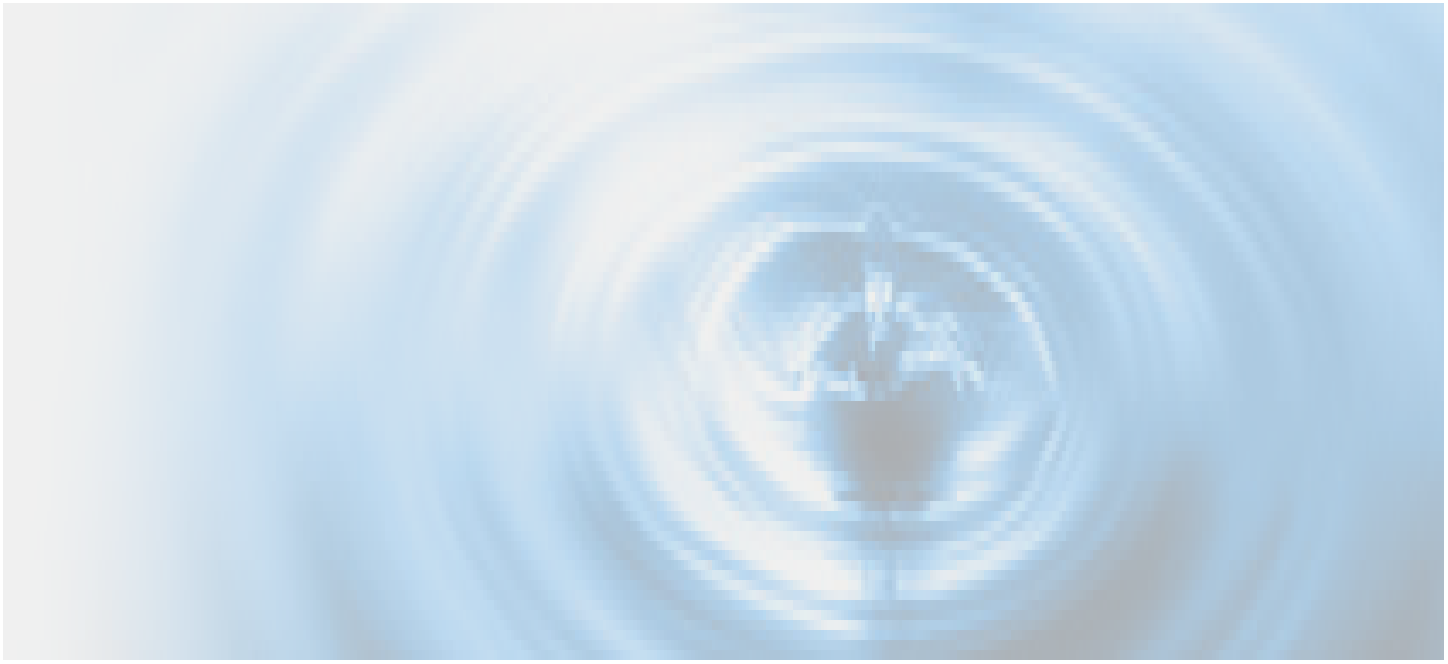
NATIONAL WATER COMMISSION



TARIFF REQUIREMENT FOR THE

PERIOD 2007-2010

September 2007

Abstract

This submission for a review of NWC's tariffs is in accordance with the Water Sector Policy of Jamaica, the Office of Utilities Regulation Act (OUR Act), the National Water Commission Act (NWC Act) and the Regulatory Framework established by the Office of Utilities Regulation (OUR).

With respect to tariffs, Section 3.3.2.5 of the Water Sector Policy states that:

"The OUR will be responsible for setting tariffs at a level which allows the service providers to fully recover efficient cost levels (including both capital and operating costs)."

It also states that:

"Where exceptional circumstances dictate the need for additional funds for systems improvements or rehabilitation, the OUR will take this into account in setting tariff."

Section 11 of the OUR Act empowers the OUR to prescribe rates for utility services except in cases where an enabling instrument specifies the manner in which rates are to be fixed. The NWC Act initially provided for NWC to set its own rates subject to approval by the responsible Minister. However, the NWC Act was amended to make setting of rates the responsibility of the OUR. Such rates are to be set in conformance with the Water Sector Policy.

In December 2003, the OUR specified the NWC rates which were to be applicable from January 2004 to December 2006. NWC is required to submit an application for new rates which will come into effect no sooner than January 2007.

It is expected that the tariff review arising from this application will result in the establishment of a clear framework which encourages efficiency and quality of service in the water sector by ensuring that NWC operates in a viable and sustainable manner with appropriate incentives for system improvements. The objectives of the submission are therefore as follows:

1. Improve the availability, reliability and quality of services provided by NWC while ensuring that potable water and sewerage costs are kept at the minimum levels that would allow this.
2. Ensure the sustainability of NWC's operations by allowing the utility to earn a reasonable return on investments which would allow it to source and service the required financing.

The tariff control mechanism being used by the OUR is characterized by a price cap regime which fixes rates for three year periods such that adjustments are only made for price escalations less an imposed allowance for efficiency gains. It is proposed that this regime continues but broadened to also explicitly take into account performance standards and targets to which NWC is held by ensuring

that the Commission has the requisite resources and incentives to efficiently expand and improve service levels.

The price cap regime encourages the utility to continue to improve its operating efficiency and the benefits of these improvements are passed on to consumers. When properly applied, it simulates the operations of a liberalized competitive market environment.

NWC's primary motivation is to act in the best interest of its owners, the people of Jamaica. In this respect the utility is anxious to deliver the levels of service desired and is committed to do this in the most efficient manner. The Commission is therefore implementing a wide range of programs and projects which will redound to the ultimate benefit of all concerned by supporting social and economic developments and contributing to the protection of the environment and the improvement of living standards.

The Commission is grappling with the challenges of infrastructure has been in place for many decades (as old as the cities they are in some instances) which are in need of major rehabilitation or replacement. The utility is also challenged to expand its services to facilitate developments and curtail environmental degradation due to untreated wastewater.

In order to fulfill these objectives, major investments will be required over the next decade. Given the country's fiscal constraints, these investments will have to be financed by NWC. The utility therefore needs to not only recover its operating and maintenance costs but also needs to be sufficiently viable to attract the necessary financing.

Continued delays in addressing the resource requirements of the Commission have only been worsening the situation, constraining local developments and postponing an inevitable situation where the government will either have to come up with the requisite resources and further strain its fiscal position or resort to private ownership from a poor bargaining position and with significant and inevitable rate adjustments at that point.

NWC's efforts to expand and improve potable water and sewerage services need to be supported by a rate regime which allows the Commission to attract financing to pursue its programs and projects. In this application, NWC is therefore proposing a new tariff regime which will:

1. Support the objectives of improving and expanding potable water and sewerage services to address the needs of the people of Jamaica;
2. Encourage the utility to continue its drive to improve operating efficiencies by providing appropriate incentives;
3. Allow NWC to achieve financial viability in order to autonomously sustain its operations and finance system developments.

These objectives are in the best interest of all concerned.

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SUMMARY OF TARIFF APPLICATION

The OUR has been using the Price Cap Methodology for the determination of tariff and this methodology is acceptable to NWC to determine the new tariff for the period January 2008 to December 2010. The essence of the determination of the starting rate is the calculation of the revenue requirement which would allow NWC to recover its reasonable costs, including the cost of capital.

The highlights of the submission are presented below

- It is important that the inputs used in the tariff determination reflect the true cost and fully reflects NWC's cost of service. Based on the revenue requirement based on the various costs related to service, and other inputs, and using the Price Cap Methodology, it is determined that NWC requires an increase of 45.8%.
- NWC is requesting an across the board increase of 44% in the rates charged for water and sewerage services. The shortfall of 1.8% will be addressed through further efforts to improve the efficiency of operations.
- NWC is proposing that the existing tariff structure remain.
- The weights of the PAM have not been adequately recovering movements in costs and a proposal for the revision in these weights is presented.
    - In addition, it is proposed that the weights of PAM be adjusted annually to ensure that they continue to reasonably reflect NWC's cost structure.
    - It is also proposed that in addition to exchange rate risks associated with foreign costs, that foreign inflation be included as part of the movement of the foreign exchange component.
- In this submission, information on NWC's financial performance during the period of the current tariff is provided. It will be noted that net profits remained negative which is resulting in an erosion of NWC's reserves/equity base.

Some special issues of concern have been highlighted. These include NWC's pension liability; the imposition of income tax; the requirement's to meet the National Environment Planning Agency's (NEPA) wastewater discharge effluent standards; the cost of treatment of wastewater at Soapberry; and the adverse impact of the high cost of energy.

As part of the water supply and sewerage improvements, which includes system renewal, NWC has been undertaking a number of water supply and sewerage projects. It is intended to pursue a number of other projects during the next three

years and it is important that NWC generates sufficient revenue to finance these undertakings.

1 INTRODUCTION

1.1 BACKGROUND

National Water Commission (NWC) is the only major utility company in Jamaica that is still wholly owned by the people of Jamaica. The utility operates throughout the island and is the designated primary vehicle for the achievement of the country's policy objectives of providing potable water supply to all Jamaicans by 2010 and fully operational central sewerage systems for all major towns by 2020.

The utility is also engaged in the provision of potable water and sewerage infrastructure to support economic and social development, especially in respect of relevant areas targeted by the Government's development policies. Tourism and housing developments are two of the key sectors in focus.

Despite being a publicly owned company with wider economic and social objectives, however, NWC has been mandated to operate as a commercially viable entity. This is to ensure sustainability and expansion of its operations, without dependence on the central government for financial support. This is in light of increased fiscal challenges being faced by the central government.

In order to achieve viability, the following is required:

- NWC must operate as efficiently as possible;
- The rates charged by NWC must ensure recovery of the cost of service, including the cost of capital.

The first requirement is within the ambit of NWC and the utility has been making strenuous efforts to maximize its operating efficiency, despite ongoing resource limitations. These efforts are described in this document.

The second requirement has not been realized in the history of the utility for a wide variety of reasons. NWC has never had a tariff that allows the utility full recovery of the cost of service provision. This, however, is expected to change with the implementation a Water Sector Policy which stipulates that the cost of service is to be recovered by the utility and with the empowerment of the Office of Utilities Regulation (OUR) to objectively establish water services tariffs within this policy framework.

1.2 SCOPE OF NWC's SERVICES

1.2.1 NWC Customers

NWC provides potable water to just under 460,000 domestic and commercial customers throughout the length and breadth of Jamaica and sewerage service to some 140,000 customers in specific areas of the country. The numbers and categories of NWC customers served are summarized in figure 1.1 below.

Figure 1-1: Number and Category of NWC Customers

	March 2007	March 2006	March 2005	March 2004
CATEGORIES	Number of Accounts			
Domestic	423,277	416,161	406,585	394,783
Commercial	31,423	30,470	29,222	28,187
Primary School	1,123	1,182	1,168	1,162
Condomium	259	263	255	255
Others	1,770	1,816	1,789	1,815
TOTAL	457,852	449,892	439,019	426,202

1.2.2 Potable Water Supply Services

Potable water services are provided throughout the island and are available in most areas via in-house taps, standpipes and bulk supply points. NWC produces some 5.4 billion gallons of water per month through a network of some 9,000 kilometers of pipeline to just over 70% of the population.

NWC continues to provide water that consistently meets the water quality standard of the Ministry of Health. Large sections of most urban areas receive 24-hour supply for the major part of the year. It is recognized that there are areas where the level of service needs to be more consistent and NWC has been taking steps to address this.

1.2.3 Sewerage Services

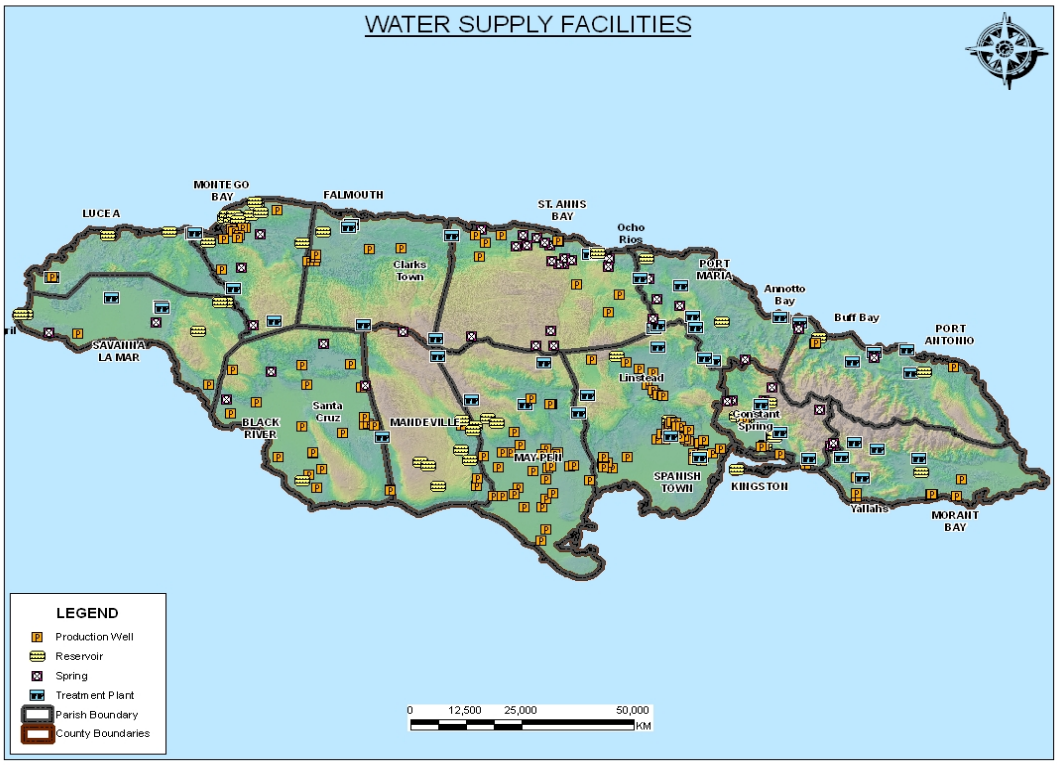
NWC provides sewerage service to 23% of the population, the majority located in Kingston and St. Andrew and the urban sections of St. Catherine and St. James. In recent years, NWC has constructed new sewerage facilities in Negril in Westmoreland, Montego Bay in St. James and Ocho Rios in St. Ann. Steps are now being taken to establish sewerage in Port Antonio, Portland and expand the sewer network in Kingston and St. Andrew.

1.3 NWC's FACILITIES

1.3.1 Potable Water Supply Facilities

NWC operates some 460 water supply systems, comprising water treatment plants, wells, entombments and booster/relift stations. Figure 1.2 shows the distribution of the major water production facilities across the island.

Figure 1.2 – NWC Water Supply Facilities



1.3.2 Sewage Treatment and Sewerage Facilities

NWC operates 68 wastewater treatment plants. Most of these plants are small and are associated with housing developments. A number of these facilities require extensive refurbishing while others need to be replaced.

NWC prepared a Wastewater Sewerage Action Plan, following consultation with the National Environment and Planning Agency (NEPA), outlining NWC plans to carry out refurbishing and replacement of some of these wastewater plants. A new tariff is critical to the achievement of the objectives of this plan.

Figure 1.3 shows the locations of NWC operated wastewater plants and figure 1.4 provides information of NWC's major wastewater plants.

Figure 1.3 – NWC Wastewater Facilities

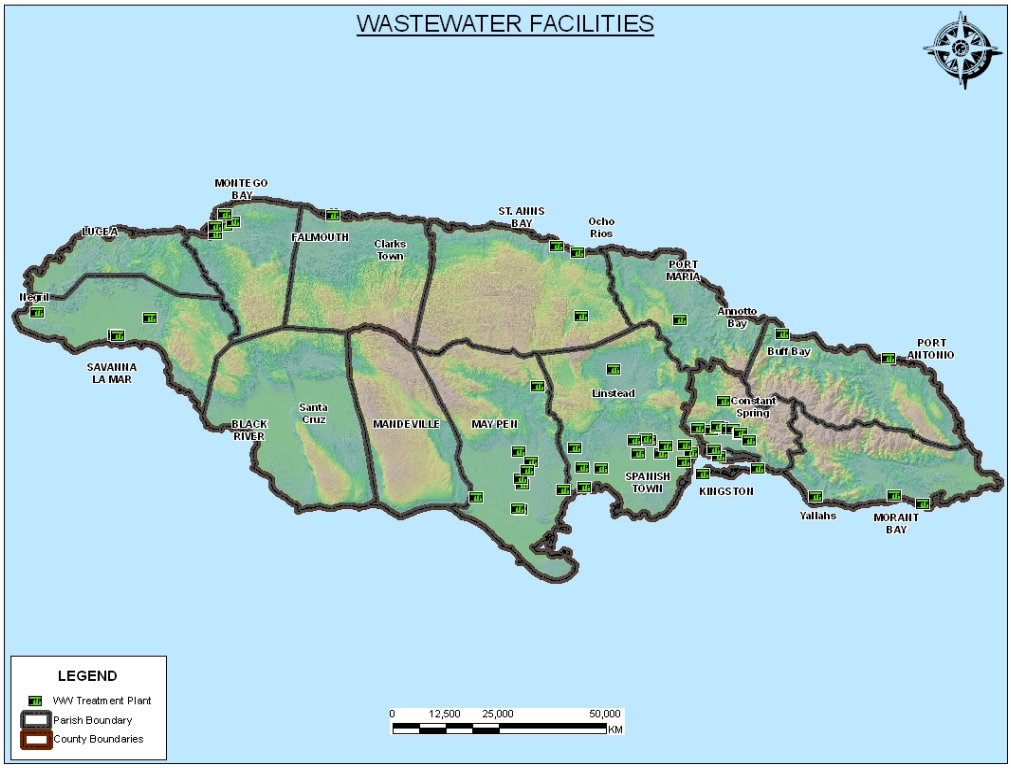


Figure 1.4 – Major Wastewater Treatment Facilities

Location	Name of Facility	Type	Design Capacity (MIGD)	Age (years)
Kinston & St. Andrew	Greenwich Treatment Works	Primary Treatment	12	>50
	Western treatment Works	Primary Treatment	5	>50
St. Catherine	Greater Portmore Ponds	Ponds	4	15
	Bridgeport	Contact Stabilisation	2	30
	Eltham Park	Oxidation Ditch	1	20
	Independence City	Contact Stabilisation	3.5	37
Westmoreland	Negril	WSP	4	11
St. James	Montego Bay Ponds	WSP	10	11
St Ann	Ocho Rios	Oxidation Ditch	3.5	11

1.3.3 NWC's Share of Potable Water Supply and Sewerage Services Market

NWC does not have monopoly rights for the provision of water and sewerage services. Other government agencies as well as the private sector have been involved in the provision of these services; the Government has a policy which encourages further participation by the private sector. However, these other entities have much less investment in water and sewerage infrastructure.

Figure 1.5 – Other Entities Providing Water and Sewerage Services

Name of Entity	Type of Service	Areas Served
CanCara Development Limited	W, S	Western Spanish Town
Dynamic Environmental Management Limited	W, S	Vineyard Estates, Bushy Park, St. Catherine
		Prospective Areas: Caribbean Estates, Morris Meadows
Rose Hall Development Limited	W, S	Ibera Star, Palmyra, Wyndham, Half Moon
Runaway Bay Water Company Limited	W	Cardiff Hall, NWC
Dairy Springs Limited	W	Shaw Park, St. Ann
Four Rivers Development Company Ltd.	W	Shaw Park, St. Ann
Hampstead Benevolent Society	W	Hampstead, St. Mary
Water Supply (W), Sewage Treatment & Sewerage(S)		

1.4 CHALLENGES

1.4.1 Condition of Facilities

NWC operates and maintains a number of complex systems, incorporating over 180 water production facilities, a number of booster pumps, over 9,000 kilometers of transmission and distribution mains. In addition, there are 68 wastewater treatment plants, some 95 wastewater pumping facilities over 1,500 kilometers of collector and trunk sewers.

