

**RESEARCHING, DEVELOPING AND TESTING OF
PAYMENT STRATEGIES FOR THE LOWER INCOME
GROUPS AT FOUR SELECTED COMMUNITIES IN
ORDER TO MANAGE CHARGES FOR WATER USE**

**Report to the
WATER RESEARCH COMMISSION**

by

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“RESEARCHING, DEVELOPING AND TESTING OF PAYMENT STRATEGIES FOR THE LOWER INCOME GROUPS AT FOUR SELECTED COMMUNITIES IN ORDER TO MANAGE CHARGES FOR WATER USE”.

The study was undertaken in

- Tshwane (Elandspoort and Lotus Gardens)
- Johannesburg (South Hills)
- Durban (Chesterville)
- Cape Town (Guguletu, Langa and Weltevreden Valley)

The Steering Committee responsible for this project consisted of the following persons:

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This project was made possible with the co-operation of Working Committees of Local Councils in the four study areas, namely Tshwane Metropolitan Municipality, Johannesburg Municipality, Durban Metro Water and Cape Town Metropolitan Council.

The following task team members assisted and contributed in the research process in formulating the local research objectives, identifying the study areas, developing the different pre and post questionnaires and providing payment records of the different households that took part in the study. The participating nature of the research provided opportunities for capacity building at the task team level.

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During the Post Survey the following people were also involved:

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Cape Town Administration
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EXECUTIVE SUMMARY

1. BACKGROUND OBJECTIVES AND SCOPE OF THE STUDY

The research started with a literature overview of work that was done in South Africa by Johnson, Schlemmer and Veck & Bill.

Veck & Bill discovered through their research that consumers are generally aware of how they could save water, but not how they use water.

Johnson identified 5 main factors that were central to the non-payment of water accounts during his 1999 study, namely:

- a culture of non-payment;
- expectations of funding from central government;
- a criminal component, namely that “it is not such a serious crime”;
- some non-payers were not part of the formal payment system;
- the influx of immigrants and “wild cat” squatting.

The research of Schlemmer, also during 1999, found that poverty played a major role in non-payment. However, he also found that the “culture of non-payment” was a minority phenomenon and rather a “climate of non-payment” because “everybody does it”. He also found a lack of knowledge about water cost and the way revenues were utilized. He mentioned that most studies undertaken regarding non-payment lack an in-depth attempt to uncover causal “relationships in the data”.

The aim of this study was, amongst others, to explore this lack of attempt to uncover relationships in the data. Another aim of this study was to involve different role players in the research to make it a participative research project. Participative in the sense of having 4 task teams (with representation at council level) in each of the areas (namely Tshwane, Johannesburg, Durban and Cape Town). Also, to involve local interview people to conduct the interviews with the selected low-income consumers, and grow their knowledge about water related research. This approach facilitated capacity building research and transparency.

The initial research aims were to monitor the changing attitudes (during the research period) of water consumers to the right of access to water and the payment of water services. The potential effects of specific interventions between pre-test and post-test surveys were also examined after task teams (local authorities) identified issues that were of value to them, for example the perceptions of respondents in Durban of a new flow limiting system (‘flow limiter’). In the areas in Cape Town, the potential effect of a pamphlet, with water saving hints, as well as the introduction of a “mock” (or dummy billing system, based on water consumption and not a fixed role), were also examined.

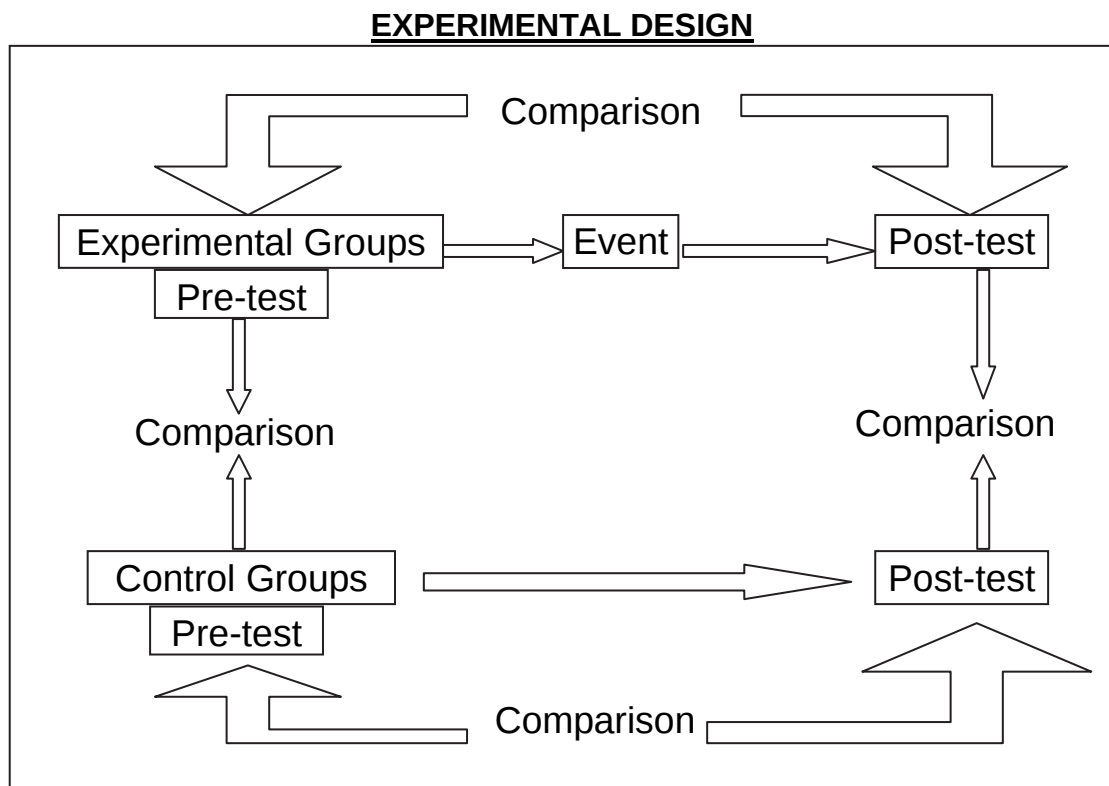
This lead to an adjusted set of objectives for the research with a generic and local focus of the research. It also included a classification of respondents into “regular” payers and “irregular” payers in order to formulate hypothesis to identify probable causal patterns.

The secondary objectives were to detect the effect of specific demographics (employment status, income, ownership, language, etc.) and other research variables (general attitudes, estimation and knowledge of water consumption units, systems of payment, communication and intention to save water), on payment behaviour.

