



**Water Resources - Marketing LLP**

**"Clean Water - the source of life!"**

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***2nd Central Asia Knowledge Forum***

**Contribution of Water Resources - Marketing LLP in  
sustainable development to climate change**

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**Anarbek Ongarovich Orman,  
General Manager**

Almaty,  
May 13, 2014



**Water Resources - Marketing LLP is successfully working in the market for 17 years in terms of public-private partnership.**

**The Company delivers service and drinking water to the city of Shymkent and several settlements of Sayram area with a total population of about 1M people, and also provides the retraction and complete wastewater treatment.**

- Capacity of water intake structures – 522.2 m<sup>3</sup>/day;**
- Average daily rise of water – 140 m<sup>3</sup>/day;**
- Manufacturer of equipment for the purification of drinking water – Grundfoss;**
- Number of installed water meters – 163 thousand units (head, district, street, in-house and household water meters).**
- Length of water networks - 1822.3 km;**
- Length of sewerage networks - 442.0 km;**
- Every day, the city sewage treatment plants purify 100 m<sup>3</sup>/day.**

- In 2010, we signed with the Akimat of Shymkent the Service Contract to supply consumers of Shymkent with water and sanitation services in accordance with international standards.
- The Company operates in accordance with IRFS principles.
- Since its establishment, the Company has paid to the state budget the total of US\$9.5M of taxes.
- Since 2005, the Company works with mid-term rates and tariff estimates, investment programs:
  - Mid-term rate 2005-2007
  - Mid-term rate 2008-2009
  - Mid-term rate 2010-2012
- - Mid-term rate 2013-2014
  - We plan transition to mid-term period 2015-2019 starting from Jan. 1, 2015.

**Achievements of the company are internationally recognized**



**Medal "For excellent business reputation"**  
**Kazakh-Swiss Summit in Almaty, 22.12.2004**



**Medal "For Excellence in Business Practice"**  
**III International Forum,**  
**Geneva, 24.06.2004**



**Diploma "Golden Certificate of Quality"**  
**III International Quality Assembly,**  
**Moscow, 26.03.2008**



**Diploma "Leader of National Economy 2008"**  
**International Summit "Leaders of National Economies"**  
**Moscow, 28.04.2008**



**Diploma "Best Taxpayer of South Kazakhstan region in 2007"**  
**Ministry of Finance of the Republic of Kazakhstan**  
**Astana, 14.11.2008**



**Achievements of the company are internationally recognized**



**Premium "Golden Phoenix"**

*For outstanding contribution to strengthening co-operation in the economic sphere*

**International Forum "Economic efficiency and corporate transparency", Monaco, 30.03.2009**



**Diploma "Best CIS Company"**

*II International Summit  
Moscow, 19.11.2008*



**Diploma "Golden jaguar"**

*For impeccable business reputation and high quality of products and services*

**International image program "Leader of the XXI Century", Moscow, 19.02.2010**

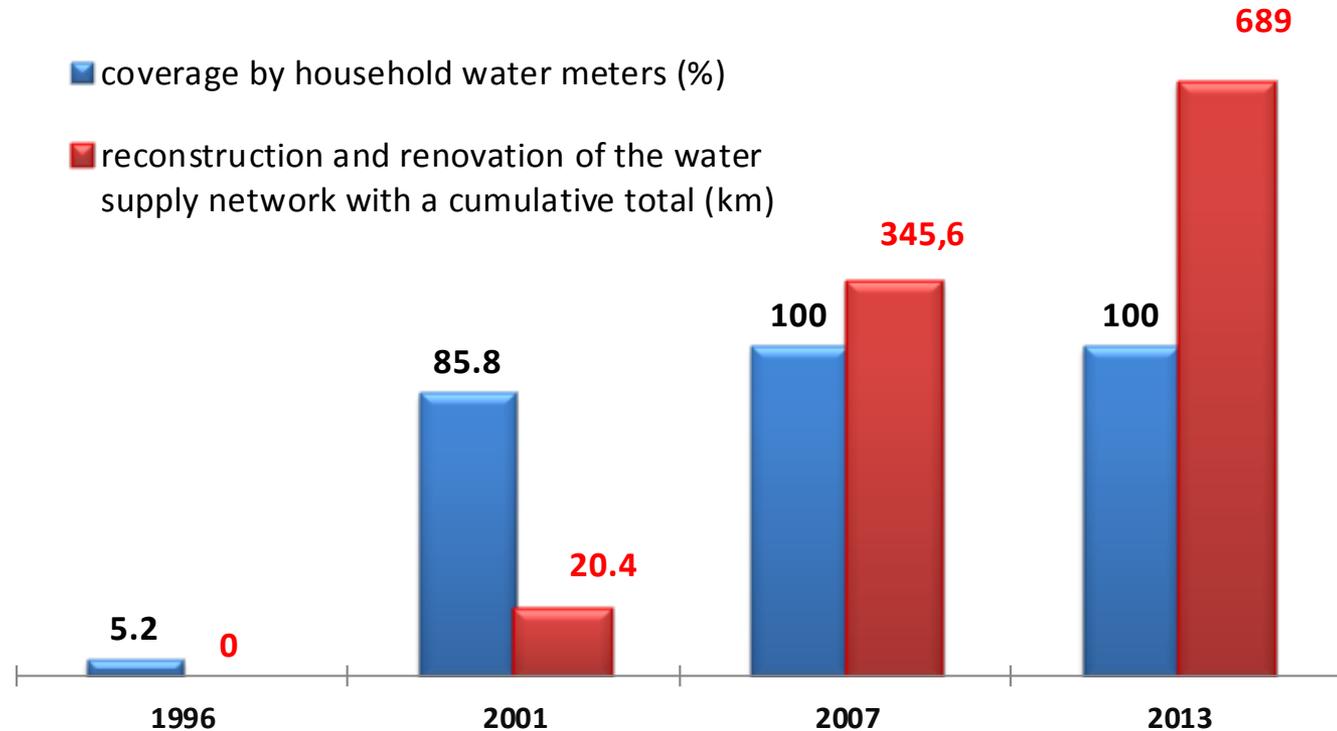


**Diploma of Silver Medalist of the Republican Contest on Corporate Social Responsibility "Paryz-2012".**

**For significant contribution to the ecology of Astana, December 25, 2012**

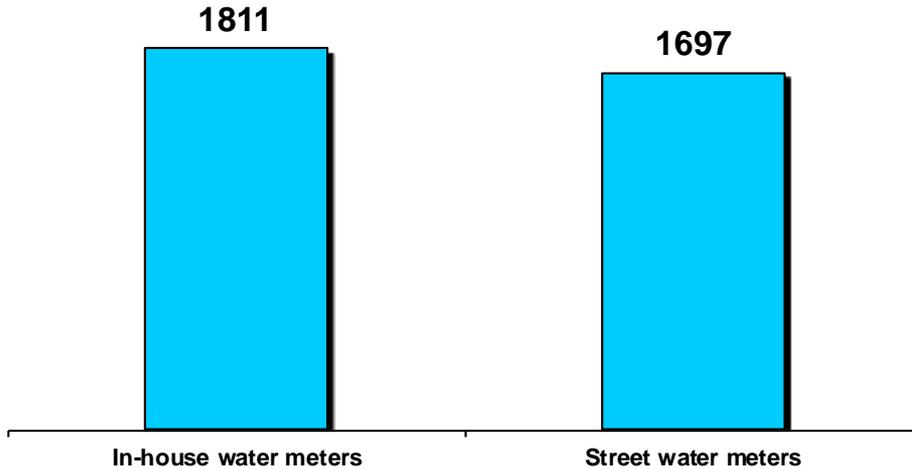
## Coverage of Shymkent population with household water meters, dynamics of reconstruction and renovation of the water supply network, km

