



# Annual Report 2006

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(Front cover shows the interior of the newly refurbished Petit Bot pumping station)

## Key Achievements in 2006

- ◆ **The quality of tap water is the highest ever.**
- ◆ **Customer taps are now randomly tested for water quality.**
- ◆ **No demand restrictions (e.g. hose pipe bans) enforced during a year when other water companies struggled to provide enough water.**
- ◆ **New technology is introduced to improve water meter reading.**
- ◆ **In-house engineers improve pumping stations saving the business £'000s.**

## **Statement from the Minister**

### **Public Services Department**

I am proud and delighted, as Minister of the Public Services Department, to present Guernsey Water's fourth Annual Report. The year, 2006, has seen a number of great achievements for Guernsey Water. I congratulate the Director of Water Services and all his staff on another successful year. They have not only continued to deliver a reliable supply of high quality drinking water but also maintained supplied in what has been a difficult year for some water authorities.

Whilst many water companies in the south of England experienced water shortages, Guernsey Water was able to maintain supplies without the need for any restrictions such as hose pipe bans. This is thanks to the long term investment in water supply as well as the Island's wealth of quarries, fifteen of which are used by Guernsey Water for water storage. However with the uncertainties of future rainfall patterns brought about by global warming, every possible water storage area is valuable.

In addition to investing in water storage, Guernsey Water has also been working hard towards increasing its ability to collect more rainfall when it occurs. For example, the pumping station at Petit Bot has been upgraded by Guernsey Water engineers. This valley represents approximately 5% of the Island's water catchment area and thus provides a significant proportion of water resources. Similarly a new underground pumping station has been installed at Forest Road Service Reservoir, helping to increase the reliability and resilience of the water network.

I am pleased to report that the quality of tap water achieved even higher standards in 2006, thanks in part to the new membranes installed at St Saviours Water Treatment Works and the dedication of staff who work continuously to monitor and improve the treatment and distribution system. Compliance with the UK standard levels of 99.87% were achieved for Water Treatment Works and 99.11% for Service Reservoirs. As part of Guernsey Water's dedication to ensuring that drinking water is of the highest standard possible, customer taps are now also routinely tested for water quality, bringing our compliance testing up to the latest high standards of the UK. Good progress has also

been made with the project to install a new Water Treatment Works at Longue Hougue using similar membrane technology to that installed at St Saviours.

Work continues to improve the distribution system, with slip lining work being carried out on various pipes around the Island. Whilst undoubtedly Islanders find road works frustrating, they are a necessary evil in order to ensure that our water pipes are maintained at the highest possible standards. Guernsey Water makes every effort to co-ordinate its work through the Environment Department's road programme to minimise inconvenience to customers and road users.

In 2006, Guernsey Water invested in new technology to read water meters automatically. The new equipment will be gradually phased in across the Island, helping cut costs and increase efficiencies in our meter reading techniques as well as improving customer service. The number of customers on metered supply increased during the year by 791, taking the total number of metered customers to just over 50% (12,597) for the first time. Guernsey Water continues to work towards its objective of universal metering.

Guernsey Water has adopted a commercial approach to its finances, which has enabled the Board to clear its borrowing and build a capital reserve. Increased efficiencies through closer working relations with other business units of the Public Services Department will also result in savings.

I am fully optimistic about the future for Guernsey Water, with water charges now set at a realistic level in order to sustain long term investment in the future of our Island's water company and a dedicated workforce focused on providing a quality service.

William M Bell  
Minister for Public Services Department

# Report from the Director of Water Services

## Introduction

The annual report provides a summary of Guernsey Water's achievement over the year and also reflects on the areas for future improvement. It is intended to provide Guernsey Water customers and stakeholders with a transparent account of how the business is developing against its stated objectives.

Some changes have been included in this year's report to aid the reader in gaining a better understanding of the business as a whole and how water forms an essential part of every day life. Reference is still made to the Business Plan objectives, although some specific details have been left out.

## Vision

Guernsey Water's mission statement continues to be fundamental to its operation:-

"to deliver to its customers a reliable supply of high quality drinking water in sufficient quantity that satisfies normal daily demand at lowest cost consistent with meeting a high level of customer service and confidence.

Environmental catchment protection will be monitored, storage will be maintained at maximum possible levels, treatment techniques and delivery systems will be the most appropriate to meet international standards."

In order to support this vision, a number of key policies have been adopted:

## Key Policies

### 1. Water Resources

To combat the effects of global warming, water must be caught when available and operational plant equipment must be effective and reliable. Storage reservoirs must be kept as full as possible.

### 2. Water Catchment Protection

Ensure that by rigorous enforcement of catchment protection all controlled streams are capable of being used for the Public Water Supply.

### **3. Water Supply (Treatment)**

Water Treatment Works must be capable of producing consistently good quality drinking water in sufficient quantity that meets demand with forecast growth of plus 1% per annum in consumption.

### **4. Service Reservoirs**

There is a total of 60 hours of storage of treated water at Forest Road and Frie Plaidy. Guernsey Water must ensure that this water is kept “sweet” by mixing and where necessary using booster chlorination. In addition the reservoirs must be cleaned on a regular basis, every three years.

### **5. Water Distribution**

To ensure that the 408km of potable water main is in a suitable condition to transfer water to customers whilst retaining it at the highest standards possible that Guernsey Water aims to achieve. Hydraulic modelling and operational performance statistics will help Guernsey Water to perform a risk assessment so as to ensure that the right pipes are being replaced at the right time.

Leakage will be reduced and maintained at an economically viable level by proactive monitoring.

### **6. Customers**

Guernsey Water believes that it is crucial to ensure that customers consider they are in receipt of a good “value for money” water service.

### **7. Management and General**

People are our most important asset. Staff at all levels are encouraged to participate in business improvement initiatives and appreciated for their contributions.

Property which is surplus to operational requirements should be sold or rented on a commercial basis.

The Public Services Department has endorsed the principle of universal metering for the Island's water supplies.

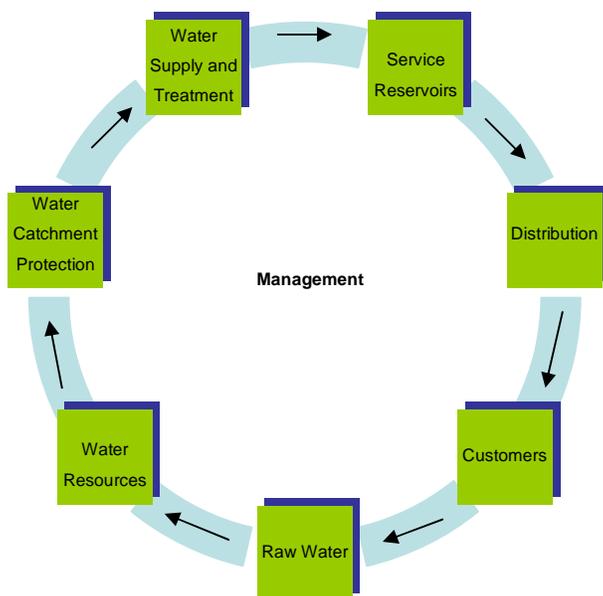
Where the States of Guernsey corporate IT systems exist then these will be used. All information should, ideally, be held once in the right place.

Guernsey Water will seek to minimise borrowing for infrastructure improvements.

Customers are encouraged to value water and trust Guernsey Water to supply them with a high quality product.

As custodians of the Island's freshwater aquatic environment, Guernsey Water has a responsibility to ensure that it conserves and enhances the natural environment within the Water Catchment Area.

### The Water Cycle



The water cycle depicts the various parts of the business which combine to bring you a reliable supply of high quality drinking water.

## Key



= Objective achieved or working to schedule.



