.0 billion;
- raised financing – RUB 0.6 billion.

**Vodokanal invested RUB 5.3 billion in the water supply system under the investment programme, including:**

- supply of safe potable water to the customers – RUB 0.4 billion;
- provision of reliable water supply services – RUB 0.8 billion;
- improvement of energy efficiency and implementation of energy saving measures at water supply facilities – RUB 0.2 billion;
- access to water supply services – RUB 2.7 billion;
- other items (production bases, procurement of equipment, security systems, development of fountain complexes) – RUB 1.2 billion.

**The amount of RUB 7.7 billion was invested in the wastewater system, including:**

- mitigation of wastewater system's negative impact on the environment – RUB 1.1 billion;
- provision of reliable wastewater services – RUB 2.5 billion;
- improvement of energy efficiency and implementation of energy saving measures at wastewater collection and treatment facilities – RUB 0.08 billion;
- access to the sewerage – RUB 3.4 billion;
- other items (production bases, procurement of equipment, security systems, development of public toilets) – RUB 0.6 billion.

**It is worth mentioning the following major projects implemented in 2015:**

- Construction of Okhta sewage tunnel, first phase (started in 2015);
  - Reconstruction of Main Water Supply Plant (the design documentation was adjusted, the tender for construction and installation works was launched in 2015);
  - Construction of the sewage collector along Admiralteyskaya Embankment (the project was completed in May 2015; the direct discharges were channeled to the wastewater treatment plant);
  - The total length of the rehabilitated, repaired and constructed water and sewage networks accounted for 137.6 km. Water and sewage network totaling 162.1 km was put into operation;
  - Design documentation for construction of two water supply plants in Kurortniy district (at Dyuny and Molodezhnoe sites) was developed;
- RUB 2.0 billion from the St. Petersburg budget were invested in water and wastewater infrastructure by order of GKU "Ordering authority for construction and capital repair projects in the engineering and energy sector".

**THE TOTAL INVESTMENT IN WATER SUPPLY AND WASTEWATER DISPOSAL PROJECTS IN 2015 AMOUNTED TO RUB 15 BILLION.**

# ADOPTION OF INVESTMENT PROGRAMME FOR 2016–2020

**In 2015, due to the transition to a long-term planning, a new Vodokanal's Investment Programme for 2016-2020 was adopted taking into account investments implemented by GKU "Ordering authority for construction and capital repair projects in the engineering and energy sector". The total investment for a 5 year period will amount to RUB 97.6 billion.**

The following sources of investments are envisaged for a 5 year period:

- St. Petersburg budget – RUB 38.1 billion;
- Corporate funds and attracted financing – RUB 46.7 billion;
- Connection fee – RUB 12.8 billion.

Besides, work with the federal authorities is going on to raise funds from the federal budget for implementation of such important project as the Okhta Sewage Tunnel Construction (1 stage) and the Reconstruction of Main Water Supply Plant.



**IN 2016, THE INVESTMENT IN WATER SUPPLY AND WASTEWATER DEVELOPMENT AND RECONSTRUCTION PROJECTS WILL AMOUNT TO RUB 14.2 BILLION AS COMPARED TO RUB 13.0 BILLION IN 2015.**

It is worth mentioning the following major projects to be continued or launched in 2016:

- Construction of Okhta Sewage Tunnel, first phase;
- Construction of the looped sewage tunnel along Basseyaya street;
- Reconstruction of Main Water Supply Plant;
- Construction of the second water pipeline along Gorskoe shosse, from the crossroads of the Ring Road and the Western Speed Diameter to the settlement of Gorskaya;
- Reconstruction, capital repair and installation of water and sewage network totaling 138.8 km.



# IMPLEMENTATION OF THE TARGETED REPAIR PROGRAMME IN 2015

**THE FINANCING  
ALLOCATED FOR  
THE TARGETED  
REPAIR  
PROGRAMME  
OF ST. PETER-  
SBURG  
VODOKANAL  
IN 2015  
AMOUNTED TO  
RUB 650 MILLION,  
INCLUDING:  
● WATER  
SUPPLY – RUB  
205.66 MILLION;  
● WASTEWATER  
DISPOSAL – RUB  
444.34 MILLION.**

The expected performance of the targeted programme has amounted to RUB 663.99 million, which is 102.2% of a yearly plan.

**Within the targeted repair programme, the following major projects were implemented in 2015:**

## Water Supply

- 1) Repair of contact clarifiers and replacement of filter media at Kolpino WTP;
- 2) Capital repair of the heating system of screens on the 1st water conduit of the Northern WTP first-lift pumping station;
- 3) Capital repair of the heating system of screens on the 9th water conduit of the Southern WTP first-lift pumping station;
- 4) Repair of contact clarifiers and replacement of filter media at Northern WTP;
- 5) Repair of contact clarifiers and replacement of filter media at Volkovskaya WTP;
- 6) Repair of rapid filters and replacement of filter media at Southern WTP;
- 7) Capital repair of a 6,000 m<sup>3</sup> clean water reservoir no. 3 at Duderhof water pumping station;
- 8) Capital repair of chemical preparation and storage facilities at Northern WTP (restoring of tank thermal and chemical insulation);
- 9) Capital repair of storage tanks of the chemical preparation and storage facilities at Southern WTP.

## Wastewater Treatment

- 1) Capital repair of the primary sedimentation tank no. 5 at Central WWTP (Lit AБ, 1, the Bely Island);
- 2) Capital repair of the aeration system of the aeration tanks no. 10 and no. 12 (Lit БД, 1, the Bely Island);
- 3) Capital repair of sludge treatment facilities at Central WWTP, Northern WWTP and South-West WWTP; capital repair of the SIP turbine at South-West WWTP;
- 4) Repair of sewage tunnel (DN 900 mm) along Arsenalnaya Street;
- 5) Capital repair of FV22700/63 pumping unit at the main pumping station of Northern WWTP (12a, Konnolakhtinskiy pr.).

# THE TARGETED REPAIR PROGRAMME FOR 2016

**The financing allocated for the targeted repair programme of St. Petersburg Vodokanal in 2016 amounts to RUB 670.8 million, including:**

- water supply – RUB 247.0 million;
- wastewater disposal – RUB 423.8 million.

**Within the targeted repair programme, the following major projects are planned for 2016:**

## Water Supply

- 1) Continuation of capital repair of contact clarifiers (Contact Clarifiers Unit-1) at the Northern WTP;
- 2) Capital repair of the rapid filter no. 2 at the Main WTP;
- 3) Capital repair of chemical preparation and storage building at Volkovskaya WTP;
- 4) Capital repair of contact clarifiers building (Contact Clarifiers Unit-3) at the Southern WTP;
- 5) Capital repair of ventilation system of chemico-bacteriological laboratory at Volkovskaya WTP.

## Wastewater Treatment

- 1) Continuation of capital repair of the aeration tank no. 10 at Central WWTP (Lit Б, 1, the Bely Island);
- 2) Capital repair of pumping units at the main pumping stations of Central WWTP and Northern WWTP;
- 3) Continuation of capital repair of sludge treatment facilities at Central WWTP, Northern WWTP and South-West WWTP; capital repair of the SIP turbine at South-West WWTP;
- 4) Capital repair of the boiler house at Northern WWTP (Lit.E, 12/2, Konnolakhtinskiy pr.);
- 5) Capital repair of penstock no. 1 in shaft no. 12 and penstock no. 2 in shaft no. 13 of the sewage tunnel collector in Rzhevka-Porokhovye district.



# VODOKANAL AWARDS

**In 2015, Vodokanal won several international and national awards, where the most prestigious was the Quality Prize 2015 of the Russian Government "for achieving good quality of products and services, and for implementation of highly efficient quality management methods". It was the second time Vodokanal won the Quality Prize: its performance had also been highly appreciated by Russian experts in 2006.**



In 2015, Vodokanal St. Petersburg was awarded a certificate of merit and the medal "For invaluable achievements in development of sectoral legislation" by the Russian Water Association (RWA). The awarding took place at the Third All-Russian Congress of water companies in the town of Alushta in April. At the same Congress, the results of the video film competition "Understanding Water Means Understanding the Universe" organized by RWA were summarized. Vodokanal's video film "The Neva Crayfish and Its Friends" telling about the main character of Da-Voda website (da-voda.com), the Neva Crayfish, was recognized the best in the nomination "Water Will Find Its Way" (the best animation telling about water or the activities of an RWA member company) and awarded the grand prize of the competition – "The Apple Branch".

In 2015, the public organization "St. Petersburg Union of Industrialists and Entrepreneurs": commended Vodokanal activities with a certificate of merit "For proactive approach and substantial contribution to the development of social partnership in St. Petersburg, and on the occasion of the Union's 25th anniversary".

Among other awards received by Vodokanal in 2015 was the certificate of merit for active participation in IX International Green Economy Forum from the organizers. The Forum is a platform for state authorities, scientists and industry representatives to discuss and solve national environmental challenges, and to address the development and application of novel environmental technologies.



Another environmental award was received by Vodokanal for its contribution to the improvement of environment and environmental awareness-raising in the framework of the All-Russian Cleanup Day "Green Spring 2015" organized on the initiative of Vernadsky Fund. The awarding ceremony took place at the opening of the first All-Russian Environmental Children's Festival "Eco-childhood" in the Kremlin Palace in Moscow.

In 2015, Vodokanal won the competition for the best trade union committee's occupational safety officer and the Spartakiad of the Inter-Regional Committee of Trade Unions for St. Petersburg companies and organizations.

Vodokanal received a grant in the nomination "Career Guidance" for the best project in the field of vocational guidance of school students and promotion of technical professions, as one of the winners of the International Competition of organizations for the best youth outreach.

Vodokanal got the Trajectory 2015 Award in the nomination "Senior Teenagers" at the All-Russian Forum "Trajectory of Success" dedicated to professional identity of youth.

In 2015, Vodokanal won the Best Professional Skill Competition of Russian water companies' emergency repair teams; it was also the prize winner of the competition among the sewerage emergency repair teams, excavator drivers and maintenance technicians.

Moreover, Vodokanal was awarded the Honourable Diploma for in-house sports promotion and for its huge contribution to the sports achievements of the Inter-Regional Trade Union Committee at the International Workers' Sports Festival.

IN 2015, THE DIRECTOR GENERAL OF SUE "VODOKANAL OF ST. PETERSBURG" FV. KARMAZINOV GOT THE PRESTIGIOUS BUSINESS STANDART INTERNATIONAL AWARD FOR EFFECTIVE MANAGEMENT AND COMPLIANCE WITH THE INTERNATIONAL MANAGEMENT STANDARDS.

MOREOVER, IN APPRECIATION OF THE DIRECTOR GENERAL'S MERITS IN 2015, HE WAS AWARDED THE 1ST DEGREE SECTORAL MEDAL OF THE FEDERAL SERVICE FOR TECHNICAL AND EXPORT CONTROL "FOR STRENGTHENING OF GOVERNMENTAL INFORMATION PROTECTION SYSTEM".

FV. KARMAZINOV WAS AWARDED THE MEDAL "FOR PROMOTION OF RESCUE SERVICE" BY THE RUSSIAN MINISTRY OF EXTRAORDINARY SITUATIONS FOR "ACHIEVEMENTS IN IMPLEMENTATION OF THE GOVERNMENTAL CIVIL DEFENSE POLICY, PROTECTION OF POPULATION AND TERRITORIES FROM NATURAL AND TECHNOGENIC EXTRAORDINARY SITUATIONS, AND CONTRIBUTION TO THE DEVELOPMENT AND IMPROVEMENT OF THE STATE FIRE FIGHTING SERVICE".

FV. KARMAZINOV' ROLE IN THE DEVELOPMENT OF SOCIAL PARTNERSHIP AND FRUITFUL COOPERATION WITH THE TRADE UNION AIMED TO PROTECT THE EMPLOYEES' SOCIAL AND LABOUR RIGHTS, AS WELL AS HIS CONTRIBUTION TO SPORTS DEVELOPMENT AND ENSURING HEALTHY LIFESTYLE OF EMPLOYEES IN THE COMPANY, WAS HIGHLY APPRECIATED WITH THE DIPLOMA OF THE INTERREGIONAL PUBLIC UTILITIES AND SERVICE WORKERS UNION IN ST. PETERSBURG AND THE LENINGRAD REGION.







# RISK MANAGEMENT

## FINANCIAL RISK MANAGEMENT

## FINANCIAL RISK MANAGEMENT STATUS IN 2015

**The Company is exposed to financial risks which are typical of large utilities, namely: inflation risk, exchange rate risk, interest rate risk and consumer income risk.**

**In 2015, Vodokanal kept using a wide range of tools to minimize financial risks.**

**TO MINIMIZE  
FINANCIAL RISKS,  
VODOKANAL  
OF ST. PETERS-  
BURG FOLLOWS  
A BALANCED  
FINANCIAL POLICY  
BASED ON THE  
STRATEGIC PLAN  
AND LONG-TERM  
PERSPECTIVE.**

To make a long-term forecast, the Company uses its financial model calculated for the period up to 2035.

The financial model evaluates Vodokanal's financial capabilities taking into account the big investment projects implemented with the Company's own or borrowed funds. It takes account of macroeconomic factors and Company development factors to identify potential sources of investments and to project development options under different scenarios.

The model provides instruments for comparative dynamic analysis and monitoring of Vodokanal's performance. The monitoring and analysis results provided by the financial model are promptly used by Vodokanal management to make the necessary amendments to the company's production and investment programs.

To minimize the risk of the reduced income and the risk of the reduced payment collection, Vodokanal implements a steady monitoring of the customers' debt and a package of measures for the debt recovery (for instance, through the arbitration courts, debt restructuring, etc.)

In 2014, the Company hedged foreign exchange and interest rate risks under the attracted Euro loans. The counterparty under the hedge transaction was OOO Goldman Sachs Bank (Moscow, Russia). The hedge transactions were made on the grounds of the documents issued by the Self-Regulatory (Non-for-Profit)

Organization National Association of Securities Market Participants, National Foreign Exchange Association and the Association of Russian Bank. Currently, 97% of all foreign currency liabilities are hedged at the weighted average exchange rate of RUB 47.07/EUR 1 for the period until 2019.

The Company also manages the liquidity risk by maintaining a certain amount of cash and bank deposits, monitoring of the cash flows and compliance with the loan repayment schedules.

Risk management is integrated into the management system via strategic management and budgeting processes. Internal control procedures are implemented by the Company to mitigate all types of risk. Internal audits are made by a separate department within the Vodokanal administration. Scenario-based approach, industry analysis and SWOT analysis are used by Vodokanal as risk identification and assessment methods.

Furthermore, property insurance and third-party insurance of Vodokanal as the owner of hazardous production facilities are used as a financial risk reduction tool.

Continuous monitoring of financial situation and assessing its potential impacts on the key financial indicators enabled prompt updating of financial policy and helped maintain the Company's financial sustainability.

In 2015, Vodokanal continued improving its financial model. The improved model corresponds to the European level and allows to predict and analyze Vodokanal's key financial indicators in accordance with IFRS.

To minimize unfavorable macro-economic factors, in particular, a high inflation rate, Vodokanal has taken measures to increase the efficiency of all its divisions, including the optimization of operating expenses and import substitution.

Due to the earlier hedging of potential foreign exchange and interest rate risks, repayments of the foreign currency loans were made in rubles at the fixed exchange rate as of a certain date, which made it possible to avoid additional costs caused by recent drop of Ruble exchange rate.

Moreover, Vodokanal negotiated with the competent public authorities of St. Petersburg to receive compensations from the St. Petersburg budget for the shortfall in income resulting from the discrepancy between the sales approved for tariff regulation and actual sales.

As a result, in July 2015 in accordance with the St. Petersburg Government Resolution no. 646 dated 21 July 2015 and the Order of the Committee for Energy and Engineering Support no. 140 dated 22 July 2015, the Company received the subsidy to compensate the shortfall in the income from cold water supply and sewage disposal services in the amount of RUB 1,995,596,800 (VAT included).

# NON-FINANCIAL RISK MANAGEMENT

**The risk management system is targeted for a comprehensive risk assessment and implementation of measures to ensure prompt response to altering circumstances and conditions. Risk management system is based on standards such as the standards developed by the Federation of European Risk Managers Associations (FERMA) and ISO 31000.**

**VODOKANAL'S  
INTERNAL  
CONTROL  
FUNCTION  
IS PERFORMED  
BY A SPECIAL  
DEPARTMENT  
THAT DEALS WITH  
PREVENTIVE  
IDENTIFICATION  
AND MINIMIZATION  
OF THE COMPANY  
RISKS.**

**The internal control department works to achieve the following objectives:**

- ensuring the reliability of financial and managerial information;
- protection of the company assets and supporting the effective use of the company resources;
- assistance in optimization of the corporate organizational structure;
- compliance with the applicable laws of the Russian Federation and St. Petersburg and internal regulations;
- implementation of financial and economic action plans.

**The internal control department provides the management of Vodokanal with the information obtained:**

- during inspections of the company departments;
- by analyzing the range and prices of goods and services procured by the company in the course of operations;
- during the examination of basic and supporting processes in the Company.

General procedures for internal control of departments and internal auditing are formulated and approved. Inspection reporting rules and requirements to the form and contents of reports are issued. The development of inspection and audit methods for different types of corporate activities is ongoing.

Segmentation of non-financial risks was made by Vodokanal as a part of self-assessment in accordance with the EFQM Excellence

Model. The key aspects of the Company activities which may lead to risks were identified including the risks of the stakeholders: dissatisfaction of the customers with water and wastewater services, environmental risks, production accident risks and counterparty risks.

The non-financial risks (see Major Non-Financial Risk Map) are systematically managed by Vodokanal using a process-based approach in order to restrain potential losses of the Company.

To minimize the risks associated with the customer dissatisfaction with water and wastewater services, the quality management system based on the International Standard ISO 9001 is continuously improved. Regular interaction with customers through the Hot Line Service in combination with the Company's transparency policy (including active communication with the mass media), as well as questionnaires and customer satisfaction surveys, help mitigate this risk, too. Internal and external audits under the Quality Management System (QMS) promptly identify the management areas to be enhanced and help improve the processes at all stages of the service lifecycle. In this way, the Company performance can be enhanced and customer satisfaction can be raised.

The risks associated with negative impacts on the environment are managed on the basis of the environmental management system ISO 14001 used by the Company.

Vodokanal enhances the reliability of water supply and sewerage, improves wastewater treatment and sludge management technologies, stops the discharge of backwash water from water treatment plants using it for process needs after a proper treatment, and addresses the environmental impacts of its vehicle fleet.

Since 2012, the energy management system (EnMS) based on ISO 50001 has been functioning in the Company to raise energy efficiency at the plants in a systematic way and to reduce risks of unsustainable use of energy resources. EnMs facilitates the optimization of energy consumption. The Company selects and procures energy-efficient equipment, designs energy-efficient processes and facilities.

Reduction of the risks associated with work-related accidents and emergency situations improves the service quality and mitigates negative impact not only on the Company's employees, but also on all Company-related stakeholders (contractors, visitors). Improved occupational health and safety management on the basis of OHSAS-18001 leads to the situation where the identified hazards and hazard-related risks are managed by the Company. Vodokanal continuously improves the working conditions, takes measure to cut down work-related accidents and prevent emergencies at the main production facilities. Currently, professional risks assessment is not only an important part of occupational health and safety management but also a part of the corporate management. This activity is implemented on the basis of OHSAS-18001 and national regulations.

To alleviate the risks associated with undesirable changes in legislation, the company

makes a strong contribution to the development of regulations, makes suggestions and argues its position.

To minimize the risks associated with the need to extend production capacities, St. Petersburg Vodokanal widely implements environmental awareness-building programmes to foster solicitous attitude to water resources among the population.

The risks associated with the pollution of potable water source (the Neva) are mitigated by early detection of pollution events. In particular, Vodokanal has implemented the river water biomonitoring by crayfish at all its water intakes. Oil spills in the river are detected by the monitoring system installed on one of the bridges across the Neva, upstream of the first city water intake.

To mitigate the risks associated with information security, the company implements measures to identify risks, determine risk factors and risk probability; makes analyses and assessments of the risks that may affect the company's information security. The company's informational security management system in accordance with ISO 27001 was established and certified in 2012 to ensure a systematic approach to the information security.

**At present, Vodokanal keeps improving its non-financial risk management. Particular attention is paid to the following areas:**

- development of risk management;
- extension of both internal and external benchmarking;
- development of its own production system with a tentative name "4E: Efficiency, Ecology, Economy, Evolution". 4E will be a consolidating concept determining the place of each of the applied methods, approaches, and standards.

**SUSTAINABLE  
USE OF NATURAL  
RESOURCES,  
SYSTEMATIC  
APPROACH  
TO THE CORPO-  
RATE MANAGE-  
MENT, STRONG  
CONTRIBUTION  
TO THE DEVELOP-  
MENT OF REG-  
ULATORY ACTS,  
ENVIRONMENTAL  
AWARENESS-RAIS-  
ING, INNOVATIVE  
TECHNOLOGIES,  
AND INTERNAL  
AND EXTERNAL  
BENCHMARKING –  
ALL THAT IS INTE-  
GRATED INTO THE  
CORPORATE MAN-  
AGEMENT CUL-  
TURE AND LEADS  
TO MINIMIZATION  
OF COMPANY  
RISKS.**



# NON-FINANCIAL RISK MANAGEMENT STATUS IN 2015

In 2015, the non-financial risk management process was under constant control based on ISO Standards and EFQM Excellence Model, thus ensuring an efficient combination of measures to alleviate the risks taken by the company and measures to minimize, avoid or redistribute the unacceptably high risks.

**Non-financial risk control comprises:**

- identification of all significant non-financial risks (risk map);
- monitoring of the progress of actions designed to mitigate any significant risks;
- immediate response to identified risks or to the situations where the identified risks are near threshold levels;
- effectiveness analysis of risk management actions by the top management.

The risk management process is designed to reduce the probability of unfavorable outcome and to limit potential losses.

KEY NON-FINANCIAL RISKS MAP OF SUE “VODOKANAL OF ST. PETERSBURG”

RISK	RISK FACTORS	DEGREE OF IMPACT	RISK MANAGEMENT MEASURES
Political and regulatory risks			
Risk of economically unjustified restrictions in the state regulation of tariffs for water supply and wastewater disposal	State authorities decide to freeze or limit the growth of tariffs	High	Close interaction with the regulating authority (St. Petersburg Tariff Committee)
Country risk	Special features of the social, economic and political situation in Russia	High	Country risk is weakly managed by the Company, however, it is taken into accounts when strategic decisions are taken or updated
Operational risks			
Production-related and technical risks (risks of breakdowns or incidents)	Losses due to irrecoverable damage of production facilities	High	Company investment programme implementation; Control over the scope and time schedule of repairs
	Losses due to higher cost of providing water and wastewater services compared to the planned equipment operation scenario	High	

RISK	RISK FACTORS	DEGREE OF IMPACT	RISK MANAGEMENT MEASURES
Shutdown of process equipment as a result of any terrorist act or natural disaster in the region	Terroristic or naturally-occurring threats	Above average	Implementation of antiterrorist measures in compliance with the law of the Russian Federation; Protection against potential consequences of accidents, catastrophes and natural disasters; Insurance of property and personnel
Customer dissatisfaction with the quality of water and wastewater services	Lower quality of the services provided	Above average	Management system improvement on the basis of ISO9001 and EFQM Excellence Model
Corruption risks (potential conflicts of interest)	Losses due to economically unjustified terms of transactions with counterparts and payments for nonexistent works	Above average	Enhancement of internal control to prevent conflicts of interest; Compliance with anti-corruption policy and the corporate ethics code
Risks of accidents at production sites	Negative impact on the life and health of the company personnel resulting from their operational activity	Average	Compliance with the Russian laws pertinent to occupational health and safety; improvement of the management system on the basis of OHSAS 18001
Risks of non-performance of obligations by contractors	Non-fulfilment of contractual obligations regarding the time schedule and quality of performed works, the supply of equipment and components	Below average	More detailed preliminary analysis of counterparty risks and control over performance of obligations by counterparties
Strategic risks			
Strategic risk	Incorrect long-term planning of the company development	Above average	Regular updating of the strategic development plan
Environmental risks			
Water quality deterioration and pollution of the Neva	Negative impact of ship traffic and agriculture on the Neva water	High	Maintenance and improvement of the Neva water monitoring system, incl. biomonitoring
Risk of negative impact on the environment	Negative impact on the environment resulting from the company activity	Above average	Management system improvement on the basis of ISO 14001 and ISO 50001

Long-term planning, analysis of key performance results at all management levels, evaluation of stakeholders’ satisfaction, social responsibility and development of partnerships – all these elements have become a part of the corporate management culture to reduce non-financial risks and integrate successfully the non-financial risk management approaches into a holistic system.



# PARTICIPATION IN EXTERNAL INITIATIVES

## OVERVIEW OF THE MAIN PUBLIC EVENTS HELD WITH PARTICIPATION OF VODOKANAL, AND THEIR OUTCOMES

**Being a socially responsible company, Vodokanal devotes much attention to participation in different public events.**

On 12 March 2015, Vodokanal participated in the St. Petersburg Forum dedicated to finalization of the Gulf of Finland Year.

The Forum was attended by the Minister of Natural Resources and Environment of the Russian Federation S.E. Donskoy, the Governor of St. Petersburg G.S. Poltavchenko, the Governor of the Leningrad Region A.Yu. Drozdenko, the Director General of SUE "Vodokanal of St. Petersburg" F.V. Karmazinov, and delegates from Finland and Estonia.

Addressing the Forum participants, G.S. Poltavchenko pointed out that Petersburg had been involved in environmental protection activities over many years. The Governor stressed the role of Vodokanal in such activities, referring to the company as the city's strategic partner.

According to G.S. Poltavchenko, one of the topmost events of the Gulf of Finland Year was the opening of the Marine Mammals Research and Conservation Center in Repino.

Before the plenary session, the Forum participants including the Minister of Natural Resources and Environment of the Russian Federation S.E. Donskoy, the Governor of St. Petersburg G.S. Poltavchenko, and delegates from Finland and Estonia, visited the Marine Mammals Research and Conservation Center in the town of Repino and evaluated its readiness for the new season.

Speaking about the outcome of the Gulf of Finland Year, all Forum participants emphasized that the cooperation would not stop at that. This point was reflected in the joint declaration adopted at the Forum: in particular, it states the necessity to "continue the cooperation in a trilateral format for the purpose of fulfilling national and international commitments on protecting the marine environment of the Gulf of Finland and the Baltic Sea".

On 27 November 2005, Vodokanal together with FBGU Sevzaprybvod and the Federal Fishery Agency (Rosrybolovstvo) implemented a public event aimed to stock the Gulf of Finland with fish.

During the event, over one thousand of juvenile Baltic whitefish were released into the Gulf of Finland from Vasilievskiy Island. Artificial rearing of young fish for subsequent release into its natural habitat is a valuable contribution to the maintenance of whitefish population. The purpose of the event was to rehabilitate the Gulf of Finland and to restore biological resources in the Baltic Sea.

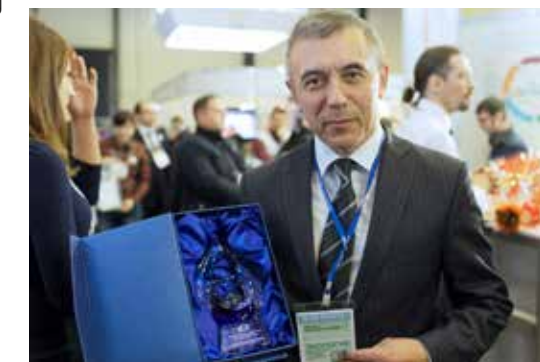


## Vodokanal held the annual Crystal Drop competition for the title of the best customer.

On 18 March, the winners in the nomination "Best Customer among Providers of Municipal Services" were announced. The awarding ceremony was attended by the Vice-Governor of St. Petersburg I.N. Albin, the Chairman of the Inter-Regional Trade Union of public utilities and municipal service workers in St. Petersburg and the Leningrad Region N.A. Leontyeva, and the Chairman of the Housing Committee V.V. Shiyan.

For the second time in a row, the best customers among building management companies, condominiums, housing associations and housing committees were awarded in the framework of the International Trade

Exhibition and Conference "Russian Public Utilities" housed in the Petersburg Congress & Exhibition Centre "ExpoForum". The main purpose of the competition was to encourage the customers who pay for water and sewerage in a timely manner, to build relations between the company and its customers on the principles of openness and partnership, and to search for new ways of improving the quality of service.





At the international forum and exhibition “The Environment of Big Cities”, Vodokanal showcased the results of its Baltic Sea protection activities.

In the framework of the exhibition held at the Congress & Exhibition Centre “ExpoForum” on 18-20 March, panel discussions on import substitution, industrial wastewater treatment, environmental awareness-raising, etc. were

organized at Vodokanal’s stand. The stand also showcased Vodokanal’s social projects: activities of the Youth Environmental Centre and the Universe of Water museum complex, Da-Voda website ([www.da-voda.com](http://www.da-voda.com)) encouraging careful attitude to water, and the International Advanced Water Technologies Center.

Moreover, the information about the Marine Mammals Research and Conservation Centre in the town of Repino and about the Baltic Ringed Seal Friends Fund established with strong support from Vodokanal, was presented in every detail.



On 19 March, Petersburg hosted XVI International Environmental Forum “The Baltic Sea Day” where Vodokanal was an active participant. The Forum was timed to coincide with the Baltic Sea Day celebrated on 22 March.



Speaking about the St. Petersburg Initiative as a platform for public-private partnerships to develop transboundary cooperation and take economically sound action for the good of the Baltic Sea, the Director of International Cooperation Department at the Russian Ministry of Natural Resources and Environment N.R. Inamov prioritized Vodokanal’s project aimed at the improvement of wastewater treatment quality in the region and to mitigate the negative impact on the integrated water system Lake Ladoga – Lake Onega – the Neva – the Gulf of Finland.

On 23 March, Vodokanal was invited by EFQM (the European Foundation for Quality Management) to participate in the joint project “Go Global 2015. Wastainability” of Imperial College London and St. Petersburg State Polytechnic University.

The project promotes sustainable development and careful attitude to natural resources. The project participants, graphic and industrial designers and architects from Great Britain and Russia taking a post-graduate course at Imperial College London and St. Petersburg State Polytechnic University (approximately, 60 people) spent two weeks developing and visualizing vital social projects for our region. In the framework of the “Consumption” team activities, the British and Russian

participants of the programme visited the Universe of Water museum complex and the Youth Environmental Centre where they learnt about different programmes promoting careful attitude to water. Moreover, the guests were told about the activities of the Marine Mammals Research and Conservation Center in Repino. Eventually, the participants presented their projects: video films, exhibition stands, and maquettes representing various environmental and social aspects of the city life.



On 24 March, Vodokanal’s Youth Environmental Centre became partner to 19th model UN youth conference.

Two conference committees, one dealing with environmental issues, and the other – with the Baltic Sea challenges (“the Baltic Forum”) were working at the Youth Environmental Centre. It was the 6th time that the Centre acted as the conference partner.

The Model UN Conference is an international not-for-profit programme of extended education for senior school students.

Working in the committees, young people develop and present their proposals on more sustainable management of water resources in the Gulf of Finland.

In line with the decisions taken at committee meetings, the participants will draw up their resolutions to be presented at the final plenary session of the Youth’s General Assembly.

On 26 March, Vodokanal took part in VI Northern Dimension Forum held in St. Petersburg.

The Forum was organized by the Northern Dimension Business Council and the European Business Association.

The Forum focused on inter-regional cross-border cooperation in the changed world, new approaches to business development, and interaction at the civil society level.

The first technical exhibition and workshop dedicated to import substitution were held at Vodokanal's Information & Training Centre on 8 April.

Among the participants were delegates of 180 national enterprises and professional associations including the Union of Industrialists and Entrepreneurs. The participants could get detailed information on the technologies and equipment used by Vodokanal and showcase their products.



On 25 April, Vodokanal joined the City Improvement Day and the All-Russian Environmental event "Green Spring 2015" organized by the non-governmental Fund named after V.I. Vernadskiy.

The staff of all Vodokanal units came to the banks of the Neva and the Gulf of Finland coast, as well as to other places to clean them from litter.

The cleanup of the Neva banks was done by Vodokanal employees and students of the Water College and of the Nevskiy District School no. 570. Students of the Machine-Building Vocational School helped the Vodokanalers who were cleaning the Gulf of Finland coast in the town of Olgino. During the "Green Spring 2015" event, over 200,000 m<sup>2</sup> of area along the Neva and the Gulf of Finland were cleaned. As many as 254 cubic meters of rubbish were collected and taken away.

The Green Spring participants numbered 534 people; and over 3,200 Vodokanalers participated in the City Improvement Day in different city districts.

On 15 May, the students of Petersburg schools participating in the project "Youth Awareness-Raising in the framework of the International Advanced Water Technologies Center Activities" presented their video reports of "the Baltic Interludes" performed at their schools in the Youth Environmental Centre.

In the course of the Project, students attended classes in the Youth Environmental Centre and then, they organized "the Baltic Interludes" in their schools using the knowledge obtained.

The spectators' and adults' juries have selected two best video films, the authors of which went on a study tour to the town of Lahti (Finland) in the autumn. In November, schoolchildren from Finland made the return visit to the Youth Environmental Centre of Vodokanal, St. Petersburg school and South-West Wastewater Treatment Plant.

The Russian-Finnish environmental awareness-raising project "Youth Awareness-Raising in the framework of the International Advanced Water Technologies Center Activities" has been developed by Vodokanal's Youth Environmental Centre, the International Advanced Water Technologies Center, and Lahti Region Development LADEC.

Over a decade, the Universe of Water museum complex has participated in the international Museums at Night event.



Through this event, a wide audience can be familiarized with water-related aspects and the need to take good care of natural resources. As all country celebrated the 70th anniversary of Victory in the Great Patriotic War in 2015, the Museums at Night event was timed to coincide with this memorable date. On the night of 16 May, the guests were offered a special programme allowing to visit one of the museum complex exhibitions with an entire ticket and to participate in an interactive festival programme in the Information & Training Centre area where they could see imitations of the Siege-time vegetable beds, a field cinema with wartime movies and songs, a thematic concert programme, a repair zone imitating repair works on a damaged water pipe, and an interactive museum programme "Order to Survive!".

A unique exhibition "I am with Vodokanal: I have memories and pride!" was a centerpiece of the event. It was a military-patriotic exhibition of materials from family archives of the Vodokanalers still working at the company. The exhibition showed letters, awards, reminiscences, wartime photos, personal belongings and many other things that had accompanied the soldiers and those who had worked on the home front, as well as archival documents of Main Water Treatment Plant taken from the repository collection of the Information & Training Centre. The exhibition was organized under the inter-museum project "Order to Survive!" contrived and organized by the Information & Training Centre. The project participants were 11 city museums whose collections contained documents and things of the enterprises which had supported the life in Leningrad during the Nazi siege.

**DURING THE MUSEUMS AT NIGHT EVENT 2015, THE UNIVERSE OF WATER MUSEUM COMPLEX WAS VISITED BY 8,046 PEOPLE.**

On 28 May, students from the USA and Russia attended an interactive class at the Youth Environmental Centre (YEC). The young people were authors of environmental mini-projects under the aegis of the international project "Eco-representatives: sustainable development awareness-raising actions for peers". The interactive class was one of the learning stages.

Under the project, the students met members of different youth environmental movements of St. Petersburg: "Separate Collection", "No.More.Waste", and "Bicyclization of St. Petersburg".

On 28 May, the YEC implemented the final project phase: a festival where 12 best mini-projects were demonstrated. The competitive works

addressed the ideas of sustainable development, cyclic economy, and better environment.

The project was implemented in 2014-2015 by the independent not-for-profit organization "Cross-Border Cooperation Centre St. Petersburg" in association with the Kansas University and with the support of the partnership programme US-Russia Peer-to-Peer Dialog.



On 11 July, young employees of Vodokanal St. Petersburg and members of the company's trade union organization' Youth Council participated in the All-Russian Environmental Event "Clean banks for our rivers and lakes" organized by the Inter-Regional Public Organization "Environment Protection Union".

The participants cleaned a city beach at the Malaya Neva River having collected around two tons of litter.



For the third time, the Universe of Water museum complex and the Youth Environmental Centre participated in the city festival "EcoOkhta" organized in cooperation with the St. Petersburg Krasnogvardeyskiy District Administration.

Environmental master classes and an informative competition programme were organized for the guests of the festival. An exhibition of special machinery from ZAO "Vodokanal's Emergency Repair and Rescue Centre" supplemented the Museum's and YEC's programmes.



On 27 September, Vodokanal's Youth Environmental Centre held the creative festival "Knowledge and Creativity – Energy for the Future" for residents of children's homes and their tutors.

The festival participants attended creative master classes "The Emerald City Craftsmen" where they were introduced to different trends in decorative and applied art.

The residents of children's homes and their tutors were invited to join the activities of the YEC's special workshop.

Around 150 residents of six St. Petersburg children's homes, including children's home no. 23 in Petrogradskiy District patronized by Vodokanal, and their tutors participated in the festival programme.

On 29 September, the YEC specialists organized the business game "Water and Cities" in the framework of II St. Petersburg Youth Environmental Forum.

The game participants – students of Petersburg higher schools, proposed their own ideas regarding sustainable water use and developed a project: implementation of water supply and sewerage systems in imaginary cities.

In the game, the young people were to estimate how many water and sewage treatment plants were required for each of the cities and to select the optimal layout of the plants in the city area. In addition to presenting its project, each team was to "obtain approvals" for it from relevant authorities.



Traditionally, during the autumn school vacation, 30 October thru 9 November 2015, the museum complex participated in the City Festival of children's museum programmes "Children's Days in St. Petersburg".

The museum specialists developed an interactive family programme "Ready or not, here I come" for the Festival participants. The programme was attended by 4,523 people.

The City Festival "Children's Days in St. Petersburg" was supplemented by the exhibition "Finding at the Far Side of the World". The exhibition showed exhibits from archaeological, ethnographical and natural science collections of the Yamal Museum and Exhibition Complex named after I.S. Shemanovskiy. The gem of the exhibition was a replica of the baby mammoth Lyuba.



On 6 November, the St. Petersburg Water Cluster's Demonstration & Exhibition Centre was opened.



The Centre is permanently functioning at Northern WWTP in Olgino. The Centre's exhibition area shows over 300 specimens of domestic products and equipment produced by national manufacturers.

The opening of the Demonstration & Exhibition Centre marked the launch of the St. Petersburg Water Cluster practical activities.

The official inauguration was attended by the Governor of St. Petersburg G.S. Poltavchenko, the Director General of SUE "Vodokanal of St. Petersburg" F.V. Karmazinov, Vice-Governors I.N. Albin and O.A. Markov, the Chairman of the St. Petersburg Investment Committee I.A. Babyuk, the Chairman of the St. Petersburg Committee for Industrial Policy and Innovations M.C. Meiksin, and the Deputy Chairman of the Committee for Energy and Engineering Support E.E. Rozova.

On 18 November, Vodokanal hosted the Forum "Turning Over the Pages" dedicated to the 70th anniversary of UNESCO.

The Forum was organized by the Regional Coordination Centre of Associated Regional Schools "Baltika-Sever" in cooperation with Vodokanal's Youth Environmental Centre.

In 2015, in addition to the jubilee, UNESCO marked the 10th anniversary of the Water for Life Programme (2005-2015) announced by the UN General Assembly. The Forum participants were delegates of the St. Petersburg Education Committee; headmasters, teachers and students of UNESCO associated schools and other educational institutions in Petersburg and the region.

The Forum participants visited the Universe of Water museum complex and the environmental workshop at Vodokanal's YEC.



Vodokanal's YEC participated in XX International Festival of Environmental Films "The Green Look" in St. Petersburg on 24-27 November.

Traditionally, the Festival participants are the YEC project winners.

At the Festival, the YEC presented the best video films shot under two projects: "Youth Awareness-Raising in the Framework of the International Advanced Water Technologies Center Activities" and "ECOvision".



On 3 December, the participants of the Petersburg International Youth Forum 3.0 PROorienter were introduced to Vodokanal St. Petersburg.

The Petersburg International Youth Forum 3.0 PROorienter is one of the biggest youth projects of the year. The Forum under the motto "Time to Set Priorities!" addressed 10 key aspects of the governmental youth policy. Delegates from

Russia, Belarus, Hungary, Kazakhstan, Latvia, Lebanon, Poland, Romania, Uzbekistan and Ecuador visited the company's Information & Training Centre as part of their work in the "Economically Active Youth" subpanel.

From 18 December 2015 till 5 January 2016, the museum complex offered environmental awareness-raising interactive programmes "New Year in the Old Tower" for children of Vodokanal employees and the city school students. The new-year programmes 2015 were attended by 5,610 people.



In 2015, the Information & Training Centre developed and implemented the thematic programme "Energy and Power Engineering: Our choice!" for residents of children's homes in the framework of the citywide environmental event "Earth Hour".

On the Children's Day 1 June, the Youth Environmental Centre implemented the interactive programme "The Engineer's Secret Archive" for residents of children's homes and urban summer camps.

The programme was attended by 124 schoolchildren including 41 residents of children's home no. 23 in Petrogradskiy District, and 20 people from Family and Children Aid Center of Vyborgskiy District.



# COMPLIANCE WITH HELCOM RECOMMENDATIONS

**SINCE THEN, VODOKANAL ST. PETERSBURG HAS DONE A HUGE WORK TO PHASE OUT UNTREATED WASTEWATER DISCHARGE INTO THE WATER BODIES, TO BUILD WASTEWATER TREATMENT PLANTS AND TO UPGRADE TREATMENT PROCESSES. AS A RESULT, THE MEETINGS OF COMMITTEES AND HEADS OF DELEGATIONS OF HELCOM MEMBER-COUNTRIES RECOGNIZED THAT THE MAJORITY OF VODOKANAL'S HOT SPOTS WERE ELIMINATED.**

The Convention on the Protection of the Marine Environment of the Baltic Sea (Helsinki Convention) was signed by all Baltic countries in 1974. For the first time ever, the Convention addressed all polluters located in the catchment area of the Baltic Sea. After the collapse of the USSR and other geopolitical changes in 1990s, the new Helsinki Convention was signed in 1992 by the states located along the coast of the Baltic Sea and the European Communities. In October 1998, the Russian Federation joined the Helsinki Convention 1992.

In 1992, the Comprehensive Programme of environmental protection measures in the Baltic Sea Region adopted as a part of Helsinki Convention listed the biggest pollution sources of the region and named them "hot spots". Initially, the Programme specified 132 "hot spots" located in all countries of the Baltic Sea Region.

Out of the 18 hot spots located in Russia, 6 were in St. Petersburg including the 4 hot spots with 19 "hot sub-spots" being the responsibility of SUE "Vodokanal of St. Petersburg".

At that time, wastewater treatment in St. Petersburg was quite unsatisfactory, besides, the discharge of huge volumes of untreated wastewater into the local water bodies had to be stopped urgently.

**The main tasks of Vodokanal with regard to the commitments taken by the Russian Federation under the Helsinki Convention were as follows:**

- closure of untreated wastewater discharges;
- reduction of nutrient load on the Baltic Sea basin.

With the Northern Tunnel Collector put into operation on 10 October 2013, Vodokanal could reach a very high wastewater treatment level (98.4%) and stop the discharge of 122 million m<sup>3</sup>/year of untreated sewage into the Gulf of Finland.



Due to the results achieved by Vodokanal, Russia could apply for exclusion of hot sub-spot no. 18.1 ("sewerage system development") from the HELCOM list.

The 47th Meeting of HELCOM Heads of Delegation on 16-17 December approved the exclusion of hot sub-spot no. 18.1 from the HELCOM list.

Two hot sub-spots of one hot spot 18 (18.11 Kolpino WWTP and 18.15 Metallostroy WWTP) stayed unclosed by 2016. Closure of hot sub-spot no. 18.11 Kolpino WWTP is planned for 2020 after the reconstruction of Kolpino WWTP with the plant capacity increased to 140,000 m<sup>3</sup>/day. The elimination of hot sub-spot no. 18.15 (Metallostroy WWTP) is planned for 2016 with the wastewater diverted to Central Wastewater Treatment Plant.

NO.	HOT SUB-SPOT	STATUS
18.1	Sewage collectors	closed (2014)
18.2	Central WWTP	closed (2010)
18.3	Northern WWTP	closed (2006)
18.4	South-West WWTP	closed (2009)
18.5	Pargolovo WWTP	closed (2006)
18.6	Prigorodniye WWTP	closed (2006)
18.7	Torfyanye WWTP	closed (2006)
18.8	Zavodskiy WWTP	closed (2006)
18.9	Pushkin WWTP	closed (2006)
18.10	Petrodvorets WWTP	closed (2012)
18.11	Kolpino WWTP	Capacity will be increased; hot sub-spot closure expected in 2020
18.12	Kronstadt WWTP	closed (2009)
18.13	Sestroretsk WWTP	closed (2006)
18.14	Pontonnyy WWTP	closed (2009)
18.15	Metallostroy WWTP	WWTP closedown with the wastewater diverted to Central WWTP; hot sub-spot closure expected in 2016
18.16	Repino WWTP	closed (2009)
18.17	Zelenogorsk WWTP	closed (2006)
18.18	Pesochnyy 1 WWTP	closed (2012)
18.19	Pesochnyy 2 WWTP	closed (2012)

The Neva Untreated Wastewater Discharge Closure Programme developed in 2001 is being implemented successfully to improve water environment in St. Petersburg and preserve the Baltic Sea water resources.

Now the Programme is one of the most important environmental projects in the city. In the period 2003-2015 alone, 223 direct discharges of untreated sewage and rainwater totaling 480,000 m<sup>3</sup>/day were diverted into municipal sewage system.

In 2015:

- construction of the sewage collector along Admiralteyskaya Embankment and the sewer along Dekabristov street was completed enabling the closure of 6 more direct wastewater discharges (approx. 1,000 m³/day in total). The direct discharges to the Bolshaya Neva River were diverted to the sewerage collector and to further treatment at the Central WWTP. The environmental impact with reduction of organic and inorganic matter, nutrients and suspended solids amounted to 285 tons per year;

- rehabilitation of sewerage network was finished along Rimskogo-Korsakova street from the Fontanka Embankment to 21 Rimskogo-Korsakova street. The direct discharge from the combined sewage system to the Fontanka River was diverted to the sewerage collector and to further treatment at the Central WWTP. The environmental impact with reduction of organic and inorganic matter, nutrients and suspended solids amounted to 11.6 tons per year.

By 2016, the treatment level of municipal wastewater coming to the combined and municipal sewerage system in St. Petersburg has reached 98.5%.

AT THE END OF 2013, THE ST. PETERSBURG GOVERNMENT APPROVED THE ST. PETERSBURG WATER AND WASTEWATER MASTER PLAN TILL 2025 WITH AN OUTLOOK TO 2030 (REVIEWED IN 2015). THE TASKS TO BE FULFILLED UNDER THE MASTER PLAN INCLUDE THE CLOSURE OF ALL UNTREATED WASTEWATER DISCHARGES.

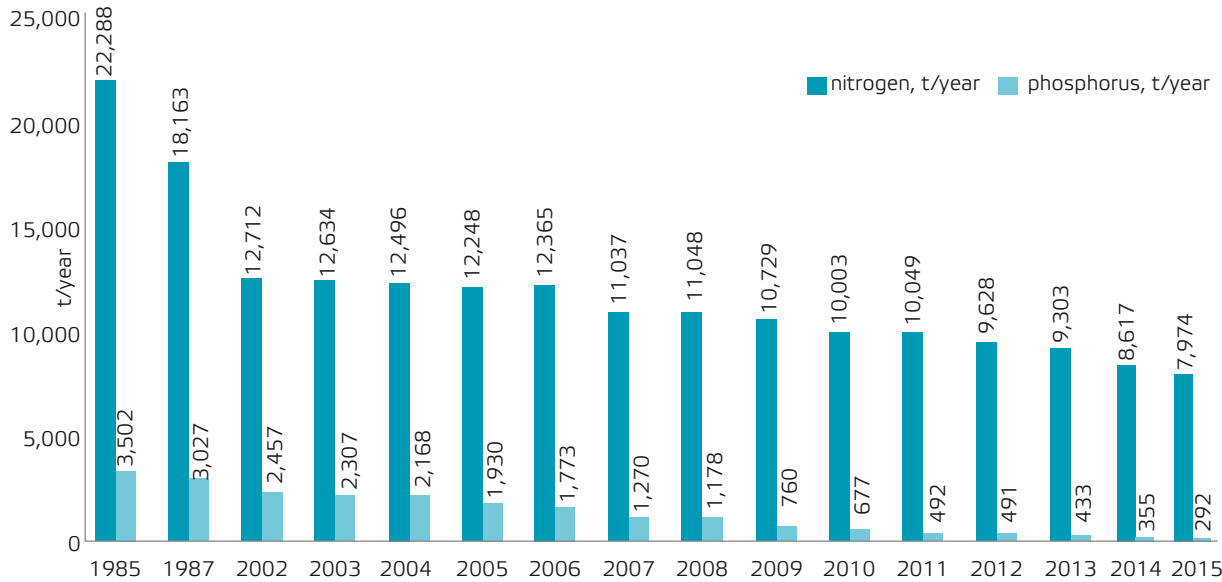
The remaining 96 direct sewage discharges in the city (they account for 1.5% of wastewater still discharged untreated) must be closed by 2020. The discharge volumes are very small; however, interceptors and networks have to be constructed to divert them to treatment plants. In particular, the Okhta collector project should be launched to stop the discharge of untreated municipal and industrial wastewaters into the Okhta River. In 2015, the government contract no. 1/15 was signed to launch the first stage of Okhta Tunnel Collector.

The Master Plan envisages modernization of municipal wastewater treatment plants, including the upgrading of the treatment processes and implementation of tertiary treatment and wastewater disinfection at all plants. The treated effluent quality targets are strictly defined in the HELCOM recommendations.

In the 1990s, HELCOM adopted unified limit values for concentrations of nutrients, nitrogen and phosphorus, for all Baltic countries. The requirements grow increasingly stringent. With the adoption of new recommendation (Recommendation 28E/5, substitutes for Recommendations 9/2, 16/9, and 7/3) for municipal wastewater treatment on November 15, 2007, the requirements to wastewater treatment quality became still more stringent. Concentrations of total nitrogen and total phosphorus in the treated effluent discharged into water bodies shall not exceed 10 mg/l and 0.5 mg/l, respectively.

Vodokanal focused on the modernization of the biological treatment technologies (especially, for the purpose of reaching the phosphorus removal targets). Since 2005, enhanced biological treatment and chemical phosphorus precipitation methods have been applied at St. Petersburg wastewater treatment plants to meet new requirements and achieve stable nutrient removal performance. Since 2008, with the chemical phosphorus precipitation process implemented at all municipal WWTPs, the total phosphorus removal efficiency has reached 89-90%. In 2015, the volume of phosphorus discharged into the Gulf of Finland decreased 6.6 times, and the volume of nitrogen – 1.54 times as compared to 2005. Phosphorus concentration in the total discharged wastewater does not exceed 0.5 mg/l (including the minor portion of the untreated wastewater) and nitrogen concentration does not exceed 10 mg/l.

DISCHARGE OF POLLUTANTS



**To improve the nutrient (also total nitrogen) removal efficiency in 2015:**

- Vodokanal continued to implement the Northern WWTP reconstruction project designed by SWECO, Sweden. In particular, basic construction and installation works for stage 2 of the Northern WWTP were implemented: primary clarifiers 5-7, raw sludge pumping station 2, aeration tank (5 sections) and 5 blowers were set into operation. Start-up and commission of the installed equipment and works related to automatic process control system are underway. Works for stage 1 are ongoing: construction of the underground part of return sludge pumping station no. 1 is performed, pipelines are being laid. The old equipment of primary clarifiers no. 1–4 is dismantled, construction works are being implemented.
- The blowing station at the Central WWTP is under reconstruction within upgrading the aeration tanks no. 5 and 6. Compressors, air pipelines, electrical equipment of old air blowers are disassembled. Equipment is delivered and air blowers are installed on a new foundation. Electric equipment installation and connection to electric power supply is carried out. The completion deadline is 2016.

**IN 2015, SLUDGE THICKENERS AT PUSHKIN WWTP WERE RECONSTRUCTED AND STARTED UP.**

**CONSTRUCTION OF WWTP IN MOLODEZHNOE SETTLEMENT WAS COMMENCED.** The plant is to be commissioned in the end of 2017.

**THE BIOLOGICAL TREATMENT SYSTEM AND SLUDGE THICKENING FACILITIES WERE STARTED UP AND COMMISSIONED AT KRONSTADT WWTP** after modernization of WWTP with introduction of JHB technology. Some snags were revealed for air flow meters and nitrate pumps of the aeration tank in the course of start-up and commissioning, for which reason completion of works was postponed to 2016 until the elimination of the above snags.

**UNDER RECONSTRUCTION WORKS AT KOLPINO WWTP (WITHOUT INCREASING WWTP CAPACITY),** rehabilitation of section 1 of the aeration tank was performed within the first stage of implementing nutrients removal technology with installation of new tubular aeration system (OOO “SGS”). The section is in operation. Construction and installation works for secondary clarifiers are ongoing (SC-4 of stage 1 and SC-3 of stage 2).

**THE MASTER PLAN ENVISAGES DIVERTING OF WASTEWATER FROM METALLOSTROY WWTP CATCHMENT AREA TO THE CENTRAL WWTP CATCHMENT AREA.**

Building of networks and rehabilitation of sewage pumping station is needed in order to construct this wastewater diverting system. Construction of a 300 m sewerage network at Metallostroy WWTP territory was completed by Vodokanal’s own efforts. Tender procedure is being prepared to perform construction and installation works within the upgrading of the sewage pumping station and laying of sewage network.





The recognition of the fact that the enhancement of the Baltic Sea environment is only possible through joint efforts in the field of innovation and awareness-raising led to the signing of the Memorandum of Understanding between HELCOM and SUE “Vodokanal of St. Petersburg” on April 19, 2013. The subject of the Memorandum is the support to joint activities for the Baltic Sea enhancement. The Memorandum provides for information sharing and collaboration in bringing treatment plants into compliance with the HELCOM recommendations.

Under the cooperation referred to in the Memorandum of Understanding between HELCOM and Vodokanal of St. Petersburg, a pilot project, aimed to identify sources and types of the pharmaceuticals discharged from St. Petersburg into the Baltic Sea, is launched (scientists from the Environmental Safety Research Centre under the Russian Academy of Sciences are involved in the project implementation). The test pharmaceuticals are diclofenac and ethinylestradiol, as their negative impact on the hemathernal species in the Baltic Sea has been reported.

The results have shown that diclofenac removal at WWTPs is very poor, therefore it was recommended to make further studies to determine the maximum admissible concentration of diclofenac in the influent to WWTPs.

As for ethinylestradiol, it was found that potential concentrations of the pharmaceutical in municipal sewage (0.004 ng/l) were lower than the most stringent environmental quality standards (0.007 ng/l). The decision was made to continue research on the matter together with HELCOM in 2016.

In 2014, the pilot project to detect microplastics in wastewater was implemented. Microplastics and their impact on water environment is a new challenge raising concern worldwide, since such “litter” is not biodegradable and tends to accumulate in the environment.

On 3 October 2013, the Ministers of Environment and high-level officials from nine Baltic countries and the European Union adopted the HELCOM Copenhagen Declaration. In the Declaration all parties agreed that the “regional action plan on marine litter shall enable ... development and testing of technology for removal of microplastics and nanoparticles in municipal wastewater treatment plants by 2020 and, inter alia, interaction with industrial companies to ban the use of microplastics and to assess the use of nanoparticles in production processes (e.g. in cosmetics production)”. Therefore, it is important to get reliable information on microplastics concentrations in wastewater.

In 2014, laboratory tests were made to detect microplastics in wastewater at Vodokanal’s WWTPs. It was found that the removal efficiency of different modifications of microplastics at municipal WWTPs was rather high (96% average) as shown in the table below.

MICROSCOPIC LITTER PER 1 LITER OF WASTEWATER

LITTER TYPE	INFLUENT WASTE-WATER TO WWTPS	AFTER MECHANICAL TREATMENT	AFTER FINAL TREATMENT	TREATMENT EFFICIENCY,%
Textile fibers	467	33	16	96.57
Synthetic particles	160	21	7	95.63
Black particles	3,160	302	125	96.04

It was also found that microplastics (fibers and particles) concentrations were much higher in the treated effluent than in the Baltic Sea waters. It was recommended to continue the studies to underpin a legislative initiative aimed at minimization of microplastics concentrations in industrial wastewater.

Microplastics issue was widely discussed again within the frame of the Baltic Sea Day events in 2015. The results of joint work implemented by Vodokanal of St. Petersburg and HELCOM to determine microplastics in wastewater before and after treatment at WWTPs became the subject of the discussions.



In 2015, Vodokanal gave support to the development of HELCOM Recommendations for Sewage Sludge Handling. The objectives of this document are as follows:

- to decrease negative impact on the environment by reducing landfilling of sewage sludge;
- to recommend possible options of beneficial use of sewage sludge with consideration for:
  - 1) Energetic potential of sewage sludge;
  - 2) Content of useful elements including phosphorus.

Also in 2015, Vodokanal took an active part in a number of HELCOM events aimed to protect the Baltic Sea. The official completion of the Gulf of Finland Year 2014 took place on 12 March 2015 in St. Petersburg. The International Forum dedicated to the completion of project was organized. All participants emphasized that this was not the end of collaborated effort. In the joint declaration adopted at the Forum, among other things, the need to “continue cooperation in a trilateral format to fulfil national and international commitments in relation to the protection of marine environment of the Gulf of Finland and the Baltic Sea” was recognized.

## PARTICIPATION IN THE UN GLOBAL COMPACT

**The UN Global Compact (UN GC) is the world's biggest voluntary initiative that unites companies and organizations utilizing ten principles for responsible business in the areas of human rights, labour, environment protection and anti-corruption. The UN Global Compact principles are based on the Universal Declaration of Human Rights, International Labour Organization Declaration, the Rio Declaration on Environment and Development, UN Convention against Corruption.**



In 2007, SUE "Vodokanal of St. Petersburg" undertook voluntary commitments to comply with the ten UN Global Compact principles in its operations. Vodokanal's support of the UN GC initiative demonstrates its eagerness to meet international standards in all areas of activity and confirms its intention to promote social projects.

The Company developed a corporate social responsibility system which comprises the following elements: social support for personnel potential and motivation, continuous training and retraining programs, youth policy, health and safety system, care for labour veterans, development of physical culture and sports, interaction with labour unions. Vodokanal's participation in the UN Global Compact is the basis for planning and implementation of its social responsibility policy.

In the last four years, SUE "Vodokanal of St. Petersburg" has been acting as Environment Activity Coordinator for the Global Compact Network Russia. In 2015, as a part of the Environment Activity, Vodokanal implemented Help the Pinnipeds Project, Da-Voda website, Youth Environmental Centre projects. In 2016, it was decided that Vodokanal would continue its role of the coordinator.

Aiming at successful implementation of the UN GC principles, in 2015, Vodokanal participated in working meetings, conferences and workshops organized by the Global Compact Network Russia to ensure efficient exchange of experience, presentation of the best available practices and innovations. Participation in such activities enables Vodokanal to be aware of the international best practices related to the sustainable development.

In 2015, Vodokanal took part in the now-traditional Russian Business Week organized under the auspices of the Russian Union of Industrialists and Entrepreneurs together with the Global Compact Network Russia; participated in Roundtable "Business and Human Rights: promotion and implementation of business activity guidelines in terms of human rights" focusing on establishing partnerships to implement the following priorities: social investments, systematic training and awareness-raising of personnel, social responsibility before personnel, creation of new jobs and unemployment problem. Vodokanal participated in the conference "Business and power partnership in the interests of social stability" which covered the issues related to the social situation in the Russian Federation, allocation of responsibility between the state, business and society for maintaining social stability, developing a system of professional standards, improving labour quality and establishing a system of independent assessment of qualifications. Besides, in 2015, Vodokanal took part in three advisory groups meetings in the frames of the Global Compact Network Russia focusing on the urgent issues of business communities.

Vodokanal regularly discloses the results of its activities to the stakeholders and the general public. The consolidated information is published in the corporate sustainable development report which is annually produced in accordance with the international standards of social reporting and posted, in English and Russian, on the official website of the UN Global Compact. In 2015, Vodokanal for the sixth time presented the Sustainable Development Report at the international exhibition of non-financial reports by participant members of the Global Compact Network Russia. The aspects of Vodokanal corporate responsibility are reported in the corporate media – the corporate website and newspaper.

Vodokanal considers its participation in the UN Global Compact as a unique strategic opportunity to promote the social corporate responsibility principles and to further improve the corporate sustainable development practice.



# INVOLVEMENT IN THE DEVELOPMENT OF REGULATORY FRAMEWORK

**In 2015, Vodokanal specialists participated in the development of draft regulatory legal acts at federal and regional levels aimed to regulate relations between different actors of the water sector and with associated sectors.**

It should be particularly noted that in 2015, the development of the regulatory framework necessary for functioning of the Federal Law no. 416-FZ dated 7 December 2011 "On Water Supply and Wastewater Disposal" (Water Supply and Wastewater Disposal Law) was completed to make the mentioned law fully operational. That work ended up with the registration of the following laws and regulations by the Russian Ministry of Justice:

- Guidelines on the estimation of production and distribution losses of hot, potable and utility water in centralized water supply systems (registered by the Russian Ministry of Justice on 17 February 2015);
- Guidelines on the estimation of collected (disposed) wastewater volumes using the sewer throughput method (registered by the Russian Ministry of Justice on 26 February 2015);
- Guidelines on the estimation of collected (disposed) rainwater volumes (registered by the Russian Ministry of Justice on 27 February 2015).

The development of the above documents was completed as early as in 2014, but a significant work on their amending and modifying has been done on the basis of the comments by the Russian Ministry of Justice.

In early 2015, Vodokanal employees suggested developing a number of initiatives aiming to improve the legislation on water supply and wastewater disposal. So, Vodokanal experts prepared amendments to the Water Supply and Wastewater Disposal Law aimed at improving terms and conditions of appointing a guaranteeing organization (cancelling the compulsory requirement to appoint a guaranteeing organization), regulating the reimbursement of lost income to water companies.

In the accounting period, work on the draft law no. 386179-6 "On amending the Federal Law "On Water Supply and Wastewater Disposal"" continued. In particular, the draft law was under preparation to be adopted in the second reading. In 2015, the draft law was subject to major changes related to improving legislative regulation of relations between the actors of the environmental sphere (transfer to using BAT, changes in the setting of norms related to the negative environmental impact).

**During 2015, Vodokanal experts were actively engaged in discussing a number of draft legal acts of key importance for the functioning of the water sector and housing utilities. The following documents should be pointed out:**

- Federal Law dated 29 June 2015 no. 176-FZ "On amending the Housing Code of the Russian Federation and some legal acts of the Russian Federation";
- Federal Law dated 3 November 2015 no. 307-FZ "On amending some legal acts of the Russian Federation with a view to strengthen payment discipline of energy consumers";
- Federal Law dated 28 November 2015 no. 357-FZ "On amending some legal acts of the Russian Federation" (in terms of distribution of powers between different levels of local government in the spheres of water supply and wastewater disposal, waste management);
- Federal Law dated 13 July 2015 no. 224-FZ "On Public-Private Partnership, Municipal-Private Partnership in the Russian Federation and on amending some legal acts of the Russian Federation";
- Decree of the Russian Government dated 5 January 2015 no. 3 "On amending

some acts of the Russian Government related to wastewater disposal";

- Decree of the Russian Government dated 14 October 2015 no. 1101 "On amending some acts of the Russian Government related to wastewater disposal".

**Besides, the following legal acts, which made a significant impact on the legislative regulation of relations in the environmental sphere in terms of wastewater disposal, were adopted in the accounting period:**

- Federal Law dated 13 July 2015 no. 221-FZ "On regulatory aspects of legal relations associated with the construction and reconstruction of transportation facilities at federal and regional levels to provide transportation between the Taman Peninsula and Kerch Peninsula, as well as the engineering infrastructure facilities at federal and regional levels on the Taman Peninsula and Kerch Peninsula, and on amending some legal acts of the Russian Federation" (with regard to imposing moratorium until 1 January 2019 on the validity of certain provisions placing additional property liabilities on customers of water companies in terms of wastewater disposal);
- Federal Law dated 29 December 2015 no. 404-FZ "On amending Federal Law "On the Protection of the Environment" and some legal acts of the Russian Federation" (with regard to the cancellation of certain regulatory aspects of relations in the sphere of the environmental protection in terms of wastewater disposal).