*According to Supplement to the Law of the RK “On natural monopolies” # 166–III dated 05.07.2006, installation of water meters was to be completed by 1.01.2009. in Shymkent, that was done 5 years earlier.*



Thanks to 100% coverage by water meters, use of saving technologies, the repair, reconstruction and modernization of the water supply system, the average water consumption decreased by **4** times – from **450** liters / day in 1996 till **115** liters / day at the moment, with the conventional saving of consumers’ family budget on the rational use of drinking water of about **US\$144.7M**. In addition, energy consumption decreased by **6.2** times, and the release of greenhouse gases into the atmosphere was reduced.

## Shymkent is 100% covered by in-house and street water meters



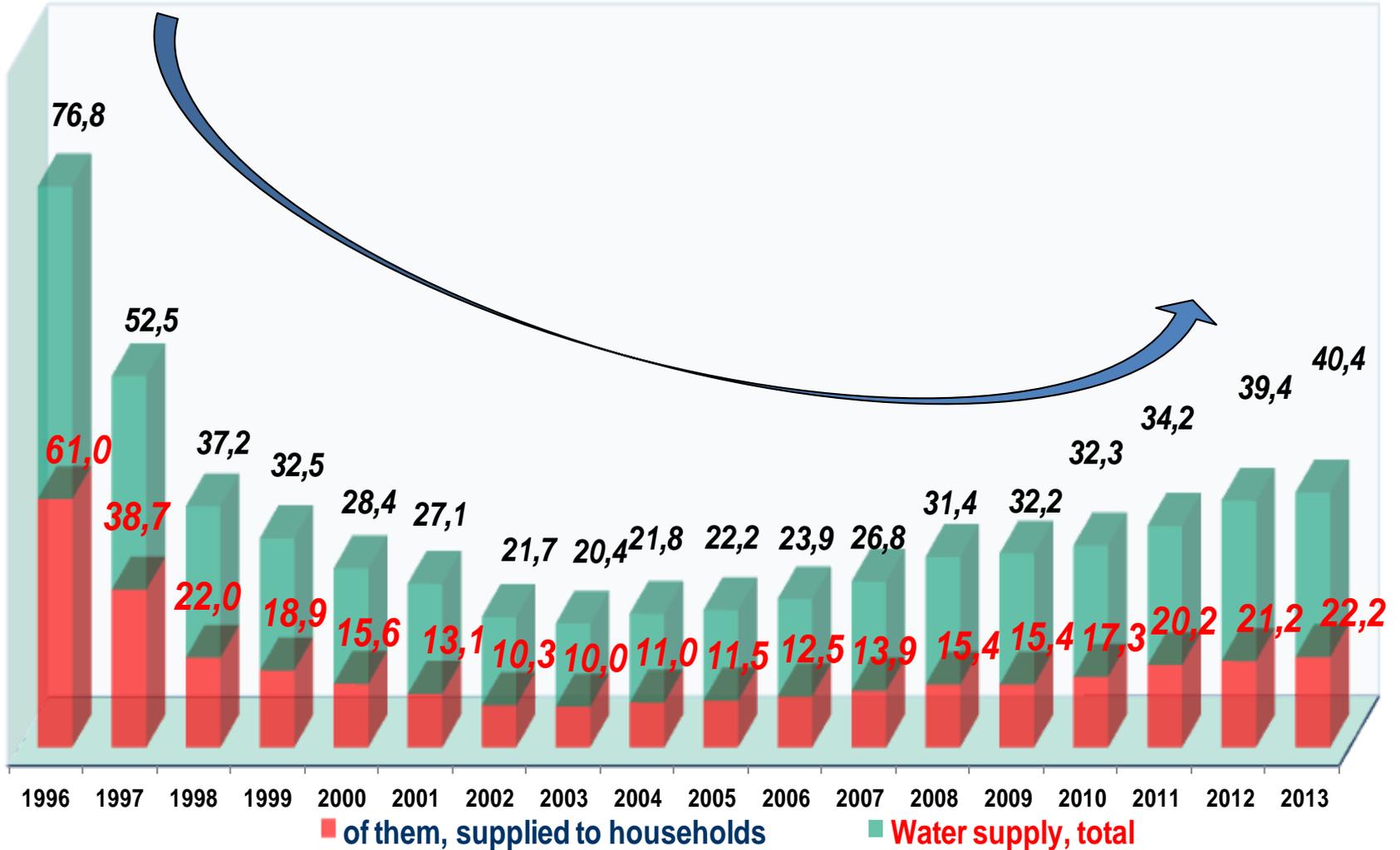
The water is supplied through in-house and street meters on a contractual basis with outsourcing companies engaged in dealer services.

All in-house and street meters work in remote indication reading. Automation of meter readings will be completed in 2014.

**We've installed 500 household, 1697 street and 1811 in-house meters with pulse output for remote indication reading :**

##	Manufacturer of metering device	household	street		in-house	
		Via GSM	Via GSM	Via terminal	Via GSM	Via terminal
1	ITRON	320 (at the Company's expense)	21	172		155
2	ARAD	60	135	276	10	55
3	ZENNER	60		219	59	1519
4	SENSYS	60	14	860	1	12
	<b>TOTAL</b>	<b>500</b>	<b>170</b>	<b>1527</b>	<b>70</b>	<b>1741</b>