= Objective has not meet deadline but is close to completion.

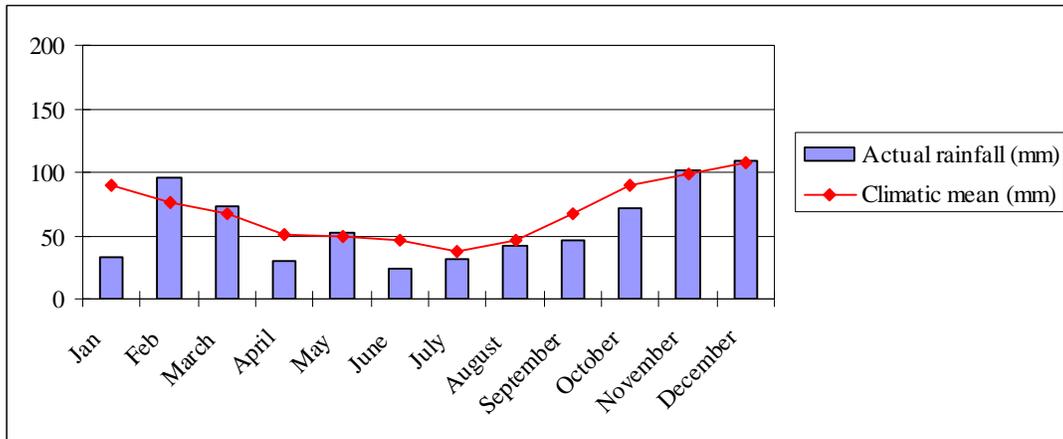


= Objective failed.

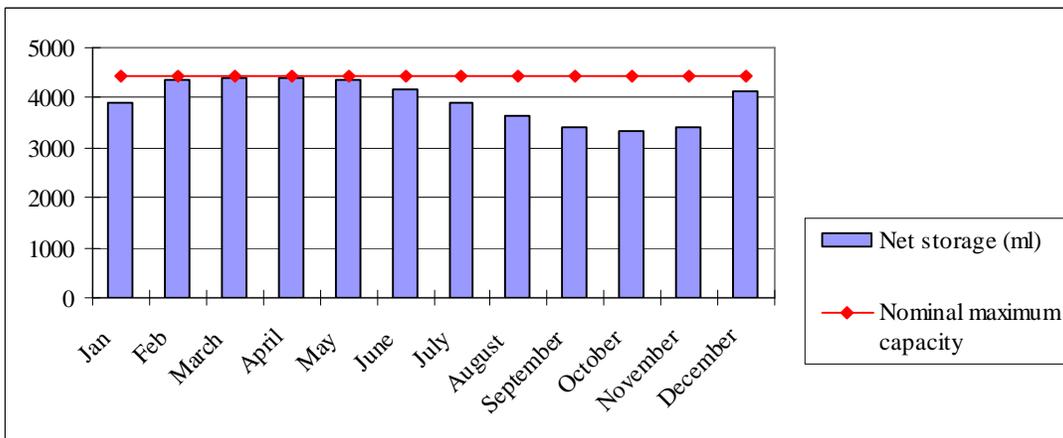
## Water Resources

Despite a good warm summer, there were no water shortages or restrictions and customers heeded advice to use water sensibly.... Thank you.

A total of 762 millimetres of rainfall was recorded in 2006 which was 7.5% below the climatic mean.



Reserves of water fell to their lowest level in the year during October standing at 3,320 megalitres, which represents 75% of the total capacity that Guernsey Water can store. By the end of the year however, staff had managed to fill raw water reservoirs to 94%.



Guernsey Water, on behalf of the States of Guernsey, owns a total of 15 quarries and water storage reservoirs, including the recently purchased St Andrews Reservoir Quarry, which together hold a capacity of 4425 megalitres of water (which represents about 10 months of normal usage). Although there are no prescribed standards for the amount of storage that a water company should have, the simple principle is that the more one has, the better you are protected from the risk of severe shortage. With virtually no underground sources, Guernsey is almost totally reliant upon the water stored in the Island's reservoirs.

The strategic importance of water to the community was recognised by the States of Deliberation who in September 2006 agreed that once Ronez has completed its stone excavation works at Les Vardes Quarry, then the resultant enlarged quarry should in future be used as a fresh water reservoir. This additional water storage resource will provide protection for the Island's long term water resource needs.

However, the impacts of climate change on weather patterns will have a direct effect on Guernsey Water's ability to collect and retain enough water to meet the Island's increasing demand. The States is working towards investigating the impact of climate change as highlighted in its list of priorities in the Government Business Plan.

Objectives:  4 water resource objectives were achieved in 2006.

 1 water resource objective has not meet the deadline but is close to completion.

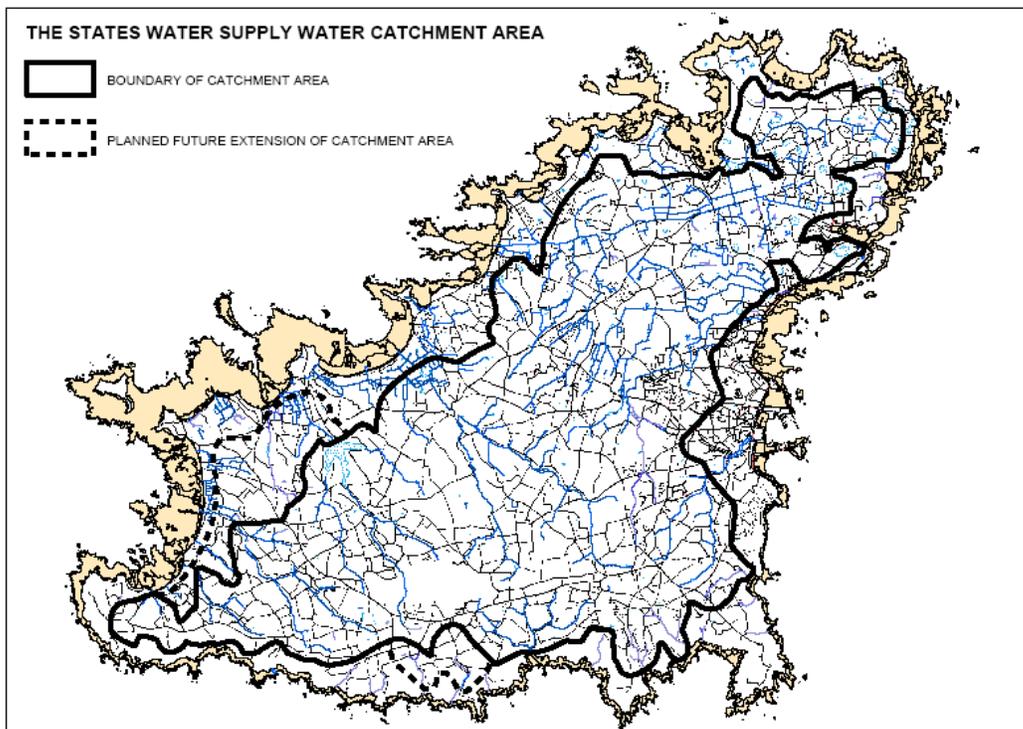
## **Catchment Protection**

Guernsey Water's Catchment Protection Team continued to work closely with the community to ensure that maximum use was made of the available rainfall. Catchment areas such as Les Nicolles and Vale Pond have been cleaned up and are now fit to be used for drinking water collection.

Water Catchment staff monitored the levels and types of aquatic insects in 18 streams in order to check the quality of raw water within the Water Catchment Area. Results showed that raw water quality is generally good within the Island with no streams showing any significant deterioration in water quality from previous years and four

streams showing significant improvements. This could in part be due to a reduction in potential pollution sources in the catchment areas of these streams.