Over sixty percent (60%) of the Commission's water and wastewater facilities have exceeded their useful economic life. Most of these facilities were constructed and commissioned into operation over 25 years ago and require renewal through extensive rehabilitation and facility upgrade or complete replacement and/renewal.

Water Supply

Despite the constraints and challenges, the National Water Commission has been undertaking a number of capital projects to address water supply deficiencies across the island. These include the upgrading and construction of new systems to increase operating capacities and extending the useful economic lives of some of these facilities.

The process equipment for most of the water treatment plants are old and are not performing at acceptable levels. This has resulting in a higher than desired level of manual involvement in certain aspects of the treatment operations.

The aged water supply network has resulted in frequent main breaks and unacceptable levels of leakage. This has adversely affected the level of service provided to our customers.

Wastewater

The National Water Commission's 68 wastewater treatment facilities are located at many different locations island-wide. Over 75% of these facilities were constructed more than 25 years ago. A number of these plants are small packaged type plants, which were inherited from housing developments at various times. Many of these plants require significant rehabilitative works to ensure that they operate at their designed treatment capacity.

Most of the older plants were designed to meet the Ministry of Health's (MOH) effluent standards for wastewater discharge. The National Environment and Planning Agency (NEPA), which was recently incorporated is the Agency responsible for all environmental matters has prepared a draft final document relating to the National Sewage Effluent Regulations for which NWC must comply.

The Sewage Effluent Regulations speaks to raising the standards with regards to some parameters for facilities which were constructed later than 1st January 1997 and those facilities constructed prior to that date will be required to meet the old effluent standards.

2 POLICY FRAMEWORK

2.1 GENERAL

The general framework for the provision of water and sewerage services, among other things, is set out in the Government's Water Sector Policy (WSP). The WSP sets out GOJ's objectives for the sector as well as the institutional responsibilities and strategies to achieve these objectives. It also sets out the basic guiding principles for the establishment of tariffs for water and sewerage services. This tariff application is consistent with the Policy and it is expected that the OUR will act within this framework established by the Government.

The WSP acknowledges GOJ's objective of making NWC commercially viable and identifies the following as reasons for the failure to achieve this objective to date:

- The absence of timely and adequate tariff adjustments;
- An increase in the area served by NWC and the demand for service consequent on NWC taking over Parish Council systems;
- Insufficient capital to upgrade these facilities.

2.2 RELEVANT TENETS OF THE WATER SECTOR POLICY

The key aspects of the WSP in relation to NWC's tariffs may be summarized as follows:

2.2.1 Institutional Responsibilities

- OUR shall have responsibility for approval of fees and tariffs based on agreed standards;
- MOWH, in consultation with stakeholders, will carry out the legislative reforms necessary to give effect to the Policy;
- NRCA shall continue to have responsibility for monitoring and enforcing compliance with environmental standards.

2.2.2 Financing and Cost Recovery

- Cost recovery mechanisms shall be used to ensure that the direct beneficiary pays to the extent feasible for the reasonable costs associated with provision of the service.

2.2.3 Operating Cost Recovery

- Where necessary to achieve social objectives, GOJ will provide subsidies otherwise payable by the consumer for "social water". Recovery of these costs is fundamental to the viability of the entity providing the service.

2.2.4 Financing Capital Costs

Funding will be accessed through:

- Millage (charges levied in addition to tariff to fund new projects);
- Finance provided by the private sector;
- Government grants for specific works with high social or environmental value.

2.2.5 Financing Infrastructure for Housing and Other Developments

- The developer shall be required to meet all on-site infrastructural costs;
- The developer shall be required to provide capital to construct or assist with the construction of off-site infrastructure required to take water to the development.

2.2.6 Tariff Structure

The tariff shall be designed to allow for:

- A life line rate;
- Full cost recovery to the extent that costs are not subsidized;
- Differential rates where appropriate.

2.2.7 Tariff Regulation

- OUR will be responsible for setting tariffs at a level which allows NWC to fully recover reasonable costs (including capital and operating costs);
- NWC will be responsible for increasing efficiency of operations;
- Where exceptional circumstances dictate the need for additional funds for systems improvements or rehabilitation, OUR will take this into account in setting tariffs.

2.2.8 Social Water

Social water refers to the provision of the minimum levels of potable water and sewerage services to persons who cannot afford the full cost of such services. The definition is also expanded to include water supplied to the public at large in circumstances where collection of payment from the user is impractical.

The relevant stakeholders, including the OUR and the Ministry of Finance and Planning, shall agree on revenue sources for social water including:

- Tariffs and user fees;
- Cross subsidies;
- Direct subsidies.

2.3 RECENT DEVELOPMENTS

Consistent with its policy to make NWC operate as a self-sufficient and commercially viable entity, the Government has recently passed a law requiring NWC to start paying corporate taxes.

3 LEGAL AND REGULATORY FRAMEWORK

3.1 LEGAL FRAMEWORK

3.1.1 NWC Act

NWC currently operates under the NWC Act.

3.1.2 OUR Act

Pursuant to Section 4 (1) (a) of the OUR Act, the Office has the responsibility to regulate the provision of prescribed utility services, including water and sewerage services.

3.1.3 Water Act

The legal framework under which NWC operates has been under review for some time now. A new Water Supply and Sewerage Services Act has been under preparation and is expected to be passed within another few months.

The new Water Supply and Sewerage Services Act will apply to all water service providers, including the NWC and privately owned utilities. Special regulatory powers which NWC had under the NWC Act have already been removed and are now vested with the OUR. NWC is now being treated as just another service provider, albeit the largest in the country. The Water Act will be consistent with the amended NWC Act and the OUR Act.

3.2 REGULATORY FRAMEWORK

3.2.1 General

As part of its 2003 Determination, the OUR specified a number of performance targets for NWC. These were later updated and included in a Regulatory Framework document which the OUR published in July 2004. The Framework prescribed by the OUR is for the period 2004 to 2006.

The document includes the following:

- Legal authority of the OUR to regulate NWC;
- Performance targets and benchmarks;
- Reporting requirements;
- Filing requirements for tariff applications.

The document is silent on the guiding principles and methodologies to be used in reviewing NWC's tariffs. In this respect, it differs from the framework specified for major private utilities.

The key aspects of the document are summarized below.

3.2.2 Performance Targets and Benchmarks

A number of performance targets were established by the OUR for the period April 2004 to March 2006

Reporting Requirements

General Reporting and Compliance

The following information is required annually/quarterly (with monthly breakout):

- Financial reports
- Statistical information on operations and customer service
- Quality of service standards reports
- Performance of capital projects
- Until completed, summary reports on the restructuring program

The OUR specified a significant level of detail as required under each category.

NWC used its best efforts to provide all the required information in timely manner and was largely successful in doing so. However, the utility is of the view that the level of detail required may have been excessive and unnecessary in some instances. The Commission proposes a review of the information requirements under the expected new regulatory framework.

Accounting Separation

NWC was required to develop the necessary procedures to allow for separation of accounts into its major business areas, so as to enable an appropriate determination of various charges for services provided by the Commission at the next tariff review. In this regard:

- A plan to achieve this was to be submitted by October 2004; and
- Accounting separation is to be achieved is to be achieved by December 2006.

PAM Reporting

NWC was to submit to the OUR monthly reports on PAM indices and values, including details of the calculations in order to facilitate an *ex post* review by the OUR.

NWC has been submitting the required information to OUR on a monthly basis.

Rate Application

Minimum filing applications for rate applications were specified.

The required information is being submitted to support this rate application.

3.2.3 Making NWC Easier To Regulate

NWC has been seeking to improve its relationship with the OUR and will continue to do so by means of the following:

- NWC will continue to maintain an open book policy with the OUR. No reasonable request for information from the OUR will be refused;
- NWC will seek to have more frequent dialogue with the OUR at regular intervals on all relevant matters;
- During the recent restructuring exercise, additional personnel and systems were put in place to better collect and analyze information on systems operations. An OUR liaison person has also been designated.
- With the assistance of the necessary audits and analyses, NWC will seek to agree on more reasonable targets with the OUR and will keep the OUR up to date on the details of efforts to achieve these targets.

4 MACRO-ECONOMIC REVIEW AND OUTLOOK

4.1 RELATIONSHIP BETWEEN NWC AND THE LOCAL ECONOMY

The state of the Jamaican economy affects and is affected by NWC in many respects. It is therefore necessary to consider the macro-economic outlook and the expected implications for NWC.

With GOJ targeting the tourism as the main sector for growth, adequate water supply becomes a critical ingredient. This is being demonstrated on the north coast where for years a number of investments were constrained by the absence of adequate water supply. In response, NWC has undertaken a number major water supply improvement projects and will continue to do so. The projects include:

- Logwood Water Supply Project
- Great River Lucea to Water Supply Projec
- Northwestern Parishes Water Supply Project (currently ongoing)
    - Martha Bare to Braco Water Supply
    - Braco to Runaway Bay Water Supply
    - Network Services Improvement

The result is that a number of investment projects that have been on hold are now being implemented or are about to be implemented. Some of the major ones are provided in figure 4.1 below.

Water supply also has significant social value. A minimum level of potable water supply is required for health reasons and to assist with poverty alleviation, especially in the case of rural poor.

Figure 4.1 : Some of the Investments Being Facilitated by NWC Projects

Parish	Development	Size (No. Rooms)	Units
Resort Developments			
Hanover	Grand Palladium Hotel	1000	Rooms
St. James	Iberostar, Rose Hall Resort	980	Rooms
St. James	Fuerte Seawind Keys, Montego Bay		
Trelawny	Couples Hotel Resort, Harmony Hall	350	Rooms
Trelawny	Oyster Bay Hotel		
Trelawny	Harmony Cove Resort		
St. Ann	Riu Mamme Bay	1000	Rooms
Residential Developments			
KSA	Inner City Housing Development Project		
St. Catherine	Frazer Content/Eboney View	500	Lots
St. Catherine	Claremount Housing Scheme		
Clarendon	Rocky Point Relocation	213	Units
Manchester	Melrose Mews Housing	590	Units
St. James	Rosevale	494	Units
St. James	Ryne Park Housing	964	Units
Sports/Recreational Development			
Trelawny	Greenfield Stadium		

4.2 GENERAL COMMENTS

4.3 LOOKING BACK (2004 to 2007)

4.3.1 General

The macroeconomic programme of the country was guided by the policy objectives established by the medium term Socio-economic Policy Framework. The objectives included the maintenance of a stable macroeconomic environment to foster economic growth.

The period proved to be a challenging one, dominated by rising energy prices and the adverse impacts caused by Hurricanes Ivan, Denis, Emily and Wilma on the productive assets of the economy. All these had repercussions on the exchange rate, interest rates and inflation in the Jamaican economy, all of which impacted on all stakeholders in the Water Sector—including customers of NWC.

A key question therefore is, "in which direction can the Jamaican economy be expected to move within the next five years?"

4.3.2 Gross Domestic Product (GDP)

Over the period 2003 to 2006, the economy recorded yearly real GDP growth rates between 1.2% and 2.5% with the highest rate of economic growth being recorded in 2006 which boasted a single digit inflation of 5.8%.

Figure 4.2 – Real GDP Growth

Year	Real GDP Growth
2003	2.1%
2004	1.2%
2005	1.4%
2006	2.5%

During the period, Government policies focused on creating an enabling environment that would facilitate private sector-led growth. This was to be achieved through the maintaining of macroeconomic stability, infrastructure

development and implementation of sector specific measures aimed at improving international competitiveness. There was a general reduction in interest rates over the period.

Over the period, there were adverse effects on GDP due to:

- the effects of Hurricane Ivan (2004) which resulted in estimated damages of $36.9 billion;
- the impact of increased crude oil prices;
- drought conditions and bush fires (2005);
- the impact of Hurricanes Dennis and Emily (2005) which caused damage to infrastructure and productive assets amounting to approximately $6.0 billion; and

The growth of the Electricity and Water sub-sector is presented figure 4.3.

In 2003, the electricity & Water sub-sector grew by 4.7 per cent relative to 2002, as a result of higher electricity generation and increased water production. In 2004, the year of Hurricane Ivan, real GDP for the Electricity & Water sub-sector declined by 0.1 per cent due mainly to the decline in water production as electricity generation increased.

Figure 4.3 : Electricity and Water Sub-sector

Year	Real GDP Growth
2003	4.7%
2004	-0.1%
2005	4.1%
2006	3.4%

Real GDP for the Electricity & Water sub-sector grew by 4.1 per cent in 2005, reflecting higher electricity generation and water production. The higher level of water production followed improved production in both Kingston & St. Andrew and the Other Parishes. The Electricity and Water sector recorded real GDP growth for the calendar year 2006 of 3.4%. Reasons for this were increased electricity generation of 4.3% and increase in water consumption by 1.0% even though water production fell by 0.7%.

4.3.2 Exchange Rate

There was relative stability of the exchange rate of the Jamaican dollar vis-à-vis the US dollar. This stability reflected the impact of investor confidence. Over the period 2003 to 2007, the exchange rate depreciated by 8.5

Figure 4.5 : Exhange Rate Movement

Year	USD	JMD
2003	$1.00	$60.72
2004	$1.00	$61.39
2005	$1.00	$62.51
2006	$1.00	$65.87

One of the factors leading to low depreciation was the pause in monetary tightening in the US as of August 2006. Another was the significant reduction in world oil prices which lessened the impact of fuel-related imports on the US dollar. And from a domestic point of view, an overall improvement in fiscal performance also contributed to the exchange rate stability.

4.3.3 Interest Rates

There was an overall downward trend in interest rates over the period, a component of GOJ's strategy to maintain macro-economic stability and inspire investor confidence. Reductions were such that at year end, interest rates were at their lowest in 15 years, with rates on 30-day and 180-day tenors closing at 11.65% and 12% respectively.

Figure 4.6 Annual Average Interest Rates

Year	Average Interest Rate (%)*
2003	14.49
2004	14.29
2005	12.84
2006	12.35

* 30-Day Reverse Repurchases

4.3.4 Inflation

Double digit inflation was recorded over the period, except 2006 when the economy recorded a single-digit inflation of 5.8%. Inflation over the period was as a result of:

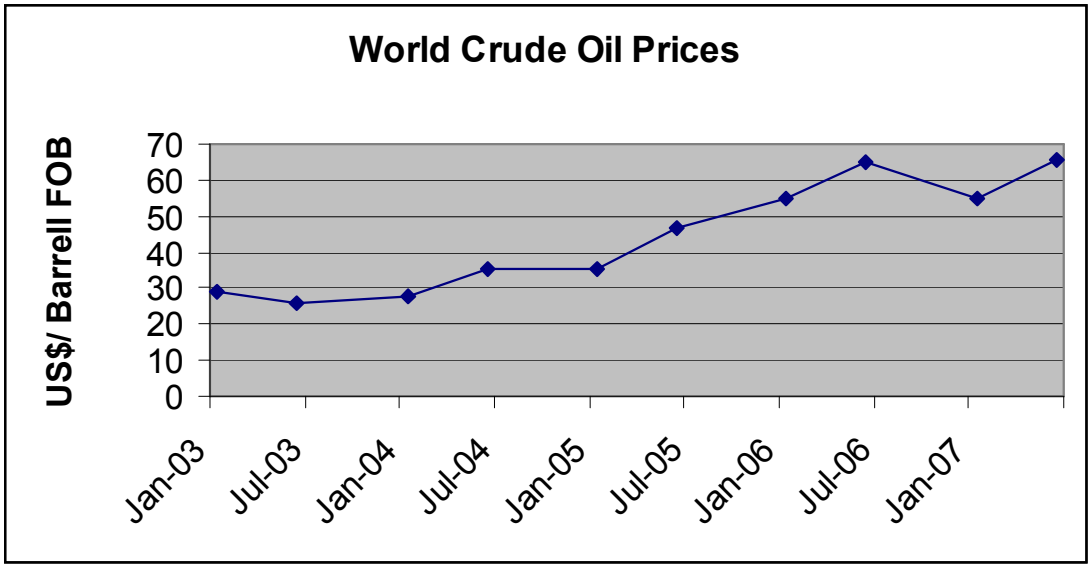
- Exchange rate depreciation, increases in international commodity prices and new tax measures (2003);
- shortage of locally produced food due to drought conditions in the first half of the year and the flood damage from Hurricanes Charley and Ivan in the latter half of the year (2004);
- an increase in commodity prices, particularly oil and grain; and
- higher user fees for electricity and water (2004).

In 2006, single-digit inflation was obtained due to a fall in the rate of increase of international oil prices inspite of increases in the groups related to housing, food and household expenses.

Figure 4.7 Average Annual Inflation Rate

Year	Inflation rate (%)
2003	14.1
2004	13.7
2005	12.9
2006	5.8

Figure 4.8 – World Crude Oil Prices



4.4 LOOKING AHEAD: 2007—2010

The outlook for the Tariff period January 2008 to December 2010 is critical to NWC. Many factors can undermine the efforts to expand water and sewer service.

NWC costs are dependent on key factors such as: ·

- Interest rates—particularly as NWC seeks to finance up to US$200M of its capital projects in 2008 and beyond.
- Foreign exchange—as a significant portion of its costs, mainly capital plants and equipment cost, are pegged to the US dollar while its revenues are recovered in the local currency.
- Inflation —which affects its costs as well as prices to customers.
- GDP growth—which affects its sales growth outlook as well as it determines the socio-economic conditions in Jamaica that contribute to non-revenue water. Mid-range forecasts of these factors are shown below.

Figure 4-9: Macro-economic Outlook 2006-2010

	2006	2007	2008	2009	2010
Inflation Rate	10.0	8.5	7.5	7.5	7.5
Treasury Bill Rate	13.0	12.0	12.0	12.0	12.0
Exchange Rate	66.6	68.6	70.6	76.0	82.0
GDP Growth Rate	2.5	3.0	3.0	3.0	3.0

4.4.1 Real GDP

Real GDP growth of 3.0% per annum is expected to yield per capita disposable income increases of around 2.0 - 3.0 percent per annum. Population growth is projected at approximately 1 percent per annum over the next decade due largely to continued high migration levels, which itself puts a drag on economic growth because of the skilled workers that are among the migrants.

Disposable income figures in Jamaica are generally thought to be understated. One prime reason given is overseas remittances from relatives which do not show up in official statistics. Therefore real per capita income growth is likely to be understated. However, adjusting income figures to water services use is difficult. An argument can also be made that this other income translates into increased housing demands, especially from the residential category. There have been significant increases in housing starts and dwelling constructions.

Notwithstanding the weak performance of the macro economy in recent years and the precariousness of the debt dynamics, the economy is inheriting some investment momentum at the start of 2007. The continuation of that investment in infrastructure and tourism, along with new investment in the port terminals, should be positive influences this year.

Long term growth of 3% per annum is predicated upon continued adjustment of the exchange rate to maintain competitiveness. The risk of Jamaica not achieving these growth levels in any particular year is high. The economy is highly vulnerable to external shocks, with tourism, bauxite, alumina and other commodity sales dependent on international prices as well as natural events. While alumina and bauxite prices are expected to increase and the likelihood of a major recession in the U.S. is not great, changes in these variables will have strong impacts on Jamaica.

In the absence of external shocks or the failure of the government to meet its payment obligations, and in the presence of the positive signs listed above, the economy should continue to show positive GDP growth. This growth potential,

however, must be accompanied by the greatest of caution in the presence of a significant level of risk in the government's ability to meet its payment obligations and a non-negligible probability of a severe contraction. This risk is compounded by the dependence of the economy on tourism and its vulnerability to external shocks.