The adoption of the above regulatory acts was driven by the need to reduce the non-tax financial burden on the industries which buy water supply and wastewater disposal services from water companies. In the reporting period, activities related to identification of ways to mitigate risks of potential adverse economic and ecological consequences of the mentioned regulatory acts were conducted.

Vodokanal experts were actively involved in the discussion of possible changes in a number of the regulatory acts of St. Petersburg which govern relations in the water supply and wastewater disposal sphere. For example, they discussed possible changes in the Order of the St. Petersburg Government Committee for Energy and Engineering Support dated 8 November 2012 no. 148 "On establishing standards for the quality of wastewater to be discharged into St. Petersburg wastewater disposal system" – namely the adjustment of the standards specified in the specified Order. Efforts were made to improve the Decree of the Russian Government dated 19 October 2004 no. 1677 "On procedure of collection of payments for discharge (receipt) of wastewater and pollutants into St. Petersburg wastewater disposal system".

The outcomes of the regulatory and analytical work conducted in 2015 indicate the completion of the active phase of reforming the legislation in the water and housing sectors. Moreover, the scope of the regulatory work is expected to be increased in 2016, since the existing regulatory basis should be adjusted to the updated federal legislation.

## INVOLVEMENT IN THE DEVELOPMENT OF PROFESSIONAL STANDARDS

**At the present time, major updates are being introduced into the Russian Qualifications System thus influencing almost all sectors of Russia's economy and social sphere.**

Vodokanal of St. Petersburg has been actively involved in the development of the water-related professional standards.

In October 2015, Vodokanal established a working group on professional standards aimed to:

- participate in public and professional debate on draft professional standards;
- preparation of proposals on the development of professional standards for housing and public utilities in terms of water supply and wastewater disposal;
- elaboration of measures to introduce the approved standards into the Company.

Vodokanal St. Petersburg has been actively cooperating with the leading organizations in the sphere of development, assessment and application of water-related professional standards – the Russian Water Association, the Presidential National Council for Professional Qualifications and National Research University "Higher School of Economics".

**In 2015, Vodokanal management took a decision to initiate the establishment of the Council for Professional Qualifications in the Water Sector to develop and expertize the relevant professional standards, update the educational standards in accordance with the requirements of the professional standards, arrange the performance of the relevant qualification assessment system.**

Vodokanal experts reviewed and commented on twelve professional standards. Nine of them have already been approved by the Ministry of Labour of the Russian Federation.

- Water intake operation specialist;
- Water pumping stations operation specialist;
- Wastewater treatment plant operation specialist;
- Water treatment plant operation specialist;
- Operator of sedimentation and aeration tanks;
- Pumps and compressors maintenance worker (for the systems of heat and water supply);
- Operator of tertiary treatment and effluent disinfection systems;
- Wastewater treatment plant design engineer;
- Water and wastewater pumping stations design engineer;
- Water intake operator;
- Coagulation specialist;
- Chemicals preparation and dosing operator.

Vodokanal experts prepared their proposals on the functional map of the professional standards for the ten key professions of the water sector and forwarded them to the Russian Water Association to include them into the Professional Standards Development Plan 2016.

## ACTIVITIES OF THE INTERNATIONAL ADVANCED WATER TECHNOLOGIES CENTRE

**The International Advanced Water Technologies Centre – a joint project implemented by Vodokanal St. Petersburg and Lahti Region Development LADEC Ltd. (former Lahti Science and Business Park Ltd., Finland) – has been successfully operating for several years.**

Great work has been done during this period and today the Centre functions as an integrated well-established system. The Centre activities are carried out in accordance with the yearly schedule of key training sessions. Contacts established with the Russian and foreign partners help find the best experts to develop educational materials.

Different formats of the Centre training activities are developed to involve various target groups of participants (managers, average specialists, students and schoolchildren).

To improve the performance of the Centre, the participant feedback process was established. The state registration of the Centre as a non-commercial partnership was carried out; the Centre's active engagement in the large-scale international forums and exhibitions facilitates the development of the Centre.

**In 2015, the Centre continued to pursue the following objectives and tasks:**

- provide training in the field of innovative water supply and wastewater disposal technologies;
- enhance the proficiency of St. Petersburg Vodokanal employees as well as the employees of Russian and foreign companies operating in water and wastewater sectors;
- share experience in the technologies applied in water supply, wastewater disposal, environment protection and rational use of natural resources;

- accumulate, generalize and promote knowledge of innovations both in the sphere of the applied technologies and in water and wastewater management;

- contribute to the promotion of innovations both in the sphere of the applied technologies and in water and wastewater management for further dissemination of innovative solutions among Russian companies;

- perform environmental awareness-raising activities.

**THE YEAR 2015 WAS THE ANNIVERSARY YEAR FOR THE CENTRE – IT HAS BEEN CARRYING OUT ITS ACTIVITIES FOR 5 YEARS SINCE JANUARY 2011.**

The program of the main activities in 2015 was rather extensive and diverse. Workshops and conferences for water specialists as well as different forms of training activities for schoolchildren and students of water-related and other colleges were conducted.

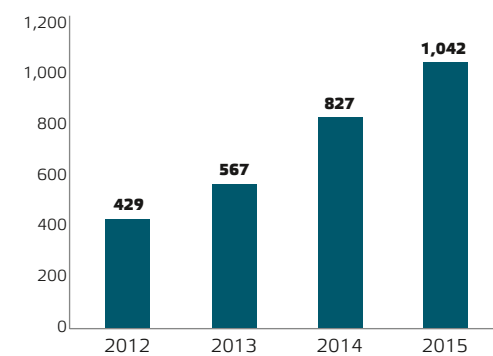


**TOTALLY, REPRESENTATIVES OF 43 RUSSIAN VODOKANALS, 84 RUSSIAN AND FOREIGN COMPANIES AND 7 HIGHER EDUCATION INSTITUTIONS PARTICIPATED IN WORKSHOPS ORGANIZED BY THE CENTRE IN 2015.**

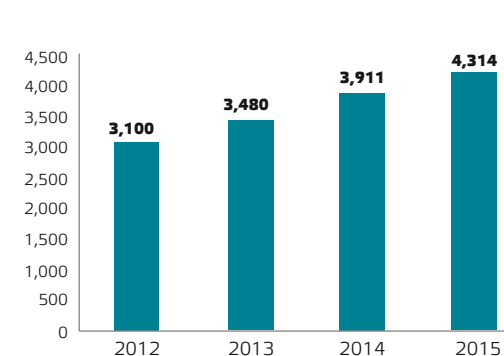
So, in 2015, the Centre conducted 13 workshops for water sector employees, the lectures were delivered by leading experts from Vodokanal, partner-companies experts from the recognized European organizations and institutions. The workshops consisted of both theoretical and practical parts including site visits to the facilities of Vodokanal and other companies. These activities covered

the most important issues in the water sector, presented the innovative technologies of the water sector, enabled the experts from the Russian and foreign companies to share their opinions and experience. The training workshops were focused on improving the professional qualification level of not only Vodokanal employees but also the representatives of other Russian Vodokanals.

**TOTAL NUMBER OF PARTICIPANTS IN THE CENTRE WORKSHOPS IN 2012, 2013, 2014 AND 2015**

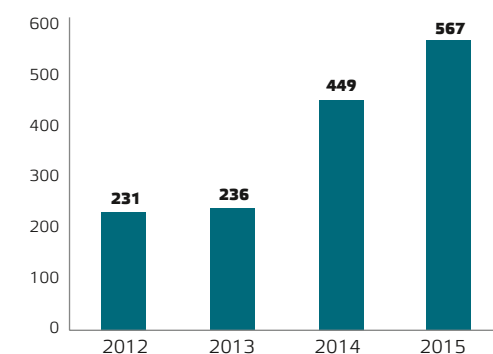


**TOTAL NUMBER OF PARTICIPANTS IN THE CENTRE ACTIVITIES IN 2012, 2013, 2014 AND 2015**



During 2015, over 4,300 Russian and foreign participants including over 1,000 water experts attended the Centre activities.

**NUMBER OF VODOKANAL EMPLOYEES AT THE WORKSHOPS IN 2012, 2013, 2014 AND 2015**



The activities of the Centre are an integral part of Vodokanal operation because they are aimed, among other things, at addressing the educational needs in the sphere of professional training and qualifications. Therefore, significant attention was paid to the training of Vodokanal employees in 2015, as before.

Such training sessions are conducted in the frames of the Centre workshops. The results of the workshops show the increase in the number of participants, as well as their interest in further training activities.

In 2015, the Centre paid great attention to the environmental awareness-raising activities for the younger generation. This work is regarded as an important factor of the social responsibility. The activities are organized in the form of workshops, interactive and laboratory classes, lectures, on-the-job training and projects, and are conducted in the Youth Environmental Centre of Vodokanal of St. Petersburg and in city schools, as well as abroad.

Substantial contribution into the arrangement of these activities was made by the employees of the Youth Environmental Centre. They developed plans of the classes aimed at solving not only the issues of environmental education and informing the participants of Vodokanal activities, but also the issues of practical implementation of the knowledge learned.

The educational and awareness-raising course for schoolchildren dedicated to the problems of the Baltic Sea proceeded in

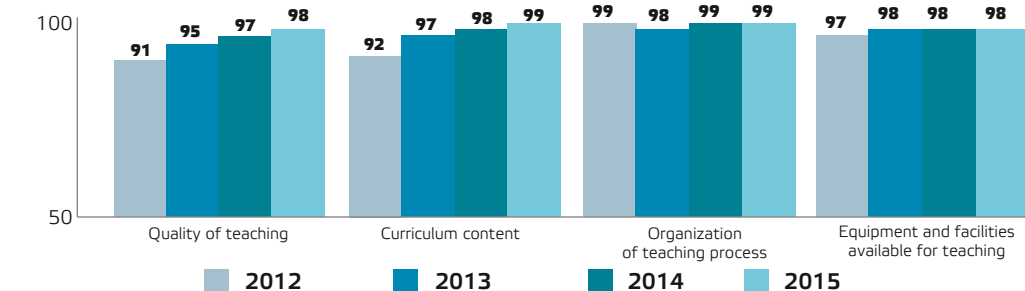
2015. On its completion, the schoolchildren presented their approach to conservation the ecosystem of the Baltic Sea and solving the environmental problems.

The grand prize – a trip to Finland for exchanging knowledge with Finnish peers – is a great incentive that attracts schoolchildren into the course.

Similar activities were carried out in Finland, and the winners of interschool projects visited St. Petersburg.

Year by year the Centre keeps on developing and improving its activities to make them attractive to new participants. A key to the growth of the number of interested persons is the system of questionnaires and feedback with the participants. The system allows to identify the level of satisfaction with the Center activities as well as to take into account the participant recommendations for the future, in particular – the inclusion of topics of their interest into the program of the future workshops.

**SATISFACTION LEVEL BASED ON THE QUESTIONNAIRES RESULTS (%)**



The results of the Centre activities in 2015 confirmed the efficiency of its performance.

Such efficiency of the Centre is due to the access to the intellectual resources of both Vodokanal and water science communities of Russia and foreign countries.

The most experienced and notable reporters are attracted on the competitive basis which guarantees the highest level of their preparation.

The fact that the establishment of the Centre was initiated by the Northern Dimension Business Council, which working group is co-chaired by the Director General of St. Petersburg Vodokanal and the Director of Strategic Development Department of the Ministry of Employment and Economy of Finland, creates additional positive reputation to the Centre.

The Centre is unique because of its active direct contacts with the wide range of stakeholders: Vodokanals, scientific and research organizations of Russia and CIS countries. Active interaction with external partners gives additional opportunity for advertising and promoting the objectives and mission of the whole Company and strengthens its image.

We should mention the Centre's extensive "geography of cooperation". In 2015, its activities were attended by representatives of the Russian vodokanals and water companies from the Far East to the western frontiers of Russia, as well as CIS countries.

Today, the Centre is a structure which has made a name for itself not only in Russia but also in other countries in the world.

**IN 2015, THE CENTRE CONTINUED TO CONDUCT LECTURES, INTERACTIVE LESSONS AND PRACTICAL STUDIES FOR ST. PETERSBURG UNIVERSITY STUDENTS OF RELEVANT PROFESSIONS AND OTHER PROFESSIONS. SUCH ACTIVITIES HELP FUTURE SPECIALISTS GET FAMILIAR WITH THE ROUTINE AND SHOW THEMSELVES UPON ENTERING EMPLOYMENT.**

**OF VITAL IMPORTANCE FOR THE DEVELOPMENT OF THE CENTRE IS ITS PARTICIPATION IN INTERNATIONAL EXHIBITIONS AND FORUMS. IN FEBRUARY 2015, THE CENTRE REPRESENTED ITS ACTIVITIES IN THE EXHIBITION BOOTH OF VODOKANAL ST. PETERSBURG AT THE INTERNATIONAL FORUM "ECOLOGY – 2015".**

# MEMBERSHIP IN ASSOCIATIONS, UNIONS AND OTHER ORGANIZATION

## SUE “Vodokanal of St. Petersburg” gives much attention to participation in professional associations and unions.

The Company is a member of the Russian Water Association (RWA) – a leading union of water experts in Russia. Felix V. Karmazinov, Director General of Vodokanal, is a member of the RWA Board.

Baltvod Association of North-Western Water Companies initiated by Vodokanal in 1991 actively participates in promotion of the advanced technologies in water sector of the North-West Federal District. In 2015, Baltvod Association conducted several joint workshops and conferences at the premises of Vodokanal. Felix V. Karmazinov, Director General of Vodokanal is the chairman of the Association Board.

In 2015, Vodokanal together with Lahti Region Development LADEC Ltd. (Finland) continued to promote the Non-Commercial Partnership “International Advanced Water Technologies Centre” which activities are aimed at the provision of training in the field of the advanced water and wastewater technologies for the Company’s employees, water companies from other regions of Russia and abroad.

Since 1 December 2011, St. Petersburg Vodokanal has been a full member of the European Foundation for Quality Management (EFQM).

Moreover, Vodokanal St. Petersburg is actively involved in the work of the Non-Commercial Partnership “Russian Water Association” and the Non-Commercial Partnership “National Union of Vodokanals” (NUV) established in 2009 where Felix V. Karmazinov, Director General of Vodokanal, is the President.

Since 2014, Vodokanal St. Petersburg has been involved in the international benchmarking program for water services conducted by the independent not-for-profit partnership “European Benchmarking Co-operation”. The main objective of the project is to benchmark water supply and wastewater disposal services mostly provided by the European utility companies.

Vodokanal St. Petersburg is a member of two self-regulatory organizations: the Non-Commercial Partnership “Association of Builders of St. Petersburg” and the Not-For-Profit Partnership “Interregional Union of Design Engineers”.

**EFQM is a non-for-profit membership organization. It was established in 1987 by 14 leading European companies with the support of the European Commission to increase the competitiveness of the European economy by promoting new management approaches, stimulating training in management fundamentals and creating opportunities to be recognized for success in this field.**

**Currently, EFQM members number over 800 European organizations totaling several millions of employees. EFQM was established to assist organizations in achieving sustainable success by giving them relevant recommendations.**

There is a set of key principles upon which the EFQM’s fundamental concept of Excellence is based:

- Adding value for customers;
- Sustainable achievement of the distinguished results;
- Leading with vision, inspiration and honesty;
- Developing organization capacities;
- Succeeding through the talent of people;
- Using creativity and innovation;
- Managing with flexibility;
- Creating a sustainable future.

Over 30,000 companies throughout Europe use the EFQM Excellence Model. It is a proven, well-defined structure of 32 criterion parts grouped under 9 criteria which allow to implement the fundamental concepts of Excellence and achieve sustainable future. The Model shows the cause-effect relationships between what is done in a company (what approaches are used), how it is done (how extensively and at what levels the approaches are used) and what results are gained (achievement of the goals).

One of the top-priority tasks of Vodokanal St. Petersburg is the improvement of the Company’s management system aimed to raise responsibility for sustainable future of the Baltic Sea region.

Using the Excellence Model in its operations, Vodokanal is in a constant search for ways to develop and improve the performance, including:

- the increase of the reliability and efficiency of water supply and wastewater disposal systems through the introduction of up-to-date management and metering systems, improvement of water and wastewater treatment processes;
- rational use of water resources in the course of treating, distributing and provision of drinking water to consumers;
- protection of the environment while treating wastewater, handling and utilizing wastewater sludge;
- guaranteeing to consumers the quality of water supply and wastewater disposal services that meet and exceed the requirements of Russian and European standards;
- keeping the investment attractiveness to implement reconstruction and building programs;
- effective resource management to optimize costs.

The Foundation organizes the EFQM Excellence Model Competition to motivate organizations which introduce self-assessment according to EFQM Excellence Model, share experience in improving management practices.

Companies that comply to the maximum with the EFQM Excellence Model become winners of a prestigious prize – the EFQM Excellence Award (there are also Prize Winner and Finalist Nominations). But before a company starts to compete for the Excellence Award, it should pass, as a rule, several levels (“Committed to Excellence” Level and “Recognized for Excellence” Level) and receive relevant certificates.

Since 2006, to improve its management framework, Vodokanal has started self-assessment of its activities on the basis of the regional model (the Russian Federation Government Regional Quality Model) that is harmonized with the EFQM Model. Since 2009, Vodokanal has conducted the self-assessment on the basis of the EFQM Model.

The constant self-assessment enables the managers to see problems and challenges, respond to them in a timely manner, develop risk reduction alternatives and achieve the set goals.

## Main stages of interaction with EFQM:

- in 2009, Vodokanal received the certificate confirming compliance of the Company’s management with the “Recognized for Excellence” 5 stars level of the EFQM Model;
- in 2010, Vodokanal won the International Quality Tournament of Central and Eastern Europe;
- in 2011, St. Petersburg Vodokanal became a finalist of the EFQM Excellence Award. The Company was the first to achieve such a result among European water companies;
- in 2012, St. Petersburg Vodokanal won the best practice competition in creative use of social media organized by the European Foundation for Quality Management (EFQM). Vodokanal presented at the competition its video-film “The Neva Crayfish and His Friends” telling about the da-voda website ([www.da-voda.com](http://www.da-voda.com)) – the project aimed to disseminate the ideas of careful attitude to natural resources;
- in 2015, two Vodokanal’s employees who had been trained on the EFQM Model were engaged as EFQM assessors in examining Russian companies for nomination to “Recognized for Excellence” Level.



## SUPPORT OF REGIONAL INITIATIVES

**In 2015, experts of the Information & Training Centre, the Universe of Water Museum complex and the Youth Environmental Centre participated in the regional events targeted to the raising of the environmental awareness among children, youth, citizens and guests of the city.**

More specifically, they:

- organized and implemented the city contest "Fundamentals of Safe Water Use" in the framework of All-Russian School Olympiad in Life Safety, the city round;
- implemented the interactive programme "ECO-School" in the framework of the Youth Environmental Forum;
- co-organized the VI All-Russian Scientific Environmental Conference "Water – Source of Life on Earth";
- organized and implemented the programme dedicated to the 70th anniversary of the Victory for the International Museums At Night Event (18 May 2015);

- co-organized children programme at the International Environmental Film Festival "Green Vision";
- participated in the IV All-Russian Environmental Education Conference in Moscow;
- participated in the VII Research and Practice Conference "Environmental Culture and Awareness-Raising" for schoolchildren in Krasnoselskiy District;
- co-organized and participated in the implementation of a thematic programme in the framework of the city festival "EcoOkhta";
- developed and implemented a museum programme in the framework of the citywide inter-museum festival "Children's Days in St. Petersburg";
- the YEC's youth core group gave a welcome address to the delegates of XV International Forum "The Baltic Sea Day";
- prepared and implemented the youth panel session at YEC during the XV International Forum "The Baltic Sea Day";
- co-organized and took part in the implementation of the International Model UN Youth Conference;
- participated in the XII city conference of senior school students "The Young Generation";
- organized and implemented a thematic programme for 5-8 year school students under the "Environmental Lessons in St. Petersburg" Project of the non-governmental environmental fund named after V.I. Vernadskiy;
- were on the jury panel at the sustainable development youth projects festival implemented by ANO "CTS-SPb" in partnership with the Kansas University;

- co-organized and participated in implementation of the International Environmental Camp in the framework of the Russian-Finnish cooperation in partnership with the Eco-Biological Centre and the public organization "Friends of the Baltic";
- participated in the "TELESTART" Festival of Children's Broadcast Journalism;
- prepared and implemented the thematic programme "Energy and Power Engineering: Our Choice!" for residents of children's homes in the framework of the citywide environmental event "Earth Hour";
- participated in the inter-museum project "Big Regatta", prepared and implemented a thematic museum programme for 5-8 year school students and families;
- organized and implemented the Creative Festival "Knowledge and Creativity – Energy for the Future" dedicated to the Teacher's Day for residents and tutors of children's homes;
- organized and implemented career guidance programmes for school students "Professions in a Big City" on request of the St. Petersburg Labour and Employment Committee' Instructional Support Centre;

- co-organized and participated in implementation of the Forum "Turning the Pages of History" dedicated to the 70th anniversary of UNESCO for UNESCO associated regional schools;
- developed the concept of, and coordinated the inter-museum citywide project "Order to Survive" dedicated to the 70th anniversary of Victory in the Great Patriotic War; prepared and implemented the thematic interactive programme "Order to Survive: Lenvodokanal!" under the project;
- organized the exhibition "Valaam. Portrait. Landscape" dedicated to the Isle of Valaam;
- organized the exhibition of patchworks by the leading artists in St. Petersburg and the Leningrad Region "Touch the Spring Well";
- organized the XII regional exhibition of artworks by elderly and disabled people "Good Hands Craft" in cooperation with the Social Protection Committee of the Leningrad Region;
- organized the exhibition "Finding at the Far Side of the World" and master classes under the Russian North Project.

Moreover, Vodokanal helps create comfort for participants of different public events in the city and the regions by providing toilets. Depending on the venue of festive event, confirmed number of participants and guests, time of day and season of event, Vodokanal provides relevant toilet types (mobile cabins or vehicle chassis-mounted mobile sanitary and hygiene complexes).

In 2015, mobile toilets were provided on requests of various organizations for over

750 events including the city festival events: the New Year, Christmas, the Day of Victory, the City Day, The Red Sails, Day of Lifting of the Siege, the Children's Day, the Petersburg Economic Forum and many other significant events. Moreover, in 2015, Vodokanal provided toilets to the all-Russian event "The Immortal Regiment" organized for the first time ever. The operation schedule of mobile toilets at such events was determined by the City Government.



## INTERACTION WITH STAKEHOLDERS

## PARTNERSHIP CONCEPT

**Vodokanal of St. Petersburg maintains lasting relations with its partners on the basis of mutual trust, respect and openness and acknowledges that in the dynamic environment of the modern world the company success and satisfaction of all stakeholders strongly depend on the development of effective partnership.**

Vodokanal adheres to the multilateral partnership concept including the interaction with its partners and suppliers on technical, process-related, financial, organizational and tutorial aspects of activities. Vodokanal St. Petersburg divides its partners into segments – by types of activities or services and by significance and importance of the partnership in terms of creating value for the stakeholders.

The selected partnership concept provides the Company with the resources necessary to achieve the set targets and allows it to evaluate comprehensively the external environment, build its reputation and establish trust-based relations. Such an approach is used by Vodokanal subject to its financial stability and investment attractiveness to ensure maximum effective cost control and implementation of construction, reconstruction and capital repair plans for water/ wastewater and social facilities.

As for its international partners, in 2015 Vodokanal continued to cooperate successfully with such organizations as:

- the Ministry of the Environment of Finland;
- the John Nurminen Foundation;
- Nordic Environment Finance Corporation (NEFCO);
- Swedish International Development and Cooperation Agency (Sida);
- Northern Dimension Environmental Partnership (NDEP).

The international cooperation enables Vodokanal to study and introduce the best international practices into its own operations. One of the active partners of the Company is the Ministry of the Environment of Finland which participated in over 50 innovative projects of Vodokanal.

Vodokanal maintains close partnership with water companies of the Baltic Region in the frames of HELCOM Convention and the Clean Baltic Sea Project. Partnerships with the water companies of the Baltic Region are aimed at implementing joint environmental projects. Such partnerships formed under cooperation agreements provide access to resources, innovations and new technologies on a mutually beneficial basis. A considerable number of investment projects essential for the whole Baltic Sea Region were implemented. The Company has partner relationships with water companies of Helsinki, Stockholm, Tallinn, Hamburg and Berlin. International cooperation assists the Company to solve issues related to efficient benchmarking, investments, environmental protection, technical upgrade and environmental awareness-building.

Since 2009, St. Petersburg Vodokanal has been the member of the National Union of Vodokanals and interacts with water companies and governmental authorities for the purpose of introducing new operational standards and technical regulations as well as increasing investment opportunities of the sector. The Company is engaged in reviewing and developing new drafts of water legislation for public utilities, conducts consultations with legislative and executive bodies, exchanges experience with leading housing and public utilities as well as water unions. At present, Vodokanal is involved in promoting innovative approaches in housing and public utilities of the Russian Federation and the CIS. Vodokanal production branches conduct working meetings with experts from housing and public utilities of the Russian Federation and the CIS and arrange visits to Vodokanal reference plants, where such innovative projects and best practices have been implemented.

Among the leading Russian partners in the field of innovative technologies there are such companies as Kreal, Arsenal and AVIV. Together with these companies Vodokanal implements projects aimed at improving wastewater treatment technologies.

The partnership with the Russian and European banking community as well as with different investors is successfully implemented by

Vodokanal. Investments implemented by means of the public-private partnership model are an example of sophisticated and consistent activity aimed at the mobilization of funds for priority environmental projects. For instance, the Northern Tunnel Collector construction, reconstruction and upgrading of small wastewater treatment plants of St. Petersburg were financed from several sources including budgets of the Russian Federation and the City of St. Petersburg, own funds of Vodokanal and proceeds provided by IFIs (including Northern Dimension Environmental Partnership (NDEP)).

In 2015, Vodokanal together with the Russian Water Association which is comprised of 243 vodokanals from all federal districts of Russia established the Water Cluster. On 17 September 2015, the Water Academy (the Water Cluster's educational segment) was opened at the facilities of the Information and Training Centre. On 6 November 2015, the Water Cluster's Demonstration and Exhibition Centre was opened at the premises of the Northern WWTP. The Cluster solves several issues at once: import substitution, integration of production and science, improving the performance of the Russian water companies. The Water Cluster aims to create conditions for the development of new water technologies on the basis of Russian engineering design solutions.

To improve the quality of education of students in the water-related fields and build external labour pool of young experts, Vodokanal cooperates with the following educational institutions: St. Petersburg State University of Architecture and Civil Engineering, St. Petersburg State Transport University, Admiral Makarov State University of Maritime and Inland Shipping, St. Petersburg State Technological Institute, Mechnikov North-West State Medical University.

The partnership concept developed in Vodokanal help the Company to implement innovative technologies, modernize plants, improve the company management and, eventually, raise the stakeholders' satisfaction with Vodokanal services.

**THE BASIC PRINCIPLE OF THE PARTNERSHIP APPLIED BY VODOKANAL IS THAT EACH PARTNER FULFILLS ITS OBLIGATIONS IN DUE TIME AND AT A GOOD QUALITY LEVEL AND UNDERSTANDS THAT PARTNERSHIP IMPLIES JOINT WORK AIMED AT LONG-TERM, SUSTAINABLE CREATION OF VALUE FOR BOTH PARTIES. OVER DECADES OF COOPERATION WITH FOREIGN AND DOMESTIC PARTNERS, VODOKANAL HAS NEVER FAILED TO FULFIL ITS OBLIGATIONS; AND IT WAS HIGHLY APPRECIATED BY ITS PARTNERS.**



# INTERACTION WITH CUSTOMERS

**One of the most important aspects of Vodokanal activities is maintaining everyday contacts with customers.**

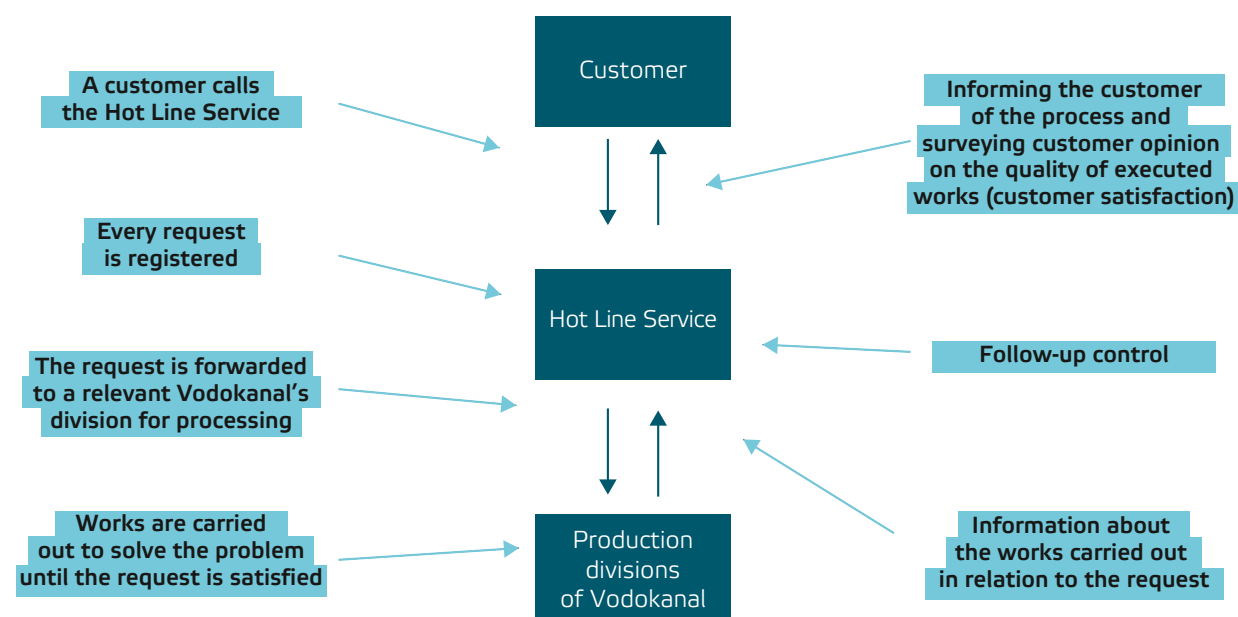
Vodokanal of St. Petersburg operates the Hot Line Service which receives customer calls round the clock (tel.: +7 (812) 305-09-09).

The Company communicates with customers in several ways: in the course of services provision, in the course of interaction initiated by Vodokanal (interviews, focus groups), by discussing various problems in the mass media, in newspapers, magazines and by organizing different meetings with citizens.

Quick response to the customers' complaints of deficiencies in water and sewage networks operation is an important aspect for Vodokanal.

Besides, Vodokanal receives requests via the Internet (there is a separate section "Feedback" on the corporate website [www.vodokanal.spb.ru](http://www.vodokanal.spb.ru)) and processes claims received from the portal "Our St. Petersburg" and website "Beautiful St. Petersburg".

## VODOKANAL-CUSTOMERS INTERACTION THROUGH CALLS



All incoming requests are recorded in the information system of the Hot Line and forwarded to the relevant production division responsible for examination of the network, remediation of relevant section of network and informing the customers of the works performed. All the call processing stages – from the call to remediation – are under the control of a body, which is independent from the production division performing the works. The monitoring of the request processing may only be stopped after the customer confirms that the works are completed. Thus, it is a customer who evaluates the final results of works in relation to every call.

Moreover, the above system enabled citizens, customers and clients to receive information and consulting services from the Hot Line operators.

To develop the call reception system, the time distribution of calls during 24 hours was analyzed. The results of the analyses ensured

efficient arrangement of work process with a sufficient number of skilled operators available at any time of the day or night.

The customer call management includes computer registration of all incoming calls. Codification of calls supports efficient evaluation of service quality and helps determine the areas for improvement in order to eliminate the causes of complains preventively.

**PROCESSING OF CUSTOMER CALLS IS BASED ON THE INFORMATION OBTAINED BY MEANS OF UP-TO-DATE TECHNOLOGIES, IN PARTICULAR, THE CALL-CENTRE – AUTOMATED CALL RECORDING AND DISTRIBUTION SYSTEM. THE INFORMATION OBTAINED THROUGH THIS SYSTEM ENABLES US TO ENSURE RECEPTION OF ALL INCOMING CALLS AND TO OPTIMIZE BOTH THE CALL PROCESSING TIME AND THE WAITING TIME REQUIRED FOR THE CALLER TO GET THE OPERATOR'S ANSWER.**

All these factors contribute to the improvement of the customer service quality.

In 2015, Vodokanal was involved in consultation activities related to customers, interaction with customers, unions and professional associations of customers.

Vodokanal cooperated with the Union of Industrialists and Entrepreneurs of St. Petersburg within the working group including St. Petersburg authorities (the Committee for Energy and Engineering Support, Tariffs Committee, Committee for Nature Use, Environmental Protection and Ecological Safety of St. Petersburg) with regard to wastewater disposal norms, construction of local wastewater treatment plants and installation of water and wastewater meters, amending regulatory acts related to water balances.

In 2015, Vodokanal organized working meetings with St. Petersburg Association of Industrial Companies (with regard to wastewater disposal norms, construction of local wastewater treatment plants, water balances).

Meetings of the working group organized by the Concierge Newspaper with the participation of the public services providers were held to discuss issues of water supply for apartment houses, including drinking water quality and pressure, installation of house meters with remote data reading, estimation of public service consumption by an apartment house if there are no metering instruments and interaction with owners (right holders) of non-residential premises of apartment houses, collection of payments from the owners of premises of apartment houses, application of multiplying factors to the public services consumption rates.

Moreover, Vodokanal conducted consultations with the Association of Housing Construction Cooperatives, Housing Companies and Condominiums, discussed issues related to estimation of wastewater service consumption by an apartment house if there are no limits for wastewater services consumed for the apartment house management needs and boundaries of operating responsibilities of the public service providers toward wastewater network within apartment houses, etc.



## Vodokanal conducts the Annual Contest for the best customer title – “Cristal Drop”.

The objective of the contest is to build up close interaction between customers and Vodokanal on the grounds of mutual openness and good partnership as well as to search ways for further enhancement of water and wastewater services provided to customers.

The contest procedure is implemented according to the Provision “On Contest for the Best Customer Title – Cristal Drop” that came into force by the Decree no. 159 dated 9 November 2012.

Major criterion for the selection of nominees is the fulfilment by the customer of contractual obligations, and for the nomination “Clean Waters of the Baltic Sea” it is the implementation by the customer of nature and water protection measures in addition to the contractual obligations.

Apart from the winners, the companies which rank second (category “Our Hope”) are also recognized at the awarding ceremony.

The first stage of 2015 contest was held on 18 March within the framework of International Exhibition and Conference “Housing and Public Utilities of Russia” in Expoforum Center. Vodokanal awarded the best customers under the category “Providers of Public Services”. In 2015, a new nomination for the customers

of this category was introduced – “For the Long-term and Fruitful Cooperation”.

According to the contest results, the winner in the nomination “The Best Customer among Managing Companies” was Housing Agency no. 2 of Admiralteysky District. The title “Our Hope” (second place in the nomination “The Best Customer among Managing Companies”) was awarded to the Managing Company “Service Nedvizhimost”. The Housing Agency no. 3 of Primorsky District was awarded for the long-term and fruitful cooperation.

In the nomination “The Best Customer among Housing Companies, Housing Construction Cooperatives, and Condominiums” the first place was awarded to the Housing Company “Badaeva – 8”. The second place and the title “Our Hope” was awarded to the Housing Construction Cooperative-1357. The Housing Company “Korzuna-26” was awarded for the long-term and fruitful cooperation.

The winners in each nomination got the contest symbol – “Cristal Drop”, a diploma and a special prize – a certificate for attending the Museum Complex “The Universe of Water” free of charge.

**THE FESTIVE ANNOUNCEMENT OF THE CONTEST RESULTS IN THE REMAINING NOMINATIONS UNDER THE SECOND STAGE OF THE CONTEST TOOK PLACE ON 17 APRIL 2015 IN THE MUSEUM COMPLEX “THE UNIVERSE OF WATER”.**

## The winners were announced as follows:

The title “The best customer among heat supply companies” was awarded to:

- I place: OAO “TGK-1”;
- II place: AO “South-West Thermal Power Plant”.

The title “The best customer among organizations financed through the federal budget” was awarded to:

- I place: St. Petersburg State Technological Institute (Technical University);
- II place: Nikiforov Russian Center of Emergency and Radiation Medicine of the Ministry of Emergency Situations of the Russian Federation.

The title “The best customer among organizations which are financed through St. Petersburg budget” was awarded to:

### AMONG CUSTOMERS NOT SERVED BY THE CENTRALIZED ACCOUNTS DEPARTMENT:

- I place: Pushkin Leningrad State University;
- II place: St. Petersburg State-Financed Entity “The Duni Children’s Health Resort”.

### AMONG CUSTOMERS SERVED BY THE CENTRALIZED ACCOUNTS DEPARTMENT:

- I place: State budgetary general educational institution The Second St. Petersburg Gymnasium;
- II place: State budgetary pre-school educational institution Nursery school no. 11 of Admiralteyskiy District, St. Petersburg.

The title “The best customer among industrial companies” was awarded to:

### AMONG CUSTOMERS WITH WATER AND WASTEWATER CONSUMPTION UP TO 10,000 M<sup>3</sup>/DAY:

- I place: OAO “Zavod Electropult”;
- II place: OAO “Special economic areas”.

### AMONG CUSTOMERS WITH WATER AND WASTEWATER CONSUMPTION 10,000-30,000 M<sup>3</sup>/DAY:

- I place: SUE “Inpredservice”;
- II place: OOO “North-West Technopark”.

### AMONG CUSTOMERS WITH WATER AND WASTEWATER CONSUMPTION OVER 30,000 M<sup>3</sup>/DAY:

- I place: OOO “Operation Glavstroy St. Petersburg”;
- II place: OAO “Russian Railways”.

In the nomination “Clean Waters of the Baltic Sea” (for implementation by the customer of nature and water protection measures):

- OOO “POLYSAN Scientific & Technological Pharmaceutical Company”.

In the nomination “Sustainable use of water resources” (for sustainable use by the customer of water resources through timely installation of water and wastewater meters).

- Housing company “Glinki-17”.



# INTERACTION WITH SUPPLIERS

**Vodokanal St. Petersburg is striving to build long-term, mutually beneficial relations with suppliers.**

In 2015, Vodokanal's procurement policy was developed and approved.

Any procurement activities are performed by the Company in compliance with the applicable laws of the Russian Federation, the Policy, the Corporate Procurement Regulation and other regulatory documents.

Strategically, Vodokanal's procurement policy aims to provide high-quality goods, works and services as needed for the Company production process in a timely manner and at optimal market prices through reliable suppliers subject to the procurement principles and on the basis of common information space.

**PURSUANT TO THE FEDERAL LAW "ON PROCUREMENT OF GOODS, WORKS, SERVICES BY CERTAIN TYPES OF LEGAL ENTITIES" NO. 223-FZ DATED 18 JULY 2011, WHEN PROCURING GOODS, WORKS AND SERVICES VODOKANAL SHALL ABIDE BY THE PRINCIPLE OF TRANSPARENCY (LAW NO. 223-FZ, ART. 3, PART 1, CL. 1). ACCORDING TO THIS PRINCIPLE THE CONTRACTING AUTHORITY IS OBLIGED TO POST ANY INFORMATION ABOUT PROCUREMENTS ON THE OFFICIAL WEBSITE WWW.ZAKUPKI.GOV.RU.**

**The following tasks are addressed under Vodokanal's procurement policy:**

- long-term planning of requirements to goods, works and services;
- priority is given to goods and equipment manufactured in St. Petersburg and the Russian Federation;
- continuous market analysis to ensure a reasonable level of competition among potential counterparties;
- target-oriented and cost-effective spending of corporate funds for the purchase of goods, works and services;
- procurement procedures should be based on market mechanisms and principles of competition, transparency and publicity;
- implementation of measures to reduce procurement-related costs, including time costs, by developing advanced information technologies to manage the procurement process;
- optimization of corporate procurement by using best practices;
- ensuring safe operation of the Company production facilities;
- maintaining a positive image of the Company as a purchaser of goods, works and services.

**Under the Law no. 223-FZ, the following information shall be posted on the official website:**

- 1) Procurement plan.
- 2) Procurement regulation.
- 3) Procurement information.
- 4) Amendments made to a contract during its conclusion and performance.
- 5) The number and total value of contracts concluded.

**To spend own funds in an effective way, Vodokanal carries out procurements applying the following regulated procedures:**

**tender** – a bidding process where the winner shall be the bidder that offers the best contract terms according to the criteria and procedures of evaluation and comparison of bids as stipulated in the tender documentation;

**auction (open or closed)** – a bidding process where the winner shall be the bidder that offered the lowest price or, if the contract price is reduced to zero in the course of the auction and the auction participants compete for the right of entering into the contract, – the highest contract price;

**request for quotation** – a method of order placement where any information about the purchase of goods, works or services is made available to an unlimited range of persons by posting a call for quotations on the corporate website; and the participant who offers the lowest contract price is announced the winner. The maximum contract price in this procedure is 1 million Roubles, and the procedure may only be launched by a company (including its branches) once in three months for the same product;



**single source** (supplier, contractor) procurement – a procedure other than tender where a purchaser sends an offer of contract to one supplier (contractor) only. The use of this procedure is limited to strictly defined cases where other procurement procedures are not feasible or reasonable;

**competitive dialogue** – a method of order placement where the Order Placement Commission negotiates with the participants of competitive dialogue, and upon the completion of such negotiations the latter submit their final proposals. Prior to the competitive dialogue, the Order Placement Commission selects, according to the evaluation criteria and procedures set forth in the Competitive Dialogue Documentation, the competitive dialogue participant offering the best contract terms.

**PRE-QUALIFICATION IS MADE PRIOR TO THE ABOVE PROCUREMENT PROCEDURES IN THE SITUATIONS WHERE UNTIMELY OR UNSATISFACTORY PERFORMANCE OF WORKS OR PROVISION OF SERVICES MIGHT CAUSE DAMAGE TO CUSTOMERS.**

The following selection criteria are commonly used for prequalification:

PRE-QUALIFICATION MEANS SELECTION OF CONTENDERS FOR PARTICIPATION IN THE PROCUREMENT PROCEDURE IN COMPLIANCE WITH THE REQUIREMENTS AND CRITERIA SET BY THE CONTRACTING AUTHORITY.

- bidder’s experience in the area relevant to the subject of the tender;
- availability of plant and equipment;
- competence of managers and specialists;
- company ratings;
- certificates, diplomas, SRO (self-regulating organization) documents;
- other criteria used to evaluate the bidder qualification.

With such approach, goods and services can be procured on optimal terms. Any call for tender should contain information about the contracting authority’s contact persons for tender-related and technical issues. Those who wish to bid (submit quotations) can get clarifications on any issues arising during the preparation of tender proposal either orally by calling the phone number specified in the documentation, or in written form by sending a request for clarification.

In 2015, under the Regulation “On the procurement of goods, works and services with Vodokanal’s own funds”, Vodokanal carried out over 2000 procurement procedures which led to conclusion of contracts for the total amount of over 32 billion Roubles including a RUB 11,851.47 million worth of procurements under the Federal Law no. 44-FZ “On contracting in the sphere of procurement of goods, works and services for governmental and municipal needs”.

The open tender for “Construction of Okhta Sewage Collector (phase 1)” conducted in compliance with the Federal Law 44-FZ “On contracting in the sphere of procurement of goods, works and services for governmental and municipal needs” was the biggest procurement event in 2015. The contract was awarded to ZAO PRISS, its amount was 7,952.2 million Roubles.

Under the Decree of the Russian Government no. 616 dated 21 June 2012 “On approving the list of goods, works and services to be procured in electronic form” and for the purpose of developing electronic procurement of goods (works, services) and computerizing of procurements made with the company own funds, Vodokanal has made agreements with electronic trading platforms EETP and OTC-tender ([www.otc.ru](http://www.otc.ru)).

E-procurement reduces labour costs of the bidders and contracting authority, fosters competitive environment, and accelerates and facilitates the procurement process.

Since 2012, Vodokanal has participated in the competition “The national rating of procurement transparency for the companies placing orders under the law no. 223-FZ”. In the competition 2015, Vodokanal once again took a decent place in the section “Medium Transparency” on a par with the leading Russian companies.

ORGANIZATION	SCORE
OAo “Russian Railways”	2,846
PAO “Sberbank of Russia”	2,759
SUE “Vodokanal of St. Petersburg”	2,747
OAo NK “Rosneft”	2,694
OOO “Air Gate of the Northern Capital”	2,618

Based on the 2015 results, Vodokanal evaluated the suppliers of goods, works and services under the regulation “On organizing the competition for “the best supplier of the year for SUE “Vodokanal of St. Petersburg””. The suppliers were evaluated in eight nominations:

- the best contractor in construction and reconstruction of utility networks, buildings and structures for the needs of SUE “Vodokanal of St. Petersburg”.  
the winner – OOO TERES;
- the best supplier of process equipment for the needs of SUE “Vodokanal of St. Petersburg”.  
the winner – OOO Alliance Electro;
- the best supplier of materials for the needs of SUE “Vodokanal of St. Petersburg”.  
the winner – OOO NPO “Chemical Agents Factory”;
- the best supplier of consulting services for the needs of SUE “Vodokanal of St. Petersburg”.  
the winner – Ernst & Young;
- the best outsourcing company working with SUE “Vodokanal of St. Petersburg”.  
the winner – ZAO VK “Service”;
- the best supplier to ensure comfortable labour environment for the personnel of SUE “Vodokanal of St. Petersburg”.  
the winner – AO “BTK Group”.

IMPORT  
SUBSTITUTION

In 2015, the priority goal of SUE “Vodokanal of St. Petersburg” was to reduce the Company dependence on foreign suppliers and to use domestic equipment, materials and technologies instead of imported products.

Since the beginning of 2015, all contracts concluded by Vodokanal for design, construction and renovation of water supply and sewerage networks and facilities and for supply of equipment and spare parts, have contained the requirement to use materials and equipment produced by Russian manufacturers.

In order to improve the Company operations, the performance of Investment Program and the procurement of products for industrial use, Vodokanal established a technical import substitution commission which holds meetings every week.

The commission is made up of Vodokanal’s energy specialists, mechanical engineers, process engineers, IT-specialists, metrologists, logistics experts, etc. The technical commission members do analytical work and select equipment for import substitution.

- Drainage systems for filters;
- On-line water quality monitoring devices;
- Equipment for wastewater treatment plants;
- Equipment for sewer networks;
- Electrical equipment;
- Thermal equipment;
- Vehicles and road-building machinery.

The Catalogue contains information on the domestic products to be used for operation, renovation or construction of water and wastewater facilities. The data are regularly updated and supplemented. Vodokanal’s Catalogue of Materials and Equipment is posted on the city government website in the Import Substitution Section of the St. Petersburg Committee for Energy and Engineering Support alongside with catalogues of other companies (<http://gov.spb.ru/gov/otrasl/ingen/importozameshenie>).

In 2015, Vodokanal regularly communicated with manufacturers of equipment and materials for the water sector in line with its import substitution policy.

Currently, substitution of imported pipes is practically achieved. St. Petersburg companies OOO “IKAPLAST” and ZAO “Nordpipe” satisfy the demand for polyethylene pipes, in particular, for high-strength polyethylene pipes, having launched a new line of pipes with a higher resistance to mechanical damage: PE100 pipes with a PP protective cover, PE100 RC pipes, and PE100 RC pipes with a PP protective cover.

- Pipes;
- Valves;
- Pumps;
- UV water disinfection equipment;
- Ozonation equipment;
- Electrolysis equipment for sodium hypochlorite production;

Offers of domestic manufacturers were scrutinized to compile a catalogue of materials and equipment eligible for import substitution. The Catalogue contains the following sections:



**SINCE 2015, VODOKANAL HAS BEEN ACTIVELY SEARCHING FOR NEW IMPORT SUBSTITUTION OPTIONS WITH REGARD TO SPECIAL PUMPS USED IN WASTEWATER DISPOSAL.**

The Russian ductile iron pipe manufacturer "Svobodny Sokol" has taken a commitment to provide ductile iron pipes with a diameter 1,200 mm max. for Vodokanal's water distribution and sewerage systems.

The Russian manufacturers ZAO "ENEKOS Group" (St. Petersburg), Havle-Sevkom (Lipetsky Region), ARMSPETSENERGO (Znamya Truda factory, St. Petersburg), OOO "Ugreshsky Valve Plant" (Moscow Region), and "Rus" Group (St. Petersburg) meet 95% of the demand for valves.

HYDROMASHSERVICE (Moscow) offers pumping equipment for water supply facilities. Pump manufacturers: Uralgidromash (Sverdlovsky Region), OOO "Baltic Plant Hydraulic Equipment" (St. Petersburg), OOO "Grundfos" Russian factories (Moscow Region) and OOO "WILO RUS" (Moscow) are ready to partially meet Vodokanal's demand for pumping units.

The dosing equipment is produced by St. Petersburg manufacturing factory "Areopag".

The analysis has shown that Vodokanal still depends on some foreign-made products (including pumping equipment). Since 2015, efforts have been made to find domestic alternatives to the special pumps used in wastewater systems. Since 2005, Vodokanal has been using Seepex

thickened sludge pumps (Germany). In April 2015, the Russian ONL sludge pumps passed the tests successfully and will be installed at Vodokanal's wastewater treatment plants in future.

Interaction at the level of the Russian Ministry of Industry and Trade is underway to find domestic alternatives to the imported reciprocating high-pressure sludge pumps (Schwing pumps of Putzmeister, Germany, have been in operation for over 20 years), cased sewage pumps with the capacity of more than 2,000 m<sup>3</sup>/day, submersible sewage pumps with the capacity of 4,000 m<sup>3</sup>/day max., and sludge dewatering centrifuges.

In 2015, extensive work was done to find good substitutes for the high-tech equipment used in automated process control systems including the power equipment.

**AS A RESULT OF THE COMPANY'S IMPORT SUBSTITUTION ACTIVITIES, THE SHARE OF IMPORTED EQUIPMENT, MATERIALS, AND SPARE PARTS IN THE TOTAL PROCUREMENT VOLUME REDUCED FROM 30% TO 1.8%.**

Equipment of AO "Avangard" and OOO "Alliance-Electro" (manufacturers of water meters and pressure sensors in St. Petersburg) has been successfully used for the building of the Water Supply Management System in the Southern Water Supply Zone.

For the purpose of replacing imported water meters, Vodokanal has approached OOO "Neko" (St. Petersburg), UK "Vodopribor" (Moscow), and "Vzlet" Group (St. Petersburg). Vodokanal is discussing production of quality monitoring instruments for all water types with NPF "Burevestnik" (St. Petersburg), NGO "Automatika" (Vladimir), OOO "Lyumeks" (St. Petersburg), and ITMO University (St. Petersburg).

In 2015, performance tests of Praestol and Greenlife flocculants were carried out together with Russian organizations at Main WTP and South-West WWTP to find effective domestic chemicals for drinking water treatment. As a result, the Company made a transition to domestic chemical giving up the imported French one.

In 2015, AO "Gazpromneft" satisfied 80% of Vodokanal's demand for the lubricants (oils and greases) and service fluids complying with the international standards and machinery manufacturers' requirements, to be used for Vodokanal-operated vehicles and industrial equipment.

The share of St. Petersburg manufacturers' products in the total volume of purchased domestic basic equipment for water and wastewater systems is about 80%.

Since 1 January 2015, the economy achieved by purchasing domestic equipment, materials and spare parts instead of imported products has been 258.09 million Roubles.

Import substitution activities are carried out under the reconstruction and modernization projects for the main treatment plants, water and sewerage networks and tunnel collectors listed in Vodokanal's Investment Program. Before, foreign-made equipment was generally used in most projects. Revision of the projects for reconstruction of Main WTP, construction of the Okhta Collector, construction of wastewater treatment facilities in the Settlement of Molodezhny, creation of the water supply management system for Southern water supply zone, etc. with the aim to substitute imported equipment has shown that it is possible to use domestic products instead of imported (also high-tech) equipment in almost every case.

In compliance with the tasks specified in the decree of the Russian President "On the National Security Strategy of the Russian Federation till 2020", the main import substitution activities related to the Company's business processes were planned and approved.

## The main tasks of the import substitution program in the field of information technologies are identified:

- meeting of the Russian legal requirements to information security;
- modernizing the fleet of computers and copiers, building the Company infrastructure in line with the import substitution policy, and implementing national software;
- possibilities of import substitution must be considered for any procurement activities.

In 2015, various equipment manufactured in the territory of the Russian Federation was supplied to the Company through tendering, namely: switch gears, all-in-one PCs, uninterruptible power supply units. During overall reconstruction of the building in 19, Komsomola str., an electronic queue management system produced by the national company OOO "LETO Engineering" (Moscow) was installed in the customer reception room. Lists of standard and special-purpose software used by the Company were prepared.

By the middle of the 3rd quarter of 2016, Russian-made server hardware and data storage systems will be tested. Tests of the databases developed in Russia are planned to substitute them for the existing corporate information systems in the long run.

## The First Technical Workshop & Exhibition held by Vodokanal on April 8, 2015 was also another way to liaise with national producers.

This event aroused interest not only in St. Petersburg but also in other Russian cities. About 40 companies from St. Petersburg and all over Russia made their presentations at the workshop, and 50 companies showcased their products at the exhibition. Vodokanal set up its own information stands where the equipment and materials used by it were described. Detailed information on the procurement process in Vodokanal was provided.

The Import Substitution and Localization Centre in St. Petersburg that opened in September 2015 helped Vodokanal intensify dialog with national manufacturers of products for the water sector and promptly solve any supplies-related problems.



**IN 2015, FOR THE PURPOSE OF MAINTAINING DIALOG WITH NATIONAL SUPPLIERS AND MANUFACTURERS, A SPECIAL IMPORT SUBSTITUTION SECTION WAS CREATED ON VODOKANAL WEBSITE. IMPORT SUBSTITUTION PROPOSALS CAN BE SENT BY COMPLETING A SPECIAL FORM AVAILABLE IN THIS SECTION ([WWW.VODOKANAL.SPB.RU/IMPORTOZAMEWENIE](http://WWW.VODOKANAL.SPB.RU/IMPORTOZAMEWENIE)) OR BY E-MAIL: [PARTNER@VODOKANAL.SPB.RU](mailto:PARTNER@VODOKANAL.SPB.RU).**

The newly-established Water Cluster in St. Petersburg is also working with a strong focus on import substitution. On 6 November 2015, The Water Cluster's Demonstration & Exhibition Center was opened. The Center is a part of the Water Cluster's technological segment aimed to intensify innovative development in the water industry. The Centre works on a permanent basis at the premises of Northern Wastewater Treatment Plant (town of Olgin). Over 300 specimens of Russian-made products and equipment are showcased at the Center. Most of the manufacturers are based in St. Petersburg including the exhibitors at the Import Substitution and Localization Centre.

The Demonstration & Exhibition Center is not just a show room: at the stands visitors can watch how Russian equipment operates and look at acting models of novel equipment.

In 2015, collaboration with St. Petersburg manufacturers for the purpose of import substitution reduced Vodokanal dependence on imports and increased the industrial capacity of our city.

## INTERACTION WITH FINANCIAL INSTITUTIONS

**Vodokanal St. Petersburg has a long history of successful cooperation with Russian and European banking communities and investors.**

**VODOKANAL CONDUCTED REGULAR MONITORING OF FINANCIAL MARKETS AND IS DEVELOPING A CONCEPT OF DEBT FINANCING FROM VARIOUS SOURCES.**

Examples of such cooperation are: the Northern Tunnel Collector construction project and reconstruction and modernization of small wastewater treatment plants in St Petersburg. Both projects were financed from several sources including the budgets of the Russian Federation and St. Petersburg, Vodokanal's own funds, as well as loans and grants of international financial institutions and environmental organizations, such as:

- European Bank for Reconstruction and Development;
- Nordic Investment Bank;
- European Investment Bank;
- Ministry of the Environment of Finland;
- John Nurminen Foundation;
- Nordic Environment Finance Corporation (NEFCO);
- Swedish International Development Cooperation Agency; and
- Northern Dimension Environmental Partnership.

In 2015, Vodokanal continued implementation of the Neva Untreated Wastewater Discharge Closure Program.

The Program is financed, in particular, by the loans of European Bank for Reconstruction and Development (EBRD), Nordic Investment Bank and European Investment Bank, and by grants of Northern Dimension Environmental Partnership, Swedish International Development Cooperation Agency, Ministry of Environment of Finland, EBRD Special Shareholder Fund and John Nurminen Foundation.

In addition to financing, the lenders and donors of Vodokanal monitor the performance of financial obligations by the Company, compliance with environmental requirements, and conformity of tenders for procurement

of goods, works and services with the international standards.

In 2015, the reconstruction of Northern Wastewater Treatment Plant was going on under the Program. It was funded by the existing loans and grants. The supplies of relevant equipment are underway; the equipment was tested with process water; in December 2015, the filling of aeration tanks with wastewater began; after that all the facilities were put into a full-scale operation. Preparations to the pre-commissioning are under way. The program completion is scheduled for 2016.

In 2015, Vodokanal continued to perform its obligations regarding the repayment and servicing of loans.

As of the end of 2015, the outstanding balance of foreign loans was MEUR 72. By the beginning of 2015, it had been MEUR 98. During the year, MEUR 26 was repaid in strict accordance with the terms and conditions of the loan agreements.

Moreover, in December 2015, Vodokanal's subsidiary OOO "Vodokanal-Finance" repaid, on time and in full, the bonded loan of 1,994 million Roubles (state registration number 4-01-36398-R dated 16 November 2010) obtained in 2010 to finance the construction of Northern Tunnel Collector.

In 2015, Vodokanal got loans from VTB Bank and Sankt- Petersburg Bank in the amount of RUB 2 billion and 1 billion, respectively. The loans were raised through open e-bidding. The interest rates were 13.3% and 12.95%, respectively.

## INTERACTION WITH BUSINESSES AND INDUSTRIAL ENTERPRISES

**In 2013-2015, the legislation regulating the water sector activities was developing. Vodokanal experts actively liaised with industrial enterprises, explaining to them different provisions of the new regulations and providing consultancy as necessary.**

In 2015, amendments were made to the Federal Law "On Water Supply and Wastewater Disposal" (the state regulation of big industrial consumers' wastewater quality postponed till 2019), the Cold Water Supply and Sanitation Rules, and The Consumers' Wastewater Composition and Properties Monitoring Rules.

**Vodokanal provided assistance to industrial enterprises on the following issues:**

- wastewater monitoring;
- how to write declarations on wastewater composition and properties;
- identification of pollutant sources;
- planning of organizational and technical measures to reduce the discharge of pollutants;
- development of pollutant reduction plans.

In 2015, the Federal Law "On Water Supply and Wastewater Disposal" (state regulation of the quality of wastewater from big customers was postponed to 2019), Rules of Cold Water Supply and Wastewater Disposal and Wastewater Composition and Properties Control Regulations were amended.

Throughout 2015, 103 audits of consumers' water management activities were made upon requests of the consumers for the purpose of identifying pollutant sources.

As of 31 December 2015, 757 production sites had local wastewater treatment plants (LWWTP), and 210 consumers had their water protection action plans including 120 consumers which planned LWWTP construction or modernization.

Following the work done in 2015, 51 consumers submitted their water protection action plans to Vodokanal (including 34 consumers which plan to build LWWTPs). Thirteen consumers put into operation or reconstructed their LWWTPs. Among them are big companies, such as: OAO "Zavod Magneton", OAO "Wimm-Bill-Dann", ZAO "Zavod Krasnaya Zarya. Digital Communication Systems", OOO "Fazer", and OOO "Leningrad bakery products factory named after S.M. Kirov".



**IN 2015, PARTICIPANTS OF THE WORKSHOPS ORGANIZED BY THE INTERNATIONAL ADVANCED WATER TECHNOLOGIES CENTRE IN ASSOCIATION WITH VODOKANAL SHARED EXPERIENCE IN COLLECTION AND TREATMENT OF SURFACE RUNOFF FROM INDUSTRIAL PLANTS AND INDUSTRIAL WASTEWATER TREATMENT BEFORE DISCHARGE INTO THE CENTRALIZED SEWERAGE SYSTEM; DISCUSSED CHANGES TO THE RUSSIAN WATER LEGISLATION AND THE EU LAWS REGULATING INDUSTRIAL WASTEWATER VOLUMES AND TREATMENT.**

The working group at the St. Petersburg Committee for Energy and Engineering Support addressed the issues arising in connection with the Federal Law "On Water Supply and Wastewater Disposal" and relevant bylaws. The members of the working group are representatives of the Union of Industrialists and Entrepreneurs of St. Petersburg, Association of Industrial Enterprises in St. Petersburg, St. Petersburg International Business Association, the St. Petersburg Committee for Energy and Engineering Support, the St. Petersburg Committee for Natural Resources, Environment Protection and Ecological Safety, and SUE "Vodokanal of St. Petersburg". The working group discussed problematic points of law to propose amendments to water-related and environmental legal acts, such as the change of wastewater disposal rates, application of water balances and local treatment plants. Moreover, the working group together with the Neva-Ladoga Water Basin Authority and RoshydrOMET Territorial Agency is considering development of regional iron/manganese concentration limits for assessment of water quality in regional water bodies, as their background values are high in the St. Petersburg area due to the geochemical characteristics.

Similar meetings were held with the St. Petersburg Association of Industrial Enterprises and the St. Petersburg International Business Association to discuss changes to wastewater discharge rates, construction

of local treatment plants, etc. Vodokanal regularly participates in the sessions of the Union of Industrialists and Entrepreneurs and in the meetings organized by the Saint-Petersburg International Business Association (SPIBA). Cooperation between Vodokanal and SPIBA began in March 2011. Then, the meeting of SPIBA Committee for Environmental Protection and Industrial Safety and Vodokanal proposed and approved the idea of creating a SPIBA working group at Vodokanal to solve urgent problems of water supply and sewerage in an efficient way and to maintain a dialogue with the international business community.

At different meetings with representatives of industry and SME, Vodokanal regularly presents a rapidly growing focus area: implementation of the chemical pollutant balance system for the municipal sewerage. With the system in place, any above-limit discharge of specific pollutants can be identified at the sewerage network nodal points making it possible to reduce the search of pollutant sources to individual sewer basins and to approach the polluters with the aim to assist them in the development of pollutant reduction action plans and selection of optimal technologies for their local treatment facilities.

In 2015, the inventory of sewer basins was made to estimate the total number of basins (638) for the calculation of chemical pollution balance.



10,392 samples were taken at the sewer basins' nodal points to investigate wastewater pollution levels. Specific combinatorial pollution index evaluation methods (RD 52.24.643-2002 dated 06.12.2002) were used to analyze the level of sewer basins pollution. Based on the assessment results for 2015, 2% of shafts were classified as relatively clean, 8% – slightly polluted, 27% – polluted, 50% – highly polluted and 13% – extremely polluted. Consequently, strong efforts are made to locate the sources of above-limit discharge in highly polluted and extremely polluted sewer basins. The tests of wastewater composition and properties for 1,706 consumers showed that 88.8% of the consumers failed to comply with the regulatory requirements (16% of them just slightly exceeded the limit values. The regulatory limits were met by 11.2% of the consumers).

The results achieved in the chemical pollutant balance will be assessed at the workshop to be held by the International Advanced Water Technologies Center in autumn 2016.

In April 2015, Vodokanal hosted the first exhibition and workshop dedicated to import substitution where representatives of Vodokanal described their activities and needs, and manufacturers presented their products. The new Import Substitution section was opened on Vodokanal's official website on the day of exhibition.

According to the City Administration, the opening of the Water Cluster in St. Petersburg on the initiative of Vodokanal was one of the key events in 2015. In November 2015, a demonstration & exhibition center as part of the Water Cluster was opened at Northern WWTP in Olgino. The center will offer permanent exhibition areas to showcase products of national manufacturers, advanced technologies and materials for the water sector. The opening ceremony was attended by the Governor of St. Petersburg G.S. Poltavchenko and members of the city government.