Work has started upon the extension of the water catchment area which will include the areas shown on the map below.



Objectives: 😊 8 catchment protection objectives were achieved in 2006.

😞 4 catchment protection objectives did not meet the deadline but are close to completion.

### **Water Treatment Works and Service Reservoirs**

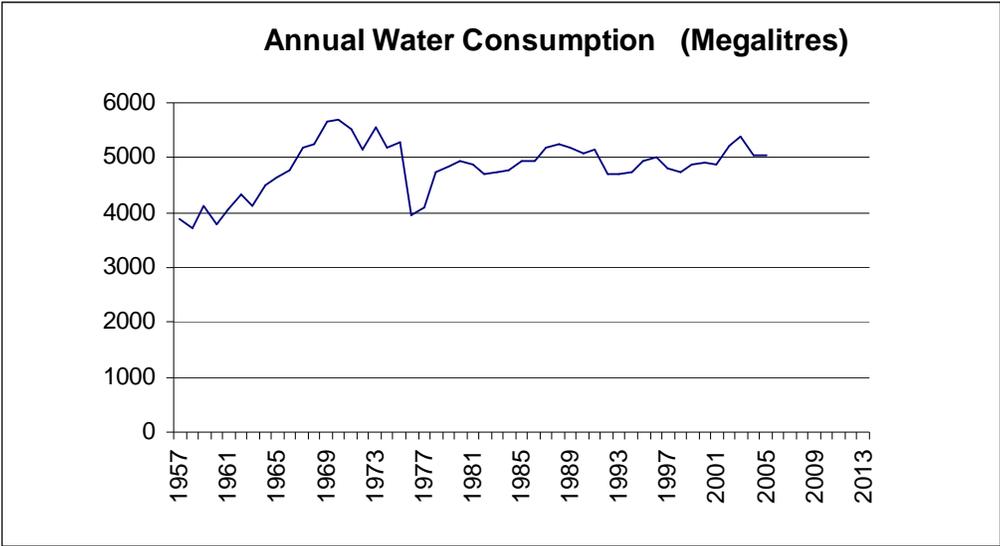
Water Treatment Works - There are three Water Treatment Works operated by Guernsey Water, all of which have been used in 2006, helping to produce 4,805 megalitres of water in 2006 to meet public demand. St Saviours and Juas Water Treatment Works have operated all year round with Kings Mills brought into operation briefly during September in order to supplement supply during cleaning operations at the other major works.

The membrane plant at St Saviours Water Treatment Works has settled down following the commissioning challenges and operational staff are pleased with the plant's performance. This confidence has enabled Guernsey Water to proceed with the plans for the new membrane plant at Longue Hougue.

Services Reservoirs - Major improvements have been made to the Forest Road Service Reservoir site where stirrers and chlorine dosing equipment have been installed. The reservoirs have also been drained and cleaned thoroughly.

A complete new underground pumping station and associated pipework has been installed that lifts water out of the ground level reservoirs up into the water tower. Guernsey Water's own engineers designed and built this facility with the aid of a small number of specialist contractors. Working in this way saved expensive consultants and third party engineering costs.

In Guernsey the average customer currently uses 130 litres of water per day and this is forecast to increase to around 150 litres per head per day in 10 years time. The usage of water has changed over the last twenty years as the nature of the Island's economy has altered. The attached chart shows the volumes of water that have been produced from the treatments works here in Guernsey. Operational staff work towards a target of achieving 95% full water storage by the end of March each year, which ensures that Guernsey Water is in a good position to provide enough water to meet the Island's demand.



Water conservation measures continue to be an important part of looking after one of the Island's most important assets – water. Water is essential for life and yet we take clean, safe water for granted. Everyone can play their part in minimising wastage of this precious resource by taking measures to minimise their water usage. Steps such as changing to metered supply may save your water usage levels and can save you money. Even simple measures such as taking a shower instead of a bath or turning the tap off whilst you clean your teeth can help. Guernsey Water continues to invest in promoting water conservation measures.

Objectives:  6 water treatment objectives were achieved in 2006.

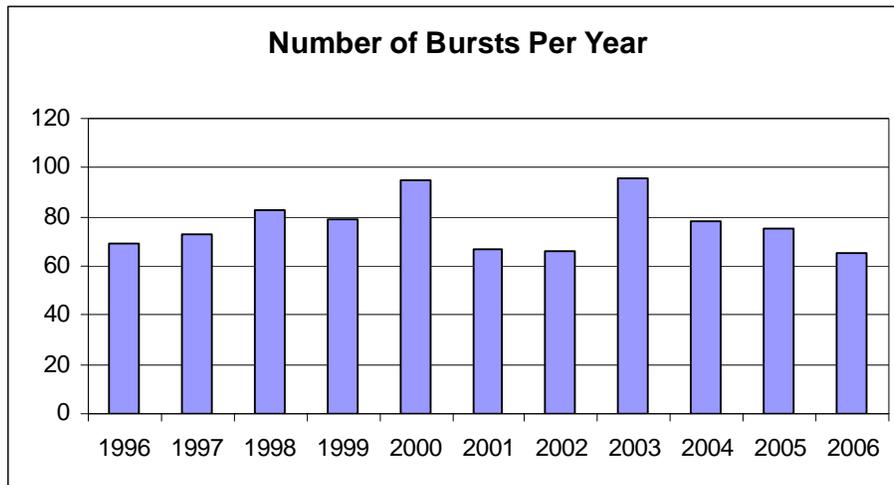
 3 water treatment objectives did not meet the deadline but will shortly be achieved.

## **Distribution**

Guernsey Water is committed to maintaining and where appropriate upgrading its pipes. In 2006, a total of 4.1 km of watermain was replaced or slip lined (sliding a new pipe inside an original pipe). The large amounts of capital invested in improving the distribution system ensure that not only is water maintained at the very high quality produced by the Water Treatment Works but also that waste through leakage is minimised.

The rate of leakage within the treated water distribution system is monitored closely, and once again Guernsey Water was proud to be able to report that it reached its target of reducing unaccounted for water to below 700 megalitres during the year.

The number of burst water mains has reduced as more failing pipes have been replaced with polyethylene material. This welded pipe material will further reduce maintenance costs in the long term.



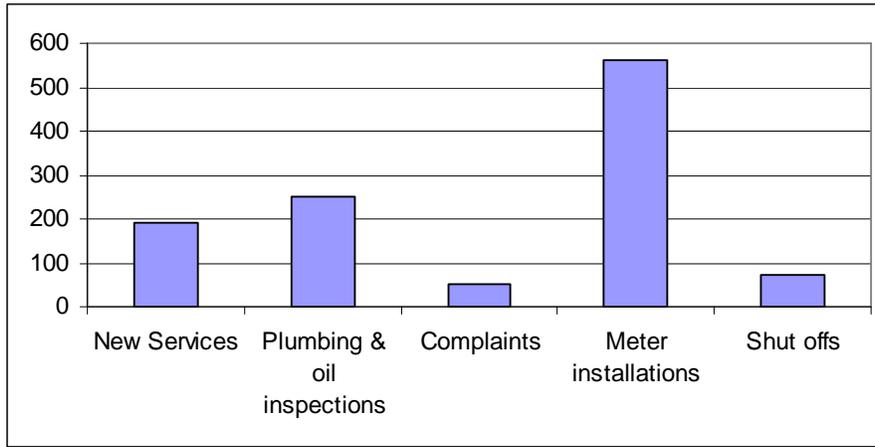
Objectives: 😊 12 distribution objectives were achieved in 2006.

😞 1 distribution objective failed.