Economic variability carries a particular risk for NWC. The Company must plan for expansion and development based on long term growth prospects, and therefore carries commercial risks. The government appears determined to support export earning projects which implies increased support for tourism, mining and manufacturing for export. Both the tourism and the mining sectors are currently strong and government incentives will likely accelerate this condition. Substantial increase in hotel capacity is expected within the next three years in Negril, Montego Bay, South West Coast, St. Mary and Ocho Rios.

4.4.2 Inflation

Inflation is was 5.4% cent in 2006 and for the eight month period January to August 2007, inflation was 7.1%.

Whilst factors such as hurricanes and increases in oil prices are likely to continue to affect the rate of inflation, it is expected that such effect will be muted upward. Additionally, the modest growth of base money last year makes the prospect for renewed inflation slim. Nonetheless, the pass through effect of last year's depreciation will not have completely been incorporated in a single year. We can therefore expect a moderation of inflation next year, but not an immediate return to the inflation rates of the recent past. The likeliest path for the inflation rate, then, is an average of near to 7.5 percent in the coming years.

It should be noted, however, that the forecast range of possible outcomes for this variable is wide, possibly by as much as five percentage points on the positive side, which means that an inflation rate of over 12 percent is possible over the medium term. This is due to the considerable risk that a more inflationary policy will be necessary if the government's debt dynamics do not respond to corrective measures. Further, higher than expected oil prices or another bout of rapid uncontrolled currency depreciation can also lead to higher inflation.

4.4.3 Interest rates

Interest rates for 2006 were slighly lower than those of 2005. This occurred against a background of relative stability in the exchange rate, and higher output levels.

Interest rates should continue on the downward trend that they have been on since then. However, the fundamental condition that maintains interest rates at

the high levels that have obtained in Jamaica for several years is the presence of a large borrower in the form of the government in the context of a small credit pool made up of reluctant lenders.

With domestic debt of just under $400b, the necessity of a large public sector borrowing requirement would not be expected to diminish for some time yet. Furthermore, with the expected fiscal deficit of 2007/08 being near to $25b, the immediate expectation is for the public sector borrowing requirement to continue.

For the medium term, the large public sector borrowing requirement is likely to keep rates on government paper in the lower double digit for some time and that is expected to continue to hold rates on commercial bank loans in the high teens. The reluctance of the lenders to reduce rates faster is derived from the lack of confidence in the value of currency over the medium term, partly from the experience of decades of inflation and depreciation, and partly from recognition of the precariousness of the fiscal accounts and the implications of that for medium term currency value.

Those considerations are not going to change much over the next year. The nervousness surrounding interest rates is heightened by the extent of recent exchange depreciation. On the one hand, with the increase in the public sector borrowing requirement from the domestic capital market in 2004 and to a lesser extent in 2005, in the context of an already large debt burden, there should be upward pressure on interest rates. On the other, as the foreign exchange market remains relatively stable and interest rates should continue to moderate from the high teens.

The balance of these opposing forces suggests, in the short run, continued reduction of rates on government paper, but not by much more than a couple of percentage points. Over a longer horizon, it is much more difficult to forecast because of the precariousness of the public accounts. On the best of assumptions, the moderation will continue.

4.4.4 Exchange rate

The pressure in the foreign exchange market during 2008 and the medium term will be influenced by the differentials between the inflation rates in the two currencies, US and Jamaica. In the absence of exogenous shocks or balance-of-payments corrections, the real exchange rate will be maintained. That would require a nominal depreciation equal to the differential.

Obviously, if there is further deterioration in the fiscal accounts then another exchange rate run is likely. At the same time, however, there are possibilities for

revaluation pressure on the currency which are more likely to produce an outcome, possibly, much lower than $70.

The Net International Reserve (NIR) is over US$ 2,000 million and can be used to defend the exchange rate. Additionally, decrease in US interest rates and with interest rates on government securities in Jamaica substantially higher than that on corresponding instruments in U.S. dollar economies, lending in Jamaica represented a relative bargain. This differential will attract portfolio capital and therefore a demand for Jamaica currency that will be greater than it would otherwise be, and that demand will be sufficient to create an appreciated currency.

4.4.5 Risks and uncertainties

The projection of economic growth amidst moderate inflation must therefore be placed in the context of the risk present in the economic environment. The combination of a large fiscal deficit, enormous public debt, buoyant international reserves, and large dependence on tourism earnings, create an economic climate in which any negative shock to the economy or the fiscal accounts will result in higher inflation and renewed recession, and possibly even a currency collapse. The risk is sufficient that corporate planning should include some provision for these possibilities.

4.4.6 Conclusion

The problems that currently affect the Jamaican economy are fundamental – unbalanced fiscal accounts, large debt, low social capital, weak infrastructure, poor schooling. None of these can therefore change dramatically in the near to medium term. Nonetheless, with the investment that occurred in the economy last year, and the expectation of further investment this year, in combination with improvement in the relevant "macro prices" – wages, the real exchange rate, interest rates – the probability of robust economic recovery exists.

However, the risk analysis suggests that in planning NWC must take account of the very great risk of higher future inflation, renewed interest rate hikes, even though, in the absence of such shocks, the expectation is for robust improvement in all the relevant macroeconomic signals.

Similarly the OUR should also take these factors into account when approving the new tariff. These risks do not exist to the same degree in other countries where models of such regulatory regimes are in place. Hence, the OUR is encouraged to allow room for modifications, where appropriate, to adapt to the specific environment in which NWC operates.

5 PREVIOUS RATE DETERMINATION

5.1 PREVIOUS APPLICATION BY NWC

In 2003, NWC, with the assistance of international consultants, undertook a full and comprehensive review of its tariffs. As a result of this review, it was confirmed that the rates existing at the time were well below the cost of service provision and that if the full cost of service were to be recovered, a rate increase of about 80% would be required.

In order to avoid the dramatic effect of an 80% increase while at the same time curtail NWC's worsening financial position, an application was made for a 42% increase in rates. This increase, along with the restructuring and efficiency improvement projects that were being undertaken by NWC, would have allowed the utility to:

- Recover operating and maintenance costs; and
- Begin to attack the backlog of rehabilitation work that was required to renew aged facilities and improve the level of service.

NWC also proposed that a new K-Factor be introduced to support new capital projects, since the proposed new rates would not allow recovery of the cost of capital.

Financial projections at the time confirmed that without the requested increase, NWC's finances would continue to deteriorate resulting in an inability to improve the level of service without significant subsidies from the government.

5.2 PREVIOUS RULING BY OUR

In December 2003, the OUR published its ruling on NWC's rate application. It prescribed a nominal increase of 26.36% based on figures as at mid 2003 but the increase was to come into effect January 2004. This time delay resulted in the effective increase in NWC's rates being only 18%. The OUR also introduced a 3.5% X-Factor which was to be subtracted from the rates each year. The new rates were to be in effect for a period of three years.

The net real effect of the OUR's decision on NWC's tariffs were therefore as follows:

- Rates increased by 18% during the first quarter of 2004.
- Rates are being decreased by 3.5% at the beginning of each year (or 14% over the four years).

Therefore, by January 2008 the net real increase over the 2003 rates would have reverted to only 4%.

6 NWC PERFORMANCE REVIEW 2003 - 2007

6.1 OVERVIEW

NWC has put in a creditable performance for the period 2003 – 2007, taking into consideration the constraints and challenges that were faced. Aside from the problems relating to inadequate financial resources, there were a number of severe weather events, including droughts and hurricanes, which tested the resolve and commitment of the Commission's staff.

The Commission continued to pursue a number of major projects primarily aimed at supporting economic investments, housing developments and environmental improvements. Highlights include the following:

- Completion of the Great River to Lucea Water Supply Project (US$ 40 M) ahead of schedule and within budget;
- Completion of the Martha Brae to Harmony Hall/Braco Water Supply Project (US$38M).
- Progress on other major projects including the following:
    - KMA Water Supply and Rehabilitation Project (US$ 85 M)
    - Kingston Water Supply and Sanitation Project (US$ 55 M)
    - Port Antonio Water Supply, Wastewater and Drainage Project (US$ 39 M

NWC has been collaborating with others to arrange the implementation of the Soapberry Sewage Treatment Project (US$ 50 M)

Efforts to improve operating efficiencies, supply reliability and customer service levels were intensified as the NWC sought to maintain its status as the number one ranked major utility in customer service.

6.2 CHALLENGES DURING THE PERIOD

6.2.1 Severe Weather Events

There were a number of severe weather events during the period ranging from drought to flooding and extensive damages to systems due to four different hurricanes. Hurricane Ivan (September 2004), Hurricane Dennis (July 2005), Hurricane Emily(July 2005) and Hurricane Wilma (October 2005) resulted in damages in excess of $600M.

6.2.2 Rising Costs

The last three years saw dramatic increases in costs primarily driven by rising oil prices which in turn drove electricity prices. These increases had inverse effects on NWC for the following reasons:

- The electricity weight in the Price Adjustment Mechanism (PAM) did not fully reflect the relative cost proportion and thus there was some under-recovery of the cost of electricity.
- With inflation adjustments only being allowed at the end of each year, NWC had to bear the carrying costs associated with the monthly price movements.
- Foreign related costs are not allowed to be adjusted for foreign inflation.
- The X-Factor further reduced the extent to which price movements were recovered by 3.5% per annum.

Figure 6-1: Fuel Price Movements

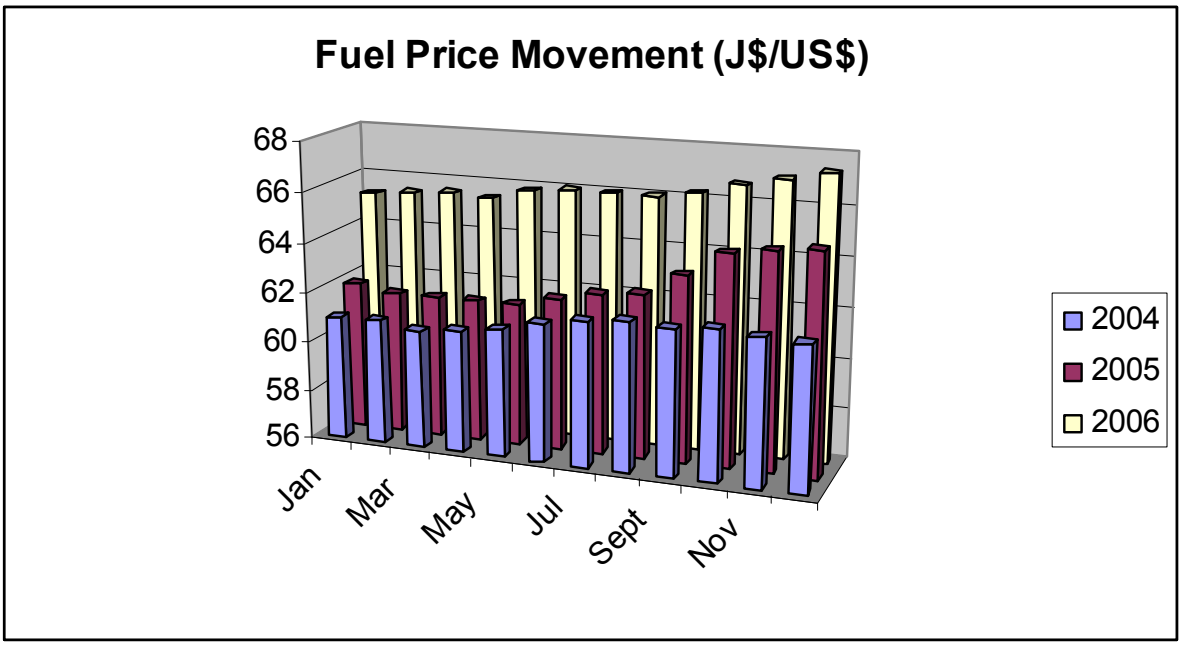
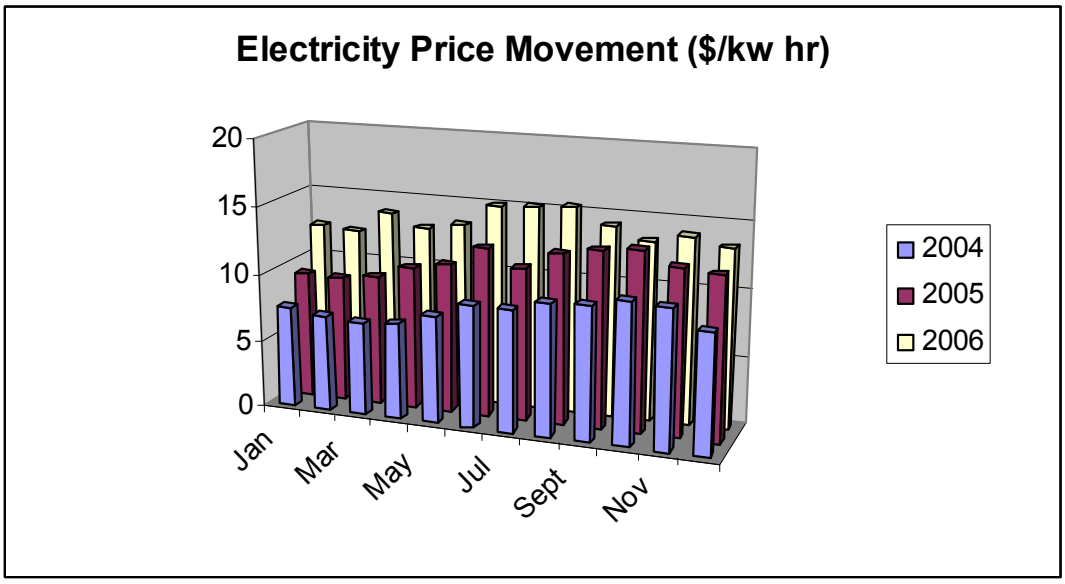


Figure 6-2: Electricity Price Movements



6.2.3 Failing / Aged Infrastructure

The state of NWC's aged infrastructure continued to pose a challenge. In particular, the frequency of leak occurrences continued to be very high due to aging pipelines and appurtenances. NWC's leak repair efforts bore some fruit with improvements in the average time taken to repair leaks, despite increased occurrences of leak. As shown in figure 6.4, the average time has decreased from 8 days in calendar year 2004 down to 5 days by calendar year 2006. However, the ultimate solution in most instances will have to be whole scale replacements of large sections of pipeline.

Figure 6-3: Leak Repair

2004		2005		2006	
Repaired Leaks	Average Time to Repair Leaks	Repaired Leaks	Average Time to Repair Leaks	Repaired Leaks	Average Time to Repair Leaks
30,210	8	38,359	7	42,668	5

6.2.4 Limited Financial Resources

NWC's financial position showed slight improvements in the early years due to the efficiency improvement, restructuring exercises, tighter management of resources and the tariff increase which became effective in January 2004. However, there were adverse factors also affecting the finances including the requirement to start paying corporate taxes and the increasing pension liabilities.

Limited financial resources therefore continued to be a major constraint.

Financial performance during the period is discussed in further detail below.

6.3 MAJOR ACHIEVEMENTS

6.3.1 Water Supply Projects

During the last three years, NWC has completed or has commenced work on a number of water supply improvement projects across the country. These include:

Great River Water Supply Project (St. James)-
This project was completed in September 2004, ahead of schedule and within the budget of US$40M. It involved the expansion of the Great River Water Treatment Plant from 10 mgd to 15mgd and installation of trunk mains to improve supply to communities between Great River and Lucea. It also included network and operational improvements to the distribution systems in areas between Great River and Negril.

Financing was done through commercial loans.

Martha Brae to Harmony Hall/Braco (Trelawny)

The Marthae Brae Water Treatment was extensively rehabilitated to restore its original production capacity of 6 mgd. This has availed some 3 mgd of additional water for distribution. In addition, trunk transmission and water storage tanks were constructed to serve areas along the coastal areas between Falmouth and Braco. These works were completed in October 2006.

Network improvements and a comprehensive non-revenue water (NRW) reduction programme for sections of Westmoreland, Hanover, St. James and Trelawny were included in a second component of this project. Substantial reduction in NRW was achieved.

The overall project cost was US$38M and was financed through commercial loans.

Rural Water Supply Project

This project involves work in Milk River (Clarendon), Christiana-Spauldings (Manchester), Shettlewood (Hanover) and Hope Bay (Portland). The water supply infrastructure in these areas were substantially rehabilitated/upgraded to improve supplies to existing customers and extend service to new ones. An active NRW reduction programme was undertaken in each area.

Work activities in Milk River, Christiana Spauldings and Hope Bay are complete and those in Shettlewood are scheduled for completion by December 2008.

The project cost is US$12M and was funded through the European Union (EU),the Government of Jamaica (GOJ) and from NWC's funds.

KMA Water Supply Project

Work to rehabilitate water supply facilities that serve Greater Spanish Town, south-east St. Catherine and sections of Kingston and St. Andrew is scheduled for completion by December 2009. The project involves rehabilitation of a number of water supply facilities in Greater Spanish Town and southeast St. Catherine and the provision of an additional 5 mgd of water by constructed new wells and constructing new trunk mains, water storage tanks and distribution pipelines.

The total project cost is US$80M and is being funded by the Japan Bank for International Cooperation (JBIC), GOJ and NWC.

Kingston Water and Sanitation Project (Kingston and St. Andrew)

The project is funded by the Inter-American Development Bank (IDB) and the total project cost is US$54.7M.

This project aims to improve the service delivery in Kingston & St. Andrew (KSA) through the delivery of adequate potable water and increase efficiency in the service provided. It will include the rehabilitation of water supply facilities in KSA – water treatment plants, well pump stations and water storage tanks.

It will include a comprehensive re-assessment of the KSA water supply network and a NRW reduction programme.

Completion is scheduled for December 2011

Port Antonio Water Supply, Sewerage and Drainage (Portland)

This project aims to address long standing deficiencies in the water supply, sewerage and drainage for Port Antonio and its adjoining areas. It will include the upgrading of the Grants Level Production facility, increasing its current output from 2 mgd to at least 4 mgd; construction trunk facilities; and a NRW reduction programme for Port Antonio and its environs

A new central sewerage and wastewater treatment plant will also be constructed under this project.

The overall cost of the project is US$39M, and funding will be provided by the European Investment Bank (EIB), GOJ and NWC.

Work has commenced on this project and it is expected to be completed by the end of 2010.

Other Projects

Some of the smaller projects completed by NWC include Brighton, Airy Castle, Dumphries (St. Thomas), Kellits (Clarendon), Lacovia/Slipe (St. Elizabeth), Venture River (Westmoreland), Woodland/Blackness (Hanover) Askenish, Sherwood (Trelawny),

6.3.2 Sewerage Projects

During the last three years, NWC took further steps to address the various problems associated with the operation of its sewerage facilities and sewage treatment plants islandwide. Some extensions of sewerage were also undertaken to reduce the inconvenience and environmental impact caused by some on-site sewage disposal systems.

