

PLANNING AND DEVELOPMENT COLLABORATIVE INTERNATIONAL, INC

**Russian Federation
Water and Wastewater Project**

Russian Water Loan Feasibility Assessment: Overview

Prepared for
**United States Agency for International Development
The Urban Institute**

Prepared by
PADCO, Inc

USAID/PADCO Contract No. EPE-C-00-95-00118-00, Task Order PAD-712-01

June 1998

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FOREWORD

This Final Overview Report represents a single volume of a seventeen-volume series on Russian water and wastewater utilities (Vodokanals in Russia). In addition to this report, the series contains an Interim Overview Report and 15 other reports, each focusing on single Vodokanal. This series was produced in support of the Russian Water and Wastewater Project with financing from the United States Agency for International Development (USAID).

This report presents an overview of the main findings related to our institutional and financial assessments concerning the ability of Vodokanals to service long term debts. Based on these results, the report presents institutional and financial recommendations to assist federal and local decision makers improve Vodokanal operational and financial autonomy in order to enhance its debt repayment capabilities.¹

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Finally, we would like to thank Stephen Giddings, Hugh Winn, Joel Helsey, and Valentin Stobetsky of USAID for their continued support and encouragement for projects related to housing and communal service reform in the Russian Federation.

¹ All ruble values in the report are presented at exchange rates that prevailed prior to January 1, 1998, the date of re-denomination of the ruble.

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Chapter 1 - Background and Introduction

1.1 Background

The Russian Federation's institutional and economic environments have adversely affected the ability of Vodokanals to be financially self-sustainable. In the past, Vodokanal operations, capital investment and expansion were subsidized or directly paid by the State. As envisioned by recent Presidential Decree No. 425 "On Housing and Communal Sector Reform in the Russian Federation", dated April 28, 1997, Vodokanals through user charges, will be responsible for achieving cost recovery and financial sustainability. In order for Vodokanals to realize this goal, the government has promoted the development of market-based contractual relationships between Vodokanals and all of their customers, including the general population. Such relationships will involve having all customers make water and wastewater payments based on full cost tariffs and metered consumption. Only needy low income families would receive targeted subsidies for their water and wastewater supplies.

As Vodokanals begin to look towards their sustainability, customer satisfaction and affordability become more important. In the past, the relationship between Vodokanals and their customers, particularly general population customers, was not very strong nor open. General population customers paid nominal tariffs.

As the goal is for full cost recovery in the short term, the Vodokanals will now have an obligation to provide their customers the best service at least cost. This requires carrying out improvements to reduce losses and inefficiencies, improving production activities, and improving management and public relations. To enforce cost recovery policies, Vodokanals must be given the powers to shut-off service for customer non-payment. Under the new government reforms, the Vodokanals are to receive more fiscal autonomy and be responsible for their own capital expenditure financing.

From February 1997 through March 1998, PADCO reviewed 15 Russian Vodokanals to assess their institutional and financial capacities to obtain long term loans.² This overview report and the individual Vodokanal reports, are based on the project's main findings. These reports are intended to identify and initiate the implementation of a program of institutional strengthening and improvement of financial management of Vodokanals. This effort is also intended to assist the World Bank in their financial assessment of the individual Vodokanals, as the annual accounts of Vodokanals that were prepared under the Russian Accounting System (RAS), were converted to near-GAAP annual accounts.³ The reports will also help the Vodokanal management and Federal, Oblast and Local government officials determine the investment

² The 15 Russian Vodokanals assessed include Cheboksary, Gagarin, Kansk, Murmansk, Nalchik, Nizhny Tagil, Orel, Pechora, Petrozavodsk, Pskov, Smolensk, Sochi, Tobolsk, Votkinsk, and Vladimir.

³ The accounting conversion methodology is given in Appendix I.

packages which could be financed by the proposed World Bank funded Russian Federation Water and Wastewater Project

1.2 Introduction - Institutional and Financial Limitations

During the Vodokanal review, PADCO observed some improvements over the years as well as issues of concern. PADCO observed a number of institutional, legal and financial obstacles confronting Vodokanals as they are undergoing a transition period to face up to a near market economy.

There are issues that limit the Vodokanals from being able to repay long term debt obligations through user charge collections. The primary institutional obstacles facing the Vodokanals include

- Federal restrictions for including interest on long term loans in the tariff structure,
- Politicized tariff approval processes,
- Tariff structures in which enterprise tariffs provide large cross subsidies to general population customers,
- Undeveloped targeted social safety net,
- Weak legal relationships between Vodokanals and local governments,
- Weak legal frameworks between Vodokanals and their customers, including billing and collection intermediaries, and the inability to terminate service for non-payment,
- Vodokanal managements predominantly focus on technical/engineering issues, e.g., water production and wastewater treatment, and less on financial management,
- Lack of water loss reduction and operation efficiency improvement programs,
- Lack of demand management programs

The primary financial obstacles observed for most Vodokanals reviewed include

- Inadequate collection of user charges,
- Declining total collections and especially cash collections,
- Existing tariffs do not include all economic costs of providing services,
- Weak management information systems,
- Lack of cost accounting systems and subsequent poor budgeting,
- Inadequate medium and long term operating and capital expenditure planning

Each of these obstacles will be discussed in detail in this overview. At the end of this report, the Vodokanal debt service capacities are assessed and an Action Plan is presented to assist policy makers and Vodokanal managers in enhancing Vodokanal debt repayment capacities. The Action Plan is also intended to assist Vodokanals overcome the institutional and financial

limitations discussed in this document. Specific recommendations of each Vodokanal can be found in the respective individual Vodokanal reports.⁴

⁴ Eight individual Vodokanal reports were financed by USAID Contract No. CCS-0008-C-00-2057-00, Task Order 87 and their respective reports were delivered separately, together with an Overview report dated August 1997. Seven additional Vodokanal reports were financed by USAID Contract No. EPE-0008-C-00-5118-00. The review of the seven Vodokanals was carried out by PADCO in collaboration with The Urban Institute.

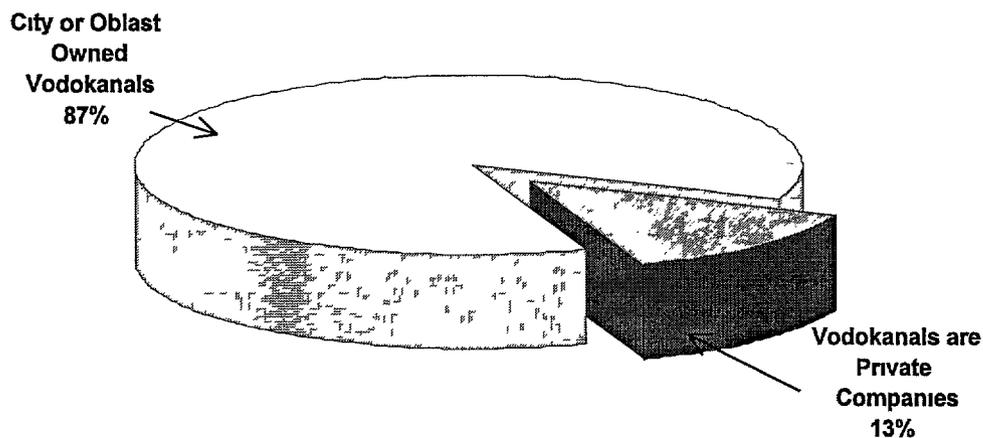
Chapter 2 - Institutional Review

2 1 Assessment of Present Institutional and Regulatory Environment

2 1 1 Vodokanal Legal Status

Typically, Russian water and wastewater utilities are municipally-owned enterprises. Under the Russian Civil Code, enterprises that do not have ownership rights over municipally-owned assets under their management are recognized as unitary enterprises⁵. Even if the title of municipally-owned Vodokanals does not contain the word “unitary”, one may treat these enterprises as a unitary, as there is no other legal form envisaged by the legislation suitable for them. The Civil Code mentions that the legal status of federal and municipal unitary enterprises is also instituted by the law on the federal and municipal unitary enterprises⁶. Though such law has not been issued yet by the Russian Government.

Figure 1 Vodokanal Comparative Legal Status



Out of 15 Vodokanals reviewed by PADCO, only Tobolsk and Pskov Vodokanals are legally independent private enterprises. Tobolsk Vodokanal has the status of a closed joint stock company fully owned by the physical persons. Though the Russian law on the joint stock companies limits the number of shareholders in a closed joint stock company to fifty, the Tobolsk Vodokanal status of having 280 shareholders does not invalidate its charter as the company was organized before

⁵ See Civil Code, Part 1 Chapters 113-114

⁶ See Civil Code, Part 1, Chapter 113, Point 6

the restriction was imposed⁷ Tobolsk and Pskov Vodokanals' legal status are exceptions rather than a rule. As it was mentioned by the Russian Housing and Communal Services Institute, current ratio of non-municipal-owned enterprises in Russia to municipally-owned is lower than 10 percent and has been reducing recently⁸. This trend reflects the local authorities' concerns about the safety of the assets, and risk of losing control over the Vodokanals.

Pskov Vodokanal has the status of a partnership with limited liability, which is outdated according to newly created Russian law on the partnerships with limited liability. Similarly to the closed joint stock companies Pskov Vodokanal is not allowed to have more than 50 partners. But new law on the partnerships unlike one on the closed joint stock companies obliges the Vodokanal to reduce number of partners within one year since the law came into effect in February 1998⁹. Currently Pskov local administration and Pskov Vodokanal are conducting final negotiations to create municipal enterprise Vodokanal which will operate Pskov entire water and wastewater system.

2.1.2 Vodokanal Property

All of the Vodokanals reviewed, except for the Tobolsk, enjoy economic management rights to municipal or oblast property to use for their water and wastewater activities. The Vodokanals received such rights from their founders in accordance with the Russian Civil Code¹⁰. The Tobolsk Vodokanal however leases the municipal assets which it uses. However, all the Vodokanals include these municipally-owned assets in their balance sheets and depreciate them.

Property transfer agreements exist for all the Vodokanals assessed except Petrozavodsk, Nizhny Tagil, and Tobolsk Vodokanals. As Nizhny Tagil Vodokanal charter mentions that "conditions and procedure of the full economic management should be established by the agreement between the enterprise and the body, authorized by the government to manage this property", absence of such an agreement may invalidate the rights of full economic management assigned by the charter. The Petrozavodsk Vodokanal charter does not mention any additional documents regulating the economic management rights. As the Civil Code does not require these documents, the

⁷ The Closed Joint Stock Company Tobolsk Vodokanal was registered by the Tobolsk local administration in June 1995. The Federal Law on the Joint Stock Companies was issued in December 1995. The Article 94, Point 4 of the Law states that "Provisions of the Point 3, Article 7 of the current Federal Law are not applicable to the joint stock companies created prior to the enforcement of the current Federal Law." Point 3 of the Article 7 restricts the number of shareholders in a closed joint stock company to fifty.

⁸ See Housing and Communal Services Institute Report to PADCO.

⁹ The Law on the Partnerships with Limited Liability was issued in February 1998. Chapter 7 of the law prohibits number of partners more than 50. If number of partners is larger than 50 than partnership should be reorganized into an open joint stock company or a production cooperative. The law allows one year for this conversion.

¹⁰ See Russian Civil Code, Part II, Article 294, 295.

Petrozavodsk Vodokanal activity apparently is within the current legal framework. The Tobolsk Vodokanal has a lease agreement for the municipally-owned assets with the city property management committee with expiration date January 1, 2000. (Table 2.1 summarizes corporate structures of the 15 Vodokanals)

Table 2 1
Vodokanal Comparative Legal Information

City	Name	Charter Date	Corporate Structure	Approval Needed for Reorganization
Cheboksary	“Vodokanal”	August 92	Municipal Production Enterprise	Cheboksary City Property Management Committee, Labor Collective
Gagarin	“Gorvodokanal”		Municipal Enterprise	Gagarin Raion Administration, Labor Collective
Kansk	“Water and Wastewater Service Administration”		Municipal Production Administration	Kansk City Soviet of People’s Deputies, Labor Collective
Murmansk	“MurmanVodokanal”	July 95	State (Oblast) Unitary Enterprise	Murmansk Oblast Administration, Murmansk City Administration
Nalchik	“Vodokanal”		Municipal Enterprise	The Republic of Kabardino-Balkarian Cabinet of Ministers
Nizhny Tagil	‘ Production Water and Wastewater Enterprise ’	January 92	Municipal Enterprise	Nizhny Tagil City Property Management Committee, Labor Collective
Orel	‘OrelVodokanal’	March 93	Municipal Production Enterprise	Orel City Administration, Labor Collective and Orel Soviet of People’s Deputies
Pechora	“Vodokanal”		Structural Sub-unit	Municipal Unitary Enterprise ‘Pechorazhilkomkhoz
Petrozavodsk	“Petrozavodsk Vodokanal”	August 95	Municipal Enterprise	Petrozavodsk City Property Management Committee
Pskov	“Vodokanal”	August 92	Partnership with Limited Liability	Partners
Smolensk	“Gorvodokanal”		Municipal Enterprise	Smolensk Mayor, Labor Collective
Sochi	“Vodokanal ’	February 96	Municipal Unitary Enterprise	In accordance with the Section 57-65 of the RF Civil Code
Tobolsk	“Tobolsk City Vodokanal”	July 96	Closed Joint Stock Company	General Shareholder’s Meeting, Legislation
Vladimir	“Production Water and Wastewater Enterprise”	January 93	Municipal Production Enterprise	Vladimir Property Committee Court Decision, Legislation
Votkinsk	“Water and Wastewater Communal Enterprise”	March 92	Municipal Communal Enterprise	Udmurtia Republic State Property Committee, Labor Collective

2 1 3 Vodokanal Director

Vodokanal's charters generally provide their directors with broad authority over the management of the respective Vodokanals. All Vodokanal directors are authorized to act independently on behalf of the enterprises. They can issue power of attorney to third parties, open bank accounts and take out loans, and issue orders and instructions which are obligatory for all employees.

Typically Vodokanal directors sign their employment contracts with the city heads or chairmen of the municipal property management committees. The Tobolsk Vodokanal director is elected by the board of directors of the Tobolsk Vodokanal, that in its turn is elected by the general meeting of the shareholders.

2 1 4 Vodokanal Labor Collective

Usually all employees of the enterprise belong to a Vodokanal labor collective.¹¹ Generally the collective concludes a labor collective agreement with the Vodokanal director stating the list of social privileges to be received by Vodokanal workers. The chairman of the local trade union committee signs a labor agreement with the Vodokanal director on behalf of the labor collective. Collective also give opinions on the local administrations' candidates for the director position and participate in revision of Vodokanal charters. As the Tobolsk Vodokanal does not have a local trade union organization, the labor agreement there was signed by the elected members of the labor collective.

2 1 5 Tariff Approval Process

The Russian Government Resolution No 239, dated March 7, 1995 (as amended) authorizes oblast governments to regulate the tariffs for water and wastewater services. On the other hand Federal Government Resolution No 707, dated June 18, 1996 authorizes local governments to approve consumption norms and tariffs for housing and communal services rendered to the general population.

Actual tariff approval procedures vary in different cities. In many cases proposed tariff increases are reviewed by different commissions or local government bodies. The principal similarity is that these organizations are established and appointed by the city or oblast governments, and the final tariff approval is made by the city major, or by the city major and the chairman of the city дума. Thus, the tariff approval process is subjected to political influence, and very often tariff increases for residential customers are postponed because of expected political events, like elections of the

¹¹ For example, point 10.4 of the Nizhny Tagil Vodokanal Charter states that "The enterprise labor collective consists of the all individuals, participating in the activity of the enterprise based on the labor agreement"

local duma or mayor¹² The procedure of the tariff approval process does not involve open hearing and is not transparent to the public

Tariffs consist of two main components, production expenses and profitability Production expenses are regulated by federal laws and consist of salaries related to production, associated social taxes, inputs required to produce the goods and services provided by the enterprise and depreciation of fixed assets Profitability is the enterprises' planned profit and includes many expenses that would be treated as production expenses under international accounting rules For example, salary-related bonuses are paid out of profitability as is interest on long-term debt Resolution 239 permits each subject of the federation to determine allowable profitability levels in their jurisdictions

Profitability levels are established as a percentage to the total planned costs, making Vodokanals interested in showing higher planned expenses in tariff structures However, some Vodokanals have also to prove to the tariff regulating authorities that they need this level of profitability by submitting calculation of required profit

Average tariffs per unit of services (T) is calculated by the following formula

$$T = \frac{C(100\% + P)}{N}$$

where

C - cost of services, rubles,

P - profitability level (rentabelnost), percent,

N - number of units to be sold

Under this tariff structure, Vodokanals have little incentive to reduce their costs, as during the next tariff approval process, they may be deprived of all savings, gained from reduction of costs For example, if Vodokanal today manages to reduce its personnel by 20 percent due to more efficient operation and management, tomorrow the "labor costs" component in a tariff structure may be cut by the same 20 percent Tariff review and approval procedures do not give any alternatives in this case

Very often Vodokanals maintain large cross-subsidies between enterprise and general population customers, where the former's higher tariffs subsidize lower tariffs for the latter Only in Nizhny Tagil and Tobolsk lower population tariffs are subsidized by the local government budget (see Table 2 2) In either case, lower population tariffs create problems for Vodokanal collection

¹² The concept of the federal housing and communal sector reform establishes annual benchmarks for the population tariffs for housing and communal services as a percentage to the cost of services
1998 - 50 percent, 1999 - 60 percent, 2000 - 70 percent, 2001 - 80 percent, 2002 - 90 percent, and 2003 - 100 percent

Enterprises are not able to carry the population costs, and local budget is not able to compensate lower population rates. Apparently the most feasible solution of this problem is increasing population tariffs to cover the full costs of services for residential customers.

Table 2.2
Vodokanal 1996 Consumption and Billing by Customer Category

Vodokanal	Population		Budget Organizations		Other Customers	
	Consumed to Total (%)	Billed to Total (%)	Consumed to Total (%)	Billed to Total (%)	Consumed to Total (%)	Billed to Total (%)
<i>Cities where other groups of customers cross-subsidize lower tariffs of the residential customers</i>						
Cheboksary	65%	10%	9%	25%	26%	65%
Gagarin	74%	18%	11%	36%	15%	46%
Kansk	37%	20%	41%	26%	23%	54%
Murmansk	70%	39%	10%	20%	20%	41%
Nalchik	62%	13%	38%	87%	NA	NA
Orel	78%	13%	11%	17%	11%	70%
Petrozavodsk	52%	16%	6%	9%	42%	75%
Pskov	75%	26%	11%	34%	14%	40%
Smolensk	74%	13%	13%	27%	14%	60%
Sochi	46%	6%	6%	27%	48%	67%
Vladimir	70%	18%	7%	18%	23%	64%
<i>Average</i>	<i>64%</i>	<i>17%</i>	<i>15%</i>	<i>27%</i>	<i>24%</i>	<i>52%</i>
<i>Cities where lower tariffs for the residential customers are subsidized by the city budget</i>						
Pechora	39%	39% ¹⁾	43%	50%	18%	11%
Tobolsk	64%	63% ¹⁾	9%	9%	27%	28%
Nizhny Tagil	45%	41% ¹⁾	13%	22%	43%	37%
Votkensk	74%	75% ¹⁾	4%	2%	23%	23%
<i>Average</i>	<i>56%</i>	<i>55%¹⁾</i>	<i>17%</i>	<i>21%</i>	<i>28%</i>	<i>25%</i>

Notes

¹⁾ The ratio represents sum of bills issued by the Vodokanals to the housing maintenance companies as a representatives of population. Actual amounts billed by the housing companies to each family are much lower. In Tobolsk general population customers pay about 35 percent of the amount billed to the housing companies while in Nizhny Tagil population customers pay only about 18 percent.