## Water Byelaws

With the high volumes of building development taking place on the Island, stringent monitoring is necessary to ensure that the plumbing byelaw standards are rigorously maintained. The team of eight are on hand to help, advise and where necessary regulate plumbers. The important work of this team ensures that illegal connections or poorly installed apparatus does not threaten the public water supply. (All property is categorised according to its perceived risk and an appropriate monitoring regime is maintained). In 2006, a total of 191 new services were installed, each requiring a minimum of three site visits before services were passed. Similarly 252 plumbing and oil inspections were carried out thereby helping to ensure that the Island complies with the Water Byelaws.

In addition to this work, the Plumbing Inspectorate also contribute to a major part of Guernsey Water's customer service, carrying out 563 meter installations upon customer request, dealing with 51 customer complaints all of which were satisfactorily resolved within three working days. The Inspectors investigated properties where high consumption was reported which may be due to leaks. They also assist in the debt recovery process by turning off supplies where customers refuse to pay water charges.



**Plumbing Inspections**

Objectives: 😞 The water byelaw objective was not achieved but progress will be made at the start of 2007 to address it.

### Customer Service

Our customers must see Guernsey Water as delivering a good 'value for money' service.

The market research undertaken a few years ago is due for re-evaluation.

**I would just like to thank the lads/ladettes from Guernsey Water for ensuring I had water for my shower this morning.**

**Last night at 12:30 there was a major pipe burst in the Castel somewhere, this resulted in me losing the water supply in my house. We phoned up the water boards hotline and reported it, someone else had done this already and the team were on their way already.**

**They had obviously been working very early this morning, and many people woke up oblivious to the fact they may not have had water this morning.**

Customer feedback posted on "Why Guernsey" website, November 2006

Meter reading technology - Faced with a growing number of water meters we have to devise a more efficient method of reading water meters so as to avoid the need to take on additional staff. Following extensive trials of new meter reading technology we have identified an appropriate solution. This involves fixing a radio transmitter to the head of each water meter and then using a handheld computer/ radio reader held close to the surface of the ground to take a reading. This same handheld unit is capable of being used in a manual mode for normal meter reading. Guernsey Water staff, working closely with system providers, Jendev and Itron, have developed the fully integrated system that provides a seamless transfer of data onto the Navision Billing system. This new technology will ensure more accurate and efficient billing together with an improved level of customer service. The remote reading capability is being rolled out in a prioritized manner, where the greatest business benefit can be derived.

The automatic meter reading project went live on 1 January 2007, enabling a more efficient system of operation.

Guernsey Water has a total of 12,500 customers on metered supply compared to 11,500 customers who are not metered. This compares favourably with UK water companies who range from the best – Anglian 56% to Northumbrian 13%. Most have between 20 – 30% metered. The Environment Agency encourages the use of meters as they can save between 5 and 15% on total water use.

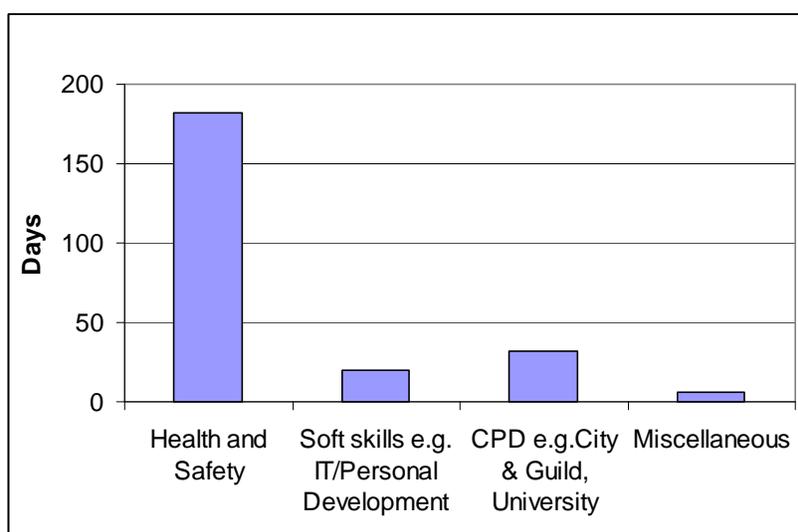
- Objectives:
-  2 customer service objectives were achieved in 2006.
  -  3 customer service objectives did not meet the deadline but will shortly be achieved.
  -  3 customer service objectives failed.

## Human Resources

People are our most important asset. Policies are utilised which ensure that the right people are recruited with appropriate skills and qualifications. Guernsey Water will do everything in its power to retain valued workers. Guernsey Water also seeks to ensure that career and personal development are a priority with appraisals being used as a key element of the process. Everyone in Guernsey Water is encouraged to participate.

Guernsey Water employees 87 staff, 75% of whom provide front-line services to customers. They include a wide selection of experienced water industry staff such as engineers, scientists, operators and craftsmen. Whilst concern remains as to the loss of experienced water industry staff, we have been fortunate in 2006 to be able to attract some new young people into the water business.

The graph below shows that Guernsey Water invested in 240 days of training in 2006, the majority being Health and Safety training so as to ensure that we are compliant with Health and Safety regulations. Other courses included continued professional development such as City and Guilds utility operations, soft skills such as customer care, personal development and IT.



Health and Safety forms a vital corner stone in Guernsey Water’s work and during 2006 a revised manual was produced and circulated to staff. Guernsey Water also undertook to produce a hygiene code of practice with in house training to bring staff up to date with latest developments.

As a States of Guernsey business unit, employees are expected to comply with the civil service code of conduct and in all activities to act with integrity, honesty, objectivity and impartiality.

- Objectives: 😊 18 human resource objectives were achieved in 2006.
- 😐 2 human resource objectives did not meet the deadline but will shortly be achieved.
- 😞 2 human resource objectives failed.

## Other Management Areas

e.g. IT, property, legislation, monitoring and reporting

Our asset management team have developed a system, which is the envy of many a



utility business. Working with Digimap, Guernsey Water staff have built an exceptionally good management tool with which to operate the whole of the mains water distribution network. It is a model which Guernsey has now recognised as being outstanding and Guernsey Water was delighted to receive the “Best use of GIS in 2006” award from Digimap.

Guernsey Water staff receiving the award from Digimap.

Working together ‘Networking’ – Guernsey Water has continued to work with both Jersey and the Isle of Man Water Authority to share best practice and to benchmark one another. Similar island jurisdictions provide a more representative comparison than that of the mainland UK water companies. Each island water business manager uses their network of UK contacts to further technical understanding and development so as to ensure current UK ‘best practice’ is not ignored. Visits were made to a number of UK water installations during the year to see at first hand various technological advancements. Similarly in a reciprocal manner we hosted visitors to our membrane plant at St Saviours Water Treatment Works.

The business plan was updated in 2006.

- Objectives:
- 😊 11 management objectives were achieved in 2006.
  - 😐 1 management objective did not meet the deadline but will shortly be achieved.
  - 😞 2 management objectives failed.

## **Public Relations**

Guernsey Water aims to ensure that customers value water and trust Guernsey Water to supply them with a quality product. To do this we must keep customers informed and be receptive to their feedback.

We continue to produce our customer news letter “On Tap” on a regular basis in order to keep customers informed of what we are doing. In addition to this and the regular media releases, a number of initiatives were also developed in 2006.

In January, Guernsey Water published its booklet entitled “Water the important facts” to highlight what action people could take to reduce their usage of water and to provide some basic facts about the production of clean drinking water. This was delivered to every household in Guernsey and has undoubtedly been a success in raising the profile of the importance of conserving water.

In addition to this publication Guernsey Water also supplied schools with an information pack, designed for 8 – 13 year olds, which aims to help them learn about the importance of water and how this precious resource is managed. Educating future generations about the importance of good water management is crucial for long term sustainability.