## WATER CLUSTER IN ST. PETERSBURG

The St. Petersburg Water Cluster Project was approved by the meeting of the St. Petersburg Governor's Investment Council on 6 April 2015. The main objective of the Cluster is to improve the performance of Russian water companies through development, dissemination and implementation of technical, organizational, legal, financial and economic solutions by combining the resources of industrial and research sectors.

Vodokanal signed Water Cluster development support agreements with six water companies at the St. Petersburg International Economic Forum.



**ON 15 OCTOBER 2015, THE CLUSTER MANAGING COMPANY WAS REGISTERED AS AN INDEPENDENT NOT-FOR-PROFIT ORGANIZATION (ANO). THE FOUNDERS OF ANO "WATER CLUSTER MANAGING COMPANY" ARE SUE "VODOKANAL OF ST. PETERSBURG" AND THE RUSSIAN WATER ASSOCIATION (RWA) COMPRISING OVER 240 WATER COMPANIES IN RUSSIA.**

The Managing Company was established with the aim to develop the water sector by creating, managing, developing and coordinating activities of the Water Cluster in St. Petersburg, providing services to water companies and promoting investments in the water sector.

The managing company focuses on coordination and development of three Water Cluster segments: Technological, Industrial, and Educational.

## TECHNOLOGICAL SEGMENT

**The technological segment comprises a demonstration & exhibition center, engineering center and consulting center.**

The Demonstration & Exhibition Center was opened as a part of technological segment on 6 November 2015. The event was attended by the Governor of St. Petersburg and members of the city government.

The Center is arranged as a permanent exhibition of achievements and technical solutions in the water sector. The exhibition area showcases process equipment for WTPs and WWTPs, valves for water networks and sewers, materials for pipe repairs, different control and monitoring equipment, hydraulic test rigs, etc.

The exhibition demonstrates the products of more than 100 manufacturers already time-tested at Vodokanal's facilities. All exhibits have a good record of performance.

### There are three exhibition sites:

- a 680 m<sup>2</sup> building;
- outdoor space under a canopy – for large-sized exhibits;
- an open-air space – for special machinery.

The Demonstration & Exhibition Center is a meeting place for manufactures and users of water industry products. This area can also be used as a venue for industrial workshops. The technical workshop on "Import substitution as a vector of development" was organized by Vodokanal in cooperation with the Russian Water Association in the framework of the Center inauguration.

The workshop was attended by representatives of Russian manufactures, specialists of design institutes, teachers and researchers of St. Petersburg universities as well as experts from Russian water utilities. The workshop on "Import substitution as a vector of development" had 105 participants from different parts of Russia.

Many contacts between manufacturers and potential customers were established in less than two months of the Center operation.

• OOO "Managing Company Vodopribor" provided 25 building-level water meters to make pilot tests and decide whether they can be used in the St. Petersburg Water Supply Management System;

• Federal State Unitary Enterprise "D.I. Mendeleev All-Russian Metrology Institute (VNIIM)" expects to conclude a contract with the Cluster Managing Company for verification of instruments on the test rigs shown at the Center;

• during the implementation of the tunnel collector reconstruction project, the imported HOBAS pipes were replaced with domestic products manufactured by OOO "Metrobeton" (also demonstrated in the Exhibition Centre) along Primorskoe shosse up to Zelenogorsk WWTP;

• after the demonstration and relevant discussions at the Center, the customized boosting pumping station manufactured by AO Gidromashservis was tested in a residential building to replace the existing boosting pumping station;

• a number of national companies (OOO "Nash Gorod", OOO "SGS", OOO "Riotek", etc.) were recognized as capable to substitute identical Russian analogues for imported equipment. Given the growth of foreign currency exchange rate, replacement of process equipment under the State Contract with SUE "Vodokanal of St. Petersburg" No. 2/15 dated 18.08.2015 "Construction of Molodezhnoe Wastewater Treatment Plant" could lead to a significant cost increase. However, thanks to Russian manufactures, it was possible to keep the Contract cost unchanged. The same situation was experienced when equipment was selected for construction of a permanent snow-melting station at the address: section 27, Shkipersky Protok st.

Potential establishment of a Cluster Managing Company's expert council responsible for identification of key focus areas and evaluation of the Cluster performance, was scrutinized. Agreements with nine experts have been reached.

**REPRESENTATIVES OF THE CLUSTER MANAGING COMPANY WERE ASSIGNED TO THE WORKING GROUP FOR VODOKANAL INTERACTION WITH THE LEADING HIGHER EDUCATION INSTITUTIONS IN ST. PETERSBURG. THE WORKING GROUP MADE A PATENT SEARCH. IN TOTAL, OVER 500 ACTIVE PATENTS OF ST. PETERSBURG TECHNICAL UNIVERSITIES WERE EXAMINED, AND 100 OF THEM WERE SELECTED AS POTENTIALLY RELEVANT TO THE CLUSTER'S FOCUS AREA. A MORE IN-DEPTH ANALYSIS OF PATENTS IS PLANNED IN FUTURE WITH A VIEW TO IMPLEMENT TECHNOLOGIES THROUGH THE CLUSTER MANAGING COMPANY.**



## INDUSTRIAL SEGMENT

**One of the key projects of the Cluster industrial segment is chemical plant construction to produce chemical agents for water and wastewater treatment.**

The project outcome will be a state-of-the-art plant to produce a wide range of coagulants for water and wastewater treatment.

**The following chemical product lines will be launched:**

- Phase 1 (2018) – aluminum sulphate production line – 100,000 t/year;
- Phase 2 (2019) – aluminum chlorohydrate production line – 20,000 t/year;
- Phase 3 (2020) – ferric sulphate production line – 35,000 t/year.

The total project investment will exceed 1 billion Roubles.

Another Cluster project is construction of a hybrid cable-duct and sewerage system in underground networks of St. Petersburg.

The project envisages installation of microduct cable lines in Vodokanal's sewerage network in Central and Admiralteyskiy districts of the city. The project objective is to remove over 2,600 km of overhead cable ducts which substantially impair the look of historical parts of St. Petersburg. Translocation of overhead cable lines under the ground will improve the city appearance and offer a chance to reconstruct the sewerage networks with the total capacity of communication lines remaining unchanged. The project will be implemented in 2016-2018.



## EDUCATIONAL SEGMENT – THE WATER ACADEMY

On 24 February 2015, for the purpose of consolidating sector-related scientific and practical capacities, academic education capabilities, and material and technical resources of the Water Cluster with the aim to provide competent professionals for the water sector, Vodokanal established the independent non-for-profit organization of higher education "Water Academy" – a center of water specialist training and development.

The idea of Water Academy as a sectoral training center accumulating best practices and proving for water companies the personnel who meet professional standards, was supported by the sector community, as well as federal and regional executive authorities.

During the year 2015, the Water Academy was announced at sector-specific events of different level. This project was highly appreciated by the water market actors.

The Water Academy began to function on September 17, 2015 at the premises of Vodokanal's Information and Training Centre and opened the doors to its first students enrolled in the course "Geoinformation systems as a basis of water company management".

**ВОДНАЯ  
академия**

**By the end of 2015, the Water Academy had tested three more practice-oriented professional training programs:**

- "Chemical balance in water utilities as a basis of wastewater treatment quality management and interaction with customers";
- "Hydraulic modeling of network operation modes (operation and design calculations)";
- "Use of hardware and software system for water supply measurement and accounting".

In total, over 70 Vodokanal employees were trained at the Water Academy under four complementary professional training programs in 2015.

**IN PARALLEL WITH THE TRAINING PROGRAMS TESTING, TEACHERS WERE SELECTED FROM AMONG THE COMPANY EMPLOYEES AND EXTERNAL ORGANIZATIONS.**

## INTERACTION WITH PERSONNEL

**Following the principles of socially responsible business Vodokanal places great emphasis on effective interaction with personnel.**

**INTERACTION WITH PERSONNEL AND SOCIAL RESPONSIBILITY IS OUTLINED IN THE COMPANY DEVELOPMENT STRATEGY AND IN THE PERSONNEL MANAGEMENT POLICY OF SUE "VODOKANAL OF ST. PETERSBURG".**

The policy is based on strict observance of the Labor Code of the Russian Federation and is based on social partnership, common goals, respect for mutual interests, feasibility of the obligations taken by the parties and proper fulfillment thereof.

The employees are the Company's main asset and guarantee of its sustainable development and, therefore, special attention is paid to training and professional development, attracting and retaining high-skilled professionals,

as well as training of young employees. In terms of labor relations, the Company is committed to the principle of equal opportunities and guarantees no discrimination on the grounds of gender, religion, political views, age, nationality, wealth status, etc. Vodokanal makes every effort to create a favourable environment for improving labor effectiveness, involving personnel in implementation of strategic tasks, and ensuring transparency and openness of personnel management approaches and principles.



Interaction with personnel is one of the most important components of strengthening and developing Vodokanal corporate culture and is implemented, in particular, through the internal communications system including:

- regular meetings of employees with managers to inform the employees about future development of the Company;
- issue of the corporate newspaper "Vodokanal News";
- corporate website accessible to every employee where the Company reg-

- ularly posts and updates information on corporate activities (policies, plans, procedures, etc.);
- surveys of employees' opinions on a wide range of issues;
- placement of advertisements, posters and other information on special stands.

## INTERACTION WITH TRADE UNIONS

**Partnership with the trade union is an important part of Vodokanal interactions.**

Vodokanal recognizes the trade union as an essential element for the building of effective corporate management and occupational health and safety systems, raising the personnel satisfaction level; organization of employees' recreation and leisure-time activities, youth outreach, etc.

The basic document to determine relationship between the employer and the trade union as parties to social partnership is the Collective Employment Agreement – a legal act that regulates social and labour relations between employers and employees based on the congruence of interests of the parties under the law of the Russian Federation.

The Collective Employment Agreement determines not only responsibilities of the employer and the trade union, but also social guarantees and privileges for the Company employees and labour veterans.

On 1 January 2014, the new Collective Employment Agreement came into effect, and it will be valid for the next three years. It sets out a well-developed corporate social responsibility framework including: social support of the personnel capacity and motivation, occupational health and safety, care for veterans, sports development, youth policies, interaction with trade unions, and continuous staff training and development.

Compliance with the Agreement determining relations between the personnel and the company is annually checked by representatives of the parties who issue a relevant statement of compliance available to any interested employees. The Collective Employment Agreement is revised and amended on a regular basis in consideration of the check results. All amendments made to the Agreement are aimed to optimize social and labor relations between the employees and the employer.

The Collective Employment Agreement was supplemented with three addenda in 2015. Following the adoption of new Occupational Health and Safety laws, assessment of work places was replaced by special assessment of working conditions under "The methodology of special assessment of working conditions" approved by Order No. 33 of the Russian Ministry of Labour dated 24.01.2014. The methodology does not envisage assessment of biological factors when determining the class of working conditions for the workplaces of employees performing works related to the operation of water and sewerage networks or facilities. The trade union and the Company administration initiated revision of the Methodology to be made in cooperation with the Ministry of Labour and Social Welfare, with the aim to amend the clauses describing the assessment of biological factor impacts in the process of determining the class of working conditions at Russian water companies.

**A YOUTH COUNCIL WAS ESTABLISHED AND IS ACTIVELY WORKING UNDER THE AUSPICES OF THE PRIMARY TRADE UNION ORGANIZATION. THE COUNCIL HAS EXPANDED ITS YOUTH OUTREACH IN THE COMPANY IN THE REPORTING YEAR. YOUNG EMPLOYEES USE THE KNOWLEDGE OBTAINED AT SEMINARS AND TRAININGS TO IMPLEMENT PROJECTS AIMED AT THE ACHIEVEMENT OF OBJECTIVES AND TASKS SET BY THE COMPANY.**

As of 1 January 2016, 5,673 employees were members of the trade union (68.0% of the total number of staff), including 1,791 employees under 35 years of age (31.6% of the total number of Vodokanal employees – trade union members).



# INTERACTION WITH EDUCATIONAL INSTITUTIONS

**The most important goals of the personnel management policies of Vodokanal are the maintenance of professional personnel in all areas of the Company activity and motivation of employees to productive and effective labour.**

One of the areas of work with personnel is the generation of the external personnel succession pool. Availability of the external personnel succession pool gives the Company the opportunity to train the skilled workforce in line with the Company needs and to mitigate the risk of shortage of much-in-demand professions.

One of the elements of the personnel succession pool generation is the interaction with educational institutions.

## St. Petersburg Vodokanal interacts with the educational institutions with regard to the following:

- conclusion of cooperation agreements;
- meetings with academic teaching staff and students;
- arrangement of practical and on-the-job training;
- establishment of the targeted groups, establishment and supporting of the basic sector-related departments;
- participation in state examination commissions, state qualifying commissions, defense of the graduate projects for professional qualification;
- development of proposals on the themes of the course papers and projects for professional qualification for higher education institutions and vocational secondary education institutions;
- estimation of the Company's needs for experts trained by higher education institutions and vocational secondary education institutions.

In 2015, Vodokanal entered into twenty agreements on cooperation to generate the external personnel succession pool of the water sector.

In 2015, within the frame of the work targeted to the generation of the external personnel succession pool, including the search for the talented youth, the Company organized 15 meetings with academic teaching staff and students from the educational institutions, with which the Company entered into the cooperation agreements, and the Company's Information Days.

Students receive pre-graduation, on-the-job and practical training in Vodokanal which enable them to solidify the theoretical knowledge, get practical experience and develop their professional skills.

Due to such training programmes, the students of Russian higher education institutions and vocational secondary education institutions are given the opportunity to familiarize with the advanced production technologies and obtain a unique practical experience.

226 students did practical training in the Company in 2015.

To estimate the quality of training provided by higher educational institutions and vocational secondary education institutions and to select the most high-potential students, experts of Vodokanal participate in state examination commissions and attend the defense of the graduate projects for professional qualification.

Under the cooperation agreements concluded by the Company with St. Petersburg educational institutions for the purpose of generating the external personnel succession pool, the Company experts developed the list of the Company-relevant themes of the course papers and projects for professional qualification. The list that contained over 150 themes was forwarded to the partner-educational institutions.

The Youth Environmental Centre (since 2002) and the Universe of Water Museum (since 2003) have been actively interacting with municipal educational institutions (kindergartens, schools and orphanages). Their activities are oriented to different age groups.

So far, in the opinion of public organizations, educational institutions and city committees, the Youth Environmental Centre is the important environmental awareness-raising centre of the city and the Universe of Water Museum is one of the most advanced museums of the city.

Relevant environmental information, various forms of work, active training methods applied by YEC allowed to attract over 600 educational institutions of the city, different Russian and international organizations to the implementation of YEC projects and programmes.

YEC partners are kindergartens, schools, colleges, secondary vocational technical schools, orphanages, higher education institutions of the city and the Leningrad Region.

## YEC partner-educational institutions:

- Russian State Hydrometeorological University;
- Herzen State Pedagogical University;
- St. Petersburg National Research University of Information Technologies, Mechanics and Optics;
- St. Petersburg Fire and Rescue College "Rescuer Training Centre";
- Children and Youth Creative Work Centre "Creative Forum Kitezh Plus";
- Youth Palace;
- St. Petersburg City Palace of Youth Creativity;
- Environmental and Biological Centre "Krestovsky Ostrov";
- District children and youth creative work centres;
- Pedagogical Colleges;
- Orphanages, boarding-schools, social rehabilitation centers.

## Interaction with educational institutions is built on the basis of social partnership and in compliance with the main objectives of YEC:

- fostering the culture of water use in the city;
- fostering the responsible attitude of citizens to natural resources;
- development of the youth inclusiveness;
- promotion of efficient environmental education as well as education for sustainable development.

## Interaction with educational institutions, the youth and children is carried out in a variety of ways:

- interactive classes, excursions;
- projects;
- theme-based events;
- contests, festivals, campaigns, etc.

Seminars and method review sessions are organized for teachers, study guides are distributed for experts.

In 2015, within the frame of interaction with orphanages, boarding-schools, municipal and regional social rehabilitation centers, experts of the Museum and Youth Environmental Centre developed the programme "How to Make Friends with Water" targeted to enhance the knowledge of children from orphanages and social rehabilitation centers about the value of water and its use in big cities, different (environmental, economical and technical) aspects of water use.

Participants of the programme take part in various theme-based events, excursions to the Water Museum and classes in the Youth Environmental Centre.

Children from the Orphanage no. 23 actively participated in "How to Make Friends with Water" programme. St. Petersburg Vodokanal has been providing support to the Orphanage no. 23 of Petrogradsky District for several years. In particular, foster-children attend classes of the Youth Environmental Centre, take part in New Year Programmes in the Universe of Water Museum and in different events organized by the Information and Training Centre of the Company. During 2015, foster-children from the Orphanage no. 23 took part in the programme "Energy and Power Engineering: Our choice!" dedicated to the Earth Day, the programme "The Engineer's Secret Archive" dedicated to the Children's Day, the creative festival "Knowledge and Creativity – Energy for the Future!". Children did the excursions in the Water Museum and participated in the programme "Order to Survive: Lenvodokanal!" and etc.

In October 2015, Vodokanal submitted to the orphanage 50 volumes of the childhood classical reading – a big set of work of Russian and foreign authors written for children of different age.

**TOTALLY, 978 FOSTER-CHILDREN FROM ORPHANAGES, BOARDING-SCHOOLS, MUNICIPAL AND REGIONAL SOCIAL REHABILITATION CENTERS VISITED THE WATER MUSEUM COMPLEX AND YEC DURING 2015.**

# INTERACTION WITH ENVIRONMENTAL AND OTHER PUBLIC ORGANIZATIONS

**Responsibility to the society and future generations is among the basic values of Vodokanal St. Petersburg. In its operation the Company actively interacts with environmental organizations and public leaders.**

**IN 2015, VODOKANAL INTERACTED WITH RUSSIAN AND INTERNATIONAL ENVIRONMENTAL ORGANIZATIONS UNDER DIFFERENT NATURE CONSERVATION PROJECTS IMPLEMENTED IN ST. PETERSBURG AND THE NORTH-WEST REGION OF RUSSIA.**

The Company experts took part in a number of events organized by the Ministry of the Environment of Finland. In particular, on the 2nd September 2015 St. Petersburg Vodokanal experts participated in the International Forum "Outcome of the Gulf of Finland Year Project" held in Helsinki (Finland) and chaired by the President of Finland Tarja Halonen, and on the 1st December 2015, Vodokanal representatives took part in the International Forum "The Present Condition and Future of the Gulf of Finland" in Helsinki within the frame of closing the Gulf of Finland Year Project.

Historically, Vodokanal maintains partnership relations with the Northern Dimension Environmental Partnership (NDEP). In May 2015, there were series of meetings with the NDEP management at the premises of Vodokanal. On 8 – 10 June 2015, with the participation of NDEP Vodokanal held the international conference involving the sector-related ministries and water companies of Belarus.

**IN 2015, THE COMPANY KEPT ON STRENGTHENING THE RELATIONS WITH ITS LONG-STANDING AND RELIABLE FINNISH PARTNER – LAHTI REGION DEVELOPMENT LADEC LTD. (FINLAND).**

During 2015, Vodokanal representatives together with their Finnish colleagues organized and conducted over ten workshops on environmental issues.

Vodokanal in cooperation with LADEC established the International Advanced Water Technologies Centre (IAWTC), which operation was aimed at the provision of training in the advanced water-related technologies to the Company's employees, the personnel from Russian

and foreign water companies as well as other enterprises. IAWTC organized training courses on the topic of legislation in water supply and sewerage in different countries, monitoring of water/wastewater quality, etc. In 2015, IAWTC conducted workshops devoted to the requirements to water and sewerage network, industrial wastewater treatment (including metal-fabricating companies) and the experience of European countries in industrial wastewater treatment, collection and treatment of surface runoffs, metrology support of water/wastewater treatment, membrane technologies in water/wastewater treatment, alternative option of wastewater sludge utilization, hydraulic modelling, benchmarking of water companies, impact of hazardous substances (hormones, metals and their compounds, organic matter, etc.) on the water bodies.

Vodokanal plans to conduct similar workshops further on. The workshop programme for 2016 included such topics as "The Chemical Balance of Pollutants at Water Companies" and "Tertiary Treatment and Wastewater Disinfection".

Experts of the Youth Environmental Centre, the International Advanced Water Technologies Centre and Lahti Region Development LADEC Ltd. have developed the Russian-Finnish Environmental Awareness-Building Project "Awareness-buildings among the youth in the frame of the International Advanced Water Technologies Centre". In May, St. Petersburg schoolchildren presented their video reports of "the Baltic Interludes" performed at their schools in the Youth Environmental Centre. The spectators' and adults' juries have selected two best video films, the authors of which went on a study tour to Finland in the autumn.

Representatives of Vodokanal are members of the Environmental Council for Environmental Protection under the Government of St. Petersburg and the Council of the Neva-Ladoga Basin Water Authority. Members of the Environmental Council are the representatives of regulatory environmental authorities, St. Petersburg executive bodies, leading R&D institutions in environment conservation and water protection sphere, public environmental organizations and institutions.

**IN 2015, WITHIN THE MEETINGS OF THE ENVIRONMENTAL COUNCIL THEY DISCUSSED DRAFTS OF THE FEDERAL LAW "ON THE PROTECTION OF THE LADOGA LAKE" WHICH PROVIDED FOR THE IMPLEMENTATION OF MEASURES ON IMPROVING THE SAFETY OF THE DRINKING WATER SUPPLY TO ST. PETERSBURG CITIZENS UNDER THE FEDERAL TARGET PROGRAMME AND THE ST. PETERSBURG ENVIRONMENTAL PROBLEMS DRIVEN BY GEOLOGICAL FACTORS.**

As a result, it was decided to take measures to stabilize the shores in the districts adjacent to the Gulf of Finland. The Climate Strategy of St. Petersburg was developed which objective was to carry out strategic planning for the development of St. Petersburg subject to the observable and projected negative climate changes. In terms of Vodokanal, the Climate Strategy provides for the development of preventive measures to ensure reliability of water and sewerage networks under the condition of heat/cold waves, heavy precipitation and flooding.

Representatives of Vodokanal regularly participate and make reports at the round-table sessions organized by the Environmental Council in respect of the changes in the current environmental legislation and nature protection activities of St. Petersburg enterprises, and, in particular, changes in the legislation governing the discharge of wastewater into water bodies via the centralized sewerage system. Such round-table sessions that focus on improving the interaction of state authorities and natural monopolists with city companies and enhancing the environmental condition get a widespread support from community of environmental professionals and attract plenty of experts from leading companies.

Members of the Council of the Neva-Ladoga Basin Water Authority are the managers and representatives of water authorities (and subordinated to them federal state institutions) of the Karelia Republic, the Neva-Ladoga Region, Barentsovo-Belomorsky Region, the Committees for Natural Resources of St. Petersburg, Leningrad Region, the Karelia Republic, Novgorod Region, Pskov Region and Kaliningrad Region, scientific institutions, territorial bodies of Rosgidromet (Russian Federal Service for Hydrometeorology and Environmental Monitoring).

**At the meetings of the Council of the Neva-Ladoga Basin Water Authority they discussed implementation by the executive bodies of the subjects of the Russian Federation the scheduled activities targeted to the prevention of the negative environmental impact on water bodies, conservation of the environment, organization of the state monitoring of water protection zones and water bodies as well as their security arrangements. They also discussed the development of the Plan of the integrated use and protection of the water bodies and the draft exposure limits on water bodies. It was decided to accept the proposal of Vodokanal and to consider the following issues at the 13th meeting of the Council:**

- the members of the R&D activities related to the monitoring of the background content of very hazard substances (referred to in the list of pollutants, which are subject to measures of state regulation in the field of environmental protection, approved by the RF Government Decree no. 1316-r dated July 8, 2015);
- the algorithm of using the exposure limits on water bodies (to be approved under the Plan of the integrated use and protection of the water bodies) for the calculation of the allowable discharge limits at discharge points to water bodies (the Neva River, the Neva Bay).





**IN 2015, THERE WERE 13 "LEAVERS" OF THE MARINE MAMMALS RESEARCH AND CONSERVATION CENTER: FOUR BALTIC GREY SEALS AND NINE LADOGA RINGED SEALS. ONE SEAL PUP – THE BALTIC RINGED SEAL LITTLE INGER – HAD NOT GOT HER REMOVE AND STAYED IN THE CENTRE SINCE IT WAS SERIOUSLY INJURED AND ITS MEDICAL TREATMENT TOOK LONGER TIME.**

The practical assistance provided by St. Petersburg Vodokanal to the Center for Research and Conservation of Marine Mammals in the settlement of Repino is widely recognized. Vodokanal's participation in the saving of the Baltic Sea inhabitants is a follow-up of the many-year work it carries out to protect the Baltic Sea. The main objective of the Centre is providing help to seal pups. The scientists and zoologists Vyacheslav Alekseyev and Elena Andrievskaya are qualified experts that have gained a wide experience in successful rehabilitation of marine mammals. In addition to the rehabilitation work, they monitor populations of the Ladoga ringed seal, the Baltic ringed seal and the grey seal in St. Petersburg and the Leningrad Region. In late 2014, the Baltic Ringed Seal Foundation was established with the active support of Vodokanal.



**IN 2015, VODOKANAL TOOK PART IN A PUBLIC EVENT AIMED TO STOCK THE GULF OF FINLAND WITH FISH AND TO RESTORE BIOLOGICAL RESOURCES IN THE BALTIC SEA, WHICH WAS ORGANIZED BY THE NORTHWEST TERRITORIAL DEPARTMENT OF THE FEDERAL AGENCY FOR FISHERIES, THE FEDERAL STATE BUDGETARY INSTITUTION "NORTH-WEST BASIN FISHERIES MANAGEMENT AND CONSERVATION OF AQUATIC BIOLOGICAL RESOURCES" AND THE FEDERAL STATE BUDGETARY SCIENTIFIC INSTITUTION "STATE RESEARCH INSTITUTE OF LAKE AND RIVER FISHERIES".**

During the event, over 1000 of juvenile Baltic whitefish (450-500 grams each) were released into the Gulf of Finland in the most favorable time for reproduction (mid-September – mid-December). A big preparatory work preceded the stocking of the Gulf with fish including

the incorporation of St. Petersburg Vodokanal into the regional plan on artificial rearing of biological resources for 2015. Vodokanal plans to carry out similar environmental events in future, probably, in some other areas of the Gulf of Finland.

Vodokanal experts regularly participated in the meetings organized by industry-based communities (NP "Housing and Utilities Sector Development", Russian Water Association) to develop proposals on reforming the water sector and nature protection legislation. They also took part in the activities of the Working Group on the development of housing and communal services of the Expert Council under the Government of Russian Federation and discussed necessary amendments to regulatory acts and proposals for technical policy and technical regulation in the sphere of water supply and wastewater disposal. The result of the discussions at the meetings held by the executive authorities of the Russian Federation (the Ministry of Economic Development, Ministry of Construction of the Russian Federation) is the development of the concerted position on the proposals together with the industrial community (the Russian Union of Industrialists and Entrepreneurs) and the RF Ministry of Natural Resources. Due to the introduction of the moratorium on the state regulation of the setting of the wastewater treatment quality limit values for the industrial customers till 2019 and the charge for the negative impact on water bodies, Vodokanal experts participated in the meeting at the RF Ministry of Construction and discussed the concerted position on this issue. Vodokanal experts represented their experience in interacting with supervision and control authorities in order to make the customers observe the regulatory norms set to the quality of wastewater discharged to the centralized sewerage system. Discussion and adjustment of the changes to the Federal Law "On Water Supply and Wastewater Disposal" and "Rules of Cold Water Supply and Wastewater Disposal" will continue in 2016.

**IN 2015, VODOKANAL EXPERTS PARTICIPATED IN THE DEVELOPMENT (ADJUSTMENT) OF THE DRAFT LEGAL ACTS OF FEDERAL AND REGIONAL LEVELS WHICH WERE TARGETED TO THE LEGAL REGULATION OF RELATIONS IN WATER SUPPLY/WASTEWATER DISPOSAL AND ENVIRONMENT PROTECTION SECTORS, IN PARTICULAR, THE DRAFT DECREE OF THE RUSSIAN FEDERATION GOVERNMENT "ON AMENDING SEVERAL ACTS OF THE RUSSIAN FEDERATION GOVERNMENT IN THE SPHERE OF WATER SUPPLY AND WASTEWATER DISPOSAL" (CHANGES TO THE RULES OF COLD WATER SUPPLY AND WASTEWATER DISPOSAL APPROVED BY THE DECREE OF THE RUSSIAN FEDERATION GOVERNMENT NO. 644 DATED 29 JULY 2013).**

Vodokanal experts are the members of the Technical Working Group no. 10, which members are nominated by the Order of Rosstandart no. 251 dated 6 March 2015 and which develops the Technical Guide "Use of the centralized sewerage networks to transport wastewater from communities and urban districts for treatment". Development of the Technical Guide is the first important step of Vodokanal in adoption of a new wastewater quality norm setting system based on process parameters of the best available technologies (BAT). The Technical Guide will be a framework for the further development of nature protection regulations which govern process parameters and technological standards based on BAT as well as their usage procedure. After the active work of the Technical Working Group no. 10 (including participation of the Company representatives in the meetings of the BAT Bureau) the Technical Guide was brought up for discussion in public. Then it was adjusted upon such a discussion and approved by the Order of Rosstandart no. 1580 on 15 December 2015 for voluntary use since 1 June 2016. Since the Technical Guide needs to be continuously updated, the work within the frame of the Technical Working Group no. 10 will proceed further.

**SINCE 2011, MEETINGS OF THE WORKING GROUP ON WATER SUPPLY AND WASTEWATER DISPOSAL IN THE RESIDENTIAL SECTOR OF THE CITY HAVE BEEN HELD AT THE PREMISES OF VODOKANAL.**

The idea to organize such a working group started up during the IV Conference for Chairpersons of Homeowners Associations. It was also decided that the working group would comprise experts from Vodokanal, CEO of managing companies, chairpersons of housing cooperatives and construction associations, as well as representatives of the publishing house "Concierge". Regular meetings are dedicated to contractual relationship between customers, sub-customers and Vodokanal St. Petersburg, boundaries of responsibility for operation of water supply systems between customers and sub-customers, installation by Vodokanal of water filters at the inlets of the buildings, maintenance of water meter units, water heads in apartment houses, etc. At these meetings Vodokanal experts always answer specific questions on water supply and sewerage services asked by representatives of housing cooperatives and managing companies.

**IN 2015, VODOKANAL ALSO PARTICIPATED IN A NUMBER OF EVENTS ORGANIZED BY THE BALTIC MARINE ENVIRONMENT PROTECTION COMMISSION (HELCOM).**

In 2015, Vodokanal continued its contacts with the environment protection company "Ecology and Business". On 19-20 March 2015, Vodokanal took part in the international environmental forum "Baltic Sea Water Day".

Historically, Vodokanal keeps a liaison with the Northern Dimension Environmental Partnership (NDEP). On 26 March 2015, Vodokanal was engaged in the work of the VI Northern Dimension Forum held in St. Petersburg.

The organizers of the Forum were the Northern Dimension Business Council and the European Business Association. The Forum focused on the issues of interregional trans-boundary cooperation in the changed conditions, new approaches to business development and interaction within the frame of the civil society.



**IN APRIL 2015, ST. PETERSBURG VODOKANAL WAS INVOLVED IN THE EVENT "STARLINGS RETURN" ORGANIZED FOR CHILDREN AND TEENS OF ORPHANAGES AND BOARDING-SCHOOLS OF ST. PETERSBURG.**

It was a two staged event. From the 1st of April till the 21st of April, children built bird houses and on the 21st of April they hanged them up on the trees of the Mikhaylovsky Garden which was opened for one day on this occasion. Representatives of different companies including Vodokanal helped children to hang the bird houses up on the trees.

The public organization "Recreation of Gardens and Mini-parks" and the Russian Museum were the co-organizers of the event. The objective of the event was to attract attention of the city children to the surrounding environment and to draw attention of the society to the problems of social adaptation of children with disabilities.

Environmental awareness-raising and occupational guidance activities are implemented by Vodokanal in close cooperation with various public organizations and civil society activists.

## INTERACTION WITH FEDERAL AND REGIONAL AUTHORITIES

**Vodokanal actively liaises with state authorities at the federal and regional levels.**

In 2015, Vodokanal was actively involved in the United Russia Party's Clean Water Project aimed at the implementation of new technologies and improvement of public administration procedures in the field of water management.

In November 2015, Vodokanal held, under the Clean Water Project, a research and training conference on: safe drinking water supply to citizens; design and maintenance of in-house hot/cold water distribution systems for the purpose of extending their lifetime and reducing the breakdown rate; and regulation of municipal service fees. The conference participants described different cleaning techniques for external and in-house networks, their experience in design of in-house cold/hot water distribution networks, and cutting-edge water metering technologies.

They also discussed problems related to the managing companies which bear responsibility for the quality of the hot/cold water supply services provided to residents. Such events offer a platform for direct contacts between those who influence the citizens' quality of life, and promote partner relations with manufacturers and dissemination of the best available techniques.

Under the infrastructure strategic planning and monitoring project, Vodokanal ordered an R&D program to improve efficiency, reliability and security of water supply and sewerage systems. The objective of the R&D Program is to raise the efficiency of investments in municipal infrastructure in St. Petersburg through strategic planning of the city programs aimed at the achievement of social and economic objectives under "The Strategy 2030 with an Outlook to 2050", in consideration of their tasks, completion dates, performers and resources. The R&D Program will be implemented in 2016–2017.

The Corporate Development Plan (CDP) for 2016–2025 is drawn up, including the Water Supply and Sewerage sections based on "The St. Petersburg Water and Wastewater Master Plan for the period up to 2025 with an outlook to 2030" as updated in 2015.

**THE CDP REVISION ROAD MAP FOR THE PERIOD 2017–2030 WITH AN OUTLOOK TO 2050 IS DEVELOPED IN CONSIDERATION OF STRATEGIC PLANS OF MUNICIPAL INFRASTRUCTURE DEVELOPMENT, WITH THE AIM TO IMPROVE INVESTMENT PERFORMANCE.**



"Methodological recommendations on technical audits of Vodokanal's centralized water supply and sewerage systems" developed and approved by a company-wide directive allowed to systematize and unify the approaches used by the Company to monitor the centralized water supply and sewerage facilities.

The technical audit results were approved by the Committee for Energy and Engineering Support and used for the technical audit of Vodokanal's Investment Program with the aim to assess projected efficiency of the Investment Program actions and to substantiate the list and priorities of the actions.

For the purpose of improving the regulatory framework, Vodokanal in association with the Construction Committee, the Committee for Energy and Engineering Support and the Committee for Information and Communications, updated the regional guideline document "Construction of water and sewerage networks in St. Petersburg (RMD 40-20-2013, St. Petersburg). The new version of RMD 40-20-2013 provides for installation of optical fiber communication lines inside the gravity sewers.

In 2015, Vodokanal specialists actively cooperated with the Committee for Energy and Engineering Support on the issues related to implementation of the governmental import substitution policy and promotion of innovations.

In particular, they participated in the Working Group meetings to discuss import substitution actions as well as localization and support of energy equipment manufacturers in St. Petersburg and Russia; and addressed different import substitution issues at the sessions of the Committee's Scientific and Technical Council.

**FOR THE PURPOSE OF THE ORDER OF THE RUSSIAN MINISTRY OF CONSTRUCTION NO. 437/PR DATED 05.08.2014, VODOKANAL SPECIALISTS MADE A TECHNICAL AUDIT OF THEIR CENTRALIZED WATER SUPPLY AND SEWERAGE FACILITIES.**

The St. Petersburg Import Substitution and Localization Center (ISLC) was opened in September 2015. Vodokanal became a long-term participant of ISLC exhibiting its information on the stand of the Committee for Energy and Engineering Support and its subordinate enterprises. On 27-30 October 2015, ISLC hosted a thematic week "Sectoral strategy of domestic market development in the sphere of municipal utility infrastructure" organized by the Committee for Energy and Engineering Support. Vodokanal's proposals on the support of import substitution projects were included into the outcome document of the thematic week submitted to the Ministry of Industry and Trade.

Vodokanal liaises with the St. Petersburg Tariff Committee, St. Petersburg Committee for Energy and Engineering Support, Fuel and Energy Committee of the Leningrad Region and the Committee for Tariffs and Pricing Policy of the Leningrad Region on the matters related to compulsory planning and reporting by the Company on regulated types of activities, namely, "Cold water supply services. Sewerage services" and "Thermal energy production". In particular, drinking water production/wastewater treatment balances for controlled periods, and energy saving/energy efficiency improvement programs for the effective period of the Investment Program (3-5 years) are developed and approved.

In 2015, the Company specialists participated in different meetings and discussions of legislative and other regulatory initiatives, regulatory enforcement, etc.

Since February 2015, Vodokanal's Legal Department has been actively involved in the weekly meetings of legal department managers from St. Petersburg Committees and their subordinate entities, organized by the order of the Vice-Governor I.N. Albin. At the meetings, the Legal Department officers made detailed reports on Vodokanal legal work, such as casework, liaison with state authorities, and developing legal regulation of relations in the sphere of water supply and sewerage, as well as on the most challenging areas of technical and organizational development of water companies in different regions of the Russian Federation. One meeting dedicated to enforcement proceedings was hosted by Vodokanal.

Vodokanal's Legal Department officers were appointed members of the working group established at the Committee for Energy and Engineering Support with the aim to initiate regulatory development at federal and regional levels in the sphere of energy, water supply and sewerage. In the framework of the Working Group activities, Vodokanal specialists have developed two legislative initiatives aiming to amend the federal law no. 416-FZ dated 07.12.2011 "On Water Supply and Wastewater Disposal". The purpose of the initiatives is to introduce federal regulation of procedures and conditions of compensation for water companies' lost profit, and to annul obligatoriness of guarantor appointment. At the Working Group, Vodokanal specialists drafted several regulatory acts aimed to change the St. Petersburg laws regulating relations in the sphere of water supply and sewerage.

Vodokanal employees were actively involved in the meetings organized by the St. Petersburg authorities: the Construction Committee, the Committee for City Planning and Architecture, the Committee for Transport Infrastructure Development, the Legal Committee, etc.

Moreover, Vodokanal employees participated in the sessions of Russian state authorities, in particular, the Ministry of Construction, Housing and Utilities of the Russian Federation.

For example, on 25 December 2015, the Company employees participated in the meeting dedicated to discussion of changes to legal regulation of relations in respect of the charge for negative impact on the centralized wastewater systems. Due to consolidated opinion of the meeting participants representing the interests of big water companies, the draft amendment to The Rules of cold water supply and wastewater disposal (Decree of the Government of the Russian Federation no. 644, dated 29.07.2013) which would, in fact, eliminate any consumer liability for negative impacts on the centralized wastewater systems, was not adopted.

**MOREOVER, THE COMPANY REPRESENTATIVES PARTICIPATED IN THE FORUMS AND CONFERENCES ORGANIZED BY THE MINISTRY OF CONSTRUCTION, HOUSING AND UTILITIES OF THE RUSSIAN FEDERATION IN DIFFERENT CITIES OF RUSSIA: IN KALININGRAD (APRIL 2015), ROSTOV-ON-DON (JULY 2015), AND UFA (DECEMBER 2015).**

In 2015, the Company employees joined different associations of bigger water companies to discuss future technical, economic and legal development of the water sector, in particular, they participated in the meetings organized by NP “Public Utilities Development”.



The subject of discussion was legal regulation of relations in the sphere of public utilities' services, procedures and conditions of implementing concession agreements, and environmental regulation. At an annual conference under the aegis of the Russian Water Association (RWA), Vodokanal representative made a presentation on reforming the regulation of legal relations in the sphere of municipal service provision, and the possibility of direct relations between providers of municipal services and apartment owners. Water and energy metering was also one of the key focus areas of the conference.

In 2015, Vodokanal played an active role at international and national discussion platforms. The biggest event was V Petersburg International Legal Forum where Vodokanal was assigned the task to organize a roundtable dedicated to cross-border cooperation

in sustainable use of natural resources and environment protection. Among the roundtable participants were reputable national experts in legal science (V.A. Musin), representatives of state authorities of the Russian Federation and India, and representatives of legal service business.

In 2015, the Legal Department officers participated in the Northern Dimension Forum where they made a presentation on integrated water management; in the annual conference on finding the balance between the interests of business and sustainable use of natural resources at the St. Petersburg State University Legal Department where they made a presentation on future development of Russian environmental laws in the sphere of water supply and sewerage; and in other forums and conferences.

**A NUMBER OF PUBLICATIONS ON ENVIRONMENT-FRIENDLY PRACTICES, SUSTAINABLE WATER USE, AND LEGAL REGULATION OF RELATIONS IN THE SPHERE OF WATER SUPPLY AND SEWERAGE AND ASSOCIATED RELATION GROUPS, WERE ISSUED AS A FOLLOW UP OF THE ABOVE PRESENTATIONS.**

In 2015, liaison with federal and regional public authorities and with the professional community was regular and fruitful, and had a positive effect on different spheres of the Company activities. Some of the projects launched in 2015 will continue in 2016.

## INTERACTION WITH MASS MEDIA

**Accessibility of information is one of Vodokanal's essential values.**

**Interaction with the mass media is a good way to make the information accessible.**

Vodokanal's information policy aims to create a positive company image, to improve mutual understanding between the company, its customers and the society, and to foster the culture of water use and responsible attitude towards the environment. Relations with mass media are built on the principles of objectivity, reliability of information and quick response.

The mass media's interest in Vodokanal activities is growing every year. 10,253 news items about the Company activities were published in printed media, posted in the Internet or broadcasted on TV or radio in 2015. In 2014, the number of such new items exceeded 9,800 (in 2013 – over 9,000, in 2012 – over 8,000).

**Liaison with mass media is maintained as follows:**

- response to mass media queries;
- interviews of Vodokanal representatives in the mass media;
- press-conferences, briefings, round tables;
- press-tours to Vodokanal facilities for journalists;
- initiating publications in printed and electronic media, and TV/radio items;
- design and maintenance of websites describing the Company activities;
- projects publicity through mass media.

**NUMBER OF MASS MEDIA PUBLICATIONS ON VODOKANAL ACTIVITIES**

YEAR	NUMBER OF PUBLICATIONS
2006	2,756
2007	3,177
2008	3,835
2009	4,364
2010	6,138
2011	8,108
2012	8,836
2013	9,254
2014	9,866
2015	10,253

In April 2015, Vodokanal opened its official pages in the social networks: VKontakte and Facebook.

By the end of 2015, there were 268 posts in the social networks.



## Main Events of 2015 Covered by the Mass Media:

**ACTIVITIES OF THE MARINE MAMMALS RESEARCH AND CONSERVATION CENTER, RELEASE OF CURED ANIMALS INTO THE WILD, OPENING OF THE CENTER AFTER RECONSTRUCTION, ESTABLISHMENT OF THE BALTIC RINGED SEAL FRIENDS FUND.**



Six press-tours to the Center and animal release events were organized. In March 2015, the Russian Minister of Natural Resources and Environment S.E. Donskoy, the Governor of St. Petersburg G.S. Poltavchenko and officials from Finland and Estonia visited the Center.

Vodokanal activities aimed to maintain the populations of ringed and grey seals in the region were widely covered by the leading federal and municipal mass media including the First TV Channel, MTRK "MIR", TV "Center", 5th Channel, NTV, RenTV, Russia Today, 100TV, TK St. Petersburg; in printed publications (newspapers "Komsomolskaya Pravda v Sankt-Peterburge", "Sankt-Peterburgskiy Vedomosti", "Metro", "Delovoy Peterburg", "Argumenty I Fakty" and "Peterburgskiy Dnevnik"); by radio stations "Radio Rossiya", "Peterburg", "Baltika", "Zenit"; and on popular city's Internet resources "Fontanka", IA "TASS", IA "Nevskiye Novosti", IA "BaltInfo", IA "Interfaks", IA "Rossiya Segodnya" and IA "Dialog".

Moreover, numerous journalists' queries were processed. In total, over 1,400 publications on this theme were issued in 2015.

Information about the Center activities was posted on Vodokanal's official website ([www.vodokanal.spb.ru](http://www.vodokanal.spb.ru)) in the section "Help the Pinnipeds", on Da-Voda site which focuses on careful water use ([www.da-voda.com](http://www.da-voda.com)), and in the social networks VKontakte and Facebook.

**VODOKANAL'S IMPORT SUBSTITUTION POLICY REGARDING PROCUREMENT OF MATERIALS, EQUIPMENT AND TECHNOLOGIES (NEARLY 350 PUBLICATIONS).**

**OPENING OF THE WATER CLUSTER'S DEMONSTRATION & EXHIBITION CENTER (137 PUBLICATIONS).**

**COMPLETION OF SEWAGE COLLECTOR CONSTRUCTION AT ADMIRALTEYSKAYA EMBANKMENT (OVER 300 PUBLICATIONS).**

**TRADITIONALLY, JOURNALISTS EXPRESSED INTEREST IN THE OPERATION OF CITY FOUNTAINS, PERMANENT SNOW MELTING STATIONS (PSMS) AND PERMANENT TECHNICALLY EQUIPPED SNOW COLLECTION POINTS (PTESCP). ALL IN ALL, NEARLY 800 PUBLICATIONS ON THE CITY FOUNTAINS AND 600 PUBLICATIONS ABOUT PSMSS AND PTESCPs WERE ISSUED IN MASS MEDIA IN THE LAST YEAR.**

**IN THE LAST YEAR, NEW USEFUL SERVICES WERE OPENED FOR THE COMPANY CUSTOMERS, CITIZENS AND GUESTS OF ST. PETERSBURG: THE SECTION "OPEN HATCH? ALERT!", THE PAGE "PERSONAL ACCOUNT", CONNECTION COST CALCULATOR, ONLINE PAYMENT FOR WATER SERVICES, AND FOUNTAIN MAP; THE MOBILE APPLICATION "VODOKANAL ST. PETERSBURG" WAS DEVELOPED. APPROXIMATELY, 70 RELEVANT PUBLICATIONS WERE PRODUCED. IN 2015, A NEW IMPORT SUBSTITUTION SECTION WITH A FEEDBACK FORM WAS OPENED.**

**CONSTRUCTION OF SEWER NETWORKS IN THE REPINA SQUARE (53 PUBLICATIONS).**

A hot-button issue was "water battles" in the fountain complexes in Petersburg (over 700 items in mass media).

**EVERY DAY, THE COMPANY MANAGERS RECEIVE DIGESTS OF MATERIALS ABOUT VODOKANAL ACTIVITIES. THE DIGESTS HELP GIVE FAST RESPONSE TO PUBLICATIONS, PROVIDE COMMENTS AND CLARIFICATIONS, AND FIND NEW TOPICS TO BE HIGHLIGHTED IN MASS MEDIA.**

In 2015, Vodokanal focused on the development of its Internet sites. Information on different events was regularly posted on the existing corporate websites (the official site of SUE "Vodokanal of St. Petersburg" [www.vodokanal.spb.ru](http://www.vodokanal.spb.ru), the museum complex site [www.vodokanal-museum.ru](http://www.vodokanal-museum.ru), the Burevestnik Sanatorium site [www.vodokanal-zagorod.ru](http://www.vodokanal-zagorod.ru), and the Youth Environmental Centre site [www.vodokanal-ecocenter.ru](http://www.vodokanal-ecocenter.ru)).

**THE WATER AWARENESS-BUILDING INTERNET PORTAL (DA-VODA.COM) CREATED WITH THE SUPPORT OF VODOKANAL CONTINUED TO FUNCTION IN 2015.**

The portal's main character, the Neva Crayfish, kept telling about the importance of careful attitude to natural resources, and posted information on its pages in the social networks: Facebook, VKontakte and Twitter. Different video stories, video films and video lessons given, traditionally, by the Neva Crayfish himself were regularly posted on da-voda.com portal in the Da-Voda TV section to achieve better visibility and comprehensibility of information. During 2015, four such lessons were produced: "The Neva Crayfish at Youth Environmental Centre", "The Neva Crayfish and Weather Forecasters", "The Neva Crayfish and Open Hatches", and "The Neva Crayfish Closes the Summer Season". Moreover, 6 video stories were released, such as: "Kindergarten for Seal Pups 2015: Lunch Time" (about the process of feeding little pinnipeds – patients of the Marine Mammals Research and Conservation Centre), "Everyone Needs Water: Five Simple Water Saving Rules" (about low-effort ways to save water), "The Season 2015: Summarizing Results" (about the work of zoologists at the Marine Mammals Research and Conservation Centre in Repino during 2015 and successful rehabilitation of 13 pinnipeds), "Let's Do It 2015 Project: How We Cleaned Up the Gulf of Finland Coast" (about the all-Russian environmental campaign "Let's Do It 2015" and the campaigners who made the Gulf of Finland cleaner), "Kindergarten for Seal Pups 2015:

The Most Critical Patient" (about the only pinniped patient which stayed at the Marine Mammals Research and Conservation Centre over the winter – the Baltic ringed seal Little Inger), and "Whitefish, Go!: Stocking of the Gulf of Finland with Fish" (about the Stocking of the Gulf of Finland event implemented by Vodokanal on 27 November 2015).

**IN 2015, OVER 680 PRESS RELEASES (NEWS ITEMS) WERE POSTED ON VODOKANAL'S OFFICIAL WEBSITE.**

Vodokanal's Information and Public Relations Department responded to average 25-30 mass media queries (requests for comments, interviews, film shooting) per month, the total number of processed journalist queries having exceeded 350.

**NINETEEN PRESS-TOURS WERE ORGANIZED IN 2015; VODOKANAL MANAGERS AND SPECIALISTS PARTICIPATED IN 9 PRESS CONFERENCES.**

**TEN ISSUES OF THE CORPORATE NEWSPAPER WERE RELEASED.**

**IN 2015, THE INTERACTION WITH SOCIAL NETWORKS USERS GAINED MOMENTUM.**

In connection with the "water battles" fought by young people at the fountain complex in Moskovskiy avenue in summer, the Information and Public Relations Department monitored the group "Big Water Battle" in VKontakte on a daily basis. They issued press releases based on user messages in the group, warning about the dangers awaiting those who bathe in fountains and stressing that such water festivities should move to surface water bodies.

The VKontakte Group "Road Accidents and Extra-Ordinary Situations. St. Petersburg. Peter Online" became a good source of news for mass media; here, users promptly post photos and comments on different happenings in the city: road traffic accidents and extra-ordinary situations, such as fire events, water leaks, etc. Officers of the Information and Public Relations Department posted their comments regarding cold water leaks or sewer breakdowns and responded to mass media queries about different posts in the group.

Due to interaction with the Security Department, any unauthorized penetration of extreme roof jumpers to the top of the water tower in the town of Lisiy Nos could be prevented. A post informing that entrance to the tower is prohibited was placed in VKontakte.

# PARTICIPATION IN EXHIBITIONS AND CONFERENCES

**In 2015, Vodokanal was an active participant of different Russian and international exhibitions at all levels with the aim of strengthening liaison and cooperation with all stakeholders.**

In February 2015, Vodokanal participated in **IV INTERNATIONAL FORUM "ECOLOGICAL"**. The Forum was organized with the support of the Russian Federal Assembly and attended by delegates from 50 Russian regions and several dozen of foreign countries. Vodokanal made presentations about industrial wastewater treatment and the snow processing technologies used at snow-melting stations.

In March 2015, Petersburg hosted four important environmental events at a time. At the beginning of the month, a forum dedicated to the closing of the big international project **"GULF OF FINLAND YEAR 2014"** was held with the direct involvement of Vodokanal. In the framework of summarizing the project outcome, the Minister of Natural Resources and Environment of the Russian Federation S.E. Donskoy, the Governor of St. Petersburg G.S. Poltavchenko, and delegates from Finland and Estonia visited the Marine Mammals Research and Conservation Center in the town of Repino and evaluated its readiness for the new season.

On 18-20 March, Vodokanal presented the results of its Baltic Sea protection activities in the framework of the international forum and exhibition **"ECOLOGY OF A BIG CITY"**.

In March, the Company specialists followed the tradition being closely involved in the organization and the activities of XVI International Forum **"THE BALTIC SEA DAY"**. More than 600 people, over one hundred of them being foreign specialists, participated in the forum.

In late March, Vodokanal moderated a roundtable dedicated to ecology and environment protection at **VI NORTHERN DIMENSION FORUM**.

In April, Vodokanal organized and held **THE FIRST TECHNICAL EXHIBITION AND WORKSHOP ON IMPORT SUBSTITUTION** which set the Company policy development path in 2015 in many respects. At

the exhibition, Russian manufacturers could see the technologies and equipment used by Vodokanal in its production processes, displayed specimens of their equipment and told about their production possibilities. Around 50 Russian companies showcased their products, and delegates of over 40 companies made presentations at the technical workshop.

Moreover, Vodokanal participated in **THE THIRD ALL-RUSSIAN CONGRESS OF WATER COMPANIES** held on 22-25 April in Alushta under the aegis of the Russian Water Association (RWA). At the close of the Congress, Vodokanal got "The Apple Branch", i.e. became one of the winners in the competition of films and videos "Understanding Water Means Understanding the Universe" and was awarded the certificate of merit and the medal "For Invaluable Achievements in the Development of Sectoral Legislation" by the RWA.

In May 2015, Vodokanal delegates shared their energy saving experience at **THE RUSSIAN INTERNATIONAL ENERGY FORUM** held in Expoforum, Petersburg, on 19-22 May.

On 28-29 May, Petersburg hosted one of the notable events of the year: **VII NEVSKY INTERNATIONAL ECOLOGICAL CONGRESS** attended by more than 1600 people from 32 countries and 62 subjects of the Russian Federation. Vodokanal was a partner of the Congress. Vodokanal opened its exhibition stand at Tavricheskiy Palace and organized one of the roundtables at the Congress. Addressing the Congress participants, Marjukka Porvari from the Finnish private John Nurminen Foundation pointed out that there were much less blue-green algae in the eastern part of the Gulf of Finland in recent years, and Vodokanal deserves credit for that due to the enhanced phosphorus and nitrogen removal technologies implemented at its wastewater treatment plants in Petersburg.

On 27-30 May, Petersburg hosted **V ST. PETERSBURG INTERNATIONAL LEGAL FORUM**. The roundtable on "Environmental Cross-Border Cooperation" in the framework of the Forum was moderated by Vodokanal Legal Support Director M.V. Gassiy.

In June 2015, Vodokanal participated in **THE ST. PETERSBURG INTERNATIONAL ECONOMIC FORUM** where the St. Petersburg Water Cluster development support agreements were signed.

On 4-5 June 2015, the Company specialists participated in the special-purpose exhibition **"CONSTRUCTION MACHINERY AND TECHNOLOGIES"** in Moscow for the purpose of getting knowledge about innovative production technologies.

On 27 August 2015, the Workshop on **"25 YEARS OF COOPERATION BETWEEN VODOKANAL AND EUROPEAN FINANCIAL INSTITUTIONS IN THE FIELD OF ENVIRONMENT PROTECTION"** marked a quarter of a century of successful and fruitful collaboration of Vodokanal and European financial institutions aimed at the protection and enhancement of the marine environment of the Baltic Sea.

In September, Vodokanal specialists headed by the Director General F.V. Karmazinov were actively involved in the activities of **II ST. PETERSBURG YOUTH ENVIRONMENTAL FORUM**.

On 10 September 2015, Vodokanal specialists and management participated in the inauguration **OF THE IMPORT SUBSTITUTION AND LOCALIZATION CENTRE AT LENEXPO EXHIBITION COMPLEX**, St. Petersburg.

On 3 November, Northern WWTP hosted the technical workshop on **"IMPORT SUBSTITUTION AS A VECTOR OF DEVELOPMENT"** organized by Vodokanal in cooperation with the Russian Water Association. The workshop was one of remarkable events held by Vodokanal in the framework of import substitution. The workshop was attended by 105 participants from different parts of Russia (national manufacturers, specialists of design institutes, teachers and academic researchers of Petersburg higher schools, and specialists of Russian water companies); 25 presentations were made by representatives of companies located in St. Petersburg, the Leningrad Region, Moscow, Kaluga, Ekaterinburg, Lipetsk, Vladimir, Makhachkala, Chelyabinsk, etc.

**THE OPENING OF THE ST. PETERSBURG WATER CLUSTER'S DEMONSTRATION AND EXHIBITION CENTER** on 6 November 2015 was one of the greatest and most important events for St. Petersburg. The Center works on a permanent basis at the premises of Northern WWTP in Olgino.

The Center's exhibition showcases over 300 specimens of home-made products and equipment. The inauguration ceremony was attended by the Governor of St. Petersburg G.S. Poltavchenko and members of the city government.

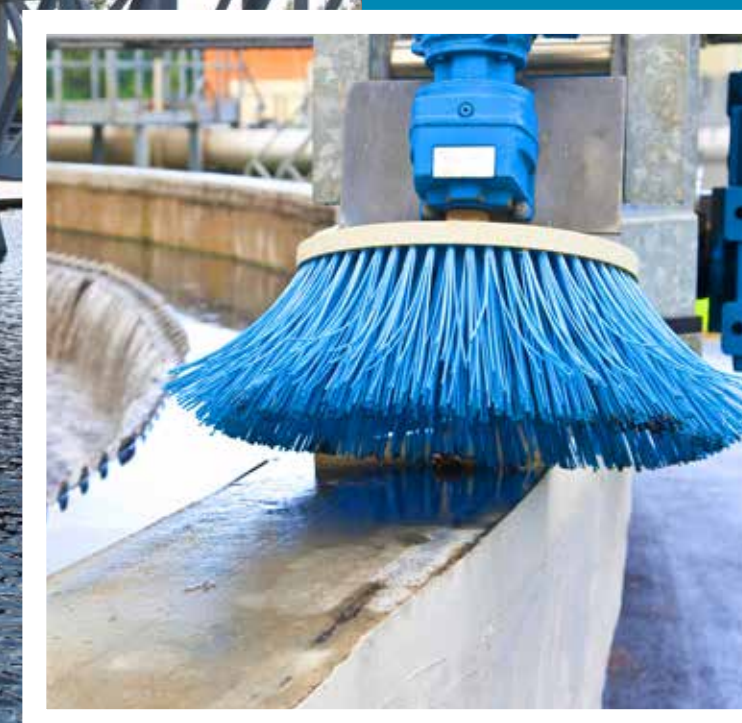
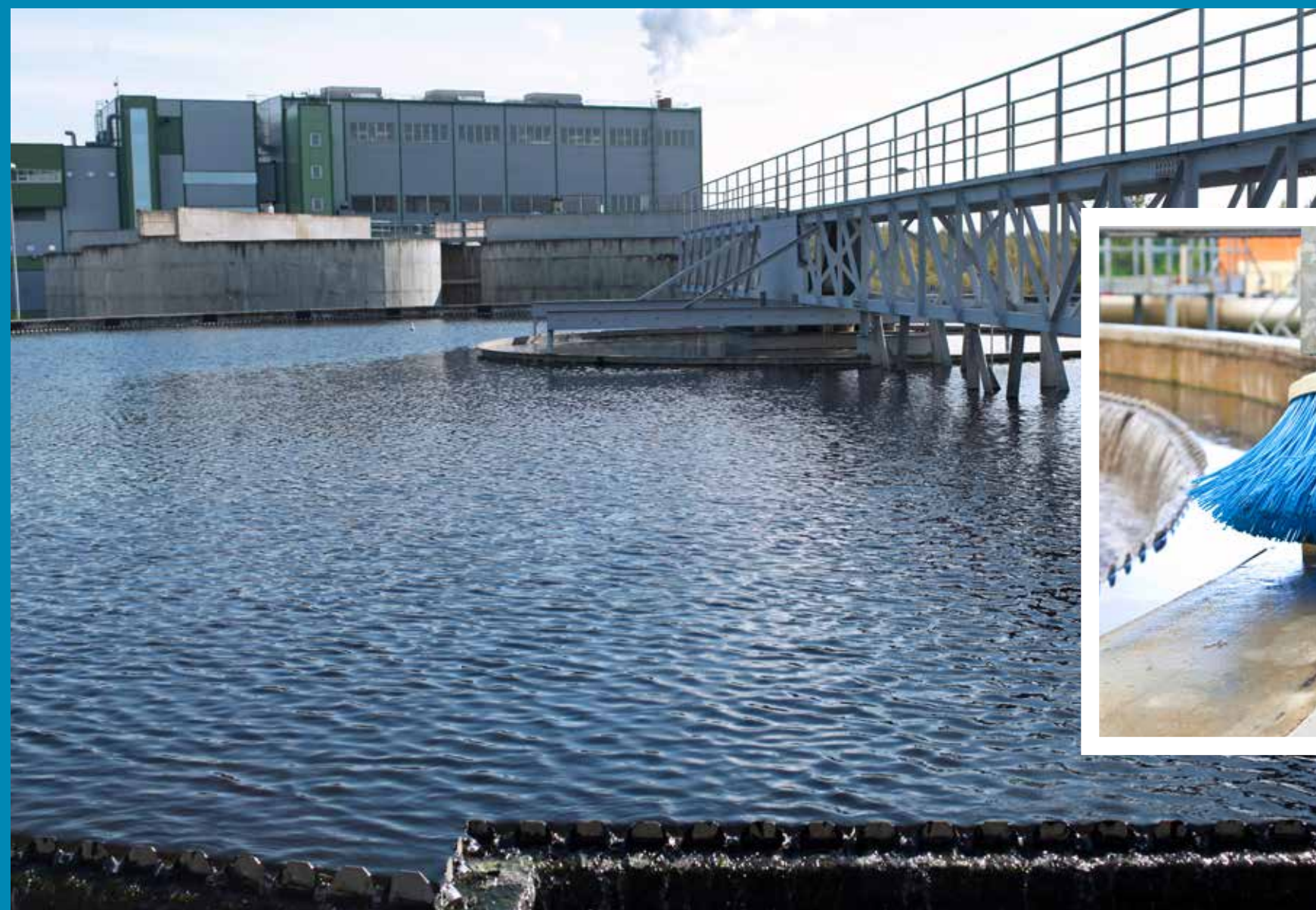
In late November, Vodokanal was awarded for active participation in **IX INTERNATIONAL FORUM "GREEN ECONOMY"** held on 23-25 November 2015 in the governmental complex "Palace of Congresses" in the town of Strelina.

In 2015, active cooperation between Vodokanal and its Finnish partners aimed to protect the marine environment of the Baltic Sea was going on. Vodokanal participated in several big international forums: on 2 September – in the International Forum **"THE GULF OF FINLAND YEAR OUTCOME"** in Helsinki chaired by the Finnish Ex-President Tarja Halonen; on 1 December – in **THE INTERNATIONAL FORUM "THE PRESENT CONDITION AND FUTURE OF THE GULF OF FINLAND" IN THE FRAMEWORK OF THE CLOSING OF THE GULF OF FINLAND YEAR PROJECT** (Helsinki).

**Throughout the year, Vodokanal specialists also participated in other international forums and exhibitions:**

- World Water Forum in Daegu, South Korea – 13-17 April;
- International Forum IFAT Ankara, Turkey – 15-17 April;
- International Forum IFAT Shanghai, China – 6-8 May;
- 2nd Russian-Chinese EXPO – Harbin Fair, China – 12-16 October;
- 10th International Water Expo China 2015 in Beijing, China;
- International China High-Tech Fair 2015 in Shenzhen, China – 16-21 November.





## RESULTS OF ACTIVITIES IN 2015





# WATER SUPPLY

## STRUCTURE, VOLUMES, MAIN PARAMETERS

**Vodokanal St. Petersburg provides potable water to the inhabitants (over 5.2 million people) and to the companies and organizations in the city (43,700 customers).**

VODOKANAL ACTIVITIES RELATED TO THE PROVISION OF WATER SUPPLY SERVICES INCLUDE WATER INTAKE, WATER TREATMENT AND TRANSPORTATION. ST. PETERSBURG TAKES WATER FROM SURFACE AND UNDERGROUND SOURCES. THE MAIN WATER SOURCE IS THE NEVA RIVER; VODOKANAL TAKES MORE THAN 98% OF WATER FROM IT.

### The water supply system comprises:

- 9 water treatment plants;
- 193 boosting pumping stations;
- 7,104.2 km of water networks;
- 2 sodium hypochlorite plants.