The Nalchik Vodokanal combines the records of budget organizations and enterprises in one customer category.

2 1 6 Social Safety Net

2 1 6 1 Social Protection Subsidization

Given the social and political impact of significantly raising the water and sewer tariff, public officials and vodokanal management must work closely together to ensure that those who cannot afford to pay the increased cost of the services have somewhere to turn for assistance. Of the current four types of subsidies described below, only the Housing Assistance Subsidy Program (HASP) enables municipal officials to focus a city's limited resources on supporting the most needy households. Additionally, income-based subsidies, while creating a social safety net, allow municipal officials and vodokanal management to move forward in the transition to full payment for water and wastewater services by residential consumers.

2 1 6 2 Types of Subsidies

Residential consumers may receive up to three of four types of subsidies at any given time. In some cities, residential consumers receive tariff subsidies from the city that pays for a large portion of the tariff (currently it is generally 70 percent). More commonly, residential customers benefit from cross-subsidies paid by budget organization and enterprise customers categories. Besides general subsidies or cross-subsidies, substantial number of residential customers may also receive *lgoti*, privileged payments, if they are veterans, disabled, or are members of the other groups who have received of people who receive "privileged payment" status. Finally, a third subsidy, the HASP subsidy, is the only subsidy based on the need or income level of the household.

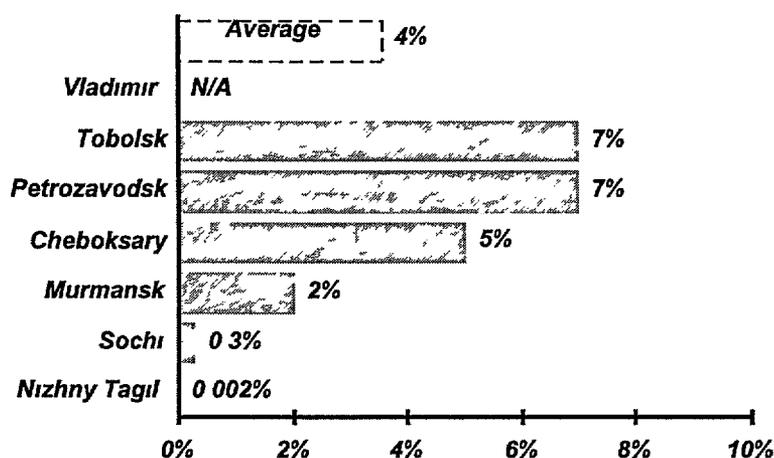
Under Presidential Decree Number 425 "On Housing and Communal Sector Reform in the Russian Federation," the agencies that grant *lgoti* are supposed to budget the payment to communal service providers from their annual budgets rather than rely on cities to pay this subsidy. This approach will help eliminate the burden on municipal budgets that make up *lgoti* payments to communal service providers. Cross-subsidies and/or general subsidies are also supposed incrementally to reduce until 2003 when the full cost of the service is to be paid by residential consumers.

Two cities, Pechora and Votkinsk, paid vodokanals directly the portion of the tariff not paid by residential consumers. In the other cities, cross-subsidies from non-residential consumers make up the difference. When general subsidies and cross-subsidies are eliminated, only the HASP subsidy is supposed to remain as the mainstay in assisting low-income residential consumers who cannot afford to pay the full cost of communal services. This mandates that the HASP must be made effective if overall tariff reform is to be useful.

The experience to-date among the 15 cities reviewed is not encouraging. Although all the cities visited during the PADCO review had HASP offices, the actual number of persons benefiting from the program is quite limited.

Increase in residential tariffs require well organized Housing Allowance Subsidy Programs to provide assistance to low-income households unable to afford the increases. The number of families applying for the income based housing subsidies may become an indicator of population affordability assuming that collection level from residential customers is high. Figure 1 shows that only about four percent of the families in the 15 cities receive HASP payments. The maximum was seven percent of families in Tobolsk and Petrozavodsk. In Ukraine, for example, where a housing allowance program achieved a considerable progress, the ratio of families receiving targeted subsidies often exceeds 30 percent¹³

Figure 2 Percent of Families Receiving Income Based Subsidies to Total Number of Families in City



Source: City officials in each of the reviewed cities

2.2 Assessment of Vodokanal Management and Operations

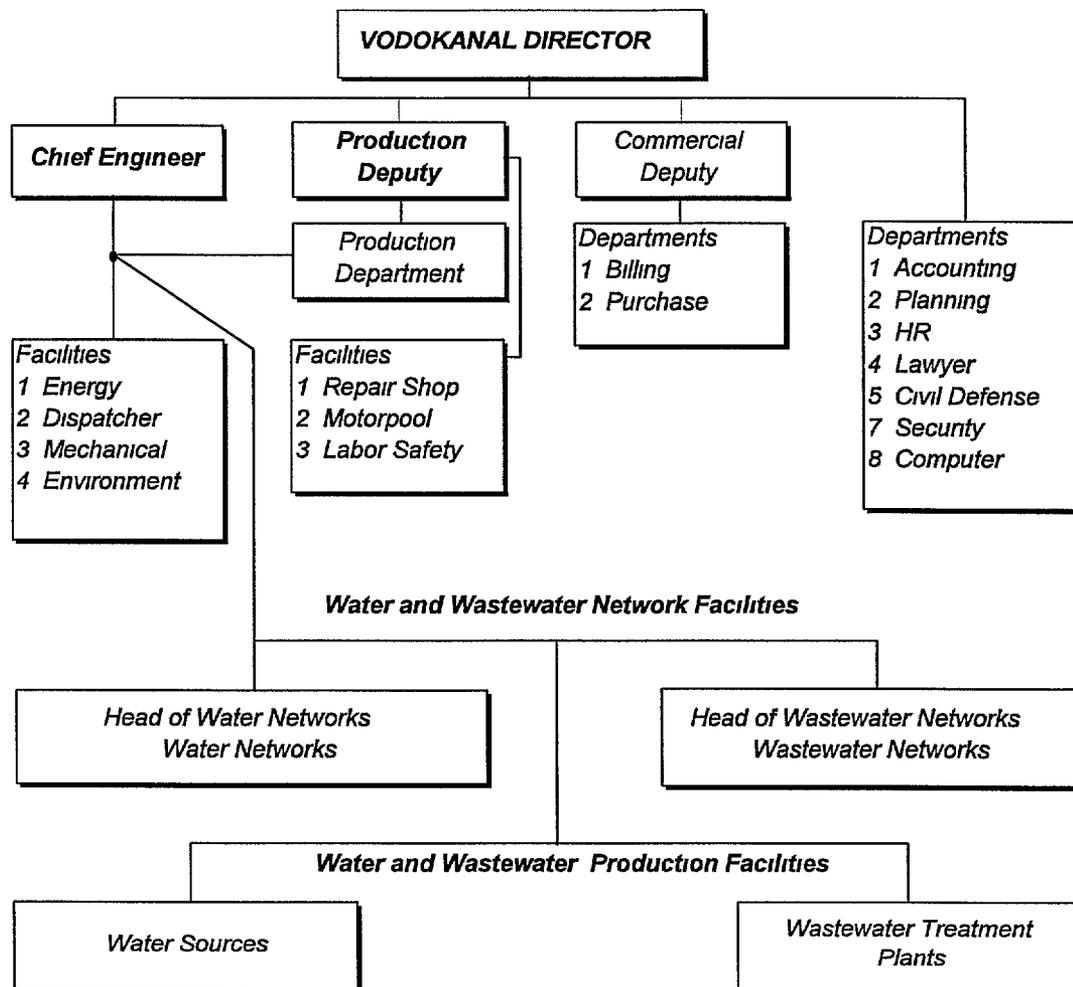
2.2.1 Organization and Management

Vodokanal directors are responsible for determining staffing structures and policies for selecting, hiring and firing of personnel. Typically the chief engineer or production deputy occupies the

¹³ For example, in Darnitsky Raion of Kyiv out of total population 161,000, by January 1997, 'the number of active subsidies reached 18,507 - 38.5% of all families living in this raion' (See Policy Reports on Targeted Social Assistance in Ukraine, March 1997, Issue No. 20, prepared by PADCO, Kyiv, Ukraine)

number two position in the Vodokanal management structure Chief accountants, chief economists and heads of billing and collection departments are almost always much lower in Vodokanal management structures than chief engineers As a result, the management orientates towards technical issues Chronic shortages of funds mean that Vodokanals activities generally consist of responding to emergency repairs adversely affecting strategic and financial planning Out of fifteen, only Tobolsk Vodokanal employs a financial deputy, who coordinates operation of accounting, planning, and billing department This facilitates information exchange between the departments and increases efficiency of operation in the organization Figure 3 illustrates a typical Vodokanal organizational structure

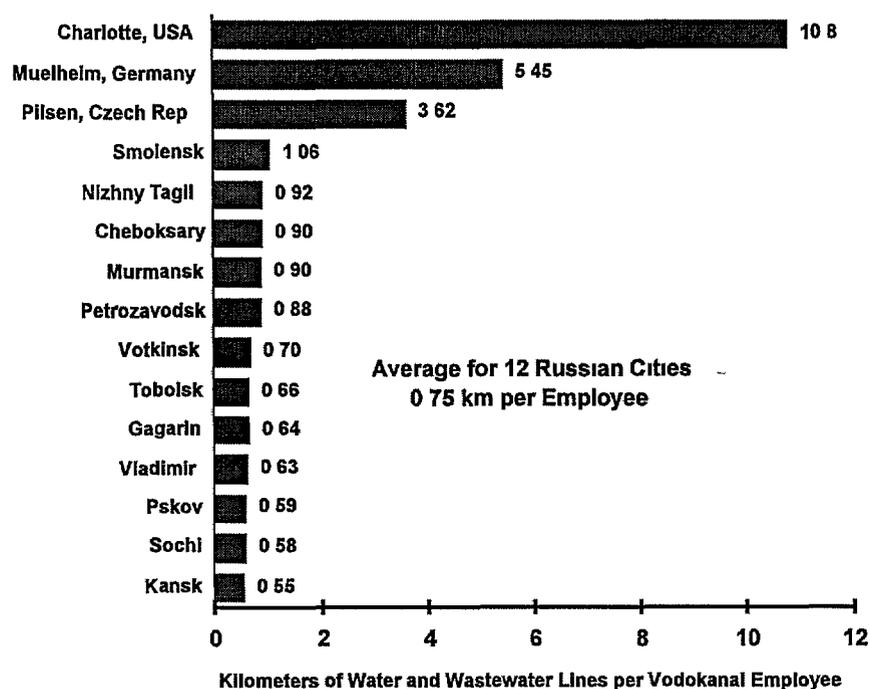
Figure 3 Typical Vodokanal Organization Chart



2 2 2 Personnel and Manpower

Typically, Vodokanals staff their organizations according to operational requirements, technological needs and norms. Administrative personnel usually consists about 6 - 10 percent of the total staff strength. The number of the employees involved with production and distribution of water, wastewater collection, transmission and treatment, and support services are usually prescribed by the established norms developed in the Former Soviet Union and controlled by tariff regulatory bodies.¹⁴

Figure 4 Kilometers of Water and Wastewater Lines per Vodokanal Employee in Cities



Source

- 1 Russian Vodokanals - PADCO analysis
- 2 Pilsen, Czech Republic - Compagnie General des Eaux Report at the seminar in Moscow April 21-23 1997 World Bank Loan for Russian Water and Wastewater Utilities
- 3 Muelheim Germany - SEBA Messtechnik Report at the seminar in Moscow April 21-23 1997
- 4 Charlotte, North Carolina USA - Ammons David N Municipal Benchmarks Assessing Local Performance and Establishing Standards

¹⁴ For example, Nizhny Tagil Vodokanal is allowed to include in its tariff calculation the number of employees prescribed by the "Norms of the number of workers involved in operation of the networks, treatment plants of the water and wastewater pumping stations" developed by the Ministry of Labor Research Institute in 1989

Usually, this proscribed number of employees is used to calculate the labor cost allowed in the production costs of the tariff as the salaries are also regulated by the tariff regulatory body. Under these conditions, Vodokanal management is not motivated in reducing the number of its employees because total labor costs allowed in the tariff may also be reduced during the next tariff approval. Typically the tariff review bodies ensure that the number of employees does not exceed the prescribed by norms, however, allowable tariff labor costs are calculated according to actual number of personnel, not normative. Such a procedure makes it difficult for Vodokanal management to reduce excess staffing levels or introduce incentive based pay schemes. As a result of these constraints plus the labor-intensive technologies employed by most Vodokanals staff levels are much higher in the 15 Vodokanals than is found in the West (See Figure 4)

2.2.2.1 Non-Core Personnel and Non-Core Activity

Some Vodokanals have not been as restricted in hiring non-core production staffs. For example, 410 employees out of total 1,660, or 25 percent of Vladimir city Vodokanal are involved in construction activities, operation of the laundry, sewing shop, public bath, cafeteria, two retail shops, and a cattle farm. Similarly, the facilities security staff of Sochi Vodokanal is about 300 employees, or 18 percent of the total staff strength of 1,661 workers. As may be seen from the Figure 4, these two Vodokanals have the lowest ratio of system kilometers per employee. On the other hand Nizhny Tagil Vodokanal Charter does not permit other business activities than those related to the Vodokanal's main activity. As a result, it has one of the highest ratio of pipeline kilometers per Vodokanal employee.

Non-core staffing pose risks for regulators as the expenses related to non-core activities may be included in the water and wastewater production costs due to weak accounting systems. It is virtually impossible to control whether a Vodokanal's plumber was fixing water and wastewater equipment at the pumping station, or he was doing some job at the cattle farm owned by Vodokanal. Non-core activities also may create unfair competition, as the Vodokanal being a monopolist in water and wastewater services may be able to offer "cheaper" construction services, public bath services, meat, or meals in its cafeteria.

In order to achieve transparency in tariffs and reduce costs, Vodokanals should divest themselves of these extraneous activities. Furthermore, many Vodokanals should consider out-sourcing many of the new activities that they are contemplating as they may be able to procure these services at lower costs from private sector providers. Among these activities that could be contracted through competitive bidding procedures are capital repairs, water meter installation and testing, vehicle maintenance, and billing and collection.

2.2.3 Customer Relations

Typically Russian Vodokanal customer relations are regulated by local government resolutions setting different tariff levels and prescribing different billing and collection procedures for each specific customer group. Vodokanals cannot change tariffs for customer groups or billing and

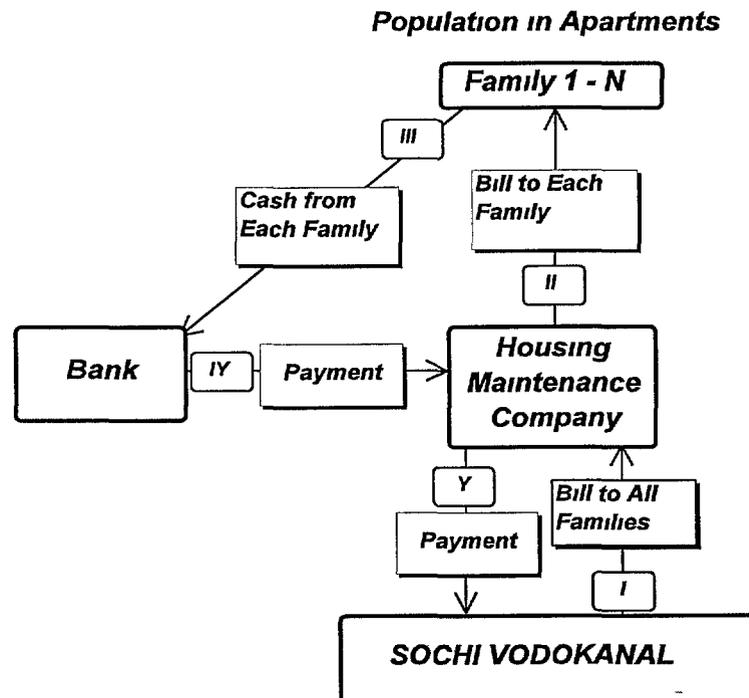
collection methods for residential customers without prior local government approval. Furthermore, population customers are very often “protected” from Vodokanal by the local government bodies and existing legislation. Vodokanals are not allowed to shut-off water from residential customers for non-payment. They also have difficulties in enforcing metering codes unless the Vodokanal installs water meters itself.

2 2 3 1 Population Billing and Collection

Population customers as the biggest Vodokanal customer group consumes from 46 to 70 percent of the Vodokanal services (see Table 2.2)¹⁵. Among this group, population residing in apartments is the largest and typically consists of 80 to 95 percent of total population consumption. Most of these apartment buildings belong to the municipality. All fifteen Vodokanals, except Vladimir Vodokanal, use housing maintenance companies as intermediaries to bill population customers living in apartments. Figure 5 illustrates a typical billing arrangement. Each housing maintenance company services several residential blocks in a city. Thus, the Vodokanal issues only one monthly bill to a housing maintenance company representing several thousand families. The housing maintenance company then issues separate bills to each family. Typically, the same housing maintenance company collects payments from each family. This is the most critical point in the total billing and collection scheme, because the housing maintenance companies very often fail to transfer the funds they receive to Vodokanals. As an exception, in Murmansk the Vodokanal bills residential customers and collects payments from them through municipal computer center. This method is more acceptable for Vodokanal as it results in higher collection rates without the need to hire additional billing and collection personnel.

¹⁵ In fact, population consumes more water and discharges more wastewater than reported by Vodokanals because, consumption norms for population are often lower than actual consumption, and domestic hot water consumed by population is billed to them by the local heat providers. Among the Vodokanals shown in the Table 2.2, only Murmansk and Vladimir Vodokanal include in their bills to population cold water for domestic hot water. One may see that population ratio in total consumption in these cities is the highest. See also discussion below “Consumption norms and Actual Consumption”.