These projects are highlighted below:

- Old Passagefort Sewerage (St. Catherine) – extension of sewerage to Old Passagefort to serve small residential communities that are adjacent to the Passagefort Drive, in the vicinity of Caymanas Park;
- Rehabilitation of the Boone Hall and Greater Portmore treatment plants to improve quality of effluent discharges;
- Rehabilitation of a number of wastewater pump stations;
- Preparation of Soapberry Wastewater Project, where a new wastewater treatment plants is to be constructed to improve level of treatment of

wastewater collected in sections of Kingston and St. Andrew and the construction of conveyance facilities to transfer wastewater to this new plant;

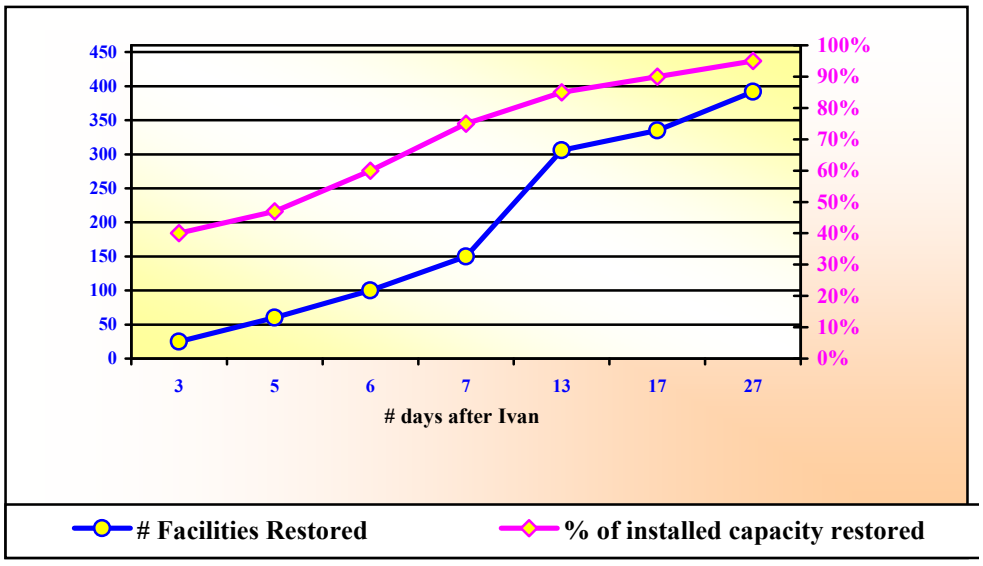
- Harbour View Wastewater Treatment Plant – steps have been taken to reconstruct the Harbour View Wastewater Treatment, under a build own operate and transfer (BOOT) basis. Expressions of interest have been invited.

6.3.3 Recovery from Natural Disasters

One of NWC's most significant achievements during the period was undoubtedly the rapid recovery from the devastations of the hurricanes during the period.

Hurricane Ivan, which struck the island on September 10, 2004 virtually affected all of the over 400 supply systems island-wide. Within one month the Commission was able to restore nearly 90% of all facilities and over 95% of the supply capacity.

Figure 6-4: Recovery from Hurricane Ivan



It should be noted that in the wake of the Hurricane Dean in August 2007, NWC was able to restore over 90% of its production facilities within 7 days.

6.3.4 Organizational Restructuring and Process Re-engineering

NWC arranged a Management Audit of the Regional and District Operations of the NWC in late 2001. This exercise focused on seeking practical ways of implementing short-run efficiency gains and developing a longer-term programme for the modernization of the NWC.

An overall programme of change and process improvement was recommended and accepted by NWC. This included restructuring the organization and rationalization of staff levels and composition.

Implementation of the restructuring and rationalization programme that arose out of the Management Audit commenced in October 2003 and was completed by January 2005. It achieved the following:

- Establishment and implementation of the new organizational arrangements, including the reduction in the number of regions from five to two;
- Reduction in staff levels from some 2,600 persons to 2,100, resulting in an 8% decrease in employee expenses. It is now just about 30% of revenue.

6.3.5 Human Resource Development

The skills required to perform documented processes are guiding the development of NWC's training programmme. Despite resource constraint, NWC has continued its staff development programme to increase the internal capability of its human resource. These have included on the job training, special training by external providers and support for courses pursued by employees for their own personal development at local and international educational institutions.

In addition to the above, NWC has received support from the European Union (EU) and the Japan International Cooperation Agency (JICA) through institutional strengthening programmes to support NWC staff development.

6.3.6 Procurement of Tools and equipment

In order to support work activities and facilitate efficient operations, appropriate tools and equipment have been procured and are being used.

Safety is a major issue and steps have been taken to ensure that adequate safety equipment is available.

In order to improve service reliability, NWC has procured additional stand-by generators for its major water supply and wastewater facilities

6.3.7 Increased Information Technology

NWC recognizes the value that information technology plays in supporting system and commercial operations. Steps have been taken to obtain modern technology to facilitate efficiency and effectiveness in the various day to day undertakings. These include upgrading computer hardware and application software.

The use of geographic information system (GIS) is becoming an integral part of NWC's way of conducting its business. It is being used to geographically document facilities and customers. All of NWC's production and water storage facilities have been geo-referenced along with some 60% of the country's water transmission system.

Steps have been taken to establish a new customer information system (CIS), which includes a new application software with advanced features and state of the art computer hardware. This new CIS will replace the existing one which has been in use for over 12 years.

Facilities have been provided to allow customers to access information on their accounts and to make payments through the use of their telephones.

6.3.8 Customer Service

NWC places great emphasis on the delivery of customer service. NWC's customer service delivery is based on the provision of a reliable service to the customer's home and making it convenient to access the Commission.

Upgrading water supply facilities to improve service reliability is ongoing.

NWC strives to be responsive to its customers and systems to monitor levels of responsiveness are available for certain parameters.

The use of call centre operations has facilitated access to NWC; the use of collection agencies is a dimension to the provision of convenience; payments using the internet and the telephone can now be done; NWC offices continue to be available to customers.

Each member of NWC staff plays a role in the provision of this service and this is being inculcated into the culture of NWC.

6.4 FINANCIAL PERFORMANCE REVIEW

6.4.1 Overview

During the period January 2004 to March 2007, NWC's finances improved in some respects primarily due to:

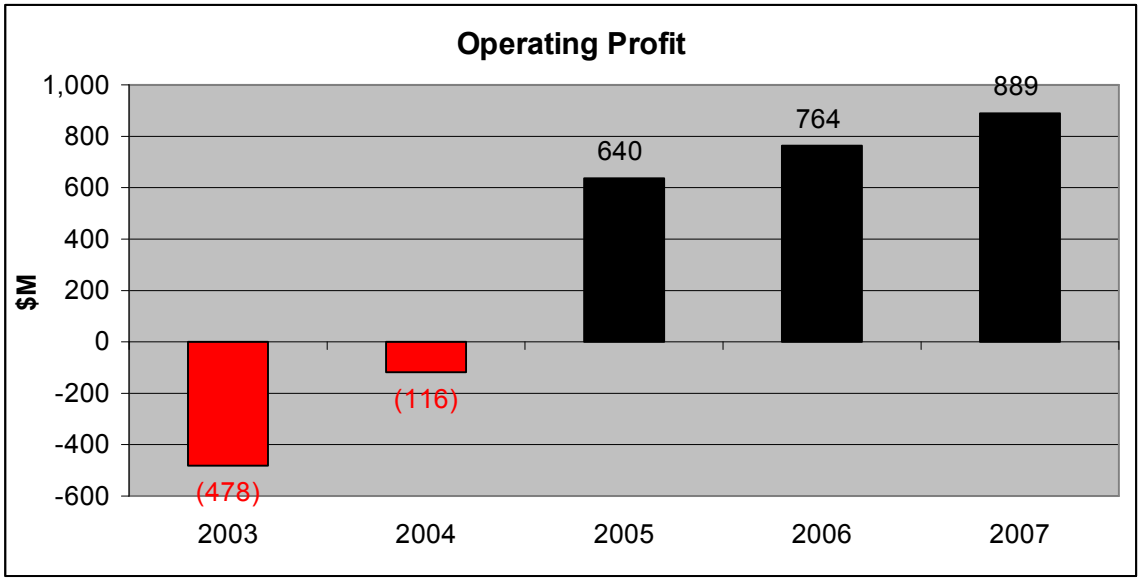
- Improvements in operating efficiencies resulting from the organizational restructuring and process re-engineering programs that were undertaken;
- The tariff increase which came into effect in January 2004;
- General tightening in the management of the Commission's resources.

However, net profits still remained negative resulting in continued erosion of NWC's reserves/equity base.

6.4.2 Profit and Loss Accounts

Operating Profit showed a turnaround, moving from negative $478 M in March 2003 to $ 889 in March 2007 as shown below.

Figure 6-6: Operating Profit for the Years Ending March 2003 - March 2007.



This was driven by revenues increasing at an annual average rate of 14.7% while costs increased at an annual average rate of 10.1%.

When depreciation and interest expenses are taken into account, it becomes clear that revenues were still far from adequate.

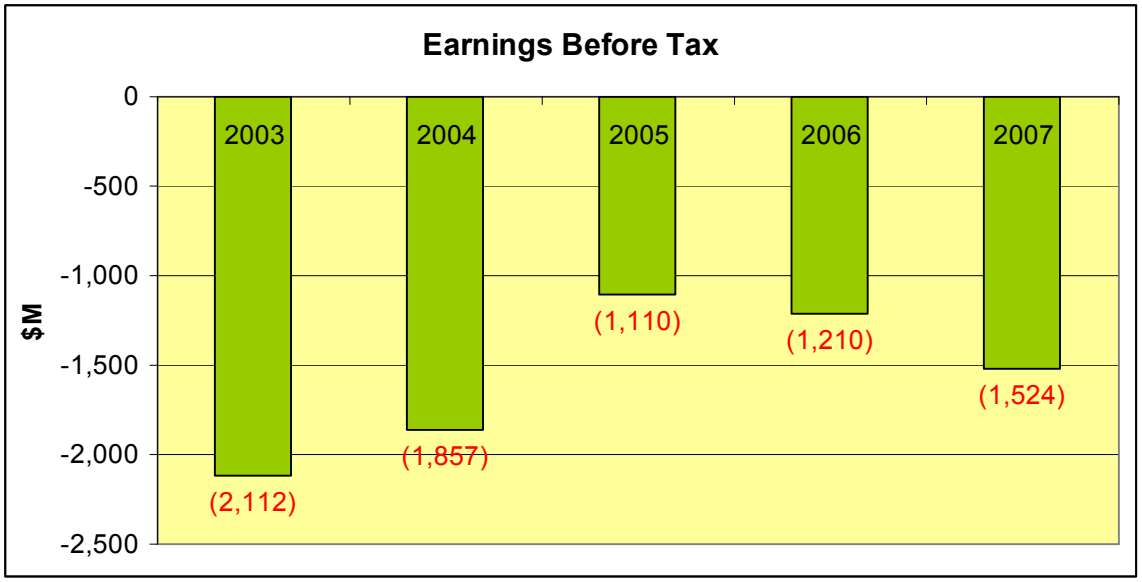
Based on their Determination Notice of December 2003, the OUR had expected NWC to make a return on equity and net profit (since they also assumed zero long term debt) of $600 M per year. This profit was supposed to allow NWC to "undertake critical rehabilitation programs as well as co-finance capital expansion projects". The OUR determined that the total revenue required to achieve this was $7.5 Billion based on their projected total cost of $6.9 Billion.

The OUR's projections proved to be significantly different from the actual outturn for the following reasons:

- The cost estimates used by the OUR were grossly understated;
    - The OUR projected that total expenses for 2003/04 would be in the range of $6.9 Billion (as opposed to NWC's total projection of $7.9 Billon.
    - The actual total expenses before taxes for 2003/04 was $8.1 Billion
- Taxation expenses were not taken into account as neither the OUR nor the NWC knew these were going to be imposed.
- The effective increase of 18% which was granted by the OUR was well below what was required for the utility to move from a net loss of $2.1 Billion in 2002/03 to a profit making position, even if taxes were excluded).

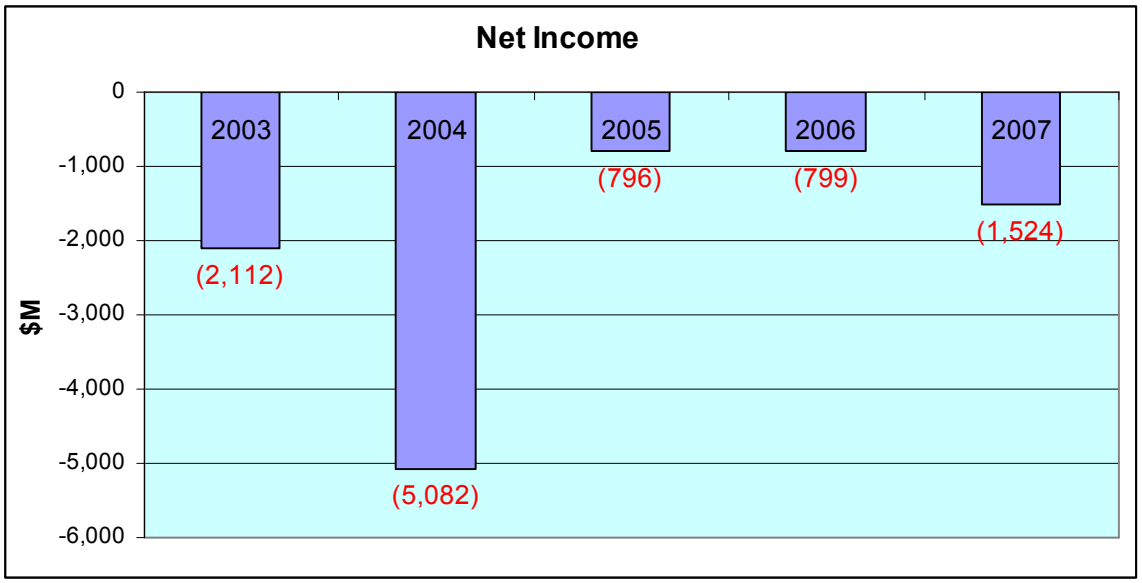
NWC actually experienced a net loss before tax of $2.1B for 2002/03. There were improvements in 2003/04 ($1.8B) and in 2004/05 ($1.1B). For 2005/06, the loss position worsened to $1.2B and for 2005/07 it was $1.5B. These are shown in figure 6.5 below.

Figure 6-7: Earnings before Tax for the Years Ending March 2003 - March 2007



With a tax expense of $3.2B in 2004 and tax credits of $313M in 2005 and $444M in 2006, the net income for the years ending March 2003 to March 2007 are as shown below.

Figure 6-8: Earnings before Tax for the Years Ending March 2003 - March 2007



The summary Profit and Loss Accounts for 2003 to 2007 are shown below.

Figure 6-9: Summary of NWC's Profit and Loss Accounts for the Period 2003 – 2007

YEAR ending March ...	2003	2004	2005	2006	2007
TOTAL REVENUES	5,274,613	6,281,354	7,890,432	9,119,642	10,335,616
TOTAL OPERATING COSTS	5,752,642	6,397,505	7,250,505	8,355,730	9,446,636
EARNINGS BEFORE DEPRECIATION, FINANCE CHARGES & TAX	(478,029)	(116,151)	639,927	763,912	888,980
DEPRECIATION EXPENSE	1,428,605	1,453,303	1,669,403	1,769,007	2,073,556
EARNINGS BEFORE FINANCE CHARGES & TAX	(1,906,634)	(1,569,454)	(1,029,476)	(1,005,095)	(1,184,576)
FINANCE CHARGES	205,643	287,775	80,297	205,133	339,693
Bank charges and interest	31,385	5,086	5,211	4,372	5,844
Loan interest	75,726	175,983	75,086	134,750	212,635
Foreign exchange loss & other loan expenses	98,532	106,706	-	66,011	121,214
EARNINGS BEFORE TAX	(2,112,277)	(1,857,229)	(1,109,773)	(1,210,228)	(1,524,270)
TAXATION	0	3,224,981	(313,750)	(411,591)	0
NET INCOME	(2,112,277)	(5,082,210)	(796,023)	(798,637)	(1,524,270)

6.4.3 Balance Sheet

Due to the losses incurred during the years 2003 to 2007, NWC's balance sheets reflect continuing declines in equity/reserves. These are shown in figure 6.10 below.

The trend is worrisome as it threatens NWC's ability to raise financing for capital projects.

The summary balance sheets for the years ending March 2003 to March 2007 are shown below.

Figure 6-10: Equity / Reserves for the Years Ending March 2003 - March 2007.

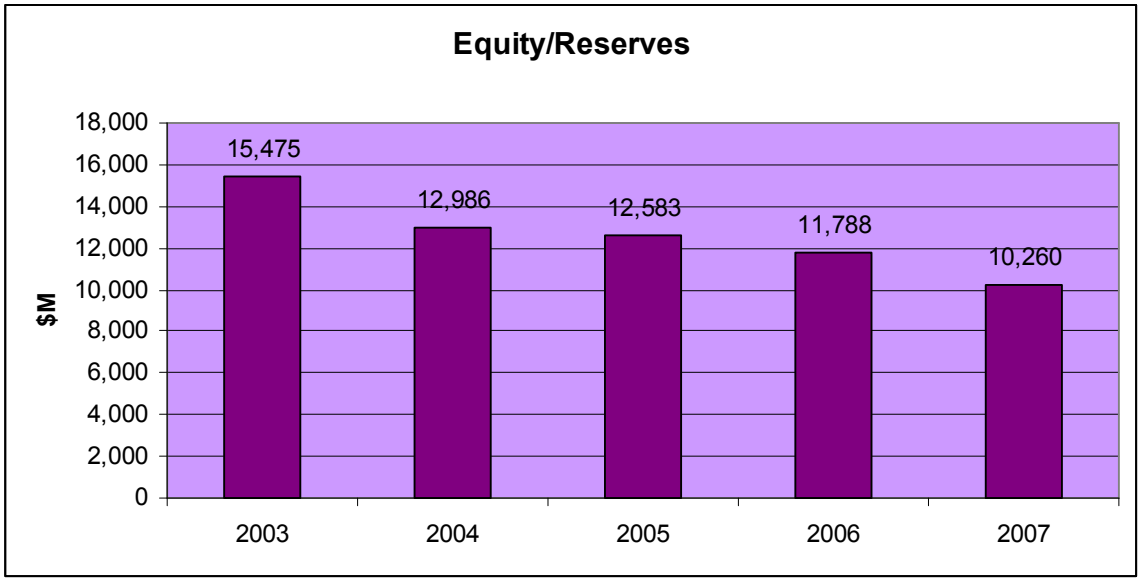


Figure 6-11: Summary of NWC's Balance Sheets for the Period 2003 – 2006

YEAR ending March ...	2003	2004	2005	2006	2007
				-0.7%	
CURRENT ASSETS	**2,912,266**	**1,876,316**	**2,883,523**	**2,863,096**	**3,224,323**
CURRENT LIABILITIES	**1,700,683**	**1,421,015**	**1,662,249**	**2,049,138**	**2,649,592**
NET CURRENT ASSETS	**1,211,583**	**455,301**	**1,221,274**	**813,958**	**574,731**
NET FIXED ASSETS	**25,248,991**	**26,972,855**	**28,016,725**	**29,800,951**	**30,717,722**
OTHER LONG TERM ASSETS	**-**	**-**	**-**	**634,352**	**730,330**
TOTAL LONG TERM ASSETS	**25,248,991**	**26,972,855**	**28,016,725**	**30,435,303**	**31,448,052**
TOTAL ASSETS	**26,460,574**	**27,428,156**	**29,237,999**	**31,249,261**	**32,022,783**
LONG TERM LIABILITIES	**10,985,724**	**13,228,301**	**14,153,563**	**15,506,904**	**16,268,854**
Long Term Loan	1,205,469	1,978,545	993,134	2,168,004	2,297,294
Deferred Taxes	-	3,224,981	2,747,731	2,287,783	2,287,783
Deferred Income	4,733,937	2,379,930	4,074,012	4,084,243	3,987,473
Employee benefit obligation	5,046,318	5,644,845	6,338,686	6,966,874	7,696,304
Bonds Payable	-	-	-	-	-
Mortgage Payable	-	-	-	-	-
EQUITY / RESERVES	**15,474,850**	**12,985,793**	**12,582,595**	**11,787,618**	**10,259,688**
TOTAL LIABILITIES AND EQUITY	**26,460,574**	**26,214,094**	**26,736,158**	**27,294,522**	**26,528,542**

6.4.4 Cash Flow

Given its mandate to operate autonomously, NWC, despite making negative net profits, made every effort to ensure that its cash resources were managed in the most astute manner. This was complemented by an aggressive drive to collect on outstanding bills.