2. RESEARCH DESIGN

In order to test any causal relations between variables, an adapted Pre-test/Post-test Design with Control groups was implemented. The areas for the study were selected from lower income groups in co-operation with the local councils. Respondents were selected in clusters of 200 (4 clusters with a pre- and post study were undertaken). All respondents in the selected clusters were interviewed and a semi-structured questionnaire was used to capture the data. Statistical analysis was done using SPSS (Statistical Software Package). The areas were: Tshwane (Elandspoort and Lotus Gardens), Johannesburg (South Hills), Durban (Chesterville), and Cape Town (Guguletu, Langa and Weltevreden Valley).

- (i) The research design can be illustrated as follows:



- (ii) Respondents in the clusters were classified according to their payment behaviour into “regular” payers and “irregular” payers using the payment records provided to the research team by the local councils.

To test the hypothesis of equality of either proportions or averages between 2 or 3 groups, the z-test for proportions and the Kruskal-Wallis or Mann-Whitney test were used. A 5% significant level was used and it is shown in the tables by using *. For significant differences between pre- and post results the ** was used.

3. MAIN FINDINGS

In the literature some factors were identified as being central to the non-payment of water accounts. This study supported some of the findings namely that the “culture of non-payment was a minority phenomenon”. But, this study found that the non-payment was not because “everybody does it”. It was mostly because of low income of households and lack of knowledge about how much water was being used.

Water Affairs Minister Ronnie Kasrils announced in the National Assembly in February 2001 that every household in South Africa would receive the first 6k/ of water free every month. This grant could have far reaching implications, therefore the knowledge and opinions of the respondents in the survey areas about the grant were included in the study. The provision of the first free 6k/ of water was still a relatively new concept during the time of the surveys. The awareness levels of the grant, however, showed a marked increase from the pre-test to the post-test surveys. Regarding water saving methods, a wide variety of creative measures were spontaneously mentioned by many water consumers, which could provide a base for future information campaigns.

Most of the findings of this study underscore the complexity of the problem of (non-) payment for water. It is particularly households with lower income levels that suffer in paying their water accounts. Other findings, however, provided some hopeful solutions.

3.1 Metro related findings

In the Tshwane Metropolitan Municipality the perceptions about a “push button tap”, “trickle flow” and “cut off” systems were surveyed amongst the sample of residents. Mixed reactions were received. Positive perceptions from the regular payers, but not perceived as sound solutions to the problems of non-payment for water by the irregular payers.

In the Johannesburg Municipality the change in supplier, from Johannesburg Municipality to Johannesburg Water, was perceived as positive action. The warning system of Johannesburg Municipality about accounts in arrears was also viewed in a positive light.

Perceptions about the new system of Durban Water, namely the “flow limiter” for households that do not pay or cannot afford to pay for the water services, were found to be fairly positive. Respondents were not familiar with the system, but post-test results were more positive. However, the group in arrears was negative about the implementation of a “flow limiter” system.

In Cape Town Metropolitan Council three issues were tested, namely:

- Introducing a billing system based on water consumption to those areas/households which were previously billed or not billed on a flat rate.
- The use of pamphlets as communication medium.
- Mock accounts to create awareness of volumes of water consumed.

The research found that the new billing system based on consumption was perceived positively. The use of pamphlets to create awareness about the new payment system proved not to be a success. No significant differences in attitude and knowledge could be identified between the groups that received the pamphlet and those that did not. Differences between those respondents that received “mock” or dummy accounts were also not significant.

3.2 Core findings

The majority of water consumers in the study were quite satisfied with the quality and provision of water in their residential areas. An alarming finding, however, was that consumers highly under-estimated their water consumption. These estimations varied between three to seven times less than their actual water consumption. If the situation is allowed to continue, it may result in the further escalation of debts, and subsequently increasing pressure on water providers.

Consumers frequently expressed the need for continuous information from the Councils. Signs were observed that traditional measures against defaulters, such as the prompt cutting off of the water supply, were not perceived as an ideal solution for the problem. Consumers expressed the need for personal communication with a friendly official at their homes.

Water consumers displayed a lack of knowledge of the units in which water consumption is expressed. The bigger the units (kilo and Mega litres), the less the respondents knew about them. These aspects could be addressed in information campaigns.

Perhaps the most significant finding regarding possible solutions for the problem of the non-payment for water was the availability of more payment options to water consumers. Consumers frequently expressed the need for more options, which would make it easier for them to choose an option for paying. Various options, combined with a friendly individual who visits them at their homes, may be a worthwhile avenue to pursue.

Another significant finding was an underlying negativity among consumers, particularly in the groups that were further in arrears with the payment of their water accounts. Not only were these groups more negative in their attitudes about the payment for water, but their consumption levels were much higher than the groups that were not in arrears. These “arrears” groups also seemed to take less personal responsibility for the situation in which they find themselves, and signs of despondency were also detected. Financial problems expressed by the groups in arrears and their excessive water consumption, are reasons for great concern.

4. CONCLUSION

In conclusion, it could be said that the financial, social and psychological dynamics of non-payment for water is a complex and multivariate problem. Poverty, negative attitudes to payment for water, excessive water usage, and the lack of interest in water saving measures, were identified as major causes for payment default. As Schlemmer described it correctly, that what is often seen as a “*culture of non-payment*” can be considered as a minority phenomenon. The findings from the current study confirmed Schlemmer’s findings that most people accept the principle of payment for services, although the lower groups see a need for targeted relief.

Signs of solutions for the problem were however, observed. Multiple payment options, combined with a personal approach of visiting consumers who are in arrears with their payment for water, provide some optimism for alleviation of the problem of non-payment for water in the study areas.

Although the findings of this study cannot be generalised to other areas (due to the method of selection of the respondents), it is significant to note that the groups in arrears consistently exhibited similar negative attitudes and payment behaviour, lack of interest in water saving measures and excessive water consumption.

5. RECOMMENDATIONS

5.1 Metro specific recommendations

5.1.1 Tshwane Metropolitan Municipality

It is recommended that the installation of “push button taps” be integrated with the indigent policy. More options of payment should also be explored and incorporated into the indigent policy.

5.1.2 Johannesburg Municipality

It is recommended that the awareness levels of the new payment system be increased by regular communication campaigns and that the “cut off” policy be integrated with an indigent policy as part of a system with different options available to “irregular” payers.

5.1.3 Durban Metro Water

It is recommended that Durban Metro Water continue to provide and to develop different options for payment for the “irregular” payers.