Figure 5 Billing and Collection from Population Residing in Sochi Apartments

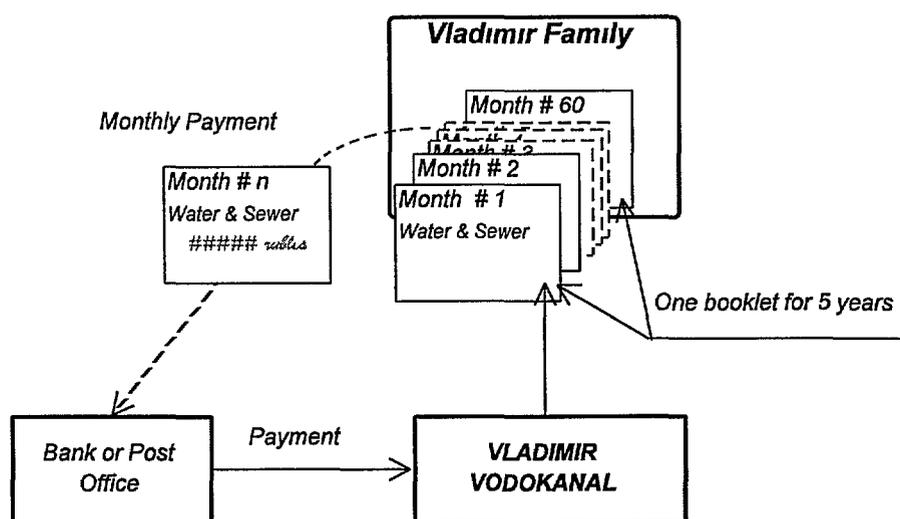


Only the Vladimir Vodokanal bills and collects from households without intermediaries (See Figure 6) The Vladimir Vodokanal concludes agreements with each family, issues one a payment booklet with blank bills that are to be completed and the estimated amount is paid to the local branch of saving bank or post office. Then, the saving bank or post office transmits population payments to Vodokanal.

Vladimir Vodokanal billing department performs the billing and collection functions that are done by the local housing maintenance companies in other cities or municipal computer center in Murmansk. The difference is that water and wastewater services in Vladimir are separated from other communal services, giving the Vodokanal the privilege to collect directly from households living in apartment housing. Obviously, the advantage of this method is direct collection of cash payments from the population. In other cities, housing maintenance companies are the main non-payers to Vodokanal, thus, the direct billing and collection in Vladimir may become a decisive factor in the Vodokanal financial stability. Some disadvantages exist, however. The billing department of Vladimir Vodokanal employs more than 100 people. Issuing one five-year booklet to each family makes it difficult to bill population customers according to average consumption measured by building level water meters. Furthermore, as only about four percent of population residing in municipal apartments have apartment water meters installed, the other 96 percent are

paying their bills according to the city established consumption norms. Installation costs of the water meters in Vladimir are paid for by the Vodokanal and included in the water and wastewater tariffs. Knowing that four percent of the population enjoys “free of charge” apartment water meters, population residing in non-metered apartments would rather wait for Vodokanal to install meters than pay for them. Apartment water meter installation began several years ago. It requires considerable investments and may take several more years to complete.

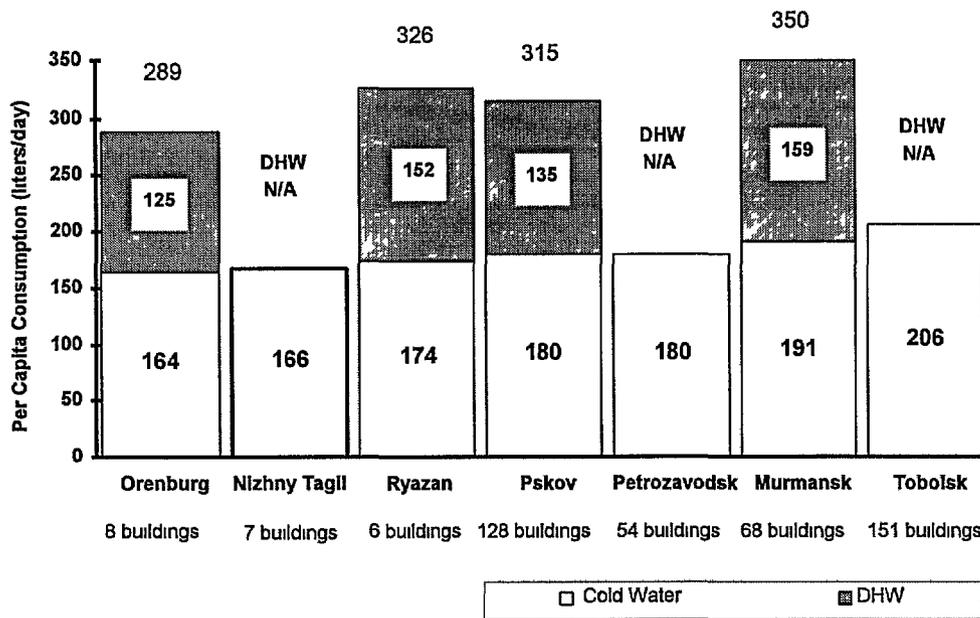
Figure 6 Billing and Collection from Population Residing in Vladimir Apartments



2 2 4 Consumption Norms and Metered Consumption

As may be seen from Figure 5, the average consumption of cold water in seven of the cities reviewed by PADCO varies from 164 liters to 206 liters per person per day. While these consumption figures illustrate the variation found in metered consumption, these figures should not be used to establish consumption norms for non-metered buildings. Consumption of water depends to a great extent on a number of specific local factors, among which the most important are, hydraulic pressure heads in pipes, housing stock age and in-house plumbing state of repair, quality of cold water, temperature and quality of domestic hot water. For each specific building in a city, consumption may vary from 50 liters to 400 liters per person per day.

Figure 7 Metered Average Consumption of Cold Water and DHW in Seven Russian Cities



Source Orenburg, Nizhny Tagil, Pskov, Petrozavodsk, Murmansk, Tobolsk - PADCO projects in Russia Ryazan - World Bank Enterprise Housing Loan to Russia Pre-retrofit Report

High consumption rates are the result of billing customers according to consumption norms rather than actual consumption and, of course, subsidized prices Very often these norms are much lower than average consumption In all reviewed cities, except Murmansk, even if buildings are metered and Vodokanal bills housing maintenance companies by metered consumption, individual families receive bills based on normative consumption Billing by norms gives no incentive for population to save water and repair sanitary equipment Thus, demand management, based on metered consumption, is a key to encouraging conservation

The Rules for Water and Wastewater System Usage in Russia include an effective mechanism for Vodokanal to enforce customer meter installation. According to the Rules if customer does not have working water meter, than the volume of water consumed per day (V) is billed to the customer on the following assumption

$$V = \frac{\pi D^2}{4} * 1.5 * 86,400$$

where D - diameter of the connection pipe, meter
 1.5 - velocity of water flow in a pipe, meters per second,
 $86,400$ - number of seconds per day

To illustrate the impact of the rules, a typical apartment block of nine floors might have 36 apartments and a total of 100 occupants. On average, they may consume about 350 liters of water per capita per day, or 35 cubic meters of water per day. The service pipe diameter for this size building is usually about 40 mm. If Vodokanal applies the rules, the billed amount of water would be calculated as 163 cubic meters per day, or 4.7 times greater than actual consumption. Obviously the rules have very rarely been enforced because of local government pressure. Nevertheless, enforcement of the rules is a tool that Vodokanals could use to encourage meter usage.

Only Murmansk Vodokanal bills population residing in apartment buildings according to metered consumption of water at a whole building level. The program just recently started, but it gave an impetus to residents to install apartment water meters. According to the Vodokanal director, everyday the Vodokanal receives about five or six orders from residents to install water meters in their apartments.

2.2.5 Operation and Maintenance

Preventive and regular maintenance has suffered over the last few years due to insufficiency of funds provided by the current poor collection. Most repair efforts are geared towards fixing water and sewer system breaks. For example, in 1997 Nizhny Tagil Vodokanal spent on the capital repair only 3.1 percent of the total annual expenditures, while emergency break repairs took 10.4 percent of the total expenditures.

2.2.5.1 Production Metering and Unaccounted-for Water

Most Vodokanals meter their production as it is shown in the Table 2.3. If production is not metered, Vodokanals estimate the volume of water produced based on the pump capacity and electricity consumption.

Table 2 3
Vodokanal Production Metering and Unaccounted-for Water

Cities	Estimated Ratio Metered to Non-metered Production	Reported Annual Production * 000 M3	Annual Billed Volume 000 M3	Unaccounted-for Water Percent
Cheboksary	100 %	74,111	57,892	21 9%
Murmansk	95 %	94,765	62,858	33 7%
Nizhny Tagil	56 %	66,085	44,413	32 8%
Petrozavodsk	50 %	45,061	36,406	19 2%
Sochi	100 %	104,096	83,220	20 1%
Tobolsk	0 %	13,162	11,269	14 4%
Vladimir	100%	63,683	46,589	26 8%

* Excluding water used to flush filters at the water treatment plants

In some instances, even if production is metered and Vodokanals are aware of actual figures, officially they may show lower numbers to hide the real unaccounted-for water ¹⁶ Under the old Soviet system, Vodokanals were punished by the authorities for high system losses encouraging them to falsify records. In Pskov, only after PADCO consultants analyzed operators' logs at the water intake, did the Vodokanal accept that unaccounted-for water was not reported 30 percent, but 44 percent. A similar situation was encountered in Nizhny Tagil. The PADCO team visited the water source pumping station and noted that all pumps were working at the pumping station having daily capacity is 130,000 cubic meters of water. However, the Vodokanal reports daily production only about 80,000 - 90,000 cubic meters. Vodokanal officials later admitted that official production numbers were intentionally reduced to show less unaccounted-for water. This water source was also metered. Fortunately, three weeks after PADCO visit to Nizhny Tagil the Vodokanal decided to reveal the true information to local administration and public. The correct production volume for 1997 was 66.1 million cubic meters of water instead of earlier official figures of 54.8 million, which "increased" unaccounted-for water from 19 percent to 33 percent. A realistic approach and desire to improve the situation prevailed over the fear to be reprimanded.

Similarly, the Vladimir Vodokanal in its official 1996 report stated that 3.5 million out of total 63.7 million cubic meters of water produced was used for firefighting needs ¹⁷. This consumption is about 5.5 percent of the total water pumped through the city networks, or is

¹⁶ Unaccounted-for water is the difference between the amount of water supplied from the waterworks and the total amount of water accounted for (billed), which includes domestic and industrial consumption as well as water used for flushing of mains, fire fighting, etc.

¹⁷ See Vladimir Vodokanal official report (format No 2-tp vodkhoz) for 1996.

equal to constantly flowing water day and night during the whole 1996 from a pipe with diameter 300 millimeters¹⁸ It is hard to believe that all this volume was used for firefighting Most probably part of this water is not accounted-for

However, unaccounted-for water cannot be considered as all physical losses Substantial portions of unaccounted-for water may be consumed by population customers As previously discussed water consumption norms used for residential customers billing may be lower than actual consumption Unauthorized connections to the Vodokanal network may also contribute to unaccounted-for water In Nizhny Tagil, metered consumption by enterprises contributes to these losses

2 3 Conclusion Limitations to Operational and Financial Autonomy

Vodokanals face six main institutional limitations to their operational and financial autonomy

- tariff limitations,
- low cash collections,
- weak legal framework and enforcement,
- Vodokanal management orientation toward engineering and technical issues and less toward financial issues,
- lack of demand management and unaccounted-for water reduction program, and
- undeveloped Housing Allowance Subsidy Program

2 4 Goal - Provision of Self-sustainable Water and Wastewater Services

In order to provide sufficient water and wastewater services within a limited period of time Vodokanals need to be financially sustainable enterprises, i e , recover all their costs To achieve this goal, full cost tariffs should be billed to the customers and collection levels should be dramatically improved Both are feasible with strong Vodokanal management and support from local administrations

An integrated Vodokanal program for self-sustainability should include

1 Tariff and Regulatory Reform

The tariff approval process needs to be streamlined if Vodokanals are to become financially self-sufficient, capable of repaying capital improvement loans and maintaining new and existing physical plant and equipment

¹⁸ Assumption is made that flow velocity is 1.5 meter per second

2 Customer Affordability and Social Safety Protection Program

Metering consumption is the centerpiece of water and demand management programs. Doing so makes possible the transition from norm-based billing to more accurate billing based on actual consumption as well as encourages water conservation through pricing mechanisms.

Increases in communal services prices are inevitable and the impact on many low-income households will be substantial. In order to ensure service for these customers, a social protection program needs to be implemented by the local authorities.

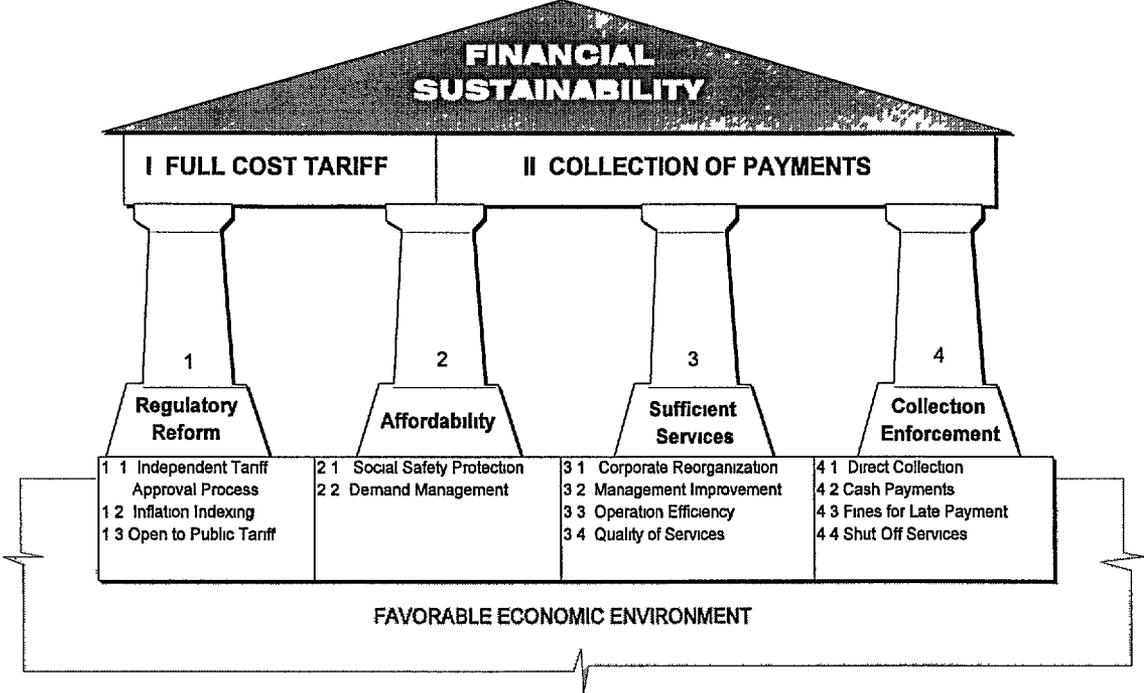
3 Provision of Satisfactory and Sufficient Services

Without satisfactory water and wastewater services, Vodokanals will not be able to recover consistent and regular payments from their customers. Service quality improvements require Vodokanal corporate reorganization, improvement of management and operation.

4 Collection Enforcement Program

The lack of a collection enforcement program, very often caused by the political pressure, further deteriorates Vodokanals financial stability. To improve collection, Vodokanals should introduce direct collection from all customers, levy fines for late payments, and shut-off services to non-payers.

Finally, when employees' salaries are delayed for several months poor moral adversely influences Vodokanal operations. Non-payment by enterprises has affected not only Vodokanal but the overall Russian economy. Improvement in the general economic situation in country should create a favorable environment for Vodokanals financial sustainability.



See more detailed recommendations in the attached Action Plan

Chapter 3 - Financial Review

3 1 Assessment of Present Financial Position

3 1 1 Introduction

Declining macro-economic conditions in Russia has affected all service providers in a number of ways. Water sales to enterprises and operating subsidies from the Government have traditionally financed the operation of Vodokanals. However, over the past few years, fiscal constraints have prevented the Government (national/oblast/local) from providing large subsidies to keep the water and wastewater systems operating efficiently. Although Vodokanals have sharply increased tariffs to all categories of consumers, most enterprises pay these charges in non-cash methods and many budget organizations are in serious arrears.

Cash resources available to virtually all service providers have declined so dramatically that most of the Vodokanals are unable to pay even salaries of staff on time. At the same time, adequate cash reserves are not available with Vodokanals to replace or rehabilitate the worn-out infrastructure systems. Vodokanals have responded by reducing maintenance funding and delaying payments to suppliers and other creditors. Reduced maintenance funding results in reduction of the life span of infrastructure systems, thus making the situation worse. Capital investment for rehabilitation of assets to a meager extent is funded by the Vodokanals from their own source resources mostly by barter of materials from customers and usage of Vodokanal skilled workers. Some capital grants are received from the Government for urgent capital investments. However, these capital grants are much lower than the funding needs of the Vodokanals.

The primary issues facing the Vodokanals include

- Inadequate collection of revenues,
- Declining cash collections with a corresponding increase in non-cash collections,
- Tariffs for enterprises providing a large cross-subsidy to population customers,
- All economic and financial costs of providing services are not included in the existing tariff,
- No financial management information system in place to assist the management decision making,
- The Financial Results Statements prepared by Vodokanals reflect expenses adjusted for collected revenues as the current profit tax regulations allows the Vodokanal to calculate taxable profit on this adjusted basis. The result is that the management is not provided with an actual profitability statement,
- Inadequate short or medium term operating and capital planning

Many of the underlying problems confronting Vodokanals are institutional in nature. The separation of responsibilities between capital investment and service operations allows different incentives to exist for Vodokanal management, local administrations' capital construction departments and consumers. Service providers have little incentive or capacity to maintain

assets Municipal construction departments have little incentive for building high quality water and wastewater assets with low operation and maintenance expenses Further, the reliance on steep industrial charges and government subsidies creates disincentives for many parties concerned to conserve water resources

3 1 2 Russian Vodokanals' Accounting Policies

The financial statements of Vodokanals have a different focus and emphasis when compared to the financial statements of service providers of other countries who follow the accounting principles as set out under International Accounting Standards (IAS) or Generally Accepted Accounting Principles (GAAP) The primary differences between the Russian Accounting System (RAS) and IAS are given below

- The main purpose of preparing annual accounts under RAS is for filing these accounts with the Tax Directorate together with the income tax returns, whereas IAS accounts focus more on showing the actual profit or loss for the year and publishing these accounts in the annual report,
- Under RAS, the treatment of certain expenses that would normally be treated as operational expenses under GAAP are required to be paid out of profit after the income tax has been paid Some out-of-profit expenses include employee bonuses, fines for late payment of taxes and interest on long-term loans,
- Accounting treatment for doubtful debts is treated differently in RAS as opposed to GAAP In GAAP, the management of the enterprise decides on the provision for doubtful debts or the bad debts to be written-off¹⁹ However, in RAS, there is legislation that permits bad debts to be written-off only when a customer account is inactive for three years or in specific instances where the customer is bankrupt Bad debts can be identified much earlier than three years, particularly where customer enterprises have closed down or gone bankrupt or in the case of population customers, where the customers have left the city and their where-about unknown
- National accounting regulations permit enterprises to account either on a cash basis or an accrual basis Most of the Vodokanals that PADCO visited accounted on a cash basis up to 1995 and changed over to an accrual basis from 1996 onwards Annual accounts that were prepared on a cash basis by the Vodokanals prior to 1996, did not show the correct or even an indicative financial performance The Ministry of Finance (MoF)

¹⁹ The Tax Authorities disallows all provisions for doubtful debts However, specific bad debts are allowed as a deduction for income tax purposes provided the enterprise has documentary evidence that all possible courses of action have been taken to collect the debt and that collection efforts have failed

issued a recommendation that all enterprises change over to an accrual basis from 1996 onwards. GAAP accounting standards require that accounts be kept on an accrual basis.