In 2007, Guernsey Water intends to take its educational role a step further with the introduction of a free water bottle for every school child. With better than ever water quality results being achieved year on year, Guernsey Water has much to be proud of. But surprisingly bottled water consumption continues to grow in demand. For instance, did you know that tap water is subject to far more stringent quality controls and can be 500 times better value for money than bottled water? Also health professionals tell us that we should each drink at least two litres of water every day and that in doing so we will maintain our bodies and minds in a healthier state.

## **Environment**

Guernsey Water has a responsibility, as custodians of the Island’s freshwater aquatic environment, to ensure that it conserves and enhances the natural environment within the Water Catchment Area.

A number of initiatives have been undertaken in 2006 to develop this policy.

The reed beds which were installed at St Saviours Reservoir in November 2005 are settling in well, and despite a slightly straggly appearance, significant growth is taking place in the root zone under the water. In recognition of this environmentally friendly solution devised to help control water quality, Guernsey Water was presented with a Green Apple award by Professor David Bellamy at the Tower of London, and the Green Organisation planted a broad leaved tree in acknowledgement.



Above is a Coot feeding young at St Saviours Reservoir © V Froome



Right, a young Purple Heron makes use of the reedbeds during its migration in July © RJ Murphy

A management plan for St Saviours Reservoir Millennium walk was devised by La Societe Guernesiaise for Guernsey Water. This included a tree planting scheme to replace the coniferous woodland which is nearing the end of its natural life. The recommendations of the report will see the gradual replacement of the non native Monterey Pines with the more wildlife friendly Scots Pine as they die out naturally.

An energy efficiency review was carried out of all Guernsey Water operational sites which has helped Guernsey Water optimise performance and reduce operating costs.

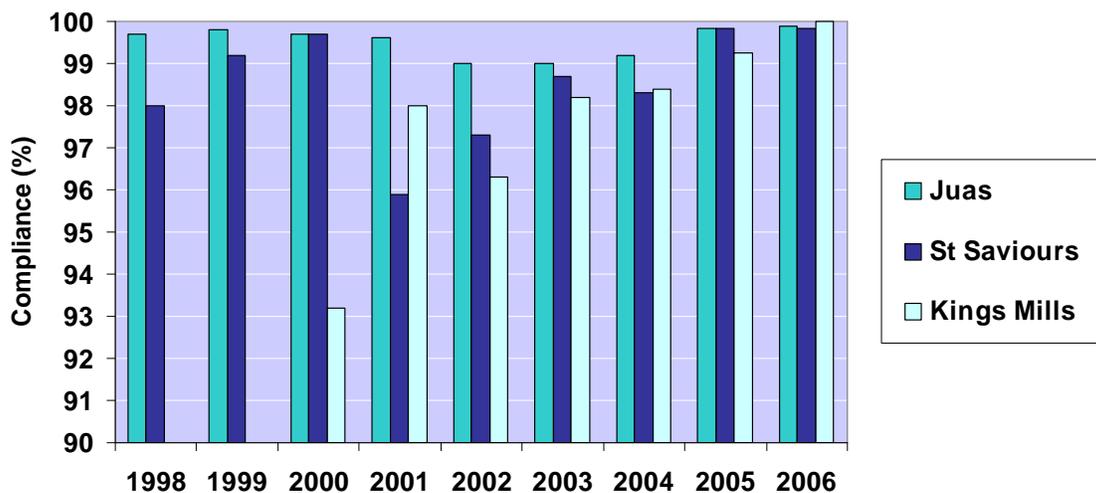
## Water Quality Summary

Record breaking water quality results were achieved in 2006. This combined with the fact that we are taking more samples at customer's taps than ever before is one of Guernsey Water's biggest and most important achievements in 2006.

A total of 6,460 water quality analyses were undertaken during 2006, of which 6,432 were compliant. This gives an overall compliance level of 99.57% which includes supply zones.

The following graph illustrates the individual Water Treatment Works (WTW's) compliance levels for the years 1998 to 2006.

### Individual Water Treatment Works Compliance



The following tables (Tables A to G) show the results of the check monitoring programme from the Island's Water Treatment Works and Service Reservoirs together with the percentage compliance for the individual parameters monitored.

**Table A: Supply point: St Saviours Water Treatment Works**

Substances & Parameters	Maximum level detected	Specific concentration or value (maximum) or state	% Compliance
<i>E.Coli</i>	0	0 per 100ml	100
Coliform Bacteria	0	0 per 100ml	100
Colony Counts	No abnormal change	No abnormal change	100
Nitrite	<0.03	0.1 mg NO <sub>2</sub> /l	100
Residual Disinfectant	0.7	No value mg Cl <sub>2</sub> /l	100
Turbidity <sup>(1)</sup>	18.1	1 NTU	98.8
<i>Clostridium perfringens</i>	0	0 per 100ml	100
Conductivity	579	2500 µs/cm	100

<sup>(1)</sup> The high turbidity was an isolated plant failure. The plant was taken off line and re-sampled prior to restart.

**Table B: Supply point: Juas Water Treatment Works**

Substances & Parameters	Maximum level detected	Specific concentration or value (maximum) or state	% Compliance
<i>E.Coli</i>	0	0 per 100ml	100
Coliform Bacteria	2	0 per 100ml	99.6
Colony counts	No abnormal change	No abnormal change	100
Nitrite	0.09	0.1 mg NO <sub>2</sub> /l	100
Residual Disinfectant	0.4	No value mg Cl <sub>2</sub> /l	100
Turbidity	0.75	1 NTU	100
<i>Clostridium perfringens</i>	1	0 per 100ml	97.4
Conductivity	709	2500 µs/cm	100

**Table C: Supply point: Kings Mills Water Treatment Works**

Substances & Parameters	Maximum level detected	Specific concentration or value (maximum) or state	% Compliance
<i>E.Coli</i>	0	0 per 100ml	100
Coliform Bacteria	0	0 per 100ml	100
Colony counts	No abnormal change	No abnormal change	100
Nitrite <sup>(2)</sup>	-	0.1 mg NO <sub>2</sub> /l	-
Residual Disinfectant	0.4	No value mg Cl <sub>2</sub> /l	100
Turbidity	0.44	1 NTU	100
<i>Clostridium perfringens</i>	0	0 per 100ml	100
Conductivity	553	2500 µs/cm	100

<sup>(2)</sup> No nitrite samples were taken from Kings Mills WTW as it only ran for a period of five days in 2006.

**Table D: Supply point: Forest Road Service Reservoir (East Compartment)**

Substances & Parameters	Maximum level detected	Specific concentration or value (maximum) or state	% Compliance
<i>E.Coli</i>	0	0 per 100ml	100
Coliform Bacteria	1	0 per 100ml	98.0
Colony counts	No abnormal change	No abnormal change	100
Residual Disinfectant	0.4	No value mg Cl <sub>2</sub> /l	100

**Table E: Supply point: Forest Road Service Reservoir (West Compartment)**

Substances & Parameters	Maximum level detected	Specific concentration or value (maximum) or state	% Compliance
<i>E.Coli</i>	0	0 per 100ml	100
Coliform Bacteria	1	0 per 100ml	97.9
Colony counts	No abnormal change	No abnormal change	100
Residual Disinfectant	0.1	No value mg Cl <sub>2</sub> /l	100

**Table F: Supply point: Forest Road Water Tower**

Substances & Parameters	Maximum level detected	Specific concentration or value (maximum) or state	% Compliance
<i>E.Coli</i> <sup>(3)</sup>	1	0 per 100ml	98.0
Coliform Bacteria	2	0 per 100ml	96.1
Colony counts	No abnormal change	No abnormal change	100
Residual Disinfectant	0.15	No value mg Cl <sub>2</sub> /l	100

<sup>(3)</sup>The *E.Coli* failure resulted in immediate isolation and drain down of the water tower. The failure was investigated and remedial works carried out. Re-samples were taken before the water tower was put back into use.