5.1.4 Cape Town Metropolitan Council

It is recommended to develop and integrate the “cut off” system with an indigent policy and to develop a communication strategy for those that will switch over from a fixed payment to payment based on consumption.

5.2 General

It is recommended that local councils:

- Segment their users of water and other services according to payment behaviour, for example “regular” payers and “irregular” payers based on the arrears of the users. This will facilitate creative use of communication strategies and different messages to the two groups to improve payment.
- Communicate consumption of water in litres and not in K/ or M/.
- Communicate water saving tips to the “irregular” payers on a continuous basis. Also mention the 6 000/ used, with no cost.
- Provide friendly options to “irregular” payers for example visiting them and discussing options for payment.

With regard to the WRC it is recommended that:

- The WRC undertake a price elasticity study in selected Metropolitan areas to explore new payment strategies for the “regular” payers and the “irregular” payers.

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PLEASE NOTE The Questionnaires, Tabled data and Database are available in electronic format on CD.

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ANNEXURE A: STRATEGIES USED ON THE PAST TO IMPROVE PAYMENT FOR WATER SERVICES

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PLEASE NOTE The Questionnaires, Tabled data and Database are available in electronic format on CD.

EXECUTIVE SUMMARY

1. BACKGROUND OBJECTIVES AND SCOPE OF THE STUDY

The research started with a literature overview of work that was done in South Africa by Johnson, Schlemmer and Veck & Bill.

Veck & Bill discovered through their research that consumers are generally aware of how they could save water, but not how they use water.

Johnson identified 5 main factors that were central to the non-payment of water accounts during his 1999 study, namely:

- a culture of non-payment;
- expectations of funding from central government;
- a criminal component, namely that “it is not such a serious crime”;
- some non-payers were not part of the formal payment system;
- the influx of immigrants and “wild cat” squatting.

The research of Schlemmer, also during 1999, found that poverty played a major role in non-payment. However, he also found that the “culture of non-payment” was a minority phenomenon and rather a “climate of non-payment” because “everybody does it”. He also found a lack of knowledge about water cost and the way revenues were utilized. He mentioned that most studies undertaken regarding non-payment lack an in-depth attempt to uncover causal “relationships in the data”.

The aim of this study was, amongst others, to explore this lack of attempt to uncover relationships in the data. Another aim of this study was to involve different role players in the research to make it a participative research project. Participative in the sense of having 4 task teams (with representation at council level) in each of the areas (namely Tshwane, Johannesburg, Durban and Cape Town). Also, to involve local interview people to conduct the interviews with the selected low-income consumers, and grow their knowledge about water related research. This approach facilitated capacity building research and transparency.

The initial research aims were to monitor the changing attitudes (during the research period) of water consumers to the right of access to water and the payment of water services. The potential effects of specific interventions between pre-test and post-test surveys were also examined after task teams (local authorities) identified issues that were of value to them, for example the perceptions of respondents in Durban of a new flow limiting system (‘flow limiter’). In the areas in Cape Town, the potential effect of a pamphlet, with water saving hints, as well as the introduction of a “mock” (or dummy billing system, based on water consumption and not a fixed role), were also examined.

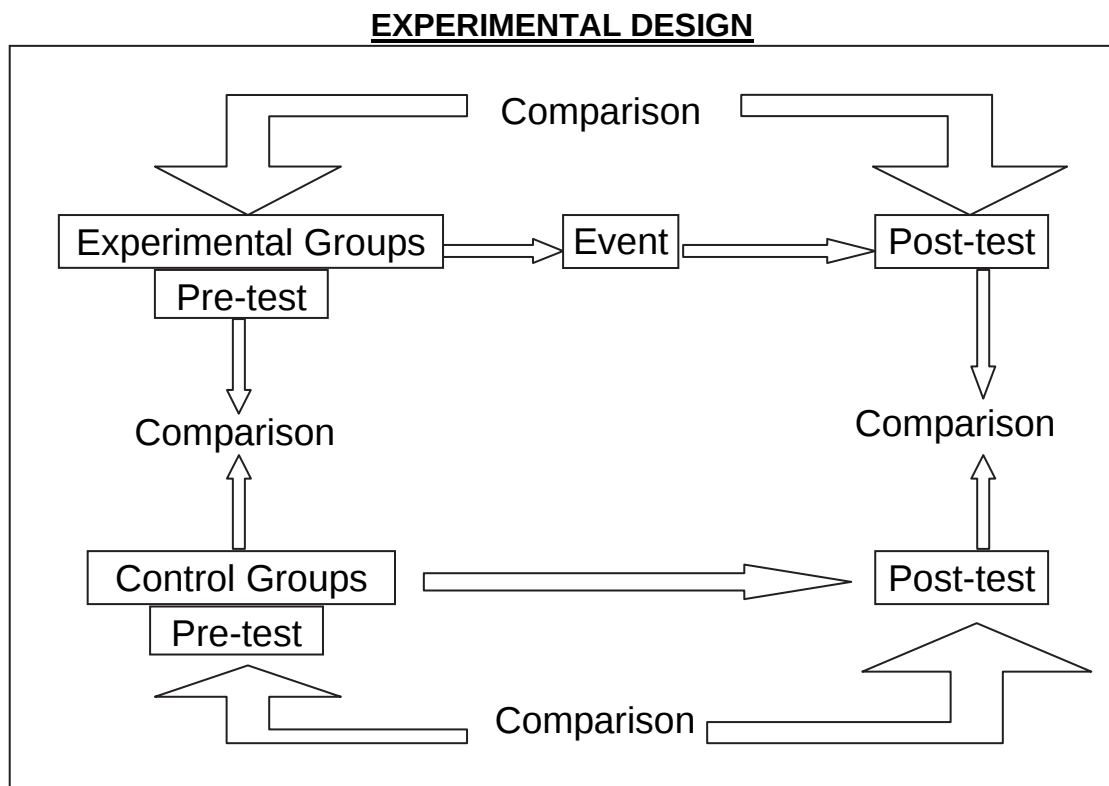
This lead to an adjusted set of objectives for the research with a generic and local focus of the research. It also included a classification of respondents into “regular” payers and “irregular” payers in order to formulate hypothesis to identify probable causal patterns.

The secondary objectives were to detect the effect of specific demographics (employment status, income, ownership, language, etc.) and other research variables (general attitudes, estimation and knowledge of water consumption units, systems of payment, communication and intention to save water), on payment behaviour.