- In RAS, the trial balance (TB) does not include the revenue and expense balances as these are maintained in sub-accounts for expense categories in subsidiary ledgers. The reason is that in RAS, the revenue and expense accounts are transferred to a P&L account (#80), thus, bringing the balances on these accounts to zero. However in GAAP, the TB lists all revenue and expenses account balances. Thereafter, the revenue and expense account balances are transferred to a detailed P&L account by a journal entry. The advantage in GAAP is that it is possible to prepare a set of accounts from the TB without having to collect figures from the general ledger.
- In RAS, all expenses are charged to about five main expense titles. For example, manufacturing expenses are charged to a cost of sales account (#20). The disadvantage of this is that the cost control becomes weak because the costs under various categories of expenses become merged into one account. In GAAP, 50 or more revenue and expense accounts exist in the trial balance.
- Financial Results statements are prepared in RAS. The main line items in this statement are total revenues, total expenses and profit. In GAAP, the equivalent statement is the Profit and Loss account (P&L). The P&L account shows about 10 or more categories of expenses, thus, enabling more effective budgetary and cost controls of expense line items.
- In manufacturing enterprises including service providers, the P&L account is preceded by a Manufacturing Account and then a Trading Account followed by the P&L account. The manufacturing account shows the cost of production and all the direct expense line items whereas the trading account shows the cost of sales and gross profit. The P&L account shows the fixed as well as some of the variable overheads, and the net profit. The detailed accounts in GAAP is very informative compared to the summary type of financial results under RAS.

3.1.3 Tariff Overview

In response to the Federal Government's decision to move toward full cost recovery, Vodokanals with the approval of local governments have begun to increase water and wastewater tariffs. Table 3.1 shows the water and wastewater tariffs for population and enterprises and the ratio of the enterprise to population tariffs. This ratio ranges from 3 in Murmansk to 85 in Orel for water service and from 4 in Kansk and Murmansk to 40 in Orel for wastewater services. The average ratio is 18 for water and 13 for wastewater.

Two methods are employed to provide subsidies to population customers. In some cities like Tobolsk and Nizhny Tagil, the Vodokanal tariffs for population and enterprises are the same.

Population customers are subsidized by the city administrations from their budgets, although the subsidized amount is not always received on time or in full. In other cities, the Vodokanal tariff for population is much less than the tariff to enterprises. Population tariffs in these instances are generally below the cost of services whereas tariffs to enterprises are well over the cost of services. Under these circumstances, there is a cross-subsidy from enterprises to population. Although tariffs of all customer categories have increased during the last few years, the population tariff is still below the cost of water and wastewater, where in some cities, enterprises provide substantial cross subsidies to population customers.

Table 3 1
Ratio of Enterprise Tariff to Population Tariff

City	Water Tariff-1996 Population (with VAT) (Rb/M3)	Water Tariff -1996 Enterprises (with VAT) (Rb/M3)	Ratio of Enterprise Tariff to Population	Wastewater Tariff -1996 Population (with VAT) (Rb/M3)	Wastewater Tariff -1996 Enterprises (with VAT) (Rb/M3)	Ratio of Enterprise Tariff to Population
Cheboksary	400	3,600	9	400	3,360	8
Gagarin	648	9,209	14	540	7,126	13
Kansk	592	2,659	4	517	2,087	4
Murmansk	936	2,880	3	444	1,728	4
Nalchik	183	900	5	183	900	5
Nizhny Tagil	119	1,367	Note 1	49	383	Note 1
Orel	184	15,636	85	172	6,840	40
Pechora	580	2,900	Note 1	327	1,633	Note 1
Petrozavodsk	348	1,908	5	380	2,080	5
Pskov	576	3,389	6	389	1,976	5
Smolensk	154	4,744	31	130	3,077	24
Sochi	166	5,736	35	166	5,040	30
Tobolsk	1,104	3,108	Note 1	984	2,916	Note 1
Votkinsk	263	1,726	7	234	1,892	8
Vladimir	584	5,470	9	266	2,383	9
Average	456	4,349	18	345	2,895	13

Notes

1) In Nizhny Tagil, Pechora, and Tobolsk, there is one tariff for population and enterprises. The City Administration subsidizes the population and reimburses the Vodokanal from the city budget.

3 1 4 Inadequate Revenue and Cash Collection

Table 3 2 illustrates the average level of 1996 collections (billed plus accounts receivable) ²¹ Total collection levels below 60% prevail in Tobolsk (49%), Nalchik (53%), Nizhny Tagil (55%), Petrozavodsk (55%), and Orel (56%), compared to 82% in Pechora, and 81% in Cheboksary and Vladimir ²² The weighted average total collection rate is 65% In addition to the low collection rates, non-cash collections make the situation even worse Cash collection is as low as 3% of billed in Pechora, 5% in Nizhny Tagil, and, below 20% in Cheboksary, Kansk, Nalchik, Petrozavodsk, Pskov, Votkinsk and Tobolsk Comparatively, Sochi has a modest 49% The weighted average cash collection is 25% Non-cash collections have been steadily increasing over the past three years, worsening the liquidity position of the Vodokanals

Table 3 2
Composition of Total Collections - 1996

City	% Cash to Total Billed plus Account Receivable (1996)	% Barter to Total Billed plus Account Receivable (1996)	% Offset to Total Billed plus Account Receivable (1996)	% Collected to Total Billed plus Account Receivable (1996)	Total Revenue (without VAT) Million Rubles (1996)
Cheboksary	18%	36%	27%	81%	79 152
Gagarin	27%	37%	10%	74%	7 484
Kansk	14%	8%	39%	61%	24 992
Murmansk	35%	14%	19%	68%	112 870
Nalchik	17%	28%	8%	53%	42 040
Nizhny Tagil	5%	25%	25%	55%	63 897
Orel	23%	27%	6%	56%	64 065
Pechora	3%	10%	69%	82%	30 329
Petrozavodsk	12%	26%	17%	55%	65 955
Pskov	13%	36%	15%	64%	48 143
Smolensk	27%	12%	24%	63%	48 569
Sochi	49%	2%	13%	64%	141 978
Votkinsk	18%	52%	3%	73%	14 155
Tobolsk	11%	32%	6%	49%	51 493
Vladimir	36%	1%	44%	81%	78 798
Weighted Average	25%	19%	21%	65%	58,261

Notes

- 1) % Offsets includes tax offsets and promissory notes
- 2) The collections includes some accounts receivable from 1995 that were received in 1996
- 3) Weighted average percentages are derived by weighing against total revenue in 1996

²¹ Some of the collections received in 1996 reflect payments from previous years' billings The record keeping in the Vodokanals are such that It is not practicable to evaluate 1996 collections with 1996 billed revenue PADCO chose to use collections as a percentage of "billed plus starting balance of the accounts receivable" so that a representative collection rate is obtained

²² Throughout this section, total collection or cash collection rates refer to total billed during the period plus the starting balance of accounts receivable since both must be collected if the Vodokanal is to be financially healthy

3 1 5 Accounts Receivable

Poor collections are a primary concern of Vodokanals. The average of accounts receivable is five months of billings (see Table 3 3). For a service provider, an average of about three months could be considered acceptable.

Table 3 3
1996 Accounts Receivable In Months of Billings

Vodokanal	Accounts Receivable as of December 31, 1996 (With VAT) (In 000 Rubles)	Receivables in Months of Billings
Cheboksary	21,683,000	3
Gagarin	2,412,192	3
Kansk	12,595,674	5
Murmansk	48,082,811	5
Nalchik	20,215,423	6
Nizhny Tagil	41,461,849	8
Orel	40,831,897	7
Pechora	7,914,278	3
Petrozavodsk	41,387,876	7
Pskov	27,830,312	6
Smolensk	24,556,900	5
Sochi	64,001,973	5
Tobolsk	41,650,618	10
Votkinsk	3,295,512	4
Vladimir	20,212,485	3
Average	28,075,000	5

3 1 6 Negative Effects of Non-Cash Payments

A substantial portion of Vodokanal collections are non-cash (barter, offsets and promissory notes). Although better than receiving no payment, non-cash payments have numerous drawbacks adversely impacting the financial viability of service providers. The financial drawbacks of bartering are given below.

- The pricing of bartered goods is questionable. It may be above market price or sometimes below the market price. As bartering for goods and services generally involves two or more parties who may value their goods and services differently arriving at a fair market value may be difficult particularly if the service provider has no experience in handling the bartered items.
- Bartering with goods that are not used by the Vodokanal invariably will end up as a loss because of additional hidden transaction costs such as transportation, storing, or marketing of bartered goods. In the case of perishable goods, losses may result from spoilage of goods.
- One of the main disadvantages of bartering is the weakening of the Vodokanal's internal control system. While the cash control systems are invariably strong, inventorying of bartered goods is generally much weaker since the Vodokanal does not regularly store such goods and often lacks internal control systems to value the bartered goods appropriately. For example, barter agreements in Vladimir Vodokanal are initiated and expedited by a separate department outside the accounting department. Thus, the transactions that do not pass through strong financial control systems. In Vladimir Vodokanal, two multi-storey apartment buildings were built for staff members and building materials were procured mainly by bartering causing serious liquidity problems for the utility. Further, the priority of building multi-storey apartment blocks for staff in comparison to the urgently needed replacement and rehabilitation of deteriorating infrastructure systems, is also questionable.

Offsets are preferable to barter as long as they are done on a ruble to ruble basis. Most commonly, tax obligations are offset. Although offsets agreements take long to negotiate, there is no loss as such on account of the depreciation of the ruble because they are offset with corresponding payables.

Promissory notes, although not as preferable as cash, are acceptable as long as they are guild-edged securities like negotiable Treasury bills issued by the Central Bank with short-term maturity, and promissory notes from the city or oblast. However, promissory notes from population or enterprises are merely securities and not settlements of account until they are negotiated with a supplier or creditor in settlement of Vodokanal payables. Promissory notes from cities or oblasts and Treasury bills are generally used to liquidate tax payables. However, no secondary market exists for city or oblast notes making them less negotiable than Treasuries.

3 1 7 Rapidly Rising Expenses

Total expenses consist of operating and non-operating expenses. Non-operating expenses may include items like a provider's sauna or grocery shop. Table 3 4 compares the Vodokanal production expenses plus depreciation for 1995 and 1996.

A partial explanation for the robust increase in production expenses and depreciation in 1996 (average 79%) is the significant increase in depreciation charge in 1996 because of the revaluation of fixed assets as well as the increase in electricity and labor/personnel costs. Pechora Vodokanal showed the lowest increase of 25%, whereas all other Vodokanals recorded increase in expenses in excess of 50%. Several Vodokanals recorded increases in expenses exceeding 80% including Smolensk 109%, Nizhny Tagil 98%, Sochi 94%, Vladimir 90%, Petrozavodsk and Nalchik 89%, and Tobolsk 81%. The depreciation of the ruble in 1996 also contributed to the increase in expenses. In Cheboksary Vodokanal, the biological cleaning of wastewater expenses increased by 90% from 13 billion rubles in 1995 to 24.7 billion rubles in 1996. Biological cleaning of wastewater in Cheboksary is done by a private contractor who uses city owned assets for this purpose.

Table 3.4
Comparison of Vodokanal Production Expenses for 1995 and 1996 (In 000 Rubles)

Vodokanal	Production Expenses Plus Depreciation 1995	Production Expenses Plus Depreciation 1996	% Increase
Cheboksary	53,422,626	89,356,827	67%
Gagarin	6,098,796	9,187,173	51%
Kansk	17,811,571	27,989,912	57%
Murmansk	58,201,680	101,262,876	74%
Nalchik	30,222,070	57,265,467	89%
Nizhny Tagil	26,123,000	51,803,000	98%
Orel	38,729,588	65,246,398	68%
Pechora	12,298,262	15,351,813	25%
Petrozavodsk	28,562,865	53,928,279	89%
Pskov	36,907,225	59,392,168	61%
Smolensk	31,756,920	66,263,831	109%
Sochi	66,762,418	129,241,239	94%
Tobolsk	22,810,997	41,333,833	81%
Votkinsk	10,052,984	17,302,124	72%
Vladimir	39,523,122	75,015,841	90%
Average	31,952,000	57,329,000	79%

3 1 7 1 **Composition of Operational Expenses**

Russian financial and accounting regulations specifically define the types and amounts of expenditures permitted in the income statement of Vodokanals. During PADCO's review of Vodokanal accounts, expenses were restated according to the principles as set out in GAAP. For example, RAS requires that certain employee benefits and bonuses to be paid out-of-profit. PADCO restated Vodokanal expenses by reclassifying these out-of-profit expenses as production expenses adding them into the relevant production expense line items.

Table 3 5 shows the composition of total Vodokanal expenses for 1996. The largest expense category differ among the Vodokanals. The largest expense categories are labor in Kansk, Murmansk, Pechora, energy in Nalchik, Orel, Smolensk, Sochi and Vladimir, materials and chemicals in Nizhny Tagil and Tobolsk (materials include water purchases), depreciation in Pskov, and Votkinsk, and, other expenses in Cheboksary and Petrozavodsk. Other expenses in Cheboksary includes biological cleaning of wastewater expenses amounting to 24.7 billion rubles in 1996, which is the largest expense item in this Vodokanal. Other expenses in Petrozavodsk includes 7.6 billion rubles as expenses paid from use-of-profit expense account #81.

A glaring observation from Table 3 5 is that the repair costs consisting of maintenance funding, are one of the smallest expense categories, suggesting that the cost of preventive and routine maintenance were thoroughly under-funded.

Table 3 5
Vodokanal Restated Total expenses - 1996 (In 000 Rubles)

Vodokanal		Labor	Energy	Materials & Chemicals	Repairs	Taxes & Mandatory Payments	Depreciation	Profit Tax	Other Expenses	Total
Cheboksary		5 736 377	17 155 638	3 301 256	4 075 664	2 553 320	22 436 073	186 190	37 202 063	92 646 581
%		6%	19%	4%	4%	3%	24%	0%	40%	100%
Gagarin		1 768 932	1 664 880	466 883	29 801	2 053 292	1 937 016		1 266 369	9 187 173
%		19%	18%	5%	0%	22%	21%	-	14%	100%
Kansk		8 252 756	5 260 406	452 014	1 933 311	6 019 631	3 393 309		2 678 485	27 989 912
%		29%	19%	2%	7%	22%	12%		10%	100%
Murmansk		40 413 015	14 910 700	6 725 741	588 252	2 800 000	22 096 152	329 310	14 086 281	101 949 451
%		40%	15%	7%	1%	3%	22%	0%	14%	100%
Nalchik		3 197 144	25 441 657	1 148 302	6 668 200	1 369 341	9 795 098		9 645 725	57 265 467
%		6%	44%	2%	12%	2%	17%		17%	100%
Nizhny Tagil		7 051 000	8 692 000	19 288 000	686 000	1 374 000	6 826 000	2 306 445	8 540 000	54 763 445
%		13%	16%	35%	1%	3%	12%	4%	16%	100%
Orel		7 161 442	25 897 480	840 688	10 322 573		12 847 663	1 083 604	8 176 552	66 330 002
%		11%	39%	1%	16%		19%	2%	12%	100%
Pechora		6 761 571	3 991 259	2 032 714	2 313 725		3 653 664	3 741 071	2 099 893	24 593 897
%		27%	16%	8%	9%		15%	15%	9%	100%
Petrozavodsk		10 606 952	6 816 400	1 778 270	4 074 000	6 242 252	10 236 217	5 521 569	27 684 379	72 960 039
%		15%	9%	2%	6%	9%	14%	8%	38%	100%
Pskov		7 242 944	12 472 322	10 444 577	2 112 226	6 015 606	19 287 186	2 338 050	6 160 694	66 073 605
%		11%	19%	16%	3%	9%	29%	4%	9%	100%
Smolensk		9 406 981	15 275 048	7 992 276	12 566 095	14 763 428	5 568 973		691 030	66 263 831
%		14%	23%	12%	19%	22%	8%		1%	100%
Sochi		35 212 977	50 898 900	2 261 944	1 361 023	9 867 244	25 385 825	10 006 965	8 338 820	143 333 698
%		25%	36%	2%	1%	7%	18%	7%	6%	100%
Tobolsk		6 599 487	2 875 021	19 712 958	4 056 772	1 730 424	5 793 054		675 684	41 443 400
%		16%	7%	48%	10%	4%	14%	-	2%	100%
Votkmsk		1 632 219	2 747 980	312 139	3 700 470		4 876 323		4 032 993	17 302 124
%		9%	16%	2%	21%		28%	-	23%	100%
Vladimir		12 190 659	27 494 234	4 591 353	1 914 711	8 414 243	14 875 766	1 361 033	9 769 868	80 611 867
%		15%	34%	6%	2%	10%	18%	2%	12%	100%
Average Expenses			14,772,928	5,423,274	3,760,188	4,213,519	11,267,221	1,791,616	9,403,256	61,514,299
10,882,297										
Average %		18%	24%	9%	6%	7%	18%	3%	15%	100%

Source Individual Vodokanal reports Table of Operating Expense Analysis and the Profit and Loss accounts of 1996

3 1 7 2 Revaluation and Depreciation

Detailed lists of fixed assets were computerized in the accounts department of the Vodokanals that use computers. Fixed assets were revalued every year from 1995 to 1997 because of the significant depreciation of the ruble over the past decade. Revaluation was based on the guidelines issued by the Ministry of Finance (MoF), except in Nizhny Tagil where the revaluation was done by a private appraiser. In the guidelines, MoF indicated multipliers to be applied on the original cost of the asset. The guidelines also stated that fixed assets that are written off should also be revalued. Different multipliers were provided for (a) different years of purchase of assets (b) different categories of assets (e.g., land and buildings, and motor vehicles), and c) different types of assets of the same category (e.g., heavy duty trucks and cars under motor vehicles). Samples of multipliers for the years from 1995 to 1997 for some fixed assets are shown in Table 3.6

Table 3.6
Sample of Multipliers Used for Revaluation of Fixed Assets - 1995 to 1997
(Assets Purchased During 1981 and 1994)

Asset Category	1995	1996	1997	Total 1995 to 1997
Buildings (excluding residential)	4.1	2.8	1.3	8.2
Machinery & equipment - group 1	1.7	1.3	0.9	3.9
Machinery & equipment - group 2	1.7	1.8	0.9	4.4
Machinery & equipment - group 3	1.7	2.3	1.0	5.0
Motor vehicles -group 8	1.7	1.8	0.9	4.4
Motor vehicles -group 9	2.4	2.3	1.1	5.8
Motor vehicles-group 10	3.2	3.2	1.2	7.6

Source: Ministry of Finance Guidelines for 1995, 1996 and 1996

The above basis of revaluation issued by the MoF has the following shortcomings

- The range of the period given is too wide (e.g., prior to 1980, and, 1981 to 1994). A wide range would distort the revaluation. A multiplier for each year would have given more realistic results.
- The above table shows that the total multiplier used for revaluation from 1995 to 1997, has a range from 4 to 8. An asset purchased in 1994 would have been revalued by 4 to 8 times which does not correspond with inflation.

