

## Habitat Scroll of Honour Award 2006

### Nomination Form

Nominations For:                      Projects                      Individual                      ☒                      Organizations  
Name of Individual/Project/Organization: Yaroslavl city administration: «Clean water – a source of hopes»  
Names of Person/s in charge: Volonchunas Victor, mayor of Yaroslavl

#### Nominee Details

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Actions or Areas of Human Settlements: «Clean water – a source of hopes» The complex programme for providing citizens of Yaroslavl with pure water.  
Human Settlements Achievements: The programme was worked out and implemented between 1995 and 2005. It was financed from both the city budget and off-budget funds, including foreign funding. To provide the constant high quality water supply there are three water supply stations, a process water station, 89 boosting pump stations and 981 km of pipe network. The drain and sewage flows are collected and transported by means of 810 km of sewage collecting pipes and 38 pumping stations, the treatment and purification is done at sewage treatment plants. Disposal of untreated sewage flows into the Volga has stopped. Trees and bushes have been planted and the whole vicinity of the municipal rivers and lakes has been put in order. An efficient PR campaign on water saving has been held.

#### Nominator Details

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## 1. Background

Yaroslavl is a big industrial city in Central Russia. It was founded in 1010 by the famous Russian prince Yaroslav the Wise and is presently preparing to celebrate its millennium jubilee. The city is an important industrial, cultural and tourist centre of the «Golden Ring of Russia». Yaroslavl is situated on the Volga river which has always been the symbol of power a smooth course of events in the ancient town. The Volga has always been the great vital source of water supply as well as hopes and inspirations. It is also a great waterway connecting Yaroslavl with many Russian and foreign towns, thus connecting peoples and countries. The favourable geographic position at the crossroads of many waterways, railways, land and air routes has always contributed to the development of the city giving the access to big markets of Moscow, St.Petersburg and abroad.

The population of Yaroslavl is 603.7 thousand people. Due to the favourable social-economic situation, religious tolerance and considerable distance from areas of conflict attracted many migrants to Yaroslavl from the not so well-off areas during the disintegration of the USSR (between 2001 and 2005 the number of newcomers grew by 3.2%, the number of those who left decreased by 32.1%). The well-developed education system provides for training highly qualified specialists for various fields of economics.

There is practically no unemployment in the city. The average level of income of people in Yaroslavl is higher than the average in Russia; the average monthly income per head was 7.071 RUR in 2005 (138.9% compared to 2004).

The city has well developed diversified industry, with many hi-tech companies, some of them unique. The basis of the city economics is 249 chemical, petrochemical, machine-building, processing, light and food industrial enterprises, as well as consumer services, big and small. Factory shipments in manufacturing industries play major role in the economic activities of the city (62.5%), in 2005 it was worth 56.6 bln RUR. Yaroslavl has wide foreign economic ties (the foreign trade turnover in 2005 was USD 339.6 mln, with export worth of USD 223.5 mln and import of USD 116 mln).

The city administration and city council have always been paying attention to such issues as the high quality of life, healthy environment. Special attention is paid to providing people with good quality drinking water, preserving natural water resources, protection against air pollution, utilisation of industrial and domestic waste, widening green zones. The Yaroslavl city administration is holding an active social-orientated policy allowing for all citizens, first of all those not too well-off, to have full access to all communal services, giving subsidies to those who need them; in 2005 the total sum of subsidies given to the people was 35.3 mln RUR. New blocks of flats are being constructed. In 2005 128.7 thousand square metres of housing were built.

The Yaroslavl city administration have always valued the importance of water resources as the essential factor for the city's steady development: water is essential for the people





(presently, 95% of the city population have access to centralised water supply, 90% - to sewage system), embankments, banks of rivers and lakes are popular places among the people as well as attractions for tourists, the city economy would not be able to work without water resources. The city administration sees one of its primary goals in providing for efficient water consuming as well as access of all the people, especially those not too well-off, to natural resources, the most important of which is pure water. The city water supply is the responsibility of the municipal waterworks company (MUP Yaroslavlvodocanal), which operates three water supply stations with the total daily capacity of 325 thousand cubic metres of drinking water and 102.9 thousand cubic metres of process water, sewage disposal and treating facilities with the capacity of 500 thousand cubic metres per day, 1.8 thousand kilometres of water and sewage pipes as well as various other infrastructure.