2. RESEARCH DESIGN

In order to test any causal relations between variables, an adapted Pre-test/Post-test Design with Control groups was implemented. The areas for the study were selected from lower income groups in co-operation with the local councils. Respondents were selected in clusters of 200 (4 clusters with a pre- and post study were undertaken). All respondents in the selected clusters were interviewed and a semi-structured questionnaire was used to capture the data. Statistical analysis was done using SPSS (Statistical Software Package). The areas were: Tshwane (Elandspoort and Lotus Gardens), Johannesburg (South Hills), Durban (Chesterville), and Cape Town (Guguletu, Langa and Weltevreden Valley).

- (i) The research design can be illustrated as follows:



- (ii) Respondents in the clusters were classified according to their payment behaviour into “regular” payers and “irregular” payers using the payment records provided to the research team by the local councils.

To test the hypothesis of equality of either proportions or averages between 2 or 3 groups, the z-test for proportions and the Kruskal-Wallis or Mann-Whitney test were used. A 5% significant level was used and it is shown in the tables by using *. For significant differences between pre- and post results the ** was used.

3. MAIN FINDINGS

In the literature some factors were identified as being central to the non-payment of water accounts. This study supported some of the findings namely that the “culture of non-payment was a minority phenomenon”. But, this study found that the non-payment was not because “everybody does it”. It was mostly because of low income of households and lack of knowledge about how much water was being used.

Water Affairs Minister Ronnie Kasrils announced in the National Assembly in February 2001 that every household in South Africa would receive the first 6k/ of water free every month. This grant could have far reaching implications, therefore the knowledge and opinions of the respondents in the survey areas about the grant were included in the study. The provision of the first free 6k/ of water was still a relatively new concept during the time of the surveys. The awareness levels of the grant, however, showed a marked increase from the pre-test to the post-test surveys. Regarding water saving methods, a wide variety of creative measures were spontaneously mentioned by many water consumers, which could provide a base for future information campaigns.

Most of the findings of this study underscore the complexity of the problem of (non-) payment for water. It is particularly households with lower income levels that suffer in paying their water accounts. Other findings, however, provided some hopeful solutions.

3.1 Metro related findings

In the Tshwane Metropolitan Municipality the perceptions about a “push button tap”, “trickle flow” and “cut off” systems were surveyed amongst the sample of residents. Mixed reactions were received. Positive perceptions from the regular payers, but not perceived as sound solutions to the problems of non-payment for water by the irregular payers.

In the Johannesburg Municipality the change in supplier, from Johannesburg Municipality to Johannesburg Water, was perceived as positive action. The warning system of Johannesburg Municipality about accounts in arrears was also viewed in a positive light.

Perceptions about the new system of Durban Water, namely the “flow limiter” for households that do not pay or cannot afford to pay for the water services, were found to be fairly positive. Respondents were not familiar with the system, but post-test results were more positive. However, the group in arrears was negative about the implementation of a “flow limiter” system.

In Cape Town Metropolitan Council three issues were tested, namely:

- Introducing a billing system based on water consumption to those areas/households which were previously billed or not billed on a flat rate.
- The use of pamphlets as communication medium.
- Mock accounts to create awareness of volumes of water consumed.

The research found that the new billing system based on consumption was perceived positively. The use of pamphlets to create awareness about the new payment system proved not to be a success. No significant differences in attitude and knowledge could be identified between the groups that received the pamphlet and those that did not. Differences between those respondents that received “mock” or dummy accounts were also not significant.

3.2 Core findings

The majority of water consumers in the study were quite satisfied with the quality and provision of water in their residential areas. An alarming finding, however, was that consumers highly under-estimated their water consumption. These estimations varied between three to seven times less than their actual water consumption. If the situation is allowed to continue, it may result in the further escalation of debts, and subsequently increasing pressure on water providers.

Consumers frequently expressed the need for continuous information from the Councils. Signs were observed that traditional measures against defaulters, such as the prompt cutting off of the water supply, were not perceived as an ideal solution for the problem. Consumers expressed the need for personal communication with a friendly official at their homes.

Water consumers displayed a lack of knowledge of the units in which water consumption is expressed. The bigger the units (kilo and Mega litres), the less the respondents knew about them. These aspects could be addressed in information campaigns.

Perhaps the most significant finding regarding possible solutions for the problem of the non-payment for water was the availability of more payment options to water consumers. Consumers frequently expressed the need for more options, which would make it easier for them to choose an option for paying. Various options, combined with a friendly individual who visits them at their homes, may be a worthwhile avenue to pursue.

Another significant finding was an underlying negativity among consumers, particularly in the groups that were further in arrears with the payment of their water accounts. Not only were these groups more negative in their attitudes about the payment for water, but their consumption levels were much higher than the groups that were not in arrears. These “arrears” groups also seemed to take less personal responsibility for the situation in which they find themselves, and signs of despondency were also detected. Financial problems expressed by the groups in arrears and their excessive water consumption, are reasons for great concern.

4. CONCLUSION

In conclusion, it could be said that the financial, social and psychological dynamics of non-payment for water is a complex and multivariate problem. Poverty, negative attitudes to payment for water, excessive water usage, and the lack of interest in water saving measures, were identified as major causes for payment default. As Schlemmer described it correctly, that what is often seen as a “*culture of non-payment*” can be considered as a minority phenomenon. The findings from the current study confirmed Schlemmer’s findings that most people accept the principle of payment for services, although the lower groups see a need for targeted relief.

Signs of solutions for the problem were however, observed. Multiple payment options, combined with a personal approach of visiting consumers who are in arrears with their payment for water, provide some optimism for alleviation of the problem of non-payment for water in the study areas.

Although the findings of this study cannot be generalised to other areas (due to the method of selection of the respondents), it is significant to note that the groups in arrears consistently exhibited similar negative attitudes and payment behaviour, lack of interest in water saving measures and excessive water consumption.

5. RECOMMENDATIONS

5.1 Metro specific recommendations

5.1.1 Tshwane Metropolitan Municipality

It is recommended that the installation of “push button taps” be integrated with the indigent policy. More options of payment should also be explored and incorporated into the indigent policy.

5.1.2 Johannesburg Municipality

It is recommended that the awareness levels of the new payment system be increased by regular communication campaigns and that the “cut off” policy be integrated with an indigent policy as part of a system with different options available to “irregular” payers.

5.1.3 Durban Metro Water

It is recommended that Durban Metro Water continue to provide and to develop different options for payment for the “irregular” payers.

5.1.4 Cape Town Metropolitan Council

It is recommended to develop and integrate the “cut off” system with an indigent policy and to develop a communication strategy for those that will switch over from a fixed payment to payment based on consumption.