- The Vodokanals revalued the purchase price of all fixed assets in 1995 using the MoF multiplier for 1995 revaluations. In 1996, the Vodokanals revalued the 1995-revalued figures, by using the 1996 multiplier (i.e., the revaluation was compounded). This method was used in 1997 also. The net result is that the purchase price was revalued by a factor in excess of the total multiplier shown in the above table. For example, the cost price of a building purchased between 1981 to 1994, would have been revalued by a factor of 14.9 and not 8.2 as shown on the above table. This procedure makes the revaluation more excessive than what would have envisaged by the MoF resulting in an overstatement of asset value and corresponding depreciation.

A more accurate value of fixed assets could be obtained by conducting an on site physical valuation by a professional valuation expert. However, the cost of such an exercise is substantial.

Cheboksary Vodokanal revalued their fixed assets according to MoF guidelines in 1995 and 1996. In 1997, they hired a firm of appraisers to carry out a revaluation of fixed assets. The appraisers also revalued the fixed assets using a multiplier basis and no physical surveys were done. The multiplier used by the appraisers were lower than the MoF multipliers. The revalued fixed assets figure in 1997 was 187 billion rubles lower than the 1996-revalued figure of fixed assets (based on MoF guidelines). The Vodokanal adjusted the value of fixed assets to the lower amount in 1997, which will result in a lower depreciation charge from 1997 onwards.

3.1.7.3 Taxes

Vodokanals are liable to taxation under Russian law like any other enterprise. The taxes include value added tax (VAT), present rate 20% of billed amounts for water and wastewater, 35% income tax on taxable profits of the Vodokanals, and, locally established road tax. In addition, the Vodokanals are liable to certain levies on employee salaries in the form of payment to funds. They include 28% of employee salaries to the Pension Fund, 5.4% of employee salaries to social insurance and lesser percentages for the medical, transport, education and unemployment funds. The total of all payments to funds including the pension fund amounts to 40.5% of employee salaries. The Vodokanals are liable for heavy penalties for delay in payments of taxes and payment to funds. Heavy penalties are also levied for non-filing as well as delay in filing quarterly reports with funds. For example, Cheboksary Vodokanal paid 574 million rubles in 1996 for late payment of taxes. Penalties for late payments are generally charged to use-of-profit account #81.

Profit tax is payable to all three levels of Governments, viz., Federal, Oblast and Local Government. The percentage for Federal government is 13% while the oblast and local governments share the balance 22%. The VAT payable at 20% is payable to the Federal Government.

Vodokanals negotiate with Oblast and Local Governments for the offset of profit and other taxes. On a case by case basis, the Vodokanals negotiate with the Federal Government to offset their portion of profit tax and VAT. The Vodokanals' payments to funds have to be made by bank wire.

transfers as they do not entertain offsets. Delays in payments to funds are caused because of the inadequate cash resources in Vodokanal accounts

3 1 7 4 Accounts Payable

The restated suppliers accounts payable are compared with production accounts receivable in Table 3 7

Table 3 7
Suppliers' Accounts Payable as a Percentage of Accounts Receivable - 1996
(Figures in 000 Rubles)

Vodokanal	Accounts Receivable	Suppliers' Accounts Payable	Payable as a % of Receivable
Cheboksary	21,683,189	5,132,083	24%
Gagarin	2,412,192	284,344	12%
Kansk	12,595,674	2,571,101	20%
Murmansk	40,096,009	4,130,308	10%
Nalchik	20,215,423	48,096,142	238%
Nizhny Tagil	41,698,408	15,240,571	37%
Orel	40,831,897	40,122,019	98%
Pechora	7,881,729	1,182,525	15%
Petrozavodsk	36,398,248	5,749,979	16%
Pskov	27,830,312	8,196,434	29%
Smolensk	24,556,900	17,974,003	73%
Sochi	64,001,973	24,234,580	38%
Tobolsk	40,694,267	1,358,379	4%
Votkinsk	3,867,201	500,700	13%
Vladimir	20,419,542	21,480,298	105%
Average	27,011,400	13,083,500	48%

Suppliers' accounts payable is below 40% in 11 Vodokanals. In Tobolsk and Murmansk Vodokanals, the percentages are as low as 4% and 10% respectively, which is quite satisfactory. However, in Nalchik (238%) and Vladimir (105%), the accounts payable is more than the accounts receivable. The unsatisfactory percentage in Nalchik is because they incurred heavy losses in 1996 due to the 123% increase in energy costs, thus incurring a 15 billion rubles net loss,

whereas in Vladimir the reason is due to the large construction work that had been carried out, including the construction of two multi-storied apartment buildings for staff

3 1 7 5 Profitability Versus Near-GAAP-Profit

In accordance with current Russian legislation, the accounts department of the Vodokanals, produces a Balance Statement and a Financial Results statement as of December 31, each year together with the supporting schedules. Russian legislation also requires that large enterprises (including Vodokanals) prepare quarterly financial statements. According to tax legislation, the Vodokanals have the option to prepare their financial results statement by showing the revenues received during the year and adjusting the expenses to represent the cost of those revenues. The Balance Statement and the financial results statement are prepared by the Vodokanals mainly for filing with the Tax Directorate. Under the above system, the following shortcomings were noted

- The standard formats on which the Vodokanals are required to prepare their annual accounts (i.e., Balance Statement and the financial results statement) are so complicated that only the accountants understand the contents. Thus, management is not furnished with adequate management information for them to read and understand even the financial performance of the Vodokanal,
- When Vodokanals prepared their financial results statement on an adjusted-expense basis, the actual financial performance of the Vodokanal measured in terms of net profit or loss, are not shown in any document. In GAAP accounting, all enterprises prepare an annual report and accounts document. This document contains the audited annual accounts which are summarized for publication. In addition, the enterprise will have a detailed set of annual accounts for management purposes. In RAS, the annual report and accounts document is not published. Where the Vodokanal prepared their financial results statement on an adjusted accounts basis, PADCO encountered some difficulty in relating the general ledger balances to the financial results statement.

The out-of-profit account #81, is used to charge expenses including employee bonuses, employee recreational expenses and interest on long term debts. Under GAAP accounting, these expenses are charged to the Profit and Loss account. In Russian accounting, as the name implies, use-of-profit account is perceived as an account to be used and cleared. When this happens, funds are not ploughed back in to the business. In GAAP accounting, the net profit is appropriated for specific purposes like payment of dividends to shareholders and transfers to reserve accounts like general reserves. The balance in the profit and loss appropriation account is transferred to the profit and loss account balance brought forward from previous years, which is a revenue reserve account that could be used for various purposes. The tendency in GAAP is to transfer the net profit to reserve accounts and collect the cash reserves.

Table 3 8 compares the net profit as a percent of total expenses (including use-of-profit expenses), with that of the allowable profit percentage included in the Vodokanal tariff.

Allowable profit is the profit margin that Vodokanals are permitted by cities to add onto expenses in the tariffs that they charge their customers (See Section 2 1 5)

Table 3 8
Actual Near GAAP Profit as a % of Expenses versus Vodokanal Allowable Profit added to the Tariff - 1996 (In 000 Rubles)

Vodokanal	Total Expenses	Near GAAP Profit-1996	Near GAAP Profit as % of Expenses	Allowable Profit in Tariff
Cheboksary	92,646,581	(10,966,926)	(12%)	25%
Gagarin	9,187,173	(1,702,961)	(18%)	20%
Kansk	27,989,912	(2,997,853)	(11%)	30%
Murmansk	101,949,45 1	10,921,453	11%	15%
Nalchik	57,265,467	(15,225,536)	(27%)	15%
Nizhny Tagil	54,763,445	9,133,995	17%	15%
Orel	66,330,002	(2,264,650)	(3%)	15%
Pechora	24,593,897	5,740,303	23%	9%
Petrozavodsk	72,960,554	(7,005,469)	(10%)	25%
Pskov	66,073,605	(19,416,894)	(29%)	10%
Smolensk	66,263,831	(17,695,057)	(27%)	15%
Sochi	143,333,69 8	(1,355,878)	(1%)	25%
Tobolsk	41,443,400	10,050,065	24%	25%
Votkinsk	17,302,124	(3,146,834)	(18%)	15%
Vladimir	80,611,867	2,527,633	3%	15%
Average	61,514,299	(2,893,600)	(5%)	18%

As shown in the table, ten Vodokanals show near-GAAP losses although their tariffs were computed with an allowable profit component. Murmansk and Vladimir Vodokanals show near-GAAP profits that are below the allowable profit percentage. Near-GAAP profit percentage and allowable profit in Tobolsk is nearly equal. Nizhny Tagil and Pechora made higher near-GAAP profit percentages than their allowable profits. The near-GAAP profit in Pechora is high because they received two tariff increases in 1996, an increase of 185% for water and 131% for wastewater. In addition, Pechora Vodokanal bills the Municipal Unitary Enterprise at the full

cost tariff for population customers and the City Administration subsidizes the population. None of the Vodokanals have written off bad debts. If bad debts had been written off, then the near-GAAP profit would have been lower than the amounts shown above.

Some of the reasons attributable to the near-GAAP losses in spite of having modest allowable profits in the tariff structure, are given below:

- Tariffs are not adjusted for inflation,
- Out-of-profit expenses are not allowed to be included in the tariff structure,
- Some Vodokanals pay heavy penalties for delay and non-payment of taxes because they do not have adequate cash resources to settle the taxes due on time. For example, Pskov Vodokanal had a charge of 3.5 billion rubles in 1996 as fines.

3.1.8 Depreciation, Development Fund and Debt Service

Depreciation expense as it applies to an enterprise's fixed assets receives approximately the same accounting treatment in GAAP as in the RAS and is charged to the Profit and Loss account to match the wear and tear of assets used by the Vodokanal. The depreciation rates used under RAS were issued as guidelines by the MoF. These rates are comparable with rates used under GAAP accounting. Depreciation is charged as an expense to set aside cash resources that will be needed for replacement of assets once they are worn out. However, charging depreciation as an expense will not automatically set aside cash resources. Therefore, cash reserves need to be maintained in a deposit account (to the equivalent value of depreciation), so that the interest earned will counter the inflation factor to some extent. The cost of replacement or rehabilitation fixed assets can then be funded from the fixed deposit account. In practice, setting aside cash in a fixed deposit account to the equivalent of depreciation charge does not happen. The low collection rates experienced by most Vodokanals mean that all receipts are used for payment of immediate expenses and no reserves are generated. To invest the equivalent of depreciation to replace the worn out assets, the Vodokanals firstly, have to increase their present low cash collections and break-even on operations. Once this begins to happen, they will begin to generate enough internal resources to fund depreciation expenses.

3.1.8.1 Development Fund

The net profit is transferred from account #80 to the use-of-profit account #81. The RAS allows the Vodokanals to transfer any surpluses in the use-of-profit account to the development fund account, which is a reserve account. Transferring the surpluses to a development fund account will not solve the problem discussed in the previous section. It is necessary to set aside cash reserves and commence replacement and rehabilitation of assets. On the other hand, the Vodokanal infrastructure needs urgent rehabilitations. As the cost of such rehabilitations are very high, they may need to be financed through long term loans from a lending institution. Under these circumstances, the cash resources could be set aside via the development fund account to repay the loan installments. Under RAS, interest on long term loans must be paid out-of-profits.

Russian legislation does however provide a capital improvement tax credit in order to encourage capital investment. If a Vodokanal can certify that it has paid up to 50% of the value of the taxable profit for capital loans related interest payments, it may deduct this amount from its taxable profit. This allows more funds to be available for debt service.

3.2 Limitation to Vodokanal Financial Autonomy

This section describes observed financial and accounting practices which currently limit the borrowing capacity of Vodokanals. A brief description of the main limitations is presented here with further elaboration in the Action Plan.

3.2.1 Local Municipality/Vodokanal Decision making and Decentralization Problems

Planning Many local governments and Vodokanals do not appear to have authority to make major decisions regarding large capital investments without the concurrence of the Oblast and even the Federal governments. On the other hand, the Vodokanals have the authority to carry out normal operations. The Vodokanals work closely with the local governments and in most cases, they appear to work well together. Together, Vodokanals and local governments collectively plan and decide on many aspects of operations and routine repairs. A lack of access to long-term credit for larger expenditures thwarts most medium and longer term planning.

The deficiencies in the planning function of Vodokanals are

- Vodokanals do not have corporate plans. A corporate plan setting out, the mission statement, short and medium term goals and objectives, strategies to achieve the goals and objectives, supported by a cash flow forecast and an action plan would be useful for improved performance of the Vodokanal.
- Although a budget is prepared by the Vodokanal economist, it is poor at its best. Often the budget is only a one page document that has not been even typed in some instances. A well prepared and an achievable budget that can measure the actual performance, analyze variances and take corrective action would help management to provide better services to their clients. It would also provide the basis for planning longer term investments. Preparation and budgetary control is up to the Vodokanals. Upper levels of government do not interfere or limit the Vodokanal's ability to perform this function.
- Capital expenditure plans are important in enterprises like Vodokanals who have large investments in fixed assets and more so because the infrastructure systems need urgent replacement and rehabilitations. Although the capital expenditure requirements can be listed out by the Vodokanals, finding sources of funding is difficult. Own source revenues will be hardly adequate to meet the present needs, more so, because of the poor cash collections. Vodokanals will need support from all three levels of governments to obtain capital grants as well as obtain government guarantees to obtain foreign loans.

Although some form of capital expenditure plans was available with Vodokanals, no sources of financing were identified. Thus, achieving these plans is doubtful.

- Hardly any management information (MI) or a system are in place to provide MI, although the data is available in different departments in an unorganized manner. Some Vodokanals have computerized their operations to some extent such as Cheboksary that has a computer department. However, an effective MIS is not in place as yet. The key to the planning function is the MI component that shows the actual results and performance with which the plans could be based upon.

The concept of evaluation is alien to current institutional processes and probably will be perceived as a threat. The evaluation and review processes must be broad based, participatory and incorporated into the planning process and service agreement negotiations.

3 2 2 Internal Vodokanal Management

- *Cash versus accrual revenues* Until the end of 1995, most utilities used cash receipts as a basis for setting and adjusting water and wastewater rates. However, MoF issued guidelines recommending that from 1996 and thereafter enterprises, including Vodokanals, should account on an accrual basis. This provides a better matching of revenues and expenses and a more accurate assessment of the profitability of the utility than does on a cash basis accounting.
- *Vodokanals do not use cash flow projections as a tool in management* Managing cash is one of the prime concerns of an enterprise. The Vodokanals do not prepare realistic cash flow projections that show all cash inflows, cash outflows and the requirements for bridging finances and other issues well in advance. Cash flow forecasts should show capital expenditures as outflows and sources of funding as inflows. These items need to be carefully monitored because the capital expenditures are quite high. The cash flow forecasts need to be updated on a monthly basis replacing the actual results with forecasts (rolling cash flow forecasts). Cash flow projections are tools in effective cash management that are currently not being used by Vodokanal management.
- *Bad debt is not recognized as an expense or reserve set-aside* As the Vodokanals account on an accrual basis from 1996 onwards, writing off of bad debts or making a provision for doubtful debts is appropriate to show a realistic net profit. An aging analysis of accounts receivable is the first step in the analysis of the bad debts. Debts over one year need to be further analyzed to see the probable chances of recovery. Bad debts are those where the debtor has closed down the business or gone bankrupt. In the case of population, if they have left the city and their whereabouts unknown, then the chances of recovery are poor. Another indication is the debtors response to the follow-up procedure of the billing and collection department of the Vodokanal. The bad debts that can be listed by name and amount with certainty that they will not be recovered are called specific bad debts. In countries outside the NIS, specific bad debts are allowed.

as an expense for income tax purposes. Some enterprises outside NIS countries, make a general provision for doubtful debts in the profit and loss account (say 5% of total revenues), every year, and charge the specific bad debts against this provision.

- ***No costing systems*** Financial accounting systems under RAS in most Vodokanals are satisfactory, however, there are no costing systems in place. Generally, the Vodokanals do not have cost accountants (except in Vladimir Vodokanal). A suitable costing system, identifying costs versus quantities and identifies variances of budgeted and actual performances, is the starting point for developing an effective costing system. In cost accounting systems, cost centers are established, e.g., water production, distribution, wastewater treatment, etc., to determine production costs of each major aspect of operation. From these cost centers, cost accounting data will emerge permitting Vodokanals to measure unit costs and determine the effectiveness of service. The financial information is available to obtain the necessary cost figures for cost center analysis. Quantities of water production and billed as well as wastewater billed are available with the billing or the engineering departments. The cost information should flow to the tariff computations via the economist. The next step in setting up cost accounting systems is to take existing cost data and reclassify it according to cost centers. Ultimately, the cost accounting system might be integrated with financial accounting systems when both are fully operational.
- ***Inadequate management information (MIS)*** A costing system forms the input data to an effective MIS. MI needs to be served at two levels, one at department levels showing details, and the other at top management level concerning the activities of the entire Vodokanal. MI gives the source data for the planning function which lead to the decision making process.
- ***Inadequate collections and lack of cash resources*** Vodokanals have to increase their total collections and more importantly, cash collections. The cash balances are way below the requirements. Population customers settle their dues in cash, therefore, the intermediaries should settle their accounts with the Vodokanals in cash after deducting service charges. An alternative is to collect cash from population customers direct by the Vodokanals. The enterprises should be required to settle their dues in cash instead of barter. Customers insisting on settling dues by barter should be charged a surcharge representing the additional costs of executing such transactions. Where possible, cash should be collected from budget organizations. Barter and offsets should be treated as last options and not as a method of settlement. Vodokanals will have to enforce collections by using disconnection of services as the final option.