Pipeline diameters of the municipal water network in St. Petersburg range from 50 mm (house connections) to 1.4 m (water pipelines).

The bigger part (58%) of networks in the St. Petersburg water supply system is made of cast iron. In recent times, pipes made of polyethylene and spheroidal graphite cast iron have been widely used.

About 60% of water networks in St. Petersburg have been in operation for 15 – 50 years. The operating time of 25% of all networks is over 50 years, and such networks need reconstruction or replacement.

#### ADJUSTED CAPACITY OF WATER TREATMENT PLANTS:\*

Southern WTP	900,000 m³/day
Northern WTP	608,000 m³/day
Main WTP	422,000 m³/day
Volkovskaya WTP	211,000 m³/day
Kolpino WTP	151,000 m³/day
Kronstadt WTP	18,000 m³/day
Zelenogorsk WTP	10,000 m³/day
Duderhof WTP	20,000 m³/day
Gantulovskaya Gora WTP	32,000 m³/day

\* Adjusted capacity of WTPs means capacity of WTPs calculated in consideration of raw water quality deterioration, technical condition of water facilities and more stringent requirements to potable water quality in compliance with the Resolution of St. Petersburg Government no. 989 “On approval of St. Petersburg water and wastewater master plan for the period up to 2025 with the outlook to 2030” dated 11 December 2013.

	2015	2014	2013
Daily average supply of potable water to the city	1,635,600 m³	1,712,700 m³	1,808,800 m³
Water losses on the networks	13.0%	12.9%	13.7%
The breakdown rate of water networks (number of damages per 10 km)	2.4	2.8	2.9

St. Petersburg water supply system is based on the area zoning principle.

### The Southern Water Supply System comprises:

- Southern Water Treatment Plant (first-lift pumping stations, water treatment facilities, clean water reservoirs and second-lift pumping stations);
- Duderhof WTP (first-lift pumping stations, clean water reservoirs and second-lift pumping stations);
- Kolpino WTP (first-lift pumping station, water treatment facilities, clean water reservoirs and second-lift pumping station);
- Kronstadt WTP (first-lift pumping station, water treatment facilities, clean water reservoirs and second-lift pumping station);
- Petrodvorets WTP (first-lift pumping station, water treatment facilities, clean water reservoirs and second-lift pumping stations). Water from Southern WTP is tertiary treated here. The plant is also ready for use in case of need to take water from Nikolskiy pond;
- named boosting pumping stations of the third and fourth lift: Moskovskaya, Frunzenskaya, Uritskaya, South-Western, Rybatskaya, Kupchinskaya, Strelinskaya, Lomonosovskaya, LGU Petrodvortsovaya Waterworks, Petrodvortsovaya Waterworks, Pulkovskaya, Orlovskaya;
- boosting pumping stations of the third and fourth lift;
- water supply and distribution networks.

### The system supplies water to the following administrative districts:

- 70% of Moskovskiy district;
- 85% of Frunzenskiy district;
- 80% of left-bank part of Nevskiy district and 15% of right-bank part of Nevskiy district;
- 65% of Kirovskiy district;
- 100% of Pushkinskiy district;
- 100% of Petrodvortsoviy district and the town of Kronstadt;
- 100% of Kolpinskiy district;
- 100% of Krasnoselskiy district.



The Northern Water Supply System comprises:

- Northern WTP (first-lift pumping station, water treatment facilities, clean water reservoirs and second-lift pumping stations);
- Zelenogorsk WTP (first-lift pumping stations, water treatment facilities, clean water reservoirs and second-lift pumping station);
- Sestroretsk WTP (first-lift pumping station, water treatment facilities, clean water reservoirs and second-lift pumping station). Water from Northern WTP is tertiary treated here. The plant is also ready for use in case of need to take water from the Lake Razliv;
- underground water sources of Kurortniy district;
- named boosting pumping stations of the third lift (Murinskaya, Kusehevskaya, Primorskaya, Severo-Primorskaya, Kolomyazhskaya, Ozero Dolgoe, Martynovskaya, Parnasskaya, Osinovaya Roshcha, Gorskaya, Pesochenskaya, Novoselovskaya, Shuvalovskaya WTPs);
- boosting pumping stations of the third and fourth lift;
- water supply and distribution networks.

The system supplies water to the following administrative districts:

- 100% of Kurortniy district;
- 65% of Primorskiy district;
- 90% of Vyborgkiy district;
- 80% of Kalininskiy district;
- 65% of Krasnogvardeyskiy district;
- 85% of the right-bank part of Nevskiy district.

The Central Water Supply System comprises:

- Main WTP (first-lift pumping stations, water treatment facilities, clean water reservoirs and second-lift pumping stations);
- Volkovskaya WTP (first-lift pumping station, water treatment facilities, clean water reservoirs and second-lift pumping station);
- named boosting pumping stations of the third and fourth lift (Vasileostrovskaya, Gavan-skaya, Petrogradskaya);
- boosting pumping stations of the third and fourth lift;
- water supply and distribution networks.

The system supplies water to the following administrative districts:

- 100% of Petrogradskiy, Vasileostro-vskiy, Tsentralniy, Admiralteiskiy districts;
- 10% of Vyborgskiy district;
- 20% of Kalininskiy district;
- 35% of Krasnogvardeiskiy district;
- 20% of the left-bank part of Nevskiy district;
- 15% of Frunzenskiy district;
- 30% of Moskovskiy district;
- 35% of Kirovskiy district;
- 35% of Primorskiy district.

WATER TREATMENT TECHNOLOGIES

Treatment of Water from Surface Sources

The water treatment process at the key WTPs taking water from St. Petersburg surface sources (the Neva River and the Gulf of Finland) includes the following stages:

- a two-stage water disinfection system;
- coagulation of pollutants (aluminium sulfate is used);
- flocculation (polyacrylamide-based cationic flocculant is used);
- sand filtration in the contact clarifiers (one-stage treatment scheme);
- sedimentation and sand filtration in rapid filters (two-stage treatment scheme);
- powdered activated carbon is dosed when necessary (if the Neva water quality becomes worse, or for odour and oil removal).

The two-stage integrated process of potable water disinfection guarantees epidemiological safety of water supply in St. Petersburg and full compliance of the microbiological parameters with the current regulations.

The process consists of chemical pretreat-ment with chloramines and secondary disinfec-tion with ultraviolet. Chloramines are produced in the treated water by dosing of hazard-free chemicals, ammonium sulfate and sodium hypochlorite, and can maintain the disinfecting effect not only in the process of water treat-ment at WTPs, but also during water distribution via the municipal networks.

The process solutions used to design and build K-6 block, a new 350,000 m³/day water treatment block at Southern WTP, in operation since early 2011, are as follows:

- pre-ozonation;
- clarification: coagulation, flocculation, sedimentation in lamella sedimentation tank, sludge thickening, sludge recirculation and removal;
- filtration through dual-media (sand/granu-lar activated carbon) rapid gravity filters;
- air-and-water backwashing of filters;
- equalization, treatment and utilization of backwash water;
- sludge treatment;
- storage, preparation and dosing of chemicals;
- disinfection with chloramines.

Potable Water  
Treatment at Zelenogorsk WTP  
(Groundwater)

The groundwater treatment process in Zelenogorsk aims at removing excessive concentrations of iron and manganese and consists of:

ZELENOGORSK  
WTP TAKES RAW  
WATER FROM  
UNDERGROUND  
SOURCES.

- aeration;
- removal of the sludge resulting from air oxidation of ferric hydroxide (III) by means of filtration through the gravel-sand media of the first-stage rapid filters;
- catalytic oxidation and separation of manganese as dioxide on the second-stage pressure filters.

Water is disinfected by sodium hypochlorite solution.

Oxidation of dissolved ferrous iron and blow-up of dissolved carbonic acid is performed in the aerator. To enhance the oxidation of iron and manganese compounds, sodium hypochlorite solution is injected into water. Chlorination is carried out after aeration and the sodium hypochlorite dose is 4-5 mg/l of active chlorine.

The first-stage rapid filters are equipped with a drainage system: hemispheric channels located on the bottom and covered by slotted elements. These elements are made of stain-

less steel wires welded to a guide frame of the element. The wires are profiled in such a way that inward expanding slots are formed between its rows. This solution ensures high reliability of the drainage structure, and the inward expanding slots prevent the clogging of filter elements and facilitate the backwashing process. Due to the drainage system, a dual-media bed could be used for the reconstruction of open filters without increasing the bed height. The lower filter bed is made of 0.6 – 0.8 mm quartz sand, the sand layer height being 800 mm. The upper filter bed is made of anthracite (0.8 – 2.0 mm); the height of the layer is 400 mm.

The second stage of Zelenogorsk WTP is designed for enhanced removal of iron and manganese and consists of six pressure filters, main-line pumps, backwash water pumps for pressure filters, buffer tanks, sodium hypochlorite dosing equipment, flow meters and a chlorine analyzer.

The water treatment process control is fully automated. The plant operation data are displayed on the monitors of the operators in the plant control room.

Tertiary Water Treatment  
Technologies Used at Petrodvorets  
and Sestroretsk WTPs

Formerly, both Petrodvorets WTP and Sestroretsk WTP used their own surface water sources – the Nikolskiy pond and the Razliv Lake. Later, because of excessive pollution of these water bodies both plants were converted to tertiary treatment facilities to treat the water supplied by the city waterworks. The tertiary treatment uses the existing water treatment units, i.e. sand filters (one-stage treatment scheme).

Electrochemical corrosion of steel pipes in the St. Petersburg water distribution system results in secondary pollution of potable water with iron. To prevent corrosion of steel

pipes and reduce iron concentrations in the tertiary-treated water from Petrodvorets and Sestroretsk WTPs, calcium chloride and soda ash are dosed into the water as anticorrosion agents.

Both plants have the equipment to receive, dilute and dose 32% solutions of calcium chloride, and the systems for preparation and dosing of 10% soda ash (sodium carbonate). The dosing of calcium salts and carbonic acid into the treated water and the resulting pH increase can slow down the corrosion process, and in some cases, fully stop oxidation of iron in steel pipes due to the formation of calcium carbonate film which isolates steel from water and the dissolved oxygen contained in it.

To improve the potable water quality at remote sections of the network, tertiary treatment systems are constructed in the boosting pumping stations and house connections. Special filter media are used there to remove iron.

Tertiary Water Treatment  
Technologies Used at Boosting  
Pumping Stations and House  
Connections

WATER QUALITY  
CONTROL

Water quality control at Vodokanal of St. Petersburg is carried out at all stages – from raw water intake to the water metering system at the house connection.

Water quality control is implemented by the Company in accordance with the approved programs – the Working Program for Production Control of Potable Water Quality and the Production Program for Water Quality Control.

The Working Program for Production Control of Potable Water Quality in St. Petersburg for 2012 – 2017 has come into effect since 1 January 2012. It was developed in accordance with SanPiN 2.1.4.1074-01 “Potable water. Hygiene requirements to potable water supplied by centralized water supply systems. Quality control” approved by St. Petersburg Department of Rospotrebnadzor and adopted by the Chairman of the Committee for Energy and Engineering Support.

The program covers 174 checkpoints where 86 water quality parameters are monitored.



The following parameters are used in water quality control:

- composite;
- organoleptic;
- chemical (organic and non-organic);
- microbiological;
- parasitological (Lambliia cysts);
- virological (presence of hepatitis A virus antigens and rotavirus antigens);
- hydro-biological (phyto- and zooplankton);
- radiation safety.

The main water quality parameters are posted, in a tabular form, on the corporate website [www.vodokanal.spb.ru](http://www.vodokanal.spb.ru), section “Water supply. Water quality.”

The Program for Production Control of Potable Water Quality covers 306 additional checkpoints allowing a more detailed assessment of the water supply system. Twelve most important parameters are short-listed for monitoring.

A systematic approach based on the

principle: “WTP – water mains – city quarter network – customer” was used for selection of the checkpoints to be included into the Program for Production Control.

The monitoring results enable to:

- trace the changes in qualitative characteristics of potable water at all stages of water production and distribution;
- identify hot spots and troubled sections of water networks;
- evaluate the efficiency of the implementation of the investment program activities;
- evaluate the efficiency of corrective actions.



Levels of water quality control:

- on-line process control using automatic analyzers and automated continuous monitoring systems;
- laboratory control;
- control by an independent organization – Water Research and Control Center;
- control by Rospotrebnadzor.

The automated analyzers are installed at all stages of water treatment, signals from the instruments are sent to the control room and process engineers, thus providing for the real-time control of the process.

All the system elements are cross-integrated to guarantee reliability of water quality data at all stages.

In addition to the instrumental metering, the biomonitoring system designed by the St. Petersburg Environmental Safety Research Center of the Russian Academy of Sciences

is used at all city water intakes to control water quality in the water source, the Neva River. Prior to the treatment process, water from the Neva River is tested by crayfish. The crayfish located in aquariums may respond to any toxic substances in water within 1.5–2 minutes (including data processing time). The cardiac rhythm of the crayfish accelerates, and sensors transmit an alarm message (a red signal on a monitor of a shift supervisor) which launches the automated water sampling for further detailed laboratory analysis of water using chemical and biological methods and gives warning to all departments of the water treatment plant.

30,162 water samples were analyzed in 2015. Minor deviations from regulatory requirements with regard to total iron content were identified in the distribution water network.

The monitoring results show that potable water in St. Petersburg is harmless in terms of its chemical composition and safe in terms of epidemiological and radiation conditions.

THE MONITORING  
RESULTS OF 2015  
SHOW THAT  
QUALITY  
OF POTABLE  
WATER  
IN 671  
APARTMENT  
BLOCKS HOUSING  
170,000 PEOPLE  
IMPROVED.

In 2015, Vodokanal continued monitoring water quality in the distribution networks and at the house connections. The conducted work helped identify houses which have problems with water quality; a plan of activities aimed at improving quality of potable water delivered to customers was developed and is under implementation.

Based on the monitoring results, the activity plan to improve potable water quality was developed; reconstruction of distribution networks was carried out, first of all in the places which gain maximum effect for customers.

Thanks to the ongoing activities, the number of houses the water samples of which indicate the excessive amount of iron reduces.

The efficiency of the activities aimed at improving potable water quality is supported by the results of an opinion poll conducted by Vodokanal in the end of 2015. According to the opinion poll results the majority of the pollees (84%) were satisfied with the quality of the cold water in general.

In August-September 2015, the St. Petersburg Department of Rospotrebnadzor conducted an unscheduled inspection of Vodokanal’s compliance with the requirements to quality and safety of potable water. The laboratories of the territorial subdivisions of St. Petersburg Hygiene and Epidemiology Center collected samples of potable water at 213 water supply facilities to check its compliance with regulatory requirements. The results of the unscheduled inspection confirmed that potable water in St. Petersburg was safe and in compliance with the regulatory requirements.

ACHIEVEMENTS  
OF 2015

In 2015, rehabilitation and construction of networks and water supply facilities was performed by Vodokanal to guarantee safety of drinking water for the customers, increase of services reliability and improvement of energy efficiency.

1. Design works for reconstruction and construction of water disinfection systems

Construction works for modernization of UV disinfection systems at the water treatment plants (Northern WTP, Southern WTP, Volkovskaya WTP, Main WTP, Kolpino WTP, Petrodvorets WTP, Moskovskaya PS, Frunzenskaya PS) were conducted.

Works on the implementation of UV disinfection system at Sestroretsk WTP and Gantulovskaya Gora WTP were completed; modernization of sodium hypochlorite dosing systems at the facilities of Kurortny district (Zelenogorskaya WTP, Sestroretskaya WTP, Gorskaya WTP and Pesochnaya WTP) was completed.



2. Design works for reconstruction and construction of water treatment facilities

In 2015, works related to the reconstruction of Kronstadt WTP including building of a container-type unit were completed. The container-type unit uses a two-stage water treatment technology producing 1200 m<sup>3</sup>/day and consists of the container blocks. The two-stage water treatment technology includes the following processes: sedimentation in a cascade contact-vortex sedimentation tank (first stage); filtration in a precoat lamellar filter (second stage).

Chemical treatment of raw water is performed by means of a coagulant, flocculant and ballaster. Quartz microsand with an average particle size (100 µm) serves as a ballaster.

Filter precoating requires quartz microsand with a particle size of 20 µm; it is also possible to use diatomite powder, powdered activated carbon and other adsorbents. Water disinfection is ensured by dosing sodium hypochlorite and treatment of water with UV.

The plant is equipped with a system of sensors to provide automated online control. The implemented technology guarantees the compliance of potable water quality with the stated regulatory requirements.

In 2015, works related to the reconstruction of the chemical plants at Southern WTP and Northern WTP were going on. Design works were completed and a positive opinion was received for the project “Construction of underground water treatment plant in Dyuny (“Rzhavaya kanava”)”.

BESIDES, IN 2015, PRELIMINARY DESIGN WORKS RELATED TO CLOSURE OF UNTREATED FLUSH WATER DISCHARGES FROM THE SOUTHERN WTP WERE CONDUCTED.

3. Construction and replacement of water supply networks

IN RECENT YEARS, VODOKANAL GIVES MUCH ATTENTION TO WATER NETWORKS REHABILITATION.

PERFORMANCE OF NETWORK REHABILITATION WORKS IN 2011–2015						
WATER SUPPLY NETWORK	2011	2012	2013	2014	2015	
Rehabilitation of water supply networks, km	89.9	137.1	72.4	79.8	80.8	

Rehabilitation of water networks is performed to ensure reliability and continuity of water supply.

In 2015, the following works were continued: the reconstruction of DN 1200 water network along Hasanskaya str., water networks and house connections in Rzhevka district; construction of the pipelines from Northern WTP to Murinskaya pumping station (five out of six construction stages were completed) and from Main WTP to Vasilievskiy Island; reconstruction

of Lopatinskiy water pipeline which is important for water supply of the right-bank part of the city.

As for the water valves, over 5,000 units were replaced.

In 2015, design works for the system of water supply from Southern WTP and Main WTP to Volkovskaya WTP were completed.

In 2015, works related to the construction of separate house connections were performed for 356 buildings in Kirovskiy, Moskovskiy districts and in Kronstadt.

4. Continuation of works related to the establishment of the water supply management system



In 2015, under the project “Establishment of the St. Petersburg water supply management system”, design works for reconstruction of the pumping stations of the Northern and Central Water Supply Zones were going on. Besides, works in the Southern Water Supply Zone (in particular – in the 2nd machine room of Southern WTP) continued. Pumps, valves, process pipelines, power-generating equipment and automatic process control systems of the 2nd machine room were replaced. In 2015, works in the Northern and Central Water Supply Zones (including Murinskaya, Kushelevskaya and Petrogradskaya boosting pumping stations) and the reconstruction of the 1st and 2nd machine rooms of the second-lift pumping station of Northern WTP were commenced.

5. Design and construction of water distribution networks and water supply for small settlements

In 2015, works related to the construction and reconstruction of water supply networks in the settlement of Volodarskiy were performed. Design works for water supply networks in the settlements of Martyshkino, Lisiy Nos, Toriki, Molodezhnoe were completed.



6. Import substitution

In 2015, import substitution activities were going on in the frames of the projects of the reconstruction and modernization of the main water supply and wastewater disposal facilities, water supply and wastewater disposal networks and tunnel collectors in accordance with Vodokanal Targeted Investment Program. Previously, imported equipment was used for the implementation of the majority of projects.

Revision of the projects on the reconstruction of the Main WTP, establishment of the Southern Water Supply Zone management system and other projects with a view to import substitution revealed that there were possibilities to stop entirely the use of the imported equipment and apply products of

domestic manufacturers, including high-technology equipment.

Import substitution activities allowed to reduce the dependence on foreign suppliers. Thus, in 2015, revision of the project “Design and construction of a new treatment block at Main WTP, including reconstruction of pipelines transporting raw water from the first-lift pumping station” was completed.

After the State Expertise of the cost-estimate documentation in 2015, the estimated reduction of the equipment cost under the project was RUB 1.435 billion (which amounted to 27.9% of the original cost of the equipment) thanks to using equipment of Russian origin and excluding a number of buildings.



# FUTURE DEVELOPMENT OF WATER SUPPLY SYSTEM

**In order to increase the satisfaction of St. Petersburg inhabitants with the quality of water supply services and ensure reliable and safe operation of water supply facilities, the following activities are planned to be launched in 2016 and continued in 2017-2018:**

1. Commencement of construction of a new treatment block to produce 500,000 m<sup>3</sup>/day at the Main WTP;

2. Design and reconstruction works at Kronstadt WTP including building of a container-type unit for two stage water treatment;

3. Modernization of the chemical units at water treatment plants (Main WTP, Volkovskaya WTP, Southern WTP, Kolpino WTP, Kronstadt WTP, Petrodvorets WTP);

4. Continuation of UV disinfection systems modernization at water treatment plants (Northern WTP, Southern WTP, Volkovskaya WTP, Main WTP, Kolpino WTP, Petrodvorets WTP, Moskovskaya PS, Frunzenskaya PS). Modernization of the existing UV disinfection systems will ensure safety of potable water supplied to the citizens and energy saving;

5. Commencement of construction of underground water treatment plants in Kurortny district (the settlements of Molodezhnoe and Dyuny ("Rzhavaya kanava")) and water pipelines for these plants. This will ensure reliable and continuous water supply to the customers of Kurortny district in full compliance with the regulatory requirements;

6. Design works and commencement of construction of flush water recirculation unit at the Southern WTP;

7. Continuation of works related to design and construction of underground water intakes to ensure the reserve water supply;

8. Design works for the construction of a flush water treatment unit at the Northern WTP to eliminate untreated flush water discharges;

9. Modernization of the technology of powdered activated carbon preparation and dosing at the Main WTP;

10. Commencement of modernization and implementation of UV disinfection systems at underground water intakes in the settlements of Komarovo, Repino, Lisiy Nos. These activities will ensure safety of potable water supplied to the citizens of Kurortny district;

11. Continuation of works related to the construction and reconstruction of water distribution pipelines that serve a large number of inhabitants and influence the development of urban areas:

- completion of works related to the reconstruction of Lopatinskiy water pipeline which is important for water supply of the right-bank part of the city;

- completion of works related to the construction of the pipelines from Northern WTP to Murinskaya pumping station and from Main WTP to Vasilievskiy Island;

- completion of works related to the reconstruction of DN 1200 mm water network along Hasanskaya str. (water conduits of the first and second lines);

- construction of feed and bypass networks to connect the hydraulically filled areas of Vasilievskiy Island;

- construction of external engineering networks for a new residential area of Krasnoe Selo;

- construction of the second line of water conduit along Gorskoye highway from the flying junction of Ring Motorway and the Western High-Speed Diameter road to the settlement of Gorskaya;

12. Continuation of the water network reconstruction;

13. Continuation of valves replacement;

14. Continuation of works related to the installation of service laterals for the houses with different ownership (dismounting of "one flow meter for several buildings" systems);

15. Completion of works related to the establishment of the Southern Water Supply Zone management system (in particular – in the 3rd machine room of Southern WTP);

16. Continuation of works related to the establishment of the water supply management system in the Northern and Central Water Supply Zones (including 1st and 2nd pump compartments of the Northern WTP, Petrogradskaya boosting PS, Murinskaya boosting PS, Kushelevskaya boosting PS). The pump-

ing station reconstruction projects envisage replacement of pumps, valves, process pipes, power-generating equipment and automatic process control systems;

17. Continuation of works related to design of the centralized water supply system in the settlements of Gorelovo, Novoselky, Petroslavayanka, Pontonny and Pavlovsk;

18. Substitution of foreign-made equipment in accordance with the Decree of the President of the Russian Federation "On National Security Strategy of the Russian Federation for the period up to 2020" within the frame of construction and rehabilitation of water supply facilities.

## Revision of the St. Petersburg Water and Wastewater Master Plan for the Period up to 2025 with on Outlook to 2030

In 2015, the St. Petersburg Water and Wastewater Master Plan for the period up to 2025 with an outlook to 2030 adopted by the Resolution of the St. Petersburg Government no. 989 dated 11 December 2013 was revised (the revision of the master plan was approved by the Resolution of the St. Petersburg Government no. 856 dated 25 September 2015).

The revision was performed in view of establishing a model water and wastewater master plan in terms of strategic planning of St. Petersburg utility infrastructure.

The algorithm to forecast water consumption and wastewater disposal volumes as well as spatial load distribution was developed. This algorithm will be used as a base for the development of sectoral balances as well as the inter-sectoral resource balance within the frame of the strategic planning of improving efficiency, reliability and safety of St. Petersburg utilities and energy systems.

Further adjustment of the St. Petersburg Water and Wastewater Master Plan for the period up to 2025 with an outlook to 2030 is planned in 2016 to align it with the documents adopted in St. Petersburg in 2015 and with the changes made in the city area planning designs.

## The master plan was updated taking into account the following:

- the city development scenarios with different forecasted population size and per-capita water consumption in accordance with the St. Petersburg economic and social development strategy up to 2030;

- the City development master plan and Rules for land use and development;

- St. Petersburg area planning design;
- development plans for the Leningrad Region municipalities bordering on St. Petersburg;

- research of water consumption in St. Petersburg;

- observations over changes in water consumption in similar cities.

## The following basic changes have been made in the revised master plan:

**1. Water supply sections were aligned with the documents adopted in St. Petersburg in 2013–2015:**

- St. Petersburg economic and social development strategy up to 2030;

- St. Petersburg heat supply master plan up to 2030 (activities related to the reconstruction of the water supply network, reconstruction and construction of house connections, installation of booster pumps were elaborated to ensure transition to a closed hot-water system);

- St. Petersburg State Program "Integrated development of public utilities, power and energy saving systems of St. Petersburg" for 2015-2020 in terms of project deadlines and amount of financing. The deadlines for activities related to the reconstruction of Main and Northern WTPs, construction of Dyuny WTP and Molodezhnoe WTP were changed;

- Approved area planning designs.

**2. Activities by AO "Leningrad Region Utilities" related to water supply for the satellite town of Yuzhny were taken into consideration.**

# WASTEWATER DISPOSAL SYSTEM

## STRUCTURE, VOLUMES, MAIN PARAMETERS



**St. Petersburg system of wastewater disposal and treatment is a complex of interconnected engineering facilities to provide collection of wastewater, its transportation and treatment at wastewater treatment plants followed by discharge into water bodies and wastewater sludge utilization.**

St. Petersburg has two centralized sewerage systems:

- the centralized combined/separate municipal sewerage system. One part of the service area is connected to the combined sewerage system which collects domestic and industrial wastewater as well as surface (rainfall, snow-melt) runoffs. The other part of the service area is sewered according

to a separate scheme which collects only domestic wastewater;

- the centralized separate stormwater system where rainfall and snow-melt waters are collected separately from other wastewater and either discharged without any treatment or treated at surface water treatment plants.

### The centralized combined/separate municipal sewerage system

Wastewater comes from customers to the centralized combined/separate municipal sewerage system which channels them into deep-laid tunnel sewers and then to the wastewater treatment plants. Wastewater undergoes mechanical and biological treatment at 13 waste-

water treatment plants. 19% of the treated effluent is subject to UV-disinfection prior to its discharge to water bodies. Wastewater sludge produced at WWTPs is neutralized and burnt at three incineration plants. Ash produced in the course of incineration is disposed to landfills.

Each sewerage area has its own system for collection and transportation of wastewater (sewerage network and tunnel sewers), sewerage pumping stations and wastewater treatment plants.

Three sewerage areas – Northern, Central and Southern – are established in St. Petersburg.

### Northern sewerage area

Covers the right bank of the Neva River including Nevskiy (the right bank), Krasnogvardeyskiy, Kalininskiy, Vyborgskiy, Primorskiy and Petrogradskiy districts. In this area wastewater is transported to the Northern Wastewater Treatment Plant (Northern WWTP).

Wastewater from Nevskiy (the right bank) and Krasnogvardeyskiy districts can be diverted by the Sewerage Pumping Station no. 6 into the tunnel sewers along Obukhovskaya Oborona avenue and then further to the Central Wastewater Treatment Plant (Central WWTP). The Northern

sewerage area receives also wastewater from the town of Vsevolozhsk and the town of Sertolovo (Vsevolozhskiy Municipal District of the Leningrad Region). Major part of the Northern sewerage area is served by the combined sewerage system, i.e. in case of rain the runoffs together with domestic wastewater are transported to the Northern WWTP.

**IN ADDITION, THIS AREA INCLUDES LOCAL SEWERAGE AREAS OF KURORTNY DISTRICT (SESTRORETSK WWTP, ZELENOGORSK WWTP, REPINO WWTP, MOLODEZHNOE WWTP).**

### Central sewerage area

Covers the territory of the left bank of the Neva River including Nevskiy (the left-bank), Vasileostrovskiy, Central, Admiralteyskiy, Frunzenskiy, Moskovskiy and a part of Kirovskiy districts. In this area wastewater is transported to the Central Wastewater Treatment Plant (Central WWTP).

In addition, this area receives wastewater from a part of Pushkinskiy district and, if needed (during repair works), some wastewater from the Northern sewerage area can be redistributed via the Sewerage Pumping Station no. 6.

**THE CENTRAL SEWERAGE AREA IS MAINLY SERVED BY THE COMBINED SEWERAGE SYSTEM. THE TERRITORY OF VASILEOSTROVSKIY, FRUNZENSKIY AND A SOUTHERN PART OF MOSKOVSKIY DISTRICTS HAS A SEPARATE SEWERAGE SYSTEM WHERE RAINFALL IS DISCHARGED WITHOUT ANY TREATMENT INTO CITY WATER BODIES AND THE NEVA RIVER.**

### Southern sewerage area

Covers the southern territory of the city as well as a part of Kirovskiy, Krasnoselskiy districts and the town of Strelna of Petrodvorets district. Wastewater from this area is transported to the South-West Wastewater Treatment Plant (SWTP). Control of wastewater flow between Southern and Central sewerage areas is performed by using penstocks located in the shafts of tunnel collectors. Except for the old part of Kirovskiy and Krasnoselskiy districts,

all other territories of the Southern sewerage area are served by the separate sewerage system.

**WASTEWATER FROM KOLPINSKIY, KRONSTADT AND A PART OF PUSHKINSKIY AND PETRODVORETS DISTRICTS IS TRANSPORTED THROUGH THE PRESSURE-GRAVITY COLLECTORS TO WASTEWATER TREATMENT PLANTS LOCATED IN EACH OF THESE DISTRICTS.**



As of 1 January 2016, the centralized combined/separate municipal sewerage system is comprised of:

- 13 wastewater treatment plants;
- 168 sewerage pumping stations;
- 6,224.0 km of sewerage networks including:
  - 1) gravity pipelines – 5,880.6 km;
  - 2) pressure pipelines – 343.4 km.
- 270.7 km of tunnel collectors;
- 21,842 dump wells;
- 106 direct discharges including:
  - 1) 63 discharges from the combined sewerage system;
  - 2) 33 domestic wastewater discharges;
  - 3) 10 flushing water discharges from waterworks.
- 2 sludge landfills: Severniy, Volkhonka-2 and sludge beds in Gorelovo community;
- 3 sludge incineration plants.

Diameters of the sewerage network range from 100 mm (courtyard networks) to 1500 mm (water mains). Pipelines with diameters up to 500 mm make up 84.5% of the total length of all centralized combined/separate municipal sewerage system.



The main material of sewerage pipes is as follows:

- reinforced concrete – 48.9% of the total length;
- concrete – 20.4%;
- polyethylene – 16.3%;
- cast iron – 8.6%;
- ceramics and other materials – 5.8%.

Tunnel sewers are the basic mains for transporting wastewater to wastewater treatment plants. Currently, 270.7 km of tunnel sewers (with 641 shafts and 452 bore wells) operate in the city. Internal diameter of tunnel collectors ranges from 2 to 4.7 meters, with laying depth of 15–80 meters. About 65% of tunnel collectors have been in operation for more than 30 years.

About 49.5% of the networks have been in operation for over 40 years.

ADJUSTED CAPACITY OF WASTEWATER TREATMENT PLANTS:

WASTEWATER TREATMENT PLANT	ADJUSTED CAPACITY, ‘000 M <sup>3</sup> /DAY
SWTP	290
Northern WWTP	690
Central WWTP	1,050
Sestroretsk WWTP	17
Zelenogorsk WWTP	10
Repino WWTP	10
Petrodvorets WWTP	72
Kronstadt WWTP	28
Pushkin WWTP	71
Kolpino WWTP	69
Pontonny WWTP	11
Metallstroy WWTP	9
Molodezhnoe WWTP	0
TOTAL:	2,327

According to the results of 2015 the daily average volume of treated wastewater was 2,100,000 m<sup>3</sup>/day.

In the course of wastewater treatment the plant produces sludge which contains a lot of pollutants removed from influent. At the present time, three sludge incineration plants (SIP) constructed at the city’s biggest WWTPs (Central WWTP, Northern WWTP and SWTP) are in operation. They incinerate

sludge produced in the course of wastewater treatment at all WWTPs. This enabled the city to solve its primary task – to stop storing wastewater sludge and reduce the negative environmental impact.

THE DESIGN CAPACITY OF SEWERAGE PUMPING STATIONS RANGES FROM 300,000 UP TO 1,000,000 M<sup>3</sup>/DAY.

SIP CHARACTERISTICS

	YEAR OF COMMISSIONING	NUMBER OF FURNACES	DESIGN CAPACITY OF ONE FURNACE, T DS/DAY*	ADJUSTED CAPACITY OF ONE FURNACE AS OF 1 JAN 2016, T DS/DAY*
SIP at Central WWTP	1997	4	62.5	50
SIP at Northern WWTP	2007	3	62.5	60
SIP at South-West WWTP	2007	2	44	44

\* t DS/day – tones of dry solids per day.

Vodokanal also operates two sludge landfills: Northern and Volkhonka-2 and sludge beds in the settlement of Gorelovo.

CHARACTERISTICS OF SLUDGE LANDFILLS

	YEAR OF COMMISSIONING	AREA, HA	DESIGN CAPACITY, M³
Northern landfill	1987	82.5	2,000,000
Volkhonka-2 landfill	1990	34	2,867,100
Sludge beds in Gorelovo	1984	69.93	846,900

In 2015, the amount of the utilized sludge was 97,531.2 tons of dry solids including:

- incinerated sludge – 84,778.5 t DS;
- sludge disposed to the landfills – 12,752.7 t DS.

Major performance indicators of the centralized combined/separate municipal sewerage system in 2015

The share of treated municipal sewerage in the total amount of municipal sewerage collected by the centralized combined/separate municipal sewerage system was 98.5%.

The share of treated runoffs in the total amount of runoffs collected by the centralized combined/separate municipal sewerage system was 97.1%

Specific quantity of breakdowns and blockages in the network per unit length of the centralized combined/separate municipal sewerage system per year – 0.69 breakdowns/blockages/km.

Share of sludge utilized by incineration – 87%.  
Share of sludge disposed to landfills and treated up to environmentally safe condition – 10%.

The following territories of the city are served by the separate storm water system: territory of Vasilievskiy Island, non-residential zone of “Parnas”, block building area “Shuv-alovo-Ozerky” in the Vyborgkiy district; block building area “Road to Grazhdanka district” and “To the north of Murinskiy Ruchey” in the Kalininskiy district; block building area “To the north of Novoselov street”, non-residential zone of “Obukhovo” and “Rybatskoe” and development areas of “Rybatskoe” in the Nevskiy district; block building area “Rzhevka-Porokhovye” in Krasnogvardeyskiy district; block building area “Northern Kupchino” and “Southern Kupchino” in the Frunzenskiy district; non-residential area “Predportovaya” and block building area to the south of the Dunayskoe avenue in the Moskovskiy district; housing area “Ulyanka” in the Kirovskiy district; block building area “Sosnovaya Polyana and Uritsk”, “Krasnoe Selo” in the Krasnoselsky district; block building areas “The western part of Petrodvorets” and “The central part of Lomonosov town” in the Petrodvorets district; territories of Kolpinskiy and Pushkinskiy districts, near the Angliyskaya embankment in the Admiralteyskiy district; 38th quarter of Sestroretsk, the eastern part of Zelenogorsk in the Kurortny district; near the Dvortsovaya embankment in the Central district; in Elagin island in the Primorskiy district; the western part of the embankment near the Karpovka River, the Zhdanovskaya embankment in the

Petrogradskiy district, the western part of Kronstadt.

Rainfall and snow-melt waters from the specified territories are collected into the storm water sewerage system and are either discharged without any treatment through stormwater discharges or storm-water overflows or transported for treatment to surface water treatment plants and then upon treatment discharged into water bodies.

Diameters of the sewerage network range from 100 mm (courtyard networks) to 1.5 m (water mains). Pipelines with diameters up to 500 mm make up 84.0% of the total length of all centralized separate storm water system.

About 45.3% of all the networks have been in operation for over 40 years.

The main material of sewerage pipes is as follows:

- reinforced concrete – 73.6% of the whole network;
- concrete – 13.6%;
- polyethylene – 8.0%;
- cast iron – 3.5%;
- ceramics and other materials – 1.3%.

The capacity of the surface water treatment plants is as follows:

- Pulkovo-3 surface water treatment plant – 690 m³ per day;
- Kolpino surface water treatment plant – 860 m³ per day.

The centralized separate stormwater system

The centralized separate stormwater system is the system where rainfall and snow-melt waters are collected separately into a stormwater system and:

- either discharged without any treatment through stormwater discharges or storm-water overflows,
- or collected and transported for treatment to surface water treatment plants and then upon treatment discharged into water bodies.

As of 1 January 2016, the centralized separate stormwater system is comprised of:

- 2 surface water treatment plants;
- 8 sewerage pumping stations;
- 2,379.1 km of sewerage network including:
  - 1) gravity pipelines – 2,374.7 km;
  - 2) pressurized pipelines – 4.3 km.
- 1,090 storm water discharges and overflows.



Major performance indicators of the centralized separate storm water system in 2015.

The share of treated runoffs in the total amount of runoffs collected by the separate storm water system is 2.2%.



# WASTEWATER TREATMENT TECHNOLOGIES

Technologies to ensure wastewater treatment in compliance with the Russian norms and requirements of the Baltic Marine Environment Protection Commission are implemented at Vodokanal’s wastewater treatment plants.

Wastewater treatment quality at St. Petersburg WWTPs is regulated by the Russian Federation regulations and international recommendations.

The process flow of municipal wastewater treatment plants includes the following stages of wastewater and sludge treatment:

**Mechanical treatment** is aimed at clarifying wastewater to ensure normal flow of further treatment stages. It includes screens, grit removal units and primary sedimentation tanks. The screens retain coarse impurities; grit removal units separate mineral suspended solids (sand). In the following stage of primary sedimentation, there goes a process of mechanical and organic pollutants sedimentation.

**Biological treatment** is the main wastewater treatment process before the effluent is discharged into a water body. This block includes aeration tanks and secondary sedimentation tanks. The biological treatment process is based on the activated sludge biocenosis in a compulsory presence of oxygen. The biocenosis of activated sludge

is formed by various bacteria, protozoa and metazoa which clean wastewater through oxidation of pollutants present in it.

**Chemical treatment** is chemical removal of phosphorus phosphates. Previously, the wastewater treatment plants applied mechanical and biological treatment only; and the quality of effluent in terms of phosphorus concentration did not meet the requirements of the Helsinki Commission. Thus, a chemical-biological treatment method was implemented at Vodokanal WWTPs. This method combines the enhanced biological nutrient removal and chemical phosphorus precipitation. Today, all St. Petersburg WWTPs apply chemical phosphorus removal method using the most effective and cost-efficient chemical – aluminum sulfate.

The principle of chemical treatment of wastewater is that the addition of the chemical causes a reaction which results in formation of insoluble compound of aluminium and phosphates to be removed from the system along with sludge.

After the implementation of the chemical treatment method at all WWTPs, the effluent quality meets HELCOM recommendations in terms of total phosphorus content (max 0.5 mg/l).



**Tertiary treatment.** Given that almost all water bodies in St. Petersburg, where treated wastewater is discharged, are categorized as fishery water bodies, it predetermines the quality requirements to wastewater discharged into water bodies – suspended solids of less than 5 mg/l. Therefore, tertiary treatment (post-treatment) is needed to be introduced at all WWTPs of the city in order to stabilize treatment quality. Now, tertiary treatment is implemented only at Repino and Petrodvorets WWTPs.

**Disinfection.** The Water Code of the Russian Federation and other regulations require disinfection of the treated wastewater. Disinfection using ultraviolet radiation is introduced at Repino WWTP, Sestroretsk WWTP, Petrodvorets WWTP and South-West WWTP. Sodium hypochlorite is used to disinfect wastewater prior to its discharge to water bodies at Zelenogorsk WWTP, Kronstadt WWTP, Pushkin WWTP, Kolpino WWTP, Pionersky WWTP and Metallostroy WWTP.

**Sludge treatment.** The main purpose of the wastewater sludge treatment stage is to minimize its volume and eliminate negative environmental impact (smell, pathogenic microflora). Optimal solution for utilization of sludge produced in wastewater treatment plants is the incineration of the dewatered sludge.

In order to ensure the compliance of wastewater treatment with HELCOM recommendations, Vodokanal St. Petersburg has been constantly upgrading biological treatment by means of enhanced nutrient removal technologies.

The advanced UCT biological process (University of Cape Town) was implemented at SWTP, Sestroretsk WWTP and five sections of the Northern WWTP according to SWECO design scheme. JHB process (University of Johannesburg) was introduced at Petrodvorets WWTP, Pushkin WWTP, Kronstadt WWTP and Repino WWTP. These technological solutions enable to manage the biological treatment system in a flexible way, adjusting the recirculation volumes and supply of oxygen for aeration. As a result, with any changes of external factors affecting the treatment process (wastewater temperature, influent contaminant concentrations), it became possible to select the optimal mode and ensure the required quality of treatment. The projects of the city wastewater treatment plants reconstruction are meant to upgrade biological treatment with effective solutions of UCT and JHB technologies.

Efficiency of wastewater treatment at Vodokanal WWTPs in 2015 was as follows: suspended solids and BOD – over 97%; total phosphorus – 95.4% and total nitrogen – 72.5%.

AT THE PRESENT TIME, VODOKANAL IS SEARCHING FOR EFFICIENT AND COST-EFFECTIVE TECHNOLOGIES OF EFFLUENT TERTIARY TREATMENT AND DISINFECTION TO BE IMPLEMENTED AT ALL WASTEWATER TREATMENT PLANTS OF ST. PETERSBURG.

# WASTEWATER QUALITY CONTROL

**Regular wastewater quality control at Vodokanal’s facilities is carried out in accordance with Wastewater Quality Assessment Programs approved by the Neva-Ladoga Basin Water Authority of the Federal Agency for Water Resources.**

## Wastewater quality control is performed:

IN FOLLOW-UP OF THE ACTIVITIES IMPLEMENTED IN 2015, 51 CUSTOMERS SUBMITTED TO VODOKANAL WATER PROTECTION ACTIONS PLANS (34 CUSTOMERS PLAN TO CONSTRUCT LOCAL WASTEWATER TREATMENT PLANTS). 13 CUSTOMERS SET INTO OPERATION LOCAL WASTEWATER TREATMENT PLANTS OR RENOVATED THE EXISTING ONES.

● in the inlet chamber of wastewater treatment plants;  
● in the collection chamber in the outlet of wastewater treatment plants.

Wastewater quality control is carried out by monitoring 21 physical and chemical parameters, 8 microbiological and parasitological parameters. Around 16,000 components are determined annually.

Besides, regular process control of all the stages of wastewater and sludge treatment is carried out at all WWTPs aiming at qualitative and quantitative measurement of the plant operations. These control activities ensure the operation of the facilities in compliance with the established regulations. To adjust the treatment mode of WWTPs the following parameters are monitored: temperature, biological oxygen demand, chemical oxygen demand, phosphates, nitrogen, alkalinity, dissolved oxygen, properties of activated sludge and sludge.

Moreover, the South-West Wastewater Treatment Plant has been constantly using crayfish. Crayfish is the main element of the system for biomonitoring the quality of effluent to be discharged into the Neva Bay of the Gulf of Finland. Only the organism of an animal-bioindicator is able to assess simultaneously a set of all the qualitative characteristics of water, where it lives, and its safety for the Neva Bay of the Gulf of Finland. Australian red-claw crayfish are used in warm seasons and narrow-clawed crayfish – in cold seasons.

In 2015, within the frame of the chemical pollutants balance, Vodokanal checked the sewer basins and defined more accurately the total number of them (638 basins).

10,392 samples were taken at the sewer basins’ nodal points to investigate wastewater pollution levels. Specific combinatorial pollution index evaluation methods (RD 52.24.643-2002 dated 6 December 2002) were used to analyze the level of sewer basins pollution. Based on the assessment results for 2015, 2% of shafts were classified as relatively clean, 8% – slightly polluted, 27% – polluted, 50% – highly polluted and 13% – extremely polluted. Consequently, strong efforts are made to locate the sources of above-limit discharge in highly polluted and extremely polluted sewer basins. The tests of wastewater composition and properties for 1,706 consumers showed that 88.8% of the consumers failed to comply with the regulatory requirements (16% of them just slightly exceeded the limit values. The regulatory limits were met by 11.2% of the consumers).

During 2015, 103 surveys were carried out to monitor the water management of the customers and to assist them in identifying the pollutant discharge sources.

# FUTURE ACTIVITIES WITH REGARD TO INDUSTRIAL WASTEWATER TREATMENT

In accordance with the changes introduced into the Federal Law no. 7-FZ “On the Protection of the Environment”, government control in the sphere of water-resource conservation will be applied by Rosprirodnadzor to big industrial companies (producing over 200 m³ of wastewater per day) from 2019.

It is connected with the fact that in July 2014, the Federal Law no. 219-FZ “On amending the Federal Law “On the Protection of the Environment” dated 21 July 2014 was adopted. New provisions of the law are targeted for a step-by-step transition to new principles of wastewater quality regulation which will be based on process parameters of the best available technologies (BAT) and applied, inter alia, to wastewater disposal companies and a number of their customers.

The process parameters will be established for the facilities, which produce significant negative impact on the environment (1st category), within the environmental permits starting from 2019.

The regulatory acts adopted in furtherance of the Federal Law no. 219 make it clear that implementation of BAT will be obligatory for the following St. Petersburg industries:

- treatment of municipal wastewater by centralized sewerage systems;
- production of refractory ceramics and ceramic construction materials;
- production of synthetic dyes, inorganic colors and vanish materials, surfactants;
- production of pharmaceuticals;
- large-scale food processing companies;
- fuel-and-energy companies;
- municipal solid waste landfills;
- facilities having electroplating production lines and chemical processes.

Thus, it may happen that by 2019 the notion “big customers” will be modified and the government control will be applied by Rosprirodnadzor to the customers which facilities are attributed to the 1st category.

The Federal Law no. 219 states that detailed norm setting for wastewater disposal companies and their customers is established by water and wastewater laws of the Russian Federation.





The water industry-based community has to do a solid piece of work on developing and agreeing the concerted position (also with industries) that will interlink law provisions with the environmental regulations and will be reflected in the following documents:

- reference guides of the best available technologies for different industries (with regard to wastewater disposal sector, on 15 December 2015, Rosstandart approved the Technical Guide "Use of the centralized sewerage networks to transport wastewater from communities and urban districts for treatment", which was the first step in the transition to norm setting system based on process parameters);
- amendments to the Federal Law no. 416 related to improving the principles of wastewater quality regulation for water companies and their customers (including regulations for the transitional period before BAT are implemented, i.e. for 7-12 years).

Vodokanal St. Petersburg plans to carry on its cooperation with the Russian Association of Water Supply and Wastewater Disposal, National Union of Vodokanals, Ministry of Natural Resources of the Russian Federation, Ministry of Economic Development of the Russian Federation, representatives of the Russian Union of Industrialists and Entrepreneurs and the scientific and design organizations in this direction. Discussion and agreement on the necessary amendments to the Federal Law "On Water Supply and Wastewater Disposal", "Rules of Cold Water Supply and Wastewater Disposal", the Law "On Environmental Protection" and relevant legal acts will continue in 2016.

Vodokanal St. Petersburg will maintain its interaction with business communities and industrial companies of St. Petersburg, the Union of Industrialists and Entrepreneurs, Association of Industrial Companies, St. Petersburg International Business Association (SPIBA). Vodokanal will give consultations and organize workshops dedicated to the issues arising in connection with the application of the Federal Law "On

Water Supply and Wastewater Disposal" and relevant by-laws as well as the issues related to the selection of BAT for local wastewater treatment and implementation of wastewater metering systems as well as discussions of changes to legal acts. Vodokanal will go ahead with its work within the frame of the working group organized by the St. Petersburg Committee for Energy and Engineering Support with regard to the fulfilment of requirements set forth in the Federal Law "On Water Supply and Wastewater Disposal" and the by-laws adopted in its furtherance.

In 2016, the International Advanced Water Technologies Centre will continue its activities focused on providing assistance to the companies and exchanging international experience in the spheres of water supply, wastewater disposal and environmental protection. Vodokanal plans to hold a number of workshops for industrial companies dedicated to the best available technologies applied for industrial wastewater treatment and to the on-site treatment of wastewater from industrial plants. The workshop programme for 2016 includes, inter alia, such topics as "Chemical pollutants balance in water companies" and "Tertiary treatment and disinfection of wastewater".

**VODOKANAL INTENDS TO DEVELOP FURTHER THE SYSTEM "CHEMICAL POLLUTANTS BALANCE" AS AN INSTRUMENT OF MANAGING AND PLANNING THE CONTROL OVER THE COMPOSITION AND PROPERTIES OF SURFACE WASTEWATER FROM CUSTOMERS. IT ALSO WILL AWARD THE INDUSTRIAL COMPANIES WITHIN THE ANNUAL CONTEST FOR THE BEST CUSTOMER TITLE – "CRISTAL DROP" IN THE NOMINATION "CLEAN BALTIC SEA" (FOR THE IMPLEMENTATION OF NATURE AND WATER PROTECTION MEASURES).**

# ACHIEVEMENTS OF 2015

In 2015, Vodokanal performed the following works to improve wastewater treatment quality and meet the HELCOM recommendations:

## 1. Reconstruction of Northern WWTP 1st stage and Central WWTP

The main objective of the reconstruction project is to ensure compliance of the treated effluent quality with relevant Russian regulations and the HELCOM recommendations.

**In 2015, the following key process facilities were reconstructed at Northern WWTP to achieve the project objectives:**

- Replacement of all mechanical and electrical equipment in seven primary clarifiers and rehabilitation of building structures;
- Construction of new raw sludge pumping stations nos. 1 and 2;
- Reconstruction of Aeration Tank 2 with implementation of enhanced nutrients removal technology, including rehabilitation of building structures;
- Replacement of the existing air blowers with the frequency-controlled turbo blowers (5 units);
- Replacement of all mechanical and electrical equipment in six secondary clarifiers and rehabilitation of building structures;
- Construction of a new return sludge/waste activated sludge pumping station no. 2;
- Construction of a stand-alone electric substation with 10/0.4 kV transformers.

UCT VIP technology was implemented after the plant reconstruction. Raw sludge pre-fermentation in the primary clarifiers was implemented to increase concentrations of volatile fatty acids – an important component for biological phosphorus removal in UCT and VIP processes.

Each line of aeration tanks is designed as nine sections with anaerobic, anoxic and oxic zones. The zones are equipped with mixers and aerators. The aeration process is controlled by the oxygen meter readings. Circulation pumps are used to achieve the required treatment level by means of internal recirculation.

The old return sludge pumps are replaced with the new ones. Sludge scrapers in the secondary clarifiers are also replaced.

Reconstruction of aeration tanks nos. 5 and 6 at Central WWTP continued including the implementation of JHB nutrient removal technology designed to enable flexible control of the biological treatment process and the achievement of target values at any fluctuations of influent parameters or other influencing factors.

THE NEW EQUIPMENT AND ADVANCED PROCESS SOLUTION ENSURE GOOD TREATMENT EFFICIENCY AND SIZEABLE ELECTRICITY SAVINGS.

## 2. Completion of Kronstadt WWTP reconstruction and implementation of advanced nutrient removal technology

In 2014, reconstruction of aeration tanks and implementation of JHB technology were completed; the air blowers and return sludge/waste activated sludge pumps were replaced.

**In 2015, pre-commissioning was performed. The reconstruction project has led to:**

- stable quality of the treated effluent;
- 50% savings of chemicals, and 40% savings of electricity.

3. Start of a new WWTP construction in the settlement of Molodezhnoye

4. Sludge recycling and reconstruction of landfills

In 2015, works were performed under the contract of "Design of Severniy Landfill reconstruction project to mitigate the environmental stress and to provide reserve areas for the needs of SUE "Vodokanal of St. Petersburg"" (Phase 1, design studies, feasibility study).

THE RESULTS OF DESIGN STUDIES AND THE FEASIBILITY STUDY WILL UNDERPIN THE SELECTION OF OPTIMAL SOLUTIONS FOR SLUDGE RECYCLING AND LANDFILL RECONSTRUCTION.

5. Next phase of wastewater diversion and closure of untreated wastewater discharge into the city water bodies

● In 2015, reconstruction of the sewage collector along Admiralteyskaya embankment and construction of sewer network in the Repina Square were completed. As a result, six untreated wastewater discharges into the Neva equivalent to about one thousand cubic meters in total were diverted. Now, the wastewater goes to Central WWTP to undergo a full treatment cycle.

● After the completion of design works and the obtaining of positive opinion of the State Expertise, a sewerage reconstruction contract was made with a view to stop the discharge of municipal wastewater into the Murinskiy Stream.

● The construction of Okhta Tunnel Collector began. Twenty-one discharges accounting for 7000 m³/day of wastewater will be diverted in the first project phase.

6. Design of sludge incineration systems reconstruction project at Central WWTP

The sludge incineration plant (SIP) at Central WWTP is one of the world's biggest and has been in operation for 18 years. The operating time of the SIP's main process units is 10-12 years. In 2015, to ensure incineration of 100% of sludge and to stop disposal of

sludge to landfills, Vodokanal completed the design of two incineration lines at Central WWTP, selected home-made equipment, and concluded a supplementary agreement for the project updating in terms of import substitution.

7. Construction and reconstruction of tunnel sewage collectors

- The TSC loop in Aviakonstruktorov str. between TSC "Severnaya Dolina" shaft 601 and shaft 345 was put into operation. With the loop in place, wastewater can be diverted to either of the two collectors for the purpose of technical inspections, shutoff of damaged pipe sections, and TSC repairs without having to drain untreated wastewater into the city water bodies.
- Preparation of construction sites for a 4800 m looping TSC in Basseyaya str. began. The project aims to improve the sewerage operation reliability and to enable closedown of TSC in Blagodatnaya str. for reconstruction.

TUNNEL SEWAGE COLLECTORS (TSC) ARE BUILT OR RECONSTRUCTED TO PROVIDE STABLE WASTEWATER SERVICES AND TO IMPROVE RELIABILITY AND FAIL-SAFETY OF SEWERAGE OPERATION.

- Construction of shunt pipe from shaft 1/27 at 33, Obukhovskoy Oborony ave. to the NTC shaft near Zolnaya str. began.
- Installation of technical equipment in the shaft is going on under the collector construction project to divert wastewater from hydraulic-fill areas on Vasilievskiy Island. Sewer networks were built to connect the first quarters of the hydraulic-fill areas on Vasilievskiy Island.

8. Ongoing design of the automated wastewater management system in St. Petersburg

THE SURVEY AND THE TERMS OF REFERENCE FOR DESIGN ARE COMPLETED.

The design will define the operating regimes of penstocks in the TSCs and stream distribution patterns in different hydraulic modes with the aim to control volumes and quality of wastewater in rainy weather and to monitor breakdowns. Implementation of metering and control systems for wastewater basins, improvement of the wastewater system reliability, and energy saving actions are planned.

9. Replacement of sewers in 2011–2015

Lately, Vodokanal has paid much attention to replacement of sewers.

REPLACEMENT OF SEWERS IN 2011–2015

SEWERS	2011	2012	2013	2014	2015
Sewers replaced, km	69.9	116.3	68	55.3	56.8



10. Design and construction of sewer networks and facilities for small communities

In 2015, construction and rehabilitation of the centralized sewerage system in the settlement of Volodarskiy were completed. As a result, the wastewater was diverted to South-West WWTP.

The designs of vacuum technology based sewer systems for the settlements of Martyshkino, Lisiy Nos, Toriky and Molodezhnoye are completed.

The construction of off-site water and sewer networks to connect the new developments "Tsvetnoy Gorod" and "Ruchyi-7" is underway.

The construction of combined sewerage for Konnaya Lakhta area in the northern coastal part of the city is going on.

11. Import substitution

In 2015, import substitution activities were carried out under the reconstruction and modernization projects for the main treatment plants, water and sewerage networks and tunnel collectors as listed in Vodokanal's Target Investment Program. Formerly, foreign-made equipment was generally used in most projects.

The revision of projects for construction of Okhta Collector, wastewater treatment facilities in the settlement of Molodezhnoye, etc. with the aim to substitute imported equipment has shown that it is possible to use domestic products instead of imported (also high-tech) equipment in almost every case. The import substitution activities reduced Vodokanal's dependence on foreign suppliers.

**IN 2015, EXTENSIVE WORK WAS DONE TO SELECT EQUIPMENT OF RUSSIAN MANUFACTURERS (PUMPS, PROPELLER-TYPE MIXERS, AERATION SYSTEMS, VALVES, PENSTOCKS) FOR THE PROJECT "CONSTRUCTION OF WASTEWATER TREATMENT FACILITIES IN THE SETTLEMENT OF MOLODEZHNOYE". AS A RESULT OF THE IMPORT SUBSTITUTION EFFORTS, 80% OF EQUIPMENT FOR THE PROJECT WILL BE RUSSIAN-MADE.**

**CONSTRUCTION OF TWO INCINERATION LINES AT CENTRAL WWTP**

The equipment of the existing sludge incineration plants in St. Petersburg is 90% foreign-made. Today, the import substitution policy revealed that many types of equipment, such as boilers, lifting machines, screw conveyors, mixers, compressors, turbines, etc., could be supplied by national manufacturers.

The use of domestic equipment including chemical pumps under the project was approved by the German partners. However, some imported equipment, such as sludge pumps, sludge conveying platforms, sludge driers, vapour condensers, and gas/water injectors, will still be used as it is not manufactured in Russia.

The construction of Okhta Tunnel Collector is one of the key projects under the untreated wastewater discharge closure program. The project will use penstocks of national manufacture (RUS Group, St. Petersburg), however, application of German-made protective material (Konusit) is still an open issue. Currently, Vodokanal is making tests and selecting an optimal technical solution and domestic materials for biocorrosion protection of tunnel sewers in cooperation with Russian companies, such as NPO STRIM (Moscow), OOO Tekhpolymer (Krasnoyarsk), OOO SNIP (St. Petersburg), OOO GIS (St. Petersburg), etc.

FUTURE  
DEVELOPMENT  
OF WASTEWATER  
DISPOSAL SYSTEM

**To mitigate negative impacts on the environment and to ensure consistent quality of treated effluent in 2016, Vodokanal has to implement actions as follows:**

- 1) further diversion of direct discharges from combined sewerage system, including:
  - further construction of Okhta Collector, Stage 1;
  - further construction of networks for diversion of untreated wastewater discharges in Petrogradskiy District (the Karpovka embankment);
  - construction of sewer networks for diversion of untreated wastewater discharges in Petrogradskiy District (the eastern part of Krestovskiy Island, Dinamo ave.);
  - further reconstruction of Martyshkino sewage pumping station (SPS) and the wastewater distribution system from the SPS to Petrodvorets WWTP to enable diversion of combined sewage from the town of Lomonosov into the sewerage system (now it is discharged untreated);
  - construction of wastewater distribution system to divert the ObschMet Discharge to SPS no. 9;
  - start of sewer network design to divert three direct discharges into the Okkerville River;
  - start of sewer network construction from Reshetnikov and Krasavitsa communities to the town of Zelenogorsk;
  - completion of the wastewater diversion system between the sewer basins of Metallostroy and Central WWTP.
- 2) reconstruction of stormwater system under the Murinskiy Park Development Program including the diversion of seven runoff discharges;
- 3) completion of the mechanical and biological treatment facilities reconstruction at Northern WWTP, Stage 2;

- 4) completion of aeration tanks 5 and 6; commencement of reconstruction project for aeration tanks 1 and 2 at Central WWTP, commencement of reconstruction project for primary clarifiers and the flocculant preparation facility in the Central WWTP sludge treatment building (transition to a single-agent flocculant);
- 5) further construction of the new wastewater treatment facilities in Molodezhnoye community;
- 6) completion of design and start of construction of two new sludge incineration lines at Central SIP;
- 7) further work on sludge recycling to obtain an environmentally safe product and to unload sludge storage beds at Severniy Landfill.



The following measures will be taken to improve reliability and security of wastewater services:

1) Construction of looped tunnel collectors and a wastewater diversion system between sewage basins:

- start of the 4800m looped TSC construction project in Basseyayna str. The project aims to ensure reliable wastewater disposal services in Moskovskiy and Frunzenskiy districts and to enable inspection and repairs of collectors in Blagodatnaya str. and Krasnoputlovskaya str.;
- start of a 608.2m shunt pipe construction from shaft 1/27 (33, Obukhovskoy Oborony ave.);
- start of penstock reconstruction in shaft 44bis of the backup collector leading to Bely Island to allow reconstruction of the main influent collector of Central WWTP.

2) Construction of ventilation and gas cleaning system for the tunnel collectors and the SPS.

3) Reconstruction of tunnel sewage collectors:

- start of TSC no. 3 reconstruction along the embankments of the River Moyka and the Kryukov Canal in the historical center of the city;
- start of the Zelenogorsk WWTP's influent collector reconstruction;
- start of TSC no. 3 reconstruction on the River Moyka embankment;
- further construction of sewage collector and networks to dispose wastewater from the hydraulic-fill areas on Vasilevskiy Island.

4) Reconstruction of sewer networks.

Further works to create a wastewater management system in St. Petersburg that will ensure optimal hydraulic modes in the sewerage and improved energy efficiency of the centralized wastewater disposal system. The following should be done to achieve this goal:

- installation of wastewater metering and quality control instruments with an automatic data transfer capability;
- grouping of consumers by sewer basins;
- calculation of chemical balance for the wastewater disposal system to optimize the pollutants load on treatment facilities and water bodies.

The following should be done to calculate the chemical balance:

- investigate how specific pollutants influence the biocenosis activity of the biological treatment process at municipal treatment plants;
- investigate how the discharge of untreated surface runoff influences the condition of water bodies;
- continue to liaise with manufacturers with the aim of developing action plans to mitigate negative impacts on the environment.

The following actions are planned to ensure access to centralized sewerage for the citizens:

- further construction of combined sewerage to dispose wastewater from the northern coastal area "Konnaya Lakhta";
- construction of wastewater facilities as required for connection of consumers under relevant contracts.

Moreover, Vodokanal is planning to continue import substitution activities in respect of its wastewater-related construction and rehabilitation projects pursuant to the Decree of the Russian President "On the national security strategy for the Russian Federation up to 2020".

Revision of the St. Petersburg Water and Wastewater Master Plan for the Period up to 2025 with an Outlook to 2030

In 2016, the St. Petersburg Water and Wastewater Master Plan for the Period up to 2025 with an Outlook to 2030 (the Master Plan) will be revised in consideration of the documents adopted in St. Petersburg in 2015 and the changes made to the city planning projects.

In 2015, the Master Plan approved by the Act of the St. Petersburg Government no. 989 dated 11.12.2013 was revised for the first time after the approval (the revision was approved by the Act of the St. Petersburg Government no. 856 dated 25.09.2015).

The revision was made with a view to create a model water and wastewater master plan in terms of strategic planning of the St. Petersburg utility infrastructure.

The Master Plan was revised as follows:

1) The wastewater-related sections were harmonized with the documents adopted in St. Petersburg in 2013-2015, such as:

- economic and social development strategy for St. Petersburg up to 2030;
- the St. Petersburg State Program "Integrated development of municipal infrastructure, energy and energy saving in St. Petersburg" for 2015-2020 where completion dates and volume of financing are specified for each action. Completion dates have been changed for reconstruction projects at Central and Northern WWTPs, wastewater treatment facilities in Kolpino and Pionerskiy, and the Okhta Collector construction project;
- approved area planification projects.