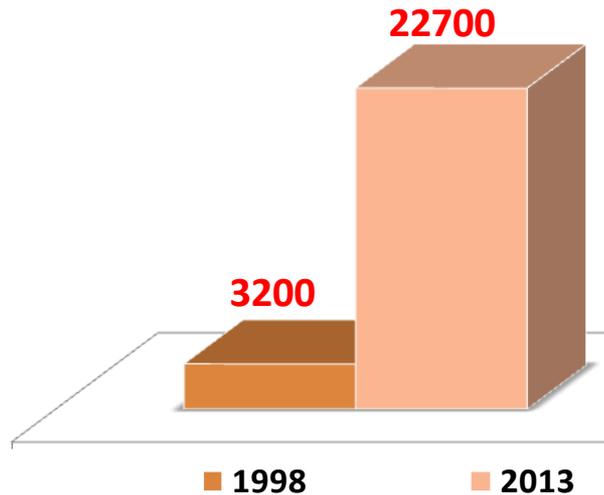
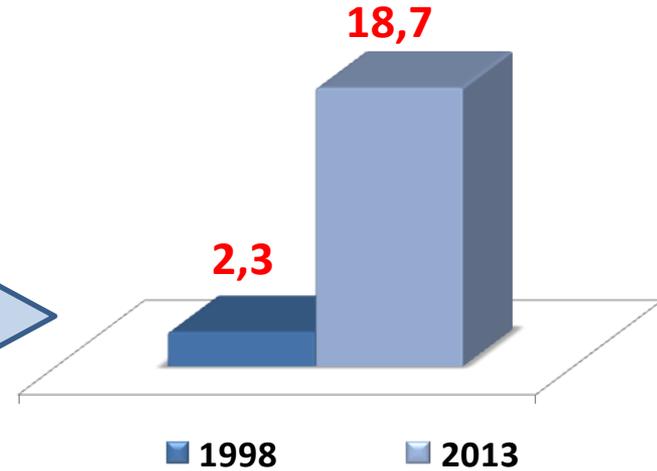
During 17 years, we've saved 780.7M cubic meters of water which is the water demand of Shymkent for 19 years (Mm3)



## Sustainable economic development of the Company

### Dynamics of income of the Company, US\$M

After 16 years, the Company's income increased from **US\$2.3M** in 1998 up to **US\$18.7M** in 2013, with the average increase by 45,0%.



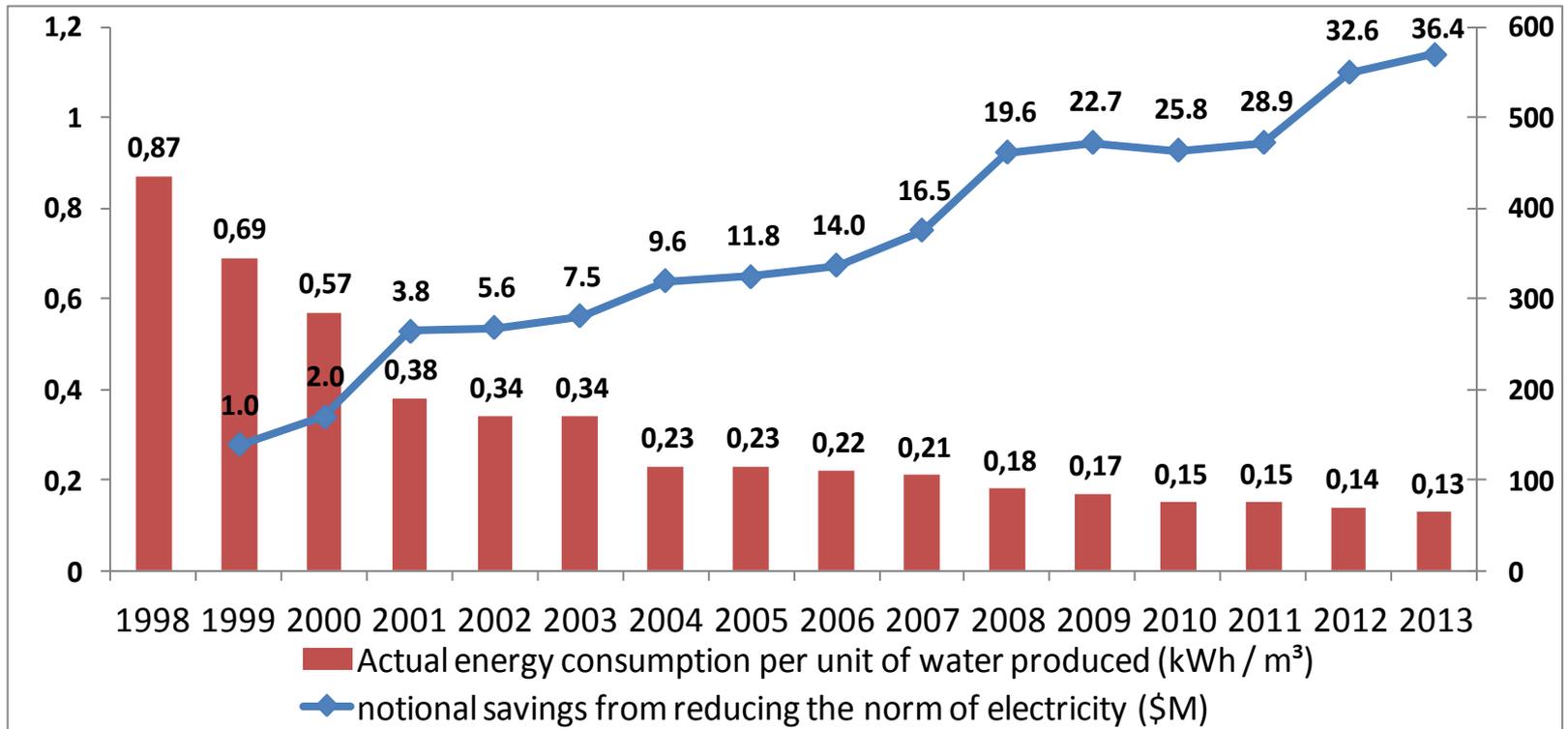
### Company revenue per employee, US\$

The Company revenue per employee increased more than 7.0 times - from **US\$3 200** in 1998 up to **US\$22 700** in 2013.