3 2 3 Full Cost Recovery - Tariffs

Tariffs should reflect the full cost of water and wastewater services. Full cost pricing however, cannot be achieved unless bad-debt expenses, cost of billing and collection, and the cost(s) of

depreciation or debt service which-ever is higher is taken into account. Limitations to full cost recovery through user charges include

- ***Interest from capital related improvement loans cannot be directly included into the tariff structure*** Many Vodokanals take short term loans to pay salaries and other operating related expenses as a result of their poor cash collections. In accordance with current Russian legislation, the interest which Vodokanals pay for short-term loans is currently included as an expense in the tariff structure. However, interest on long-term capital investment must be paid “out-of-profit”
- ***Bad debt expense cannot be directly included into the tariff structure and currently could limit debt capacity*** Vodokanals are now permitted to deduct from taxable income, for profit tax purposes, losses from writing off bad debts older than three years and other debts which cannot be recovered, e.g., bankrupt customer. Federal legislation needs to be changed in order to allow for all specific bad debts to be treated as an expense, irrespective of the period of debt, thus, included directly in the tariff structure
- ***Tariffs not automatically adjusted for inflation*** Currently, no escalations due to inflation exist to accommodate increases in the cost of production inputs due to inflation. Vodokanals should be allowed to increase tariffs for all groups of consumers at least by the inflation factor and trends

Chapter 4 - Debt Service capacity and Action Plan

4 1 Background and Introduction

During the Soviet Union times, there was no need to borrow money for capital investment because the local governments financed infrastructure development from municipal or oblast resources. New equipment and the modernization of Vodokanal facilities are still financed out of the municipal budget to some extent. To date, Vodokanals have not obtained long term loans, although some Vodokanals like Murmansk, have obtained short term credits from commercial banks at high interest rates.

As the funds available from own source revenues and municipal budgets are way below the needed infrastructure rehabilitations, the Vodokanals are interested in obtaining long term loans at low interest rates and long repayment periods. The Vodokanals hope that the current legislation will be changed and allow them to take interest on long term loans as an expense under tariff computations as well as for under profit tax computations. The current stipulation that long term interest must be funded out-of-profit limits the ability of the Vodokanal to pay interest on long term loans when there is a loss or the profit is inadequate to meet this expense.

4 2 Revenue Requirements and Tariff Levels

In determining the future Vodokanal debt and tariff levels, PADCO considered the Vodokanals' estimated future revenue requirements. This section describes operational and financial projections over a seven-year period. The assumptions underlying the financial projections are detailed below. Obviously, Vodokanals with a smaller turnover were reviewed in light of a smaller debt carrying capacity.

4 2 1 Principles

The financial projections are based on the following broad principles:

- The Vodokanals receive no subsidies or transfer payments from the government and funds its operational and debt service expenses out of revenues collected from end-users,
- Revenues should in aggregate be sufficient to meet all incurred expenses and to ensure the Vodokanals' financial viability. Therefore, the revenues should be sufficient to cover all operating expenses and debt service costs. In addition, Vodokanal finances should provide for contingencies, such as bad debts or emergency repairs.

4 2 2 Assumptions

The following financial assumptions were made in developing the tariff projections for Vodokanals:

- **Inflation rate/exchange rate** A domestic rate of inflation of 15% was assumed throughout the forecast period. This is based on the current country economic statistics and the EU / IMF / OECD inflation projections for 1997. The US dollar medium term inflation rate is forecast at 3% per annum. Purchasing power parity exchange rate models assert that exchange rates adjust to differences in relative prices. From a modeling standpoint, this implies that the Ruble will devalue against the dollar by at least 12% per annum on a compounded basis,
- **Loan amortization and interest rates payable** Under subsidiary loan agreements between the Ministry of Finance and Vodokanals, loans will be repaid over 15 years with an initial grace period of 5 years. The interest rate of this loan is assumed to be equal to 7.2%,
- **Personnel costs** Wages will grow at an annual rate of 15% - the same as the rate of inflation. No reduction in the Vodokanal staff requirements is projected. All out-of-profit employee bonuses are included as production expenses,
- **Depreciation** The tariff includes the full depreciation of all fixed assets used by the Vodokanal, including leased assets, and assets purchased and other sources (i.e., 10% Vodokanal matching). This assumes that such assets have been placed on the Vodokanal's balance sheet, i.e., if a construction period is required, the assets will be placed only upon construction completion. As allowed by current Russian Federation legislation, depreciation shall also reflect the associated VAT on capital purchases,²³
- **Capital repair expenses** The Vodokanal real expenses on capital repairs will be maintained at their current share of total expenditures through the year 2003, increasing 15% per annum for inflation,
- **Materials/electricity, depreciation and supporting services** The real costs of electricity and materials will stay about the same throughout the seven-year period. However, with a system-wide loss reduction program in place these expenditures could be reduced over the forecast period,
- **Bad debts** Under current Russian accounting rules, uncollectible accounts receivable can only be written off after three years, unless the debtor has been declared bankrupt. In practice, the Vodokanals do not write-off any debt, unless the debtor is bankrupt. Currently, the value of uncollectible debt that is over three years old is negligible in value due to the recent high inflation. However, inflation has been stabilizing. We have assumed a 5% bad debt provision. Under current Russian legislation, bad debts can only be deducted from pre-tax income and cannot be treated as a tariff related expense, thus, bad debt provisions also cap affordable loan amounts,

²³ Section 52 of the Russian Federation State Tax Service 'Instruction No. 59' dated October 11, 1995

- **Water/wastewater production** The overall production of water/wastewater is assumed to drop significantly in the first and second years of the loan as a result of aggressive demand management, loss reduction programs including metering at the whole building level. In 1998, consumption and production are assumed to drop 10%, in 1999, it is assumed to drop 20% and then begin a gradual increase of 2% per year after that due to general improvement in economic conditions resulting in increased demand,
- **Loan repayment** Principal payments are shown as a depreciation expense. Interest is shown as a residual, coming out-of-profit. As allowed by current Russian legislation, the tariff projections also include an investment tax credit equal to, up to 50% of a Vodokanal's taxable profit liability that are shown paying for all, or part, of the long term interest associated with capital investment²⁴. Under this tax privilege, up to 50% of a Vodokanal's taxable profit liability can be used for capital investment. Any interest greater than the 50% limit, is shown coming out of net-profit,
- **Profitability** The tariff projections incorporate the profitability rate currently allowed for each Vodokanal. This ranges from 15% (Nizhny Tagil) to 25% (Cheboksary, Petrozavodsk, Sochi and Tobolsk),
- **Tariff projection** The tariff projections include a collection rate approaching 95% with a 5% level of bad debt write-offs throughout the forecast period and cash collection of at least 50%.

Table 4.1 illustrates estimated loan capability and forecast future tariff with that respective level of debt. It also illustrates that by incorporating the indicated debt into the Vodokanal tariff structure, the combined (water/wastewater) tariff will rise by a minimum of 255% in Murmansk and a maximum of 332% in Tobolsk over the seven year period. The inflation rate alone at 15% per annum will compound to 166% during the seven-year period. The two new components added to the tariff structure were debt service and bad debts.

The projected rise in the combined average tariff would translate into tariff increases for all customer groups. Since the ability of enterprises and commercial organizations to cross subsidize residential consumers is already constrained by relatively high tariff levels, the most drastic increase would have to be borne by residential consumers.

²⁴ Article 6 of the Russian Federation Law 'On Enterprise and Organization Profit Tax', No. 2116-1, dated December 27, 1991.

Table 4 1
Russian Vodokanal Debt Capacity

City	Recommended Loan (US\$)	Adjusted 1996 Combined Average Tariff with VAT (Rubles/M3)	Estimated 2003 Combined Average Tariff with VAT (Rubles/M3)	% Change in Tariff 1996-2003
Cheboksary	15,000,000	1,147	4,230	269%
Gagarin	2,000,000	2,470	9,424	282%
Kansk	14,000,000	1,891	8,192	333%
Murmansk	10,000,000	1,271	4,510	255%
Nalchik	7,500,000	1,133	4,105	262%
Nizhny Tagil	20,000,000	705	2,888	310%
Orel	13,000,000	1,221	4,580	275%
Pechora	1,500,000	2,140	7,454	248%
Petrozavodsk	20,000,000	1,534	5,927	286%
Pskov	6,000,000	1,511	5,335	253%
Smolensk	13,000,000	1,401	5,251	275%
Sochi	20,000,000	1,297	4,753	266%
Tobolsk	20,000,000	2,798	12,083	332%
Votkinsk	3,000,000	1,137	4,186	268%
Vladimir	18,000,000	1,144	4,380	283%
Average	12,200,000	1,520	5,820	283%

Notes

- 1) Tariff collection assumes collection rate of 95% and 5% bad debt deduction from taxable income
- 2) Estimated combined average tariff includes VAT (20%) and Vodokanal allowed profitability

4 3 Loan Feasibility

To recap, the PADCO loan feasibility model assumes a collection rate approaching 95% with a 5% bad debt allowance. Further, the model assumes a cash collection of 50% of total collections. The interest on the capital investment loan is to be financed out-of-profit, thereby requiring the Vodokanals to make a net profit adequate to take the interest charge. These are relatively stringent financial criteria. Are Vodokanals currently able to satisfy these financial prerequisites?

Cash Collections

As discussed earlier, the current level of cash collections is extremely low. In order to make timely debt repayments and necessary operating expense payments, the Vodokanals will need to dramatically increase its level of cash collections to at least 50%.

The minimum 50% cash requirement assumes the following:

- Federal taxes to be paid in cash. Some VAT payable can be paid via offset arrangements,
- Payroll and other mandatory payments must be made in cash,
- At a minimum, 70% of the electricity expenses must be paid in cash,
- Emergency repair costs and purchase of items outside the local area would require at least 40% cash payment. Expenditures tied to repairs and contracting services are assumed to be at a very minimum 50% in cash, and,
- All debt service (interest plus principal) must be repaid in cash.

Total Collections

The present level of collection as discussed earlier is below the tariff/loan forecast model's 95% level of total collections. Further, the composition and timing of collections are a major limitation in the current Vodokanals' financial position. It is assumed that collections will improve to 95% prior to the commencement of large borrowing.

Profitability

As discussed earlier, three Vodokanals (Cheboksary, Petrozavodsk and Sochi) made near-GAAP net losses in 1996, while Vladimir made a marginal net profit. Modest near-GAAP net profits were made in 1996 by Murmansk, Nizhny Tagil and Tobolsk. None of the Vodokanals had written off bad debts or created a provision for doubtful debts. Receivables are on average 6 months of billings which is too long.

In their present financial condition, all Vodokanals under this study appear unable to service debt at any significant level at their current collection rates. Only when the level of total collections, and more importantly, cash collections dramatically improve and the tariff is raised to reach full cost recovery, the Vodokanals will be able to service long term debt on their own.

In connection with the Russian Federation Water and Wastewater Project loan implementation schedule, Table 4.2 outlines priority actions and implementation time frames for each Vodokanal to satisfy prior to long term borrowing can be initiated.

4 3 1 Improve Cash Collections - Direct Collection from Population Customers

Cash collections can be significantly improved by direct collection from population customers and budget organizations while continuing cash collections from enterprise customers. Low cash collections were caused by the municipal unitary enterprises collecting cash from population and not transferring cash to Vodokanals. Direct cash collections could be done by directing all customers to pay direct to the Vodokanal bank account by completing the appropriate documentation.

Table 4 2
Proposed Vodokanal Priority Actions and Implementation Time Frame to Enable Debt Service

Vodokanal Priority Action	Corresponding Project Activity
Collect at least 50% of all user charges in cash	Loan effectivity
Collect at least 80% of all billings	Loan effectivity
Bill full-cost tariffs	Loan covenant
Meter at least 40% of all consumption	Loan covenant
Eliminate cross-subsidies	Loan covenant
Expand the Housing and Allowance Subsidy Program (HASP) to incorporate the participation of at least 20% of all local families	Loan effectivity

4 3 2 Increase Total Collections

Obviously, the steps taken towards increasing cash collections will improve total collections as well. A regularly updated database and an effective follow-up procedure will be the key to increase in collections.

4 3 3 Bill Full Cost Tariff

Some of the Vodokanals were unable to recover all of their costs, including out-of-profit expenses, from their user charges in spite of having a cross-subsidy from enterprises to population. Given this environment, it is unlikely that in the present context, the Vodokanals will be able to successfully undertake debt service until they are allowed to bill full cost tariffs.

4 3 4 Meter 40% of Consumption

As a step towards full consumption metering, the Vodokanals should make arrangements to meter up to 40% by the end of 1998. Almost all enterprises and some budget organizations are presently metered. Therefore, metering is required in the budget organizations that are not metered and in apartment buildings (one meter to a block).

4 3 5 Eliminate Cross Subsidies and Expand the Housing Allowance Subsidy Program

Achievement of these targets will require sustained effort on behalf of participating cities to publicize the HASP and to upgrade the capacity of HASP offices to serve larger populations. Meeting this target is crucial as it provides a social protection net to low income families when the Vodokanals make arrangements to implement full cost tariffs and eliminate or minimize cross-subsidies. By reducing cross-subsidies from enterprises to population, the Vodokanals are likely to increase their cash collections because some enterprises presently barter in settlement of accounts whereas the population customers generally pay in cash. In addition, eliminating cross-subsidy and billing on metered consumption, the Vodokanals should experience the benefits of a demand management program, e.g., minimizing the need for further capacity.

The Ministry of Land Policy, Construction and Housing could negotiate the Vodokanals' performance targets, including tariff increases, and financial reforms of each Vodokanal. These negotiations will determine each Vodokanal's real debt carrying capacity. The PADCO model does not consider capital subsidies. Individual Vodokanal debt carrying capacity may be improved if such capital subsidies were provided as part of the individual Vodokanal negotiation.

4 4 Vodokanal Action Plan

The priority actions form the core of a broader Action Plan (Appendix II), will assist all levels of the governments and Vodokanals to create the necessary conditions for efficient Vodokanal loan management and help improve Vodokanal operational and financial autonomy. The Action Plan presents action items which need to be carried out over the short, medium and long term.

The Action Plan's goal is to promote the financial sustainability of Vodokanals' current and future operations. The Action Plan is divided into the following six categories: corporate governance, regulatory framework, management improvement, tariff/finance/social protection, operational efficiency, and demand management.

Appendix I - PADCO Accounting Conversion Methodology

1 Introduction

All Vodokanals (VKLs) assessed by PADCO maintain their books of accounts and prepare annual accounts according to Russian Accounting Standards (RAS). In 1995, most VKLs maintained books of account on a cash basis while in 1996, they changed their basis of accounting to an accrual basis following guidelines issued by the Ministry of Finance (MoF). Cash basis, strictly means, that only cash transactions are recorded in the books of account. Under this system, there are no accounts receivables or payables. However, in all VKLs who said that they prepared accounts on a cash basis, there were accounts receivable and payable. Therefore, the accounts were not prepared strictly, on a cash basis. PADCO financial analysts had to analyze the VKL ledger and annual accounts to detect the extent of the cash basis of the VKL accounts, and how accounts receivable and payable came into being. In 1995, most of the VKLs prepared their accounts on a so-called cash basis, which was in fact a mix of cash and accrual bases.

The VKL prepares a Balance Sheet and a "financial results" statement that they file with the Tax Directorate every year. The financial results statement is their Profit and Loss (P&L) account. A breakdown of the expenses is not shown in the financial results statement. Some VKLs prepare their financial results statement based on cash collections during the year from customers as revenue and adjust the expenses for the year to show the proportionate value of expenses that match revenue shown on a cash basis. The VKLs call this cash basis. Here, the figures in the balance sheet and P&L account will not agree with the general ledger. In 1996, most VKLs prepared their annual accounts on an accrual basis because of a recommendation given by the MoF.

2 PADCO Conversion Methodology

The PADCO team included institutional and financial, including accounting and analyst, experts. Because of the inconsistent accounting basis from one year to another used by the VKLs (cash, accrual, and mix of cash and accrual), and also different basis of accounting used by different VKLs, PADCO had to adjust the approach and methodology to suit the relevant VKL. The general methodology used for the task of converting Russian accounts to near-GAAP accounts in VKLs is described in the following sections.

2.1 Review of Accounting System

The first task was to familiarize with the accounting system of the VKL. The financial team interviewed the Chief Accountant (CA) of the VKL. At this preliminary meeting, the following aspects were discussed:

- Basis of accounting in 1994, 1995, and 1996. The basis of accounting in 1994 was necessary for the preparation of sources and uses of funds statement.

- Organization of the accounts department A rough organization chart was drawn as VKLs typically do not have a separate organization chart for the accounts department The chart was important because (i) it provided a summary of the organization of the accounts department for the report, (ii) clarifications could be obtained from the relevant accountant, thus, saving much time of the consultants and the CA, and (iii) tables required by the World Bank were handed over to the relevant accountant of the VKL through the CA
- The main tasks of each accountant were reviewed to gain an understanding of the division of work in the accounting department The answers gave the basis for an assessment of the subdivision of work of the accounts department
- General ledgers and the subsidiary ledgers were examined Computerization was assessed at this stage Depending on computerization and the subdivision of work of the accounts department, getting a preliminary level of confidence or lack of confidence on the VKL financial data was possible
- Copies of the trial balances for 1994, 1995 and 1996 were requested Most VKLs did not prepare trial balances In RAS, the trial balance shows only assets, liabilities, capital, reserves and deferred expenses
- Copies of the 1995 and 1996 financial statements and the financial results statement filed with the tax Directorate was requested
- Russian versions of the World Bank (WB) tables were given to the CA to complete for the years 1995 and 1996 While doing so, the significance of each table as well as the meaning of each row and column was explained in detail Items in the tables that could be traced to the P&L account or the Balance Sheet were shown to the CA, so that these tables would agree with figures in the restated financial statements A contact person from PADCO was identified as the liaison person for the completion of the task of completing the WB tables, and the CA and her accountants were requested to contact this person for any further clarifications on the WB tables

The WB tables that were given to CA included

- Analysis of taxes and other mandatory payments,
- Cost analysis,
- Changes in accounts payable, and
- Aging payables

The following WB tables were completed by the Billing department

- Analysis of billing and collection for the year,
- Analysis of accounts receivable, and
- Aging of accounts receivable

CA was requested to check the following items while preparing the WB tables to ensure consistency with the trial balances and general ledgers

- **Cost analysis table** The figures should agree with the expenses shown in the P&L account
- **Changes in accounts payable** Accounts payable at the beginning and end of the year should be equal to the Balance Sheet figure
- **Aging payables** Closing balance of accounts payable should be equal to the total in this table
- **Analysis of accounts receivable** Accounts receivable at the beginning and the end of the year should be equal to the Balance Sheet figures Water and wastewater billed in this table includes with VAT whereas the revenue in the P&L account is shown without VAT However, revenue in the P&L account that excludes VAT when multiplied by 100 and divided by, 100 minus the VAT percentage ($100-20=80\%$, in 1996) should equal revenue plus VAT
- **Aging of accounts receivable** Accounts receivable figures in this table should be equal to the closing balance of the accounts receivable table While reviewing accounts receivable, the team requested a list of bad debts of budgetary organizations and production enterprises The list showed the name of the organization, amount of bad debt and, the reason for considering the debt as bad (i.e., the organization was bankrupt, the accounts receivable extended beyond three years, etc.)