2) Construction of treatment facilities for the satellite town "Yuzhnyy".

3) Under the Master Plan, the length of the looping tunnel collectors and backup collectors will be reduced. Such reduction was made possible due to Vodokanal's continuous monitoring of achievements in the field of water and sewerage services.

The information on centralized sewerage systems – combined and separate domestic sewerage and separate rainwater sewerage – has been revised.





# SPECIALIZED VEHICLES AND EQUIPMENT

As of 1 January 2016,  
Vodokanal had  
874 vehicles.

TYPES OF VEHICLES

TYPES OF VEHICLES	AS OF 1 JAN 2016
Passenger vehicles	38
Freight vehicles:	309
Dump truck	118
Flatbed truck	44
Van truck	139
Long trailers	8
Specialized vehicles:	315
Van trucks to transport workers	167
Vacuum-type vehicles	2
Sewage suction trucks	27
Combined trucks (Scania, Mercedes, MAN)	49
Other	70
Buses	24
Road construction machinery	111
Trailers, semi-trailers	77
TOTAL	874

- Including:
- 167 specialized van trucks to transport workers and equipment;
  - 118 dump trucks;
  - 111 units of road construction equipment including 40 JCB loader-excavators;
  - 49 specialized combined vehicles Scania, Mercedes, MAN;
  - 29 steam generators (STEAMRATOR MHT700);
  - 24 tank trailers for drinking water supply;
  - 376 other vehicles.

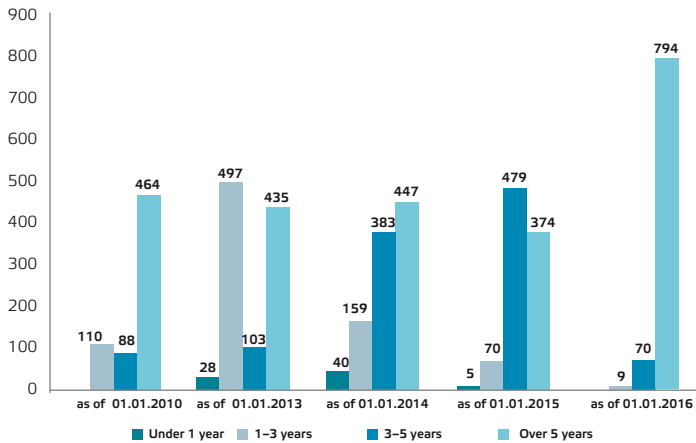
Vodokanal has on its balance sheet 13 diesel power plants including 1,250/1,000 kVA/kW (prime rating) mobile diesel-electric container-type plants (C1400 D5, 3 units). When cold water supply is interrupted during network repairs, trailer tanks are used to deliver drinking water to the citizens.

Vodokanal has the following equipment on the balance sheet:

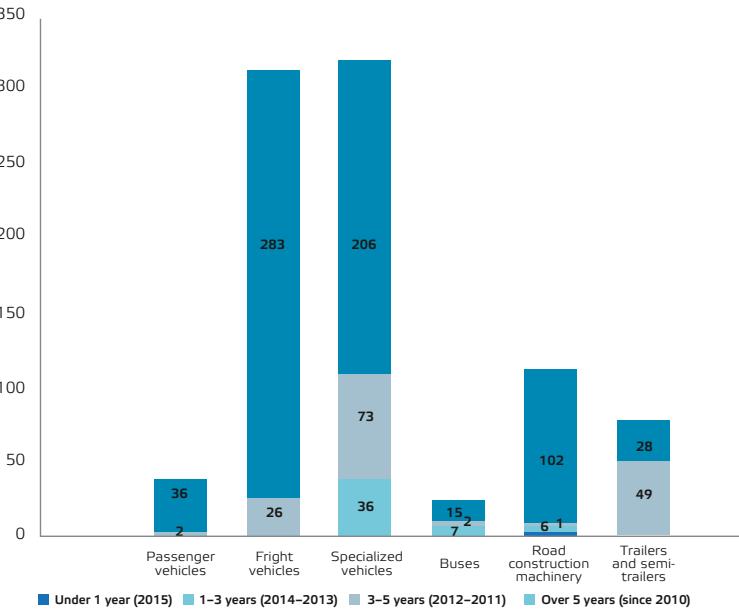
- compact mobile boiler units (STEAMRATOR, MNT700, MNS700) as a substitute for outdated ADU steam generators, to thaw out fire hydrants and stormwater tanks in the winter period;
- 1 ASTEC DD2024 boring machine;
- 2 UNIVERSAL HDD mod. UNI 60\*70 horizontal directional drilling machines (truck-mounted);
- 1 VOLKSWAGEN 2EKE2 CRAFTER special van – Mobile Tele-inspection Laboratory. The mobile laboratory for diagnostics and examination of networks using high-tech robotic video systems reduces the examination time and improves the accuracy of defect detection.
- 2 vacuum excavators SuperVac 2000 on the basis of FREIGHTLINER. The use of these machines has reduced the number of vehicles involved into repair of damage at water and sewerage networks from 5 to 3 units at the same site. Also vacuum excavators work perfectly in restrained urban conditions. It takes a few minutes to deploy the equipment on the spot. Within minutes, an excavator removes soil from the defect area by means of a powerful suction mechanism.

At the same time, the vacuum mechanism operates very carefully without interfering with, or damaging underground utilities.

AGE OF VEHICLES



AGE OF VEHICLES BY TYPE AS OF 31 DECEMBER 2015



IN 2015, WITHIN THE FRAME OF THE IMPORT SUBSTITUTION PROGRAMME VODOKANAL PURCHASED TWO LOCALLY MANUFACTURED FULL-CIRCLE SHOVELS (E170W) WHICH TECHNICAL CHARACTERISTICS WERE NOT WORSE THAN CHARACTERISTICS OF FOREIGN PROTOTYPES.

Vodokanal also purchased home-produced equipment for repair works:

- AM1600 BC washer for cleaning large units and vehicles;
- a set of 2 battery conditioners with Svetoch-04-06 desulfation device and 1 battery condition analyzer.

Vodokanal is planning to upgrade and develop its vehicle fleet. The Company is planning to convert to vehicles equipped with EURO-4 (or higher) diesel engines with improved technical capabilities, and to use multifunction transport units thus reducing the number of vehicles in its fleet.

The vehicles to be procured are the products of Russian manufacturers, including:

- 14 emergency vans with improved chassis capabilities, providing more comfort for the teams transported. The emergency vans will replace the outdated emergency vans on ZIL chassis;
- 4 Amkodor 333B front-end shovel loaders to replace outdated TO-28 loaders;
- 5 KAMAZ 65115-6058-23 (A4) rear-dump trucks equipped with EURO-4 (or higher) diesel engines, with improved technical capabilities, – to replace old dump trucks with EURO-1,2 engines (KAMAZ-55111S, KAMAZ -65115);
- 1 vehicle with a rope transfer, equipped with EURO-4 (or higher) diesel engine, with improved technical capabilities, – to replace outdated KAMAZ 53229S vehicle with Euro-1 motor;
- 1 telescope mobile self-propelled manlift PSS on KAMZA-43253 chassis, equipped with EURO-4 (or higher) diesel engines, with improved technical capabilities – to replace AGP-18.02E on chassis ZIL-433362 with a petrol engine;

- 3 sludge suction vehicles on KAMAZ 65115-3082 chassis, with EURO-4 (or higher) diesel engines, with improved technical capabilities, – to replace outdated KO-510 petrol-fueled sludge suction vehicles on ZIL-433362 chassis;
- 1 mobile three-phase laboratory for testing (low and medium voltage) power and cable networks and locating failures, with high-tech equipment to perform water networks tele-diagnostics, – to replace 3990-0000010 laboratory on PAZ-320540 chassis with a petrol engine;
- 1 track-type bulldozer TM10.10 GST9 – to replace outdated B10M.0111-EH bulldozer;
- 2 crawler-mounted full-circle shovels (18-20 tons) – to replace outdated EK-12, ET-18 shovels.

# BACKUP POWER SUPPLY FOR VODOKANAL'S FACILITIES

A backup power supply system consisting of mobile and stationary diesel-electric power units (0.4/6/10 kV) has been operated by Vodokanal since 2013.

With the backup system in place, Vodokanal can, if power outage occurs, ensure pump operation to maintain water head in the networks up to 10 – 15 m, stand-alone operation of WTPs to supply water from clean water tanks during 12 hours, and wastewater pumping to treatment plants.

The installation of diesel-generators at WTPs led to a 1.53 million kWh reduction of power consumption by pumps, because diesel-generators at Southern WTP, Main WTP, Northern WTP, Volkovskaya WTP and Kolpino WTP were equipped with continuously-operated variable-speed drives.

In 2015, the backup power supply system enabled to mitigate the emergencies on power supply network and generated energy for 232 hours and 36 minutes, ensured full-scale operation of the facilities in the course of the scheduled works and generated energy for almost 31 hours, maintained the required power supply level at water and wastewater facilities when the actual power supply was reduced by grid operators and when some emergencies on the network were eliminated.

Thus, the functioning of the backup power supply system made it possible to maintain the quality of services provided by Vodokanal under the conditions of external effects on the power supply system of the Company.





# CUSTOMER SERVICE

## CUSTOMER SERVICE IN 2015

### Installation of water meters with remote data transfer capability will enable to:

- manage water supply of the building in real-time, determine optimal parameters of cold drinking water supply to the building;
- ensure reliable recording of water consumption volumes in the building; the data can be used for prompt localization of emergencies and for the settlement of accounts.

Water meters with remote data transfer capability are installed by Vodokanal under the automated water supply management system project for the Southern Water Supply Zone.

### Customer service is one of the most important and prioritized areas of Vodokanal activities.

Given the positive experience of “one contact” customer centers in St. Petersburg and in consideration of customers’ calls and proposals, Vodokanal interacts with its customers through the Customer Service Centre using the same “one contact” principle.

On the grounds of “one contact” principle Vodokanal interacts with customers to connect them to the centralized cold water supply and sewerage systems, conclude cold water supply and wastewater disposal contracts, receive meter readings, charge for the provided services and issue invoices, interact with customers in arrears (including identification of the cause of debt, development and implementation of debt payment plan).

In November 2015, the Customer Service Centre was opened within working distance of Ploshchad Lenina metro station (19, Komsomola str., St. Petersburg).

The Customer Service Centre provides a package of services to the customers including execution of permitting documentation for the connection of buildings to the centralized cold water supply and sewerage systems (issuance of technical specifications, execution of service connection contracts, issuance of certificates confirming the fulfilment of the connection conditions) and cold water supply and wastewater disposal service contracts.

Vodokanal divisions (Department for Service Connections and the Payment Centre), which were located previously at three different premises, today are placed in a single building of the Customer Service Centre.

The Customer Service Centre has a customer floor with a comfortable waiting area and an electronic queuing system. Customers may look through the printed materials about Vodokanal operations and watch video-films about Vodokanal environmental projects. The Customer Service Centre offers additional services: scanning of the documents needed for the execution of cold water supply and wastewater disposal service contracts, copying of the documents from Vodokanal archive and obtaining the information from the open information sources of the state authorities (in particular, the information which is necessary for the execution of cold water supply and wastewater disposal service contracts).

In 2015, Vodokanal launched in a full scale “Customer Personal Accounts” which can be used to apply for connections, change or termination of cold water supply and wastewater disposal service contracts, to insert meter readings and receive information about amounts owed.

In 2015, the online payment for water services via the Company’s website became available for physical entities (owners of private residential houses, individual entrepreneurs).

### Direct Contracts with Citizens

In 2015, according to the provisions established by the legislation of the Russian Federation on public services (direct management of the apartment building, apartment building management form is not selected, the building management form is selected, the building management form has not been yet implemented), Vodokanal processed the contractual relationship with regard to cold water supply and sewerage services with owners of commercial and residential apartment buildings (the Article

164 of the Housing Code of the Russian Federation, clause 17 of the Rules of provision of public services to owners and users of premises in apartment buildings and houses, approved by the Decree of the Russian Federation Government no. 354 dated 6 May 2011).

In the business practice of the Company, Vodokanal may conclude direct contracts with citizens or collect direct payments from the owners of apartment buildings (the Article 155 of the Housing Code of the Russian Federation).

#### SUMMARY OF DIRECT CONTRACTS AND PAYMENTS (AS OF 31 DECEMBER 2015)

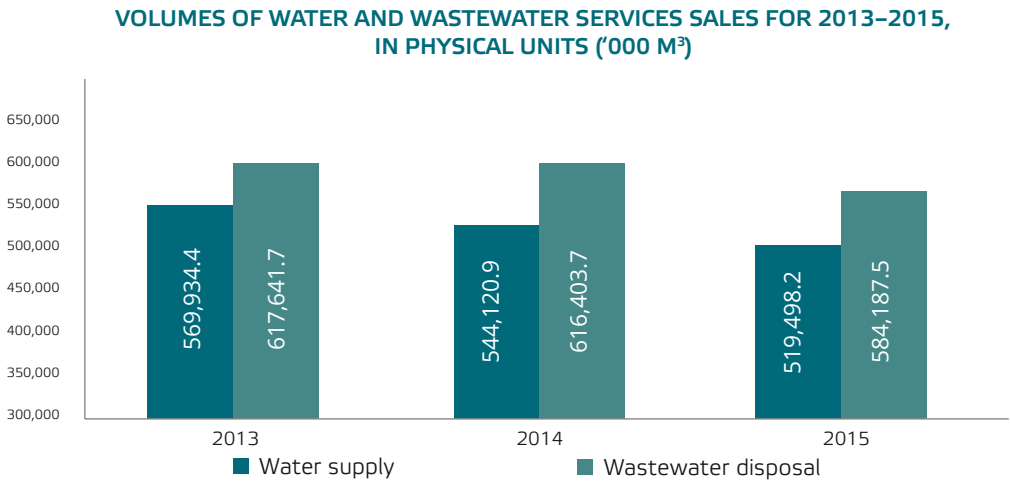
DIRECT CONTRACTS	
Number of apartment buildings, which owners (users) concluded direct contracts	47 (including 7 houses with the number of flats over 30)
DIRECT PAYMENTS	
Number of apartment buildings, which owners (users) made direct payments to Vodokanal	7

THROUGHOUT 2015, VODOKANAL INSTALLED METERING DEVICES EQUIPPED WITH REMOTE DATA TRANSFER FUNCTION ON THE CUSTOMERS’ SIDE.

# VOLUMES OF SALES

The results of Vodokanal activities in 2013-2015 show a stable reduction in cold water consumption by customers.

The diagram illustrates the reduction in water consumption over the last three years.



Volumes of water consumed were reduced by 8.8% in the last three years. Reduction of sales in 2015 amounted to 4.5%.

Water supply reduction trend may be observed for both “Service Providers to Households” category (population) and Other Consumers category.

Reduction of water supply volumes for the “Service Providers to Households” category is a result of application by housing organizations of comprehensive measures to improve energy-savings and energy efficiency, including minimization of water losses in in-house networks, control over the water consumption, rational water consumption by population through the installation of water meters for cold and hot water.

## Water sales reduction for “Other Consumers” category is caused by:

- saving fuel and energy resources by the companies;
- application of resource-saving technologies (for instance, application of water recycling);
- modernization of equipment and technological processes of industrial companies;
- elimination of breakdowns and leakages in in-house networks;
- cut down of production volumes and number of orders;
- termination of the production operations by the customer or change of the type of operation by the customer;
- removal of major production operations to the suburbs or to other districts of St. Petersburg.

Reduction of water supply volumes for budgetary organization has been stipulated by law.

According to the Federal Law no. 261-FZ dated 23 November 2009 “On energy saving and increasing of energy efficiency” and the Decree of the Russian Federation Ministry of Economic Development no. 591 dated 24 October 2011 “About the procedure for determining the reduction of the volumes of resources consumed by state (municipal) institutions in comparable conditions”, budgetary institutions are obliged to carry out energy audits each 5 years.

STARTING FROM A CERTAIN PERIOD, BUDGETARY INSTITUTIONS (ACTING IN COMPARABLE CONDITIONS) ARE REQUIRED TO REDUCE THE WATER CONSUMPTION VOLUME DURING A 5 YEAR PERIOD BY AT LEAST 15% OF THE ACTUAL WATER VOLUME CONSUMED IN THE PREVIOUS YEAR, AND THE ANNUAL REDUCTION OF THE WATER VOLUME SHOULD BE NOT LESS THAN 3%.



Summarizing the results of the report period, major reduction of water consumption volumes was achieved by health care facilities, kindergartens and secondary schools.

Wastewater volume from cold and hot water supply directly depends on water supply volumes. Therefore, wastewater volume from cold and hot water supply is characterized by similar factors as the water supply volume.

Surface runoff volumes directly depend on the amount of atmospheric precipitations as compared to the actual amounts in previous years. Moreover, the Guidelines for the calculation of the volume of the received (transported) surface runoffs came into force on 10 March 2015 as approved by the Decree of the Ministry of Construction, Housing and Communal Services no. 639/pr dated 17 October 2014.

## Major impact on the reduction of surface runoff volume is produced by the following factors:

- reduction of surface runoff due to the decrease of atmospheric precipitations;
- calculation of volumes in line with new guidelines;
- installation of wastewater metering devices.



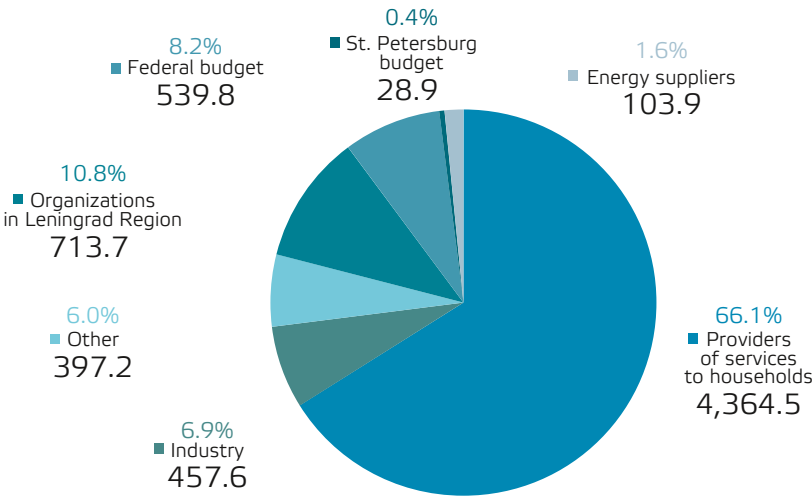
# ACCOUNTS RECEIVABLE

In order to improve the collection of payments, settlement of any receivables and prevention of the receivables increase, Vodokanal has developed and implemented the mechanism of individual interaction with customers aimed to ensure timely collection of payments for the provided services.

The Company monthly approves individual payment collection plans split by customer categories and monitors the observance of such plans on a weekly basis.

As of 1 January 2016 the accounts receivable amounted to RUB 6,605,556,800. The diagram shows the structure of accounts receivable as of 1 January 2016 (MRUB).

THE STRUCTURE OF ACCOUNTS RECEIVABLE AS OF 1 JANUARY 2016 (MRUB).



The share of the customer category “Providers of Services to Households” is 66.1% in the overall structure of accounts receivable, the share of the category “Organizations in Leningrad Re-

gion” is 10.8%, the share of customers financed by the Federal Budget (the Russian Federation Ministry of Defense including OAO “Slavyanka”) is 8.2% and the share of the other categories is 15%.

THE STRUCTURE OF ACCOUNTS RECEIVABLE BY CUSTOMER CATEGORIES AS OF 1 JANUARY 2016

CUSTOMER CATEGORY	ACCOUNTS RECEIVABLE AS OF 1 JAN. 2016	BY PERIOD OUTSTANDING			SHARE OF ACCOUNTS RECEIVABLE IN OVERALL STRUCTURE
		Less than 1 month	Less than 2 months	Over 2 months	
Providers of services to households	4,364,489	1,053,277	501,286	2,809,925	66.1%
Energy suppliers	103,874	99,138	1,125	3,611	1.6%
St. Petersburg budget	28,917	24,146	3,897	874	0.4%
Federal budget	539,832	61,595	48,909	429,329	8.2%
Organizations in Leningrad Region	713,665	59,403	21,213	633,050	10.8%
Others	397,176	232,646	28,620	135,910	6%
Industry	457,604	316,558	45,084	95,962	6.9%
Total	6,605,557	1,846,763	650,134	4,108,660	100%

## Actions Taken to Reclaim Receivables

To avoid delays in payments and overdue accounts receivable Vodokanal implements a set of actions including:

- telephone negotiations with customers to find out the reasons for non-payment and agree on possible payment dates;
- reconciliation of volumes of the provided public services (identification of discrepancies in the cold water/received wastewater volumes (or the absence of such discrepancies));
- written notifications to warn about the breach of contractual obligations and overdue payments;
- reconciliation of payments and clarifying to customers the reasons for debt accumulation;
- working meetings with representatives of customers-debtors to agree on payment due dates;

- notifications to customers that the Company is entitled to limit and (or) stop, on a temporary basis, the provision of cold water supply/wastewater disposal services; further limitation and stoppage of water supply and (or) wastewater services;
- agreeing on the repayment of outstanding debt in installments;
- interaction with state authorities (exchange of information, working meetings, participation in the work of multiagency commissions) (district administrations, governmental authorities of the Leningrad Region, local authorities, Housing Committee, main authorities responsible for distribution of budgetary funds);
- recovery of accounts receivable through the court proceedings.

## Temporary Limitation and Stoppage of Cold Water Supply and Wastewater Disposal Services for Customers-Debtors

The laws of the Russian Federation provide for temporary limitation and stoppage of cold water supply and wastewater disposal services in case of customers’ debt.

Such measure is exceptional and is applied by the Company when all other actions aimed at the settlement of a debt have been exhausted or when the customer breaches the agreed repayment of the outstanding debt.

Over 12 months of 2015, Vodokanal forwarded 1,235 notifications to customers-debtors warning about the impending temporary limitation and stoppage of services because of the customers’ debts totaling RUB 140,347,100. Upon such notifications 1,067 customers repaid their debts in the total amount of RUB 88,231,100.

Provision of services was temporary limited and stopped for 114 facilities because of the customers’ debts totaling RUB 14, 851,900. With regard to 41 facilities Vodokanal received money in the total amount of RUB 7,895,100.

Reclamation of Receivables through the Court Proceedings

THE COMPANY INTENSIFIES THE RECLAMATION OF RECEIVABLES FROM ALL CATEGORIES OF CUSTOMERS.

In 2015, 4,664 lawsuits were brought to the courts to collect debts totaling RUB 2,756,082,500. As of 1 January 2016:

- the courts delivered judgments at 2,372 lawsuits in favor of the Company to collect the amount of RUB 1,242,815,200 (RUB 204,318,700 were paid prior to the judgment);
- 707 lawsuits were paid in full prior to the court judgment in the amount of RUB 361,850,400;
- 13 amicable agreements were concluded for the total amount of RUB 44,349,000.

In 2015, 205 claims in the total amount of RUB 74,758,600 were sent to the respondents and had been paid before the lawsuits were taken to the court.

In 2015, the lawsuits brought in the courts prior to 2015 were completed; as a result 282 judgments were made in favor of Vodokanal to collect RUB 249,433,800.

Thus, totally in 2015 (as of 1 January 2016) 2,654 judgments on reclamation of RUB 1,492,249,000 were issued.

As of 1 January 2016, 1549 lawsuits are pending in courts to collect debt and penalties for the total amount of RUB 881,249,500.

In 2015, Vodokanal introduced and has been applying new approaches to debt enforcement, including:

- collection of debts of physical entities without recourse to the courts is performed by means of judicial orders. During the period of 1 January 2015 to 31 December 2015, the total amount of RUB 6,090,700 was collected;
- the debts not exceeding RUB 300,000 are reclaimed through the summary procedure. In 2015, 2790 statements of claim were sent to arbitration courts under the summary procedure for the total amount of RUB 300,691,000;
- consolidation of claims under several contracts and with regard to different facilities into one legal action. It enables to reduce the number of claims, review duration and collection period. In 2015, such consolidation was applied to 27 claims totaling RUB 825,100;
- introduction of a new online payments service on the web-site of Vodokanal;
- launching “Customer Personal Account” on the web-site of Vodokanal which enables to insert meter reading in a timely manner, receive information about water service calculations and volumes, apply for technical specifications, conclusion (change or termination) of contracts;
- submission of the request to impose temporary restriction on the departure from the Russian Federation;
- application of court enforcement actions towards physical entities;
- sale of the distrained property.

Court Enforcement Action

Over 12 months of 2015, RUB 1,183,636,400 were collected which is 78% higher than in the similar period of the

previous year (Over 12 months of 2014, the collected amount was RUB 665,690,000).

Court Enforcement Actions towards Physical Entities

THE IMPLEMENTED ACTIONS RESULTED IN THE COLLECTION OF RUB 1,608,000.

From 1 March 2015 till 31 December 2015 the Federal Bailiff Service forwarded 53 requests to impose temporary restriction on the departure from the Russian Federation:

- 34 requests were accepted;
- 6 requests are under consideration;

- 13 were rejected (in accordance with the Resolution of the Plenum of the RF Supreme Court no. 50 dated 17 November 2015, the temporary restriction on the departure abroad shall not be imposed during the period given for voluntary performance).

CONNECTION TO WATER DISTRIBUTION AND SEWERAGE NETWORKS

Vodokanal issues authorizations for connection of new (reconstructed) facilities to municipal water distribution and sewerage networks.

This includes the issuance of:

- technical specifications;
- conditions for connection (utility connection) to municipal water and sewerage networks;
- connection (utility connection) contracts to municipal water and sewerage network;
- project validation;
- certificates of conformity of the built (reconstructed) facilities with connection conditions.

Customers’ applications for permitting documents are received by the Customer Service Centre at the address: 19, Komsomola str.

- from 9:00 till 17:00 (Monday-Thursday);
- routine break from 12:00 till 12:30.

The one contact principle is used.

Other visiting addresses for the customers are:

- Room 218, 15 Saperniy pereulok, Kolpi-no, from 9:00 till 18:00 (lunch break is from 12:0 till 13:00);
- Room 12, 1 Pereulok Suvorovtsev, Petrodvorets, from 9:00 till 18:00 (lunch break is from 12:0 till 13:00).



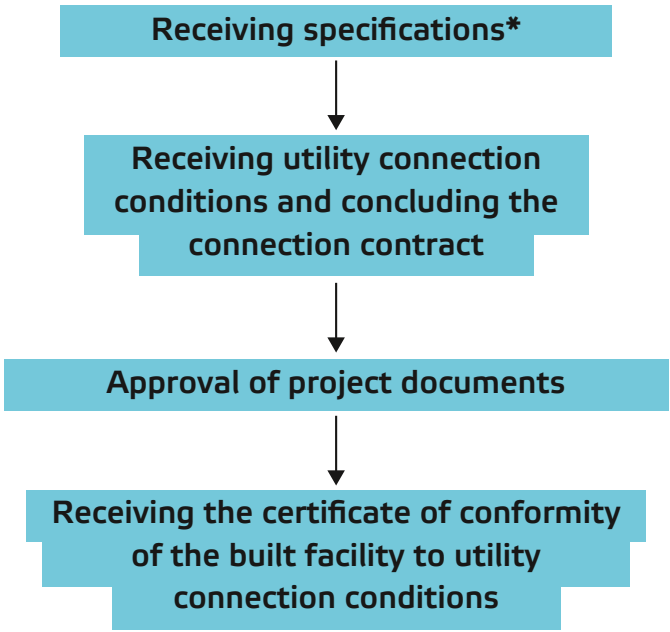
Applications for obtaining specifications can be submitted via the Internet ([www.vodokanal.spb.ru/dlya\\_abonentov/lichnyj\\_kabinet/](http://www.vodokanal.spb.ru/dlya_abonentov/lichnyj_kabinet/)).



ANNUAL SUMMARY OF THE ISSUED PERMITTING DOCUMENTS FOR THE CONNECTION  
TO MUNICIPAL WATER SUPPLY AND SEWERAGE SYSTEMS

TYPE OF WORKS	NUMBER OF THE PREPARED DOCUMENTS								The number of documents in 2015 compared to 2014
Period	2008	2009	2010	2011	2012	2013	2014	2015	
Technical specifications, utility connection conditions, initial data	7,250	6,987	8,623	5,143	4,591	5,333	4,285	2,461	-42.57%
Other documents				6,211	7,803	4,623	4,478	2,400	-46.40%
Reviewed design documents	3,169	2,950	3,456	3,794	4,120	4,211	4,372	7,093	62.24%
Prepared utility connection contracts		123	311	314	476	424	1,276	1,866	46.24%
Concluded utility connection contracts		242	181	260	374	333	1,115	1,435	28.70%
Performed utility connection contracts		1	5	59	123	252	216	232	7.41%
Letters confirming the issuance of conformity certificates with utility connection conditions			489	466	489	363	370	330	-10.81%

THE SCHEME OF ISSUING AUTHORIZATIONS FOR CONNECTION  
OF FACILITIES TO MUNICIPAL WATER  
AND SEWERAGE NETWORKS



Time periods for issuing permit-  
ting documents by Vodokanal:

- specifications – 7 working days (by law – 14 working days);
- utility connection conditions – 14 working days (by law – 30 working days);
- utility connection contracts – 5 working days (by law – 30 working days);
- project approval – 10 working days (the term of the project review is not regulated by law;
- certificate of conformity of built facilities with connection conditions – 7 working days (the term of issuing the certificate is not regulated by law).

# CALL CENTRE

Vodokanal of St. Petersburg has its twenty-four-hour  
Hot Line Service to receive calls from the customers  
(phone: +7 (812) 305-09-09).

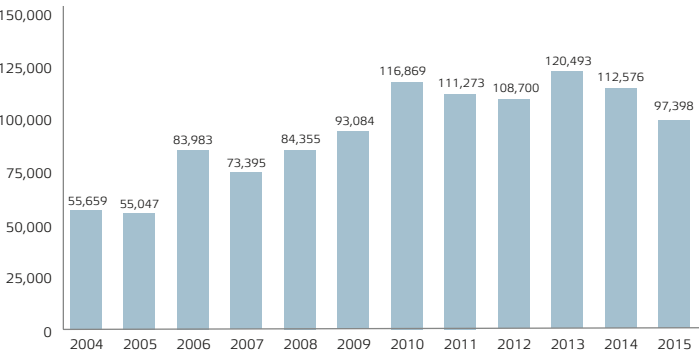
\*FOR MORE DETAILS SEE ALSO “INTERACTION WITH CUSTOMERS” SECTION.

In 2004-2014, the implementation and use of the calls recording and handling system, as well as other improvements of this process, led to reduction of call duration from 12 to 2 minutes with the maximum waiting time of 2 minutes (in peak periods, when up to 200 calls per hour are received). At present, the average time of waiting for the operator’s reply is 2–20 seconds.

The number of inquiries related to Vodokanal activities has increased over these years. It can be explained by the increase of a number of new customers and the growing interest of the citizens in the Company’s operations.

IN 2004-2015, THE CALL CENTRE RECEIVED A BIG NUMBER  
OF CALLS (GENERAL INQUIRIES OR CONSULTATIONS).  
97,000 CALLS WERE RECEIVED IN 2015.

INFROMATION INQUIRIES

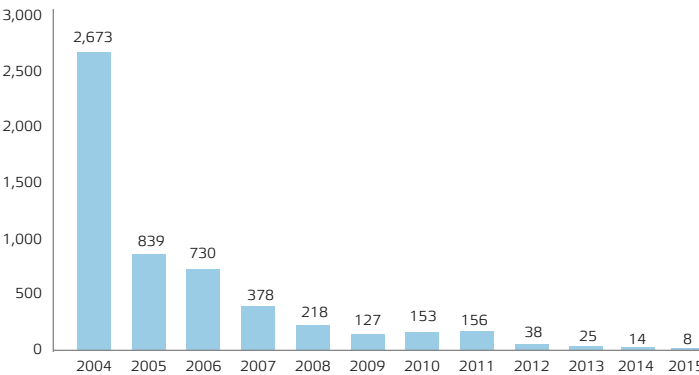


The number of complaints  
received by the Hot Line Service  
reduced from 30,146  
to 23,308 in 2004–2015.

LOW WATER HEAD COMPLAINTS

The most serious complaints are those related to low cold water head. In 2004, 2,673 complaints about low water head were received, and in 2015 there were only 8 legitimate complaints, i.e. the number of complaints has reduced more than 334 times over 12 years.

The number of complaints  
related to blockages of the yard  
sewers has reduced 2 times in  
2004-2015.



\* – If the client has determined the required installed capacity, the receipt of specifications shall not be required.

# CUSTOMERS' SATISFACTION SURVEY

**End-consumers of cold water and wastewater services are the citizens of St. Petersburg, individual entrepreneurs and legal entities of different ownership.**

**IN 2015, ST. PETERSBURG VODOKANAL CONDUCTED SELECTIVE POLLING OF ITS CUSTOMERS (BUDGETARY ORGANIZATIONS, PROVIDERS OF SERVICES TO HOUSEHOLDS, TENANTS, INDUSTRIAL COMPANIES). 307 CUSTOMERS PARTICIPATED IN POLLING.**

Vodokanal actively involves consumers in discussing issues arising in connection with water supply and wastewater disposal. Such interaction is carried out on a regular basis in the form of an open dialogue (regular meetings, working groups, consultations).

The Company provides ongoing monitoring of satisfaction of both customers and end-consumers.

Questionnaires used to survey customers' satisfaction with water and wastewater services are approved by St. Petersburg Vodokanal's Standard no. 18.2-2010 "Interaction with customers (clients) during rendering of services. Information support to customers (clients)".

11.7% (19.8% in 2014) of respondents were not satisfied with the location of customer service offices. The Company analyzes the results of polling in order to undertake remedial actions.

**The polling results showed that:**

- 85.1% (85.2% in 2014) of customers were satisfied in general with water supply and wastewater disposal services;
- 92.8% (91.4% in 2014) of customers were satisfied with Hot Line Service operation.



In particular, in November 2015 Vodokanal opened the Customer Service Centre which is located in a working distance from the metro station and unities several business units of the Company in one office.

The Customer Service Centre gives the customers the opportunity to fill out the feedback form, propose how to improve the Company's operations and leave feedback about the work of the Centre employees.

**In the end of 2015, Vodokanal conducted its usual opinion surveys among the citizens of St. Petersburg regarding the services provided by Vodokanal, i.e. end-user satisfaction survey.**

The data was collected by street interviewing of 1000 persons of all age groups and different social status, living in different city districts.

Opinion surveys among citizens of St. Petersburg are carried out annually. The objective of such surveys is to find out to what extent the end-users are satisfied with the quality of services and social projects of Vodokanal. By analyzing the results of such surveys Vodokanal can identify problems, as the citizens see them, and improve its performance in relevant areas.

Since 2010, Vodokanal has conducted opinion surveys in the form of outdoor polling (previously, Vodokanal did phone surveys). Questionnaires are developed on the basis of a Likert-type scale (rating scale). Mathematical-statistical methods are used to analyze the collected data (e.g. scalogram analysis).

The survey demonstrated that the majority of citizens (84%) were satisfied with cold water quality. 17% of respondents were "absolutely satisfied", 30% – "very satisfied" and 37% – "satisfied".

Satisfaction with regard to specific parameters of cold water remained persistently high. 87% of respondents were satisfied with odour; 87.5% – with transparency; 78.7% – with colour.

97% of respondents were satisfied with continuous water supply. This parameter is the most important for the majority of the St. Petersburg population and characterizes the quality of municipal water supply service.

As usual, the satisfaction with cold water head is high. At late 2015, 87% of respondents were satisfied with it.

The satisfaction with quickness of defect rectification increased in 2015 (60% of respondents were satisfied with it in 2015, which was 10% higher than in the past year).

More than 85% of respondents rated high the provision of the information about repair works and about the timeframe of the water supply restoration. The satisfaction with diversion of stormwater from in-yard territories remains on a high level (82.4%) among the city residents.

St. Petersburg citizens highly appreciate the operation of Vodokanal's Hot Line Service (telephone: +7 812 305 09 09), which receives calls about the failures in water and sewerage systems and gives reference information about the Company operations. 93% of those who

Respondents are grouped by age, gender, social status, district of residence, etc. to ensure representative sampling.

The survey-2015 results showed that the overwhelming majority of respondents (82%) rated high Vodokanal's work: 67% of respondents gave 4 scores (according to a 5-score system), 15% of respondents gave 5 scores and 16% of respondents gave 3 scores.

have ever called the Hot Line Service were satisfied with its performance.

More than three quarters (78%) of the city residents installed water meters in their flats. (In comparison with 2014 this parameter has increased by more than 10%). The majority of those who had the meters (90%) thought that they were worthwhile. Another 5% of respondents were undecided when they were asked to assess the efficiency of water meters. 5% of respondents declared their dissatisfaction with water meters (5%).

City residents assessed also the tariffs for water and wastewater services. 56.4% of the St. Petersburg residents were satisfied with tariffs. This parameter has increased by 1.6% as compared to 2014. At the same time, 80% of respondents could not tell what water tariff applied to them.

**THE SURVEY SHOWED THAT CITIZENS HAD POSITIVE ATTITUDE TO SOCIAL PROJECTS OF VODOKANAL. AS USUAL, THE RESPONDENTS RANKED HIGH THE WORK OF THE UNIVERSE OF WATER MUSEUM. 99.3% OF RESPONDENTS WERE SATISFIED WITH THE WORK OF THE MUSEUM COMPLEX; 97.5% – WITH THE YOUTH ENVIRONMENTAL CENTRE; 98.9% – WITH VODOKANAL OPERATION OF FOUNTAINS AND FOUNTAIN COMPLEXES AND 88.3% – WITH ACTIVITIES TARGETED TO THE PROTECTION OF THE BALTIC SEA.**





# CITY FOUNTAINS

In 2015, Vodokanal St. Petersburg operated 77 fountains and 4 fountain complexes.

ALL FOUNTAINS BUILT AND RECONSTRUCTED BY SUE “VODOKANAL OF ST. PETERSBURG” COMPLY WITH EXISTING CONSTRUCTION, SANITARY AND ENVIRONMENTAL STANDARDS.

The history of St. Petersburg fountains dates back to 1705. Construction of fountains is associated with the genius city founder – Peter the Great. The first fountains appeared in the Summer Garden which construction was carried out under the Emperor guidance. Peter I dreamed of his own Versailles and drew the original park design himself. He planned to establish a regular architectural park with clear layout and straight parkways, neatly trimmed trees and bushes. In Russia the spectacular fountains were located for the first time ever in four places of the garden. In order to ensure fountains operation, a canal was dug out and a steam machine pumped water from the Bezmyaniy Erik River which later was named the Fontanka.

The Summer Garden fountains were plainer than in Peterhof, but they embellished the park nicely. Later, the fountains of the new capital were constructed in the noblemen’s estates appearing on the banks of the Neva, the Fontanka and the Moyka in a great number, however, these spaces were closed and fountains were only for “private fun”. When landscape parks gained popularity, fountains went out of fashion. But they came back in the second half of XIX century, when public gardens and parks were opened. Moreover, the construction of fountains was facilitated by the development of St. Petersburg water supply system and rapid improvement of construction technologies which resulted in a significant reduction of the hydraulic structures construction costs. The fountains in Aleksan-

drovskiy, Rumyantsevskiy and Nikolskiy gardens were the spectacular examples of the fountains built in those times.

The interest in the city fountains amplified in the 1930s and 1950s of XX century. At that time, full-flowing fountains in Smolnii Garden (1934) and the memorial fountain “Crown of Glory” in Moskovskiy Park of Victory (1949), which became one of the Great Patriotic War Victory monuments, were built. Furthermore, construction of many small fountains in the yards of the restoring, fast-growing and upgrading city can be considered as a distinctive feature of the fountain development at that time. The total number of the fountains in the city exceeded 300. However, the fountains were gradually deteriorating as no maintenance or repairs had been provided over a long time. Fewer than 20 fountains were in operation by the end of the century.

In 1996, in order to improve the situation, it was decided to transfer the fountains to SUE “Vodokanal of St. Petersburg”. 65 fountains were handed over to Vodokanal operation in the period from 1996 to 2015.

In 2006, the fountain complex was built in the Moskovskaya Square. The Government of St. Petersburg was the Employer and SUE “Vodokanal of St. Petersburg” performed as the General Contractor for this construction. The Company conducted all the necessary organizational and a part of construction work. The fountain complex in the Moskovskaya Square consists of 11 fountains. Their parameters such as jets height, dynamics, flow rate, change of jets illumination color are set by a special software program built-in multimedia panel of the control cabinet. Fountain complex operation equipment is located in four underground rooms.

The City fountains are in operation from April to October. At the end of the season, all fountains are subject to temporary shutdown, all equipment is removed, sewage pipes are flushed, water supply network valves are closed, and fountain bowls are cleaned and covered. In winter, dismantled equipment is maintained and prepared for the season, the fountains are visited and inspected, snow and litter is removed and waterproofing of the bowls is checked.

IN THE PERIOD OF 1996-2015 SUE “VODOKANAL OF ST. PETERSBURG” REPAIRED 36 FOUNTAINS. AS OF 31 DECEMBER 2015, 35 FOUNTAINS, WHICH WERE TRANSFERRED TO THE COMPANY IN NON-OPERATIONAL CONDITION, ARE OUT OF OPERATION.

In 2015, Vodokanal has taken for economic management the fountains at the following addresses:

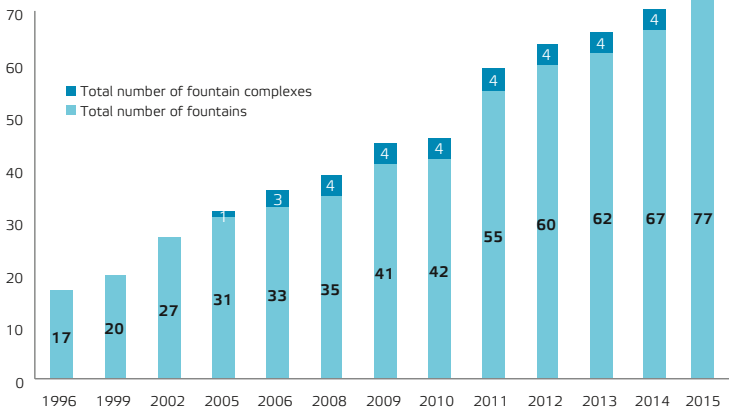
- Lit. A, Block 1, 22 Gospitalnaya str., Pavlovsk;
- Lit. A, Block 1, 4, Slobodskaya str.;
- Lit. A, Block 1, 148, Nevskiy pr.;
- Lit. A, Block 1, 30, Fontanka emb.;
- Lit. A, Block 1, 32, Kamennooostrovskiy pr.;
- Lit. A, Block 1, 7, Krasnogo Kursanta str.;
- Lit. A, Block 1, 57, Liteiniy pr.;
- Lit. B, Block 1, 3, Aleksandrovskiy Garden;
- Lit. G, 13, Karpovka emb.;
- Lit. A, Block 1, 41, Lermontovskiy pr.

These fountains were transferred in non-operational condition, the building structures are checked and repeatedly inspected, and the litter is collected.

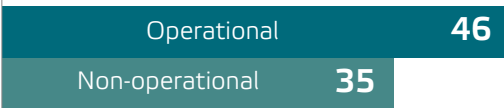
In 2015, the following fountains were put into operation:

- the fountain “Near the Market” (559, Primorskoye Shosse, Zelenogorsk);
- the fountain in Primorsky Victory Park on Batareinaya Road, which became a new architectural dominant of the park;

NUMBER OF FOUNTAINS BY YEARS



CONDITION OF THE CITY FOUNTAINS AND FOUNTAIN COMPLEXES OPERATED BY VODOKANAL ST. PETERSBURG



Total number of city fountains managed by Vodokanal – 81 fountains.

- the fountain “Lighthouse” in the St. Petersburg 300th Anniversary Park (Lit. L, 74, Primorskiy pr.).

Capital repair works for the fountain “Globe” in Malaya Sadovaya str. were also completed, the technical equipment and decorative elements were replaced, as well as the clock function was restored.

Design works were started for capital repair of four fountains in Kronstadt: “Fish”, “Pearl”, “The Water Carrier”, “Near the Tower”; and the fountain in Kolpino near the cinema “Podvig”.

The following is planned for 2016:

- completion of design works, capital repair and start-up of the fountain near the cinema “Podvig” in Kolpino;

- commencement of construction and installation works to renovate the fountain “Crown of Glory” in Moskovskiy Park of Victory (Lit. F, Block, 188, Moskovskiy pr.);

- commencement of construction and installation works to renovate the fountain in Aleksandrovskiy Garden (Lit. F, Block 1, 3, Admiralteiskiy pr.).

It is planned to commission the fountains at the following addresses:

- Lit. A, Block 1, 30, Fontanka emb.;
- Lit. B, Block 1, 3, Aleksandrovskiy Garden;
- Lit. A, Block 1, 10, 3rd Krasnoarmeiskaya str.

CONSTRUCTION OF SUCH UNUSUAL FACILITIES AS FOUNTAIN COMPLEXES HAS BECOME SIGNIFICANT DEVELOPMENTS IN THE CITY LANDSCAPING OF RECENT YEARS. THE FIRST SUCH COMPLEX WAS THE LIGHT AND MUSIC FOUNTAIN COMPLEX FUNCTIONING DYNAMICALLY IN THE SQUARE IN FRONT OF FINLYANDSKIY RAILWAY STATION. THE FOUNTAIN WAS OPENED ON 22 SEPTEMBER 2005 TOGETHER WITH THE CEREMONIAL START-UP OF SOUTH-WEST WASTEWATER TREATMENT PLANT. ON THIS DAY, THE FOUNTAIN SQUARE WAS VISITED BY THE PRESIDENT OF RUSSIA VLADIMIR PUTIN.

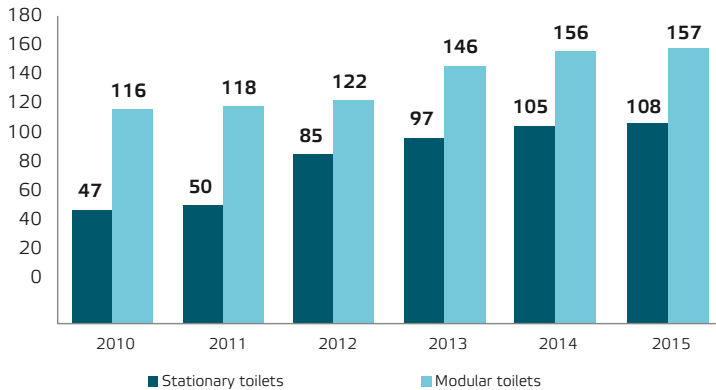


# PUBLIC TOILETS

In 2015, Vodokanal  
operated 569 public toilets.

There are 673 public toilets in the economic management of Vodokanal St. Petersburg, including:

- 215 stationary toilets;
- 155 modular toilets;
- 20 mobile sanitary and hygienic complexes installed on vehicle chassis;
- 283 mobile cabins.



IN 2015, THREE PUBLIC TOILETS WERE TRANSFERRED TO SUE "VODOKANAL OF ST. PETERSBURG" FOR ECONOMIC MANAGEMENT. ALL OF THEM WERE INCLUDED INTO THE REHABILITATION PROGRAM.

Vodokanal has been operating public toilets since 2001. In December 2001, the Order of the Administration of St. Petersburg no. 1492-ra "On the development of St. Petersburg public toilet network" was issued. Vodokanal St. Petersburg undertook responsibility for maintenance of public toilets owned by the City of St. Petersburg and for contracting repair, renovation or development works. In accordance with the Order of the City Property Management Committee the city public toilets were transferred to SUE "Vodokanal of St. Petersburg" for economic management. Transferring of public toilets to the Company control was necessary as the city public toilets network needed to be rehabilitated. Major part of the facilities, handed over to the Company for economic management, is downfallen and in non-operational condition.

Such types as mobile sanitary and hygienic complexes on MAZ chassis and modular toilets with storage containers are operated only in seasons with ambient temperature above zero. The number of toilets increases during the city festive events since additional mobile toilets are provided.

Vodokanal issues technical specifications for mandatory construction of public toilets in newly-built shopping centers in compliance with the "Sanitary Rules for public toilets arrangements and operation" approved by the Deputy of the Chief State Sanitary Doctor of the USSR no. 983-72 dated 19 June 1972. Today, almost every big shopping center has free public toilets for all categories of visitors. Vodokanal has modern mobile sanitary and hygienic complexes installed on vehicle chassis providing services of better quality compared to mobile toilet cabins. Currently, design works are being carried out to manufacture new mobile sanitary and hygienic complexes to increase the number of public toilets in the city districts.

Mobile sanitary and hygienic toilet complexes and modular toilets help to handle the situation with public toilets in the central city districts.

Pursuant to the Resolution of the City Landscape Development Department no. 8 dated 16 June 2011 "On arrangement of public toilets in city parks", SUE "Vodokanal of St. Petersburg" installs modular toilets in public green areas (gardens, parks, garden squares, boulevards) for every summer season. Places of modular toilets are selected taking into account the needs of the citizens and city guests and in accordance with the regulations.

The outsourced trained personnel work in every public toilet operated by the Company, and Vodokanal specialists supervise their work on a regular basis. The toilets have security sys-

tems to ensure the personnel security. Over 500 people are involved in the operation and maintenance of toilets.

TOILETS ARE OPEN FROM 9:00 A.M. TILL 9:00 P.M. ON PUBLIC HOLIDAYS TOILETS ARE OPEN ACCORDING TO A SPECIAL SCHEDULE.

Moreover, Vodokanal can extend the open hours if necessary, especially, during public events. Vodokanal sets up additional mobile toilets during the city festivals, such as the New Year, Christmas, Victory Day, Day of the City and Scarlet Sails.

In 2015, Vodokanal overhauled two toilets. Two toilets were commissioned after reconstruction.

Under the sub-programme "Development and maintenance of public services and utilities" of the St. Petersburg State Programme on Improvement and Environment Protection in St. Petersburg for the years 2015-2020, overhaul of 25 toilets is planned till 2020, including the overhaul of nine stationary public toilets in the period from 2016 to 2017.

The reconstructed toilets will be in operation for a long time due to the application of modern construction methods and use of new materials resistant to ambient exposure.

Development of public toilets network will lead to the increase of the number of toilets in operation, extension of the service life, improvement of quality of life of St. Petersburg population and enhancement of urban environment.

The standards defined by the set of rules "Urban Development. Planning and development of urban and rural settlements" (SNiP 2.07.01-89) are used to estimate the number of toilets required. In accordance with the rules, the number of toilets should meet the following requirement: one seat per 1000 people. At present, the

number of all municipal toilets is equivalent to "1 seat per 557 people". Overhaul program will give opportunity to meet regulatory requirements and increase the toilets service life. In 2015, installation of modular toilets was performed near underground stations and in the places approved by district administrations.

In order to inform the citizens about the location of public toilets, Vodokanal in cooperation with the Press Committee undertook measure to include the placement of the public toilet addresses into the city advertising program.

Information about public toilets is posted on Vodokanal website [www.vodokanal.spb.ru/kanalizovanie/tualety/](http://www.vodokanal.spb.ru/kanalizovanie/tualety/) in the section "Interactive map of public toilets". The map shows all public toilets managed by the Company. The information about each toilet is specified on the map including its type (modular or stationary), whether it is open only in summer or all the year round, working hours. The nearest toilets can be found by typing the specific address or just the street name in the search box.

IN SEPTEMBER 2015, SUE "VODOKANAL OF ST. PETERSBURG" LAUNCHED A MOBILE APPLICATION FOR USERS TO FIND PUBLIC TOILETS ON THE MAP. The application is free of charge; the program is supported by the devices on Android and Apple iOS platforms. It can be downloaded via Apple Store and Google Play. All stationary toilets have light boxes with the Company logo and are easily recognizable from a big distance. Modular toilets also have information about their owner.

The Order of the Committee for Energy and Engineering Support no. 74 dated 9 April 2015 "On Implementing the St. Petersburg Government Decree no. 295 dated 24 March 2015" sets the charge in the amount of 20 Roubles for the public toilets operated by Vodokanal.

The right of free use of public toilets is granted to:

- disabled persons and participants of the Great Patriotic War;
- disabled persons of 1, 2 and 3 group; disabled persons that have restrictions in labor activity of I, II and III degree;
- combat veterans;
- citizens awarded the "Resident of Sieged Leningrad" badge;
- heroes of the USSR, the Russian Federation, and holders of full set of Orders of Glory;
- home front workers;
- victims of political repressions;
- former prisoners of concentration camps;
- military conscripts;
- disabled children under 18;
- children under 7.





## PERMANENT SNOW-MELTING STATIONS AND SNOW COLLECTION POINTS

**Construction and operation of permanent snow-melting stations and snow collection points is an important activity of Vodokanal.**

**St. Petersburg is the most highly populated city in the Baltic Region. Environmental issues are particularly acute for the modern megalopolis with five million citizens.**

Snow, exported from the city highways, is greatly polluted with coarse substances (mainly street litter, gravel and sand) and oil products. Soil pollution with oil products causes changes in soil structure, soil geochemical properties, as well as has toxic effect on living organisms and long-term negative impact

on diversification of plants and vegetation development. Accumulation of large snow masses in the city streets results in environmental problems. In spring and summer, mud flow and air dust volumes increase having adverse influence on environment and human health.

SUE "Vodokanal of St. Petersburg" has focused on a new activity – design and construction of Permanent Snow-Melting Stations (PSMS) – since the end of 2011.

A Permanent Snow-Melting Station is a utility system located in sewers and sewerage networks comprising energy and pumping equipment, piping systems and valves, as well as residential and production areas. The whole system provides 24/7 snow masses receiving, melting and discharge of snow melt waters into the sewage system with subsequent treatment at Vodokanal wastewater treatment plants.

Sewage heat (the average temperature of 16-18°C) is used for snow melting in the stations. Wastewater for snow melting is fed via pressure pipelines.

The snow from roadways is delivered by dump trucks with a body capacity of 10-20 m<sup>3</sup>. Two dump trucks can be simultaneously unloaded at the PSMS. Snow masses are unloaded through the intake plant equipped with separator crushers for crushing ice and snow discharged into the snow melting chamber. Crushing of the snow mass accelerates melting process. At the same time, separator crushers intercept and take

big-sized garbage away from the snow melting chamber.

The snow melting chamber is a reinforced concrete tank designed to provide necessary snow melting conditions. Snow is melted in liquid flow without mechanical agitation and suspended substances are partially settled.

Grit channel is installed next to the melting chamber treating wastewater up to the standards acceptable for domestic sewage system. The flow rate in the melting chamber and sedimentation tank ensures settling of inert materials (sand, gravel and other debris); floating garbage is removed with special basket screens installed at the end of the grit channel. All settled garbage is removed by an excavator during the chamber cleaning and transported by dump trucks to landfills. After settling, the entire volume of wastewater resulting from snow processing is discharged into the city collector and transported to have full treatment cycle at the wastewater treatment plant.



In 2015, in addition to ten PSMSs four more Permanent Snow-Melting Stations (previously managed by the city road service companies) were transferred to the Company for economic management, as well as two Permanent Technically Equipped Snow Collection Points were arranged at the Company facilities in Kurortny district.

In 2016, it is planned to commission a new Snow Melting Station located in Sector 9 in Shkiperskiy Protok str.

**THE TOTAL  
DESIGNED  
CAPACITY  
OF 10 PSMS  
IS 59,000 M<sup>3</sup>/DAY.**

In 2014-2015 season Vodokanal operated 10 Permanent Snow-Melting Stations and about 632,500 m<sup>3</sup> of snow were processed.

PSMS Addresses and  
Designed Capacities

ADDRESS	MAXIMUM VOLUME OF SNOW PROCESSED IN THE SPECIFIED SEASON, M³
Lit. A, 1, Admirala Greiga str., Kronstadt	65,274
Block 5, 24, Obvodnogo Kanala emb., St. Petersburg	120,000
Lit. A, Block 2, 127, Gostilitskoe shosse, Peterhof	60,000
Lit. A, 6, Novo-Nikitinskaya str., St. Petersburg	46,650
“Sludge Beds”, Lit. A, 93, Lenina pr., Kurortniy District, Zelenogorsk	60,000
Sestroretsk WWTP, 7, Transportnaya str.	30,000

Snow is received, stored and naturally melt at the Snow Collection Points. Snow melt water is discharged into sewage system and transported to Vodokanal wastewater treatment plants.

The site foundation has watertight coating and the site area is banked up. Snow, collected from the city streets, is delivered to the snow collection point by trucks, then it is unloaded and stored.

The snow dump has the form of a 6m high prism made by a bulldozer. The working area is divided into two parts: unloading area and storage area. The snow mass is dumped out of trucks in the unloading area. A bulldozer works in the storage area moving unloaded snow on top

of the dump up to the height of 6m. When the unloading area is full, a bulldozer comes to this area starting to push the snow upwards. The trucks are unloaded in unoccupied space. Filling the site with snow starts from the far end of the site with gradual approach to the site entry as far as the site is filled. The dump height is 6 meters, slopes grade is 1:1.5. The slope of bulldozer snow moving area is 1:3.

The snow, arriving to the snow collection point, contains significant amount of wastes including large volumes of traffic road sand. Therefore, the site is cleaned up and wastes are transported to the landfill in the end of winter period.

In 2015–2016 season Vodokanal received, measured and disposed snow masses at ten Permanent Snow-Melting Stations and six Permanent Technically Equipped Snow Collection Points. The Season 2015–2016 broke the record in terms of received snow volume: ten Snow Melting Stations and six Snow Collection Points processed 1,433,000 m³ of snow exceeding the total result of three past seasons.

VOLUMES OF SNOW RECEIVED

NO.	ADDRESS	VOLUMES OF SNOW RECEIVED IN THE SEASON OF 2015/2016
1	2, Oktyabrskaya emb.	212,009.6
2	77, Peterhofskoye shosse	52,217.5
3	Lit. B, 83, Stachek pr.,	62,853.0
4	Lit. A, 69, Krasnoutilovskaya str.,	126,726.2
5	Section 2, Sevastyanova str., Kolpino	28,954.0
6	Lit. A, 45, Rizhskiy pr.,	129,429.0
7	123, Volkhonskoye shosse	16,536.0
8	2, Rybinskaya str.	130,239.3
9	Mebelnaya str./Mebelniy Proezd	153,065.5
10	9, Kushelevskaya Road	177,517.4
	TOTAL FOR SNOW-MELTING STATIONS:	1,089,547.5
1	“Sludge Beds” Lit. A, 93, Lenina pr., Kurortniy District, Zelenogorsk	26,658.8
2	Sestroretsk WWTP 7, Transportnaya str.	46,679.0
3	Lit. A, 1, Admirala Greiga str., Kronstadt	54,204.1
4	Lit. A, 6, Novo-Nikitinskaya str., St. Petersburg	26,354.0
5	Block 5, 24, Obvodnogo Kanala emb., St. Petersburg	140,695.9
6	Lit. A, Block 2, 127, Gostilitskoe shosse, Peterhof	48,438.0
	TOTAL FOR SNOW COLLECTION POINTS:	343,119.0

An automatic snow metering system is used to measure the volumes of received snow. The system collects, processes, stores, displays and transfers the data (tables, report forms, receipts, etc.), keeps records of vehicle traffic and the volumes of snow delivered to the snow-melting stations. It is an integrated hardware-software system consisting of two levels: level 1 – operator workstation, and level 2 – hardware and software system in Beliy Island.

In 2015-2016 season, the automatic snow metering system with laser scanning was introduced at the Snow-Melting Station located in 2, Rybinskaya str.

The principle of this automatic snow metering system is the laser scanning of the moving object at the velocity rate of 5-10 km/h through the frame and pictures recording system. The laser scanner records the object contours every 2–5 cm. The recorded contours are processed. Geometric data of the object width, height and length are used to calculate the snow masses volume. The pilot project of snow mass measuring was acknowledged successful.





# INNOVATIONS



# IMPLEMENTATION OF NEW WATER AND WASTEWATER TECHNOLOGIES

**Vodokanal St. Petersburg is implementing up-to-date technologies on a large scale to ensure provision of high-quality water and wastewater services to its customers and to minimize negative impacts on the environment.**

## Water Supply

1. Implementation of novel equipment to control the UV dose under the UV disinfection system modernization project for Northern, Southern, Volkovskaya, Main, Kolpino and Petrodvorets WTPs and Moskovskaya and Frunzenskaya pumping stations.

The key elements of the drinking water UV disinfection control system are industrial analyzers for control of optical transmission coefficient and the monitoring system to check water flows through the UV chambers. Initially, a Swiss opti-

cal transmission measurement instrument was to be supplied for the project. However, in 2015, it was decided to test the Russian AF1.001 instrument produced by a Petersburg company in line with the import substitution policy. As the UV systems had been installed in the existing WTP schemes, problems arose because of the lack of space for the installation of a standard flow monitoring device (flow meter) at each UV chamber to maintain effective UV dosage. However, Vodokanal specialists found a good solution. A double-channel flow metering system based on variable pressure drop flow meters proved to be a suitable device to measure water flows through the UV units.

2. Selection of instruments for water quality monitoring in the Lake Ladoga – River Neva system.

At present, Vodokanal is working on a water quality monitoring project for the Lake Ladoga – River Neva system. The system is intended to improve the performance of Vodokanal’s water treatment plants by monitoring and analyzing the condition of the water bodies influencing the

quality of water in the Lake Ladoga – River Neva system and by short-term and seasonal forecasting of potential water quality fluctuations at Vodokanal’s water intakes. The key element of the system is online monitoring of water quality in a water body. The most important water

quality parameter is colour. None of the previously used online water monitoring devices could give reliable measurement results for water colour in the Neva. In 2015, a water quality analyzer manufactured by S::can company (Austria) was tested.

The instrument demonstrated good correlation with the laboratory monitoring results. The instrument can be used for water quality monitoring in the Lake Ladoga – River Neva system. S::can company (Austria) is considering production of such instruments in the Russian Federation.

3. Updating the buffer zones project for the surface water sources used by Vodokanal.

**In 2015, the buffer zones project for the surface water sources used by Vodokanal was approved. The project aims to establish borders and procedures of the buffer zones around water supply sources, and to approve actions to be taken within three zone belts, specifying completion dates, responsible organizations and financing sources, in particular:**

- a) to establish borders of buffer zones and each of their constituent belts;
- b) to draw up a plan of water protection actions with a view to improve the sanitary state of buffer zones and to prevent pollution of water sources, specifying relevant business entities in St. Petersburg and the Leningrad Region;
- c) to define rules and procedures for business activities within the area of three SIP buffer zone belts.

## Wastewater Disposal

1. Review of engineering solutions for removal of heavy metals from the ash produced by sewage sludge burning at Central sludge incineration plant (SIP).

Vodokanal has long been focused on the selection of viable and cost-effective technology for recycling of the ash produced by sludge incineration utilizing the useful properties of ash. In 2015, the Company tested a heavy metals removal technology on the ash produced at Central SIP and assessed the performance.

**The tests were made with a view to:**

- figure out how to use the resulting decontaminated material in compliance with the Russian environmental law;
- search for appropriate methods of heavy metals-containing waste handling in compliance with the Russian environmental law.

Research has demonstrated that, technically, different ash fractions can be used in the production of pigments, additives to (bituminous) concrete, dry mixes, and fire extinguishing agents; and for recovery of metals. Marketing studies have been made to identify the goods that can be produced using ash from sludge incineration, such as artificial soil for road building and landscaping, fertilizers, basalt-like blends, etc.

**FORMULATION OF ASH-BASED ARTIFICIAL SOIL, FERTILIZERS AND BASALT-LIKE BLENDS IS INCORPORATED IN THE PLAN FOR 2016.**



## 2. Search for, and testing of new engineering solutions for the cleaning of gaseous emissions from wastewater facilities.

In 2015, different gas cleaning devices were tested at Vodokanal's treatment plants to prevent propagation of foul smell from wastewater facilities.

Wastewater facilities produce foul smell because the so-called malodorous gaseous substances (mainly, ammonia, hydrogen sulfide and mercaptans) are emitted in the process.

**In 2015, pilot tests of two gas cleaning solutions were made at Vasileostrovskaya pumping station:**

- Aerolife-KNS photocatalytic gas cleaning method;
- MSD-500 ozone-producing UV lamps-based technology.