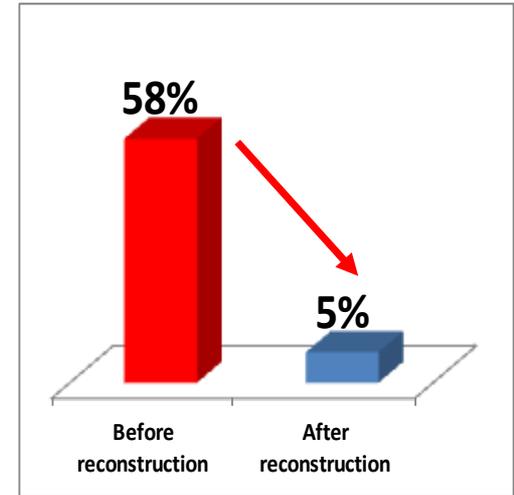
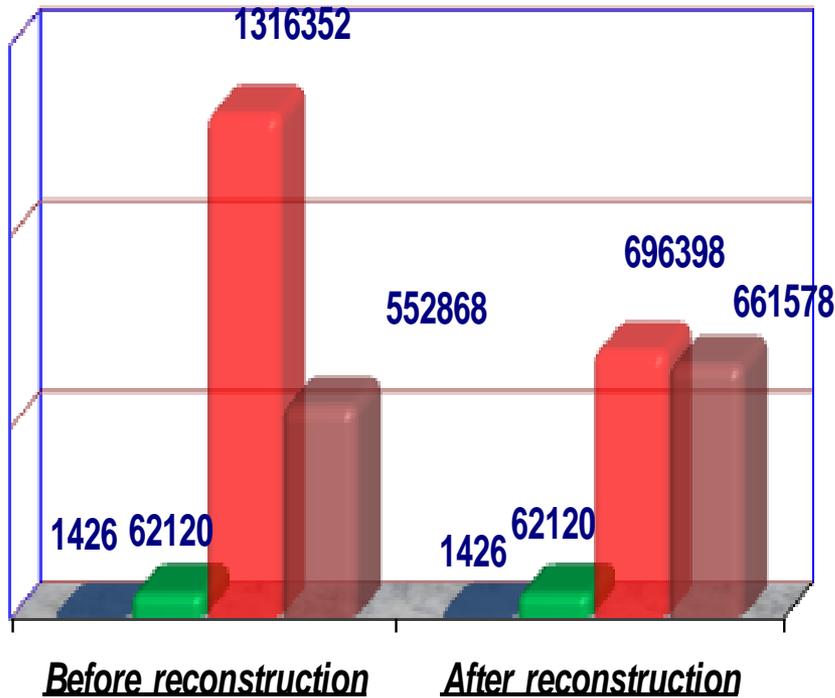
# Actual energy consumption per unit of water produced (kWh / m<sup>3</sup>)

Cost savings of electrical energy is about **US\$36.7M.**



The complete coverage of all the consumers by water meters, the introduction of advanced technologies and the transition to optimal regimes of water supply allowed reducing the consumption of electric energy by 6.2 times, or the consumption of electrical energy per unit of water produced from 0.87 kWh / m<sup>3</sup> to 0.13 kWh / m<sup>3</sup>.

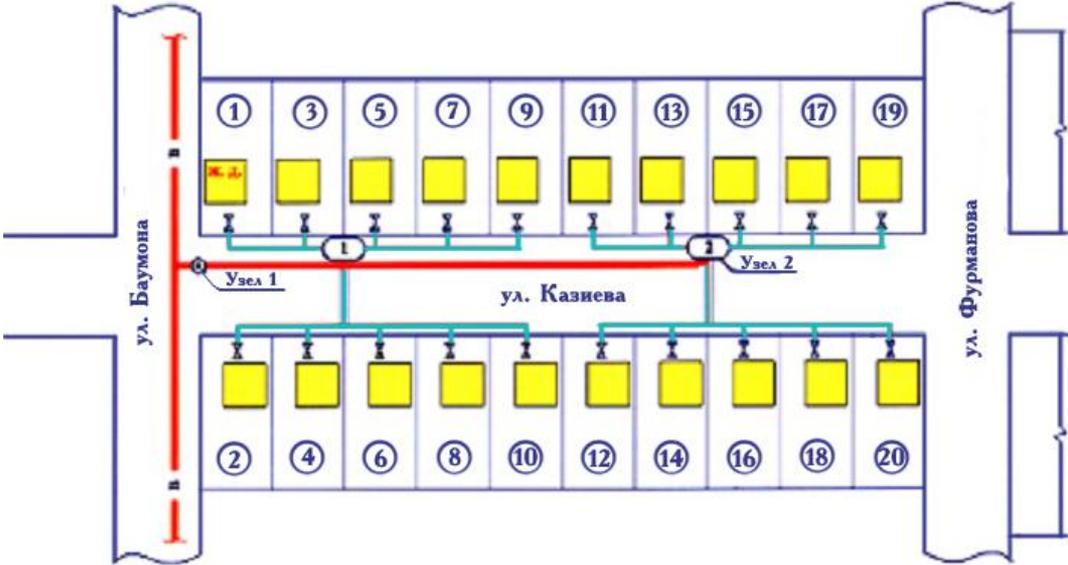
**Sales indicators before and after reconstruction of water piping and the shift of water meters into the general distribution terminal**



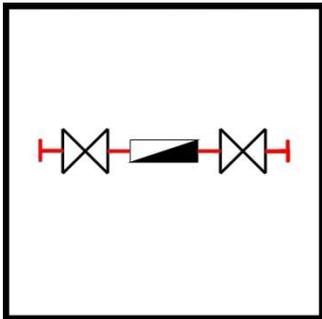
- Number of public water meters, pcs.
- Number of consumers (households)
- Water supplied, m3/month
- Charge, m3/month

*Water supply lines were reconstructed in **62.000** out of the available **70.000** private houses. For the rest **8.000** houses, reconstruction will be completed in 2014.*  
**After reconstruction, the losses are reduced from 58% to 5%.**

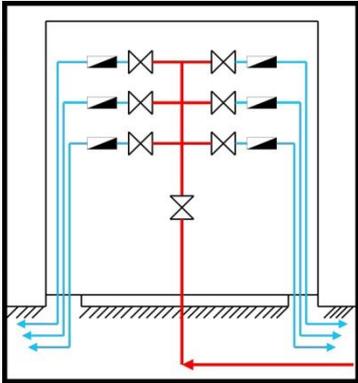
# Diagram of water supply network reconstruction in individual housing sector