## 2. Description of the initiative

The history of public water supply in Yaroslavl goes back a long way – the first city water supply system was constructed back in 1883; the city water supplier – Yaroslavlvodocanal – is more than 120 years old, it has survived the years of decay after the Communist revolution, industrialisation period and the years of World War II.

In the second half of the XX century the development of the public water supply system in the city faced problems which were growing and, eventually, led to the crisis of 1990s. For decades despite the growth of the city population (twofold from 1940s to 1980s – from 300,000 to 600,000) there were no adequate investments in the development and upkeeping of water supply systems, which led to the acute misbalance between the demand for water and the actual systems capacity. Most of the systems had been in operation for more than 20 years, some facilities had been operated for more than 50 years. The rate of repairs, replacement and restoration works was far behind the rate of systems decay, the breakdown rate was much higher than average (more than half of the systems network was accident-prone), which led to constant interruptions of water supply. Though, on the whole the quality of water in the systems was up to the norm, there were periods when water quality index was on the brink of acceptability (that concerns the iron and residual ammonia content, oxidizability, turbidity etc.).

Water consumption was also far from efficient (specific water consumption rates was much higher than the corresponding European values). Most of the water flow from the city sewage system was getting straight into the Volga without being treated or purified. Thus, the content of oxidised pollutants in the Volga downstream from the city was 1.5 times higher than that upstream the city. The principles of communal water supply management were outdated - cross funding (compensating for losses in the municipal water supply system by means of payments from profitable companies), underestimation of the necessity for improvements in the water supply financial system etc. All this prevented economic growth,





increasing profitable companies' expenses, making social and ecological problems even more acute. It was at that period that the number of complaints on the quality of drinking water grew the level of social discontent on the issue increased from 55% in 1993 up to 85.3% in 1995.

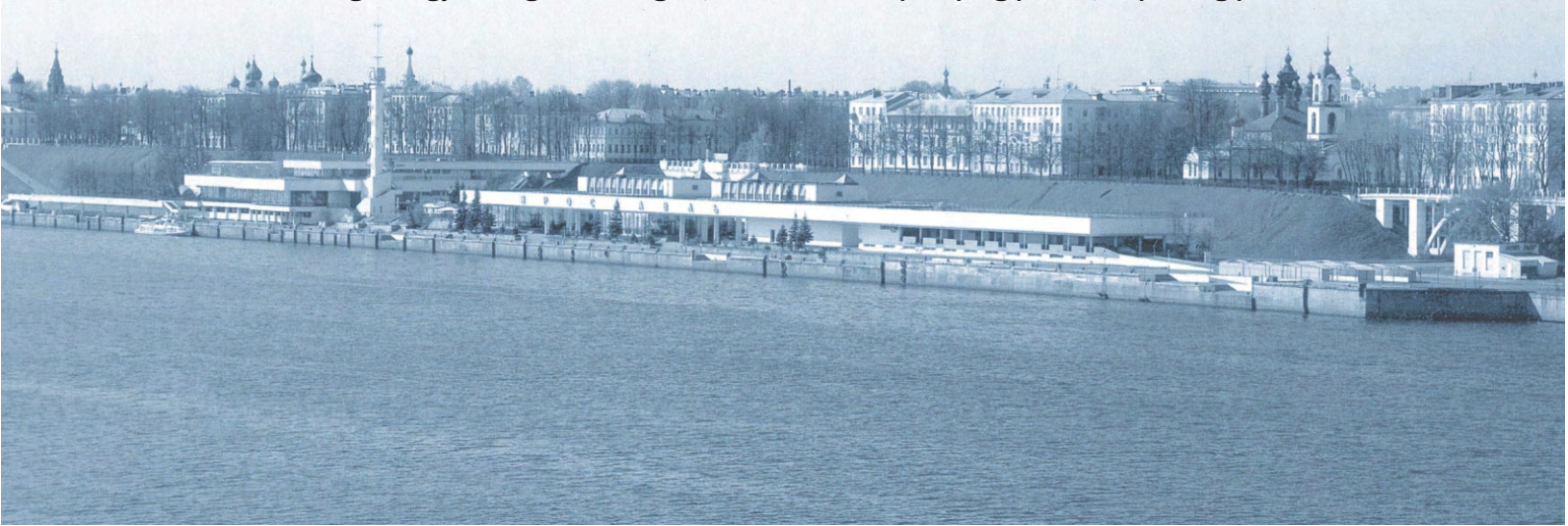
By that time internal resources of the municipal water supply system in Yaroslavl had been exhausted, and in some parts of the city there was a real danger of limited access of the people to safe drinking water and sewerage. Despite the measures taken, there was very little success in view of the wide range of obstacles: institutional and legal, commercial and financial, political and social, which meant the crisis of the water supply system as a whole.