5.2 General

It is recommended that local councils:

- Segment their users of water and other services according to payment behaviour, for example “regular” payers and “irregular” payers based on the arrears of the users. This will facilitate creative use of communication strategies and different messages to the two groups to improve payment.
- Communicate consumption of water in litres and not in K/ or M/.
- Communicate water saving tips to the “irregular” payers on a continuous basis. Also mention the 6 000/ used, with no cost.
- Provide friendly options to “irregular” payers for example visiting them and discussing options for payment.

With regard to the WRC it is recommended that:

- The WRC undertake a price elasticity study in selected Metropolitan areas to explore new payment strategies for the “regular” payers and the “irregular” payers.

RESEARCHING, DEVELOPING AND TESTING OF PAYMENT STRATEGIES FOR THE LOWER INCOME GROUPS AT FOUR SELECTED COMMUNITIES IN ORDER TO MANAGE CHARGES FOR WATER USE

"There are no ideal or simple solutions."

- Schlemmer (1999: 24)

CHAPTER 1 - BACKGROUND & LITERATURE OVERVIEW

1.1 INTRODUCTION

Optimising water management in South Africa became a national priority shortly after the severe countrywide drought of the 60's.

In Perth, Australia, a similar drought was experienced in the late 70's. However, a better understanding of the scarcity value of water was achieved after an extensive educational initiative following the severe drought. From previous research (Veck & Bill, WRC Report No. 790/1/00) it was established that people (consumers of water) are generally aware of **how they could save water, but not how they use water.** This intricate problem of fully understanding the elaborate supply process of fresh water to every citizen is of a very complex nature.

In designing a strategic model for payment of water consumption for South Africa, it is imperative that local conditions and the complexities of human behaviour, social and psychological structures should all be considered for a comprehensive macro plan for water provision. Poor knowledge of water supply and demand may lead to costly infrastructure investments that remain idle for number of years (Veck & Bill: 1-2).

According to Johnson (1999) the most central problem to the non-payment of water accounts, lies in the complex issues surrounding the "entitlement culture" and even the "*culture of non-payment*" (p. 101). To Johnson, this is the fundamental reason why the Masakhane campaign failed in areas where a "*culture*" of non-payment is prevalent. Schlemmer (1999:20) also states that the Masakhane Campaign cannot be regarded as a success. He describes the "*climate*" of non-payment for water, as a perception that water is a discretionary expenditure, unlike in most middle class households, in which it is perceived as a mandatory item.

Secondly, the funding of water provision from central government sources will have to be an option for alleviating local authorities' debts. The provision of the first 6kl of water per month per household for free as from July 2001, serves as an illustration of this principle.

Johnson argues further that general crime levels have an impact on the payment for services. This can be viewed from various viewpoints: High crime levels provide the public with the idea that non-payment for water is not such a serious crime compared to other "more serious" crimes. Even illegal connections to water and electricity services are not perceived as *"too criminal"*. Illegal water connections are at a level of 12% to 18% (Schlemmer) in Gauteng and adjacent regions and this could make up some one-third of water losses in low cost areas.

Non-payment tactics could be counter-acted by rewards systems, but these rewards should be substantial to have any impact. The inherent *"problem"* with reward initiatives is that the *"converted are being preached to"*. The practical manifestation of this phenomenon is that it was found that the non-payers disappear *"out of the system"*, and they can therefore not be traced. Schlemmer (1999) noted in this regard that the problem in low cost areas is largely one of complete non-payment for service charges, rather than partial or irregular payment. Regular payers perceive this as being punished, as they are frequently reminded of non-payment levels, but the non-payers do not receive this information, as they are not *"registered"* by the formal system. This situation leads to a subtle, but vicious cycle that does not alleviate the problem in any way. The **principle of payment** is at stake here, particularly if non-payers successfully keep *"out of the system."* He argues further (p. 20) that the lack of pressure on non-payers is evidence of the fact that local authorities operate under a range of constraints in implementing control strategies. This includes financial and personnel shortages, policy pressures, the fact that water is a basic right and the lack of common approaches to the problem. *"Some 80 % to 90 % of respondents consider that their local authorities need assistance mounting strategies to deal with non-payment in a comprehensive and appropriate manner."*

A fifth aspect that Johnson (1999:103) identified as a real danger, is the influx of illegal immigrants into townships: *"Just as the invasion of central city areas by large numbers of street traders has destabilised these areas economically and socially, resulting in enormous losses of social capital, so "wild cat" squatting has frequently had the effect of destabilising successful residential development and causing further large scale losses of social capital."* Local governments can in most cases hardly cope with the provision of water to existing respondents, therefore additional demands caused by illegal immigrants, aggravates the problem excessively.

The system whereby wealthier respondents subsidise non-payers (according to Johnson, 1999:104) is by no means unlimited: *"If people feel they are being taxed unfairly heavily, studies the world over show that they find ways of not paying more, even if it means moving away."* Schlemmer (1999:19) found that payment levels were being maintained at a relatively high level among middle class and business consumers. A fundamental question that needs attention is **why**, and **what** lessons can be learned from this phenomenon? What are the characteristics of *regular* payers that can be identified, and then applied in other sections that are non-payers?

The economical, social and psychological dynamics of non-payment for water constitute a complex and multivariate problem with no clear and concise answers on the short term. Studies done in other parts of the

world provide some generic, but not specific solutions to South Africa's unique situation. Even in different parts of the country, the problems experienced by local authorities are not identical, and therefore require unique and creative solutions.

An optimism exists among local authority Officials and Councillors, imbedded in the faith in the steps that are currently being taken - a view that the middle class and business consumers will continue to pay and carry the system, as well as the anticipation that the government will step in to assist them in one way or another (e.g. the first free 6kl of water). The question remains for how long this policy principle can be achieved.

In his review of other research conducted on the payment for water services, Schlemmer (1999:21) reported the following summary of findings:

- Poverty is one of the major causes of payment default (water charges are some 15 % of expenditure among very poor households and therefore a heavy burden), but not necessarily the cause of complete non-payment. There is consequently considerable payment default among the less-than-poor people in low-income areas.
- What is often seen, as a "*culture*" of non-payment or an "*ideology of entitlement*" is a minority phenomenon. Most people in the lower income areas accept the PRINCIPLE of payment for services, although the poor see a need for targeted relief.
- What appears as a culture of non-payment is in fact a "*climate of non-payment*" - the precedent is set by majority default, which includes even those people who accept the principle of non-payment to default, because everybody does it.
- These factors are supported by an apartheid-based lack of susceptibility to bureaucratic regulations; hence there is a need for the close involvement of newly elected authorities in addressing community attitudes.
- They are also supported by the fact that misperceptions of water costs and the way water revenues are utilised undermine the legitimacy of the payment regime.