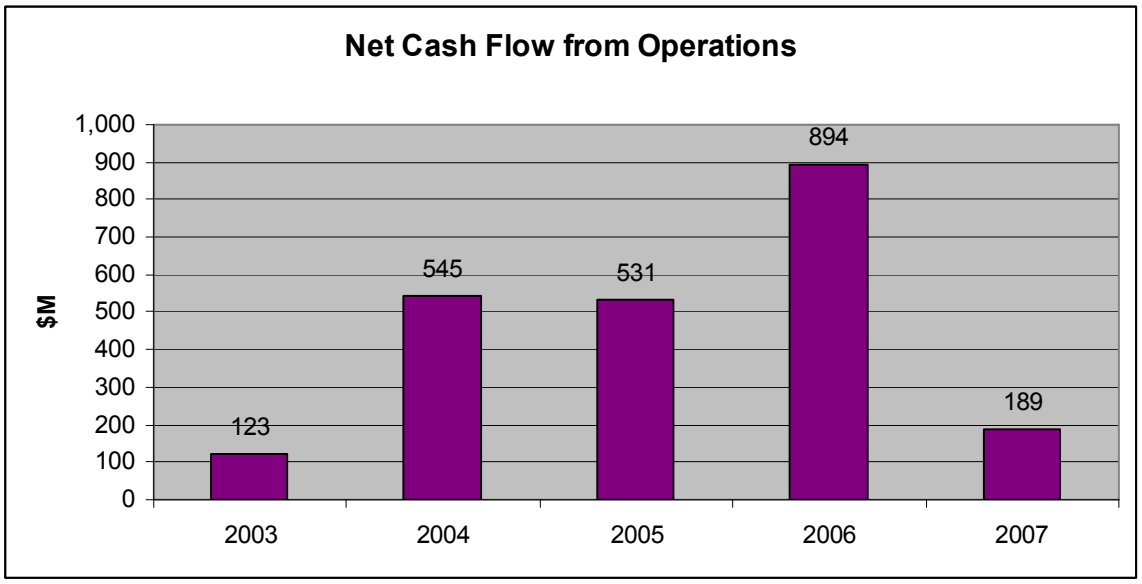
The Commission adopted a policy of maintaining a minimum level of cash reserves in order to:

- Prevent the recurrence of past experiences where there was a high dependence on bank loans / overdrafts, which came at very high interest rates;
- Be able to fast track recovery from unforeseen and unfavorable events such as hurricanes.

The tradeoff, however, was that NWC was unable to spend as much as it would have liked on system rehabilitation and other capital projects, even though the sums expended were still very significant.

Under tight budgetary management, cash flow from operations showed gradual improvements as illustrated below.

Figure 6-32: Cash Flow from Operations for the Years ending March 2003 to March 2006

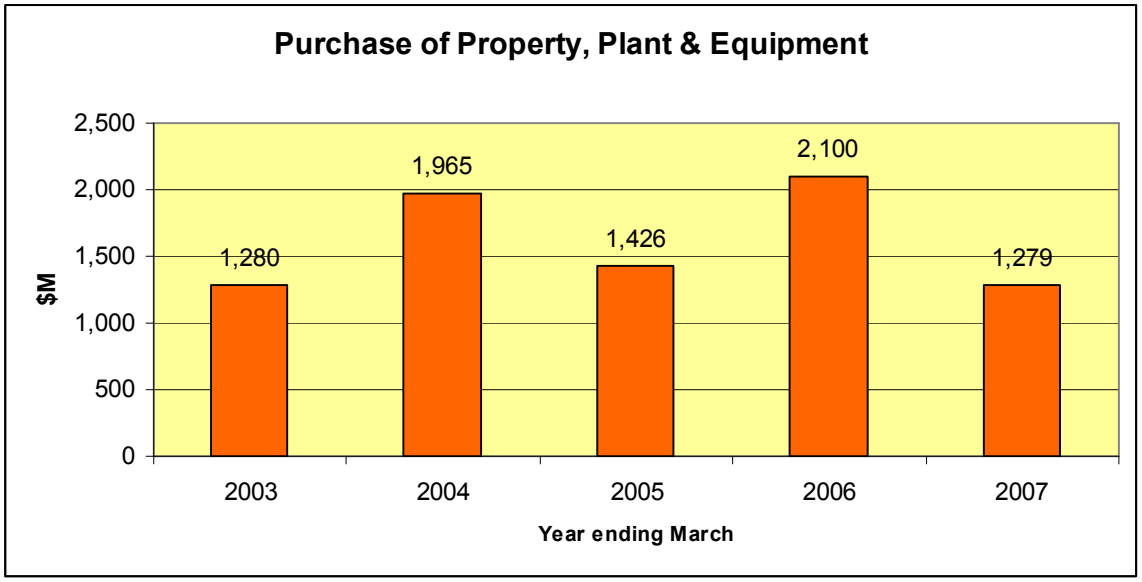


With the assistance of loan financing, NWC continued to invest heavily in system improvement projects as it sought to:

- Expand potable water production capacity;
- Reduce leakages;
- Increase system reliability;
- Improve the quality of service;
- Rehabilitate facilities.

Expenditures on property, plant and equipment are illustrated below.

Figure 6-43: Cash Expenditure on Property, Plant and Equipment during 2003 to 2007.



Significant amounts of cash were obtained from financing associated with major capital projects. In 2003 the primary source of financing was government grants which amounted to $2.8 Billion. This is reflective of loans assumed by the government for water supply projects and does not represent direct cash transfers to NWC. From 2004 to 2007 government grants averaged some $415M million per year and most of the financing for capital projects was obtained from direct loans to NWC.

Figure 6.14 indicates cash flows from financing and figure 6.15 shows the net cash flow to NWC after operating, investment and financing flows.

Summary of the cash flow statements for the years 2003 – 2007 are given in figures 6.16.

Figure 6-54: Net Cash Flows from Financing for Years Ending March 2003 to 2006

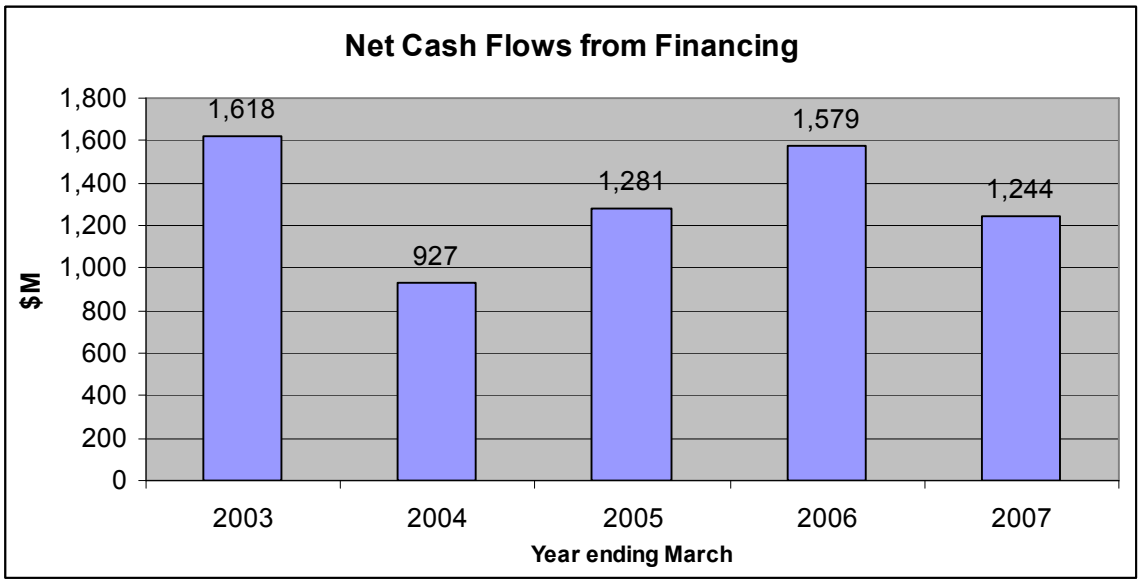


Figure 6-65: Net Cash Flows for Years Ending March 2003 to March 2006.

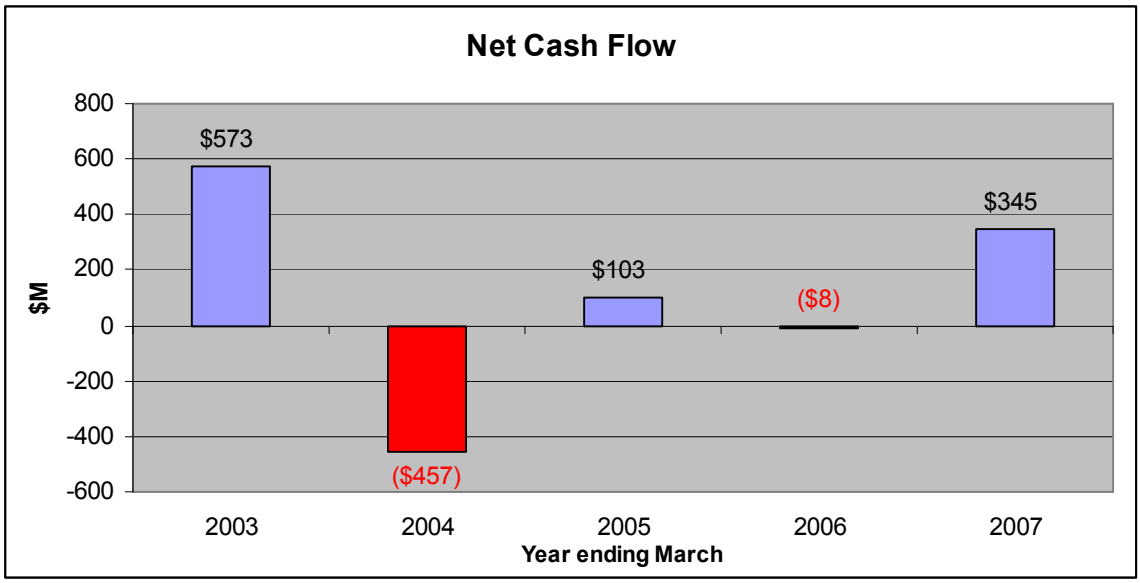


Figure 6-16: Summary Cash Flow Statements for Years Ending March 2003 to March 2006

YEAR ending March …	2003	2004	2005	2006	2007
NET CASH FLOW FROM OPERATIONS	**123,283**	**545,385**	**531,164**	**894,195**	**188,507**
Cash flow after adjustments for non-cash items	**(163,766)**	**352,778**	**1,084,955**	**1,068,171**	**1,120,913**
(Increase)/decrease in current assets	**(9,127)**	**483,852**	**(418,064)**	**(309,069)**	**(774,534)**
Increase /(decrease) in current liabilities	**296,176**	**(291,245)**	**(20,550)**	**265,429**	**49,372**
Net Tax Paid			**(5,506)**	**(11,516)**	**0**
Interest Paid			**(109,671)**	**(118,820)**	**(207,244)**
CASH FLOW FROM INVESTMENTS	**(1,168,879)**	**(1,929,654)**	**(1,709,325)**	**(2,481,893)**	**(1,086,725)**
Short term investments	(90,961)	32,608	(327,793)	194,719	191,427
Purchase of long term investments	0	0	0	(630,692)	(95,978)
Purchase of property, plant & equipment	**(1,279,793)**	**(1,964,767)**	**(1,425,513)**	**(2,100,335)**	**(1,279,126)**
Proceeds on disposal of property, plant & equipment	201,053	2,505	3,899	0	2,881
Interest Received			**40,082**	**54,415**	**94,071**
NET CASH BEFORE FINANCING ACTIVITIES	(1,045,596)	(1,384,269)	(1,178,161)	(1,587,698)	(898,218)
CASH FLOW FROM FINANCING	**1,618,497**	**927,190**	**1,281,077**	**1,579,255**	**1,243,564**
DEBT FINANCING	**(1,176,269)**	**628,094**	**897,947**	**1,234,401**	**609,567**
Short-term (bank) loan	3,388	(18,385)	(25,187)	105,427	34,910
Long-term loan received	**1,143,248**	**708,990**	**923,134**	**1,298,974**	**656,526**
Repayment of long term liabilities	(2,322,905)	(62,511)	0	(170,000)	(81,869)
Bonds Payable	0	0	0	0	0
Mortgage Payable	0	0	0	0	0
EQUITY FINANCING	**2,794,766**	**299,096**	**383,130**	**344,854**	**633,997**
Preference Stock	0	0	0	0	0
Common Stock	0	0	0	0	0
Additional Paid in Capital	0	0	0	0	0
Capital grants received	2,794,766	299,096	383,130	344,854	633,997
Dividends paid	0	0	0	0	0
		415,269			
NET CASH FLOW	**572,901**	**(457,079)**	**102,916**	**(8,443)**	**345,346**
CASH AT BEGINNING OF YEAR	(42,640)	530,261	73,182	176,098	167,655
CASH & EQUIVALENTS AT END OF YEAR	**530,261**	**73,182**	**176,098**	**167,655**	**513,001**

7 SPECIAL ISSUES TO BE CONSIDERED

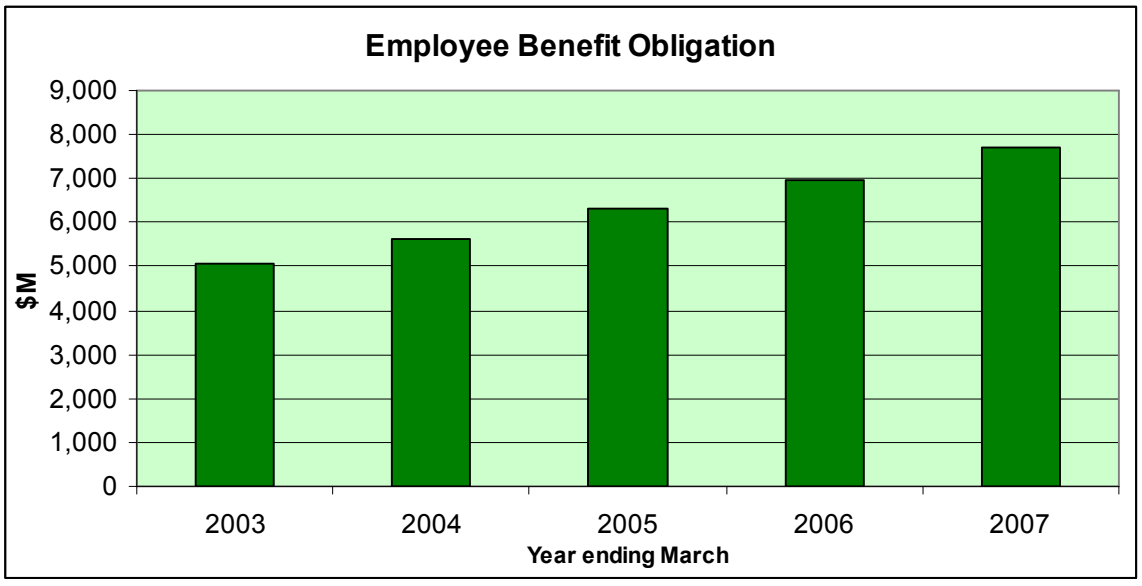
7.1 PENSION LIABILITY

A Cabinet decision in 1988 required that all NWC employees be entitled to a pension. Previously, only the management and supervisors were so entitled. No mechanism was put in place at the time to fund this pension liability and the scheme was not implemented until 2002. This resulted in a past service pension liability on the NWC's books for which there was and still is no funding in place.

NWC has also implemented a contributory pension scheme which is mandatory for new employees but voluntary for existing employees. Only about 25% of current employees are on the contributory scheme.

As at March 2007, NWC's liability is in excess of $7 billion and is expected to continue to grow at an annual rate of over 10%.

Figure 7-1: Movements in employee benefit obligation



The continued presence of this liability on NWC's books and the associated expenses puts a financial constraint on the Commission and is one of the factors affecting NWC's ability to raise financing on its own.

7.2 INCOME TAX

Pursuant to an amendment of the Income Tax Act, NWC's previous exemption from income tax was revoked as of January 1 2004. The imposition of this tax was not factored in the last tariff review and hence NWC has incurred tax expenses for which no provision was made.

7.3 NEPA NEW STANDARDS FOR WASTEWATER EFFLUENT

The National Environment and Planning Agency (NEPA) has promulgated new wastewater effluent standards which NWC's facilities were not designed to meet. Further, a number of these facilities were constructed by housing developers and had to be taken over by NWC because they were not being maintained and are in various states of disrepair.

NWC has worked out a program to bring its wastewater treatment plants in compliance with NEPA's new standards and this program has been submitted for approval by NEPA's board.

The program will cost over $6 Billion over a ten year period and will not result in any significant incremental revenues to NWC. In fact, once these facilities have been upgraded, they will have to be properly operated maintained and thus O&M expenditures will also now be incurred.

7.4 MAJOR NEW SEWERAGE PROJECTS

There are a number of major projects which will result in additional costs but with limited increases in revenues. These include projects aimed at rehabilitating or rebuilding existing facilities. They include the proposed KMA Sewerage Project (Soapberry treatment plant and trunk sewers in the KSA) and the Harbour View wastewater treatment plant and trunk sewers.

7.5 NEW CIS

Since 1992, NWC has been using the Customer Accounting System (CAS) that was developed by Welsh Water, as its billing system to support its customer service delivery. CAS represents dated technology and is in urgent need of replacement.

NWC has taken steps to replace CAS with a new customer information system (CIS). Implementation will commence by November 2007 and completed by April 2009. Included in this is major data cleansing exercise which will involve an extensive customer survey to update customer information. The overall cost to implement the CIS is US$7.5M.

7.6 ENERGY COSTS

The rapidly rising costs of energy over the last few years have driven up the costs of NWC's operations to an extent that is not being fully recovered by the price adjustment mechanism (PAM). Despite NWC's efforts to improve energy efficiency, these costs continue to rise.

7.7 PROVISIONS FOR DEPRECIATION

The large value of NWC's asset base means that a significant depreciation charge is needed to ensure timely replacements. The depreciation charge factored in the last tariff review was significantly below the actual levels.

8 TARIFF METHODOLOGY

8.1 GENERAL

The Regulatory Framework that was specified by the OUR in their document dated July 8 2004 did not indicate the guiding principles and methodology to be applied in the determination of NWC's tariffs. However, based on the approach used by the OUR for other utility companies and for NWC (with some modification) during the last tariff review and recent discussions with the OUR, it appears that the OUR is committed to the Price Cap methodology. The Rate of Return methodology is the other common approach used by utility regulators.

8.2 METHODOLOGY USED BY THE OUR

8.2.1 General

In order to illustrate the Price Cap Methodology used by the OUR, the calculation published in the Determination Notice on the JPS Tariff Review for the Period 2004 – 2009 (as published on the OUR's website) and that used in the 2003 Determination of NWC's rates are presented below.

The essence of the determination of the starting rates is the calculation of the revenue requirement which would allow the utility to recover its reasonable costs, including the cost of capital. Revenue requirement is determined as follows:

Revenue Requirement = Operational Expenses
+ Depreciation and Amortization
+ Return on investment
+ Taxes
+ Other expenditures not included above
– Non-tariff revenues

Operational expenses include O&M costs, sales, general and administration costs and interest on short term debt.

Return on investment can be calculated by multiplying the rate base (the utility's equity + long term debt) by the weighted average cost of capital (WACC). Alternatively, the dollar cost of debt and cost of equity can be calculated independently and added to determine the overall dollar cost of capital or return on investment.