The city administration, well aware of the complicated situation and the need for radical changes, worked out and implemented an anti-crisis programme. The whole strategy for setting and fulfilling tasks of providing the decent standard of living for people of Yaroslavl was reconsidered.

The task of providing citizens with pure water was considered the essential goal, with special attention paid to changing the system of management of water resources. The goal set was meeting the demand of all citizens for being provided with good quality drinking water, as well as satisfying the demand of the industry (which is rather important for economic development), not forgetting the necessity to keep water pure for future generations. That required a complex approach to managing water resources, which would consider the interrelationship between water supply, sanitary conditions and health protection, between industry and environment, and would co-ordinate the city development policy with the policy of water supply. In view of that a sociological research was made concerning the quality of services in the field of water supply and drain systems, readiness of people to pay for these services; technical-economical assessment made of the improvements in the public water supply system of Yaroslavl.

The initiative was based on need to improve economic mechanisms in water supply sector, to reform the practices of the municipal waterworks company, decreasing the excessive water consumption, decreasing the amount of water flow in natural bodies of water, recycling water at industrial enterprises. Based on the «Strategy of Development of the City of Yaroslavl Until 2010» the «Programme for Developing and Improving the Water Supply and Drainage Systems Until 2005» was adopted and implemented. Later it was incorporated into the «Complex Programme for the Development of Water Supply and Drainage Systems of the MUP Yaroslavlvodocanal for 2006-2010». The current issues and prospects of municipal water supply have constantly been discussed at the meetings of the city council, with the city administration and Mayor's decrees adopted accordingly.

The important initial step was restructuring the debts of the municipal waterworks company before the city budget, which allowed for the start of large scale work on improving the process of water treatment and purification, upgrading and replacing the old equipment, introducing energy saving technologies, automation of pumping plants, improving production





standards. In this respect, in view of improving the municipal water supply system, a number of special city programmes were worked out: «The Programme for Improving the Municipal Water Supply System of Yaroslavl» In 2001 for its implementation the city administration obtained the credit from the European Bank for Reconstruction and Development (EBRD) of 490.6 mln RUR with the Yaroslavl Region and the Government of the Russian Federation as guarantors, also using 153.3 mln RUR from the budgets of the city and MUP Yaroslavlvodocanal and 16.8 mln RUR of grant money; «Decreasing Man-caused Burden from Sewage Treatment Plants of Yaroslavl on the Environment» which was implemented with the assistance from the Moscow administration; «Designing, Funding, Constructing and Operating the Water Supply Station «Vozdvizhenye». Most of the goals planned have been fulfilled with considerable results achieved.

**IN THE TECHNICAL DEVELOPMENT SPHERE** an efficient system of water purification has been introduced and reagent plants renovated, which improved the quality of drinking water and provided for considerable safety of processing. Pumping plants have been modernised; a water line built in the southern part of the city, which allowed for the uninterrupted water supply. An automated control system for the water supply management has been introduced which decreased energy consumption and water losses. The capacity of the city treatment and purification plants for biological treatment of sewage flows has been increased. As a result, Yaroslavl is now one of the few cities on the Volga that completely stopped disposing the untreated sewage flows. An electric substation for the steady electric supply of the plants and facilities as well as nearby city blocks has been put to operation. The system for combustion of gases from sewage treatment and purification plants has been put to operation, which gives a high energy-saving effect, excluding the danger of methane emissions into the atmosphere.