**Terminal 1**



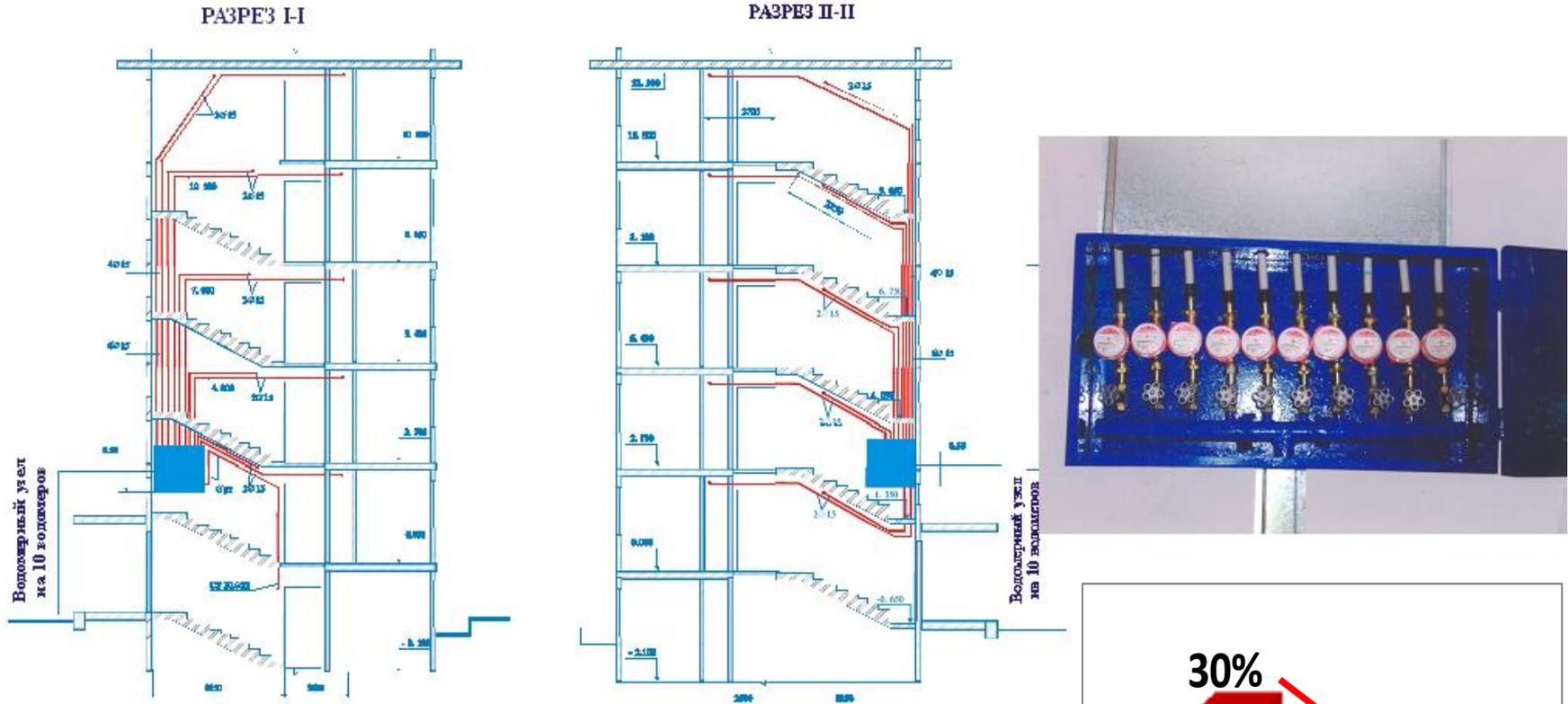
**Terminal 2**



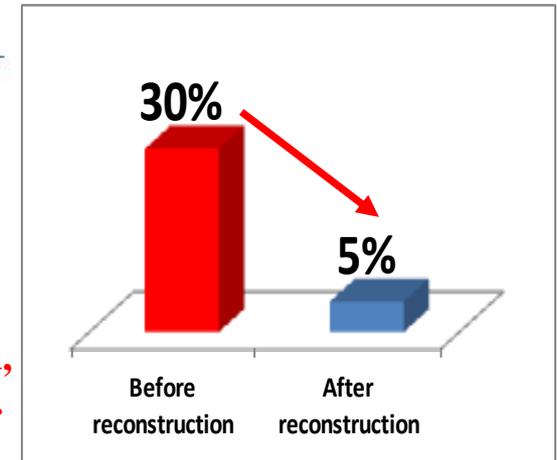
- Municipal mains**
- Customer water line**

1697 street water meters are installed in the quarters.

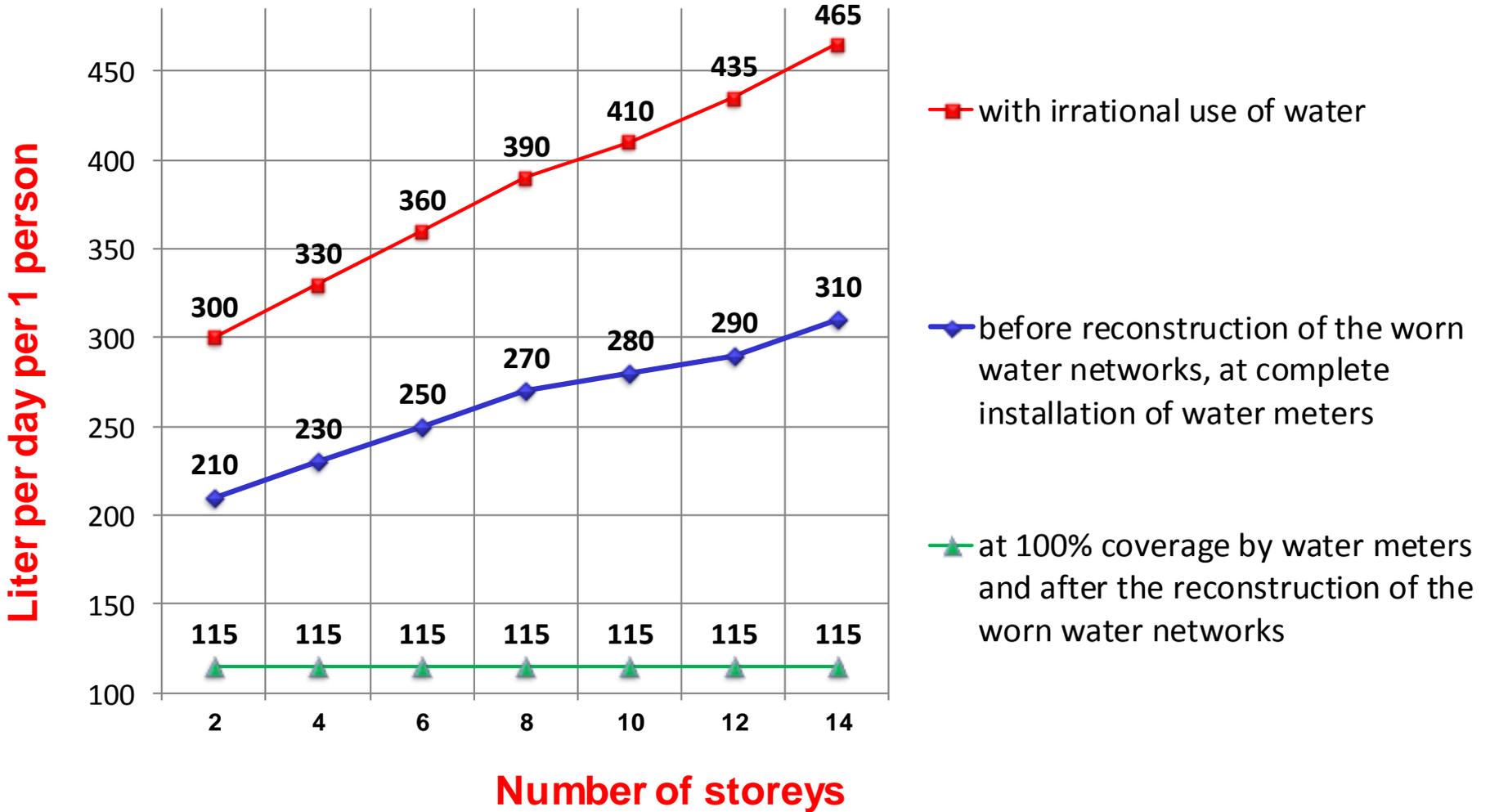
## Diagram of water supply network reconstruction in apartment buildings