Aerolife-KNS cleans air in a photocatalytic block where volatile organic compounds on the photocatalyst surface are oxidized to carbon dioxide and water by the oxygen in atmospheric air.

In the MSD-500, suspended matter is removed from air by filtration, then the air flows through a UV reactor where pollutants are oxidized by ozone, and, finally, it goes to sorption-catalytic tertiary treatment in a carbon filter where foul-smelling substances and residual ozone are decomposed.

The test results demonstrated good gas treatment performance and reduction of foul smell from the sewage pumping station's emissions. In 2016, a MSD-500-based gas cleaning system will be constructed at Vasileostrovskaya sewage pumping station located in a residential area.

Pilot tests of filter cartridges (FC) intended for manholes have been made. FC uses a special gas sorbent to absorb and neutralize the harmful gases passing through the FC air ducts.

The cartridge for gaseous media is a cylinder divided into communicating compartments that contain filter elements. The housing is made of polymeric composite materials that meet the hygiene requirements and have proper strength properties and performance characteristics. The cartridge body is a polymeric tube. A custom-made reusable filter medium designed for severe climatic conditions is used as sorbent.

A FC can be quickly installed in any reinforced-concrete manhole in the networks without dismantling the hatch base plate. For this purpose, a special retainer system is used to fix the cartridge to the lower edge of the cast-iron hatch base plate in a manhole.

Six month long testing of filter cartridges proved that the above devices can efficiently clean gas emissions from manholes.

## 3. Search for, and testing of new engineering solutions for the improvement of wastewater treatment processes (including disinfection) and for the treated effluent quality control with a view to mitigate negative impacts on water bodies.

Vodokanal intends to select the most viable and cost-effective technology for disinfection of treated effluent. Since 2015, the Company has been considering disinfection of treated effluent by a combination of ultrasound and sodium hypochlorite. Presumably, this technology will intensify the treatment process and improve the disinfection performance.

Wastewater disinfection is a rather complex process that should strictly follow the pre-calculated scheme in consideration of every factor and condition influencing the process flow.

Today, Vodokanal disinfects treated effluent by UV lamps and sodium hypochlorite. The UV disinfection method is effective against both bacteria and viruses, but very expensive to use (high investment and operating costs).

**The wastewater disinfection technology to be used by Vodokanal should meet the following requirements:**

- disinfect treated effluent effectively regardless of weather conditions or other factors;
- be economically sound;
- have no negative impact on the biocenosis of water bodies.

## In 2015, Vodokanal continued to develop methodology guidelines.

### 1. Vodokanal, in cooperation with the Environmental Research Institute, finalized the methodology guidelines for integrated assessment of Vodokanal's investment program performance using innovative criteria, best available technologies and considering the risks of non-performance of the key program actions.

The guidelines are intended to achieve the governmental policy objectives in the sphere of water supply and wastewater disposal as specified in the Federal Law dated 7 December 2011 no. 416-FZ "On Water Supply and Wastewater Disposal".

**With the guidelines in place, Vodokanal is able to:**

- establish the criteria for categorizing actions as essential and including them into the plan in consideration of health-related, environmental, economic, etc. risks;

- calculate the non-performance risk;
- classify actions by the extent of risk;
- rank actions by their relevance for minimization of the non-performance risk;
- analyze scenarios in consideration of external influencing factors;
- select, taking into account the investment volume, an optimal package of actions to minimize the non-performance risk as concerns the Company development and modernization;
- assess the effectiveness of actions aimed at the Company development and modernization;
- establish the sequence of actions under the long-term investment program taking into account investment volumes and priorities of the actions;
- assess the performance of the Company development and modernization investment program in general.

**The implementation of the methodology by Vodokanal will give the following benefits:**

- improvement of sustainability and quality of water services;
- minimization of environmental, economic, political and social risks related to any disruption of water supply or wastewater disposal services;
- better implementation of actions aimed at Vodokanal development and modernization;
- improved environmental and economical feasibility of investment projects;
- overall feasibility of the planned development and modernization actions.

### 2. The methodology guidelines on energy saving at Vodokanal's water and wastewater facilities have been developed.

Vodokanal's energy policy defines the energy efficiency management as one of the Company's prioritized focus area. In 2015, "The methodology guidelines on energy saving at Vodokanal's water and wastewater facilities" have been developed.

**The methodology guidelines are used to:**

- draw up fuel and energy consumption plans for the Company divisions;

- develop the energy saving and energy efficiency improvement program;
- prepare monthly reports on fuel and energy consumption;
- evaluate the results of energy saving efforts at different divisions;
- calculate water consumption and wastewater disposal balances.

**The adherence to the methodology guidelines by Vodokanal allowed to:**

- describe in every detail the energy saving actions implemented at the Company;
- develop the concept and strategy of energy saving;
- propose a set of estimates to define energy performance in physical terms;
- propose approaches to the draft methodology guidelines regulating energy saving actions.



## DEVELOPMENT OF HYDRAULIC MODELLING

**Hydraulic regimes in water distribution networks are simulated to solve operational tasks and plan the development of Vodokanal's water supply system.**

Hydraulic calculations are made for pressure zones, water supply districts or other specified areas depending on a specific task.

Hydraulic models are used to determine hydraulic parameters of the water network operation (mainly, water pressure and flow) and to predict how they would change during ordinary maintenance or emergency repairs, construction or rehabilitation of the network sections, or in the event of water consumption fluctuations. Hydraulic models were used to optimize pressure zones of the pumping stations in Krasnoe Selo and the neighboring communities, to optimize the operation of the

water tower in Lisiy Nos community, to determine the operating regimes of Kronstadt water networks taking into account the transition to a closed-loop hot water supply scheme, etc.

In 2015, the selection of sewer/water network construction and reconstruction projects and determination of network parameters as part of the updating of the St. Petersburg Water and Wastewater Master Plan for the period up to 2025 with an outlook to 2030 adopted by the Resolution of St. Petersburg Government no. 989 dated 11 December 2013, were based on hydraulic calculations.

On 25 November 2015, the International Advanced Water Technologies Centre held the international workshop on "Hydraulic simulation as an instrument to increase water and wastewater systems efficiency". Representatives of water companies, institutions of higher education and design organizations participated in the workshop. Presentations were made by experts with many years of practical experience in hydraulic simulation and by developers of simulation software. Different approaches to implementation of hydraulic modeling in Russia and foreign countries were evaluated, and targets for development and improvement of efficiency of hydraulic modeling in Russia were formulated.







## GEOINFORMATION SYSTEM DEVELOPMENT

**The geoinformation system (GIS) is created to provide to relevant Vodokanal divisions timely, reliable and comprehensive geoinformation about the Company facilities and the city infrastructure, to consolidate all types of accounting, to register property rights, to exchange information with state authorities and to provide data support to production processes.**

The GIS comprises hardware, software, Vodokanal's cartographic database and data communication channels.

IS "Baltika" is a distributed, MapInfo MapXtreme-based graphics and information system. It has an open-architecture core and a powerful graphics engine.

**IS "Baltika" operation is based on 10 interacting subsystems and their software modules which support the following functions:**

- Cartography – performs standard GIS operations with spatial objects, service cartographic operations, operations on technical records; supports vector and raster data sets, and defines the coverage of territorial zones.
- Property accounting – supports management of the Company property; keeping records

of land parcels held on lease or leased out; issuing reports on current or scheduled payments; update information about buildings, facilities, networks and movable assets.

- Technical record-keeping – updates information about the status of manholes and network sections, records changes in technical parameters of networks; deals with network write-off, planning, renovation and preparation for cadastral registration; maintains thematic registers of housings, discharges, boosting pumping stations, sewage pumping stations, water meters, tunnel collectors, connection points, water wells, zones, etc.; supports the issuance, follow-up and closure of network flushing requests on the basis of reporting documentation; supports inventories, drafting and making of contracts with customers; provides information support to electrochemical protection of steel pipelines.

- WEB – access – performs standard GIS operations with spatial objects, service cartographic operations; supports browsing

through records of technical parameters, events, engineering networks, the Company assets and flow meters; processes sewer flushing requests; provides a navigation function for line crews and emergency teams using a mobile workstation.

- Administration – management of user accounts; disables editing function for registers open to several users at a time, maintains lists of users, tasks, roles and news in IS "Baltika".

- Integration with external information systems and resources – updates information about facilities and their addresses; establishes primary links between the accounting data and technical records; specifies the location of breakdown upon request from IS "Hot Line"; interacts with IS "Customer Service Centre" and software module "Passport of the Facility"; on-line location and recording of object position from the mobile workstation; builds and transmits to SYNER-GEE WATER up-to-date models of engineering networks.

- Simulation and shaping of water service interruption areas, with optimization option – shapes service interruption areas, makes lists of disconnected customers and passports of disconnected sites; simulates the shaping of disconnected areas, and automates the search for redundant valves.

- Monitoring of the Southern Water Supply Zone reconstruction phases – supports the

monitoring of reconstruction works at required levels;

- Support of integrated water network inspection – maintains and browses the register of the planned water network inspection, visualizes the works completed as part of the integrated water network inspection.

- Navigation – positions network elements on the map and visualizes them by means of double-frequency GLONASS/GPS receivers (accuracy in differential mode – 2m or more, and in RTK, real-time mode, – 0.20 m or more).

The use of cutting-edge technologies for the development of the Company's own information system allowed to address the problems of security-related restrictions faced by the users working with cartographic data, such as location and characteristics of engineering networks, by installing the certified information security software WIN 7 PRO no. 2180 STEK RS in their workstations. WIN 7 PRO № 2180 CTЭK PC.

## IS “Baltika” cartographic database contains over 150 regularly updated cartographic layers, including:

- existing cadastral plan of the St. Petersburg Committee of Property Relations;
- data of the St. Petersburg urban-planning information system from the Committee for Urban Development and Architecture;
- information about investment projects received from GU “Investment Management”;
- the 1:10000 digital map of St. Petersburg dated 2005;
- raster tablets (1:500, 1:2000);

- orthophotomaps of the St. Petersburg territory produced on the basis of the aerial survey;
- digital surface map of St. Petersburg, where all types of surface (lawns, bushes, asphalt, tile, etc.) are presented in the form of areal objects (1:2000);
- digital map of the Leningrad Region within a radius of 30 km from St. Petersburg and the map of the town of Luga;
- thematic information about engineering networks, land plots, buildings and facilities of the Company.

## In 2015, IS “Baltika” was developed in the following way:

- Updating of the existing fundamental cartographic base.
- Downloading of the orthophotomap produced in 2014 (resolution – 18 cm) under the data exchange agreement between the Committee on IT and Communications, Committee for Urban Development and Architecture, State Institution of Investment Management, and Committee for Property Relations of St. Petersburg.
- Development of the package of interrelated information-computing tasks and models.

**A MODULE FOR PLANNING INTEGRATED RECONSTRUCTION OF SEWER NETWORKS TO BE USED FOR SEWERAGE BASINS AND A MODULE FOR PLANNING AND CONTROL OF HYDRODYNAMIC FLUSHING AND TELE-DIAGNOSTICS OF SEWER NETWORKS, WERE PUT INTO OPERATION. THE MODULES ALLOWED TO AUTOMATE THE PLANNING OF INTEGRATED RECONSTRUCTION OF SEWER NETWORKS AND HYDRODYNAMIC FLUSHING AND TELE-DIAGNOSTICS OF SEWER NETWORKS AS WELL AS TO CONTROL FLUSHING AND TELE-DIAGNOSTICS OF SEWER NETWORKS, AND TO PROMPTLY OBTAIN CURRENT INFORMATION ON THE STATUS OF THE WORKS.**

## The following improvements were made under the IS “Baltika” maintenance contract:

- a function to transfer the information on St. Petersburg state property inventory to the St. Petersburg Committee for Property Relations was developed;
- the speed of obtaining the data contained in nodes and links between the nodes in WEB application of IS “Baltika” was optimized;
- the networks inspection route planning function was developed;
- collection, analysis and systematization of the system software errors identified during the system operation; approval of error recovery algorithms and time schedules, troubleshooting;
- analysis, troubleshooting and remedy of IS “Baltika” malfunctions at the users’ workstations; development of recommendations for the client’s system administrators on how to restore the client-side functionality;
- development of a cartogram for the register of Siemens technological sectors: the water supply network related to the sector + buildings (linked to the sector via connection points which are linked to the sector via the points which do not get water supply according to the GUION data) + links between the connection points and the buildings of the relevant sector;
- transfer of the results of preliminary binding of house connections with connection points using IS “LIVS” as a separate Oracle display;
- implementation of OrtoPhotoMaps 2014 display function;
- improved IS “Baltika” records of integrated facilities of IS “LIVS” in the Customer Service Center (CSC);

- improved display of buildings not supplied with cold water in Siemens technological sectors cartogram;
- improved database for the GUION Inventory (Southern Zone);
- the page of the Ministry of Emergency Situation is improved in WEB-subsystem;
- WEB-application was updated by a new DevExpress registers display version;
- development of automatic standard operations execution service (correlation between buildings, land plots, nodes and links between the nodes and the territorial zones; validation of the nodes and links between the nodes, assignment of addresses to the nodes associated with the links, etc.);
- development of a function to integrate the relevant networks;
- updating of physical assets cartogram in IS “Baltika” rich-client to represent availability/lack of CSC IS contract;
- development of a database for training activities under the Water Academy Project;
- WEB-application providing compatibility with IS “Maintenance and Repair Management” was improved;
- a register of hydrodynamic sewer network flushing events was improved for WES-application;
- reference books and classifiers were improved;
- “Building Inspection Results” module for Kronstadt database was improved;
- the telediagnosics register was improved;
- the integrated reconstruction works register was developed;
- the description of IS “Baltika” database was updated.

The system maintenance evaluation has shown a 15% increase in the number of references to IS “Baltika” at Vodokanal in 2015.

GIS supports development of calculation/modeling/simulation software modules, visualization of production processes, and thematic and situation modeling for decision-makers. The structure of distributed GIS is built using advanced methods of large information system design and surpasses standard ISs in terms

of combining the data storage and processing logic in a single information visualization unit. GIS has a wide range of functionality for implementation of data management systems making it possible to use the geographic information system as the core tool for heterogeneous data integration.





## ENERGY-SAVING AND ENERGY EFFICIENCY PROJECTS

**Vodokanal St. Petersburg is one of the biggest energy consumers in St. Petersburg. In 2015, the energy consumption of the Company accounted for 662.2 Mio. kWh.**

**IN 2015, ELECTRICITY CONSUMPTION REDUCED BY 4.2% AS COMPARED TO THE PREVIOUS YEAR. THE MAIN FACTOR OF ENERGY CONSUMPTION REDUCTION IS VODOKANAL ACTIVITIES RELATED TO THE CONSERVATION OF NATURAL RESOURCES WHICH RESULT IN THE REDUCTION OF WATER CONSUMPTION VOLUMES AND IMPLEMENTATION OF ENERGY SAVING MEASURES ENVISAGED BY THE INVESTMENT PROGRAM.**

The Company is strongly focused on energy saving and energy efficiency improvement.

This task is solved by using innovative technologies and equipment and improving the energy saving management function.

**The main activities aimed at energy saving and improvement of energy efficiency at Vodokanal are as follows:**

- creation of a water supply management system including modernization of boosting pumping stations (installation of energy efficient frequency-controlled pumps) and pressure control according to the measurements at the water network checkpoints;

- creation of a wastewater disposal management system including replacement of pumps with more energy-efficient ones and installation of frequency converters.

In 2015, the energy performance of the main processes (drinking water production and distribution, wastewater treatment and transportation) in the centralized water supply system was better than that of 2014. The improvement was achieved, among other things, due to the implementation of water supply management system, installation of energy-efficient equipment at the pumping stations in the Southern water supply zone of St. Petersburg, reconstruction of machine room no. 2 at Southern WTP and operation of frequency converters at Southern (machine rooms no. 3 and 5), Main, Northern (machine rooms no. 1 and 2), Volkovskaya and Kolpino WTPs.

In 2015, the reconstruction of two bigger third-lift water pumping stations – Murinskaya PS and Kushelevskaya PS, as well as the reconstruction of Petrogradskaya boosting pumping station and second-lift pumping station in Northern WTP, was going on. The reconstruction of the air blower station including replacement of the

existing blowers with controlled-air-feed blowers, was carried out under the Northern WWTP Reconstruction Project. A similar replacement of blowers was carried out at Central WWTP. The works will be completed in 2016.

The thermovision inspection of building envelopes (717 thermograms of building facades were made) identified the defects which were corrected afterwards.

From late 2014 to mid-2015, the City Authority for Inventory and Real Estate Appraisal (GUION) inspected, by order of Vodokanal, the buildings and non-residential facilities located in the Southern Water Supply Zone of St. Petersburg and connected to the centralized water and sewerage systems including those under economic management of Vodokanal.

In total, 11,978 buildings and 8,423 non-residential facilities were inspected. The information on the actual use of buildings and non-residential facilities, rightholders, cold/hot water consumption, wastewater disposal volumes, availability of networks and meters for hot water, gas, electricity, etc., was collected.

The analysis of inspection materials identified 604 non-residential facilities for which contracts had to be made (amended) to reflect the change of tariffs for water and wastewater services used by such facilities.

The inspection results were checked by Vodokanal specialists, uploaded into information systems, and are used to amend contracts with customers and for the automated Southern water supply zone management system project. The database with the inspection results including the collected data on all kinds of resources was delivered to the St. Petersburg Committee of Property Relations to be integrated into the regional information system “St. Petersburg Geo-Information System”.

**In 2015, the following activities were carried out under the automated water supply management system project for the Southern zone of St. Petersburg”:**

- 32 intersectoral flow meters were installed to implement the distribution network zoning principle and to enable calculation of water balance for each sector in the Southern water supply zone of St. Petersburg;

- 6,192 flow meters with consumption data storage and transfer capabilities were installed and pre-commissioned on the consumer side;

- 128 pressure transmitters were installed and pre-commissioned on water distribution networks to ensure continuous monitoring of the network condition.

To implement the “proximity to the customers” principle, the “Customer Personal Account” service was added to Vodokanal website. The service enables customers to promptly obtain reliable information on cold water consumption, to identify the date and time of taking the meter readings and, consequently, to acknowledge total correlation between the water consumption data recorded by Vodokanal and by the customer, and to ensure transparency of relations between the water supplier and consumers.

The water consumption metering and accounting system (IS “NEMO-Aqua”) was put into a full-scale operation in the Southern Water Supply Zone. Due to the obtaining of analytical data and online monitoring of the balance between water supply and sales in each water supply sector, the system could improve the efficiency of water supply.

IS “NEMO-Aqua” uses integrated measurement data from meters to issue online analytical reports on Vodokanal’s water supply system performance, to calculate non-revenue water and water losses, and to keep records of water quality and energy consumption.

Today, the System is an essential tool for operators who analyze water consumption by Vodokanal customers. In the 4th quarter of 2015, the System helped reveal illegal water consumption by a customer from a house connection. The theft of over 2,000m<sup>3</sup> of water was prevented. Besides, there was a case of illegal water consumption from a reserve fire pipeline where the pipeline was promptly closed by workers of the relevant water supply district.

Since 2012, Vodokanal has implemented and certified the energy management system (EnMS) under ISO 50001:2011 “Energy Management Systems. Requirements and User Manual”.

The Company’s existing energy management system ensures efficient control over sustainable use of energy for water and wastewater services, and supports timely decision-making aimed to increase the energy efficiency of Vodokanal operations.

In October 2015, Vodokanal’s energy management system was successfully recertified for compliance with ISO 50001:2011 by Certification Association “Russian Register” and SAI GLOBAL.

**IN 2015, VODOKANAL EXPERTS PARTICIPATED IN CONFERENCES, SEMINARS AND PANEL DISCUSSIONS DEDICATED TO ENERGY EFFICIENCY AND ENERGY MANAGEMENT.**



# PATENTS

## The main principles of Vodokanal intellectual property policy are:

- provision of timely legal protection of intellectual property in compliance with the intellectual property law;
- preventing any violation of the Company's exclusive rights to the intellectual property;
- monitoring of scientific and technical information, search for new cutting-edge technical solutions, determination of scientific and technological level of solutions.

SUE "Vodokanal of St.Petersburg" has 92 valid patents for inventions and utility models, and 3 trademarks. In 2015, applications to obtain patents for 9 inventions were lodged; documents to implement 10 inventions and utility models were executed.

To support the inventive work, Vodokanal developed and put into service an Intellectual Property Directory and issued a Priority Production Problems Register.

In 2015, Vodokanal's Intellectual Property Policy was developed and adopted by order no. 101 dated 29.05.2015. Vodokanal began to improve its standards for development, legal protection and use of intellectual property.

Vodokanal specialists participated in the round-table meeting "Development of the national intellectual property strategy"

and made a presentation under the project "Concepts of the long-term national intellectual property strategy" developed by the Inter-Agency Working Group on the long-term national intellectual property strategy (order by Ministry of Education and Science no. 251 dated 17 March 2015). The presentation abstracts were sent to the All-Russian Research Institute for Inter-Industry Information (FGUP "VIMI") for publication.

The comprehensive inventory of the intellectual deliverables was taken and the data was entered into the "St. Petersburg Property" Software System, "Intellectual Property" section.

As a technical information monitoring activity, the Company made a catalogue of thematic exhibitions and a thematic database of patent searches and investigations and included them into Vodokanal's Intellectual Property Directory. Patented technical solutions of universities, design and research institutes were monitored. Thematic workshops were organized at the premises of the Information and Training Center.

**Vodokanal established (by the Company Directive no. 207 dated 31.12.2015) a working group for interaction with higher education institutions in St. Petersburg and scheduled visits. The working group is made up of deputies representing nine higher education institutions:**

- 1) St. Petersburg State University of Architecture and Civil Engineering;
- 2) St. Petersburg State Technological Institute (Technical University);
- 3) St. Petersburg State Technological University of Plant Polymers;
- 4) Military (Engineering) Institute at the Military Academy of Logistics named after Army General A.V. Hrulev;
- 5) Peter the Great St. Petersburg Polytechnic University;
- 6) Military Space Academy named after A.F. Mozhaiskiy;
- 7) National University of Mineral Resources "Gorny";
- 8) State University of Sea and River Fleet named after Admiral S.O. Makarov;
- 9) St. Petersburg National Research University of Information Technologies, Mechanics and Optics.

**According to Vodokanal's needs, 21 patent searches in the following focus areas were carried out in 2015:**

- Wastewater treatment methods (removal of substances resistant to oxidation);
- New coagulants for water and wastewater treatment;
- Filter media for tertiary treatment (removal of iron and alkalization);
- Medium for cartridge filters used in storm water tanks;
- Chemicals/water mixing devices for aeration tanks, flocculation and coagulation chambers;
- Chemical disinfectants to remove pathogens and viruses from wastewater;
- Macerators;
- Submersible sewage pumps;
- Tertiary treatment methods;
- Removal of heavy metal salts from sewage sludge;
- Sewage collector shafts made of polymeric materials;
- Magnetic – pneumatic ash separation methods;
- Recycling of carbonate sludge produced by water treatment processes;
- Chemical dosing devices for water and wastewater disinfection;
- 0.4 kV and 6 kV frequency converters of domestic manufacture;
- Grinders;
- Sludge scrapers;
- Equipment for coagulants and flocculants dosing;
- Inventions of interest for Vodokanal patented by St. Petersburg vocational colleges.

**MOREOVER, THE "DEVICE TO REMOVE SMALL WATER VOLUMES FROM HARD-TO-REACH PLACES" WAS TESTED IN 2015, AND ITS PRACTICABILITY WAS ESTIMATED.**



# DEVELOPMENT OF INFORMATION INFRASTRUCTURE



**IN 2015, A PRINTING INFRASTRUCTURE CONTROL AND AUDIT PROJECT WAS LAUNCHED TO OPTIMIZE COSTS, ENHANCE CONTROL OVER THE COMPANY'S MULTIPLE COPIERS AND PRINTERS AND IMPROVE THE INFORMATION INFRASTRUCTURE. THE FIRST PROJECT PHASE (THE PILOT PROJECT) HAS BEEN COMPLETED BY NOW.**

**The following has been done under the pilot project:**

- deployment of the control and audit system;
- testing of the system operability in Vodokanal information environment;
- close scrutiny of the system functions, capabilities and tools;
- formulation of requirements to further development of the system;
- preparation of reports on pilot works.

Full-scale implementation of the printing infrastructure control and audit system will enable the Company to keep detailed records of the number of printed copies made by Vodokanal departments and by each individual. This function will allow to control and optimize the cost of printer/copier maintenance and the cost of consumables. Currently, the Company is making preparations for a full-scale project and continuing examination of Vodokanal sites and inventory of the existing printers/copiers to draw up proposals on further extension of the system.

The analysis of automation possibilities and optimization of the existing solutions are made to develop, and improve the performance of, the information systems to be used for automation of the Company business processes.

Automation of customer interaction processes is a prioritized activity in this field. A number of actions adding value for Vodokanal customers were planned for 2015, such as completion of IS "Customer Service Center" modernization, introduction of the "Customer Personal Account", implementation of the website/bank card payment service for individuals and entrepreneurs. Almost all of them were implemented: the bank card payment service was launched in February, the "Customer Personal Account" on Vodokanal website became available for customers in October. The "Customer Service Center" system has been upgraded and is being tested by relevant departments.

To enhance automation of production-related business processes, a time schedule for upgrading the computer-based metrological information system developed by the IT Department was approved. The system practicability was confirmed: it is now used by all production departments providing metrology support for the Company. The feedback from users contained many requests for modification and upgrading of the system.

In 2015, the pilot operation of "Maintenance and Repair" information system was completed. The personnel began to use the system as a daily tool for planning and recording all works on water and sewer networks. Moreover, the system functions related to equipment in treatment plants were considerably extended. In 2016, IS "Maintenance and repair" will be implemented at all water and wastewater treatment plants to plan and keep records of maintenance and repair works.

To ensure Vodokanal compliance with the environmental standards established by the Russian Law, the "Chemical Balance" Module which supports the collection, storage and processing of water sample data and the issuance of reports according to the regulations, was developed as part of "Excess Discharge Fee Calculation" Information System.

**A KEY ACHIEVEMENT OF 2015 RELATED TO COMMUNICATIONS DEVELOPMENT WAS THE TRANSITION OF SOME VODOKANAL SITES TO VOICE COMMUNICATION. THE COMPANY'S SWITCHING NODES WERE UPGRADED TO USE THE IP PACKET-SWITCHING TECHNOLOGY FOR VOICE COMMUNICATION.**

To ensure secure data exchange between St. Petersburg executive authorities as well as between the city rapid-reaction and emergency response services, Vodokanal was connected to the Integrated Multiservice Telecommunications Network.

Vodokanal Security Department retrained relevant responsible employees in the use of Vodokanal's Information Security Management System (ISMS). The trainees passed the final tests and got certificates under the Program "ISMS introduction, implementation and internal audit to confirm the compliance with ISO/IEC 27001:2005". Thanks to timely retraining of personnel, Vodokanal passed the comprehensive inspection of the Automatic Process Control System status carried out by the Federal Service for Technical and Export Control for the North-West Federal District, and underwent successfully an external audit of ISMS compliance with ISO/IEC 27001.

In pursuance of the order of the Federal Service for Technical and Export Control of the Russian Federation no. 31 dated 14.02.2014 and the additional requirements of the regulatory authorities, the segregation of process-related and office networks at some water and wastewater facilities began in 2015. The project will be completed in 2016. The scope of the project will be further expanded to the entire production infrastructure of the Company: examination of sites is going on to prepare specifications for the next phases of the networks segregation project, and the information security system is designed for the Automatic Process Control System.

**IN 2015, THE FOLLOWING RESULTS WERE ACHIEVED IN THE SPHERE OF PROCESS AUTOMATION:**

**1) The following facilities were put into a full-scale operation:**

- machine room no. 2 of the second-lift pumping station at Southern WTP;
- the first-lift pumping station at Main WTP;
- boosting pumping station no. 12 (47 Kazakova st.).

**2) An Automated Process Control System was implemented at Kushelevskaya pumping station giving the following advantages:**

- desired accuracy and proper regulation of network pressure; as a consequence – a 40% reduction of pipe breakdowns in the service area of the above pumping stations;
- reduction of total production costs, reduction of equipment downtime and increase of efficiency up to 75%;
- reduction of energy consumption by 10%;
- better performance and quality; efficient design, reliability and high availability.

In 2015, IS "NEMO Aqua" was put into a full-scale operation. The system ensures online collection of the meters readings and real-time processing and analysis of water flow data.

The NEMO Aqua is based on high-tech hardware and software. Its lower level is based on the open M-Bus protocol which allows to use any type of M-Bus measuring instruments (EN 1434/IEC870-5). The simplicity of the protocol and, consequently, the reliability of instruments ensure stable operation of the system. The system is flexible: any device can be added without modification of the software. The system can be used with other standard industrial protocols (ModBus, ProfiBus) to integrate various measuring instruments. The system upper level is based on a powerful software package "Energy IPTM" which collects and analyzes large amounts of data (up to 20,000,000 meters) without downturn of performance and makes real-time calculations. The software package can process all major and most of the minor parameters of utility networks and deliver high-accuracy data on flow rates using the mathematic simulation. The data can even be provided for the network sections without meters or with an insufficient number of meters. The software package can forecast breakdowns and emergency situations based on the actual network status analysis.





## SOCIAL RESPONSIBILITY



## AWARENESS- BUILDING



An important part of Vodokanal activities is awareness-building. The Company information policy, public relations via mass media and social Internet-resources as well as the Youth Environmental Center (YEC) and The Universe of Water museum complex (both being part of the Information and Training Center) put a special emphasis on developing careful and responsible attitude towards the environment.

The recent years' trend towards reduction of water consumption is the result of Vodokanal's awareness-building efforts.

## YOUTH ENVIRONMENTAL CENTER

In 2002, the Youth Environmental Center (YEC) of Vodokanal was established to raise awareness among population, especially among the younger generation, under the Company environmental policy.

The Youth Environmental Center (YEC) is located in the former machine house of Main WTP (built in 1858). The first YEC project was "Let's save water together!". The project participants (about 1,000 people) attended classes at the center, measured water consumption at home, reflected about careful water use and came up with ideas how to save water.

More than 320,000 people participated in YEC programs in 13 years and over 50 big (also international) projects were implemented.

More than 30,000 people take part in the YEC programs annually.

In 2010-2011, YEC was reconstructed. At present, several interactive halls are opened in the Center building:

- Hall of First Discoveries;
- The Baltic Sea Hall;
- 3D cinema hall;
- Media-hall;
- Technical hall of the former machine house.



## Vodokanal's YEC activities are recognized both in Russia and in foreign countries:



The main task of YEC is to help the young generation realize the value of water, to raise the culture of water use, and to teach children simple skills of using water resources sparingly.

Working with children and teenagers, YEC presents new technologies and development trends of the Company, and describes its objectives and concerns. Children are eager to share their knowledge and experience with their families and schoolmates. Thus, environmental awareness of the city inhabitants is raised through children in an indirect way.

YEC activities are based on the ideas of sustainable development; it makes good use of information technologies and active learning methods.

**IN 2015, TWENTY-ONE ENVIRONMENTAL AND CAREER GUIDANCE PROJECTS WERE IMPLEMENTED AT THE YOUTH ENVIRONMENTAL CENTRE, INCLUDING 12 CITYWIDE, 2 REGIONAL AND 7 INTERNATIONAL ONES. 36,927 PEOPLE WERE INVOLVED IN YEC ACTIVITIES INCLUDING 2,129 TEACHERS OF EDUCATIONAL INSTITUTIONS IN ST. PETERSBURG AND THE LENINGRAD REGION.**

In 2004, YEC was awarded the National Environmental Prize of V.I. Vernadskiy Foundation for its contribution to the strengthening of environmental safety and sustainable development.

In 2005, YEC project "Baltic Sea – Our common home" was announced the sixth winner of PROBA-IPRA GWA public relations award in the nomination "Best PR-Project of the Year".

In 2007, YEC was awarded the Certificate of the European Environmental Agency for teaching young people how to conserve the environment and the Baltic Sea.

In 2013, the Youth Environmental Centre was declared the winner of the Environmental Year First National Prize in the nomination "Eco-Leader of the Year 2013".

Training seminars for teachers and partnership projects are implemented by the Youth Environmental Center to promote ideas of effective environmental education and sustainable development.

YEC is an advanced interactive center offering interactive classes for preschoolers, schoolchildren, college students and families; it implements environmental projects, offers informational and methodological support to teachers and organizes festive thematic events. YEC is an active participant of regional and international programmes and projects.

## Every day, YEC offers interactive programmes for children and young people of different age groups by request of educational institutions:

- for 5–7 year old children: "Droplet's Journey", "Sea Adventures on Your Birthday";
- for 1–5 year schoolchildren: "Water on the Earth", "Water in Everyday Life", "Mysteries of Nature", "Big, Little Sea", "Learn from the Nature", "Sea Adventures on Your Birthday";
- for 6–10 year school students: "The Sea Nearby", "Secrets of the Baltic", "The City by the Sea", "Proficient in the Baltic", "Water Yesterday, Today and Tomorrow", "Water – A Global Resource", "Water, Environment and I";
- for 8–11 year school students and college students: "Water Quality Test Lab", "The Sea Nearby", "Secrets of the Baltic", "Water for a Big City", "Water Yesterday, Today and Tomorrow", "Water – A Global Resource", "Water, Environment and I".

In 2015, YEC specialists prepared a number of career guidance projects and programs for the city educational institutions which were recommended to schools by the St. Petersburg Government Committee for Education.

In 2015, YEC specialists **DEVELOPED AND TESTED THE MULTI-VISIT TICKET FOR THE PROGRAM "IN SEARCH OF MYSTERIES"** offering visitors an integrated educational route in the museum complex "The Universe of Water" and the Youth Environmental Center and introducing the concept of "safe access to water", engineering solutions in the field of the city water supply and the Company's most in-demand professions.

In 2015, special attention was given to the family audience by means of proposing the multi-visit ticket **"WATER + I = FRIENDS"**. Family groups attended a course consisting of three classes at the Youth Environmental Center on weekends. Children and their parents made experiments with water together, performed creative tasks, learned how to save water and assessed their impact on the Baltic Sea.



The career-oriented project **"WATER FOR A BIG CITY"** was designed for high school students, the project **"WATER +"** – for 6-8 year students.

This activity area of SUE "Vodokanal of St. Petersburg" acquaints young people with the engineering, blue-collar and other professions, requirements to specialists and career opportunities. Students get an insight into importance of engineering solutions for sustainable water use in a big city; learn about comprehensive solutions and achievements in the public utilities sector by the example of Vodokanal.

The Youth Environmental Center and the Museum Complex have the facilities for visual presentation of Vodokanal operations and professions needed by the Company. Career guidance techniques for children and young people were developed in consideration of special features of the venues.

**THE YEC PROJECT-RELATED ACTIVITIES** are carried out throughout a year in accordance

with each project description and time schedule and aim to develop habits of sustainable use of natural resources, to raise environmental culture among children, young people and their families, and to provide career guidance for the young.

In 2015, at the request of educational institutions, project teams were created and trained at YEC workshops, following which they performed independent tasks, research or creative works. The participants presented their results in the final and got recognition of their achievements. The young people share the experience and knowledge gained in the course of the project with their families and schoolmates and use them in their everyday life.



## Key projects implemented by YEC in 2015:

- 1) "Water +" – environmental awareness-raising, career guidance project for 6-8 year students;
- 2) "Water for a Big City" – career guidance project for 9-11 year students;
- 3) "In Search for Mysteries" – environmental awareness-raising project with career guidance elements for 1-6 year students;
- 4) "ECOgames" project for secondary and senior school students dedicated to the Earth Day;
- 5) "ECOsummer" project for the participants of the summer camp programs;
- 6) New Year event "New Year in the Old Tower" and other.

Themed tours, interactive programs at Water Museum and YEC, festive events, campaigns and exhibitions were organized throughout the year under the program for children from the Orphanage no. 23 and other orphanages and boarding schools. For example, career guidance quest game "The Engineer's Secret Archive", the festive programme "Funny Lessons with Vodokanal of St. Petersburg", the programme "Energy and Power Engineering: Our Choice!" dedicated to the Earth Day, the creative festival "Knowledge and Creativity – Energy for the Future!" etc.

In 2015, implementation of the program "How to Make Friends with Water" for children from orphanages, boarding-schools and social rehabilitation centers continued.

## International projects implemented by YEC in 2015:

### AWARENESS-RAISING OF THE YOUNG THROUGH THE INTERNATIONAL ADVANCED WATER TECHNOLOGIES CENTRE IN ASSOCIATION WITH LAHTI REGION DEVELOPMENT LADEC LTD

2,712 people (2,529 school students and 183 university students) participated in the project in 2015.

A series of lessons in "The need and approaches to mitigate anthropogenic load on the Baltic Sea" and field classes at Vodokanal's South-West Wastewater Treatment Plant were organized and held for students of non-water related higher educational institutions.

Interactive classes and workshops providing knowledge about the special features and environmental problems of the Baltic Sea were developed and held for St. Petersburg school teams in 2015.

Special attention was paid to reduction of individual loads on the Baltic Sea and discussion of international solutions for sustainable water consumption.

In the course of the project, the school teams not only received information but also conducted awareness campaigns at school. Video reports on school projects were presented at the Videofilm Festival "The Baltic Interlude" at the Youth Environmental Center. The best works of the festival participants are posted on Vodokanal's official website.

One of the project activities was a visit of Finnish schoolchildren to St. Petersburg in November 2015 and a visit of St. Petersburg students to Lahti (Finland) in May 2015. During the study tours, the students tested water quality together, visited Vodokanal's wastewater treatment plants, presented project results, and participated in joint seminars and interactive lessons devoted to local environment and the Baltic Sea.

### RUSSIAN-GERMAN PROJECT "ECOVISION" IN PARTNERSHIP WITH THE GENERAL CONSULATE OF GERMANY

During the German Days in St. Petersburg (April 2015), St. Petersburg senior school students met the project organizers: representatives of the Office of the Senate of Hamburg, Urban Development and Environment Committee of Hamburg, the Consulate General of the Federal Republic of Germany, Vodokanal specialists and Russian sustainable development experts, at the project opening ceremony.

Under the project, the students and teachers were trained at YEC environmental workshops and master classes on cinematography and animation and, thereafter, students present-

ed their ideas of sustainable urban development in videofilms.

At the project final, the youth and international jury summed up the festival results and announced winners in each of 12 nominations and the Audience Award. The best works of "ECOVision" festival are presented on Vodokanal website.

The project "ECOVision" became a participant of the All-Russian Competition of Energy Saving Projects ENES-2015 (North-West) and was awarded the diploma as a winner in the nomination "The best project to promote energy-saving lifestyle among preschoolers and school children".

### PARTICIPATION IN ORGANIZATION AND IMPLEMENTATION OF THE INTERNATIONAL UN MODEL YOUTH CONFERENCE – ACCREDITED PROGRAM OF THE HAGUE UN MODEL

The Youth Environmental Center took part in the organization and implementation of the Environmental Committee and the Baltic Sea Forum (March 2015) attended by 135 youth delegates from 14 countries.

**MOREOVER, YEC SPECIALISTS AND THE YOUTH CORE GROUP WERE ACTIVELY INVOLVED IN THE EVENTS OF** the International Environmental Forum "The Baltic Sea Day" in March 2015, at the summer **INTERNATIONAL ENVIRONMENTAL CAMP** dedicated to studying the Gulf of Finland (Finland, July 2015) in partnership with the public organization "Friends of the Baltic" and the Eco-Biological Center in Krestovskiy Island.

The Youth Environmental Center co-organized **THE XXI INTERNATIONAL FESTIVAL OF ENVIRONMENTAL FILMS "THE GREEN LOOK"**. The best video films shot under YEC projects were presented and commended by the jury in different nominations.



**IN 2015, THE YEC TEACHING AND LEARNING ACTIVITIES** comprised workshops, conferences, consultancy and trainings for teachers and managers of the city educational institutions to acquaint them with YEC programmes, new trends and effective methods and forms of environmental education and awareness-building.

**FOURTEEN THEMATIC WORKSHOPS WERE DELIVERED IN 2015. IN TOTAL, 652 TEACHERS** from St. Petersburg and the Leningrad Region **ATTENDED THEM**.

Train the trainers programmes aimed to disseminate effective education methods and to make teachers more competent in selection of relevant topics for modern environmental lessons.

## As for the regional and international programmes implemented in 2015, YEC:

- organized and implemented the city contest "Fundamentals of Safe Water Use" in the framework of All-Russian School Olympiad in Life Safety, the city round;
- implemented the interactive programme "Your Success is in Your Hands" for the students – participants of the citywide Youth Environmental Forum;
- co-organized VI All-Russian Scientific Environmental Conference "Water – Source of Life on Earth";
- organized and implemented the programme dedicated to the 70th anniversary of the Victory Day within the frame of the International Museums At Night Event (18 May 2015);
- participated in IV All-Russian Environmental Education Conference in Moscow;
- participated in VII Research and Practice Conference "Environmental Culture and Awareness-Raising" for schoolchildren in Krasnoselskiy District;
- participated in the XII city conference of senior school students "The Younger Generation";
- participated in the "TELESTART" Festival of Children's Broadcast Journalism;
- prepared and implemented the thematic programme "Energy and Power Engineering: Our Choice!" for residents of orphanages;
- organized and implemented the Creative Festival "Knowledge and Creativity – Energy for the Future" dedicated to the Teacher's Day, for residents of orphanages and their tutors;
- organized and implemented career guidance programmes for school students "Professions in a Big City" on request of the St. Petersburg Labour and Employment Committee's Curriculum and Instruction Center;
- co-organized and participated in implementation of the Forum "Turning the Pages of History" dedicated to the 70th anniversary of UNESCO for UNESCO associated regional schools;
- developed the concept of, and coordinated the inter-museum citywide project "Order to Survive" dedicated to the 70th anniversary of Victory in the Great Patriotic War; prepared and implemented the thematic interactive programme "Order to Survive: Lenvodokanal!".

In 2015, the satisfaction level of YEC visitors was 98% according to the survey results.

# THE UNIVERSE OF WATER MUSEUM COMPLEX

The Universe of Water museum complex is an open social project of SUE "Vodokanal of St. Petersburg". Here, water knowledge is offered from wide variety of perspectives – historical, cultural, social, scientific, and other.



The museum complex comprises three exhibitions:

- **CLASSICAL MUSEUM EXHIBITION "THE WATER WORLD OF ST. PETERSBURG"** (in the former Water Tower). The exhibits – documents, pictures, objects, collections of sanitary equipment and hatches – show the history of water supply and sewerage origination and development.

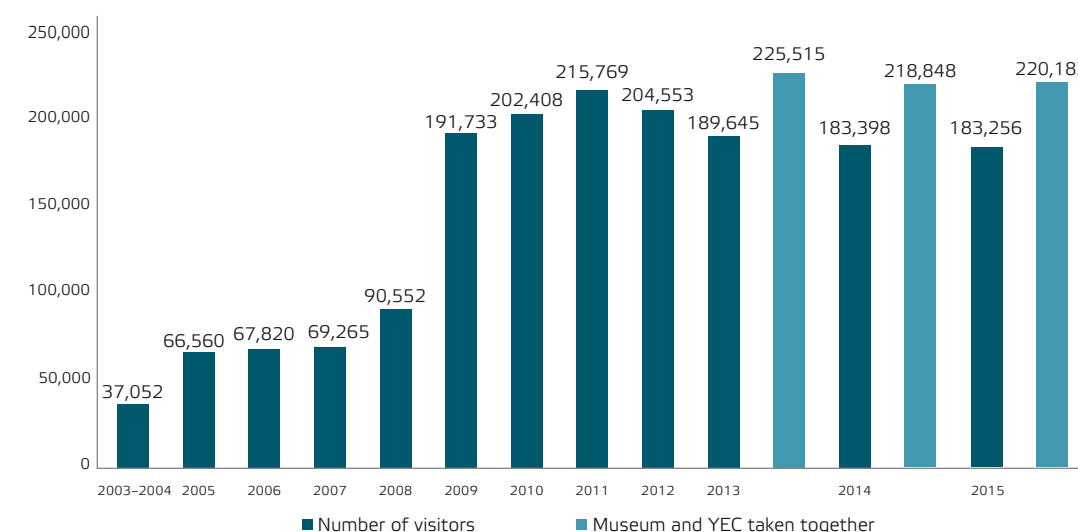
- **MULTIMEDIA EXHIBITION "THE UNDERGROUND WORLD OF ST. PETERSBURG"** (in the left annex to the Water Tower). Visitors can trace the route of water from the intake to treatment plants, then to the flats via distribution networks and back to wastewater

treatment plants. Here, they can also look at a model of the historical center of St. Petersburg. The model was made by the Institute of Architecture by the order of Vodokanal.

- **MULTIMEDIA EXHIBITION "THE UNIVERSE OF WATER"** (in the former underground clean water reservoir). It is a unique storage of modern water knowledge. The exhibition is based on multimedia technologies, stereo effects and textual explanations. Over thirty video-films disclosing various aspects of the water element are demonstrated there.

The exhibitions in the Water Tower were opened in 2003 – it was Vodokanal's gift on the 300th anniversary of St. Petersburg. The former clean water reservoir was transformed into the Universe of Water museum in 2008. In 2013, the exhibition was renewed and supplemented with multimedia installations and interactive models on the occasion of the 150th anniversary of Vodokanal.

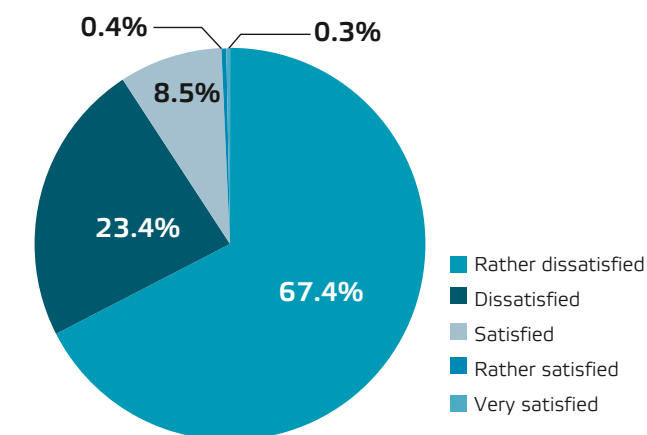
VISITORS OF THE MUSEUM COMPLEX (NUMBER OF PERSONS)



IN 2015, THE UNIVERSE OF WATER MUSEUM COMPLEX AND YEC WERE VISITED BY 220,183 PEOPLE.

THE UNIVERSE OF WATER MUSEUM COMPLEX

The results of opinion survey conducted among the St. Petersburg citizens showed that overall satisfaction with the performance of the museum complex was 99.3% in 2015.





## Key projects

1. The Universe of Water museum complex is a long-term participant of the international Museums at Night event. This event helps draw attention of a vast audience to water-related topics.



**DURING THE MUSEUMS AT NIGHT EVENT 2015, THE UNIVERSE OF WATER MUSEUM COMPLEX WAS VISITED BY 8,046 PEOPLE.**

At the Museums at Night 2015 event, visitors of two museum exhibitions were offered a special Memory Program dedicated to the 70th anniversary of the Victory in the Great Patriotic War: the exhibition "I am with Vodokanal: I have memories and pride!" based on materials from family archives of Vodokanal employees told about the military and labor feats of their relatives. A concert program and an open air cinema were organized at the premises of the Information and Training Center.

2. In January-May 2015, the Universe of Water participated in the city inter-museum project "The Big Regatta". Under the project, the Museum specialists developed a special educational excursion to the historical exhibition "Water World of St. Petersburg".

**THE NUMBER OF PARTICIPANTS WAS 1,268 PEOPLE.**

3. The museum complex and YEC participated in the city's thematic environmental project "EcoOkhta" organized together with the Administration of Krasnogvardeyskiy District in St. Petersburg.

Environmental master classes and a competitive educational programme were organized for the festival guests. The museum and YEC programmes were supplemented with an exhibition of special vehicles provided by ZAO "Emergency Response Center".

4. During the autumn school vacation (October – November 2015), the museum complex participated in the City Festival of children's museum programmes "Children's Days in St. Petersburg".

The museum specialists developed a thematic programme "Ready or not, here I come" in the historical exhibition for children aged 5–8. The programme was included into the main route of the Festival. It was attended by 4,523 people.

5. In 2015, in the framework of the 70th anniversary of the Great Victory, Vodokanal's Water Museum contrived and organized the inter-museum citywide interactive project "Order to Survive".

The project was implemented in partnership with 11 city museums. Each of the museums came with an exhibition showing how the city was supplied with vital resources: water, energy, transport, communications, etc., during the siege.



6. The thematic installation dedicated to Vodokanal operations during the Great Patriotic War, the exhibition of photos, documents, war-time letters from family archives of Vodokanal employees "I am with Vodokanal: I have memories and pride!", and the interactive museum programme "Order to Survive: Lenvodokanal!" were opened in the Universe of Water museum complex under the "Order to Survive" project.

7. From 18 December 2015 to 5 January 2016, the museum complex offered environmental awareness-raising interactive programmes “New Year in the Old Tower” for children of Vodokanal employees and the city school students.

**THE NEW-YEAR  
PROGRAMMES  
2015 WERE  
ATTENDED  
BY 5,610 PEOPLE.**



8. Special interactive thematic programmes for schoolchildren and families were designed and implemented by the museum specialists in 2015:

- My Water Weekend! – the weekend thematic programme;
- Where Do Crayfish Winter? – during the first-graders’ vacation in February;
- Make a Date at the Water Museum – for Saint Valentine’s Day;
- Fair Winds and Following Seas! – for the Fatherland Defender’s Day;

- Cleanliness is the Best Beauty – for the International Women’s Day on 8 March;
- Tune into the Baltic – for the World Water Day and the Baltic Sea Day;
- The Fountain of Wishes – for the All-Russian Family, Love and Faithfulness Day;
- Cast off the Lines! – for the Russian Navy Day;
- The Odyssey of Water – dedicated to the World Water Day and the Baltic Sea Day (22 March) – for secondary and senior school students.

## In 2015, the following exhibitions were organized:

1. From 15 January to 8 February, the exhibition **“VALAAM. PORTRAIT. LANDSCAPE”** was opened. It was the sixth exhibition following the tradition of art shows dedicated to the Isle of Valaam at the Universe of Water museum complex. The representatives of the

clergy, the Union of Artists and social organizations attended the opening ceremony.

**THE NUMBER OF PARTICIPANTS  
WAS 1,150 PEOPLE.**

2. From 6 March to 20 March, the exhibition of patchworks by the leading artists from St. Petersburg and the Leningrad Region **“TOUCH THE SPRING WELL”** was arranged.

The opening ceremony was arranged to coincide with the International Women’s Day.

**THE EXHIBITION WAS ATTENDED  
BY 1,320 PEOPLE.**

3. From 28 April to 18 June, the exhibition **“I AM WITH VODOKANAL: I HAVE MEMORIES AND PRIDE!”** showing documents and personal belongings from Vodokanal employees’ private archives and dedicated to the 70th anniversary of the Victory in the Great Patriotic

War, was opened to the public. Vodokanal veterans were honorary guests at the opening ceremony.

**THE EXHIBITION WAS VISITED  
BY 3,720 PEOPLE.**

4. From 23 September to 25 October, the exhibition of creative works by Vodokanal employees and members of their families: **“WATER – SOURCE OF INSPIRATION!”** was organized. Traditionally, the employees demonstrate their creative achievements during the celebration of Vodokanal anniversary on 10 October. The exhibition 2015 had

a record-breaking number of exponents: 130 artists presenting their paintings and works of graphic and applied art. Each exponent received a commemorative exhibition diploma.

**THE EXHIBITION WAS VISITED  
BY 2,860 PEOPLE.**

5. From 28 October to 9 November, the unique exhibition **“FINDING AT THE FAR SIDE OF THE WORLD”** was opened under the Russian Arctic Project. Exhibits from Yamalo-Nenets Autonomous Area, collections of the Yamal Museum and Exhibition Complex named after

I.S. Shimanovskiy and a replica of the baby mammoth Lyuba were showed there.

**THE EXHIBITION WAS  
ATTENDED BY 4,800 PEOPLE.**

6. From 13 to 28 November, the XIII regional exhibition of artworks by elderly and disabled people **“GOOD HANDS CRAFT”** was organized. The exhibition initiated by the Social

Protection Committee of the Leningrad Region coincided with the International Day of Older Persons and the International Day of Persons with Disabilities.



# DA-VODA WEBSITE

**Da-Voda website (da-voda.com) has been working since 2010 with the support of Vodokanal. The website is dedicated to careful attitude to water resources and tells how to save water at home without impairing the comfort.**

The main character of the portal is the Neva Crayfish. The Neva Crayfish has his pages in the social networks, such as VKontakte, Facebook and Twitter. It addresses his friends in Russian and English. His friends had numbered over 12,000 by the end of 2015.

In March 2015, at the international forum and exhibition "The Environment of Big Cities", Vodokanal showcased the results of its Baltic Sea protection activities. In the framework of the exhibition held at the Congress & Exhibition Centre "ExpoForum", one section of Vodokanal stand showcased the Company's social projects: activities of the Youth Environmental Centre and the Universe of Water museum complex, the Da-Voda website (www.da-voda.com) encouraging careful attitude to water. The information about the Marine Mammals Research and Conservation Centre in the town of Repino and about the Baltic Ringed Seal Friends Fund established with strong support from Vodokanal and highlighted on da-voda.com, was presented in every detail.

In April 2015, Vodokanal became one of the winners of the video film competition "Understanding Water Means Understanding the Universe" organized by the Russian Water Association. Vodokanal's video film "The Neva Crayfish and Its Friends" telling about the main character of the website, the Neva Crayfish, was recognized the best in the nomination "Water will Find its Way" (the best animation telling about water or the activities of an RWA member company). The competition was attended by

roughly 50 companies presenting more than 120 videos. **The grand prize of the competition was "The Apple Branch".**

In December 2015, the Russian-German project "ECOvision" results were summarized at Vodokanal's Youth Environmental Centre. The video "Everything Depends on Us" by the team from school no. 599 was awarded a special prize from Vodokanal Department for Information and Public Relations: a certificate for participation in environmental journalism master classes at the editor's office of Da-Voda website.

"Video-lessons" is a popular section on the portal where the Neva Crayfish acts as a teacher. The total number of views of short animated cartoons about careful attitude to water was nearly 115,000.

**One of the most popular sections on the website is Da-Voda TV.** Video films on various environmental topics are often posted there. In 2015, most of them were dedicated to the Marine Mammals Research and Conservation Center, the "kindergarten" for seal pups, and the release of the recovered and healthy patients into the wild. One of Da-Voda TV characters is the Baltic ringed seal Little Inger – the patient who stayed in the Center over winter due to injuries.

The fiction video film "Everyone Needs Water" tells the audience that water has been an indispensable resource throughout the history of the mankind, and the life of future generations depends on our careful attitude to water. The Da-Voda TV team also prepared video stories about remarkable environmental campaigns: the all-Russian cleanup of the shores of water bodies "Let's Do It 2015" and the stocking of the Gulf of Finland with juvenile whitefish with the participation of Vodokanal.

Da-Voda website has several regular columns. One of them, the Gadgets, offers information on different devices and simple methods that help reduce water consumption. In 2015, the portal visitors learnt, for example, what recipes or utensils should be chosen to save water in the kitchen, how to water orchards and vegetable beds, and what toys can help teach children careful attitude to this vital resource. The tips posted in this column helped visitors understand how their choice of transport, hotels and even souvenirs can affect the environmental footprint.

In 2015, the column "Thirst for Socializing" presented interviews with famous artists, politicians and scientists, such as the TV anchor Nikolay Drozdov, the movie and theater stars Anastasia Melnikova and Ivan Krasko, and the politician and writer Irina Khakamada. The glaciologist and member of the Russian Antarctic Expedition Alexey Ekaikin, the founder of the unique Orphaned Bear Rehabilitation Center Valentin Pazhetnov, and the Head of the Space Research Institute at the Russian Academy of Sciences Igor Mitrofanov, were also interviewed by Da-Voda.

Since 2015, the Da-Voda experts have given tips on careful attitude to water in the online cooking magazine "Bread and Salt" edited by Julia Vysotskaya.



The growing popularity of Da-Voda is evidenced by the site traffic data: in 2011, the average number of visitors was 135/day, while in 2015 there were 430–500 visits a day.

# REHABILITATION OF MARINE MAMMALS

**In 2015, the project launched by Vodokanal and the zoologists Vyacheslav Alexeyev and Elena Andriyevskaya and aimed at the rescue and rehabilitation of marine mammals in the Baltic Sea region, was going on. Seal pups are treated and rehabilitated at the Marine Mammals Research and Conservation Centre located at Vodokanal WWTP in Repino.**

IN 2014, THE CENTRE WAS OPENED AFTER IN-DEPTH RENOVATION AND INSTALLATION OF ADVANCED MEDICAL EQUIPMENT AND RESEARCH TOOLS. VODOKANAL INVOLVEMENT IN THE RESCUING OF SEAL PUPS WAS A LOGICAL FOLLOW UP OF ITS BALTIC SEA ENVIRONMENT IMPROVEMENT ACTIVITIES.



In March 2015, the Centre was visited by the participants of the Forum dedicated to the Completion of the Gulf of Finland Year Project: the Minister of Natural Resources and Environment of the Russian Federation S.E. Donskoy, the Governor of St. Petersburg G.S. Poltavchenko, the Governor of the Leningrad Region A. Yu. Drozdenko, the Director General of SUE "Vodokanal of St. Petersburg" F.V. Karmazinov and representatives of Finland and Estonia. S.E. Donskoy mentioned after the Centre visit: "The Centre is impressive due to its in-depth approach to animal management and subsequent release into the wild".

In 2015, 14 patients (9 Ladoga ringed seals, 4 Baltic grey seals and 1 Baltic ringed seal) were rehabilitated in Repino. The seal pups rescue season lasted from 27 March till 29 July.

The zoologists noted that, in season 2015, they faced the most complicated cases of seal injuries and diseases. Many seals were in a critical condition. Another problem faced by zoologists in 2015 was inavailability of vendace in the shops. Vendace is the best food for seal pups. For a while, the zoologists had to feed their patients with other fish types not quite suitable for Ladoga ringed seals (and the fish quality was not good either). Therefore, the rehabilitation process slowed down.



The Baltic ringed seal Little Inger stayed for continued rehabilitation in the Centre over the autumn-winter period for the first time in the Centre history. The seal was found on the beach of Kandikyulya village (Lomonosov district, the Leningrad Region) on 21 April 2015. She had extensive phlegmons (inflammation of soft tissues) on her face, corneal clouding and a compound fracture of the lower jaw making the nutrition process difficult. Inger underwent surgery to remove the affected tissues and her health began to improve. In autumn 2015-winter 2016 season, Little Inger stayed in the outdoor pool of the adaptation area in the Marine Mammals Research and Conservation Center. The seal learnt how to survive on ice alone. The zoologists trained her hunting skills by throwing live fish into the pool. Inger's long-lasting rehabilitation in the Centre was only possible thanks to the concerned citizens who had contributed more than RUB 250,000. The request for donation was addressed to all concerned people by the Baltic Ringed Seal Friends Fund.

Everyone can participate in the rescue of the Baltic ringed seals and other marine mammals by making a voluntary donation to the Baltic Ringed Seal Friends Fund (the Fund was established in 2014, [www.balticseal.org](http://www.balticseal.org)). Donations will be used to finance the rehabilitation of marine mammals' pups (purchase of fish, medicaments and other things) and the scientific research related to the conservation of marine mammals and their habitats.

Among other members of the Fund's Public Council is the Governor of St. Petersburg G.S. Poltavchenko, the Director General of SUE "Vodokanal of St. Petersburg" F.V. Karmazinov, the Chairman of the Union of Journalists of St. Petersburg L.D. Fomicheva.

YOU CAN MAKE DONATION TO HELP THE SEALS UNDER REHABILITATION IN THE SPECIAL WEBSITE SECTION "HOW YOU CAN HELP US": [WWW.BALTICSEAL.ORG/DONATION](http://WWW.BALTICSEAL.ORG/DONATION)

**Account no.:** 40703810490200000024

**Bank name:**

additional office "Lesnoy"  
Bank "Saint-Petersburg" OJSC

**Correspondent account no.:**

30101810900000000790

North-Western Main Branch of the Central  
Bank of Russia, St. Petersburg

**BIK:** 044030790

**OKPO code:** 09804728

**INN:** 7841292080

**KPP:** 784101001

**OGRN code:** 1147800004989

**SWIFT:** JSBSRU2P

"Saint-Petersburg" OJSC,  
Saint-Petersburg, Russia.

**Hot line:** +7 (812) 699-23-99

**[www.balticseal.org](http://www.balticseal.org)**







# ENVIRONMENT PROTECTION

## POLICY AND MANAGEMENT IN THE SPHERE OF ENVIRONMENT PROTECTION

**St. Petersburg is the largest city located at the Baltic Sea coast. Our city and, consequently, Vodokanal, bear a special responsibility for the Baltic Sea condition, for the conservation of the Baltic Sea basin, for the health of both – the St. Petersburg citizens and the population of the countries located one the Baltic Sea coast.**

Protection of the environment and the Baltic Sea, sustainable use of natural resources and responsibility to future generations for the results of the Company activities are the key priorities of Vodokanal and constitute the Company's values and strategic targets.

Vodokanal's environmental concept is based on the understanding of its role in creating a positive environmental situation throughout the Baltic Sea Region. The key international area of the Company's activity is participation in social and intergovernmental structures of

the Baltic Sea countries, particularly, in the framework of the International Convention of the Baltic Marine Environment Protection Commission (HELCOM).

To provide the efficient implementation of its environmental conception the Company introduced and certified the environmental management system according to ISO 14001.

In 2012, Vodokanal implemented and certified the energy management system according to ISO 50001, which enabled to maintain a high level of energy efficiency in the Company.

In 2013, the Company developed and improved the new Environmental policy, as the 2008 policy commitments had been fulfilled to a large extent.

During 2015, Vodokanal continued consecutive development of the environmental management and energy management as integral parts of the Company management. Along with traditional approaches (protection of water bodies against wastewater pollution in the region, introduction of safe and effective wastewater disinfection methods, reduction of drinking water losses during its production and transportation, awareness-raising activity in ecology and resource saving), new approaches have been developed and implemented in the Company – reduction in power and heat consumption by optimizing processes, use of vehicles equipped with energy efficient engines. The Company considers the issue of applying alternative energy supply sources.

Managers of all levels are responsible for the compliance with environmental safety in the course of development and involvement of processes and for the involvement of all employees into activities targeted to mitigate the environmental load.

Under the obligations undertaken by the Russian Federation to fulfill the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea, the Company makes a lot of efforts to reduce the untreated wastewater discharge and remove nutrients (nitrogen and phosphorus) from wastewater.

In 2015, Vodokanal launched the construction of the network to divert wastewater from Metallostroy WWTP to the Central WWTP. Implementation of this project will stop the discharge of poorly treated wastewater from Metallostroy WWTP, which does not meet HELCOM recommendations, and close the sub-point 18.15 of the hot point 18 defined by HELCOM in the Baltic Sea Region.

### The objectives of the Company in the sphere of environmental safety are to:

- stop the discharge of untreated domestic wastewater;
- reduce the discharge of untreated runoffs;
- stop the discharge of untreated flush water;
- decrease negative impact on water bodies when the treated effluent does not comply with the specified standards;
- reduce land plots used for wastewater sludge disposal;
- cut down emission of bad-smelling substances from sludge disposal landfills;
- implement the advanced wastewater disinfection processes at WWTPs.

To achieve the defined objectives Vodokanal implements the St. Petersburg Water and Wastewater Master Plan for the period up to 2025 with the outlook to 2030 approved by the Decree of St. Petersburg Government no. 989 dated 11 December 2013, the investment programme and discharges/emissions reduction plan.