2.2 Review of Billing and Collection System

The next task was to become familiarized with the billing and collection system of the VKL All VKLs had separate billing and collection departments Normally, the head of the billing department reports to the Director of the VKL rather than the CA PADCO interviewed the head of the billing department and his senior accountant At this meeting, generally lasting one and a half days, the following aspects were discussed

- **Organization of the billing department** A rough organization chart was drawn showing the main functions of the subsection of the billing department
- **Tariff movements** Tariff movements for various categories of customers from 1994 to 1997 for water and waste water was requested to show how billing actually occurred In doing so, billing departments were asked to indicate clearly whether tariffs included VAT
- **Distribution of Customers** The number of customer categories and number of customers in each category was requested Then, the number of agreements signed with individual customers was requested to learn if the number of signed agreements were matched with the number of customers A copy of an agreement was collected for our files

- **Operation of Billing and Collection System** Next a rough flow chart was prepared illustrating the operation of billing and collection procedures
- **Invoicing Procedures** Since it differed by customer category, the invoicing procedures used to bill budgetary organizations and production enterprises was requested and a sample copy of an invoice was collected for our files. The tariff in the invoice was checked with the tariff given to us to (i) verify the accuracy of the tariff given to us, and (ii) to see whether the tariff was with or without VAT
- **Invoicing procedures** Population customer invoicing procedure of population was reviewed in more detail because it varies in different VKLs. Some VKLs bill intermediary municipal ZhEKs, while others bill the population directly
- **Population tariffs** Depending on the nature of population customers, tariffs used to bill general population customers differed in various VKLs. For instance, where intermediaries existed, some VKLs bill 100 percent of the population customer bills to the ZhEKs who in turn bill the population at the subsidized rate through communal services bills. Alternatively, some VKLs bill the population at subsidized rates and request the City Administration to pay the subsidies
- **Subsidies** Several different types of subsidies are provided to population customers and depending on the subsidy and frequency of payment. These can have considerable impact on VKL revenues. Thus questions were asked about the nature of the subsidies and who pays them to the VKL (the city administration or other organization)
- **Barter and offset procedure** Given the importance of barter and offsets to most VKLs, copies of barter and offset agreements were collected for the files and the CA was interviewed about the procedures used to negotiate these transactions. The authority for signing of barter and offset agreements were noted
- **Type of goods purchased under barter agreements** The basis of computing the selling price of goods purchased under barter agreements that are not used by the VKL was reviewed to determine if there was any markup for transport and stock holding costs. Next, the team requested information of pricing basis for barter transactions and compared market prices with sample barter transactions
- **Cash collection** Procedures for cash collections were reviewed to decide the source of payment of cash transactions
- **Recordation of billing and collection transactions** Next, a review of the procedures for recording billing and collections by customer category were reviewed to determine computerization. Generally, the input documents to record billings were the invoices, source documents for collections were bank wire transfers, cash deposits in bank, and cash deposits with the VKL cashier. Source documents for other collections were the barter and offset

agreements A test check of this entire process was done to assess the reliability of the system

- **Recordation of sales** The source documents used to record the monthly sales figures in the general ledger was reviewed to determine the frequency of recordation and the degree of accuracy realized from the procedures used Generally, the billing department generates a summary of monthly sales from the computerized system This is the source document for input of the sales figure
- **Recording collections** The procedure for recording the collections in the general ledger was reviewed in the accounts department Bank wire transfers and cash collections are recorded in the general ledger through the bank and cash books Collection by barter and offsets are recorded in the general ledger from the relevant agreements, a copy of which is sent to the accounts department Although the source of input data is the same, the collection recorded in the billing and accounts departments may not be the same Therefore, it was necessary to match the accounts receivable according to billing department records with that of the general ledger balance
- **Opinion of the competency of the billing department** Based on the review, the team assessed the competence of billing department key staff and the adequacy of the documentation involved as billing and collection is one of the most important financial functions of the VKL

2.3 Preparation of draft Balance Sheet

A two-stage procedure was adopted to convert the VKL Balance Sheet to a near-GAAP Balance Sheet First, a draft Balance Sheet in GAAP format was prepared from the VKL's trial balance Next the P&L account was prepared in a near-GAAP format In doing so, journal entries were prepared to convert VKL P&L accounts to near-GAAP P&L accounts Finally, a near-GAAP Balance Sheet was prepared after incorporating all journal entries made by PADCO

The detailed procedure is as follows

- The VKL trial balance (TB) was compared with general ledger balances, to see that the figures in both corresponded Where a TB was not available, the CA was requested to prepare one In our judgement, where we assessed that the CA was not able to prepare a TB within one day, the PADCO team prepared a draft TB Next, trial balances at the beginning and end of the year were entered into a spreadsheet and both were checked for reasonableness The approach for the reasonableness check was the same as those used by auditors when they do a Balance Sheet audit If there were doubtful figures from an audit point of view, these were listed and investigated and notes prepared for later inclusion in the PADCO report on the VKL Where changing the figures was necessary, journal entries were prepared describing the changes

- Preparing draft balance sheets (BS) from trial balances was not as easy in GAAP accounts because the VKL trial balances contain individual accounts having debit and credit balances that must be reconciled. Also, RAS has accounts that are different from GAAP accounting such as target financing which is really grants to the VKL. Further, target financing, and the P&L account balance are never connected to the BS by VKL. Often the net profit in the P&L account #80 is transferred to the Use of Profit account #81, a transfer that would not happen in GAAP accounting since profit is not used to fund expenses. Expenses are charged to this account. Sometimes through journal transfers, VKLs bring this account down to zero. As a result, there is no connection between the trial balance and P&L account. Preparing this connection was the most time consuming and difficult exercises. In GAAP accounting, the P&L account balance is carried forward and appears in the BS. However, in Russian accounting this connection is not made meaning that there is no direct link between the two statements.
- Next draft balance sheets were prepared in near-GAAP format. First, the BS prepared by the VKL for the Tax Directorate was connected to their TB and a connection table was prepared from this connection. The purpose of this exercise was to ensure that figures in the VKL BS can be traced to the near-GAAP BS, and to have the same grouping of individual accounts in the near-GAAP BS. When the VKL prepared an adjusted BS for their tax directorate showing cash collections received and proportionates expenses, making the connection with the VKL BS was not necessary because the VKL BS understated actual expenses. These VKLs did not have an internal BS showing the VKL's actual BS position. The reason may be that the BS presentation of VKLs is confusing even for an accountant and is very much unlike the GAAP format of a balance sheet.
- Draft balance sheets were prepared from the connection tables. Figures in the draft balance sheets can be connected to the VKL TB via the connecting table.

2.4 Preparation of Near-GAAP Profit and Loss Account

Preparation of the near-GAAP P&L account was more difficult than the preparation of the BS because in Russian accounting, the P&L account filed with the tax directorate, called the financial results statement, is in a summary form. For example, all expenses are shown in one total and the P&L account balance carried forward does not show up in the balance sheet. In GAAP accounting, net profit utilization is shown as an appropriation account below the P&L account, and the bottom line appears in the BS as a P&L account balance under revenue reserves. The P&L account balance brought forward from the previous year is then added to the appropriation account. As the two figures match, one can trace the P&L account balance in BS, to the P&L account and vice versa.

A further complication in BS preparation occurred when VKLs prepared P&Ls with proportionate expenses. Such P&L accounts were of no use in preparing near-GAAP P&Ls since they did not record all the VKL's expenses. Generally when this occurred, the VKLs did not have an internal P&L account with all expenses for the year showing the VKL's actual financial

position. Therefore, these VKLs can probably connect our restated P&L account unless they prepare a proper P&L account and reconcile the journal entries made by PADCO. Often, VKLs using this system of proportionate expenses would not have a true internal picture of the enterprises finances or its actual profitability.

The procedure adopted to prepare a near-GAAP P&L account is as follows:

- First, the VKL financial results statement filed with the Tax Directorate was used to obtain total revenue for the year. Next, the monthly totals of account sales from account #46, in the general ledger were totaled. Then, the billing department monthly billing summaries were verified with the amounts recorded in the account #46 to ensure that they correspond with January to December billings. If collections are recorded as sales, then the figure in account #46 were disregarded because for near-GAAP presentation, accounts must be prepared on an accrual basis. In such instances, revenue figures (without VAT) were collected from billing department monthly summaries covering the period from January to December. Account #46 always records sales without VAT. VAT on sales is credited to account #68-3. Therefore, the correct revenue figure without VAT is shown in account #46, provided it is from January to December. However, connecting and reconciling with VKL P&L account is important because later, the VKL may disagree with the revenue figures generated in this manner. If the VKL P&L revenue figures are different from account #46 or if account #46 shows billings for a period other than from January to December or if account #46, shows revenue on a cash basis, then an analysis of billing summaries from January to December was filed in our working paper files to substantiate the basis for determining the revenues shown in the near-GAAP accounts.
- The VKL financial results statement shows total production expenses. For near-GAAP presentation, the major expenses need to be shown separately so that they can be analyzed. This exercise can be done by analyzing the basic production account #20, where in most VKLs, all production expenses have been charged. A photocopy of account #20, ledger card was filed in our working papers. When VKLs show the major expenses separately in account #20, expense analysis is easy and can be taken directly from VKL accounts. Then all that is necessary is to add the columns. The next step is to decide whether these expenses have been accounted on a cash basis or from January to December on an accrual basis. If they are on a cash basis, the CA was requested to analyze the major expenses like electricity, labor and social taxes, on an accrual basis so that we could account the expenses on an accrual basis.
- Then the P&L account #80, where sales from account #46 are transferred as a credit and all expenses are transferred as a debit was analyzed to estimate the VKL's actual profit or loss. The debits come from basic production account #20 that had already been analyzed. In addition, debits coming from account numbers 23, 25, 26, 29, and 31, i.e., auxiliary departments, general production costs, maintaining production units and deferred expenses, respectively, representing expenses for the year, are transferred to P&L account #80. Next step is to see that the addition of all these debits representing expenses for the year agrees with

the figure shown in the VKL financial results statement under expenses. If there is a difference, it has to be reconciled with the CA.

- For near-GAAP presentation, expenses from January to December (accrual basis) are shown. If the VKL has accounted on a cash basis in account #20 or they have shown proportionate expenses in the VKL financial results statement, January to December expenses need to be analyzed to show them as accrual figures in the near-GAAP presentation. Thus, where the figures will be different from the VKL figures, and, the profit or loss also will be different. In some VKLs, we agreed the accrual figures with the CA, and even gave them copies of our analysis, so there should be no dispute with our figures.
- Next journal entries need to be prepared to record any differences between VKL accounting and near-GAAP presentation. One journal entry (JE) was made to record the differences in profit or loss under both systems. This journal entry connects the near-GAAP P&L account and balance sheet.
- VKL P&L account #80, shows the profit or loss for the year. This balance is transferred to Use of Profit account #81. VKLs make payments for various purposes and charge them to this account. In other words, they are using this profit. Some of these expenses are for production expenses like staff bonuses. Some expenses are not exactly production expenses, e.g., penalties for late payment of taxes. Balance in account #81, is transferred to various fund accounts and the balance on this account is brought to zero. Therefore, we tracked the movement of account #81 and showed the expenses charged to this account under correct > expense = account categories. At the same time, we showed the transfers to various funds as the P&L appropriation account in our near-GAAP presentation. By this method, we connected the P&L account to the BS, a step that most VKLs do not take.

2.5 Preparation of Near-GAAP Balance Sheet

Journal entries were made for various reasons. However, the most common entries were made to convert the VKL P&L account to an accrual basis when they had been accounting on cash or semi-accrual basis. Generally, we discussed the journal entries with the CA. However, their agreement was not necessary because the JE's had to be passed to prepare near-GAAP P&L account and BS. The working papers to back our journal entries are available in our working paper files. The procedure used to prepare the restated near-GAAP Balance Sheet is as follows:

- Journal entries were listed side by side with the trial balance under their respective headings. By incorporating these JE's, an adjusted trial balance was obtained. From this adjusted TB, the connection table was updated. From the updated connection table, a restated BS could be prepared.
- The connection table is useful because any figure in the balance sheet can be connected to the trial balance through the connection table. In other words, any figure from the restated BS

can be traced to the adjusted TB through the connection table and then from the adjusted TB to the VKL TB and vice versa

- Next the team checked to see whether the relevant figures in the World Bank tables corresponded with the restated P&L and BS

3 Internal Control System Review

Besides the internal control system of the billing department, the team also reviewed other component of the VKL's internal control using a standardized checklist. Samples of source documents were examined. In computerized systems, VKLs were asked to provide a demonstration of the system's operation. This exercise was important for us to form an opinion on the reliability of the figures shown in VKL financial statements. Notes on these operating systems were recorded as appropriate.

3.1 Payment System

- Examine the bank and cash books to see how collections and payments are recorded
- Supporting documents for cash collections and payments were inspected as these are official receipts issued for collections and payment vouchers to support payments
- Names of check signatories were requested to find out who had actual authority over disbursements
- Monthly bank reconciliations were requested to see if they were being prepared regularly
- The frequency of banking of cash collections was reviewed to detect the amounts of cash-on-hand that were being maintained by the VKL

3.2 VKL Economist

- Annual estimates or budget documents was examined to ascertain the budgeting process and its impact on corporate management. Attention was paid to determining the reliability of budget estimates and whether budgets were prepared using realistic values
- Basis of preparation budget was queried to learn interaction with other departments. For example, was data collected from other departments during budget preparation
- If they existed, sample data collection formats sent to other departments were evaluated regarding the detail and accuracy of the data being input into budgets

- Departmental budgets, if they existed, were inspected on a collective basis to see whether production departments and support departments like purchasing were basing their requirements on common targets
- Next the team asked about whether draft budgets were prepared and discussed with all departments, and then who approved the final budget
- Budget monitoring was then analyzed to see whether actual results were compared with the budget and significant variances noted to improve future management
- Then the correlation between the budget and the tariff computation was analyzed to figure out the correspondence between the VKL's budget and actual tariffs charged to its customers
- Finally, the team formed an opinion on the adequacy of the budgetary control system

3 3 Purchasing and Stores Department

To determine the adequacy of purchasing and inventory of the VKL, the purchasing and stores departments were asked to provide the following documentation for review by the team

- Purchasing plans showing planned purchases phased over the year,
- Documentation used for purchasing like purchase orders including the level of authority required for approving purchase orders,
- The basis of purchasing through barter agreements and degree of supporting documentation,
- Stores documentation such as stock cards and frequency that the cards are updated along with supporting documents such as goods received notes and requisitions from other departments,
- Valuation of obsolete stocks and the methods for disposal of obsolete stocks,
- Basis of charging stores issues to the basic production account #20 was reviewed from the documentation available with the store's accountant In all VKLs this function was computerized,
- Procedures for physical verification of stocks and whether stocks are physically verified annually by independent auditors, and
- Rough organization chart of the purchasing and stores department illustrating the functions of various personnel

3.4 Fixed Assets Control System

Finally, the fixed assets control system was evaluated to determine the degree of monitoring involved in the asset control system. To do so, VKLs were asked:

- Whether the list of VKL fixed assets were computerized (In all VKLs, the list was computerized),
- The basis for revaluation of fixed assets and whether the guidelines issued by the Ministry of Finance were followed in detail,
- Procedures used to revalue the individual fixed assets using the MoF multiplier, and
- Accounting entries were checked to see whether the revaluation of fixed assets was recorded correctly

Table 4 3
Vodokanal Action Plan

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
I Corporate Governance			
<i>Pass law on Municipal Unitary Enterprises</i>			The Russian Federation should pass a law on municipal unitary enterprises. Such a law would include a section that would authorize municipalities to contract services with communal service providers regardless of whether the municipality owns the enterprise. This provision would allow a binding service contract to be agreed between the city and service providers that would be enforceable in a court of law.
<i>Reorganize Corporate Structure</i>	<p>Most of the VKLs have structures which are outdated by the Russian Civil Code. Such VKLs should reorganize themselves as municipal unitary enterprises. The new Charters should grant to the VKLs and their directors as much operational autonomy as possible under applicable law, including the power to</p> <ul style="list-style-type: none"> • Create and revise internal management structures, appoint and dismiss management and other personnel • Adopt and implement operating plans and policies, • Adopt and implement personnel policies, • Adopt and implement capital repair and capital investment plans and policies, etc., and • Determine the disposition of all profits <p>The Charters should include a clear statement</p>	<p>Administration(s) should allow vodokanals to reorganize as municipal unitary enterprises which enjoy the greatest amount of autonomy possible over its operational and capital investment activities.</p> <p>The Administration retains ownership over all assets and enters into separate property transfer and service agreements with the municipal unitary enterprise.</p>	

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
	<p>of the VKLs' purposes and should accurately define their service areas The Charter should prohibit VKLs from engaging in business and activities not reasonably necessary to their principal goal of providing water and wastewater services to customers in their service area</p> <p>Once reorganized, the following three action items can take place</p> <ul style="list-style-type: none"> • Conclude New Agreement on Property Transfer, • Conclude New Service Agreement and • Conclude New Contract with the VKL Director <p>These items can be carried out immediately for those VKLs which do not require corporate reorganization</p>		
<p><i>Conclude New Agreement on Property Transfer</i></p>		<p>A property transfer agreement between the VKL and the Administration should be concluded Under RF Law municipally-owned property may be allocated to a municipal unitary enterprise only by right of economic jurisdiction' To clarify and expand as much as possible, within the existing framework of RF law the degree to which the VKL can control the disposition of these assets, the VKL and the Administration should enter into a legally-enforceable property transfer agreement with the following elements</p> <ul style="list-style-type: none"> • A broad statement of the intended use of the assets, • A complete inventory of the assets transferred, and a description and other documentation of their physical condition and depreciable value at the time of transfer 	