Schlemmer (1990:20) concludes that "*most of the studies undertaken are descriptive and lack depth in that they have not attempted to uncover causal relationships in the data. Clearly there is a need for more focused research and a re-analysis of many studies.*"

The aim of the current study was, among others, designed to follow up on this lack of causal relationships in previous studies' data.

CHAPTER 2 - OBJECTIVES AND SCOPE OF THE STUDY

The initial aims of the study were to

- create a starting point to change attitudes towards the right to access water and payment for water
- test the implementation of identified payment strategies for the poor at four local authorities.

From these initial aims primary and secondary objectives were formulated for each of the four areas by the different task teams in each area, namely Tshwane, Johannesburg, Durban and Cape Town.

2.1 ORIGINAL OBJECTIVES

2.1.1 TSHWANE METROPOLITAN MUNICIPALITY

The primary objective of the research in the Tshwane Metropolitan Municipality was to monitor the changing attitudes of water users towards the right of access to water and payment for water services during the research period.

The secondary objectives were to test the effect of the payment strategy for the low-income with regard to:

- Implementing push button taps (for non-payment) and the effect thereof
- Issues regarding the registration and deregistration of the indigent
- Free water if consumption is less than 6kl per month
- Quality service (quality of water, correctness of accounts and related services, etc.)
- Communication and water saving tips
- Community awareness and involvement in the project

2.1.2 JOHANNESBURG MUNICIPALITY

The primary objective of the research in the Johannesburg Municipality was also to monitor the changing attitudes, during the research period, of water users in the selected area, towards the right of access to water and payment for water services.

The secondary objectives were also to test the effect of the payment strategy for low-income groups with regard to:

- Termination of services for non-payment (credit control)
- Issues regarding the registration and deregistration of the indigent
- Free water if consumption is less than 6kl per month

- Quality service (quality of water, correctness of accounts and related services, etc.)
- Payment arrangements for accounts in arrears
- Community awareness and involvement in the project
- Reducing the flow of water
- Warnings laid down for non-payment

2.1.3 DURBAN METRO WATER

The primary objective of the research in the Durban area was to research the perceptions of introducing the new system called the flow limiter to households, especially those that do not pay and those that cannot afford to pay for their water services.

The secondary objectives were to test the perceptions for the payment strategy for the low-income group with regard to:

- Perceptions on water
- Perceptions on 6kl free water
- Perceptions on reducing water consumption

2.1.4 CAPE TOWN METROPOLITAN COUNCIL

The primary objective of the research in the Cape Town Metropolitan Council was to research the effect of introducing a billing system that is based on water consumption to those areas/households, which were previously not billed, and paid a flat rate regardless of their water consumption.

The secondary objectives were to test the perceptions of the payment strategy for the low-income group with regard to:

- Perceptions in terms of the issue of equity (others pay and others not)
- Water demand management
- Perceptions on water
- Perceptions on 6kl free water
- Perceptions on reducing water consumption

2.2 ADJUSTED OBJECTIVES

The adjusted objectives are reflected in the pre- and post-study questions and the layout of the report is also based on the format of the questionnaire.

2.2.1 TSHWANE METROPOLITAN MUNICIPALITY

The primary objectives in this area, were to determine and monitor attitudes about payment for and usage of water, based on the classification of “normal” (regular payers) payment behaviour and “other” (irregular payers) payment behaviour.

The secondary objectives were to detect the effect of specific demographics (employment status, income, ownership, language) and other research variables (general attitudes, estimation and knowledge of water consumption units, awareness about the “push button tap”, “trickle flow” and “cut off” systems, communication and intention to save water), on payment behaviour.

2.2.2 JOHANNESBURG MUNICIPALITY

The primary objectives in the Johannesburg area were also to determine and monitor attitudes of respondents regarding payment for and usage of water. However, it was based on the classification of three groups, namely Group 1 (up to date with payments), Group 2 (arrears in payment from R100 up to amounts of R1200) and Group 3 (arrears of more than R1200).

The secondary objectives were to determine the effect of the demographic variables and water related research variables on payment behaviour. In other words, the effect of the variables on the three defined payment groups.

2.2.3 DURBAN METRO WATER

The primary objectives in the Durban area were to determine and monitor the perceptions of introducing a new system called the flow limiter for household that do not pay and cannot afford to pay for their water services according to three groups, namely Group 1 (up to date payments), Group 2 (arrears in payment from R100 – R1200) and Group 3 (more than R1200 in arrears).

The secondary objectives were to identify the effect of demographic variables and other water related variables (as formulated in the questionnaire) on payment behaviour as defined by the groups.

2.2.4 CAPE TOWN METROPOLITAN COUNCIL

The primary objective of the research in this area was to research the effect of introducing a billing system based on water consumption to those areas/households, which were previously billed or not billed, and paid a flat rate regardless of their water consumption. The respondents were classified in two payment groups, namely Group 1 (only up to R100 in arrears) and Group 2 (more than R100 in arrears).

The secondary objectives were to determine the effect of demographic variables and other related research variables (as formulated in the questionnaire) on payment behaviour as defined by the two groups.

CHAPTER 3 - METHOD AND RESEARCH DESIGN

3.1 CAUSALITY DESIGNS

As indicated by Schlemmer (1999), Johnson (1999) and Veck & Bill (2000) in previous studies on water consumption and the payment for water services, the research should be designed in such a way that causal analysis could be done. Churchill (1979:67) argues that descriptive research can be used for testing hypotheses. However, descriptive designs are not as satisfactory as experiments for establishing causality; the reasons depend on an understanding of the notion of causality, the types of evidence that establish causality, and on an understanding of the effect of extraneous variables in a research setting.

Berger (1991:103) describes causality designs as follows: *"Thus we search for causes to help us understand and explain effects, so we can prevent effects we don't want and generate effects we do want."*

The everyday interpretation of causality implies a deterministic relationship that X causes Y to happen. Therefore X must always lead to Y. The scientific notion, however, implies a probabilistic relationship - Y can be caused by X if the occurrence of X makes the occurrence of Y more likely or more probable (Churchill, 1979:67). Furthermore, the scientific notion implies that it can never be proved that X is a cause of Y, but it can be inferred that such a relationship exists. *"When dealing with cause and effect, then, it is generally a good idea to qualify statements and say there is reason to believe that something "seems to" cause, or "might be" causing a given effect"* (Berger, 1991: 103).