Non-tariff revenues include all revenues outside those to be obtained from the tariff rates being determined. This could include interest income and income from other sources.

Once the revenue requirement is determined, it is compared with the expected revenue without a tariff increase to calculate the required rate increase as follows.

$$\text{Increase required} = \frac{(\text{Rev Requirement} - \text{Expected Rev without increase}) \times 100\%}{\text{Expected Rev. without increase)}}$$

8.2.2 Illustration of Methodology Used by OUR based on the Determination of JPS Non-Fuel Tariffs for 2004 – 2009

The methodology was applied to the non-fuel component of the JPS tariff and the calculation of the revenue requirement was as shown in Figure 11.2 below.

Figure 8-1: OUR Determination of Revenue Requirement for JPS

Components of Revenue (J$'000)

OPERATIONAL EXPENSES	**9,570,913**
PPA (outsourcing costs)	3,002,542
Maintenance	2,851,454
Selling, General and Admin (SG&A)	3,773,125
Interest expense on short term debt	76,814
Interest expense on customer deposits	121,561
Interest income	(121,561)
Allowance for Funds Used During Construction (AFUDC)	(210,615)
Other income	(44,407)
Sinking fund (self-insurance)	122,000
DEPRECIATION AND AMORTIZATION	**2,289,197**
Depreciation	2,170,278
Amortization (redundancy costs, etc.)	118,919
RETURN ON INVESTMENT	**4,199,029**
Cost of Equity	2,907,814
Cost of Long Term Debt	1,291,215
TAXATION	**1,453,907**
REVENUE REQUIREMENT	**17,513,046**
CCC Revenue and transformer discount	**214,785**
ADJUSTED REVENUE REQUIREMENT	**17,298,261**

8.2.3 Methodology Used by OUR for 2003 NWC Tariff Determination

The methodology used by the OUR for the NWC rate determination is similar to what was used for JPS. However, the inputs were did not reflect NWC's true costs and this resulted in the tariffs determined by the OUR not being reflective of NWC's cost of service.

The calculation is illustrated in Figure 8.2 below.

Figure 8-2: OUR's Calculation of NWC Revenue Requirement in the 2003 Review

PARAMETER	2003/04	COMMENT
OPERATIONAL EXPENSES	**6,905,649**	
Salaries	2,093,653	
Pension costs	243,618	
Repairs and Maintenance	751,327	
Administration	523,581	
Electricity	1,228,544	
Purchase of water	41,680	
Loan interest	120,280	
Depreciation	1,042,280	
Bad debt	555,155	
Other operating expenses	286,031	
Regulatory fees	19,500	
Interest income	-	
Allowance for Funds Used During Construction (AFUDC)	-	
Other income	-	
Sinking fund (self-insurance)	-	
DEPRECIATION AND AMORTIZATION	**-**	
Depreciation	-	Included by OUR in operational expenses above
Amortization (redundancy costs, etc.)	-	
RETURN ON INVESTMENT	**600,000**	
Cost of Equity	600,000	Based on equity base of $4,335.26 Million & cost of equity of 13.84%.
Cost of Long Term Debt	-	This implies that the OUR assumed there would be no long term debt.
TAXATION	**-**	
REVENUE REQUIREMENT	**7,505,649**	
EXPECTED REVENUE FOR BASE YEAR WITH NO TARIFF INCREASE	5,940,000	
TARIFF INCREASE REQUIRED	**26.36%**	

8.3 TARIFF METHODOLOGY USED IN THIS SUBMISSION

NWC accepts the methodology that the OUR has been using, even though there is disagreement with the inputs that were used during the last review. The methodology for this tariff review is therefore the same as what the OUR has been using. The different inputs used in the determination of the revenue requirement are discussed in the following sections.

8.4 TEST YEAR

The test year is based on the year for which the last audited financial statements are available with adjustments made for known changes and the time for implementation of tariff adjustment. The effective test year is thus 2007/08.

9 CAPITAL EXPENDITURE

9.1 OVERVIEW

In order to rehabilitate and expand its potable water and sewerage systems to reliably meet service requirements, NWC will need to make significant investments over the next decade. Some projects will result in increased revenues or reductions in cost, however, many of them are not financially viable because:

- The current tariffs are too low to ensure a fair return on investment.
- Some projects involve the rehabilitation or replacement of existing aged infrastructure, such as sewage treatment plants, and will result in little or no incremental revenues or cost savings but will merely increase the quality of service or reduce environmental impacts.
- In some cases projects are implemented before the demand is in place to fully utilize them. This includes some of the north coast water supply schemes which are put in place to facilitate or stimulate future investments in tourism and housing.

There are a number of projects which the Commission has identified that would have to be implemented over the next ten years in order to support its objectives, the Government's Water Sector Policy and regulatory requirements.

These projects are categorized as follows:

1. Priority 1: Ongoing / Committed Projects
2. Priority 2 Projects
3. Priority 3 Projects

Priority 1 Projects : These are projects that are already under construction and to discontinue them would have adverse financial and other impacts on NWC and the country. They include the following:

1. Kingston Water Supply and Sanitation
2. Mandeville Water Supply
3. Constant Spring Sewerage
4. KSA Sewerage Extensions
5. Customer Meter Installation
6. Motor Vehicle Procurement
7. In-house Capital Program – computer facilities, etc.
8. Martha Brae to Braco
9. New Customer Information System
10. KMA Water Supply and Rehabilitation
11. Milk River Water Supply
12. Christiana Spalding Water Supply
13. Santa Cruz Water Supply
14. Port Antonio Water Supply
15. Green Pond Wastewater Project
16. Braco to Pear Tree Bottom Water Supply
17. Well Rehabilitation Project
18. East Action Plan
19. West Action Plan

Priority 2 Projects: These include:

1. Ferry Water Supply
2. Constant Spring WTP Rehabilitation
3. Old Harbour Water Supply
4. Savannah La Mar Water Supply
5. Ocho Rios to Port Maria Water Supply
6. Port Antonio Sewerage
7. Kingston Sewerage Rehab

Priority 3 Projects : These include:

1. Other Water Supply Projects – not yet fully defined
2. Other Wastewater Projects – rehabilitation projects aimed at meeting NEPA requirements.

9.2 ONGOING AND COMMITTED PROJECTS

9.2.1 General

Information on various projects is presented in Appendix 1. Outline information of some of these are presented below.

9.2.2 Mandeville Water Supply

This Project involves the expansion of the water production from the Peppers Well from 2.5 to 4 mgd and the strengthening of the trunk transmission facilities to support the additional water.

A NRW reduction and control programme will be form part of this project to optimize the operations of the Greater Mandeville Water Supply System.

9.2.3 Constant Spring Treatment Plant

The Constant Spring Water Treatment has an installed capacity of some 18 mgd. It is a critical part of the water supply system for the Kingston and St. Andrew

and is in need of renewal to improve on its existing operations and to ensure that it is able to maintain supply to KSA.

Substantial rehabilitation of this plant was undertaken in the mid 1960's and in the mid 1980s. This plant requires extensive repairs to and upgrade of its equipment and treatment facilities to ensure the consistent delivery of water of very high standard and output.

Its raw water supply infrastructure which was largely constructed over 50 years ago is in urgent need of rehabilitation to ensure continued use. These include the raw water intakes located in remote sections of rural St. Andrew, pipelines that traverse rugged hillsides and pipeline appurtenances.

NWC has developed a rehabilitation programme estimated to cost some US$20M to carry out the repairs to the treatment plant and its raw water infrastructure. This would be implemented over 3 – 4 years and financing will be sought from commercial financial institutions.

9.2.4 KSA Sewerage Extensions

NWC is in the process of extending the sewer network in Kingston and St. Andrew. This is in support of improvement in general sanitation for the area and to facilitate more intensive residential developments that are required to meet the growing housing needs in this area.

The Soapberry Sewerage Project includes the establishment of a new wastewater treatment plant for the area capable of accommodating some 18 mgd. At present, it is estimated that some 10 mgd is now collected in the NWC KSA sewerage.

The extension will increase the wastewater flows into NWC sewerage and with the additional customers who will be connected, this will provide NWC with the opportunity to enhance its revenue base.

9.2.5 Customer Meter Installation

NWC aims to increase the level of metering to at least 85% of the customer base.

9.2.6 Motor Vehicle Procurement

The average age of NWC's fleet is 7 years and this has resulted in high maintenance cost and unacceptable level of reliability. It is necessary to replace over 80% of the vehicles. In view of the financial constraint faced by NWC, it In order to minimizein the fleet over the next 2 to 3 years NWC requires In order to support NWC's operation

9.3 CAPITAL PROJECTS FINANCING

The detailed financing for each capital project is included in figure 9.1. Where financing terms have not yet been confirmed, appropriate assumptions have been made.

Figure 9.1 – Financing for Capital Projects

PROJECT	Financing	Project Cost (kJ$)	Expenditure to 2006 (kJ$)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
PRIORITY 1 PROJECTS - ONGOING & COMMITTED													
Kingston Water & Sanitation		**2,970,000**	**-**		**161,832**	**822,492**	**993,974**	**991,703**					
	89% IDB	2,640,000	-		141,832	731,104	883,532	883,532					
	11% NWC	330,000	-		20,000	91,388	110,442	108,171					
Mandeville Water Supply		**396,000**	**-**		**21,275**	**109,666**	**132,530**	**132,530**					
	0% Commercial 01				0	0	0	0					
	100% NWC				21,275	109,666	132,530	132,530					
Constant Spring Sewerage		**150,000**	**-**		**8,059**	**41,540**	**50,201**	**50,201**					
	0% Commercial 02	-			0	0	0	0					
	10% Impact Fee Grant	15,000			806	4,154	5,020	5,020					
	90% NWC	135,000			7,253	37,386	45,181	45,181					
KSA Sewerage Extensions		**830,000**	**-**	**80,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**				
	0% Commercial 03	-	-	0	0	0	0	0	0				
	100% NWC	830,000	-	80,000	150,000	150,000	150,000	150,000	150,000				
Customer Meter Installation		**1,224,000**	**-**	**102,000**	**102,000**	**102,000**	**102,000**	**102,000**	**102,000**	**102,000**	**102,000**	**102,000**	**102,000**
	0% Commercial 04	-	-	0	0	0	0	0	0	0	0	0	0
	100% NWC	1,224,000	-	102,000	102,000	102,000	102,000	102,000	102,000	102,000	102,000	102,000	102,000
Motor Vehicle Procurement		**1,420,000**	**-**	**144,000**	**144,000**	**144,000**	**144,000**	**144,000**	**100,000**	**100,000**	**100,000**	**100,000**	**100,000**
	0% Commercial 05			0	0	0	0	0	0	0	0	0	0
	100% NWC			144,000	144,000	144,000	144,000	144,000	100,000	100,000	100,000	100,000	100,000
In-house Capital Program		**237,867**	**-**	**15,000**	**16,125**	**17,334**	**18,634**	**20,032**	**21,534**	**21,534**	**21,534**	**21,534**	**21,534**
	0% Commercial 06			0	0	0	0	0	0	0	0	0	0
	100% NWC			15,000	16,125	17,334	18,634	20,032	21,534	21,534	21,534	21,534	21,534
Martha Brae to Braco		**2,398,476**	**2,029,450**	**369,026**									
	20% BNP Euro	478,934	282,065	196,869									
	16% BNP French	392,971	232,569	160,402									
	10% BNP Spanish	228,578	216,823	11,755									
	13% BNP US	315,567	315,567	0									
	41% NCB	982,427	982,426	0									
	0% NWC	-	-	0									
NEW CIS SYSTEM		**510,000**	**-**		**255,000**	**255,000**							
	67% Commercial 07	340,000			170,000	170,000							
	33% NWC	170,000			85,000	85,000							
KMA Water Supply & Rehabilitation		**5,643,000**	**43,500**	**265,000**	**1,366,000**	**1,650,799**	**2,317,702**						
	70% JBICN	3,960,000	-	257,500	1,016,000	1,009,799	1,676,702						
	27% GOJ Grant	1,518,000	43,500	7,500	295,000	586,000	586,000						
	3% NWC	165,000	-	0	55,000	55,000	55,000						
Milk River Water Supply		**90,000**	**50,000**	**40,000**									
	100% EU Grant	90,000	50,000	40,000									
	0% NWC	-	-	0									
Christiana-Spaldings		**198,000**	**60,000**	**124,200**	**13,800**								
	100% EU Grant	198,000	60,000	124,200	13,800								
	0% NWC	-	-	0	0								
Santa Cruz Water Supply		**99,000**	**65,000**	**30,600**	**3,400**								
	100% NWC	99,000	65,000	30,600	3,400								
	0% GOJ Grant	-	-	0	0								
Port Antonio Water Supply		**396,000**	**-**	**30,000**	**138,600**	**257,400**							
	83% EIB 2	330,000	-	30,000.0	115,500	214,500							
	17% NWC	66,000	-	0.0	23,100	42,900							
Green Pond Sewerage		**260,000**	**-**		**130,000**	**130,000**							
	62% NHT Loan	160,000			80,000	80,000							
	38% NHT Grant	100,000			50,000	50,000							
Braco to Pear Tree Bottom		**1,251,360**	**-**		**702,762**	**539,025**							
	51% French BC 2	641,328	-		320,664	320,664							
	35% BNP Paribas 2	436,721	-		218,361	218,361							
	13% NCB 2	163,738	-		163,738	0							
Well Rehbilitation		**601,000**	**-**	**1,000**	**20,000**	**58,000**	**58,000**	**58,000**	**58,000**	**58,000**	**58,000**	**58,000**	**58,000**
	0% Commercial 16			0	0	0	0	0	0	0	0	0	0
	100% NWC			1,000	20,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000
East Action Plan		**1,750,000**	**-**	**100,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**
	0% Commercial 17			0	0	0	0	0	0	0	0	0	0
	100% NWC			100,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000
West Action Plan		**1,800,000**	**-**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**	**150,000**
	0% Commercial 18			0	0	0	0	0	0	0	0	0	0
	100% NWC			150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000
PRIORITY 2 PROJECTS													
Ferry Water Supply		**2,376,000**	**-**				**792,000**	**792,000**	**792,000**				
	80% Commercial 08	1,900,800	-				633,600	633,600	633,600				
	20% NWC	475,200	-				158,400	158,400	158,400				
Constant Spring System Rehab.		**1,782,000**	**-**			**594,000**	**594,000**	**594,000**					
	80% Commercial 09					475,200	475,200	475,200					
	20% NWC					118,800	118,800	118,800					
Old Harbour Water Supply		**330,000**	**-**			**110,000**	**110,000**	**110,000**					
	0% Commercial 10					0	0	0					
	100% NWC					110,000	110,000	110,000					
Savana-la-mar Water Supply		**660,000**	**-**					**220,000**	**220,000**	**220,000**			
	0% Commercial 11							0	0	0			
	100% NWC							220,000	220,000	220,000			
Ocho Rios to Port Maria		**2,310,000**	**-**					**770,000**	**770,000**	**770,000**			
	80% Commercial 12							616,000	616,000	616,000			
	20% NWC							154,000	154,000	154,000			
Eastern St. Mary Water Supply		**330,000**	**-**			**165,000**	**165,000**						
	0% Commercial 13					0	0						
	100% NWC					165,000	165,000						
Port Antonio Sewerage		**660,000**	**-**		**165,000**	**247,500**	**247,500**						
	EIB				165,000	247,500	247,500						
	NWC				0	0	0						
Kingston Sewerage Rehabilitation		**3,300,000**	**-**			**330,000**	**330,000**	**330,000**	**330,000**	**330,000**	**330,000**		
	20% Commercial 14					66,000	66,000	66,000	66,000	66,000	66,000		
	80% NWC				100,000	264,000	264,000	264,000	264,000	264,000	264,000		
PRIORITY 3 PROJECTS													
Other Water Supply Projects		**2,431,700**	**-**	**-**	**70,000**	**77,000**	**84,700**	**100,000**	**300,000**	**300,000**	**300,000**	**300,000**	**300,000**
	80% Commercial 15			0	56,000	61,600	67,760	80,000	240,000	240,000	240,000	240,000	240,000
	20% NWC			0	14,000	15,400	16,940	20,000	60,000	60,000	60,000	60,000	60,000
Other Wastewater Projects		**2,891,000**	**-**	**-**	**228,000**	**413,000**	**444,000**	**154,000**	**123,000**	**182,000**	**373,000**	**335,000**	**239,000**
	20% Commercial 19			0	45,600	82,600	88,800	30,800	24,600	36,400	74,600	67,000	47,800
	80% NWC			0	182,400	330,400	355,200	123,200	98,400	145,600	298,400	268,000	191,200
TOTAL CAPITAL COST		**30,675,436**	**3,747,950**	**1,450,826**	**3,995,853**	**6,513,755**	**7,034,240**	**5,018,465**	**3,266,534**	**2,383,534**	**1,584,534**	**1,216,534**	**1,120,534**

10 EXPENSES

10.1 OVERVIEW

Total expenses include operating expenses and other expenses. Operating expenses comprise salaries, wages and related costs, repairs and maintenance, administration, utilities, fuels, lubricants and water purchases. Other expenses comprise financial charges and depreciation.

Actual values based on audited statements for years ending March 2003 to 2005 and draft audited statements for the year ending March 2007 are shown below. Based on these and expected changes, the expenses for years ending March 2008 were derived using the financial model. These are shown below.

Figure 10-1: Historical and Projected Expenses

YEAR ENDING MARCH ...		2003	2004	2005	2006	2007	2008
OPERATING EXPENSES		5,752,642	6,397,505	7,250,505	8,355,730	9,446,636	10,523,891
EMPLOYEE COST		2,896,665	3,312,807	3,333,171	3,461,897	3,820,764	4,070,757
REPAIRS AND MAINTENANCE		676,727	619,011	1,039,284	1,134,358	1,233,149	1,571,238
ADMINISTRATION		975,596	975,414	1,038,814	1,290,069	1,494,400	1,692,330
ELECTRICITY		1,040,806	1,295,188	1,608,696	2,217,620	2,637,863	2,904,093
TELEPHONE		58,403	72,507	72,588	78,520	74,224	81,980
FUEL AND LUBRICANTS		55,689	72,596	85,299	105,931	121,984	134,741
WATER PURCHASES		48,756	49,982	72,653	67,335	64,252	68,753
OTHER EXPENSES		1,634,248	1,741,078	1,749,700	1,974,140	2,413,250	2,909,159
BANK CHARGES AND INTEREST		31,385	5,086	5,211	4,372	5,844	3,556
LOAN INTEREST (Current Portion)		75,726	175,983	75,086	134,750	212,635	339,688
FOREIGN EXCHANGE LOSS		98,532	106,706	-	66,011	121,214	162,100
DEPRECIATION		1,428,605	1,453,303	1,669,403	1,769,007	2,073,556	2,403,815
TOTAL BASE EXPENSES		7,386,890	8,138,583	9,000,205	10,329,870	11,859,886	13,433,050

Details of the different components of the expenses and the explanations of the derivations of the projected figures are presented below.

10.2 OPERATING EXPENSES

10.2.1 Salaries, Wages and Related Costs

The components of salaries, wages and related costs are presented in figure 10.2. These costs were kept in check for the period 2004 to 2007 as a result of the restructuring program and wage increase restraints under the MOU with the unions. However, based on an agreement with the unions, an independent survey was done to compare NWC's salaries with appropriate figures from the market and this has resulted in significant adjustments in salaries and wages.

Based on the agreement with unions, salaries and wages was increased by 34% retroactive to January 2006. This means that the total increase for year ending March 2007 was 42.2% which will be followed by a 5.9% decrease in year ending March 2008 as the retroactive payment is removed.