Another important issue was **MANAGING THE WATER DEMAND**. A large public education campaign was held (with leaflets on water saving both at home and at work given out, an explanatory campaign in press held, special public consultants put to work). A special campaign was held among children and teenagers (water-related contests, booklets «A Drop of Pure Water» (for schools) and «Keep the World in the Drop of Pure Water» (for kindergartens) published, a contest for best educational programme on water consumption aimed at children and teenagers etc.). A wide-scale PR-campaigns been launched in co-operation with local and federal press (articles on rational water consumption are published regularly), TV and video appeals made on water saving and so on.

The efficiency of management in water supply and drain systems, as well as rate policy, has been improved. The service contract has been made between the city administration and the municipal waterworks company in order to share the responsibilities in the sphere of water supply and draining. Based on the research aimed to find out the readiness of people to pay, recommendations from the Government of the Russian Federation and international practices, a differential increase of charges and rates was held. A system of subsidies for





water supply and drainage services payments for needy groups was introduced (120,000 beneficiaries).

At the same time, within the framework of the initiative «Clean water - a source of hopes», in co-operation with the people and industrial enterprises, a whole range of problems are being solved. In order to co-ordinate efforts to improve ecological situation, including issues related to preserving bodies of water and improving their sanitary condition, a target programme of decreasing antropogenic impact on the environment has been implemented in Yaroslavl since 2001. In line with this programme more than 1.2 bln RUR was spent, after which the amount of untreated drain flows into rivers and lakes decreased considerably, more than 200 enterprises have worked out and implemented their own programmes for treating drain flows, some parks on the banks of the river Kotorosl have been renovated, trees and bushes planted, the condition of the Volga and the Kotorosl monitored regularly for 22 factors. In 2005 the city council adopted a new programme for environment protection for the period up to 2010, which for the first time included the criteria of efficiency, worked out in accordance with factors of steady development of cities and towns. In the same year a project for reinforcing and decoration of the Volga embankment was worked out. As a result, the social discontent of the city policies in water supply in 2006 decreased to 18.6% (instead of 85.3% in 1995).

### 3. Main partners

The initiative of the city administration was approved and supported by the Governor of the Yaroslavl Region A.I.Lisitsyn. The Yaroslavl Regional Administration and Duma (regional legislative body) found it possible to agree on tax remissions for the municipal waterworks company. The EU through TASIS programme granted the money for the Municipal Investment Support Project (MISP) and the Project for Improvement of Financial and Economic Results of the Municipal Waterworks Company; the «Severn Trent Water International» and the City Economy Institute fund were in charge of the latter. Considerable assistance was given by the experts from American companies «CH2M HILL International Services» and «Deloitte, Touche and Tohmatsu Emerging Markets», who worked out the technical and economic assessment of the Programme for the Priority Investments. The Dutch company «DHV», in co-operation with the project institution «Yaroslavlgrazhdanproject», has held training sessions on organising and holding tenders, as well as worked out draft design, technical and tender documentation. The German company «Ost-Eur» has helped in collecting and processing data for pilot projects. The Moscow administration financed the construction of the third stage of the city water treatment and purification plants for the sewage systems.

But the biggest support comes to the city administration from the citizens and business structures because it is the money of water consumers that is the main source of funding the reforms. The people have shown understanding of the situation, mainly due to the timely and efficient explanatory campaign.





## 4. Impact

Implementation of the initiative «Pure water - a source of hopes» brought considerable positive effects for improving standard of living and providing for steady development of the city of Yaroslavl.

**SOCIAL EFFECTS.** Practically all citizens of Yaroslavl (600,000 people) have constant access to the drinking water of the guaranteed high quality. The sickness rate, primarily that of children, has decreased. More than 70% of the citizens have been motivated for the rational water consumption by the wide-scale PR-campaign. More than 53,200 children and teenagers have become aware of problems of water saving thanks to including «water classes» into the educational programmes and giving out informational booklets at schools. As a form of social subsidy 40,000 Yaroslavl families received 30% to 50% benefits in charges for water supply and drain services (the total benefits sum in 2005 was about 69 mln RUR).