**In-house water supply and sanitation networks were reconstructed in 403 houses out of the available 1881 multi-storey apartment buildings. Every year, more than 50 houses get the new plastic piping instead of the worn metal piping. These multi-storey residential buildings are 40-50 years old, while the service life of steel pipes is 20 years according to building codes. Commercial water losses because of high depreciation of pipelines reach 30%. After reconstruction, the losses come down to 5%.**

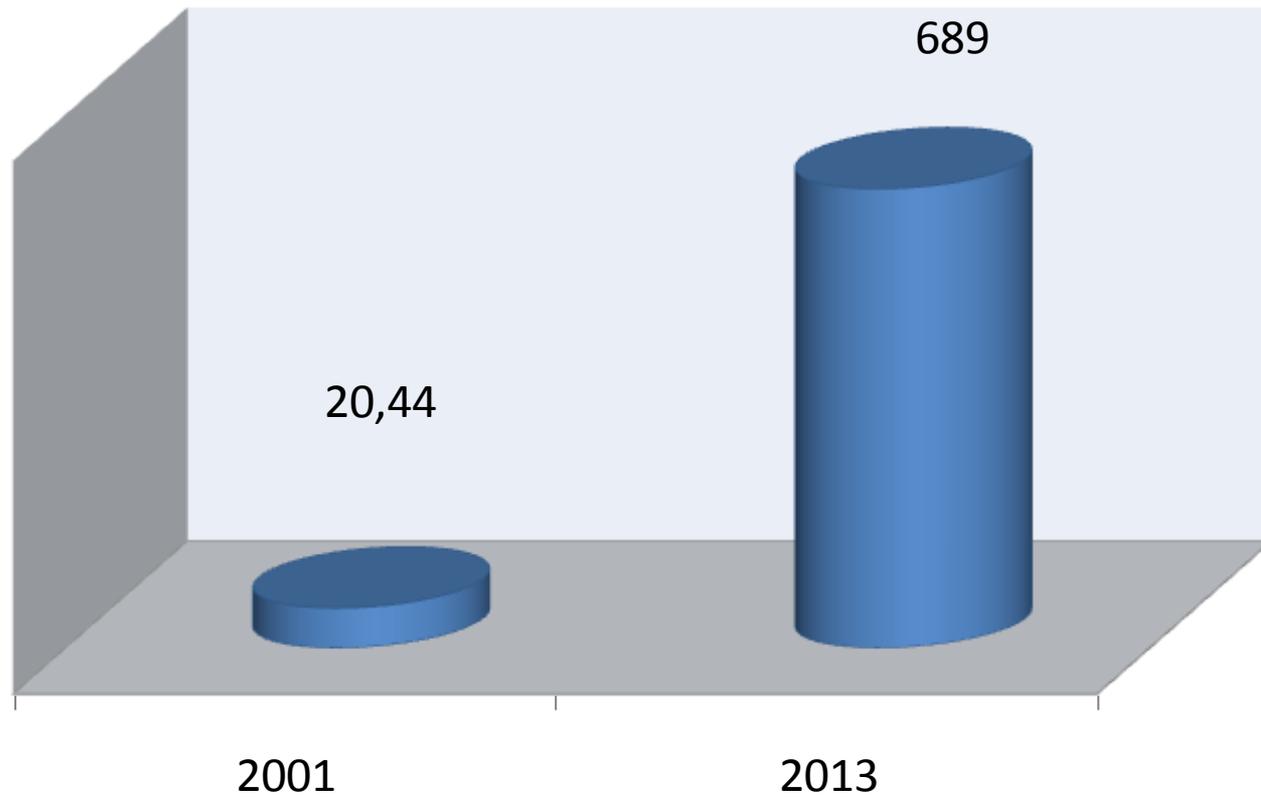


### Dependence of specific water consumption in multi-storey residential buildings



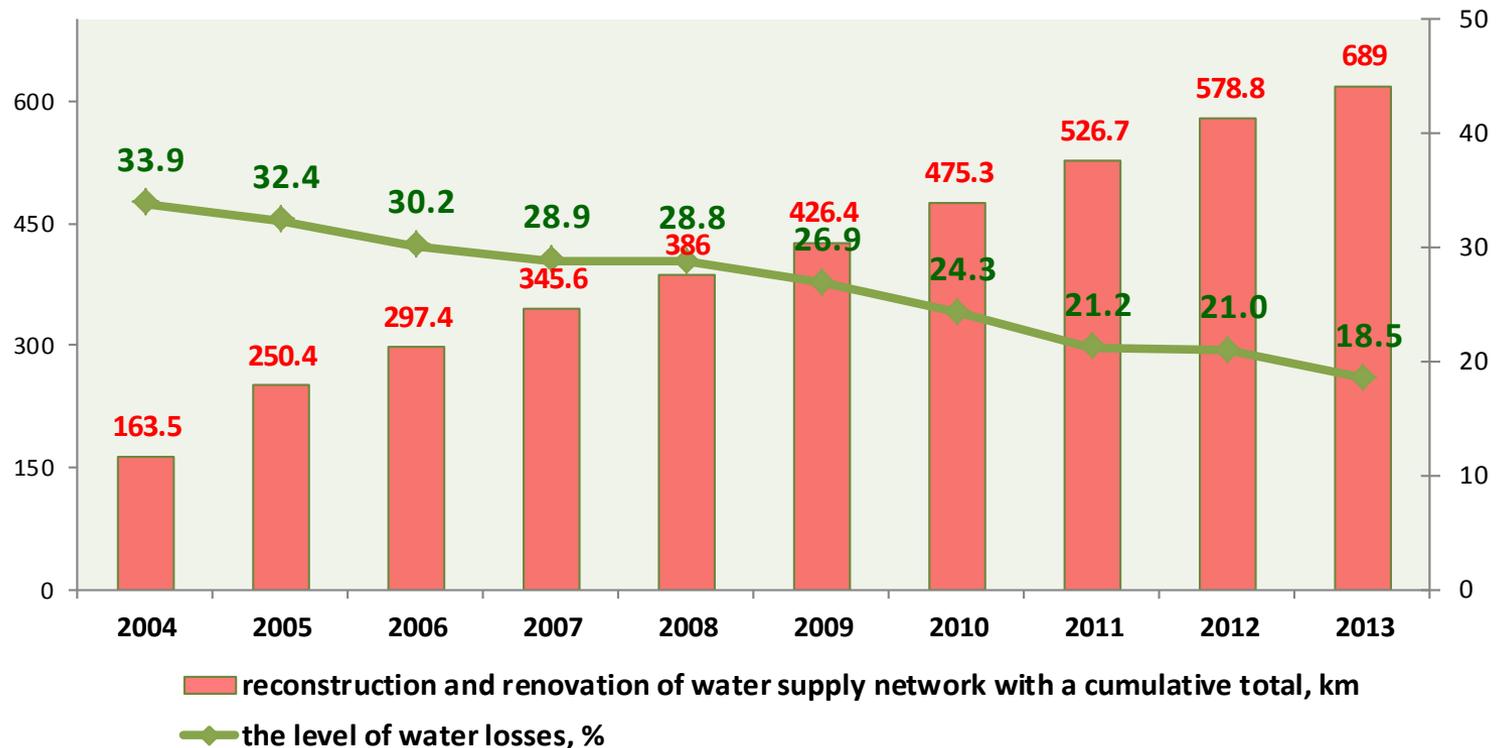
## Reconstruction and renovation of water supply network in diameter, km