**Table G: Supply point: Frie Plaidy Service Reservoir**

Substances & Parameters	Maximum level detected	Specific concentration or value (maximum) or state	% Compliance
<i>E.Coli</i>	0	0 per 100ml	100
Coliform Bacteria	2	0 per 100ml	96.2
Colony counts	No abnormal change	No abnormal change	100
Residual Disinfectant	0.25	No value mg Cl <sub>2</sub> /l	100

## Water Quality in the Distribution System

In 2006 some 1,965 tests were carried out on water samples which were taken from all parts of the distribution system. The samples were analysed for physical, bacteriological and chemical parameters. The following tables (Table H & I) show the results of the check and audit monitoring programmes and the percentage compliance.

**Table H: Supply Zone**

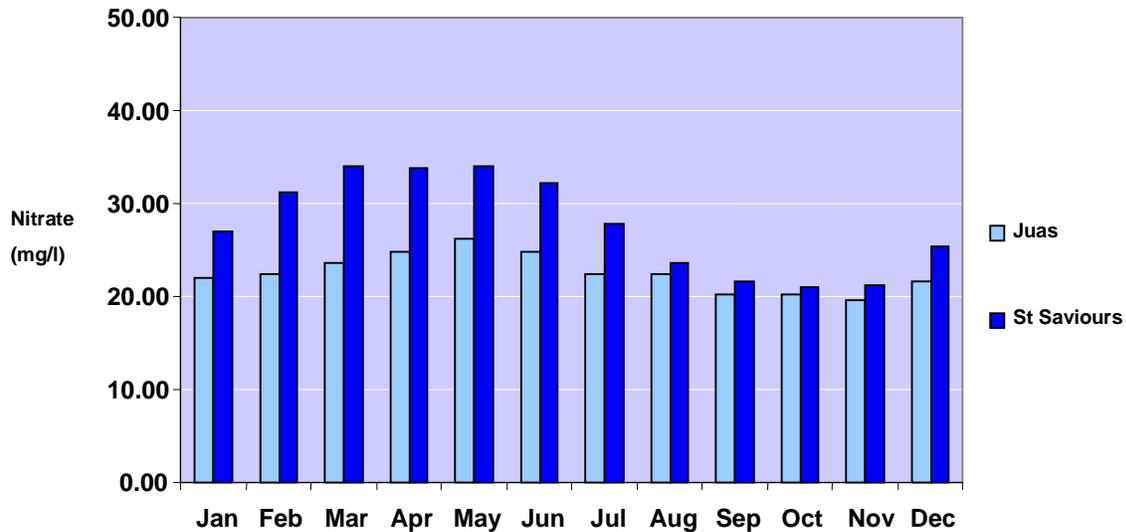
Substances & Parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	Number of Samples	% Compliance
<i>E.coli</i>	0 per 100ml	0	0	0	167	100
<i>Clostridium perfringens</i>	0 per 100ml	0	0	0	64	100
Coliform bacteria	0 per 100ml	0	1	2	167	96.4
Colony counts	No abnormal change	No abnormal change			89	100
Residual disinfectant	No value mg Cl <sub>2</sub> /l	<0.05	0.08	0.20	87	100
Turbidity	4 NTU	0.03	0.10	0.38	87	100
Conductivity	2500 µs/cm	539	602	715	87	100
Colour	20 mg/l Pt/Co	<5	<5	<5	87	100
Hydrogen ion	10.0 pH value 6.5 (min)	6.96	7.39	7.88	87	100
Ammonium	0.5 mg NH <sub>4</sub> /l	<0.01	0.01	0.04	87	100
Nitrate	50 mg NO <sub>3</sub> /l	19	25.7	34.7	38	100
Nitrite	0.5 mg NO <sub>2</sub> /l	<0.03	0.03	0.04	38	100
Aluminium	200 µg Al/l	13	62	147	74	100
Iron	200 µg Fe/l	<10	15	106	86	100
Manganese	50 µg Mn/l	<10	10	11	86	100

**Table I: Audit monitoring: Supply Zone**

Substances & Parameters	Specific concentration or value (maximum) or state	Min	Mean	Max	Number of Samples	% Compliance
Antimony	5 µg SB/l	0.33	0.99	2.01	36	100
Arsenic	10 µg As/l	<0.4	1.04	2.2	36	100
Cadmium	5 µg Cd/l	<0.07	0.18	0.5	36	100
Chromium	50 µg Cr/l	0.28	0.51	0.74	36	100
Copper	2000 µg Cu/l	<10	51	255	35	100
Benzo(a)pyrene	0.01 µg/l	<0.001	<0.001	0.001	36	100
Benzene	1 µg/l	<0.12	<0.12	<0.12	4	100
Boron	1 mgB/l	0.105	0.121	0.137	4	100
Bromate	10 µgBrO <sub>3</sub> /l	<1	<1	<1	4	100
Enterococci	0 per 100ml	0	0	0	26	100
Cyanide	50 µgCN/l	<0.05	0.08	0.1	4	100
1,2 Dichloroethane	3 µg/l	<0.10	<0.10	<0.10	4	100
Lead	25 µg Pb/l	<5	6	10	35	100
Mercury	1 µg/l	0.003	0.004	0.004	4	100
Nickel	20 µg Ni/l	1.4	2.27	5.3	36	100
Polycyclic aromatic hydrocarbons	0.1µg/l	0	0	0	31	100
Selenium	10 µg Se/l	1	2.29	4	36	100
Tetrachloromethane	3 µg/l	<0.12	0.31	<0.50	4	100
Tritium	100 Bq/l	<10	<10	10	4	100
Gross alpha	0.1 Bq/l	<0.03	<0.03	<0.03	4	100
Gross beta	1 Bq/l	0.11	0.15	0.18	4	100
Trihalomethanes	100 µg/l	32	87.78	148	36	72.2

## Nitrates

Nitrate levels in water remain unchanged throughout the treatment processes. Careful monitoring of stream and stored water is undertaken to ensure compliance of treated water values with regard to the 50 mg/l maximum allowable concentration. The results below show complete compliance with regard to this particular parameter.



## Water Quality Queries

During 2006, Guernsey Water received 108 queries from customers relating to the quality of their water supply. The following tables show the break-down of these queries. Samples taken as a result of customer queries undergo the necessary physical, bacteriological and chemical analyses and a detailed report is sent to the customer. In the majority of cases action is successfully implemented within a minimum time period. In the 8 cases where illness has been reported none of the sample results indicated that the water supply had in any way been responsible.

Type of query	Number
Iron discolouration	58
Other discolouration	3
Air	10
Sediment / bits	6
Taste / Odour	21
Illness	8
Pets & other animals	1
Water Hardness	1
<b>Total</b>	<b>108</b>

Guernsey Water has for several years, engaged the services of the UK's leading toxicologist, to advise upon compliance monitoring and overall water quality standards and improvements. The toxicologist's visit during the summer resulted in a number of improvements to water quality operations as well as some alterations to the methods employed to gather compliance data. This seal of approval from a leading UK specialist has reinforced Guernsey Water's confidence that the Islands water quality is maintained to the very highest standards possible. Likewise in other areas of the business, specialist UK consultants are used when circumstances are deemed necessary, in order to ensure that the very highest standards of protection of the Island's water supply are employed.

The States Analyst performs water quality testing that can be done locally. This provides an independent analytical assessment and gives a link to the Health Department.

## **Risk**

Guernsey Water has a risk register that helps management target resources in the most appropriate areas of the business.