**ECOLOGICAL EFFECTS.** The quality of water in the Volga river has improved due to the complete treatment and purification of the drain flows in Yaroslavl. Today one can say that the purified drain flows, to some extent, dilute the dirty waters of the Volga: the index of water pollution 10 km upstream from Yaroslavl (2.7) is higher than that downstream from the city (2.6). The amount of losses in the municipal water supply systems is decreasing all the time, so is water consumption. In 2005 the amount of water consumed was 105.54 mln cubic metres (or 94% of 2000 level), including 84.78 mln cubic metres of drinking water (95% of 2000 level) and 20.76 mln cubic metres of process water for industry needs (93% of 2000). Emissions into the atmosphere from the municipal waterworks company have decreased almost twofold between 2002 and 2005 - mostly due to combustion of methane at the boiler stations.

**ECONOMIC EFFECTS.** City consumers are being provided steadily with the high quality water. Decrease of the water consumption by industrial enterprises and general public brought a considerable economic effect. In 2005 only consumers' expenses on water supply decreased by 8.55 mln RUR (people's expenses by 6.34 mln RUR), sewage services expenses decreased by 8.05 mln RUR (people's expenses by 3.6 mln RUR). Internal expenses of the municipal waterworks company have also decreased due to saving energy and resources; there has been a steady energy consumption drop in the water supply sector (more than twofold from 2001 to 2005). All the debts of the municipal waterworks company before all the budgets have been paid thanks to restructuring the debts and financial discipline improvement. The whole economic and financial structure of the company has been changed, strict budget system introduced. The practice of cross funding has been eliminated. Steady payments are made to budgets of all levels.





## 5. Sustainability

The sustainability of the initiative depends on attracting the necessary amount of funds and on regular financing of water consumption for all social groups, especially the needy ones. This is where the public support of the reforms held is essential. Thanks to the initiative of the city administration it was possible to find financial resources for modernisation of the water supply of the city. The total funds for the Programme of Improving the Municipal Water Supply System are equal to USD 16 mln. Based on the technical and economic assessment, the EBRD gave the credit of 490.6 mln RUR. Part of it, worth of 153.3 is being financed from the city budget.

Within the framework of the initiative the Project for Increasing the Efficiency of the Municipal Waterworks Company, including decreasing the expenses, was worked out. Its implementation brought the following results: in 2005 the net profit ratio of the company was 8.1, which is about three times higher than that of 2004, and the sales profit ratio was 6.3 compared to 1.6 in.

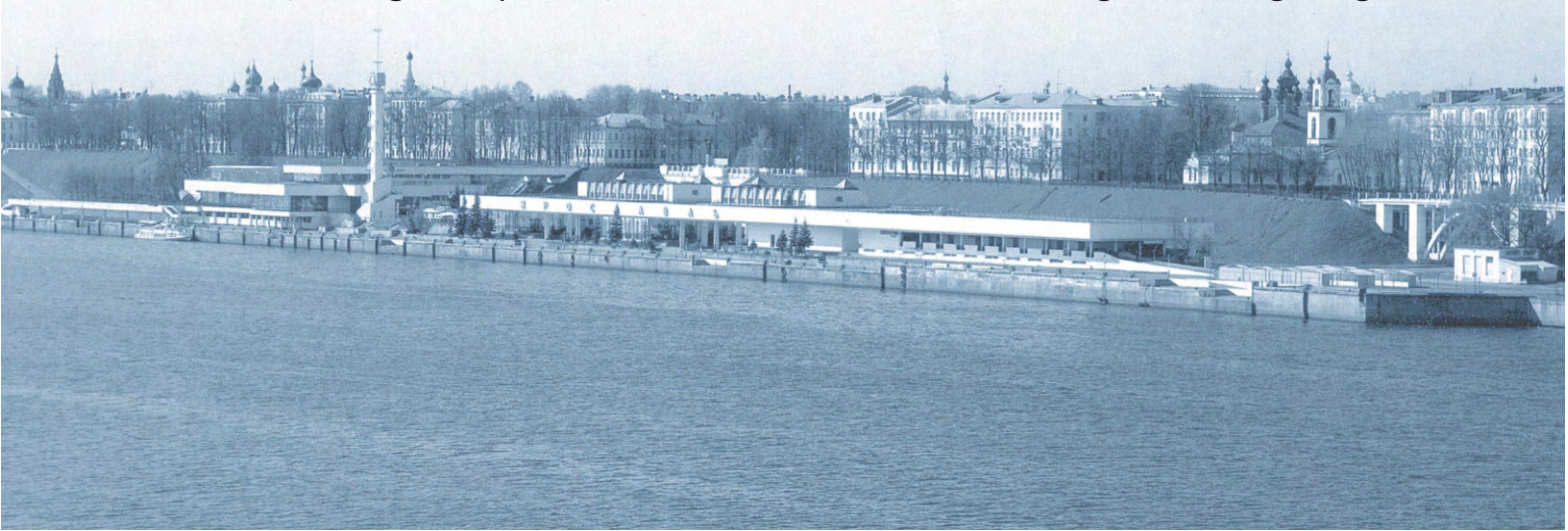
The city has held the levelling of rates for industrial and housing water consumption, rejecting the cross funding approach. The careful policy of subsidising the least protected social groups allowed to avoid negative social reaction to the inevitable growth in water supply charges. The complex approach towards decreasing water consumption and explaining the importance of thrifty approach to water use to the public in order to stabilise the city economy also brought good results.