*From 2001 till 2013, Water Resources - Marketing LLP has renovated **689** km of worn water supply networks diameter from 32 mm to 600 mm due to the development of investments.*



## Dynamics of reducing water losses in %, the dynamics of reconstruction and renovation of water supply network, km

*According to the Decree of the RK Government of 23.12.2008 # 1221 "On strategic planning of the RK Agency on natural monopoly governance", Water Resources - Marketing LLP has committed itself to reduce water losses from regulatory 28.8% to 18.5% in 2013.*



*From 2001 till 2013, Water Resources - Marketing LLP has renovated 689 km of worn water supply networks diameter from 32 mm to 600 mm due to the development of investments with the following results:*

- reduction of accidents per 100 km to 33%;*
- reduction of the specific standard energy consumption by 4 times;*
- Uninterrupted water supply to consumers;*
- reduction of emergency repair costs by 31%.*



## Investment of the European Bank for Reconstruction and Development to update capital assets of water and sanitation sector in Shymkent

During 2009-2013, 3 contracts were signed totaling US\$40M, of them, US\$30.4M assimilated. The investments will be completed in 2014.

*TRANCE 1. In 2008, the feasibility study for reconstruction of water supply networks was developed by a grant from the EBRD. The investments were utilized in 2009-2010 by the bank in the amount of **US\$8.0M** with a preferential interest rate of 5.5% per annum for 10 years.*

Result:

- Reduction of the specific standard energy consumption up to 0.15 KW/m<sup>3</sup>;
- Uninterrupted water supply to consumers;
- Reduction of regulatory and technical losses to 18.5%.

*TRANCE 2. In 2010, the feasibility study for upgrading the sewage treatment plants and construction of a biogas unit was developed and the contract signed by a grant from the EBRD in the amount of **EUR13.6M** of investment with preferential interest rate of 5.5% per annum for 10 years.*

Result:

- bringing the indicators of wastewater treatment (suspended solids, BOD<sub>5</sub>, nitrites, nitrates) to the level of international environmental standards;
- development of "green" electricity from biogas from sewage waste (reducing power consumption up to 50% - 4.4 MW / year);
- indirect prevention of CO<sub>2</sub> emissions - 9.9 metric tons / year;

*TRANCE 3. In 2013, we signed a supplementary agreement to attract another **EUR10.3M** to replace the worn water networks and lay the sanitary sewer networks in new housing estates.*

Результат:

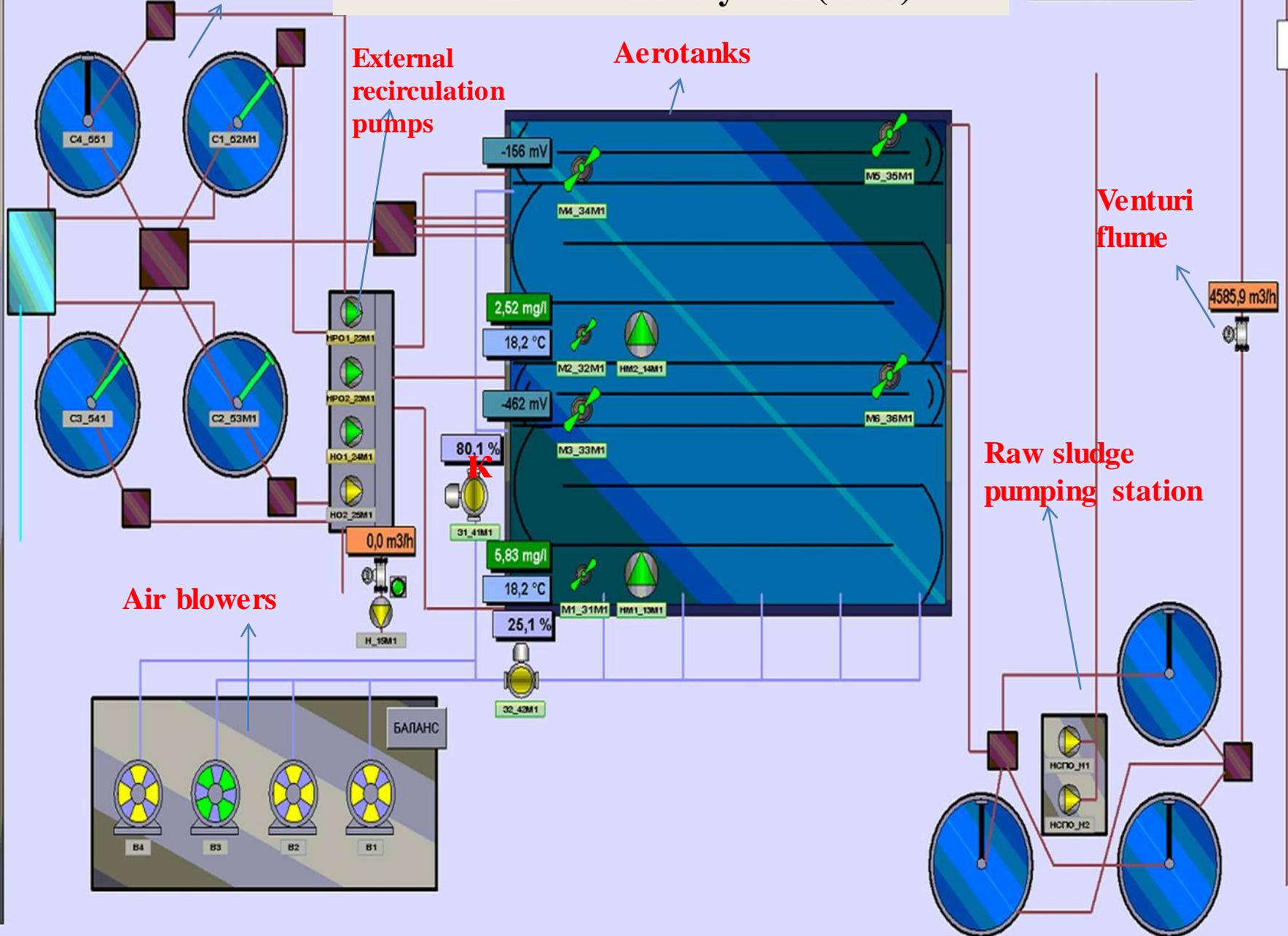
- reduction of accidents per 100 km to 33%;
- Reduction of the specific standard energy consumption up to 0.12 KW/m<sup>3</sup>;
- Uninterrupted water supply to consumers;
- Reduction of regulatory and technical losses to 17.9%;
- Increasing access to central sewage system.