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
		<ul style="list-style-type: none"> • Transfer of the property for a definite term restricting the right of the Administration to withdraw the right of "economic jurisdiction before the end of the term to the case of use of the property for purposes other than those permitted by the property transfer agreement, or failure to comply with the requirements of the service agreement, • Periodic revaluation of the transferred assets for purposes of depreciation, in accordance with applicable law and corresponding amendments to the property transfer agreement to reflect these revaluations • Periodic amendments to the inventory of the assets transferred to reflect dispositions and acquisitions, and • The term of the agreement should be from five to ten years 	
<p><i>Conclude New Service Agreement Between the Vodokanal and Administration</i></p>		<p>A service agreement between the VKL and the Administration should be concluded which describes the rights and obligations of each party with respect to levels of service tariffs capital investment planning and execution, and other aspects of the VKLs' operations and local government support The Administration and the VKL should negotiate this agreement themselves and its implementation should be monitored by the Administration department (Regulatory Body - see below) that will set tariffs The service agreement should project tariff and service levels for three to five years but should be subject to periodic (perhaps annual) review and revision by mutual agreement The service agreement should include the following major elements</p> <ul style="list-style-type: none"> • A statement of the purposes of the agreement 	

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ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
		<ul style="list-style-type: none"> • A general statement of the rights and obligations of the VKL, including the rights to set its own operating management, personnel, and other business policies, to take all reasonable and necessary steps to bill and collect tariffs from customers and to deliver services at a level consistent with revenues, and the obligations to operate as a financially sustainable enterprise to take all actions reasonably required to enable it to deliver the agreed level of services and to resolve all disputes regarding non compliance with the service agreement in proceedings before the local independent regulatory body • A general statement of the rights and obligations of the Administration including the right to monitor compliance with the service agreement and the obligations to permit the VKL to exercise its rights and fulfill its obligations without inappropriate political influence or interference by the Administration or the local organ of self-government to support a level of tariffs appropriate to the agreed level of service and to delegate to an independent local regulatory body the power to set tariffs and to resolve all disputes regarding non compliance with the service agreement • Statements of long-term and short-term goals for water and wastewater service levels, including objective measures and specific schedules Such goals could include improved water supply service duration and pressures, reduced water supply system leakage, increased water supply metering, improved water and wastewater system maintenance, reduced energy use, and improved water and effluent quality 	

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
		<ul style="list-style-type: none"> • A requirement for the VKL to prepare and execute a capital repair and capital investment plan, in coordination with the City's overall plan for social and economic development, • A requirement for the VKL to develop and undertake (and for the Administration to support) a program of customer education and improved customer relations, • Requirements for improved accounting by the VKL, and for period publication of its financial results, • Requirements for periodic reporting by the Administration and by the VKL on performance (or non performance) of their respective obligations under the service agreement • Statements of any conditions of the Administration's or the VKL's obligations including availability of funding for required capital repairs and capital investments absence of material adverse changes in law and absence of <i>force majeure</i> • A statement that the service levels called for by the agreement will be periodically reviewed and revised by mutual agreement, and 	
<i>Conclude New Contract with Director</i>	A new contract with the Director should be concluded with the newly created independent regulatory body - see below. The contract should include financial incentives for achieving written realistic performance and efficiency benchmarks	<ul style="list-style-type: none"> • A general statement of intent by the Administration and the VKL to cooperate with one another use their best efforts to fulfill their respective obligations and to allow the other party to exercise its rights under the service agreement 	
II Regulatory Issues			
<i>Amend Existing Legislation Regulating Tariff Pricing Policies to Allow Vodokanal Full Cost</i>			Resolution No 552 should be amended to allow enterprises to include all operational and capital investment costs directly into the tariff

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
<i>Recovery</i>			<p>structure Under the current system expenses such as interest for capital related loans and employee bonuses can not be included as an expense but are to be paid out of an enterprise's net profit</p> <p>In addition Resolution No 552 and other appropriate legislation should be amended to allow enterprises the ability to write-off uncollectable bad debt as a regularly occurring business expense item Currently only accounts receivable older than three years or from bankrupt customers can be written off In addition such a write-off is not treated as an expense but rather a deduction from taxable income The immediate result of writing-off bad debt is the reduction of funds available for capital loan repayments</p>
<i>Establish a Local Independent Regulatory Commission for Tariff Approval and Service Agreement Management</i>		<p>In order to separate the role of local governments as both the owner of the VKLs (except for Pskov Vodokanal) and of their assets from their role as tariff and service regulator, local organs of self-government Charters should be amended (with or without authorizing legislation by the corresponding RF subject) to create a special independent local government body to act as tariff and service regulator with as much independence as possible from the local organ The applicable RF subject legislation, if any and the Charter amendment should describe the regulatory body's tariff-setting and service monitoring procedures, including provisions stating that</p> <ul style="list-style-type: none"> • Service levels are dependent on tariff levels and collection rates, that all decisions of the regulatory body must be made based only on the 	

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ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
		<p>information submitted to it by the VKL the Administration, and others</p> <ul style="list-style-type: none"> • The regulatory body will review tariff proposals on request of the VKL the Administration, or by petition of customers representing a specified percentage of the VKL s revenues (perhaps with a limitation on the frequency of tariff changes), • The regulatory body will review compliance with the service agreement at the request of the Administration the VKL or upon request of a substantial proportion of VKL customers if they provide some evidence that either party is not in compliance, • All interested parties will have the right to have access to information submitted to the regulatory body at no cost (copies to be provided at actual cost) • All decisions of the regulatory body regarding new tariffs or compliance with the service agreement will be made only after a public hearing (preceded by publication of adequate prior written notice of the hearing), at which all interested parties will have the right to be heard and to present relevant evidence • All decisions of the regulatory body will be in writing stating the evidence presented and the reasons for its decision, • All decisions of the regulatory body will be published in the local mass media and will be available to all interested parties at no cost (copies to be provided at actual cost) • So long as the regulatory body acts within its jurisdiction, according to the procedures described in the Charter and according to applicable law, the Administration and the local 	

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
		<p>organ will not interfere with its operations and</p> <ul style="list-style-type: none"> The Administration, the VKL and (to the extent permitted by RF law) other parties affected by the regulatory body's decisions will have the right to appeal to the court or the arbitration court in accordance with applicable law based on specified, limited grounds 	
<i>Establish Automatic Inflation Escalator Mechanism In Tariffs</i>		The tariff approval process mutually agreed to in the new service agreement should include an automatic inflation escalator mechanism This mechanism would allow VKLs to adjust water and wastewater tariffs on their own without further approval of the tariff regulator to reflect inflationary increases in the cost of major inputs, especially energy costs according to inflation indices issued periodically (e.g quarterly) by the appropriate government agency	
III Management Improvement			
<i>a. Management Reporting</i>			
<i>Improve Management Reporting Systems</i>	The VKL's accounting economics and customer billing departments should meet on regular basis to discuss joint operation and cooperation Hiring a Chief Financial Officer (CFO) or creating the Office of the Treasurer to coordinate these three groups streamline and consolidate these three operations would improve the quality of the financial reporting The CFO (or Treasurer) should be at the same reporting level as the Chief Engineer		
<i>Increase Emphasis on Financial Reporting and Accountability</i>	VKL monthly reports should include Trial Balance Monthly Cash Flow and Profit and Loss statements All financial statements should have columns comparing forecast versus actual (not adjusted for revenues received) Accounts receivable should be		

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
	analyzed (bad debt expense) on a monthly basis VKLs should undergo an annual audit conducted by external auditors		
<i>Determine Vodokanal Information System Needs</i>	VKLs should review the nature of their current and future data requirements decision making processes and current capabilities of its staff VKLs should hire computer system specialists to design a comprehensive management information and reporting system (MIS) train staff on the use of the new reporting system and sign a service agreement with the MIS - service provider for regular system maintenance and upgrading as well as continued training for staff		
<i>Implement an Efficient Cost Accounting System</i>	VKL accounting departments have rudimentary cost accounting systems in place which do not yet fully incorporate the use of computers Installing a consolidated accounting computer program will greatly enhance the productivity of numerous operations		
<i>Identify Portions of Accounts Receivable As Bad Debt Expense (Include in Cost of Tariff)</i>	Until federal legislation changes, VKLs should begin to write-off those bad debts which it can - i e three years and older Before writing off such debts however VKLs, working with the support of the independent regulatory body, should try to collect all debts before writing them off The writing-off of uncollectable receivables should be viewed only as a last attempt to be compensated for services already provided The regulatory body and the VKL should develop a written procedure for pursuing debt collection		Resolution No 552 and other appropriate legislation should be amended to allow enterprises the ability to write off uncollectable bad debt as a regularly occurring business expense item Currently only accounts receivable older than three years or from bankrupt customers can be written off In addition, such a write-off is not treated as an expense but rather a deduction from taxable income The immediate result of writing-off bad debt is the reduction of funds available for capital loan repayments
<i>b Increasing Collections</i>			
<i>Collect from all Customers</i>	VKLs should collect from all customers		

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
<i>Directly</i>	directly in particular general population customers This should result in an immediate increase of overall and cash collections While billing may be handled by an intermediary, to be chosen on a competitive basis all payments should directly be made to VKLs One approach would be to use a ZheK for billing purposes, but for VKLs to open an account at the same local bank where residential customers make their housing and communal service payments Customers would deposit their payment directly into the VKL account when making their other payments		
<i>Resist Non-Cash Payments</i>	VKLs should resist all non-cash payments whenever possible If this is deemed impractical, each VKL should develop standardized guidelines/procedures for accepting non-cash payments including additional surcharge interest payment, transactions fees and a clearly defined debt repayment schedule		
<i>Levy Fines For Late Payments</i>	In accordance with existing legislation VKLs should levy fines to the maximum amount permissible Fines should be issued however, only when it is determined cost effective		
<i>Develop and Implement Service Shut-Off</i>	In accordance with existing legislation VKLs should develop standards and procedures for shutting off service for non-payment	Shut off standards and procedures developed by VKLs should be approved by the newly established regulatory boards This is one of the primary conditions in the service agreement between VKLs and Administrations	
IV Tariff / Finance / Social Protection			
<i>Include All Interest for Capital Related Long-Term Loans Directly</i>	Once permitted by law, VKLs should include the interest for capital related long-term debt		Resolution No 552 should be amended to allow enterprises to include all operational and

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
<i>in The Tariff Structure</i>	directly into their tariff structure Such interest payments currently are suppose to come out of the VKL s profit Including such interest as a direct expense and not as an out-of-profit expense, should provide VKLs the ability to achieve greater financial self-sufficiency		capital investment costs directly into the tariff structure Under the current system expenses such as interest for capital related loans and employee bonuses can not be included as an expense but are to be paid out of an enterprise s net-profit
<i>Include Re-evaluated Depreciation In Tariff</i>	VKLs should have all assets (leased or operatively managed) re appraised by professional appraisers This depreciation based on this asset valuation should be used in the new tariff		
<i>Eliminate Cross Subsidy Paid By Enterprises</i>	VKLs should recalculate full cost recovery water and sewer tariffs for each customer category and set the tariffs for all customer categories to equal these full cost tariffs	Administrations should stop pressuring VKLs to establish cross-subsidizing tariff structures as a social protection measure Instead, the Administration should allow for general population tariffs to reflect the full cost of service and rely on its Housing Allowance Subsidy Program ("HASP) to assist low income families make their housing and communal service payments See below for further action items	
<i>Accelerate the Realization of Presidential Decree No 425 by moving Towards Full Cost Tariffs for All General Population Customers With Only Low-Income Families Receiving Targeted Housing Allowance Subsidy Program Subsidies</i>		VKLs currently receive up to four different types of monetary transfers for general population customers housing and communal service payment as a social protection measure enterprise cross subsidy, Administration <i>dotatsı</i> Federally mandated privileges and Housing Allowance Subsidy Program ("HASP) subsidies Only the last measure is based on actual need i e low-income families The other three transfers inefficiently use scarce local resources for social protection While the elimination of privileges requires changes in Federal legislation, cross-subsidies and <i>dotatsı</i> can and should be eliminated to help lessen the burden on enterprises and local budgets	

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
		<p>The fourth form of transfer the HASP subsidy is based on income and should become the only form of social assistance for making housing and communal service payments from the local government By relying solely on the HASP for providing the social protection net the city budget should yield significant monetary savings as they will by providing moneys for only those who need assistance and not everyone</p>	
<p><i>Expand the Operations of the Housing Allowance Subsidy Program System</i></p>		<p>All cities have HASP offices None however appear to be fulfilling the role that they were envisioned to assume, providing less than 5% of their respective population with HASP subsidies even though many more seem to potentially qualify Once VKL tariffs move toward full cost recovery however, Administrations need to be prepared for the resulting increase in HASP participants</p> <p>In order to maximize budget savings HASP offices must work efficiently, be fully computerized as well be able to carry out strict auditing of applicants</p>	
<p><i>Implement Intensive Public Information Campaign to Explain Vodokanal Tariff to Explain the Existence of the Housing Allowance Subsidy Program</i></p>	<p>Administrations and VKLs must inform the public of HASP through intensive public education campaign(s) These efforts must explain</p> <ul style="list-style-type: none"> • Why the tariff increases are necessary • How the HASP protects poor families from unreasonable burdens, • How residents can apply to receive HASP subsidies, and • What benefits will be realized by replacing cross-subsidies <i>dotatsi</i>, and privileges with targeted HASP subsidies 	<p>Administrations and VKLs must inform the public of HASP through intensive public education campaign(s) These efforts must explain</p> <ul style="list-style-type: none"> • Why the tariff increases are necessary • How the HASP protects poor families from unreasonable burdens, • How residents can apply to receive HASP subsidies, and • What benefits will be realized by replacing cross-subsidies <i>dotatsi</i> and privileges with targeted HASP subsidies 	
<p><i>Announce the Ministry of Labor Minimum Housing Standards for</i></p>		<p>Lobby the Federal Government to announce these standards</p>	<p>Discussed in Resolution No 707 these life line type standards can help guide local</p>

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ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
<i>Communal Service Consumption</i>			decision makers with HASP standard setting For example it would help determine above what level of consumption should families become ineligible to receive HASP subsidies in order to ensure that wasteful consumption is not subsidized Families whose measured consumption were above the Ministry's standards, would not be able to receive subsidies or would receive reduced subsidies Unfortunately until general population customers are charged based on metered consumption these standards can not be applied effectively
<i>Analyze and Make Public Plans to Rationalize Privilege System</i>			Discussed in Decree No 425 the entire privilege program should be analyzed in the context of HASP and then rationalized Targets for gradually rationalizing these privileges should be published Such targets would let local governments develop better projections and more comprehensive strategies for providing services while offering a social safety net over the next several years
V Operation Efficiency Issues			
<i>Meter Production</i>	Measuring all production by meters should be considered a top priority for VKLs This is one of the primary conditions in the service agreement between VKLs and Administrations	Measuring all production by meters should be considered a top priority for VKLs This is one of the primary conditions in the service agreement between VKLs and Administrations	
<i>Reduce Production Inefficiencies</i>	VKLs should evaluate pumping efficiencies with the goal of reducing energy consumption while meeting daily peak demands including this as a primary condition in the service agreement between VKLs and Administrations	VKLs should evaluate pumping efficiencies with the goal of reducing energy consumption while meeting daily peak demands including this as a primary condition in the service agreement between VKLs and Administrations	

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ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
<i>Reduce Delivery Losses</i>	VKL should determine the magnitude of delivery losses and develop a loss reduction program that will be included in the new service agreement with the Administration	VKL should determine the magnitude of delivery losses and develop a loss reduction program that will be included in the new service agreement with the Administration	
<i>Stream-line Vodokanal Employment</i>	VKL management should evaluate total staff requirements to determine if possible staff redundancies and production inefficiencies exist. Where possible, management should reduce surplus staffing.		
<i>Competitively Contract Out to Third Parties Certain Aspects to Private Contractors</i>	Some VKL operations could be more efficiently performed by private contractors, including billing, collection, enforcement emergency repair work capital construction and repair transportation and, operation and maintenance of isolated service areas. A successful cost accounting evaluation can assist management determine which operations could be more efficiently carried-out by private contractors.		
VI Demand Management			
<i>Meter Consumption</i>	VKLs should follow the guidelines provided in existing legislation, i.e. customers shall install meters on their own or face being billed the maximum amount of water and wastewater they technically could use. Given the associated installation costs meters should be installed at the building level with individual apartment meters to be installed only if the individual apartment owner pays for it themselves. The building owner should pay for the purchase and installation for building level meters.	Discussed in Decree No 425 Administrations should promote general population meter installation. In the case of buildings still in municipal ownership the Administration itself should purchase the necessary meters for the whole building level. For non-municipal housing Administrations should develop loan programs for condominium associations and other groups, to borrow against to purchase and install meters. Other incentive based strategies should be explored.	
<i>Change Attitude to be Focused on Fixing and Maintaining "the</i>		After metering fixing leaks inside of residential buildings is the second most significant demand.	

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
<i>Other End of the Pipe.</i> ¹		<p>management strategy which an Administration can undertake This strategy can also help reduce the overall water and wastewater payment made by general population customers once full cost tariffs and metering are in place ¹</p> <p>Administrations should encourage active maintenance of plumbing to reduce water leaks as specified by existing Housing Fund Technical Exploitation Rules and Norms ² Municipal management and maintenance companies are currently not being held accountable for failing to enforce these Rules and Norms ²</p>	
<i>Introduce Incentives in Housing Management Service Agreements to Enforce Existing Rules and Norms for Improved Housing Maintenance and Management Services</i>		Administrations should introduce incentives into the management service agreements to enforce existing Rules and Norms	
<i>Promote the Privatization of Maintenance and Management Companies</i>		Discussed in Decree No 425, Administrations should promote the formation of private maintenance and management companies to compete for work currently being performed by municipal ZheKs Private companies could play a large role in reducing "other end of the pipe" leaks and losses Private maintenance and management companies are more likely to carry-out the activities which they are responsible for than municipal owned ZhEKs ² and are more likely to respond positively to incentive	

¹ PADCO analysis in two Russian cities suggest that there are significant water losses associated with the current maintenance level of residential buildings, the majority of which are still owned by local Administrations

² This is based on testimonials from Deputy Mayors from Barnaul, Ekaterinburg, Novgorod, and Chelyabinsk, PADCO, Inc , 1997

ACTION ITEM	RESPONSIBLE LEVEL OF AUTHORITY		
	Vodokanal	Municipal/Republic Administration	Federal Government
		based contingencies in their service agreements	
<i>Promote Condominium Association Formation</i>		Discussed in Decree No 425 Administrations should promote the formation of condominium associations Such associations can improve water and wastewater service provision and replace the current intermediary who acts on behalf of general population customers for billing and collecting purposes They also more readily respond to programs which could lower their members housing and communal service payment Condominium associations provide general population customers the ability to better influence the level of quality and costs of the services which they receive Note associations generally represent only their own interests and not those of the provider	

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