The research design chosen for this study was an Adapted Pre-test/Post-test with a Control Group Design (*vide* Bless & Higson-Smith, 1995:72 - 73).

Four groups of 200 respondents each were selected:

- Tshwane (Elandspoort and Lotus Gardens)
- Johannesburg (South Hills)
- Durban (Chesterville)
- Cape Town (Guguletu, Langa and Weltevreden Valley)

The Minister of Water Affairs, Mr Ronnie Kasrils, announced in the National Assembly in February 2001, that each household in South Africa would receive the first 6kl of municipal water free with effect from the beginning of July 2001, as part of government's delivery of basic services. *"We have seen that the introduction of charges for pure water at even a low rate has resulted in communities resorting to unsafe sources. For these reasons, the government has decided to ensure that poor households are given a basic supply of water free of charge"* he explained. *"In an earlier media briefing, Mr Kasrils admitted that the July 1*

target was optimistic and conceded that not all local councils would be ready to introduce the free water system" (Pretoria News, 15 February 2001).

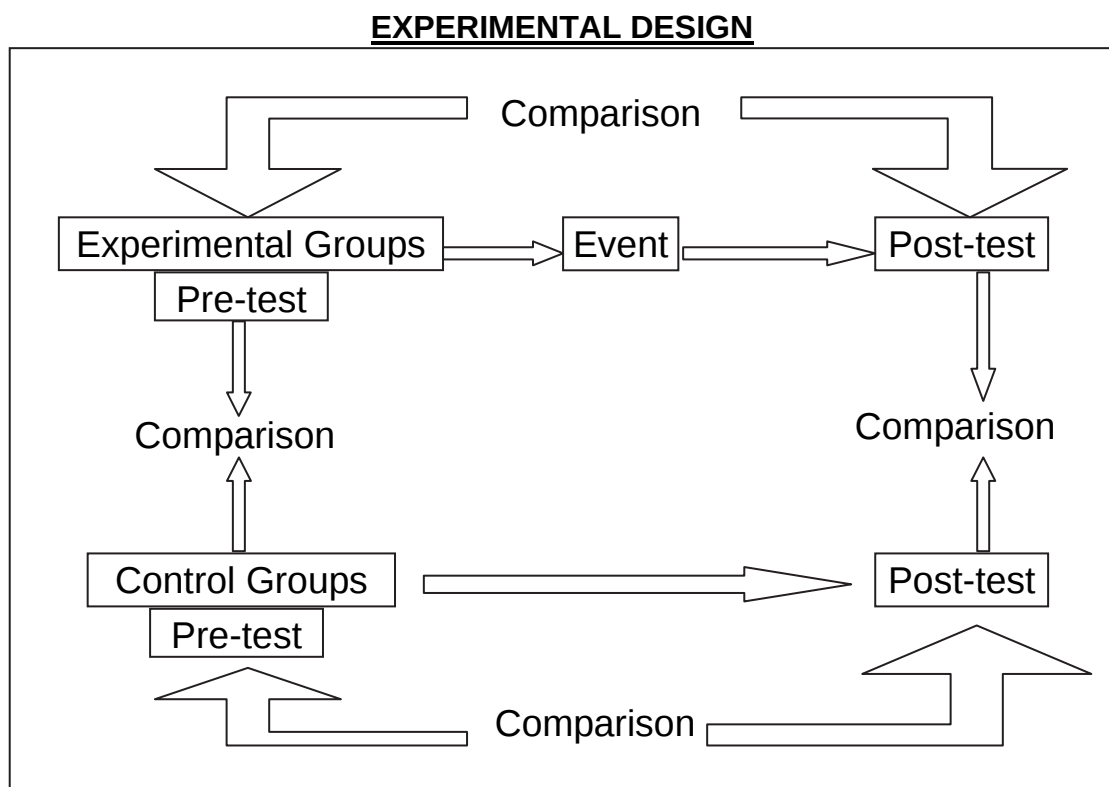
3.2 RESEARCH DESIGN

The surveys were done among selected clusters of households (non-randomly) in low-income areas that were also identified as having high levels of non-payment. In each household, either the head of the main household or his/her spouse was interviewed.

For each of the areas, a different water strategy and policy exists. It is therefore important to consider the differences in the pre-test survey results between different communities, as well as the post-test results for these groups. Finally, the pre-test and post-test results were compared to study the effects of the different campaigns within the communities.

It should be noted that the selection criteria for the different communities were not identical, therefore the results cannot be generalised to other communities or water suppliers. The results can, however, be used as guidelines for establishing criteria in payment for water services in future.

The research design can be illustrated as follows:



3.3 STATISTICAL ANALYSIS

In this report most of the data is presented in a table format. The study variable (or dependant variable) is categorised in 2 or 3 categories. This variable, which is made up of Group 1, Group 2 or Group 3, is our payment behaviour variable.

Other variables that were cross-tabulated with our study variable (payment behaviour variable) generated within the tables 2 types of statistics. The one being proportions (%'s) and the other an average based on 5-point scale ranging from 1 to 5.

In order to test the hypothesis of equality of either proportions or averages between the 2 or 3 groups, the following statistical tests (Levine, D.M., et al, 1998: 450) were used:

- a) z-test for proportions, and
- b) the Kruskal-Wallis one-way ANOVA for the 3 groups and the Mann-Whitney test for 2 groups (SPSS(1993)).

For proportions we used the z statistic:

$$z \cong \frac{[p_1(s) - p_2(s)] - [p_1 - p_2]}{\sqrt{\bar{p}(1 - \bar{p})\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

with $\bar{p} = \frac{X_1 + X_2}{n_1 + n_2}, p_1(s) = \frac{X_1}{n_1}, p_2(s) = \frac{X_2}{n_2}$

- and
- $p_1(s)$ = sample proportion obtained from population 1
 - X_1 = number of successes in sample 1
 - n_1 = size of sample taken from population 1
 - p_1 = proportion of successes in population 1
 - $p_2(s)$ = sample proportion obtained from population 2
 - X_2 = number of successes in sample 2
 - n_2 = size of sample taken from population 2
 - p_2 = proportion of successes in population 2

The hypothesis of no difference in the proportions of the 2 independent samples is:

$$H_0 : p_1 = p_2 \quad \text{or} \quad H_0 : p_1 - p_2 = 0$$

against the alternative

$$H_a : p_1 \neq p_2 \quad \text{or} \quad H_a : p_1 - p_2 \neq 0$$

z statistics are used on a 5% significant level in this report.