Secondary sedimentation basins

# Treatment facilities are managed by automated control system (ACS).

## MENU

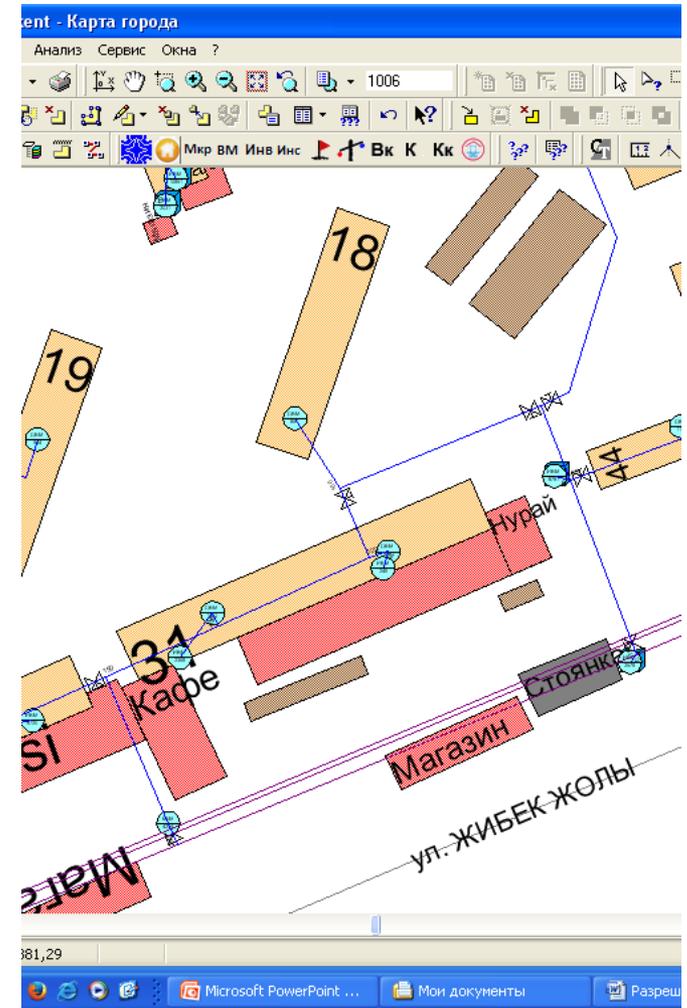
- Аварийная ситуация
- Журнал аварий
- События
- Технические аварии
- Журнал технических аварий
- Отчеты
- Диаграммы
- Настройки
- Коммуникации
- ЛОГИН
- ВЫХОД
- AUDIT



## Water Resources - Marketing LLP has implemented a GIS system

There are 6 grids, 9 maps, 54 layers, and 149 styles.

- The system processes discrete and vector data: pipes, pits, water meters, valves, gauges, regulators, pumps, wells.
- The system delivers event messages on damage to pipelines, poor services, violations in the buffer zone.
- The following information is available: aftersales planning, coverage of automated data reading of water meters, pressure control coverage.



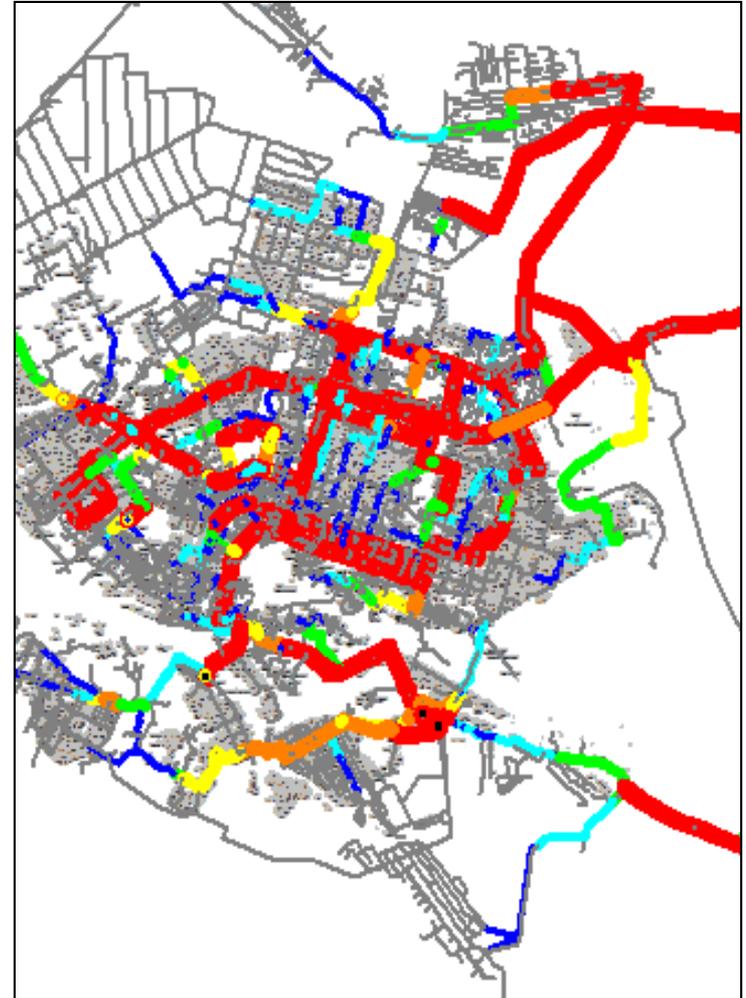
## Hydraulic model was prepared on the basis of vector maps

- The Model was prepared (unlike in some other companies) based on real consumption data, and includes 13320 plots. The length of represented waterpipe – 1194km.
- The Model provides the data on elevations, consumption, speed, pressure, with the account of hourly unevenness, at 20 minute intervals.

Level of agreement with the actual data:

on pressure – 82.3%

on consumption – 91.4%



**Thanks for Your attention!**