## **Finance**

### **Funding**

Guernsey Water is funded entirely from water charges which are kept separate from the States of Guernsey general revenue. It is our intention is to keep charges for water to a minimum level consistent with achieving appropriate international water standards. The Capital Development Programme (CDP) identifies the need for £33 million in investment for the 10 year period. To raise these funds, the States of Deliberation agreed to an increase in water charges of 10% plus RPI each year for 2004, 2005 and 2006. From 2007 onwards, Guernsey Water will increase water charge by up to RPI only if necessary. In addition, the Treasury and Resources Department agreed borrowing when necessary from States funds at the appropriate Treasury interest rates.

### **Capital Programme**

Managing on a tight budget is nothing new for the water business here in Guernsey. We have developed a system of capital project evaluation and prioritisation that ensures that limited resources are targeted to achieve the greatest business benefit. Every year capital projects are reviewed by the Senior Management Team using a formal system to evaluate each project. Managers challenge the need for each project, question the alternative options and consider the consequences of not proceeding with the project. From this thorough analysis, each project is scored according to a set of criteria. The overall score is then used to rank the projects in priority order. From this review the Chief Accounting Officer can ensure that any necessary budgetary amendments are made.

### **Corporate Governance**

Guernsey Water forms part of the Public Services Department and is required to act as commercially as possible within the confines of the Departments mandate. A recent review by the Public Accounts Committee has confirmed that Guernsey Water is

providing a good value for money service to its customers although it is unlikely that the full findings of the review will be made public until later in 2007.

Guernsey Water is committed to aligning its objectives with the corporate policies of the States of Guernsey and will ensure that the States priorities set out in the Government Business Plan are reflected within its own objectives.

Objectives:  13 finance objectives were achieved in 2006.

## **Capital Projects Review**

Several important capital schemes have been undertaken using our own experts. The pumping station at Petit Bot was refurbished with completely new pumps, pipework and electrics (as per front cover photo). A completely new pumping station was built, below ground, at the Forest Road reservoir site, again using our own engineers. Working in this way we are able to utilise our available skills, reduce cost and risk to the business - everyone wins. Consultants and contractors are only engaged to do the work that we could not perform in-house.

By the same token we have decided to outsource most of our routine building and grounds maintenance works to our sister business unit with the Public Services Department, States Works. La Societe Guernesiaise still manages, on our behalf, the land around St Saviours Reservoir.

## **The Future**

The centralised store for our materials, equipment and staff at St Andrew's has helped us to manage resources and deploy manpower more efficiently. There is yet more scope for efficiency if more staff can be accommodated there.

The Public Services Department Board has agreed how it would like to develop the site and is now in consultation with interested parties including the Environment Department's planning section.

The effects of the Guernsey Strategic Population and Migration Policy will not unduly affect Guernsey Water's resource planning, as it will seek to maintain Guernsey's population at broadly 60,000 people over the next 60 years.

## **Acknowledgements**

As always I am indebted to the hard work and dedication of the Guernsey Water staff, many of whom have to put up with working in difficult situations during anti social hours in order to ensure that a continuous supply of good quality water is delivered to our customers.

Andrew Redhead  
Director of Water Services

## Summary of financial statements

The following pages provide an overview of the capital expenditure and income and expenditure budget of Guernsey Water for 2006 and the corresponding accounts outturn for 2005. For a more detailed breakdown of the finances of Guernsey Water, please refer to the Budget of the States for 2007 published in the December 2006 Billet d'Etat.

As means of further explanation, the income and expenditure budget shows:

- An increased income from water supplies due to the 10% plus RPI rise in water charges brought into effect on 1<sup>st</sup> January 2006.

## Income and Expenditure Account

		Probable Outturn 2006		Accounts 2005	
		£	£	£	£
<b>INCOME</b>					
	Water Supplies -				
	Unmeasured	3,672,100		3,449,922	
	Measured	4,466,500		3,854,055	
			8,138,600		7,303,977
	Surplus on Other Trading Activities before				
	Management Expenses and Depreciation		163,900		280,460
<b>Operating Income</b>			8,302,500		7,584,437
<b>EXPENDITURE</b>					
	Operating Expenses -				
	Water Production	1,543,100		1,568,216	
	Water Distribution	591,400		644,685	
	Property Maintenance	181,000		118,076	
			2,315,500		2,330,977
	Management Expenses -				
	General and Financial Management	413,000		402,735	
	Income Collection	528,000		503,822	
	Technical Services	203,600		196,877	
	Support Services	682,400		685,545	
			1,827,000		1,788,979
<b>Total Expenditure</b>			4,142,500		4,119,956
<b>OPERATING SURPLUS BEFORE</b>					
<b>DEPRECIATION</b>			4,160,000		3,464,481
	Depreciation		(1,120,000)		(1,079,836)
<b>OPERATING SURPLUS FOR THE YEAR</b>			3,040,000		2,384,645
	Net Interest Receivable (Payable)		44,300		(41,433)
	Surplus on Sale of Fixed Assets		5,000		69,072
<b>SURPLUS FOR THE YEAR</b>			3,089,300		2,412,284
	Transfer to Reserve for Renewal of Assets		(385,000)		(433,618)
<b>RETAINED SURPLUS FOR THE YEAR,</b>					
<b>TRANSFERRED TO REVENUE</b>					
<b>ACCOUNT RESERVE</b>			2,704,300		1,978,666

## Capital Development Programme

Guernsey Water's Capital Development Programme in 2006 included investment in renovating the pumping station at Petit Bot, works at Forest Road Service Reservoir, replacement of water mains and developing plans for the new water treatment works at Longue Hougue.

	<b>Probable Outturn 2006</b>	<b>Accounts 2005</b>
	£	£
Water Resources	203,700	109,534
Water Treatment	1,065,500	517,640
Water Distribution	600,800	580,494
General	338,000	724,603
<b>GROSS CAPITAL INVESTMENT</b>	2,208,000	1,932,271
Customer Contributions and Asset Sales	(75,000)	(119,915)
<b>NET CAPITAL INVESTMENT</b>	2,133,000	1,812,356

## Key Statistics

<b><u>Water Supply</u></b>	<b><u>2006</u></b>	<b><u>2005</u></b>	<b><u>2004</u></b>	<b><u>2003</u></b>
catchment area	43.07km <sup>2</sup>	43.07km <sup>2</sup>	43.07km <sup>2</sup>	43.07km <sup>2</sup>
population supplied	59,710*	59,710*	59,710*	59,710*
number of connections	24,120	24,081	23,762	23,417
metered	12,597	11,806	11,013	10,372
unmetered	11,523	12,275	12,749	13,089
sources of supply (stream catchments)	23	23	23	23
sources of supply (wells)	5	5	5	5
storage towers & reservoirs (potable)	4	4	4	4
storage reservoirs / quarries	15	15	15	14
water treatment works	3	3	3	3
raw water pumping stations	15	15	15	15
<b><u>Mains Distribution</u></b>				
potable water mains including transfer main	408km	440–450km <sup>***</sup>	440–450km <sup>***</sup>	440–450km <sup>***</sup>
raw water pipelines (approximately)	60km	60km	60km	60km
mains replaced	4.2km	3.7km	2.97km	1.86km
burst mains per square / km (based on 62.94 square Km)	1.03	1.19	1.24	1.52
burst mains repaired	65	75	78	96
communication pipes repaired	56	59	257	74
unaccounted for water (leakage)	694ml	704ml	739ml	1005ml
<b><u>Water Quality</u></b>				
total samples taken at WTW	3707	4871	5170	5545
total samples passed for WTW	3702	4860	5104	5438
<b><u>Finance</u></b>				
income	£8,302,500**	£7,584,437	£6,641,629	£6,118,571
operating expenditure	£4,142,500**	£4,119,956	£3,948,234	£3,553,293
capital expenditure	£2,133,000**	£1,812,356	£5,942,000	£3,361,591
<b><u>Personnel</u></b>				
established staff	41.5	38.5	43.5	42
non established staff	37	38	38	38
staff vacancies	8	8.5	4.5	6