The positive impact on the development of public water supply system now comes from the renewed economic growth and active housing construction, including municipal housing. Another guaranty of holding reforms is obligations before the European Bank for Reconstruction and Development, which presuppose restructuring the financial and economic mechanisms of managing the water consumption in Yaroslavl.

## 6. Transferability and upscaling

The achievements in realising innovative approaches of the city administration towards water supply for the people have been presented many times at conferences and seminars both in Russia and abroad; methods and ways taken as an example by administrations of other cities and regions of the Russian Federation.

The municipal waterworks company initiated the creation of the Association of Water Supply and Drainage Companies of the Upper Volga «Pure Water», with its General Manager A.A.Aniskin elected President of the Association. The Association goal is to discuss general issues of improving the technologies of water supply and cleaning and treatment of drain flows, exchange the experience, work out the common view in discussing draft laws regulating





the field in question, share the experience. The Association member-cities look up at Yaroslavl as a good example and try to use its positive experience in water supply sphere.

Positive results of the innovative reforms in public water supply are now being considered in view of preparation for celebrating the millennium jubilee of Yaroslavl. In 2003 the President of the Russian Federation V.V.Putin signed the Decree on Celebration of the Millennium Jubilee of Yaroslavl. The programme of preparation for the celebration includes further steps towards the improvement of public water supply. The city administration is aiming at realising the inborn right of every citizen - the right for pure water thus backing everybody's hope for the stable future of the city.

## 7. The initiative novelty

Yaroslavl has become one of the first cities in Russia to be able to efficiently reform the water supply system. Based on the scientific analysis of the situation credits from the European Bank for Reconstruction and Development and other institutions were obtained. Special attention was paid to the complex approach to the management of water resources based on programme goals, which provided for multi-channel funding, as well as attracting the attention of business people and general public towards the solution of problems concerning the reforms of water supply system. In this respect innovative approach was made using both the latest world experience and social and cultural traditions of people of Yaroslavl. The processing equipment installed within the framework of the initiative is innovative and unique for Russia. In the course of implementation of the initiative a unique experience was gained in spreading best practices of careful attitude to water among grown-ups, and, what is more important, corresponding education of children and young people.

## 8. Recognition of the initiative

The initiative of Yaroslavl on improvement of public system of water supply has been supported both in Russia and abroad, which resulted in obtaining credits from the European Bank for Reconstruction and Development. The draft National Programme «Water of Russia - XXI century», which was worked out using the positive experience of Yaroslavl in implementation of the Programme of municipal water supply system improvement, was approved by the President of the Russian Federation V.V.Putin. The city of Yaroslavl has been awarded the «Peter the Great» prize as the best municipality. In 2003 the city administration was awarded with the European Council flag for the activities in uniting people of Europe. In 2005 the historic central part of Yaroslavl was included in the UNESCO World Heritage List. The activities of the municipal waterworks company are noted annually at the «All-Russian contest for the best communal services company and efficient work in the new economic conditions».