**IN ADDITION, THE COMPANY PERFORMS, IN ACCORDANCE WITH THE ESTABLISHED PROCEDURE, THE ENVIRONMENTAL MONITORING OF THE QUALITY OF WASTEWATER COMING TO WASTEWATER TREATMENT PLANTS AND DISCHARGED INTO WATER BODIES, AS WELL AS DISCHARGES FROM INDUSTRIAL COMPANIES, ATMOSPHERIC AIR IN THE SANITARY PROTECTION ZONE, WASTEWATER SLUDGE, SOIL AND WASTE MANAGEMENT. THE OBTAINED DATA IS USED TO ASSESS THE IMPACT OF THE COMPANY ON THE ENVIRONMENT, TAKE MANAGERIAL DECISION ON ALL LEVELS, DEVELOP RELEVANT MEASURES AND REDUCE THE ANTHROPOGENIC LOAD ON THE NATURE.**

POLLUTANTS DISCHARGED INTO WATER BODIES OF ST. PETERSBURG  
(FROM WASTEWATER TREATMENT PLANTS AND UNTREATED WASTEWATER DISCHARGES),  
EMISSIONS AND GENERATED WASTE

PARAMETER	UNIT	2008	2009	2010	2011	2012	2013	2014	2015
Wastewater flow discharged into water bodies from the municipal sewerage system	mln-m³/a	1,034.6	970.4	952.1	931.6	931.6	879.5	826.8	796.9
Suspended solids discharged into water bodies	t/a	21,845.4	15,826.9	14,120.8	13,706.9	12,382.2	9,353.6	8,289.3	7,239.4
BODmax discharged into water bodies	t/a	28,627.3	18,718.2	17,677.9	15,635.6	13,311.7	11,271.2	9,573.6	7,005.2
Total nitrogen discharged into water bodies	t/a	11,048.2	10,729.6	10,003	10,048.6	9,627.7	9,303.4	8,616.7	7,973.9
Total phosphorus discharged into water bodies	t/a	1,177.8	759.9	677.7	492.4	491.8	433.6	355.2	291.6
Gross emissions of pollutants into atmosphere	t/a	4,538.2	4,653.9	4,790.0	3,952.0	2,745.8	2,035.7	2,496.3	1,867.6
Quantity of waste produced by the Company	t/a	511,100.8	543,365.6	519,025.4	524,738.9	510,426	500,907.2	517,307.9	455,816.1
Quantity of the dewatered sludge	t/a	429,862	449,188.4	413,458.6	420,259.4	409,244.0	397,379.1	397,639.8	342,499.6
Quantity of sludge incinerated at SIPs	t/a	257,583	346,799.3	380,000.1	399,697.9	370,335.3	378,872.9	389,734.2	328,321.4
Quantity of the produced ash	t/a	35,805	43,481.3	49,769.5	51,333.0	47,993.7	51,236.5	48,001.0	42,158.0

# REDUCTION OF IMPACT ON WATER BODIES

The impact on water bodies is mitigated in two ways:

- closure of untreated wastewater discharges;
- construction, modernization or rehabilitation of wastewater treatment plants to meet the HELCOM Recommendations and the Russian regulations on wastewater treatment and disinfection.

In 2015, Vodokanal carried out the following activities under a stepwise closure of the untreated wastewater discharges:

- implemented the project on the reconstruction of the sewerage tunnel along the Admiralteyskaya embankment and construction of the sewerage network in the Repina Square to divert the untreated wastewater discharged into the sewerage system;
- as a result, seven untreated wastewater discharges were connected to the sewerage system (previously, six of them discharged the untreated wastewater into the Bolshaya Neva and one – into the Fontanka River, totaling about thousands of cubic meters per day). Today, this wastewater is transported to the Central WWTP to undergo a full treatment cycle;
- launched the construction of the Okhta tunnel collector to stop the discharge of untreated wastewater into the Okhta River basin;
- finalized the design works and commenced the reconstruction of storm water sewerage in Murinskiy Park. This project will result in diverting seven untreated runoff discharges into the sewerage tunnel and further transportation of this wastewater to the Northern WWTP, thus enabling to improve substantially the environmental condition of the Murinskiy stream;
- commenced the construction of the pressurized sewerage network to divert wastewater from Metallostroy WWTP to Rybatskaya wastewater pumping station and then to Central Wastewater Treatment Plant. Implementation of the project will allow to stop the discharge of insufficiently treated effluent from Metallostroy WWTP, which does not meet HELCOM recommendations, and close the sub-point 18.15 of the hot point 18 defined by HELCOM in the Baltic Sea Region;
- continued the construction works to close the untreated wastewater discharge into the Malaya Nevka in Krestovskiy Island;
- continued the designing of the sewerage network to close the untreated wastewater discharge in the settlement of Metallostroy. This project will result in the elimination of the untreated wastewater discharge into the Slavyanka River;

- continued the designing of the sewerage network and tunnels to close ten untreated wastewater discharges into the Neva along the Kutuzova embankment, two discharges into the Kronverskiy strait along the Mytninskaya embankment, one discharge into the Malaya Neva in the Petrogradskiy district, two discharges into the Neva Bay and the Karasta River in the town of Lomonosov and one discharge into the Bolshaya Izhora River in the settlement of Pontonny.

A new wastewater treatment technology with membrane bioreactors will be implemented at Molodezhnoe WWTP for the first time ever in St. Petersburg. The project on the construction of Molodezhnoe WWTP includes the construction of the main pumping station, (mechanical and biological) treatment units, sludge handling unit, chemical preparation and storage facilities and a gas cleaning system. The capacity of Molodezhnoe WWTP will be 2,500 cubic meters per day and will ensure treatment of all wastewater coming from three settlements (Molodezhnoe, Serovo and Smolyachkovo).

To improve wastewater treatment at WWTPs Vodokanal carried out the following activities:

- came close to the completion of the first stage of reconstruction of Northern Wastewater Treatment Plant including implementation of the UCT technology by SWECO (Sweden) for enhanced nutrients removal. The first stage of reconstruction included replacement of mechanical and electrical equipment in eight primary sedimentation tanks and reconstruction of the building structures; construction of a new raw sludge pumping station; reconstruction of the aeration tank no. 2 (5 sections) with the implementation of the enhanced nutrients removal process; replacement of the existing air blowers (5 pcs.); replacement of mechanical and electrical equipment in six (out of 12) secondary sedimentation tanks and reconstruction of the building structures; construction of a new pumping station for the return and excessive sludge. The completion of the first stage is scheduled for 2016;
  - continued upgrading of the aeration tanks no. 5 and no. 6 at Central WWTP including implementation of the JHB technology for enhanced nutrients removal; completed reconstruction of air blower facility and replacement of the old air blowers with new ones with the regulated air delivery;
  - completed the modernization of sand traps at South-West WWTP;
  - finalized reconstruction of one section of the aeration tank at Kolpino WWTP including implementation of the enhanced nutrients removal and installation of a new tube-type membrane aeration system.
- The effectiveness of Vodokanal’s activities aimed at the elimination of untreated wastewater discharges and reconstruction of wastewater treatment plants is proved by reduction of pollutant discharges into water bodies of St. Petersburg.

CONSTRUCTION OF THE WASTEWATER TREATMENT PLANT IN THE SETTLEMENT OF MOLODEZHNOE IS IN PROGRESS.



# REDUCTION OF IMPACT ON THE ATMOSPHERIC AIR

The impact of Vodokanal facilities on the atmosphere is estimated by means of instrumental control of industrial emissions and pollutant emissions into the atmosphere in the sources of emission, at the boundary of sanitary protection zones and in the affected area

(adjacent residential areas). The instrumental control is performed by the accredited laboratories in line with the plans on compliance with target values and the programmes on systematic field measurements of the air quality in the affected zones.

## In 2015, the following activities were implemented:

- control of pollutants content at 184 sources of industrial emissions (1,970 analytical measurements);
- control of air quality and noise level in the buffer zones and the areas affected by 86 Vodokanal facilities (3,830 analytical measurements in 133 points);
- control of performance of 21 gas and dust removal facilities, including 6 flue gas treatment facilities at sludge incineration plants (SIP). At Central and South-West SIPs flue gases undergo a two-stage treatment in electrostatic precipitators and the scrubber systems equipped with acid and alkaline columns; at Northern SIP they undergo a two-stage treatment in electrostatic precipitator and are dry-cleaned in bag filters using chemicals (activated carbon and sodium hydrocarbonate).

**ACCORDING TO THE RESULTS OF MEASUREMENTS OF POLLUTANTS IN INDUSTRIAL EMISSIONS AND THE ATMOSPHERIC AIR IN BUFFER ZONES AND ZONES AFFECTED BY VODOKANAL FACILITIES, NO EXCEEDANCE OF LIMIT VALUES IN THE SOURCES OF EMISSION AND HEALTH-BASED EXPOSURE LIMITS FOR THE ATMOSPHERIC AIR IN RESIDENTIAL AREAS WERE RECORDED IN 2015.**

## To reduce negative impact produced by sludge landfills on the atmosphere and to prevent odour nuisance from sludge landfills, Vodokanal takes the following measures:

- full elimination of the negative impact produced by sludge landfills by way of processing the deposited sludge to the environmentally safe condition;
- prevention of odour nuisance spreading from sludge landfills.

The geotube method comprising chemical treatment and static dewatering of sludge in geotubes is applied for the processing of the sludge accumulated at Severniy landfill. As of 1 January 2016, 21% of wastewater sludge was processed.

Since 2013, the automatic deodorant spraying system for odour removal (with the total length of 5 km) has been operating at Severniy and Volkhonka-2 landfills. The spraying system operation is adjusted according to the data of the connected meteorological station, which checks the wind direction. The bigger amount of chemical solution is supplied to the downwind side to produce the required odour removal effect.

Due to the fact that since 2009 the landfilling of sludge was stopped and the biodegradation in sludge beds partially ceased, the aggregated emission of pollutants into the atmosphere from sludge landfills reduced by more than 2000 tones between 2009 and 2015.

A range of devices and technologies are implemented and tested at Vodokanal facilities for the reduction of negative impact on the atmosphere and prevention of odour nuisance spreading.

In 2015, a photo-sorption gas cleaning plant (MSD-5000) underwent pilot testing at Vasileostrovskaya sewage pumping station to remove organic (aromatic hydrocarbon) and non-organic (ammonia, hydrogen sulfide, sulfur dioxide, mercaptans, etc.) substances.

The air cleaning technology works in the following way: the contaminated air from the sewer comes into the UV chamber and is distributed throughout the chamber. Ozone is generated in the UV chamber and ensures initial reduction of evil-smelling substance; after



that air flows to a coal filter where evil-smelling substances and the remaining ozone are fully destroyed. Upon the positive results of the pilot tests it was decided to implement this evil-smelling substances removal technology at Vasileostrovskaya sewage pumping station.

The existing network of tunnel collectors is mainly located in the historic center, residential areas and can cause discomfort to citizens with the odour nuisances spreading through manholes and shaft hatch covers. In order to eliminate unpleasant odors the first pilot projects were implemented which included the installation of air purifier in shafts and sealed perforated hatch covers to protect those filters from mechanical stress and ensure free release of the cleaned air. The pilot projects were implemented at the Sverdlovskaya and Petrogradskaya embankments, in Prosveshcheniya and Tovarishcheskiy avenues. The air purifier is designed to remove harmful evil-smelling substances (hydrogen sulfide, ammonia, mercaptan sulfur) from the air. Operation results showed that no unpleasant odour was observed near the collector shafts.

# LABOUR SAFETY



**Life and health of the employees are the first priority of St. Petersburg Vodokanal in all types of its activities. In accordance with the requirements of the international standard OHSAS 18001-2007 and applicable Russian laws Vodokanal's Occupational Health & Safety Management System is targeted to the minimization of risks, prevention of industrial injuries and occupational diseases.**

Vodokanal employees and all stakeholders are informed about the Company's occupational health and safety policy. This policy forms the basis for the occupational health and safety goals and implementation programme.

The Company commits to observe law requirements in the field of occupational health and safety of the Russian Federation, involve employees in occupational health and safety activities, create conditions (including motivation mechanisms) when each employee becomes aware of it responsibility for his/her own safety and for the safety of other people and ensure ef-

ficient functioning and continuous improvement of the Occupational Health & Safety Management System.

The efficient functioning of the Occupational Health & Safety Management System at St. Petersburg Vodokanal also includes the employee's health safety management. Programs for disease prevention and health improvement of employees, monitoring of working conditions and health of employees, as well as monitoring of efficiency of implemented measures are an important element of the Occupational Health & Safety Management System.

## The monitoring system includes:

- monitoring of working environment (assessment of sanitary and hygienic conditions of labour, organization of labour and maintaining favourable social-psychological environment at work);

- monitoring of health status of employees (health survey for detection of early symptoms of diseases, biological monitoring, polling of employees).

The international audit carried out in October 2015 confirmed that the Occupational Health & Safety Management System of Vodokanal functioned in compliance with OHSAS 18001-2007 requirements.

Accident prevention made it possible to decrease the number of insurance events per 1000 employees in Vodokanal: Vodokanal's average – 0.63, industry average – 1.22.

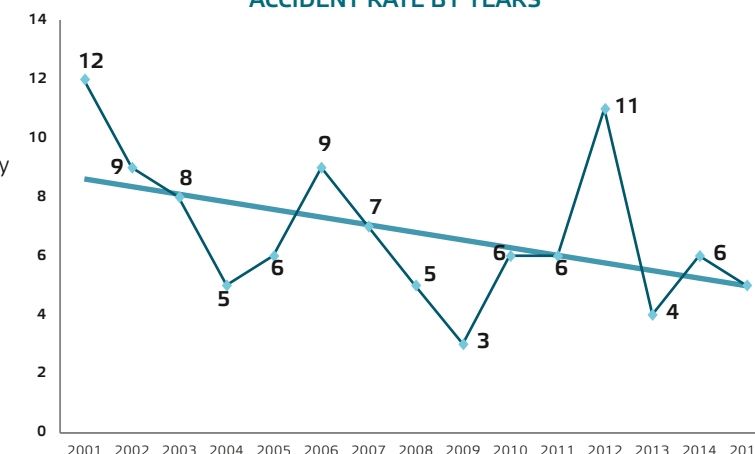
Industrial safety compliance inspection is organized and implemented in the Company in accordance with Article 11 of the Federal Law no. 116-FZ dated 1997 "On industrial safety at hazardous production facilities" and the Rules for Organization and Implementation of Control over Industrial Safety at Hazardous Production Facilities approved by the Decree of the RF Government no. 263 dated 10 March 1999. On the grounds of the Rules, the Company developed the Regulation "On control over industrial safety in the course of operation of hazardous production facilities of SUE "Vodokanal of St. Petersburg" approved by the Director General in July 2014.

The Orders "On control over industrial safety at the hazardous production facilities of the Company" were issued. Action plans are annually developed to ensure compliance with industrial safety requirements in the course of operation of hazardous production facilities. Information about the organization of control over industrial safety is provided to the North-Western Department of Rostekhnadzor. As of December 2015, 43 hazardous production facilities were registered and operated by the Company. Vodokanal operates (III class) hazardous facilities according to relevant licenses issued by the North-Western Department of Rostekhnadzor.

## During 2015, Vodokanal carried out the following activities to achieve the goals of the Occupational Health & Safety Management System:

- working conditions at twenty two production facilities of the Company were improved due to the introduction of the advanced, safe practices and modern technologies that ensured reliable and failure-free operation as well as reduced the rate of injuries and professional diseases;
- monitoring and assessment of safe labour conditions at 1,438 working places of the Company was organized and carried out by way of instrumental measurements of hazardous and harmful workplace factors;
- 100% of employees are provided with personal protective equipment;
- 2,477 employees of the Company underwent training and knowledge checks with regard to occupational health and safety issues.

ACCIDENT RATE BY YEARS





# PERSONNEL

## CREATION OF CONDITIONS FOR EFFICIENT LABOUR, PERSONNEL MANAGEMENT APPROACHES

**Proper selection, rational and efficient use of the personnel targeted for the increase of Vodokanal's effectiveness and customers' satisfaction is achieved through:**

- effective use of the workforce capacities;
- improvement of the personnel development;
- maintenance and development of the workforce capacity;
- increase of the personnel satisfaction.

Engagement of the personnel into active professional work depends not only on the competence of each employee but also on correspondence of the employee's personal interests with the applied strategies and objectives. Opinion of the employees with regard to training opportunities, career growth, optimal working conditions and best ways of achieving the goals is taken into consideration when developing the Company's policy, strategy and plans.

**Personnel management is based on a comprehensive approach with the main focus on the following:**

- effective use of labour resources;
- improve basic remuneration and incentive systems, employees motivation;
- achieve global standards in labour and industrial safety;
- create favorable conditions for labour and recreation, social support to retirees;
- create conditions for professional growth and self-realization of the youth;
- develop consistent system of training, promotion, development and evaluation of employees;
- develop dynamic corporate culture, which facilitates effective interaction of employees and accelerates integration of new assets and employees;
- maintain appropriate age/professional composition of the personnel;
- build-up relations based on social partnership, mutual responsibility and trust.



**THE COMPANY APPLIES A COMPREHENSIVE APPROACH, INCLUDING RECRUITMENT ADAPTATION, TUTORSHIP, CANDIDATES AND NEW EMPLOYEES' APPRAISAL PROCEDURES TO EMPLOY AND SELECT THE PERSONNEL. ONE OF THE KEY AREAS OF WORK WITH PERSONNEL IS FAST ADAPTATION OF NEWLY EMPLOYED PERSONS INCLUDING THEIR PROFESSIONAL DEVELOPMENT AND OPTIMIZATION OF THEIR INTEGRATION INTO THE COMPANY'S SOCIAL ENVIRONMENT. TUTORSHIP PROCEDURE IS SUCCESSFULLY USED TO DEVELOP THE PERSONNEL; IT IS APPLIED TO YOUNG EMPLOYEES AND STUDENTS WHO DO PRACTICAL TRAINING IN VODOKANAL.**

# PERSONNEL RECRUITMENT, MOTIVATION AND APPRAISAL

**One of the key tasks under the personnel recruitment process is implementation of the effective technology of relatively quick search and qualitative selection of all categories of personnel.**

Workforce planning covers a number of goals, the most important of which is the provision of the Company with qualified staff. Developed and reviewed in the course of the workforce planning demand for human resources is the starting point in recruitment and selection of candidates for vacant posts.

Personnel recruitment is performed in compliance with the Company standard "Recruitment and Employment Procedures" and is based on the demand for human resources and applications given by heads of structural units.

Under the recruitment process, work with the internal and external labor market is performed including the internal succession pool. The internal succession pool ensures continuity of the management and mitigates the risk of loss of control in the Company. The succession pool is formed on a regular basis during appraisal and training events in compliance with the standard "Work with Succession Pool". Employees included in the Company's Succession Pool are assessed according to the Company standard "The Personnel Appraisal System".

In October 2015, a new project was launched by the Company – training and appraisal of 148 candidates from the succession pool. Based on the results of the training and appraisal, the individual career plans for 2016 were developed together with the relevant managers.

Modern HR-technologies are used for search and selection of candidates from the external labour market: e-recruitment (web-resources), career fairs, the official Company's web-site, non-specialized print media, targeted training in higher educational institutions.

To form the external succession pool of young experts, the Company organizes pre-graduation practice, on-the-job and introductory training.

Adaptation and tutorship procedures are applied to newly employed persons, which provide for fast and effective entering into the position (profession). To improve employees' professional skills the ongoing from-work-er-to-manager training is carried out.

Tutorship procedure is applied not only with regard to blue-collar jobs but also to higher levels which ensures stable provision of high skilled personnel and reduces staff turnover in the first year of employment.

**THE SYSTEM TARGETED AT HIGHLY-EFFICIENT WORK OF PERSONNEL, CONTINUOUS DEVELOPMENT OF THE PERSONNEL AND INCREASE OF PERSONNEL SATISFACTION INCLUDES BOTH FINANCIAL INCENTIVES (BONUSES, SALARY INCREMENTS, LUMP-SUM REMUNERATIONS, EXTRA PAID HOLIDAYS, MATERIAL AND TARGETED SOCIAL ASSISTANCE) AND NON-FINANCIAL INCENTIVES (RECOGNITION OF PERSONNEL SERVICES, MEDICAL SUPPORT, REST AND RECREATION, CULTURAL EVENTS, INSURANCES FOR EMPLOYEES AND THEIR FAMILIES).**

# ASSESSMENT OF PERSONNEL SATISFACTION

**To determine the level of the personnel motivation and demotivation factors as well as to define potential staff turnover, Vodokanal performs regular assessments of personnel satisfaction.**

It is targeted to:

- increase the employee satisfaction with work;
- decrease the employees' turnover;
- determine motivation preferences of employees;
- identify the main problems of the personnel.

Achievement of these targets leads to creation of the optimal conditions for efficient work of each employee.

To increase the efficiency of work, the assessment of personnel satisfaction is carried out in the form of polling/questionnaire and different sociological surveys focusing of areas of business or on a specific process. The systematic assessment allows to clarify and track down the aspects of Company activities that are appreciated by employees, as well as those that are unpopular, cause discomfort, reduce effectiveness and lead to the loss of valuable specialists.



In 2015, Vodokanal for the first time organized polling survey to monitor the satisfaction of the young blue-collars and white-collars with the obtained professions. The polling was conducted among young employees of Vodokanal (under 35) who work in the Company for not more than 3 years. 44 employees took part in the polling. The polling results show high satisfaction of young employees.



# PERSONNEL TRAINING AND DEVELOPMENT

**All achievements of Vodokanal are based on the competence of the personnel. Therefore, the Company pays special attention to the professional growth on all levels to create and maintain a high level of the personnel proficiency and motivate the personnel to most efficient work with maximum use of employee's potential.**

The Company applies a comprehensive multi-module training programme that makes it possible to adopt the personnel in a short time to changes in legislation and business environment, optimize costs by way of determining exact training needs (with due consideration of the short-term and long-term objectives of the Company) while maintaining the high quality of training.

The training process in Vodokanal is implemented according to the Company standard "System of Planning, Organization and Control of Personnel Training", in compliance with the training schedule for the current year, which is compiled subject to the training needs and yearly applications from the Company structural units.

In each particular case, Vodokanal organizes the training which is optimal in terms of content, scope, duration, cost and other parameters, which is possible due to a flexible corporate training system. Various forms of training are offered: internal and external training, partnership training projects (Water College, International Advanced Water Technologies Centre, and Water Academy), cooperation with scientific institutions and higher educational institutions.

A two-staged professional skill competition is organized by the Company to achieve and maintain high proficiency of the personnel, ensure dissemination of the advanced and innovative working methods and techniques as well as access of the employees to the knowledge and experience accumulated by the Company.

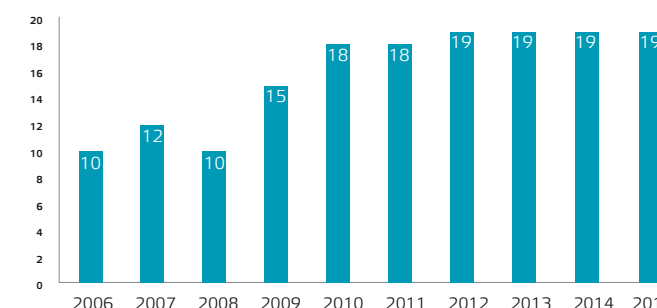
In 2015, 19 final professional skill competitions – "Best Professional" were conducted. 215 people took part in the competitions, 81 employees became the winners. The best spe-

cialists in the following spheres were identified: technicians of chemical and biological laboratories; pump operators; electricians for repair and maintenance of electric equipment; electric and gas welders; operators of excavators and truck-mounted cranes; nurses; drivers; repair and maintenance workers; instrumentation repairmen; operational engineers; specialists for occupational safety, industrial safety and production control; health and safety inspectors. Competitions for environmental management and quality management system auditors were organized. Best emergency repair teams in water supply and wastewater sectors were identified. Moreover, in 2015, Vodokanal representatives participated in interdisciplinary professional skill contests.

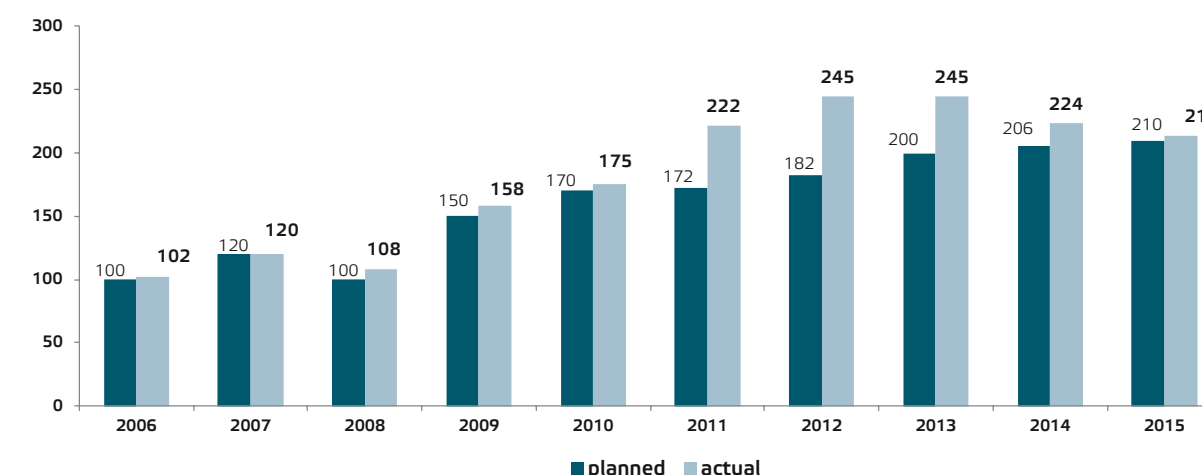
The majority of Vodokanal's professional contests is organized in the Water Utilities Department of the Water College, which is equipped in line with up-to-date requirements and has facilities that comply with difficulty level of professional contests. Professional re-training and qualification improvement of Vodokanal employees are performed at the Water Utilities Department of the Water College.

THE NUMBER OF PROFESSIONAL SKILL CONTESTS "BEST PROFESSIONAL"

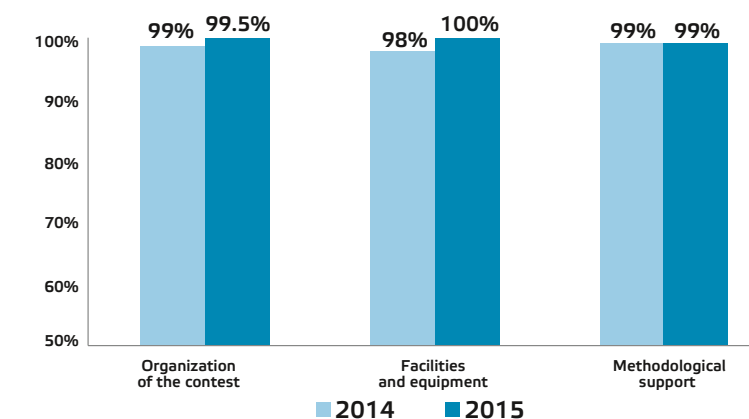
In the framework of cooperation with the Water College, Vodokanal provides hands-on training for the College students. In 2015, 20 students got hands-on training in Vodokanal. In addition, Vodokanal provides training for the College professors, PG students and foremen at the Company's production sites.



THE NUMBER OF CONTEST PARTICIPANTS



SATISFACTION LEVEL OF THE CONTEST PARTICIPANTS



## High level of proficiency of blue collars is confirmed by the awards received by them in the interdisciplinary professional skill contests:

### 1. THE INTERDISCIPLINARY PROFESSIONAL SKILL CONTEST "BEST PROFESSIONAL" AMONG THE WORKERS OF HOUSING AND PUBLIC UTILITIES AND CONSUMERS SECTOR OF ST. PETERSBURG AND THE LENINGRAD REGION (12 MARCH 2015)

3 participants from Vodokanal, one second placed winner – electric welder D.G. Sokolov (Water Supply Directorate).

### 2. CONTEST OF THE AUTHORIZED SPECIALISTS FOR OCCUPATIONAL SAFETY OF HOUSING AND PUBLIC UTILITIES AND CONSUMERS SECTOR OF ST. PETERSBURG (22 APRIL 2015)

1 winner from Vodokanal – K.S. Soboleva (Water Supply Directorate).

### 3. ALL-RUSSIAN CONTEST "RUSSIAN BUILDER-2015" (30 JULY 2015)

**16 participants from Vodokanal, six winners in two nominations:**

- emergency repair team in wastewater disposal – foreman D.V. Chernogryazskiy (Wastewater Disposal Directorate).
- repairman R.V. Bakashkin (Wastewater Disposal Directorate).

### 4. PROFESSIONAL SKILL CONTEST "BEST PROFESSIONAL" IN ROSTOV-ON-DON (15 JULY 2015)

15 participants, 15 winners.

**Best emergency repair team:**

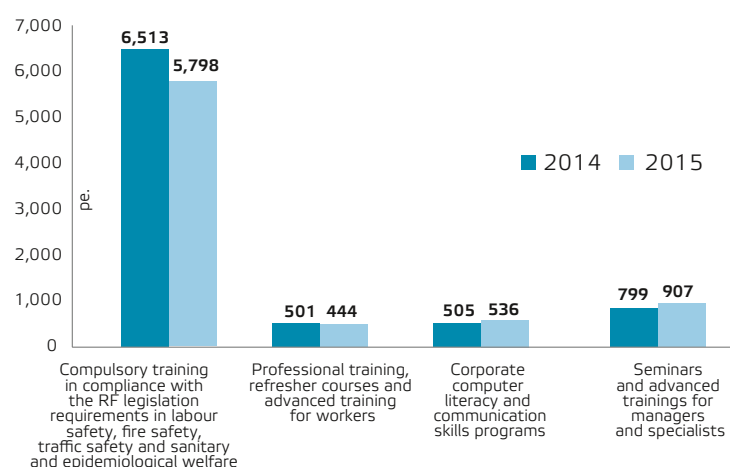
- 1 place – repair team (water supply) foreman A.V. Anokhin.
- 2 place – repair team (wastewater disposal) foreman S.V. Ogorodov.
- 1 place – electric and gas welder (Water Supply Directorate) D.G. Sokolov.

- 1 place – repairman (Wastewater Directorate) D.V. Vasilyev.
- 1 place – driver (Transport and Logistics Branch) V.V. Kolymkov.
- 2 place – electrician (Wastewater Directorate) N.P. Ivantsov.
- 3 place – excavator operator (Transport and Logistics Branch) N.L. Shpak.

### 5. STROYMASTER 2015 CONTEST (11 NOVEMBER 2015)

- 1 place – electricians for repair and maintenance of electric equipment N.P. Ivantsov (Wastewater Directorate).
- 1 place – driver Yu.V. Lebedev (Transport and Logistics Branch, vehicle division no. 2).
- 2 place – crane operator A.M. Polevchuk (Transport and Logistics Branch, vehicle division no. 5).
- 2 place – excavator operator A.M. Shcherbin (Transport and Logistics Branch, vehicle division no. 2).
- 2 place – repairman A.V. Bolshakov (Water Supply Directorate).

DISTRIBUTION OF TRAINEES BY TYPES OF TRAINING



Succession pool establishment is one of the areas of the Company HR-management. Succession pool management is performed in accordance with the corporate standard "Succession Pool Management" and aims at the development and maintenance of the personnel potential. The succession pool comprises the existing succession pool, perspective succession pool and the Talent Group. To develop the capacities of the employees included into the Talent Group, the training courses are organized for such employees in the Succession Pool School.

In order to form the external succession pool, including the search for the talented youth, the Company organizes meetings with the professors of the sector-related leading educational institutions and implements the work practice programme for students. The work practice gives the opportunity for the students to get theoretical knowledge and practical experience, develop professional skills, learn about the advanced production technologies and obtain a unique practical experience. In 2015, practice was organized for 226 students.

The Company creates a favourable training climate and considers the training costs to be investments in the fixed assets leading to optimal use of the employee potential.

In total, 7685 employees were trained in 2015. (Company employees may take several trainings a year).

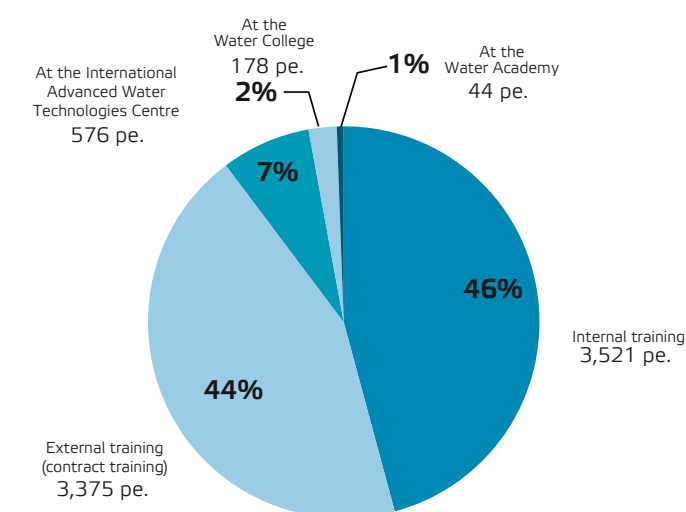
In 2015, 444 Vodokanal employees underwent professional training, refresher courses and advance training for workers, among them 178 persons – at Water College premises.

5,798 employees took training in compliance with the RF legislation requirements in labour safety, fire safety, traffic safety and sanitary and epidemiological welfare of the population.

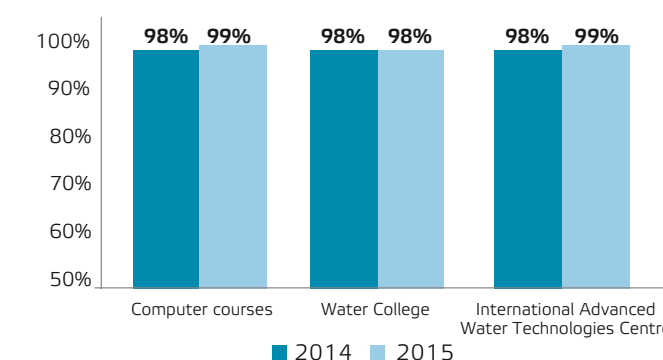
536 persons underwent training in computer literacy and communication skills.

907 persons participated in seminars and advanced trainings for managers and specialists, among them 567 persons took the training course "Advanced water and wastewater technologies" within the frame of the workshop programme of the International Advanced Water Technologies Centre.

DISTRIBUTION OF TRAINEES BY INTERNAL AND EXTERNAL TRAINING PROGRAMMES IN 2015



TRAINEES SATISFACTION WITH EDUCATIONAL ACTIVITIES IN 2015



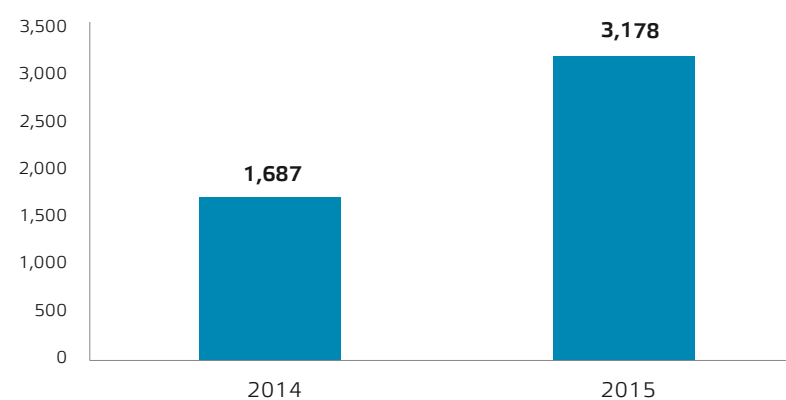


In 2012, Vodokanal began to support the educational initiatives of the personnel, which enabled to optimize the scope of training and gave the opportunity for the employees to show initiative in training (to undergo training on their own and at their own expense):

● Self-education programmes for the Company personnel (18 programmes):

- MS Word text editor – the level 1, 2;
- MS Excel spreadsheets – the level 1,3;
- Basics of the Internet. Email;
- Overview of MS Office software:
- MS Power Point; MS Visio; MS Project;
- Presentations in Power Point and work in Outlook;
- Fundamentals of Information Security;
- Adobe Photoshop graphics;
- 3D modeling in AutoCAD;
- Business Graphics in MS Visio;
- Computer processing of images in Corel-DRAW system;
- Microsoft Access. Database Design;
- MS Access, Basic course;
- MS Office in economic activity;
- Information System (MS Office) for Executives;
- PC Manager;
- Business Statistics and forecasting in MS Excel.

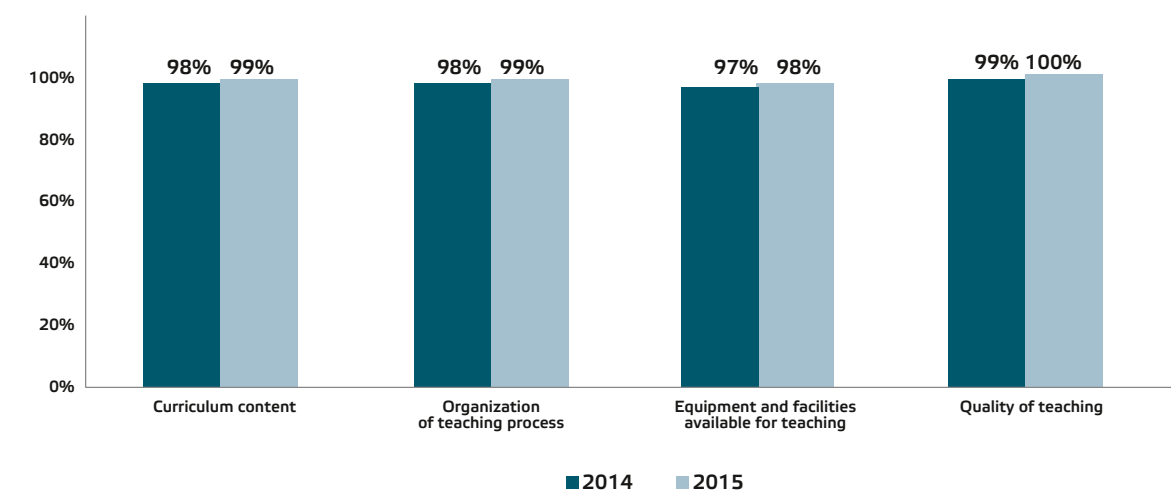
TRAINING UNDER SELF-EDUCATION PROGRAMMES



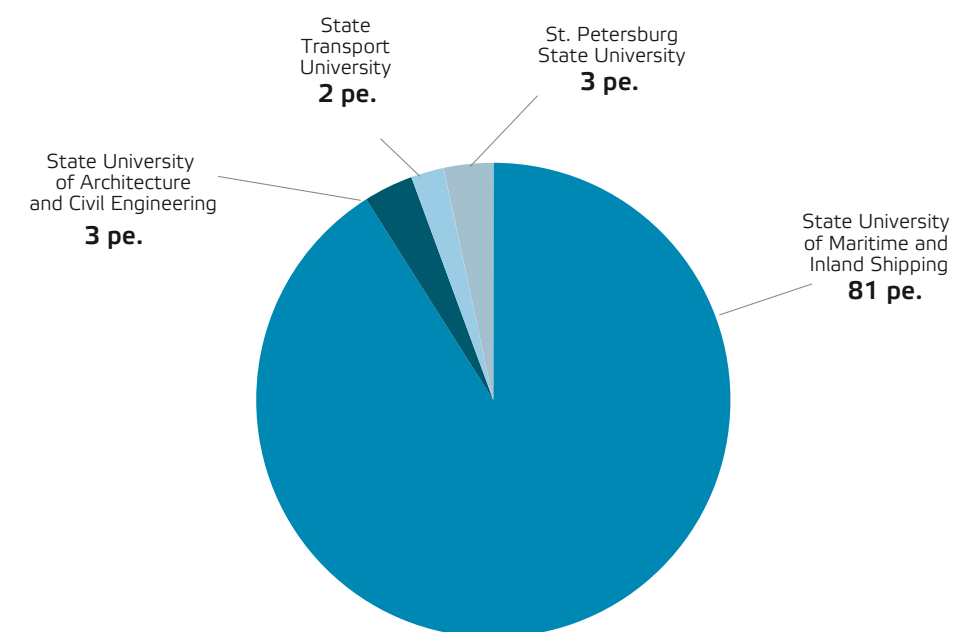
● Commercial computer courses (10 persons underwent training under 7 programmes):

- Work in AutoCAD 2010 System;
- MS Word text editor – Level 1;
- MS Word text editor – Level 2;
- MS Excel spreadsheets – Level 1;
- MS Excel spreadsheets – Level 2;
- MS Excel spreadsheets – Level 3;
- MS PowerPoint presentation program. Basic course.

SATISFACTION SURVEY RESULTS



As of 1 September 2015, 89 people underwent training in four higher education institutions of the city, 17 people are children of the Company's employees. 11 people graduated from higher education institutions in 2015.



To date, Vodokanal focuses on optimization of personnel training, refresher courses and advanced training, improves the personnel

education and development system that is inextricably connected with the sector development strategy in general.

# OUTREACH TO YOUNG EMPLOYEES

**Vodokanal is strongly focused on youth outreach.**

**AS OF 1 JANUARY 2016, THE YOUNG EMPLOYEES NUMBERED 2,714 ACCOUNTING FOR 32.5% OF THE TOTAL VODOKANAL WORKFORCE.**

Vodokanal implements projects aimed at young professionals career development, engagement of talented youth, creation of environment for their professional development and efficient involvement in the Company activities.

**Several projects intended to retain young employees at the Company and ensure their effective adaptation were implemented in 2015:**

- "Welcome to Vodokanal" event for the newly employed young people. The objective is to initiate young employees into the Company history, traditions and innovations, tell them about career opportunities and social programs. Two welcome events for 232 new employees were held in 2015;
- Adaptation and Tutorship procedures. 559 new employees were adapted in 2015. The tutorship procedure was organized for 57 persons;
- The adaptation procedure "Young Specialist's Training" has been organized since September 2015 to introduce young employees to the Company operations. Four groups, 15 persons in each, have been trained.



**Another youth engagement project (the Future Generation Project) covers:**

- outreach to students and graduates of universities and colleges (introduction into practice, on-the-job training, pre-graduation practical training). In 2015, Vodokanal organized on-the-job training for 118 higher school students and 50 students of professional colleges;
- outreach to the Water College students (on-the-job training and job placement for graduates). Twenty-two students received on-the-job training and 32 were employed by the Company in 2015. All in all, 105 Vodokanal employees are graduates of the Water College.

In 2015, fourteen employees under 35 years of age with a five-year record of full-time work with the Company were awarded lapel badges "The Best Young Worker of SUE "Vodokanal of St. Petersburg"", a monetary reward and free vouchers (for each awardee plus one member of his/her family) for a 7-day sojourn at Burevestnik Sanatorium, in recognition of their professional achievements.

Professional development and career advancement are supported by professional workmanship contests where young employees are actively involved, and by programs for young professionals included in the Company's succession pool. Young employees account for 47.3% of the succession pool. The talent pool has 33 young specialists.

The "My Initiative for Vodokanal" project triggered by the Youth Council has begun. It is a competition for the best process improvement initiative proposed by young employees.

One of the events intended to foster employee commitment to the Company is the "Games for the Young" Festival (the fifth festival was held on 17-19 April 2015). The objective of the Festival is to build a corporate spirit among the young, develop a creative networking environment and provide opportunities for detection and development of creative capabilities of the young. 300 people participated in the Festival. The program of events dedicated to the Youth Day (26 June 2015) included a training session in efficient teamwork principles. Young employees – members of the talent group, succession pool, and primary trade union organization's Youth Council, as well as the Company's best workers, 40 persons in total, participated in this event.

Almost 600 persons participated in the meetings between young employees and the Company management organized at all corporate divisions. At the meetings young people could communicate with top managers and ask them different questions in informal surroundings.

The comprehensive training program "Leadership for Trade Union Core Group" for members of the Youth Council launched in 2014 was going on. It included mass sporting events (seasonal sports and tourist rallies, Spartakiads) bringing together many young people, and excursions to the Company's production facilities where young people could learn about the Company operations.

For the purpose of improving the Company image, corporate teams engaged in citywide and national amateur sports championships, in wits & humour competitions for teams representing St. Petersburg companies and organizations, and in the International Best Youth Outreach Contest in the town of Yugorsk where the Youth Council's "Professions in a Big City" Project received a grant in the nomination "Career Guidance".

Young people were involved in thematic events, such as the business game "Feel the Value of Water", environmental quest "Success Is In Your Hands", and intellectual game "Sharp-shooter"; participated in all-Russian, citywide and corporate events, in veteran outreach, and co-organized events dedicated to commemorative dates.

**VODOKANAL'S YOUNG EMPLOYEES PROVIDED SUPPORT TO THE ANNUAL MUSEUMS AT NIGHT EVENT ORGANIZED BY THE UNIVERSE OF WATER MUSEUM COMPLEX IN THE FRAMEWORK OF THE INTERNATIONAL MUSEUM DAY; WERE ACTIVELY INVOLVED IN THE NATIONWIDE ENVIRONMENTAL CAMPAIGN "CLEAN BANKS FOR OUR RIVERS AND LAKES!", AND ACTED AS VOLUNTEER HELPERS FOR POLYANKA ANIMAL SHELTER.**

## Youth Council

Vodokanal's Youth Council supported by the Company management and the primary trade union organization participates in the development and implementation of the corporate youth policy.

The Youth Council unites the young employees under 35 years of age (regardless of their length of service or position) seeking professional and cultural self-development, interested in the discussion of the Compa-

ny-specific challenging issues and willing to disseminate the values and principles followed by Vodokanal.

In particular, the Youth Council engages young employees in the trade union activities and the Company's social life, promotes creative and innovative initiatives of the young, advocates healthy lifestyle, and organizes sporting and cultural events.



# CAREER GUIDANCE

## Career guidance is one of the Company approaches to creation of an external succession pool.

This focus area is supported by Vodokanal's Youth Environmental Centre (YEC) and Museum Complex.

They provide information on Vodokanal activities for staff members and visitors, stir the young people's interest in water-related professions, and foster a responsible attitude to water. Moreover, career guidance is a tool for the Company to create an external succession pool.

In 2015, the Youth Environmental Centre and the Universe of Water museum complex

offered different projects and programs for children and young people to get knowledge about Vodokanal activities, various water treatment and distribution technologies, and environmental aspects of water management.

Every day, the Museum and YEC offer different programs and excursions for students of secondary and higher school aiming to give them understanding of Vodokanal role in the city life, technical, economic and environmental aspects of its activities, and the professions demanded by modern water companies.

### Examples of daily programs are:

Excursions to "The Underground World of St. Petersburg" and to the historical exhibition "The Water World of St. Petersburg" in the Water Tower. Interactive programs: "Water for a Big City", "Water – Yesterday, Today and Tomorrow!", "The City at the Seaside" at the Youth Environmental Centre, etc.

### Targeted projects and career guidance programs have been developed and offered to the city's educational institutions.

**The Engineer's Secret Archive** – a program for 2-6-year schoolchildren. They learn about the engineering solutions used for water treatment and distribution in different historical periods. A special focus is given to advanced technologies. The children use the knowledge and experience they have acquired in game situations, and simulate production processes.

**Success is in Your Hands** – an interactive career guidance game program for high school and college students. The program was developed and tested by the YEC specialists and

Vodokanal's Youth Council at various venues in 2015. In 2016, the program will be replicated during offsite events.

**Awareness-raising of the young through the International Advanced Water Technologies Centre** – a project for high school and college students.

Throughout a school year, senior schoolchildren and students of non-core colleges from St. Petersburg and Lahti (Finland) meet water specialists and learn the best practices used by Russian and Finnish water companies.



Under the project, the students get information about Vodokanal operations, implement their own mini-projects, test water quality, and learn how to mitigate the burden on the Baltic Sea water environment.

The International Centre avails of the wide spectre of resources offered by the YEC, Museum and production facilities of Vodokanal St. Petersburg and Lahti. Every year, the best project participants go on study tours to Lahti where they visit industrial sites and communicate with their peers.

**"Water +"** career guidance project – for 7-11-year school students. Under the project, the students are asked to set up "design bureaus" where they will design water supply and wastewater disposal systems for a hypothetical city. At the first phase, the participants attend training classes at the YEC and excursions at the museum and then present their own projects. Project defense is arranged as a role-playing game where each participant is to obtain approvals for his/her project from several authorities, such as technical directorate, financial directorate, environment protection committee, etc. The project objective is to demonstrate what technical, intellectual and financial resources are required by water operators.

**"My Choice: Knowledge. Profession. Success"** – the career guidance program for students of senior high school and secondary vocational school helps the young people make a sensible and well-thought-out choice of profession and seeks to raise the prestige of engineering and blue collar jobs in the eyes of the young. The program offers the students deeper insight into the existing municipal infrastructure and the public utilities sector, in particular, Vodokanal activities, focusing on its liaison with other businesses and industries; gives the students knowledge about the engineering, blue collar and other professions, requirements to personnel, and career opportunities by the example of the Company's production facilities; demonstrates the importance of good engineering solutions for sustainable use of natural resources (water) in a big city, etc.

The program is implemented using the assets of the Universe of Water museum complex, the Youth Environmental Centre, Vodokanal's production facilities, and the training ground of the Water College. Under the program, students attend an excursion to the Universe of Water Museum, the interactive lesson "Water for a Big City", and an excursion to one of Vodokanal's treatment plants. The final phase of the program offers a simulation exercise "Water and Cities" where the participants design and defend their water supply project for a hypothetical city, and a "Professional Testing" competition at the Water College training ground.

The program format gives the students reliable knowledge of the city infrastructure, offers a chance to visit production facilities, communicate with Vodokanal specialists in different fields, gain practical experience, simulate actions and take decisions in the near-real game environment.

Furthermore, career guidance is one of the Company approaches to creation of an external succession pool.

### Career guidance comprises the following activities:

- Participation of Vodokanal delegates in citywide recruitment fairs;
- Participation of Vodokanal delegates in recruitment fairs organized by vocational or higher schools;
- Participation of Vodokanal delegates in youth career forums;
- Participation of Vodokanal delegates in educational forums and roundtables;
- Meetings with students of secondary vocational schools and undergraduates.

In 2015, Vodokanal participated in 11 of the above events.

**THE KEY OBJECTIVE OF CAREER GUIDANCE IS INVOLVEMENT OF YOUNG PEOPLE IN THE SEARCH FOR THEIR PROFESSIONAL IDENTITY AND ADVOCACY OF THE PROFESSIONS DEMANDED BY THE COMPANY.**

In 2015, for the purpose of career guidance, the Company strongly liaised with the St. Petersburg Labour and Employment Committee and the Committee for Youth Policy and Relations with Public Organizations; had a meeting with representatives of the St. Petersburg Central District Employment Centre where agreements were reached regarding Vodokanal participation in citywide recruitment fairs and career guidance events organized by the St. Petersburg Labour and Employment Committee and the distribution of career guidance materials in the Central District schools.



### The following career guidance projects are being implemented:

1. Specialized department of the St. Petersburg State Technology Institute. The department trains specialists in: "Chemistry and Water Technologies", "Nanoporous sorbent technology for safety products and life support systems".

The department has knowledge and resources for R&D in the field of water, gas and soil treatment for the needs of Vodokanal. In July and September 2015, the Technical Council meetings with participation of the St. Petersburg State Technology Institute and water sector-related higher schools were held where the key R&D areas of interest for Vodokanal were determined.

2. Target groups for training of high professionals at the State Sea and River Fleet University named after the Admiral S.O. Makarov.

In 2015, an intramural target group (20 students in total) was made up of Vodokanal

employees' children (6 persons) and the best graduates of the Water College (14 persons) to study "Environmental Engineering and Water Management".

For the purpose of identifying the best students (not only in the target group but also in other water sector-related groups), a regular meeting with participation of the group mentors decided to organize, starting from 2016, a competition of term and graduation projects on the subjects of interest for Vodokanal.

Moreover, nineteen persons were placed for extramural training (7 of them – in "Environmental Engineering and Water Management", and 12 – in "Civil Engineering") at Vodokanal's expense to upgrade their skills.

In addition to its own projects, Vodokanal annually sends aspirants to job competitions under the federal programme giving them a guarantee of further employment according to the needs.

## PERSONNEL FACTS

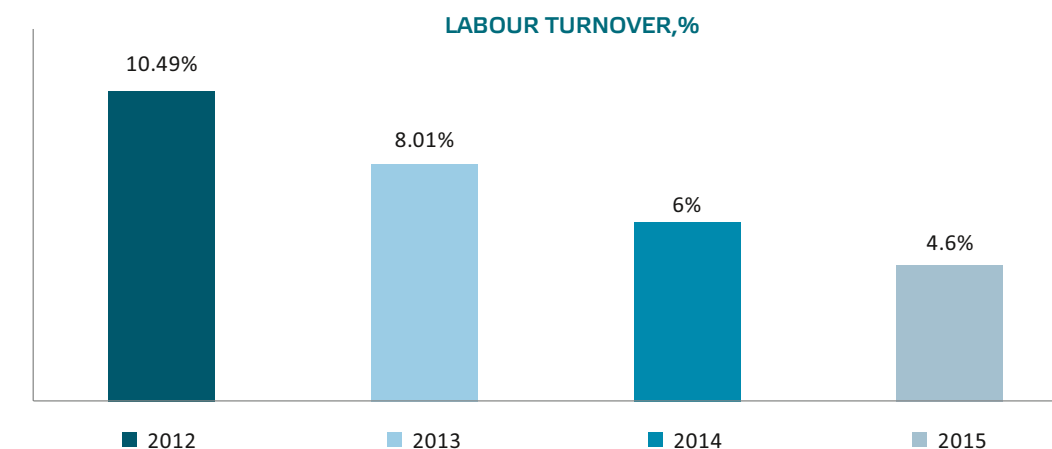
As of 1 January 2016, the actual headcount was 8,514 people.

Blue collars prevail in the staff composition – 51%, the second biggest group is specialists and office staff – 30%, and managers account for 19%. Male personnel accounts

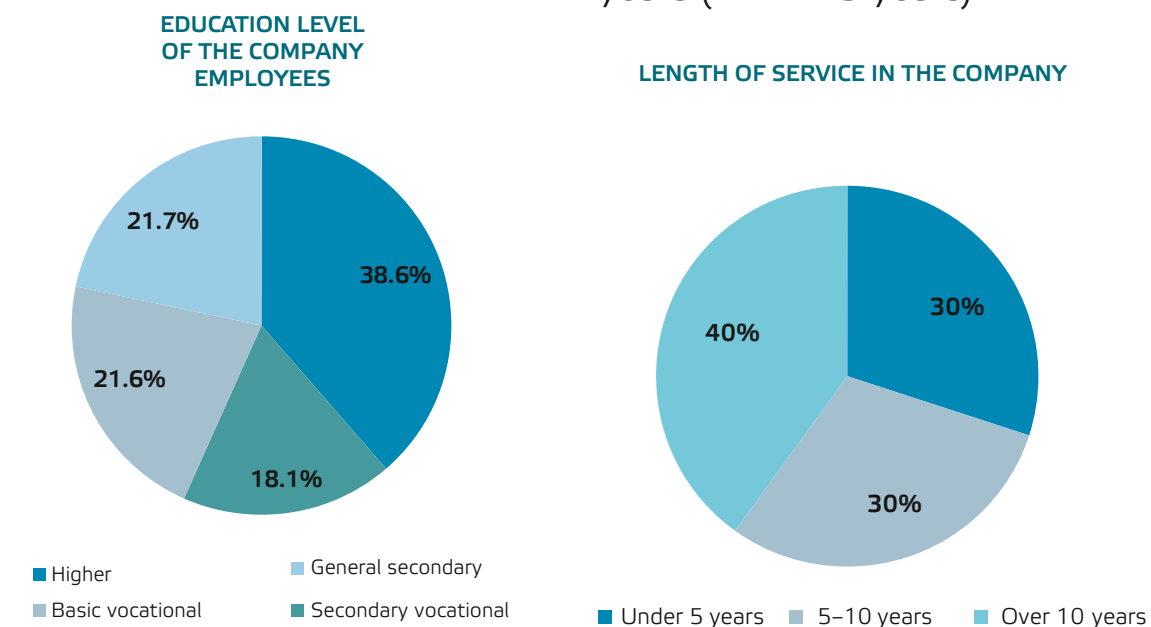
for 61%, female personnel – 39%. Young (under 35) employees are 32.4%.

The average age of the personnel is 44.4 years.

The manpower turnover was 4.6%, the turnover of young employees – 8% in 2015.



38.6% of the Company employees have a college degree; 35 employees hold a Candidate of Science degree, 5 hold a doctorate. Average length of service in the Company – 11 years (in RF – 3 years).





# SOCIAL POLICY AND CORPORATE CULTURE

## SOCIAL POLICY PRINCIPLES

Vodokanal's social policy is an important element of its personnel, production and economic potential.

The social policy takes a special place in motivation and self-expression of the personnel. The social policy is an integral part of the Company's Strategic Plan and it comprises a number of activities targeted to the provision of additional privileges and services to the Company employees.

St. Petersburg Vodokanal improves continuously the mechanisms of social support provided to the Company employees, members of their families and retirees.

The social policy is implemented in accordance with the current law and in compliance with social responsibilities specified in the Collective Agreement for 2014-2016 and regulatory acts of SUE "Vodokanal of St. Petersburg".

### The key principle of the corporate social policy is that of social responsibility according to which the Company:

- builds its strategy with due regard to the interests of the society as a whole;
- complies with the law;
- complies with generally accepted moral and ethical standards;
- respects human rights;
- is committed to ensure a balance of interests of the stakeholders including personnel, consumers and other social groups which are linked in one way or another to the Company's activities;
- considers the interests of future generations aiming at maximizing prudent use of natural resources and improving the living conditions for the population;
- works consistently on ensuring health and safety of the personnel.

The corporate social policy is implemented through social programs that are attractive for the employees and aim at engagement and retention of high-qualified personnel in the Company.

Social programmes are aimed at the reproduction and development of high-quality labour resources, qualified management and corporate culture.

### Major areas of social policy:

- staff development, enhancement of the professional qualification of employees;
- formation of corporate culture;
- improvement of health and organization of recreation activities for the employees and their family members;
- attraction and support of the youth, including educational projects;
- sports programs;
- material assistance;
- assistance to long-service employees;
- implementation of different children's programs.

### In 2015, social support provided to the employees and veterans of labour was as follows:

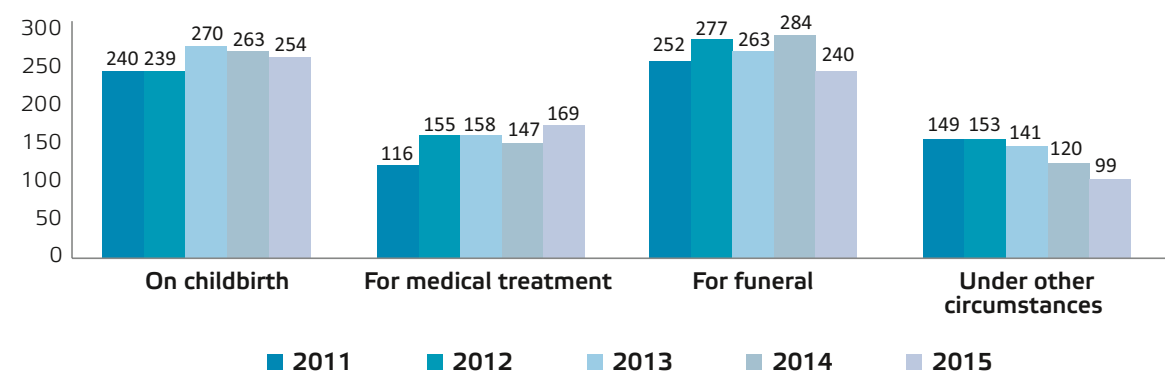
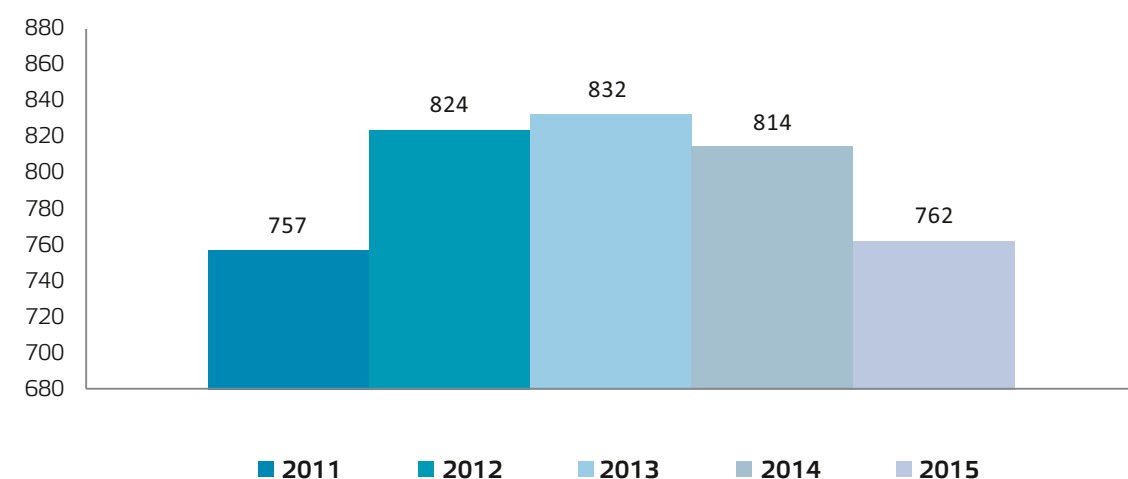
- to employees, who reached jubilee age (50 years) and retirement age (55 years for women and 60 years for men) – 374 people (RUB 13,774,800);
- to employees with an uninterrupted service in the Company for 25, 30, 35, 40 years – 178 people (RUB 14,879,200);
- financial assistance on childbirth – 254 people (RUB 3,840,000);
- financial assistance for medical treatment – 202 people (RUB 2,127,800);
- payments after death of a relative – 284 people (RUB 3,880,100);
- payments in other circumstances – 110 people (RUB 1,015,200);
- targeted material assistance to the war veterans (on the Day of Complete Lifting of the Siege of Leningrad, on Victory Day; to the veterans who served in the Armed Forces during war times the material assistance is provided on a monthly basis) – 322 people (RUB 10,043,000);
- quarterly targeted material assistance to retired employees – 1705 people (RUB 4,774,700).



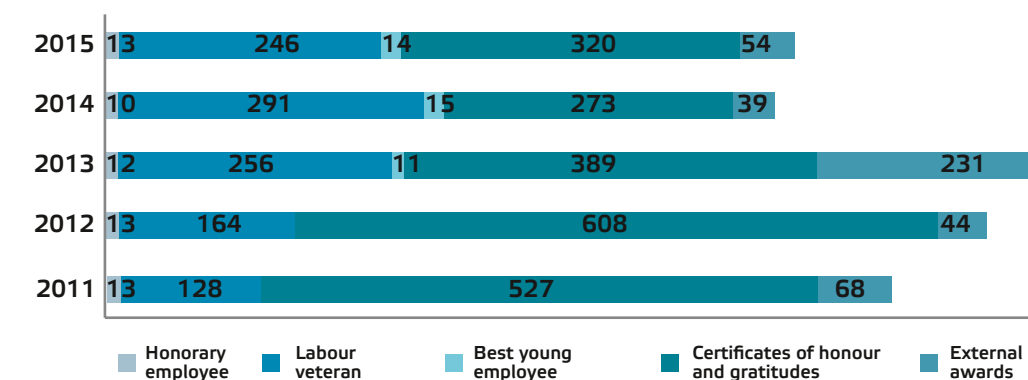
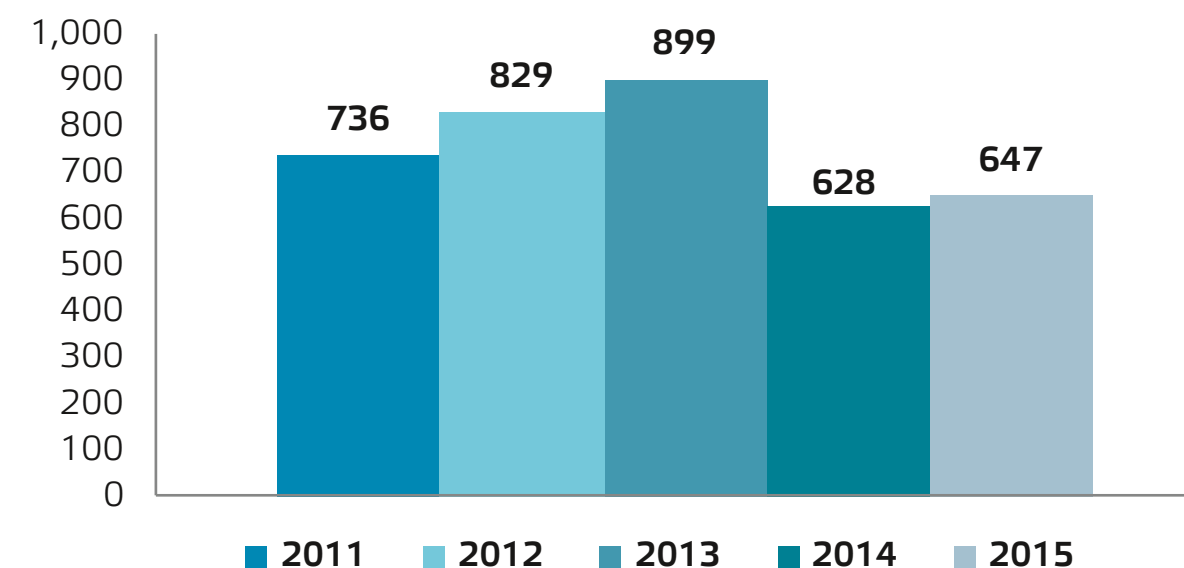
## RECOGNITION OF EMPLOYEES' ACHIEVEMENTS AND CORPORATE AWARDS

**SUE "Vodokanal of St. Petersburg" values its employees and recognizes their contribution to achievement of goals and Company development.**

PROVISION OF MATERIAL ASSISTANCE TO THE EMPLOYEES, PE.