It is noteworthy that salaries and wages as a percentage of gross property, plant and equipment would be at 7.0% which is less than the average level over the period 2003 to 2006 when the average was 7.5%. This is based on the expected increase in asset base as new projects are implemented.

Allowances, pensions and other employee related expenses are expected to generally move at the same rate as salaries and wages. These add up to approximately 32% of salaries, wages and benefits.

It would be noted that Employee Cost (including interest on past service liabilities) has decreased from 56.3% of Operating Revenue in 2002/03 to 39.5% in 2006/07. When the interest on past service pension liabilities of $729M is removed, the ratio of employee cost to operating revenue is 32%.

Figure 10-2: Components of salaries, wages and related costs

YEAR ENDING MARCH …		2003	2004	2005	2006	2007	2008
OPERATING EXPENSES		5,752,642	6,397,505	7,250,505	8,355,730	9,446,636	10,523,891
Percentage change	*14.6%*	*18.9%*	*11.2%*	*13.3%*	*15.2%*	*13.1%*	*11.4%*
Percentage of Gross PP&E		*21.6%*	*21.4%*	*22.3%*	*23.1%*	*24.2%*	*23.5%*
Percentage of operating revenue		*111.8%*	*104.5%*	*95.7%*	*97.8%*	*97.7%*	*92.6%*
EMPLOYEE COST		2,896,665	3,312,807	3,333,171	3,461,897	3,820,764	4,070,757
Percentage change	*12.3%*	*33.2%*	*14.4%*	*0.6%*	*3.9%*	*10.4%*	*6.5%*
Percentage of Gross PP&E		*10.9%*	*11.1%*	*10.2%*	*9.6%*	*9.8%*	*9.1%*
Percentage of operating revenue		*56.3%*	*54.1%*	*44.0%*	*40.5%*	*39.5%*	*35.8%*
Percentage of total expenses		*50.4%*	*51.8%*	*46.0%*	*41.4%*	*40.4%*	*38.7%*
Salaries wages and benefits (Including Interest on Past Service Pension Liability)		2,079,107	2,261,374	2,158,380	2,281,731	2,558,306	2,637,161
Percentage change	*12.55%*	*46.21%*	*8.77%*	*-4.55%*	*5.71%*	*12.12%*	*3.08%*
Percentage of Gross PP&E		*7.8%*	*7.6%*	*6.6%*	*6.3%*	*6.5%*	*5.9%*
Allowances - motor vehicle		127,704	175,028	175,386	222,774	250,762	264,757
Percentage change	*18.6%*	*13.4%*	*37.1%*	*0.2%*	*27.0%*	*12.6%*	*5.6%*
Percentage of Salaries, wages and benefits		*6.1%*	*7.7%*	*8.1%*	*9.8%*	*9.8%*	*10.0%*
Allowances - uniform		55,944	97,209	5,228	34,421	24,638	53,312
Percentage change	*-27.6%*	*-55.4%*	*73.8%*	*-94.6%*	*558.4%*	*-28.4%*	*116.4%*
Percentage of Salaries, wages and benefits		*2.7%*	*4.3%*	*0.2%*	*1.5%*	*1.0%*	*2.0%*
Allowances - Other		207,605	106,135	175,096	238,022	246,747	300,303
Percentage change	*0.9%*	*-9.7%*	*-48.9%*	*65.0%*	*35.9%*	*3.7%*	*21.7%*
Percentage of Salaries, wages and benefits		*10.0%*	*4.7%*	*8.1%*	*10.4%*	*9.6%*	*11.4%*
Pensions and gratuity (Excluding Interest on Past Service Pension Liability		220,574	436,228	502,414	367,544	416,228	448,192
Percentage change	*32.3%*	*83.9%*	*97.8%*	*15.2%*	*-26.8%*	*13.2%*	*7.7%*
Percentage of Salaries, wages and benefits		*10.6%*	*19.3%*	*23.3%*	*16.1%*	*16.3%*	*17.0%*
Insurance (group)		77,970	85,862	109,552	138,877	133,700	153,384
Percentage change	*20.2%*	*17.1%*	*10.1%*	*27.6%*	*26.8%*	*-3.7%*	*14.7%*
Percentage of Salaries, wages and benefits		*3.8%*	*3.8%*	*5.1%*	*6.1%*	*5.2%*	*5.8%*
Traveling and transportation		17,908	35,683	72,015	45,635	46,173	53,564
Percentage change	*30.8%*	*14.8%*	*99.3%*	*101.8%*	*-36.6%*	*1.2%*	*16.0%*
Percentage of Salaries, wages and benefits		*0.9%*	*1.6%*	*3.3%*	*2.0%*	*1.8%*	*2.0%*
Statutory contributions		109,853	115,288	135,100	132,893	144,210	160,085
Percentage change	*12.3%*	*31.7%*	*4.9%*	*17.2%*	*-1.6%*	*8.5%*	*11.0%*
Percentage of Salaries, wages and benefits		*5.3%*	*5.1%*	*6.3%*	*5.8%*	*5.6%*	*6.1%*

10.2.2 Repairs and Maintenance

Repairs and maintenance expenses are expected to increase as the new projects come on stream. Total value is expected to amount to approximately 3.9% of gross property, plant and equipment which is less than the normally expected 4% - 5% range. Traditionally, NWC has under-spent on repairs on maintenance due to budgetary constraints. This is one of the factors that has lead to the current poor state of its facilities.

Figure 10-3: Components of repairs and maintenance expenses

REPAIRS AND MAINTENANCE		676,727	619,011	1,039,284	1,134,358	1,233,149	1,571,238
General repairs (pipes)		125,154	87,690	81,237	90,096	110,824	202,091
Percentage change	-7.5%	1.8%	-29.9%	-7.4%	10.9%	23.0%	82.4%
Percentage of plant assets		0.6%	0.4%	0.3%	0.3%	0.4%	0.5%
						324,094	
Materials and supplies		50,263	98,813	221,307	267,814	318,145	365,440
Percentage change	48.1%	-9.7%	96.6%	124.0%	21.0%	18.8%	14.9%
Percentage of plant assets		0.2%	0.4%	0.8%	0.9%	1.0%	1.0%
Motor vehicles		83,568	86,813	104,969	99,697	104,825	115,422
Percentage change	6.9%	9.6%	3.9%	20.9%	-5.0%	5.1%	10.1%
Percentage of motor vehicle assets		11.3%	10.7%	11.5%	9.5%	9.5%	10.0%
Plant and equipment - Existing		181,175	161,767	305,092	314,146	328,642	361,383
Percentage change	7.7%	-22.3%	-10.7%	88.6%	3.0%	4.6%	10.0%
Percentage of plant assets		0.8%	0.7%	1.1%	1.1%	1.0%	1.0%
Plant and equipment - New		-	-	-	-	38,380	155,141
Percentage change	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	304.2%
Percentage of plant assets		0.0%	0.0%	0.0%	0.0%	0.1%	0.4%
Building		58,575	53,650	98,431	105,424	112,673	114,116
Percentage change	22.7%	26.0%	-8.4%	83.5%	7.1%	6.9%	1.3%
Percentage of building asset value		5.1%	4.4%	7.7%	7.8%	8.0%	7.7%
Chemicals		38,920	32,509	73,488	102,206	63,321	73,408
Percentage change	33.5%	21.0%	-16.5%	126.1%	39.1%	-38.0%	15.9%
Percentage of plant assets		0.2%	0.1%	0.3%	0.4%	0.2%	0.2%
Equipment rental		59,058	57,617	88,397	91,318	92,768	102,146
Percentage change	16.0%	16.9%	-2.4%	53.4%	3.3%	1.6%	10.1%
Percentage of motor vehicle assets		8.0%	7.1%	9.7%	8.7%	8.4%	8.9%
Reinstatement of roads		42,632	20,451	26,855	51,881	49,477	54,019
Percentage change	10.9%	24.2%	-52.0%	31.3%	93.2%	-4.6%	9.2%
Percentage of plant assets		0.2%	0.1%	0.1%	0.2%	0.2%	0.1%
Office furniture and equipment		15,513	11,212	7,382	4,107	13,651	20,986
Percentage change	-28.1%	0.7%	-27.7%	-34.2%	-44.4%	232.4%	53.7%
Percentage of building asset value		1.2%	0.9%	0.5%	0.3%	0.8%	1.0%
Claims and contingencies		21,869	8,489	32,126	7,669	443	7,086
Percentage change	-12.0%	71.1%	-61.2%	278.4%	-76.1%	-94.2%	1499.6%
Percentage of plant assets		0.10%	0.04%	0.12%	0.03%	0.00%	0.02%

10.2.3 Administration

The major components of administration expenses include bad debts, rents, insurance, postage, printing, computer services, security, consultancy fees, etc. The major cost is bad debt which accounts for 46 % of administration expenses. The projected figures were calculated at 8% of billed revenues, as per the OUR target.

Figure 10-4: Components of Administration expenses

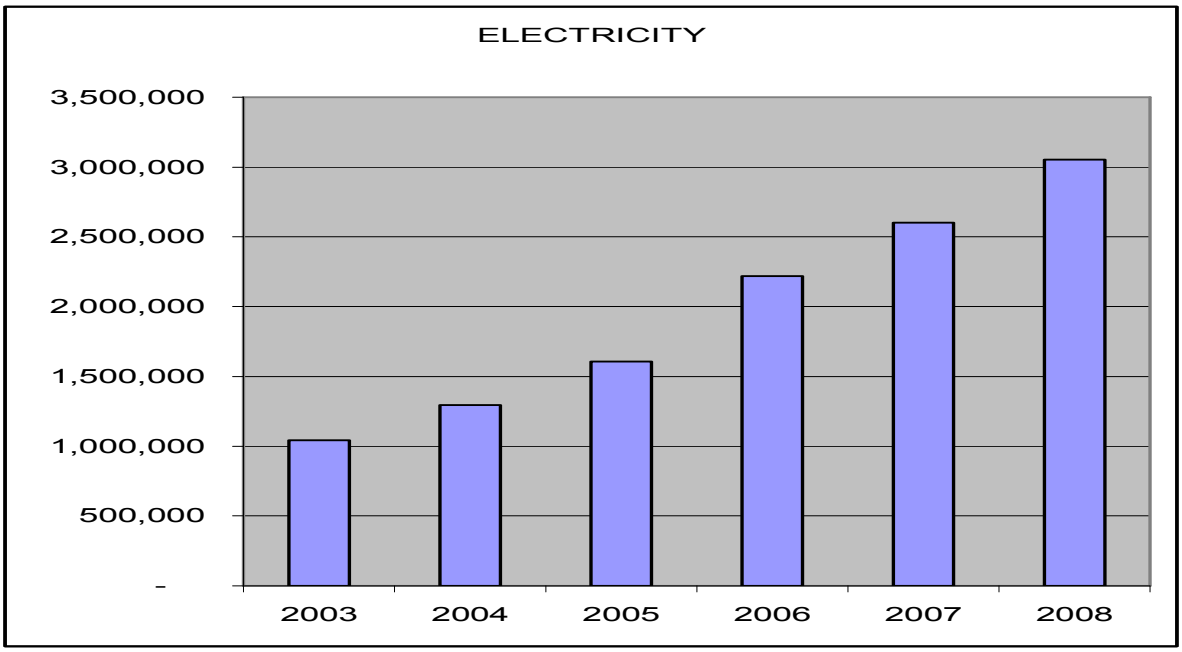
	2003	2004	2005	2006	2007	2008
ADMINISTRATION	**975,596**	**975,414**	**1,038,814**	**1,290,069**	**1,494,400**	**1,692,330**
Percentage change	*1.4%*	*0.0%*	*6.5%*	*24.2%*	*15.8%*	*13.2%*
Percentage of Gross PP&E	*3.7%*	*3.3%*	*3.2%*	*3.6%*	*3.8%*	*3.8%*
Percentage of operating revenue	*19.0%*	*15.9%*	*13.7%*	*15.1%*	*15.5%*	*14.9%*
Bad Debts	**443,732**	**458,481**	**496,400**	**679,975**	**678,777**	**689,095**
Percentage change	*-11.8%*	*3.3%*	*8.3%*	*37.0%*	*-0.2%*	*1.5%*
Percentage of operating revenue	*8.6%*	*7.5%*	*6.6%*	*8.0%*	*7.0%*	*6.1%*
Rents, rates and taxes	**52,176**	**49,934**	**58,341**	**59,750**	**92,718**	**103,398**
Percentage change	*1.3%*	*-4.3%*	*16.8%*	*2.4%*	*55.2%*	*11.5%*
% Gross PP&E	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*
Security services	**88,827**	**80,805**	**88,792**	**102,208**	**114,328**	**133,819**
Percentage change	*25.2%*	*-9.0%*	*9.9%*	*15.1%*	*11.9%*	*17.0%*
% Gross PP&E	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*
Insurance charges	**158,899**	**163,177**	**151,209**	**174,218**	**317,652**	**365,317**
Percentage change	*64.5%*	*2.7%*	*-7.3%*	*15.2%*	*82.3%*	*15.0%*
% Gross PP&E	*0.6%*	*0.5%*	*0.5%*	*0.5%*	*0.8%*	*0.8%*
Donations	**471**	**3,027**	**-**	**-**	**-**	**-**
Percentage change	*-92.4%*	*542.7%*	*-100.0%*			
Percentage of operating revenue	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Computer services	**35,977**	**34,210**	**29,807**	**42,086**	**42,520**	**86,484**
Percentage change	*7.9%*	*-4.9%*	*-12.9%*	*41.2%*	*1.0%*	*103.4%*
% Gross PP&E	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.2%*
Printing and stationary	**17,250**	**18,326**	**25,888**	**23,511**	**22,324**	**24,654**
Percentage change	*11.5%*	*6.2%*	*41.3%*	*-9.2%*	*-5.0%*	*10.4%*
Percentage of operating revenue	*0.3%*	*0.3%*	*0.3%*	*0.3%*	*0.2%*	*0.2%*
Consultancy fees	**76,486**	**36,330**	**23,776**	**18,777**	**32,999**	**40,119**
Percentage change	*-6.8%*	*-52.5%*	*-34.6%*	*-21.0%*	*75.7%*	*21.6%*
% Gross PP&E	*0.3%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*
Postage and cables	**40,560**	**44,943**	**49,849**	**41,680**	**42,574**	**46,831**
Percentage change	*-11.4%*	*10.8%*	*10.9%*	*-16.4%*	*2.1%*	*10.0%*
Percentage of operating revenue	*0.8%*	*0.7%*	*0.7%*	*0.5%*	*0.4%*	*0.4%*
Overseas travel	**1,355**	**1,361**	**3,903**	**4,536**	**2,035**	**3,111**
Percentage change	*65.0%*	*0.4%*	*186.8%*	*16.2%*	*-55.1%*	*52.9%*
% Gross PP&E	*0.01%*	*0.00%*	*0.01%*	*0.01%*	*0.01%*	*0.01%*
Audit and accounting fees and expenses	**4,773**	**7,379**	**5,881**	**7,000**	**7,012**	**8,000**
Percentage change	*14.5%*	*54.6%*	*-20.3%*	*19.0%*	*0.2%*	*14.1%*
% Gross PP&E	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Staff welfare	**32,682**	**38,026**	**48,359**	**44,673**	**75,102**	**100,815**
Percentage change	*-8.4%*	*16.4%*	*27.2%*	*-7.6%*	*68.1%*	*34.2%*
Percentage of operating revenue	*0.6%*	*0.6%*	*0.6%*	*0.5%*	*0.8%*	*0.9%*
Miscellaneous expenses	**2,389**	**14,398**	**20,964**	**69,087**	**34,523**	**39,644**
Percentage change	*-14.7%*	*502.7%*	*45.6%*	*229.6%*	*-50.0%*	*14.8%*
% Gross PP&E	*0.0%*	*0.0%*	*0.1%*	*0.2%*	*0.1%*	*0.1%*
Legal expenses	**3,865**	**429**	**4,475**	**9,405**	**10,039**	**16,043**
Percentage change	*2.9%*	*-88.9%*	*943.1%*	*110.2%*	*6.7%*	*59.8%*
% Gross PP&E	*0.01%*	*0.00%*	*0.01%*	*0.03%*	*0.03%*	*0.04%*
Advertising	**16,154**	**24,588**	**31,170**	**13,163**	**21,797**	**35,000**
Percentage change	*59.7%*	*52.2%*	*26.8%*	*-57.8%*	*65.6%*	*60.6%*
% Gross PP&E	*0.1%*	*0.1%*	*0.1%*	*0.0%*	*0.1%*	*0.1%*

10.2.4 Electricity

Electricity costs are projected based on current JPS tariffs with increases being driven by expected expansions in potable water and sewerage systems. It is assumed that the price adjustment mechanism (PAM) will provide compensation for movements in electricity prices.

Electricity cost, as percentage of total expenses is expected to increase to average about 22% over the next few years.

Figure 10-5: Movements in Electricity expenses



10.2.5 Telephone

Telephone expenses are expected to increase to just over $100 M per year which is a relatively low percentage of overall expenses.

10.2.6 Fuel and Lubricants

These expenses are also relatively low and are projected to increase to $145 M by year ending 2008.

10.2.7 Purchases – Water

Water purchases will depend on weather conditions. Expenditure is, however , expected to remain below $100 M per year.

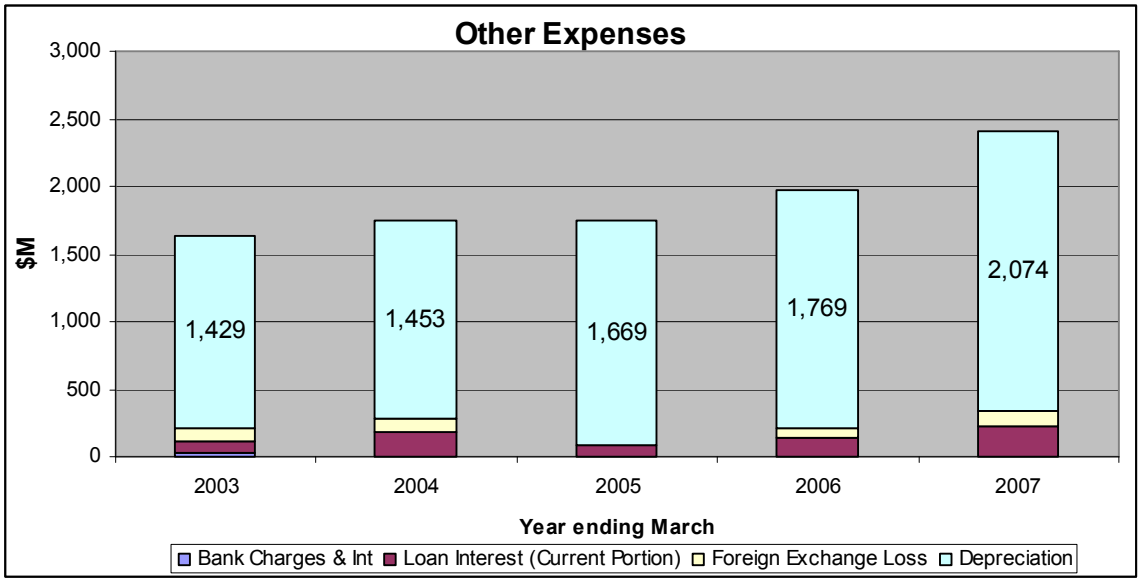
Figure 10-6: Components of Electricity, Telephone, Fuel and Lubricants, Water Purchases

	2003	2004	2005	2006	2007	2008
ELECTRICITY	**1,040,806**	**1,295,188**	**1,608,696**	**2,217,620**	**2,637,863**	**2,904,093**
Percentage change	*17.2%*	*24.4%*	*24.2%*	*37.9%*	*19.0%*	*10.1%*
Percentage of Gross PP&E	*3.9%*	*4.3%*	*4.9%*	*6.1%*	*6.7%*	*6.5%*
Percentage of operating expenses	*18.1%*	*20.2%*	*22.2%*	*26.5%*	*27.9%*	*27.6%*
Percentage of total expenses	***14.1%***	***15.9%***	***17.9%***	***21.5%***	***22.2%***	***21.6%***
Percentage of operating revenue	*20.2%*	*21.1%*	*21.2%*	*26.0%*	*27.3%*	*25.6%*
TELEPHONE	**58,403**	**72,507**	**72,588**	**78,520**	**74,224**	**81,980**
Percentage change	*47.2%*	*24.1%*	*0.1%*	*8.2%*	*-5.5%*	*10.4%*
Percentage of Gross PP&E	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*
FUEL AND LUBRICANTS	**55,689**	**72,596**	**85,299**	**105,931**	**121,984**	**134,741**
Percentage change	*11.7%*	*30.4%*	*17.5%*	*24.2%*	*15.2%*	*10.5%*
Percentage of Gross PP&E	*0.2%*	*0.2%*	*0.3%*	*0.3%*	*0.3%*	*0.3%*
WATER PURCHASES	**48,756**	**49,982**	**72,653**	**67,335**	**64,252**	**68,753**
Percentage change	*10.7%*	*2.5%*	*45.4%*	*-7.3%*	*-4.6%*	*7.0%*
Percentage of Gross PP&E	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*

10.3 OTHER EXPENSES

Other expenses comprise the financial charges and interest as well as depreciation. Depreciation, at 78% of this category, is by far the largest component, with loan interest at 21% being the other significant item.