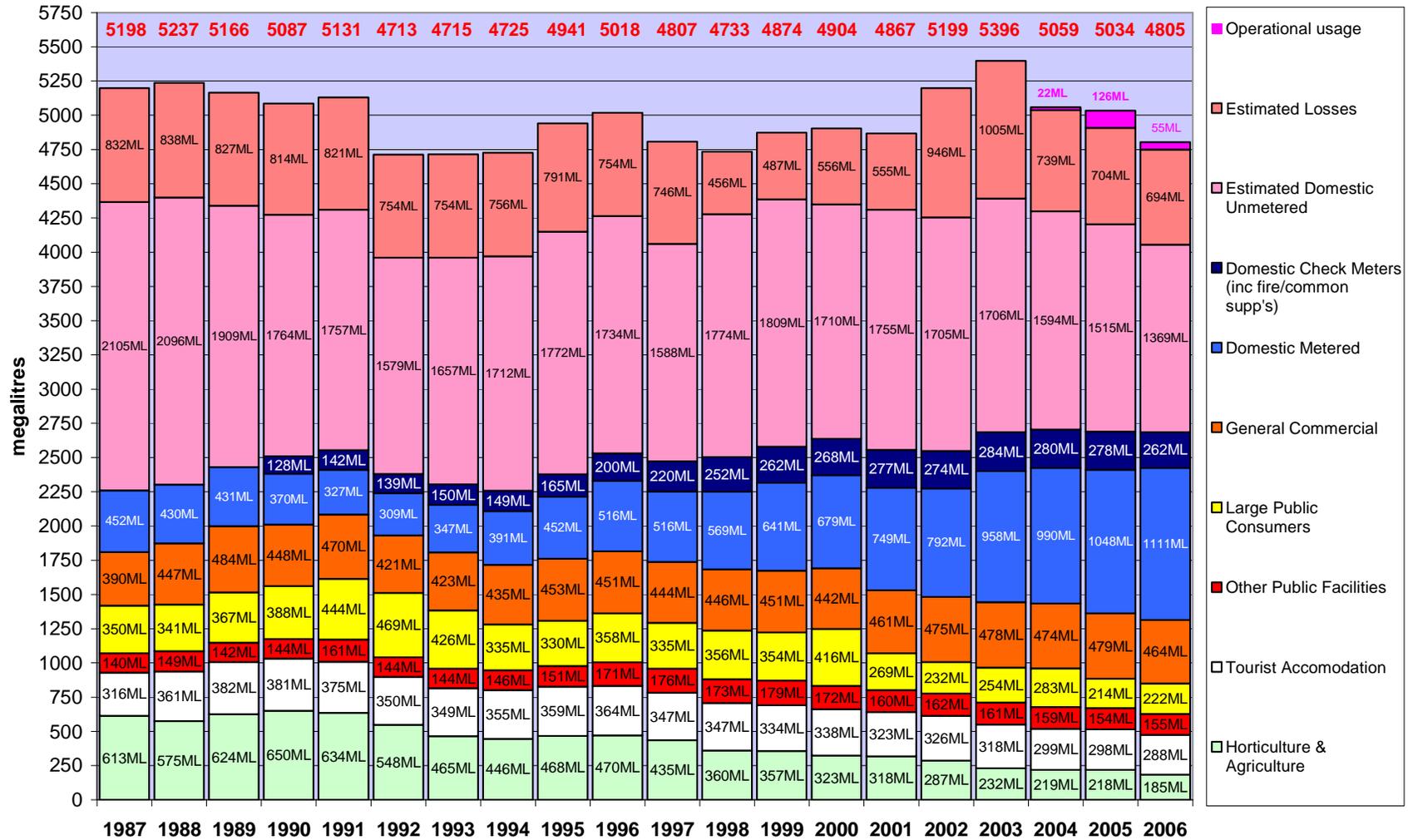
\* Taken from 2001 Census

\*\* probable outturn 2006

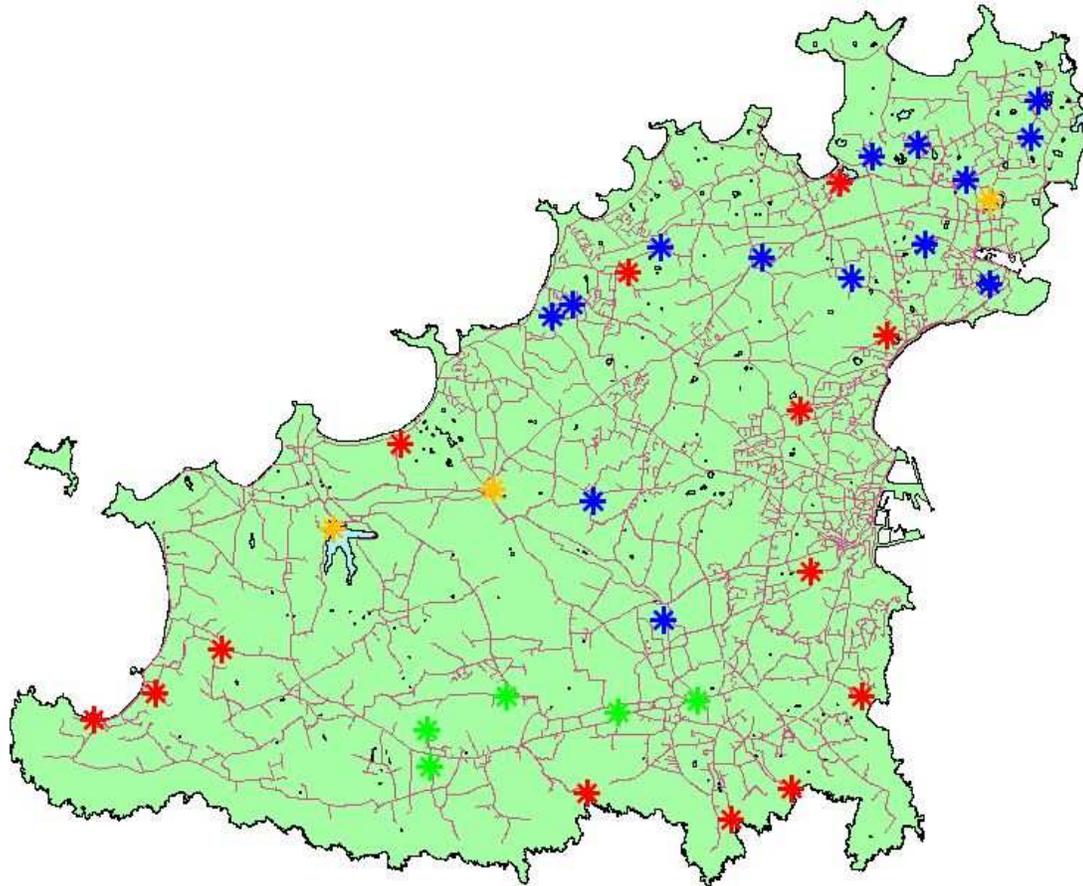
\*\*\* Based on an estimate before asset management team could accurately measure pipe lengths.

### Water Consumption from Public Supply

TOTAL PUT INTO SUPPLY IN MEGALITRES (ML)



# Guernsey Water Operational Sites



- \* Reservoirs
- \* Pumping Stations
- \* Emergency Boreholes
- \* Water Treatment Works
- Water Mains