NUMBER OF THE AWARDED EMPLOYEES, PE.





### Awarding the title “Labour Veteran of Vodokanal St. Petersburg”

The title “Labour Veteran of Vodokanal St. Petersburg” is awarded to employees who have the record of service of at least 20 years in the Company. At the same time the winner is awarded a lapel badge and certificate, as well as a money reward in the amount of a month salary.

In 2015, the title “Labour Veteran of Vodokanal St. Petersburg” was bestowed on 246 Vodokanal employees. The total money reward amount was RUB 7,256,600.

### Awarding the title “Honorary Employee of Vodokanal St. Petersburg”

The title “Honorary Employee of Vodokanal St. Petersburg” is bestowed on (at the request of managers and co-workers) the Company employees and other persons for contribution to development of the water supply and wastewater disposal systems of St. Petersburg. The title can be bestowed for development, adoption and implementation of cutting-edge equipment and technologies, application of forms and methods of labour organization leading to a significant economic effect, improvement of the positive image of the Company in Russia and abroad, mentoring, strengthening of corporate culture and high professionalism.

At the same time the winner is awarded a lapel badge “Honorary Employee”

and certificate, as well as money reward.

An Honorary Employee has a right to receive a free voucher to Burevestnik Sanatorium for recreation and resort treatment.

In 2015, the title “Honorary Employee of Vodokanal St. Petersburg” was bestowed on 13 employees. The total money reward amount was RUB 325,000.

### The lapel badge “The Best Young Em- ployee of Vodokanal St. Petersburg”

The lapel badge “The Best Young Employee of Vodokanal St. Petersburg” is bestowed on the employees under the age of 35, who have a 5-year unbroken record of service, for personal contribution to management and production, introduction of modern technologies to water supply and wastewater disposal processes, improvement of the service quality, professional skills promoting the development of Vodokanal, active participation in the social life of the Company.

In 2015, the lapel badge “The Best Young Employee of Vodokanal St. Petersburg” was bestowed on 14 young employees. The total money reward amount was RUB 140,000.

## Corporate prizes and prizes from regulatory and administrative authorities of the Russian Federation and St. Petersburg

**In 2015, 54 employees were awarded departmental prizes as well as prizes from legislative and executive authorities:**

- 2 employees were awarded departmental prizes;
- 43 employees were awarded prizes from executive authorities of St. Petersburg;
- 9 employees were awarded prizes from legislative authorities of St. Petersburg;
- 320 employees were awarded the Vodokanal certificates of honour and gratitude.

The total money reward amount was RUB 1,273,000.

# SOCIAL SUBSISTENCE AND PRIVILEGES OF THE EMPLOYEES

**In accordance with the  
local regulatory acts,  
St. Petersburg Vodokanal  
provided the following  
social privileges in 2015:**



**1. Vouchers to the Company employees and members of their families, former employees to Burevestnik Sanatorium at a partial cost;**

**2. In accordance with the local regulatory acts, free vouchers to Burevestnik Sanatorium were provided to:**

- former employees of Vodokanal – who served in the Armed Forces during the Great Patriotic War;
- employees of Vodokanal – veterans of the Great Patriotic War, residents of besieged Leningrad, homefront workers, former captives of Nazi camps;
- former employees of Vodokanal – veterans of the Great Patriotic War, residents of besieged Leningrad, homefront workers, former captives of Nazi camps;
- former employees of Vodokanal given the title “Honorary Employee of Vodokanal St. Petersburg”;

● employees of Vodokanal given the title “Honorary Employee of Vodokanal St. Petersburg”;

● employees of Vodokanal recognized as exposed to radiation after Chernobyl Accident;

● employees of Vodokanal recognized as combatants under the law of the Russian Federation;

● employees of Vodokanal who had serious illnesses and operations and needed health improvement and rehabilitation as certified by the dispensary department of Vodokanal’s Medical Centre;

● employees of Vodokanal being single parents (the voucher is provided to children and a parent subject to the relevant average salary);

● employees of Vodokanal with two or more children (free voucher is provided for children excluding the elders child).

**3. Public catering at preferential prices.**

# ORGANIZATION OF RECREATION FOR THE COMPANY EMPLOYEES AND MEMBERS OF THEIR FAMILIES

One of the social policy priorities of St. Petersburg Vodokanal is organization of recreation and health improvement for the employees and members of their families, promotion of healthy lifestyle, development of dynamic corporate culture, corporate integrity, strengthening of interpersonal relations and friendship among staff members.

To implement these goals of the social policy, the Centre for Implementation of Socio-Economic Programmes (the Company's branch) was established in 2008. The activities of the Centre are targeted to:

- increase the labour productivity and social protection of the personnel by way of implementing the adopted social programmes aimed at satisfying the needs of the employees with regard to comfortable working conditions, public catering and prevention of professional diseases;
- satisfaction of employees working in harmful conditions in terms of provision of a high quality rehabilitation and recreation opportunities;
- creation of conditions and satisfaction of needs in terms of a proper recreation and health improvement for the employees and members of their families in Burevestnik Sanatorium;
- creation of a positive image of the Company as socially responsible, technology intensive and most advanced company in the sector.

## Major performance criteria of the Centre for Implementation of Socio-Economic Programmes are as follows:

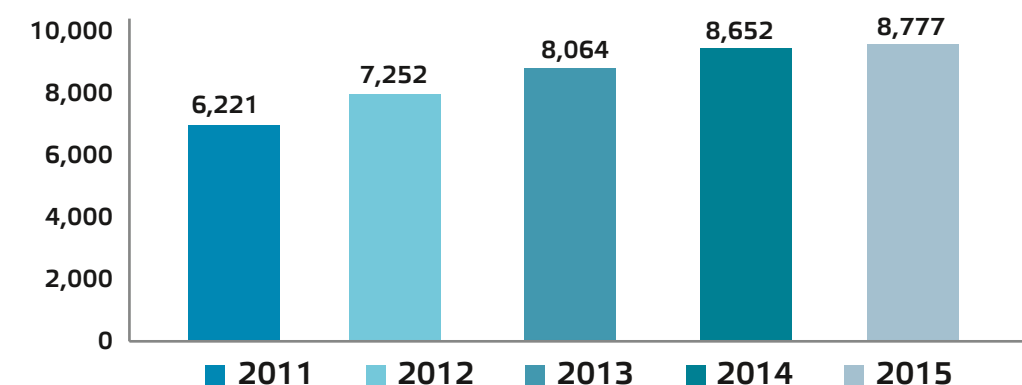
- 1) satisfaction with organization of recreation and health improvement for the personnel (92% in 2015);
- 2) satisfaction with public catering – 91%.

**BUREVESTNIK SANATORIUM – A COMFORTABLE, MODERN RECREATION AND REHABILITATION FACILITY WHICH IS LOCATED NEAR THE TOWN OF LUGA (THE LENINGRAD REGION) AND CONSISTS OF THREE SITES: BUREVESTNIK, OMCHINO AND ZVYOZDIY. THE TERRITORY OF BUREVESTNIK IS GUARDED AROUND-THE-CLOCK. THE ROOMS ARE COZY AND COMFORTABLE.**

Due to a well-developed infrastructure, the sanatorium offers a wide range of modern recreation and health improvement services. Holiday-makers can use swimming pools, Finnish sauna and Russian steam room, fitness facilities, gym, tennis courts, outdoor playgrounds for badminton, volleyball and basketball. There is a library, a café, cinema and concert hall. A multi-functional sports complex is also available for the holiday-makers with a gym, rooms for ping-pong, billiard, two swimming pools and a dancing floor. There is a zoo and a horse riding centre in the sanatorium.

**8,777 EMPLOYEES WERE ACCOMMODATED IN BUREVESTNIK IN 2015, WHICH IS 2% MORE THAN IN 2014.**

NUMBER OF SANATORIUM GUESTS



In the territory of Burevestnik there is a modern Medical Centre. The diagnostics division of the center applies new methods of prevention, diagnostics and treatment of different types and forms of diseases. In 2015, 255 health care vouchers were given to the employees and retirees (participants and veterans of the Great Patriotic War, residents of besieged Leningrad, homefront workers, former captives of Nazi camps).

A package of recovery treatment programs and diagnostic techniques is developed and implemented for Vodokanal employees working in harmful and hazardous labour conditions. Such employees are provided extra leaves (over-leaves set forth by the legislation of the Russian Federation). 164 Vodokanal employees spent their rehabilitation holidays in the sanatorium in 2015.



DURING SCHOOL HOLIDAYS THE COMPANY ORGANIZES RECREATION FOR THE CHILDREN OF THE EMPLOYEES IN ZVYOZDNY CHILDREN'S HEALTH CAMP. ALL THE CONDITIONS FOR CHILDREN (COMFORTABLE AND SAFE ACCOMMODATION, LEISURE AND COGNITIVE ACTIVITY) ARE ARRANGED IN ZVYOZDNY. THE CAMP TERRITORY IS GUARDED AROUND-THE-CLOCK AND ILLUMINATED AT NIGHT; DAY-AND-NIGHT VIDEO MONITORING IS PROVIDED. THE CAMP HAS ITS OWN FIRE STATION. THE FIRE STATION HOSTS REGULAR TRAINING LESSONS FOR CHILDREN WHO SPEND THEIR HOLIDAYS IN ZVYOZDNY DEDICATED TO THE BASICS OF FIRE SAFETY.

Each session in the children's health camp has its tailor-made programme targeted to a comprehensive development of the youth. A well-developed infrastructure of the camp keeps the children entertained. It includes:

- 1) The multipurpose sports facilities:
  - gyms: volleyball, basketball, mini football;
  - tennis and ping-pong;
  - gymnastics, trampoline and fitness facilities;
  - swimming pools for adults and children;
  - computer class;
  - classrooms for arts clubs;
  - discotheque;
  - library;
  - winter garden.

- 2) The indoor riding hall for horseback riding under the guidance of instructors. Children are given a full set of equipment.
- 3) Open playgrounds with up-to-date floors for playing tennis, ping-pong, basketball, volleyball, badminton and football.
- 4) The Svinechnoe Lake with comfortable beaches and bathing places for children.
- 5) The cinema and concert hall.
- 6) The zoo where you can find a family of camels, a brown bear, ostriches, peacocks, pheasants, mandarin ducks, Barbary wild sheep, donkeys, reindeers and a silver fox in open air enclosures.
- 7) The petting zoo for children to take care of hamsters and chinchillas and to explore the natural diversity of the Luga Region under the supervision of specialists.

Qualified teachers make children's leisure activities interesting and informative. Children participate in theme-based programmes and excursions.

In 2015, the programme devoted to the Year of Literature in Russia was implemented in Zvyozdny children's health camp. The objective of the programme was to unlock the creative potential of each child by involving the child into learning and entertaining activities and satisfy the child's need in personal fulfilment and recognition of personal pertinence by other programme participants.

1,219 children of school age (6–15 years old) spent their holidays in the camp in 2015.



In 2015, the following events were held in Burevestnik Sanatorium:

- **From 27 February till 1 March** – traditional winter championship for Vodokanal teams. Ten teams took part in the competition which accounted for about 400 people.
- **From 3 till 5 April** – the Festival “Family Games” was held in Zvyozdny. About 300 people took part in the event.
- **From 17 till 19 April** – the Festival “Youth Games”. Young employees, members of jury and, of course, fans came to Luga totaling about 300 people.
- **From 22 till 24 May** – The sports competition with the participation of sportsmen from the Society of Sports and Physical Training “Rossiya” was held in Zvyozdny. Vodokanal team consisted of 40 employees.
- **From 28 till 30 August** – traditions XIX summer competition was organized in Zvyozdny. 9 teams, fans, the Company top management, jury members (totaling over 450 people) came to Luga.
- **From 4 till 6 September** – the first summer competition “Uniting Energy” was organized in Burevestnik. The vice-governor I.N. Albin was the initiator of this sports event. The sports competition was organized by the Committee for Energy and Engineering Support and Vodokanal. Thirteen teams made up of the representatives of executive bodies took part in the competition. In addition to the representatives of the city committees subordinated to I.N. Albin, teams made up of administration of the vice governor, Housing Committee and the Committee for Municipal Improvement took part in the competition. As a result, aver 500 people came to participate in the sports event.

YEARLY, SPARTAKIADA GAMES, FESTIVALS AS WELL AS TRADITIONAL WINTER AND SUMMER COMPETITIONS ARE ORGANIZED FOR THE COMPANY EMPLOYEES IN THE TERRITORY OF BUREVESTNIK SANATORIUM. THESE EVENTS INCLUDED INTO THE CORPORATE PROGRAMME FOR HEALTH IMPROVEMENT AND SPORTS PROMOTE DEVELOPMENT AND MAINTENANCE OF HEALTHY LIFESTYLE, CORPORATE INTEGRITY, STRENGTHENING OF INTERPERSONAL RELATIONS AND FRIENDSHIP AMONG STAFF MEMBERS.

To strengthen the international relations among water companies, from 20 till 22 November Vodokanal organized the sports contest “Fellowship” in Burevestnik. About 250 people took part in the events including teams from:

- SUE “Vodokanal of St. Petersburg”;
- MUP “Vladimirvodokanal”;
- MP “Vodokanal of the town of Ryazan”;
- OAO “Nyzhegorodskiy Vodokanal”;
- MUP “Novgorodskiy Vodokanal”;
- MUP Vodokanal of the town of Cherepovets;
- OOO “Aleksandrov Vodokanal”;
- AO “Vodokanal of the town of Yakutsk”;
- MP “Vodokanal of the town Velikie Luky”;
- AO “Leningradskie oblastnye kommunalnye sistemy”.

NUMBER OF PARTICIPANTS IN THE EVENTS ORGANIZED BY THE COMPANY

EVENT	2011	2012	2013	2014	2015
Winter sports competition		380	400	400	400
“Youth Games” Festival	300	291	300	300	300
“Family Games”			200	350	300
Summer sports competition	500	700	700	700	450
“Fellowship” contest	350	200	250	250	250

# HEALTHCARE, MAJOR PARAMETERS

**St. Petersburg Vodokanal has a system of medical care aimed at maintaining professional health and longevity, reduction of industrial injuries and days away from work, improving the quality of life of employees and members of their families.**

The medical care is provided for the Company employees by the Medical Centre Branch, which mission is the provision of high quality medical services.

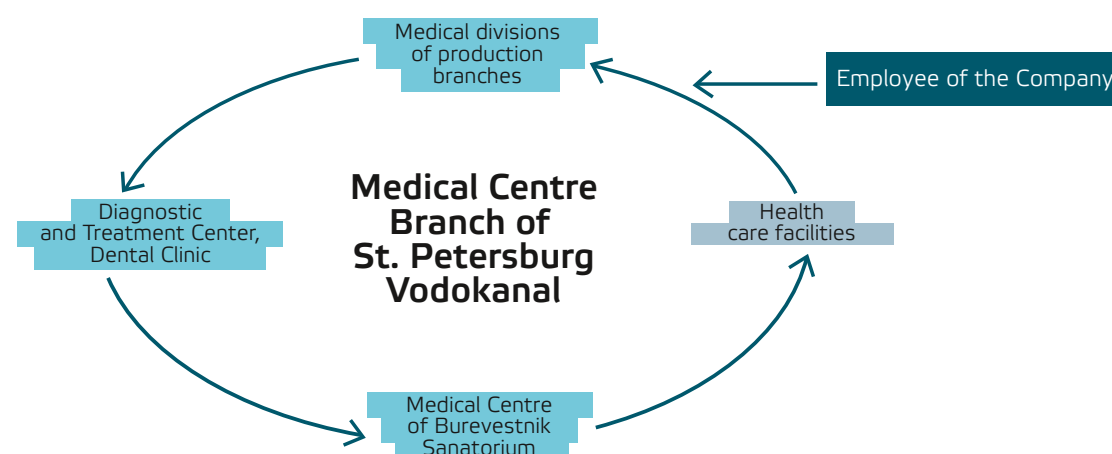
**THE BRANCH STAFF CONSISTS OF 54 NURSES OF HIGHER CATEGORY AND 53 PHYSICIANS (12 CANDIDATES OF MEDICAL SCIENCES, 6 DOCTORS OF MEDICAL SCIENCES AND 4 PROFESSORS).**

**Currently, the structure of the Medical Centre Branch includes the following units:**

- Diagnostic and Treatment Centre;
- Dental Clinic;
- Medical divisions of the production branches (11 health posts and 28 rooms for pre-trip medical examination of vehicle drivers);
- Medical Centre of Burevestnik Sanatorium.

Such structure of the medical Centre Branch enables to establish the model of medical care which includes the occupational medicine, up-to-date outpatient care, high-technology methods of diagnostics, recreation and rehabilitation facilities.

**MODEL OF MEDICAL CARE IN ST. PETERSBURG VODOKANAL**



A distinctive feature of the occupational medicine in the Company is the integrated approach, focus on preventive measures and continuity at all stages of medical care from preliminary medical examinations for new employees, periodic medical examinations, outpatient observation, vaccination, outpatient treatment to medical rehabilitation.

In 2015, about 8,400 employees received with medical services. Over 315,000 medical services were provided by the branch divisions.

An important activity of the Medical Centre Branch is a long-term follow-up care which includes regular medical check-ups with health screening and preventive and curative interventions in case of socially significant diseases. Timely identification of such diseases allows providing proper medical care to the group of patients to prevent dangerous complications. In 2015, regular medical check-ups and periodic and preliminary medical examinations were conducted in accordance with the set performance indicators of the branch.

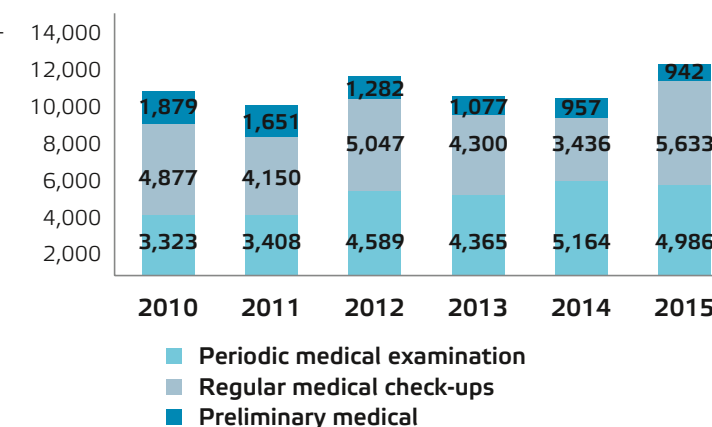
For the purpose of preventing tuberculosis and for early detection of respiratory diseases, all employees of the Company undergo diagnostic testing of the chest (photofluorography, X-ray, computer tomography).

The Company has established and constantly uses the system of pre-trip and post-trip medical examinations for vehicle drivers. To ensure high availability and efficiency of medical service, the health posts and medical rooms are located at large production facilities of the Company in different city districts, thus the medical service is pushed ultimately closer to production facilities. In 2015, more than 384,000 medical examinations of vehicle drivers were made.

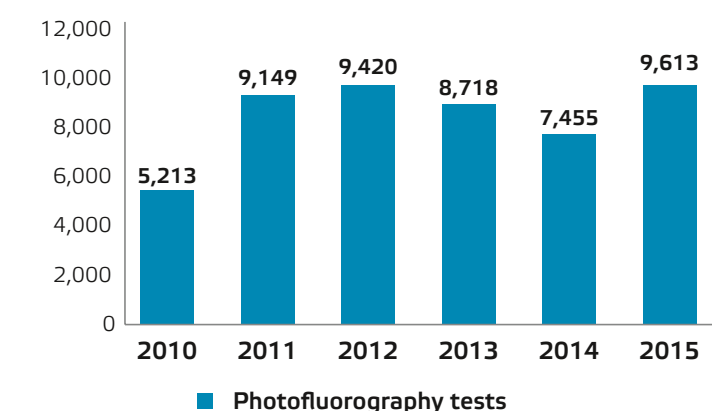
An important area of healthcare work of the Medical Centre is the conduction of mandatory vaccination and revaccination of the Company employees attributed to the decreed categories.

Regular vaccination made it possible to achieve a zero disease rate of typhoid fever and viral hepatitis A over the period of 10 years.

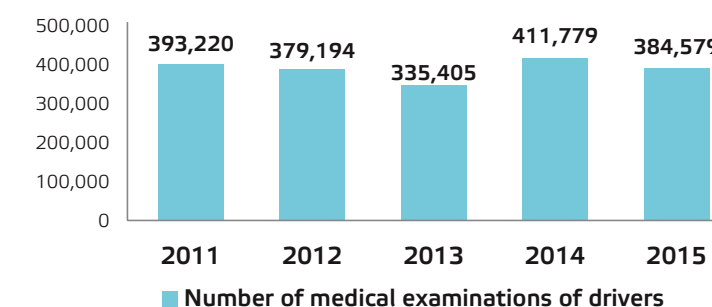
**NUMBER OF EMPLOYEES WHO UNDERWENT REGULAR MEDICAL CHECK-UPS AND PERIODIC AND PRELIMINARY MEDICAL EXAMINATIONS**



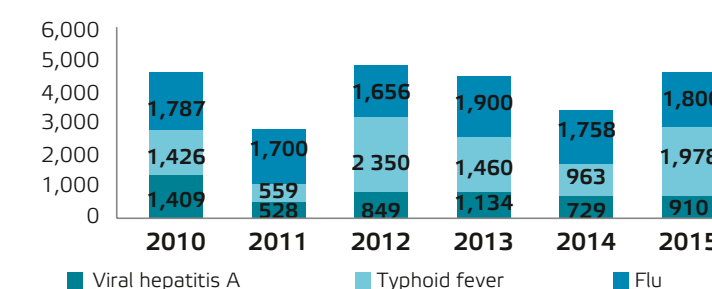
**NUMBER OF PHOTOFLUOROGRAPHY TESTS MADE**



**NUMBER OF PRE-TRIP AND POST-TRIP MEDICAL EXAMINATIONS MADE**



**NUMBER OF VACCINATIONS AGAINST VIRAL HEPATITIS A, TYPHOID FEVER AND FLU**

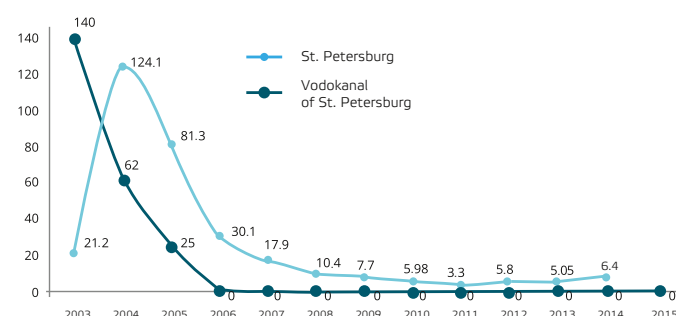




# SUPPORT OF SPORTS

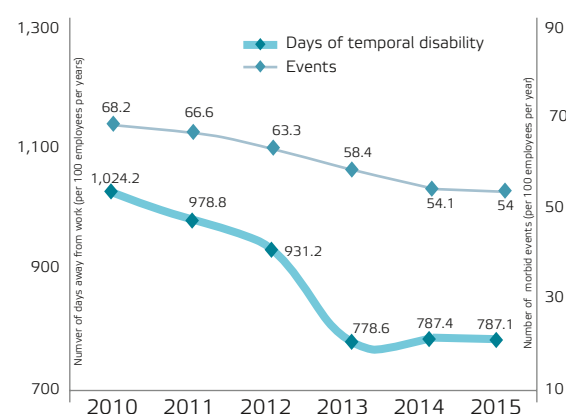
The disease rate of viral hepatitis A by years is shown in the diagram below.

**DISEASE RATE OF VIRAL HEPATITIS A**



Successful functioning of the medical care model makes it possible to evaluate the health condition of the employees and draw a conclusion on positive downward trend in morbidity with temporal disability. Since 2010, the quantity of morbid events and days away from work has decreased by 21% and 23%, respectively.

**MORBIDITY WITH TEMPORAL DISABILITY  
(PER 100 EMPLOYEES PER YEAR)**



The performance of the Medical Centre with regard to the maintenance of health of Vodokanal employees can be assessed by such an important indicator as the percentage of healthy and apparently healthy people (I-II health groups). In St. Petersburg Vodokanal this indicator accounts for 40%.

An important element of the medical care system of the Company is a common information space which includes a single medical information system, electronic medical (patient) charts, system of pre-trip and post-trip medical examinations for vehicle drivers, automated system for collection and processing of managerial and financial reports and telemedicine network for video consultations with physicians at a distance.

In 2015, the Medical Centre continued to register and issue electronic medical charts, which e-memory enables to process and store medical reports, results of instrumental examinations and clinical-laboratory analyses.

The Medical Centre established a unique database on the grounds of the single medical information system which made it possible to analyze the health condition of a substantial social group of the population – over 180,000 people (employees of the Company, members of their families and city inhabitants). In 2015, the Center launched the upgrading of the single medical information system. Today, any physician can use electronic medical charts and obtain necessary information about the patient. Through the use of this system the Center exchanges information with the Territorial Compulsory Medical Insurance Fund. Data from this information system forms the basis for statistical reporting provided to the St. Petersburg Public Health Committee and Rosstat. The confidentiality of the personal data of patients is maintained.

In 2015, the refurbishing of the Medical Centre divisions with new medical equipment continued.

In 2015, staff members of the Medical Centre participated in workshops and conferences to exchange knowledge and adopt best practices. The training course under the topic “Health Management. Occupational Medicine” was organized for top-managers of health clinics from different cities and towns of Russia at the premises of the Diagnostic and Treatment Centre.

**TODAY, THE MEDICAL CARE MODEL OF THE COMPANY IS FORMED ON SCIENTIFIC PRINCIPLES OF THE ORGANIZATION BASED ON THE INTRODUCTION OF INNOVATIVE TECHNOLOGIES FOR OPTIMAL USE OF HUMAN AND FINANCIAL RESOURCES.**

**Implementation of a comprehensive corporate health improvement program and arrangement of sports events contribute to the development and support of healthy lifestyle, corporate integrity, strengthening of interpersonal relations and friendly ties.**

Spartakiada games, festivals and traditional winter and summer competitions are held annually for Vodokanal employees in Burevestnik Sanatorium.

**In 2015, the following events took place in Burevestnik Sanatorium:**

- Vodokanal winter sports competitions with the participation of over 500 employees;
- sports contests “Fellowship” of the Russian water companies with the participation of teams from Nizhny Novgorod, Cherepovets, Vologda, Velikiy Novgorod, Vladimir, Ryazan, Yakutsk, Vilikie Luky as well as the partner-companies (over 250 people in total);
- the festival “Family Games” with the participation of around 350 people;
- the Youth Games Festival allowed more than 300 young employees to demonstrate their sports achievements;
- Vodokanal summer sports competition with the participation of over 600 employees.

Sports events are one of the most important elements of Vodokanal corporate life. Sports grounds, gyms and swimming pools are rented for sports activities and physical training. The trade union of Vodokanal leases 12 swimming pools in different districts of the city attended by more than 900 employees of the Company. Vodokanal has permanent sports teams in volleyball, football, table tennis, swimming, ski race and a football team of Vodokanal veterans.

Vodokanal teams took part in sports competitions arranged by the Society of Sports and Physical Training “Rossiya” (1st place winner), the Interregional Trade Union Committee (1st place winner), the Central District of St. Petersburg (2nd place winner).

**In 2015, Vodokanal employees also participated in the following sports activities:**

- Mini Football Cup organized by Head of the Central District;
- Friendship Mini Football Cup organized by the Central District;
- Mini Football Championship among veterans;
- Russian Kayak and Canoe Paddling Championship among veterans;
- 1st League City Football Championship;
- Volleyball Championship (amateur league).

The major event of 2015 was the success of Vodokanal sports teams at the All-Russian championship among production companies in the town of Penza.

**VODOKANAL ST.PETERSBURG ORGANIZED SPORTS COMPETITIONS FOR THE COMPANY BRANCHES IN 15 KINDS OF SPORTS. OVER 1,000 EMPLOYEES PARTICIPATED IN SUCH COMPETITIONS.**

**To develop further sports events and health improvement activities, Vodokanal defined the following tasks:**

- 1. Optimize the system of sports and physical training events; promote healthy lifestyle:**
  - increase the number of events;
  - implement innovative forms of events;
  - organize new sports events and competitions.
- 2. Develop further the infrastructure for sports and physical training.**

# PRINCIPLES AND INSTRUMENTS OF THE CORPORATE CULTURE DEVELOPMENT

Interaction with staff members is an important component for the strengthening and development of Vodokanal corporate culture and is implemented through a multilevel system of internal communications including:

● **REGULAR MEETINGS OF THE STAFF MEMBERS WITH THE COMPANY TOP MANAGEMENT TO INFORM THE STAFF ABOUT THE FUTURE COMPANY DEVELOPMENT.**

In December 2015, the Director General of St. Petersburg Vodokanal Felix Karmazinov met with young employees including the Youth Council of the Primary Trade Union Organization. Regular meetings are held with the participation of the top managers of the production branches and the production branch personnel. Official awarding ceremonies are organized to congratulate the staff members with the honorary titles. The honorary title "Labour Veteran of St. Petersburg Vodokanal" is awarded to blue collars and technical engineering personnel for introduction of cutting-edge technologies in water supply and wastewater disposal, contribution to the improvement of the service quality, performance of nature conservation activities, implementation of the environmental policy and active participation in the public life of the Company.

To maintain efficient interaction of the Company top management with personnel and to solve promptly the pressing issues, Vodokanal organizes reception days for staff members to discuss personal matters. There is a special section on the corporate portal of the Company (vodokanal-info), where you can find the schedule of reception days and contact telephone numbers. On the corporate portal there is a feedback form by means of which you may pose a question to the Director General or directors of relevant branched and departments.

● **"VODOKANAL NEWS" CORPORATE NEWSPAPER**

"Vodokanal News" Corporate newspaper has been issued since 1998. This newspaper has a circulation of 4 000. The main feature of the newspaper is devoted to operational and social issues. For instance, in April 2015 the newspaper issue was devoted to the 70th Anniversary of the Great Patriotic War. According to the tradition, each newspaper issue contains information about professional contests, medical care, personnel insurance and congratulations of the staff members with anniversaries. "Vodokanal News" informs also about the organized corporate events including sports competitions, "Welcome to Vodokanal!" event, exhibitions of creative works made by the Company employees and members of their staff.

In 2015, persons responsible for recreation services drew up a list of questions from Vodokanal employees relating to recreation services in Burevestnik Sanatorium and Zvyozdny children's health camp. Answers to the questions were given by representative of the Centre for Implementation of Socio-Economic Programmes and the Medical Centre Branch. They were published in the special section of the corporate newspaper "Recreation activities in details" devoted to Burevestnik Sanatorium in September and October.

In summer, the newspaper office conducted the opinion survey among the Company staff members with regard to the content and design of the newspaper. The employees approved the current newspaper design and proposed some new sections. As a result, new sections were introduced into the newspaper: "Learning English" and "Put out your paw, my friend!"



● **INTERNAL CORPORATE PORTAL – VODOKANAL-INFO**

The corporate portal (vodokanal-info) was established on 19 May 2011. Every employee, who has a computer, has access to the corporate portal. The portal provides regularly updated information about Vodokanal, news, announcements, congratulations of the staff members. Photo albums from corporate events and production facilities and videos are posted on the portal. Corporate newspaper makes references to the corporate portal which contains more photos and videos related to the topics covered by newspaper articles.

Portal contains information about the work of the Primary Trade Union Organization, the Youth Council and the current Collective Agreement.

Vodokanal-info portal offers information about the provided medical services, current insurance programmes, recreation services for employees and members of their families, physical training and sports activities, contact details of persons responsible for social activities in relevant divisions and branches.

The internal corporate portal is integrated with the information system of the Company and all external Internet resources ([www.vodokanal-museum.ru](http://www.vodokanal-museum.ru), [www.vodokanal-zagorod.ru](http://www.vodokanal-zagorod.ru), [www.vodokanal-ecocenter.ru](http://www.vodokanal-ecocenter.ru), [www.med-vdk.ru](http://www.med-vdk.ru)), as well as web-sites of the partners ([www.da-voda.com](http://www.da-voda.com), [www.balticseal.org](http://www.balticseal.org)).

## Social networking

In April 2015, Vodokanal opened its official accounts in popular social networks – VKontakte and Facebook. The Company' pages in social networks are one of the instruments for developing corporate communication system and maintaining trust and open relations among staff members.

Opening of the public pages in VKontakte and Facebook was considered as an additional opportunity to inform the public about the Company news, programmes and exhibitions of the Universe of Water Museum, recreation offers from Burevestnik Sanatorium and Zvyozdny children's health camp.

News about Help the Pinnipeds Project, work of the Baltic Ringed Seal Foundation, the warning about the closedown or limiting of traffic due to the repair works; stories about staff members, their work and achievements are regularly posted in the social network. The stories about staff members are focused not only on the best performers but also on family dynasties, long-service employees and young employees who just start their career in the Company. Videos and photographic reports telling about different professions are made and results of the professional skill competition "Best Professional" are posted to enhance the prestige of the blue collars.

As of the end of 2015, over 900 users of social network (more than 600 users in VKontakte and more than 300 users in Facebook) were subscribed to Vodokanal news.

**The Centre for Implementation of Socio-Economic Programmes regularly conducts opinion surveys to find out the opinion of staff members about the quality of the following services:**

- public catering at the Companies facilities;
- recreation services in Burevestnik Sanatorium;
- recreation services in Zvyozdny children' health camp.

**On the grounds of the obtained data:**

The Company develops and fulfils the action plan on eliminating the drawbacks and implementation of the suggestions made.

Information about Burevestnik Sanatorium is posted on the website – [www.vodokanal-zagorod.ru](http://www.vodokanal-zagorod.ru) and the internal Internet portal. Information about recreation services in Burevestnik Sanatorium and Zvyozdny children' health camp is regularly published in the corporate newspaper "Vodokanal News" and social networks. Staff members receive the information by e-mail.





## TARIFF POLICY

# LEGAL FRAMEWORK FOR TARIFF REGULATION

**In 2015, the tariff policy of St. Petersburg Vodokanal in water supply and wastewater disposal was governed by the established in 2014 system of main normative legal acts:**

- the Federal Law no. 416-FZ “On Water Supply and Wastewater Disposal” dated 7 December 2011 (hereinafter, the Water Supply and Wastewater Disposal Law);
- the Resolution of the Russian Federation Government no. 406 dated 13 May 2013 “On Government Regulation of Water Tariffs” which provides for pricing principles for water supply and wastewater disposal and water tariff regulation rules;
- the Regulated Water Tariffs Calculation Guidelines put into effect by the Order of the Federal Tariff Authority of the Russian Federation no. 1746-e dated 27 December 2013 (hereinafter, the Guidelines).

General provisions of water tariff policy set forth in the Water Supply and Wastewater Disposal Law are expanded in pricing principles for water supply and wastewater disposal and water tariff regulation rules. The Guidelines, in their turn, amplify the provisions of the latter and present them in formulae and tariff calculation forms.

Thus, the legal and regulatory framework of tariff regulation for water supply and wastewater disposal may be considered fully established. The main targets of the system are as follows: transfer to long-term tariff regulation, expansion of off-budget financing sources for investment programmes, implementation of reliability/service/energy-efficiency quality indicators and improvement of availability of connection to engineering infrastructure for customers.

The liquidation of the Federal Tariff Authority of the Russian Federation was a significant event in the sphere of tariff regulation in 2015. For the purpose of improvement of government control in the sphere of antimonopoly and tariff regulation, the Federal Tariff Authority was liquidated and its functions were transferred to the Federal Anti-Monopoly Service by the Decree of the President of the Russian Federation no. 373 dated 21 July 2015. At the level of St. Petersburg as the subject of the Russian Federation, control over the observance of the requirements set forth by the laws of the Russian Federation and the city of St. Petersburg with regard to tariff regulation is performed as before by the St. Petersburg Tariff Committee.

The St. Petersburg Tariff Committee issues separate orders establishing tariffs for drinking water, technical water, wastewater disposal and thermal energy services for each regulated period.

In addition, the St. Petersburg Tariff Committee sets (on case-by-case basis) the tariffs and fee for connection (technological connection) of facilities to the centralized water supply and sewerage systems.

**IN 2015, THERMAL ENERGY TARIFFS WERE REGULATED IN LINE WITH THE FEDERAL LAW OF THE RUSSIAN FEDERATION NO. 190-FZ DATED 27 JULY 2010 “ON HEAT SUPPLY”, THE RF GOVERNMENT RESOLUTION NO. 1075 DATED 22 OCTOBER 2012 “ON PRICING IN HEAT SUPPLY” (HEREINAFTER, PRICING IN HEAT SUPPLY), PROCEDURAL GUIDELINES FOR CALCULATION OF REGULATED PRICES (TARIFFS) IN HEAT SUPPLY APPROVED BY THE DECREE OF THE RUSSIAN FEDERAL TARIFF AUTHORITY NO. 760-E DATED 13 JUNE 2013 AND OTHER BY-LAWS.**

# TARIFF POLICY PRINCIPLES

**Tariff policy principles are determined by provisions of the federal laws regulating water supply, wastewater disposal and heat supply.**

**The Law “On Water Supply and Wastewater Disposal” no. 416-FZ dated 7 December 2011 provides for basic principles of national water policy:**

- provision of potable water and sewerage services to the citizens is a priority task;
- creating a good investment climate in the water sector, guaranteed repayment of private investments;
- the balance of economic interests between water companies and their consumers shall be achieved and maintained;
- water tariffs shall be based on economically justified expenses of water companies;
- creating stable and non-discriminatory conditions for business in the water sector;
- equal access to water services for all customers;
- transparent activities of water companies and the federal authorities, authorities of RF subjects and local administrations responsible for regulation of water sector.

**The Federal Law no. 190-FZ dated 27 July 2010 “On Heat Supply” establishes the basic principles of national heat supply policy:**

- availability of thermal energy (power) for customers;
- heat distribution costs of public utilities shall be economically justified;
- sufficient funding of any measures required to ensure reliable operation and development of heat supply systems;
- motivation of energy efficiency and cost-efficiency of heat supply;
- the regulation of heat prices (tariffs) shall be transparent and visible to any consumers including households;
- control over the observance of the legal requirements regarding the improvement of energy saving and energy-efficiency for the purpose of reducing energy losses, including requirements to the development and implementation of energy-saving/energy-efficiency programmes and to energy metering.



# TARIFFS FOR VODOKANAL SERVICES IN 2015

## Tariffs for Drinking Water, Technical Water and Sewerage Services

Water tariffs for 2015 were established by the Order of the Tariff Committee no. 594-r dated 19 December 2014 "On establishing tariffs for drinking water, technical water and

sewerage services to be provided by St. Petersburg Vodokanal in the territory of St. Petersburg in 2015".

### TARIFFS FOR DRINKING WATER, TECHNICAL WATER AND SEWERAGE SERVICES OF ST. PETERSBURG VODOKANAL IN 2015

NO.	TARIFFS	2015 WITH THE CALENDAR BREAKDOWN	
		from 1 January 2015 till 30 June 2015	from 1 July 2015 till 31 December 2015
1. Tariffs for drinking water			
1.	Service providers	17.82	19.60
2.	Households (incl. VAT)	21.03	23.13
3.	Other	21.84	24.46
2. Tariffs for technical water			
1.	Service providers	–	–
2.	Households (incl. VAT)	–	–
3.	Other	3.95	4.42
3. Tariffs for sewerage services			
1.	Service providers	17.82	19.60
2.	Households (incl. VAT)	21.03	23.13
3.	Others	25.60	28.67

*Note: The tariffs are shown without the value-added tax except for the Household group.*

**In 2015, the tariffs were determined with the following calendar breakdown:**

- since 1 January 2015, the tariffs have been maintained at the level determined on 1 July 2014;
- on 1 July 2015 the tariffs were raised for service providers and households by 10%; for other customers – by 12%.

In 2015, the annual average tariff grew 9.1% compared to 2014.

## Tariffs for Thermal Energy

The 2015 tariffs for thermal energy supplied by Vodokanal were determined by the Order of the Tariff Committee no. 486-r dated 12 December 2014 "On establishing

tariffs for the thermal energy supplied by St. Petersburg Vodokanal to consumers located in St. Petersburg, for 2015".

### TARIFFS FOR THERMAL ENERGY SUPPLIED BY ST. PETERSBURG VODOKANAL TO CONSUMERS LOCATED IN ST. PETERSBURG, FOR 2015

TARIFFS FOR THERMAL ENERGY						
Period	Tariff type	Pressurized extraction steam				Live and reduced steam
		from 1.2 up to 2.5 kg/cm²	from 2.5 up to 7.0 kg/cm²	from 7.0 up to 13.0 kg/cm²	Over 13.0 kg/cm²	
Consumers paying for thermal energy production (those who receive thermal energy from the producers' collectors)						
from 01.01.2015 till 30.06.2015	Single-rate tariff, RUB/Gcal	–	981.02	–	–	–
from 01.07.2015 till 31.12.2015	Single-rate tariff, RUB/Gcal	–	1,084.22	–	–	–

*Note: the tariff is shown without the value-added tax.*

Since 1 January 2015, the tariff has been reduced by 1.7%. From 1 July 2015, the tariffs were raised by 10.5% as compared to the first half of 2015.

According to the request of St. Petersburg Vodokanal, since 1 January 2015 the St. Petersburg Tariff Committee has set, together with the tariffs for thermal energy, the tariff for heat carriers.

### TARIFFS FOR HEAT CARRIER SUPPLIED BY ST. PETERSBURG VODOKANAL TO CONSUMERS LOCATED IN ST. PETERSBURG, FOR 2015

NO.	CUSTOMER	TARIFF TYPE	PERIOD OF 2015	TYPE OF ACTIVITY	
				water	steam
Tariffs for heat carrier supplied to customers					
1.	Other customers	Single-rate tariff, RUB/m³	from 01.01.2015 till 30.06.2015	–	28.34
			from 01.07.2015 till 31.12.2015	–	31.40
2.	Households (incl. VAT)	Single-rate tariff, RUB/m³	from 01.01.2015 till 30.06.2015	–	–
			from 01.07.2015 till 31.12.2015	–	–

*Note: the tariff is shown without the value-added tax.*

# CONNECTION FEES

In 2015, fees for connection (technological connection) to the centralized water supply and sewerage systems were established in accordance with the provisions of the Guidance for calculation of the regulated tariffs in water supply and wastewater disposal approved by the Order of the Federal Tariff Authority no. 1746-e dated 27 December 2013 (hereinafter, the Guidance).

**TARIFFS FOR CONNECTION (TECHNOLOGICAL CONNECTION) TO THE CENTRALIZED WATER SUPPLY AND SEWERAGE SYSTEMS WERE SET BY THE RESOLUTION OF THE ST. PETERSBURG TARIFF COMMITTEE NO. 573-R DATED 18 DECEMBER 2014.**

**In line with the Guidance, the amount of the fee for connection to the centralized water supply and (or) sewerage systems shall be calculated by the company, which provides connection (technological connection) services, by two methods depending on the connected capacity:**

- in accordance with the tariffs established by the St. Petersburg Tariff Committee (for the facilities which connected capacity is less than 10 m<sup>3</sup> per hour);
- on a case-by-case basis for each connected facility in accordance with the fee established by the St. Petersburg Tariff Committee (for the facilities which connected capacity is more than 10 m<sup>3</sup> per hour).

## TARIFFS FOR CONNECTION (TECHNOLOGICAL CONNECTION) TO THE CENTRALIZED COLD WATER SUPPLY SYSTEM OF VODOKANAL LOCATED IN ST. PETERSBURG, FOR 2015

NO.	TARIFF RATE	UNIT OF MEASURE	RATE AMOUNT
1.	Tariff rate for the connected capacity of the water network	RUB/ m <sup>3</sup> per hour	17,330
2.	Tariff rate for the length of the water network		
2.1.	40 mm – 70 mm (inclusive) diameter	RUB/m	11,160
2.2.	70 mm – 100 mm (inclusive) diameter	RUB/m	11,270
2.3.	100 mm – 150 (inclusive) diameter	RUB/m	11,690
2.4.	150 mm – 200 mm (inclusive) diameter	RUB/m	12,490

## TARIFFS FOR CONNECTION (TECHNOLOGICAL CONNECTION) TO THE CENTRALIZED SEWERAGE SYSTEM OF VODOKANAL LOCATED IN ST. PETERSBURG, FOR 2015

NO.	TARIFF RATE	UNIT OF MEASURE	RATE AMOUNT
1.	Tariff rate for the connected capacity of the sewerage network	RUB/ m <sup>3</sup> per hour	16,420
2.	Tariff rate for the length of the sewerage network		
2.3.	100 mm – 150 mm (inclusive) diameter	RUB/m	19,750
2.4.	150 mm – 200 mm (inclusive) diameter	RUB/m	21,330

*Note: Tariffs for connection (technological connection) to the centralized water supply and sewerage systems are applied to the facilities with the connected capacity of less than 10 m<sup>3</sup> per hour without the value-added tax.*

# TARIFFS FOR THE RECEPTION AND PROCESSING OF SNOW MASSES AT STATIONARY SNOW-MELTING STATIONS

In 2015, the tariffs for reception and processing of snow masses at stationary snow-melting stations were established by the

St. Petersburg Tariff Committee (Resolution of the St. Petersburg Tariff Committee no. 5-r dated 30 January 2015).

## TARIFFS FOR RECEPTION AND PROCESSING OF SNOW MASSES AT STATIONARY SNOW-MELTING STATIONS OF VODOKANAL LOCATED IN ST. PETERSBURG WITH FURTHER TRANSPORTATION AND TREATMENT OF THE GENERATED WASTEWATER, FOR 2015

NO.	CUSTOMER	UNIT OF MEASURE	TARIFF
1.	St. Petersburg state government agency “Centre of Municipal Improvement”		
1.1.	Variable costs	RUB/m <sup>3</sup>	13.49
1.2.	Fixed costs	RUB per 1 day of processing (winter period)	87,403.34
2	Other customers	RUB/m <sup>3</sup>	34.58

*Note: the tariffs are shown without the value-added tax.*

# REASONS FOR TARIFF GROWTH

Similar to the other production companies St. Petersburg Vodokanal is exposed to the influence of macro-economic factors. Among the main factors are the growth of tariffs for electric and thermal energy, inflationary price increase for services and products of other organizations, which are used in the main operations of the Company. To minimized the impact of the inflationary price increase on the growth of tariffs of St. Petersburg Vodokanal, the Company implements resource-saving technologies and optimization of operating processes.

Vodokanal performs the reconstruction of existing facilities, constructs new water supply and sewerage installations and actively introduces cutting-edge technologies to provide high quality services to the customers and fulfil more stringent legal requirements in water sector.

St. Petersburg Vodokanal tariffs are established by the tariff regulation authority with the consideration of the municipal service payment limits determined by federal authorities, the tariff affordability principle and achievement of target reliability, quality and energy efficiency parameters.

# TRANSPARENT TARIFFS

Vodokanal discloses information related to water supply and wastewater disposal in accordance with the Russian Federation Government Decree no. 6 dated 17 January 2013 “On the Standards for disclosure of information in the water sector” (hereinafter, Information Disclosure Standards). In heat supply sector Vodokanal discloses information according to the Resolution of the Russian Federation Government no. 570 dated 5 July 2013 “On the Standards for disclosure of Information to heat suppliers, heat distribution network operators and regulating authorities”.

Vodokanal follows a consistent transparency policy aimed to facilitate access to the information that must be disclosed. All information referred to in the Information Disclosure Standards, and any information regarding establishment and application of tariffs in St. Petersburg, can be found on the official websites of Vodokanal and the St. Petersburg Tariff Committee, in the Internet or in the official journal of the St. Petersburg Tariff Committee - “Vestnik Komiteta po Tarifam Sankt-Peterburga” (Order of the St. Petersburg Government no. 223 dated 21 February 2011; Certificate of Mass Media no.TU 7800675 dated 27 August 2010).

The above resources are convenient official platforms for centralized, consistent and timely disclosure of information in compliance with the Information Disclosure Standards.





# FINANCIAL STATEMENT

# MAIN FINANCIAL INDICATORS OF ST. PETERSBURG VODOKANAL

INDICATORS, MRUB	2011	2012	2013	2014	2015
Turnover	22,797	23,649	25,276	24,945	26,003
Operating costs	19,853	19,546	21,311	23,041	24,463
Operating profit	2,944	4,103	3,965	1,904	1,540
Net profit (loss)	404	1,074	(291)	(4,623)	(2,414)
Profitability of core operations,%	14.8	21.0	18.6	8.3	6.3

During 2010-2013, the growth of the main financial indicators provided financing different actions aimed to achieve the service quality targets in line with the long-term development strategy of the Company. The indicator "profitability of core operations" is high compared with that of other municipal utilities. The Company's profit was used for connection to water supply and sewerage networks implemented under the investment program.

In the current economic situation St. Petersburg Vodokanal managed to reduce the losses as compared to the previous year. Loss reduction was achieved through some organizational and technical measures, savings in the tendering procedures and import substitution. Nevertheless, in this report year Vodokanal had operating losses which were caused by:

- reduction of the Company's turnover due to the reduction of water consumption and wastewater volumes;
- unfavorable exchange rate differences (due to the change of the euro exchange rate at the end of 2015. As of 31 December 2015, the EUR/RUB exchange rate was 1 – 79.6972, as of 31 December 2014 it was 1 – 68.3427);
- the increase of property tax due to the cancellation of property tax privileges of the Company.

INDICATORS	2011	2012	2013	2014	2015
Equity to Total Assets	0.90	0.88	0.88	0.87	0.86
Financial Leverage	0.11	0.14	0.14	0.15	0.17

Vodokanal is a company with a high capital coefficient. The share of fixed assets in the balance sheet structure is over 90%. The Equity to Total Assets Ratio is high which means that the Company capital structure is stable.



BALANCE SHEET

AS OF 31 DECEMBER 2015	OKUD	CODES		
		0710001		
	Date (day, month, year)	31	12	2015
Organization SUE "Vodokanal of St. Petersburg"	OKPO	03323809		
Taxpayer's Identification Number	INN	7830000426		
Type of business	OKVED	90.00.1, 41.00.1, 41.00.2, 85.11, 85.12, 85.13, 85.14		
Form of incorporation/Type of ownership	OKOPF/OKFS	1 52 42		13
State Unitary Enterprise/RF subject owned				
Unit of measurement: '000 RUB	OKEI	384		

Location (address): 42, Kavalergardskaya st., St. Petersburg, 191015

Clarifications	Item	Code	As of 31 December 2015	As of 31 December 2014	As of 31 December 2013
1	2	3	4	4	5
ASSETS					
I. NON-CURRENT ASSETS					
1	Intangible assets	1110	310,995	404,125	373,521
2	R&D results	1120	63,641	38,315	2,727
-	Intangible development assets	1130	-	-	-
-	Fixed development assets	1140	-	-	-
3-5	Fixed assets	1150	219,781,934	200,038,805	175,560,010
	from Line 1150:				
	buildings	1151	19,528,245	19,779,575	18,403,136
	structures, transfer devices	1152	173,401,907	157,050,584	136,081,286
	machinery and equipment, vehicles	1153	6,349,981	6,809,312	6,671,925
6, 9, 10	Construction in progress	1154	20,326,299	16,201,903	14,198,056
	Income-bearing investments in inventories	1160	-	-	-
7	Financial investments	1170	117,795	117,795	117,795
	Deferred tax assets	1180	476,474	775,938	412,225
8	other non-current assets	1190	1,006,578	439,882	458,432
	Section I, TOTAL	1100	221,757,417	201,814,860	176,924,710

Clarifications	Item	Code	As of 31 December 2015	As of 31 December 2014	As of 31 December 2013
1	2	3	4	4	5
II. CURRENT ASSETS					
9	Inventories	1210	1,958,400	1,735,776	1,561,915
	from Line 1210				
	Raw materials, materials, etc.	1211	1,116,504	1,109,371	1,000,572
	Deferred assets	1212	841,896	626,405	561,343
	Value-added tax on purchased valuables	1220	40,958	18,720	83,134
10	Accounts receivable	1230	10,063,072	9,175,919	8,183,767
	from Line 1230				
	Accounts receivable due beyond 12 months after the reporting date	1231	1,548,013	1,266,943	928,787
	from Line 1231 Buyers and Clients	12311	92,328	83,830	56,950
	Accounts receivable where payments are expected within 12 months after the reporting date	1232	8,515,059	7,908,976	7,254,980
	from Line1232 Buyers and Clients	12321	6,776,262	5,751,242	5,194,495
7	Financial investments (other than cash equivalents)	1240	-	-	608,000
*	Monetary resources and cash equivalents	1250	1,861,718	2,179,091	4,708,496
	Other current assets	1260	-	-	-
	Section II, TOTAL	1200	13,924,148	13,109,506	15,145,312
	BALANCE	1600	235,681 565	214,924,366	192,070,022

Clarifications	Item	Code	As of 31 December 2015	As of 31 December 2014	As of 31 December 2013
1	2	3	4	4	5
LIABILITIES					
III. CAPITAL AND RESERVES					
**	Registered capital	1310	4,851,580	4,851,580	4,851,580
	Own shares bought out from shareholders	1320	-	-	-
**	Revaluation of non-current assets	1340	102,149,668	102,190,823	88,461,197
**	Additional capital (not revaluated)	1350	96,700,689	78,517,654	69,101,465
**	Special-purpose receipts	1351	571,135	1,627,950	2,232,445
**	Subsidy on capital invest- ments in capital construction facilities of state property	1352	263,266	-	-
**	Reserve fund	1360	86,339	86,339	86,339
**	Undistributed profit (uncov- ered loss)	1370	(5,149,756)	(2,770,324)	1,741,289
	Section III, TOTAL	1300	199,472,921	184,504,022	166,474,315
IV. LONG-TERM LIABILITIES					
11	Borrowings	1410	9,000,046	9,287,959	8,480,338
	from Line 1410				
	Loans repayable beyond 12 months after the report- ing date	1411	9,000,046	9,287,959	6,486,338
	Credits repayable beyond 12 months after the reporting date	1412	-	-	1,994,000
	Deferred tax liabilities	1420	804,200	693,199	608,480
	Estimated liabilities	1430	-	-	-
	Other liabilities	1450	1,664,379	4,199,183	2,068,252
	Section IV, TOTAL	1400	11,468,625	14,180,341	11,157,070

Clarifications	Item	Code	As of 31 December 2015	As of 31 December 2014	As of 31 December 2013
1	2	3	4	4	5
V. SHORT-TERM LIABILITIES					
11	Borrowings	1510	5,667,932	3,854,618	3,905,642
	from Line 1510				
	Loans repayable within less than 12 months after the reporting date	1511	4,154,089	1,849,247	3,894,765
	Credits repayable within less than 12 months after the reporting date	1512	1,513,843	2,005,371	10,877
11	Accounts payable	1520	15,544,769	8,958,383	7,370,387
	from Line 1520				
	suppliers and contractors	1521	6,344,994	2,993,969	3,251,549
	payroll debt	1522	194,466	191,938	182,359
	debt to state extra-budget- ary funds	1523	97,525	80,185	78,470
	tax arrears	1524	1,417,347	1,426,094	1,130,061
	advances received	1525	7,249,545	4,094,011	2,579,057
	other creditors	1526	240,892	172,186	148,891
	Deferred income	1530	2,836,402	2,830,832	2,565,255
12	Estimated liabilities	1540	690,916	596,170	597,353
	Other liabilities	1550	-	-	-
	Section V, TOTAL	1500	24,740,019	16,240,003	14,438,637
	BALANCE	1700	235,681,565	214,924,366	192,070,022


\* Cash Flow Statement  
\*\* Statement of Changes in Equity

Director

  
(signature)

G.V. Zadorozhnaya  
(name)

Chief Accountant

  
(signature)

G.A. Khachaturova  
(name)

28 March 2016



INCOME STATEMENT

AS OF 31 DECEMBER 2015	OKUD	CODES		
		0710002		
	Date (day, month, year)	31	12	2015
Organization SUE "Vodokanal of St. Petersburg"	OKPO	03323809		
Taxpayer's Identification Number	INN	7830000426		
Type of business	OKVED	90.00.1, 41.00.1, 41.00.2, 85.11, 85.12, 85.13, 85.14		
Form of incorporation/Type of ownership	OKOPF/OKFS	1 52 42		13
State Unitary Enterprise/RF subject owned				
Unit of measurement: '000 RUB	OKEI	384		

CLARIFI-CATIONS	ITEM	CODE	2015	2014
	Revenue	2110	26,002,990	24,945,533
	Cost of sales	2120	(24,462,681)	(23,041,299)
	Gross profit (loss)	2100	1,540,309	1,904,234
	Commercial expenses	2210	( - )	( - )
	Administrative expenses	2220	( - )	( - )
	Sales profit (loss)	2200	1,540,309	1,904,234
	Income from participation in other organizations	2310	426	687
	Interest receivable	2320	28,091	17,628
	Interest payable	2330	(695,861)	(603,612)
	Other income	2340	2,753,729	663,976
	Other expenses	2350	(5,630,576)	(6,884,130)
	Before-tax profit (loss)	2300	(2,003,882)	(4,901,217)
	Current profit tax	2410	( - )	( - )
	incl. constant tax liabilities (assets)	2421	(812,145)	(698,778)
	Change of deferred tax liabilities	2430	(112,488)	(84,931)
	Change of deferred tax assets	2450	298,881	366,369
	Other	2460	(908)	(3,573)
	Net profit (loss)	2400	(2,414,343)	(4,623,325)

CLARIFI-CATIONS	ITEM	CODE	2015	2014
	Result of non-current assets revaluation not included into the net profit (loss) of the period	2510	-	13,912,762
	Result of other transactions not included into the net profit (loss) of the period	2520	-	-
	Cumulative financial result of the period	2500	(2,414,343)	(9,289,437)
FOR REFERENCE				
	Base profit (loss) per share	2900	-	-
	Diluted earnings (loss) per share	2910	-	-

Director

  
(signature)

G.V. Zadorozhnaya  
(name)

Chief Accountant

  
(signature)

G.A. Khachaturova  
(name)

28 March 2016

# CONTACT INFORMATION

## STATE UNITARY ENTERPRISE “VODOKANAL OF ST. PETERSBURG”

42 Kavalergardskaya str., St. Petersburg 191015, Russia  
Documents Division:

**Tel.:** +7 (812) 372-58-28, **fax:** +7 (812) 274-13-61

**e-mail:** office@vodokanal.spb.ru

**Hot Line Service:** +7 (812) 305-09-09

**You can submit your CV to:** personal@vodokanal.spb.ru

**www.vodokanal.spb.ru**

### CUSTOMER SERVICE CENTRE

19, Komsomola str., St. Petersburg.

#### Open hours:

#### Consultancy on connection to the networks:

Monday-Thursday: 09:00 a.m. – 5:00 p.m.,

Friday: 09:00 a.m. – 4:00 a.m.,

routine break: 12:00 a.m. – 12:30 a.m.

#### Consultancy on prolongation/amendment/ termination of the contracts for cold water supply and/or wastewater disposal:

Monday-Thursday: 09:00 a.m. – 5:42 p.m.,

Friday: 09:00 a.m. – 4:42 p.m.

#### Contact telephone numbers:

#### Consultancy on connection to the networks:

**tel.:** +7 (812) 438-44-27, +7 (812) 438-44-11 –

Customer Service of the Connections Department of SUE “Vodokanal of St. Petersburg”, administrative office (documents registration), consultancy on connection to the networks and obtaining approvals (technical specifications, connection conditions, connection contracts),

**tel.:** +7 (812) 438-44-13, +7 (812) 438-44-33 –

Division for Drafting and Approval of Permitting Documentation (technical specifications and connection conditions),

**tel.:** +7 (812) 438-44-88 – Service for Approval of Facilities Layout,

**tel.:** +7 (812) 438-47-16 – Division for Connection Contracts Support.

#### Consultancy on prolongation/amendment/ termination of the contracts for cold water supply and/or wastewater disposal:

**Tel.:** +7 (812) 329-34-53, 438-47-98 – Customer Service of the Customer Service Centre of SUE “Vodokanal of St. Petersburg” – consultancy on prolongation/amendment/termination of the contracts for cold water supply and/or wastewater disposal;

**Tel.:** +7 (812) 438-44-12 – consultancy on availability and registration of the signed contracts for cold water supply and/or wastewater disposal  
Administrative office (registration of documents) –

**Tel.:** +7 (812) 329-34-96,

**Fax:** +7 (812) 438-47-94.

### YOUTH ENVIRONMENTAL CENTER

56, Shpalernaya str., St. Petersburg

**Tel.:** +7 (812) 438-43-96

**E-mail:** dec@vodokanal.spb.ru

**www.vodokanal-ecocenter.ru**

### THE UNIVERSE OF WATER MUSEUM COMPLEX:

56, Shpalernaya str., St. Petersburg

**www.vodokanal-museum.ru**

**Tel.:** +7 (812) 438-43-75 (Guidance Department),

+7 (812) 275-43-25 (Excursions to the multimedia complex “The Underground World

of St. Petersburg”), +7 (812) 438-43-01 (Excursions to the multimedia complex “The Universe

of Water”)**Open hours:**

Wednesday – Sunday. The museum is open

10.00 a.m. -7.00 p.m. Tickets can be bought

till 6.30 p.m.

### BUREVESTNIK SANATORIUM

**www.vodokanal-zagorod.ru**

Office in St. Petersburg:

7, Zelenkov per. (See Location on Map)

**Tel./fax:** +7 (812) 438-44-85

**Tel.:** +7 (812) 329-34-40,

+7 (812) 329-34-84, +7 (921) 965-65-50

Office in Luga:

16, Zapadnaya Street

**Tel.:** +7 (813-72) 4-33-03,

+7 (813-72) 2-36-60.

### MEDICAL CENTER BRANCH

**www.med-vdk.ru**

**E-mail:** medcenter@vodokanal.spb.ru

You can make an appointment with a doctor via

Medical Assistance Group

**Tel.:** +7 (812) 326-52-78.

#### Treatment & Diagnostic Center:

Lit. Я, 42, Kavalergardskaya str.

**Tel.:** +7 (812) 438-44-20

#### Open hours:

Monday-Friday 8.00 a.m. – 8.00 p.m.

Saturday and Sunday – closed.

#### Treatment & Diagnostic Center

(including X-Ray Diagnostics Department):

Block 2, 103, Moskovskiy pr.

**Tel.:** +7 (812) 438-47-77, +7 (812) 326-52-78

#### Open hours:

Monday – Saturday 8.00 a.m. – 8.00 p.m.

#### Dental Clinic:

Lit. АК, 56, Shpalernaya str.

**Tel.:** +7 (812) 326-53-19

#### Open hours:

Monday-Thursday 9.00 a.m. -8.00 p.m.,

Friday 9.00 a.m. – 7.00 p.m.,

Saturday and Sunday – closed.