Figure 10. 7 . Movement in Other Expenses



10.3.1 Loan Interest

Loan interest is based on the different loan terms and the extent of drawdown based on the capital projects being implemented.

10.3.2 Depreciation

Depreciation is being driven by the asset base.

Figure 10-8: Components of Electricity, Telephone, Fuel and Lubricants, Water Purchases

	2003	2004	2005	2006	2007	2008
OTHER EXPENSES	**1,634,248**	**1,741,078**	**1,749,700**	**1,974,140**	**2,413,250**	**2,909,159**
BANK CHARGES AND INTEREST	**31,385**	**5,086**	**5,211**	**4,372**	**5,844**	**3,556**
Percentage change	*-12.2%*	*-83.8%*	*2.5%*	*-16.1%*	*33.7%*	*-39.1%*
Percentage of total expenses	*0.42%*	*0.06%*	*0.06%*	*0.04%*	*0.05%*	*0.03%*
Percentage of prior year end overdraft	*18.8%*	*4.8%*	*2.0%*	*3.3%*	*3.0%*	*2.5%*
LOAN INTEREST (Current Portion)	**75,726**	**175,983**	**75,086**	**134,750**	**212,635**	**339,688**
Percentage change	*-46.9%*	*132.4%*	*-57.3%*	*79.5%*	*57.8%*	*59.8%*
Percentage of total expenses	*1.0%*	*2.2%*	*0.8%*	*1.3%*	*1.8%*	*2.5%*
FOREIGN EXCHANGE LOSS	**98,532**	**106,706**	**-**	**66,011**	**121,214**	**162,100**
Percentage change	*88.3%*	*8.3%*	*-100.0%*	*#DIV/0!*	*83.6%*	*33.7%*
Percentage of total expenses	*1.3%*	*1.3%*	*0.0%*	*0.6%*	*1.0%*	*1.2%*
DEPRECIATION	**1,428,605**	**1,453,303**	**1,669,403**	**1,769,007**	**2,073,556**	**2,403,815**
Percentage change	*194.3%*	*1.7%*	*14.9%*	*6.0%*	*17.2%*	*15.9%*
Percentage of total expenses	*19.3%*	*17.9%*	*18.5%*	*17.1%*	*17.5%*	*17.9%*

10.4 OUTSOURCING COSTS

NWC has taken a decision to outsource aspects of its non-core activities to other entities which specialize in the provision of the activities services. The Commission has already outsourced its call center services and private companies are actively involved in bill collections as well.

NWC only considers outsourcing aspects of its operations if:

- It is determined that the private sector can undertake these activities on NWC's behalf at a lower cost for the same level of effectiveness. In some instances, due to the required improvement in service level, the outsourced cost may be higher than NWC's current costs but the value per dollar spent should be higher.
- NWC is unable to secure the necessary financing to implement the activities itself. This is the case with many projects where the government is not providing a guarantee to lenders.
- It is mandated by the government or a regulatory agency that private firms provide the requisite service and the costs are passed through in NWC's rates.

10.4.1 Soapberry BOOT

The Soapberry Wastewater Project is being developed on a Build Own Operate and Transfer Basis consistent with GOJ's policy to encourage private investments in the water sector and in light of the fact that NWC had been unable to raise the financing for this project.

The project's O&M costs are to be approved by the OUR and the O&M Contractor has indicated that they are not yet in a position to indicate proposed costs. These costs are expected to be better known closer to the commissioning date of the facilities which is scheduled to be towards the end of 2007.

NWC assumes that the costs to be set by the OUR will be passed through in the NWC customer tariffs. However, at this point the figures included are estimates only base on assumed costs and sewage flows at this time. Details of the derivation of these estimates are included in Appendix A3.

10.4.2 Harbour View BOOT

The rebuilding of the Harbour View wastewater treatment plant and transmission facilities is also being done on a BOOT basis as NWC was unable to raise the necessary financing on its own.

Tenders have already been received, evaluated and negotiations are now taking place to arrive at a final arrangement. An arrangement is expected to be concluded before December 2007.

The rates to be paid will also be subject to approval by the OUR and again it is expected that these will be passed through in the NWC customer tariffs.

10.4.3 Call Center

NWC now outsources is call management activities. The costs included represent expected increases due to proposals received recently to replace the existing arrangement whose term is about to end.

10.5 TAXATION

Pursuant to an amendment of the Income Tax Act, NWC's previous exemption from income tax was revoked as of January 1 2004. Income tax has therefore been included as an expense since that date.

11 RETURN ON INVESTMENT

11.1 GENERAL

11.2 TEST YEAR BALANCE SHEET AND RATE BAE

Historical and projected summary balanced sheets and rate base for NWC are shown in figure 11.1 below. Deferred income represents assets that have been provided by way of grant and are therefore not included in the rate base.

Key points to note are as follows:

- The rate base of $4.3 Billion which was "deemed" by the OUR and used in the 2003 Determination was significantly below what the actual rate base was. This contributed to NWC being granted a rate increase at the time which did not provide a proper return on investment.
- Because of the significant losses that NWC has been incurring and is expected to continue to incur, the rate base has been decreasing at a rapid annual rate. This means that the lack of an adequate tariff is also reducing the level of tariff that NWC will receive in the future.

More detailed representations of NWC historical and projected balance sheets are with no tariff increase are given in Appendix A4.

11.3 COST OF CAPITAL

11.3.1 Cost of Debt

Based on current market conditions, NWC expects that it can raise debt in US$ at an all in cost of 12%, if it does not get a government guarantee.

11.3.2 Cost of Equity

The cost of equity, as determined using the capital asset pricing model is 14.5%.

11.4 RETURN ON CAPITAL

The required return on capital for the historical and projected years are shown in figure 11.2 below.

Figure 11-1: Summary Historical and Projected Balance Sheets and Rate Base

YEAR ending March …	2003	2004	2005	2006	2007
				-0.7%	
CURRENT ASSETS	**2,912,266**	**1,876,316**	**2,883,523**	**2,863,096**	**3,858,320**
CURRENT LIABILITIES	**1,700,683**	**1,421,015**	**1,662,249**	**2,049,138**	**2,649,592**
NET CURRENT ASSETS	**1,211,583**	**455,301**	**1,221,274**	**813,958**	**1,208,728**
NET FIXED ASSETS	**25,248,991**	**26,972,855**	**28,016,725**	**29,800,951**	**30,717,722**
OTHER LONG TERM ASSETS	**-**	**-**	**-**	**634,352**	**730,330**
TOTAL LONG TERM ASSETS	**25,248,991**	**26,972,855**	**28,016,725**	**30,435,303**	**31,448,052**
TOTAL ASSETS	**26,460,574**	**27,428,156**	**29,237,999**	**31,249,261**	**32,656,780**
LONG TERM LIABILITIES	**10,985,724**	**13,228,301**	**14,153,563**	**15,506,904**	**16,268,854**
EQUITY / RESERVES	**15,474,850**	**12,985,793**	**12,582,595**	**11,787,618**	**10,259,688**
TOTAL LIABILITIES AND EQUITY	**26,460,574**	**26,214,094**	**26,736,158**	**27,294,522**	**26,528,542**
RATE BASE (Method 1)	**16,680,319**	**16,178,400**	**16,077,570**	**17,910,361**	**18,685,220**
TOTAL ASSETS	26,460,574	27,428,156	29,237,999	31,249,261	32,656,780
Deferred Taxes	0	(3,224,981)	(2,747,731)	(2,287,783)	(2,287,783)
Deferred Income	(4,733,937)	(2,379,930)	(4,074,012)	(4,084,243)	(3,987,473)
Employee benefit obligation	(5,046,318)	(5,644,845)	(6,338,686)	(6,966,874)	(7,696,304)
RATE BASE (Method 2)	**16,680,319**	**14,964,338**	**13,575,729**	**13,955,622**	**12,556,982**
EQUITY / RESERVES	15,474,850	12,985,793	12,582,595	11,787,618	10,259,688
Long term debt	1,205,469	1,978,545	993,134	2,168,004	2,297,294

YEAR ending March …	2003	2004	2005	2006	2007	2008
				-0.7%		
CURRENT ASSETS	**2,912,266**	**1,876,316**	**2,883,523**	**2,863,096**	**3,224,323**	**3,403,706**
CURRENT LIABILITIES	**1,700,683**	**1,421,015**	**1,662,249**	**2,049,138**	**2,649,592**	**3,467,762**
NET CURRENT ASSETS	**1,211,583**	**455,301**	**1,221,274**	**813,958**	**574,731**	**(64,056)**
NET FIXED ASSETS	**25,248,991**	**25,758,793**	**25,514,884**	**25,846,212**	**25,483,298**	**27,525,752**
OTHER LONG TERM ASSETS	**-**	**-**	**-**	**634,352**	**730,330**	**730,330**
TOTAL LONG TERM ASSETS	**25,248,991**	**25,758,793**	**25,514,884**	**26,480,564**	**26,213,628**	**28,256,082**
TOTAL ASSETS	**26,460,574**	**26,214,094**	**26,736,158**	**27,294,522**	**26,788,359**	**28,192,026**
LONG TERM LIABILITIES	**10,985,724**	**13,228,301**	**14,153,563**	**15,506,904**	**16,268,854**	**18,990,309**
EQUITY / RESERVES	**15,474,850**	**12,985,793**	**12,582,595**	**11,787,618**	**10,519,505**	**9,201,717**
TOTAL LIABILITIES AND EQUITY	**26,460,574**	**26,214,094**	**26,736,158**	**27,294,522**	**26,788,359**	**28,192,026**
RATE BASE (Method 1)	**16,680,319**	**14,964,338**	**13,575,729**	**13,955,622**	**12,816,799**	**13,370,229**
TOTAL ASSETS	26,460,574	26,214,094	26,736,158	27,294,522	26,788,359	28,192,026
Deferred Taxes	0	(3,224,981)	(2,747,731)	(2,287,783)	(2,287,783)	(2,287,783)
Deferred Income	(4,733,937)	(2,379,930)	(4,074,012)	(4,084,243)	(3,987,473)	(4,067,079)
Employee benefit obligation	(5,046,318)	(5,644,845)	(6,338,686)	(6,966,874)	(7,696,304)	(8,466,935)
RATE BASE (Method 2)	**16,680,319**	**14,964,338**	**13,575,729**	**13,955,622**	**12,816,799**	**13,370,229**
EQUITY / RESERVES	15,474,850	12,985,793	12,582,595	11,787,618	10,519,505	9,201,717
Long term debt	1,205,469	1,978,545	993,134	2,168,004	2,297,294	4,168,512

Figure 11-2: Calculated required return on investment for historical and projected years

YEAR ENDING MARCH ..	2003	2004	2005	2006	2007	2008
PRE-TAX COST OF DEBT	**12.00%**	**12.00%**	**12.00%**	**10.00%**	**10.00%**	**10.00%**
RETURN ON EQUITY	**14.50%**	**14.50%**	**14.50%**	**14.50%**	**14.50%**	**14.50%**
TAX RATE	**33.3%**	**33.3%**	**33.3%**	**33.3%**	**33.3%**	**33.3%**
CAPITALIZATION	**10,822,419**	**16,680,319**	**14,964,338**	**13,575,729**	**13,955,622**	**12,816,799**
Shareholders equity (BOY)	8,673,293	15,474,850	12,985,793	12,582,595	11,787,618	10,519,505
Long term debt (BOY)	2,149,126	1,205,469	1,978,545	993,134	2,168,004	2,297,294
GEARING (debt / capital)	**19.9%**	**7.2%**	**13.2%**	**7.3%**	**15.5%**	**17.9%**
WACC (after tax)	**13.2%**	**14.0%**	**13.6%**	**13.9%**	**13.3%**	**13.1%**
COST OF EQUITY	**1,257,627**	**2,243,853**	**1,882,940**	**1,824,476**	**1,709,205**	**1,525,328**
COST OF DEBT	**171,930**	**96,438**	**158,284**	**66,209**	**144,534**	**153,153**
REQUIRED RETURN ON INVESTMENT	**1,429,558**	**2,340,291**	**2,041,224**	**1,890,685**	**1,853,738**	**1,678,481**

12 REVENUE REQUIREMENT

The revenue requirement and required increase for the test year is shown in figure 15.1.

Revenue requirement is determined as follows:

Revenue Requirement	**=**	**Total Expenses**
		+ Outsourcing costs
		+ Return on investment
		+ Taxes
		+ Other expenditures not included above
		– Non-tariff revenues

All of the inputs have been discussed above except for Miscellaneous Income. This is includes the following:

- Foreign exchange gain;
- Interest income;
- Project management fees;
- Gain on disposal of fixed assets;
- Amortization of capital grants;
- Amortization of miscellaneous income.

Expected movements in miscellaneous income are shown below.

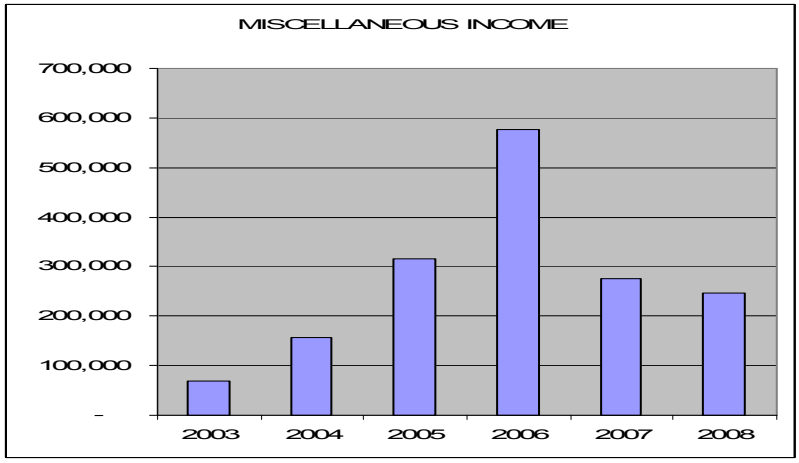


Figure 12-1: Revenue Requirement and Required Rate Increase

YEAR ENDING MARCH …	2004	2005	2006	2007	2008	2009	2010	2011
TOTAL BASE EXPENSES	8,138,583	9,000,205	10,329,870	11,859,886	13,433,050	14,536,917	15,502,436	16,285,291
PRIVATE PROJECTS COST	-	-	-	-	200,000	1,050,000	1,050,000	1,050,000
MISCELLANEOUS INCOME	156,948	316,349	576,691	671,140	598,786	337,618	362,516	382,215
RETURN ON INVESTMENT	2,340,291	2,041,224	1,890,685	1,853,738	1,640,808	1,523,666	1,678,738	1,765,171
TAXATION	3,224,981	(313,750)	(411,591)	0	0	0	0	0
REVENUE REQUIREMENT	13,546,907	10,411,330	11,232,273	13,042,484	14,675,072	16,772,965	17,868,659	18,718,247
BASE REVENUE	6,124,406	7,574,083	8,542,951	9,664,476	10,656,170	11,600,035	12,158,675	12,841,813
Revenue increase required						44.6%	47.0%	45.8%
Three year forward average						45.8%		

13 RATE INCREASE REQUIRED

13.1 GENERAL

The rate increase required is determined by comparing the revenue requirement with the expected revenues without a tariff increase. The formula used is as follows:

$$\text{Increase required} = \frac{\text{(Rev Requirement – Expected Rev without increase)} \times 100\%}{\text{Expected Rev. without increase)}}$$

13.2 REVENUE PROJECTION WITH NO TARIFF INCREASE

The revenue projection with no tariff increase, i.e. the base revenue expectation, is based on the projected financial statements generated by the tariff model and takes into account the expected cost and revenue impacts of all projects.

13.3 TARIFF INCREASE CALCULATION

Based on the above analysis, if NWC is to carry out its mandate to provide reliable potable water and sewerage services and expand these services in accordance with its planned capital investment program in a viable and sustainable manner, a 45.8% increase in rates is required.

13.4 REQUEST FOR TARIFF INCREASE

Based on the analysis, the tariff requirement for 2008/09, 2009/2010 and 2010/2011 requires an average increase of 45.8%. During the first financial year when this increase is put in effect, the tariff requirement to address the needs of the organization, including its capital works programme, will require an increase of some 44.6%.

NWC has reviewed the matter and is requesting that the OUR grant an across the board increase of 44% in the rates charged for the provision of water and sewerage services, while NWC will strive to address the shortfall through further efforts in improving the efficiency of its operations.

14 PRICE ADJUSTMENTS

14.1 GENERAL

The current price adjustment mechanism (PAM) is intended to protect NWC against factors outside its control while at the same time provide an incentive for the utility to improve its operating efficiency.

NWC accepts this concept but believes that the current mechanism does not now serve the intended purpose in an efficient and effective manner.

14.2 PRICE ADJUSTMENT MECHANISM (PAM)

14.2.1 Compensation for Foreign Inflation

We propose that, in addition to exchange rate risks associated with foreign costs, there is also a risk relating to foreign inflation. We propose that this also be included as part of the movement of the foreign exchange component.

14.2.2 Adjustment of Weights

We propose that the weights of the PAM be adjusted annually in order to ensure that they continue to reflect the NWC's reasonable cost structure.

Based on the current cost structure we propose that for January 2008, the new weights proposed as follows:

Index	Existing	Proposed
Exchange Rate	0.175	0.25
Electricity	0.220	0.24
CPI	0.605	0.51

14.3 X – FACTOR

The X-Factor was based on expected efficiency gains from the re-structuring exercise and expectations for NRW reduction. However, implicit in the OUR's analysis is an assumption that reduction in NRW results in an equivalent increase in billed sales. This is not the case.

Based on the above, it is recommended that the efficiency factor be re-visited and made more realistic. It is propose to remove the efficiency factor from the PAM.

14.4 K - FACTOR

Because a significant portion of the increase required relates to capital projects, and some of these projects will not result in any significant additional revenues to NWC, we propose that a K-Factor be used to represent the increase associated with some of these projects.

14.5 Z – FACTOR

NWC continues to be exposed to risks which are not covered by the price adjustment mechanism and which are outside its control. Consistent with the policy for other utilities, NWC proposed the introduction of a Z-Factor to address these risks.