With regard to the hypothesis of no difference between the average scores of the three (SPSS (1993), p.389) groups, the following can be formulated:

$$H_0 : \mu_1 = \mu_2 = \mu_3$$

$$H_a : \mu_1 \neq \mu_2 \neq \mu_3$$

We decided to use the Mann-Whitney test (2 groups) or the extension to 3 groups the Kruskal-Wallis test. The reason for not using the t-test or Analysis of Variance (ANOVA), the parametric test, is that the scales we used (a 5-point scale) did not produce normal distributions and the distances between points could not be assumed equal.

Non-parametric statistics can be used if the distribution does not appear to be normal and the sample sizes are small. The scale used to measure need only be an ordinal scale and not an interval scale.

A 5% significance level is also used for these tests.

The following table shows the calculations used for the Kruskal-Wallis test.

Group	Rank in joint array	Total of ranks
1	ranks of first group	T_1
2	ranks of second group	T_2
3	ranks of third group	T_3
		$\frac{n(n+1)}{2}$

$$\text{Total ranks} = 1 + 2 + 3 + \dots + n = \frac{n(n+1)}{2} \text{ and } n = \text{total sample size}$$

Test statistics:

$$K = \frac{12}{n(n+1)} \sum_{i=1}^3 \frac{T_i^2}{g_i} - 3(n+1)$$

where

$$T_i = \text{sum of the } i \text{ th group's ranks}$$

$$g_i = \text{sample size of the } i \text{ th group}$$

$$\sum_{i=1}^3 g_i = g_1 + g_2 + g_3 = n = \text{total sample size}$$

and n approximates the $\chi^2(2)$ distribution

3.4 INCOME INTERVALS

In the analysis of the income groups three income (per month) categories were used namely:

R0 – R1 399	Low income group
R1 400 – R3 999	Medium income group
> R4 000	High income group

The reason why the value of R1 400 was chosen is, because less than R800 per month per household during 1996 census was used to define “the poverty line” (Hirshowitz, 2000: 23).

This value was accordingly adjusted with estimated inflation rates over the past 6 years. This survey was conducted during 2001.

The following calculation was used:

$$\begin{aligned}
 &R800 (1.12) (1.11) (1.10) (1.09) (1.08) (1.08) \\
 &= R1\,390.91 \\
 &\approx R1\,400.00
 \end{aligned}$$

CHAPTER 4 – RESULTS: TSHWANE METROPOLITAN MUNICIPALITY

4.1 PRE-TEST RESULTS

The results of the study can mainly be categorised in Demographic, Knowledge, Attitude, Perception and Communication variables. **Throughout this report significant differences or dependencies were identified using a 5% level of significance. It will be indicated by a single *. Pre and post significant differences will be indicated by two **.** For differences in means (averages), non-parametric test for 2 categories, namely *Mann-Whitney U* and *Kruskal-Wallis H* for 3 categories were used. For dependencies the Chi-Square test were used.

4.1.1 DEMOGRAPHICS

200 Households were included in the survey area (Elandspoort & Lotus Gardens). The average age of the respondents in the area was 41,06 years. Female respondents were proportionally more (59%) than male respondents (41%).

In order to gain a better comparison of the variables pertaining to the payment for water, the respondents were divided into two groups. For the purposes of the analyses, the one group was labelled “*Normal*” (respondents who could be classified as regular payers of their water accounts) and “*Other*” (respondents whose water supply had either been suspended, cut-off, push-button taps installed, meter broken, or who qualified as Indigents). These categories of (non-) payers were relatively small and were therefore combined for meaningful analyses. The categories were derived from information provided by the local authority. According to this classification, the “*Normal*” group had 104 respondents and the “*Other*” group 95. The employment status of one of the respondents in the “*Other*” group was not given and is classified as a missing value for this table.

From this table no statistical significant differences could be identified for the employment categories.

EMPLOYMENT STATUS (CLAIMED)

	TOTAL (n = 200)	% of Total	<i>Normal Group</i> (n = 104)	<i>Other Group</i> (n = 95)
Employed	81	40,5	40,4%	40,6%
Unemployed	113	56,5	56,7%	56,3%
Self-employed	6	3,0	2,9%	3,1%

The average gross income level of the households was (reported) R2878-17 per month. All of the households were formal houses and in six of the cases (3,0%) there was also a second dwelling on the

stand. Three percent also mentioned that two households/families lived on the premises. The average number of people living on the stand was 4,215 (Other group 4,58* and Normal group 3,88). Inspection of the gross income of the households revealed the following.

GROSS MONTHLY INCOME (REPORTED)

	TOTAL (n = 197)	% of Total	% of Normal Group (n = 101)	% of Other Group (n = 96)
R0 – R1399	53	27,0	17,8	36,5*
R1400 – R3999	77	39,1	48,5*	29,2
> R4000	53	26,9	26,7	27,1
Refused	14	7,1	6,9	7,3

From the table it can be deduced that a statistical significant percentage of the *Other* group reported low-income levels. In the second category significant more percentage were found in the normal group. This finding might be considered as one of the reasons why this group was further in arrears with the payment of their water accounts.

OWNERSHIP OF PROPERTY

	n = 199	% of Total	Normal % n = 103	Other % n = 96
Own, paid off	23	11,6%	13,6	9,4
Own, still paying	122	61,3%	60,2	62,5
Renting	54	27,1%	26,2	28,1

The average size of a stand was reported as 412,32 m². (It should be noted, however, that 30 respondents (15,4%) did not know what the size of their stand was, and was therefore not included in the calculation.)

No significant differences were found in this table. Ownership therefore can not be identified as a probable causal issue for non-payment.

The table below shows the language composition of the sample.

HOME LANGUAGE

Home language	n = 200	Total of % n = 200	<i>Normal %</i> <i>n = 104</i>	<i>Other %</i> <i>n = 96</i>
Afrikaans	77	38,5	48,1*	28,1
English	52	26,0	26,0	26,0
Southern Sotho	4	2,0	-	4,2
Northern Sotho	44	22,0	17,3	27,1*
Xhosa	2	1,0	1,0	1,0
Zulu	7	3,5	1,0	6,3
Venda	1	0,5	1,0	-
Tswana	9	4,5	4,8	4,2
Tsonga	3	1,5	-	3,1
French	1	0,5	1,0	-

Although a significant difference between “*Normal*” and “*Other*” groups was identified for two language groups, namely Afrikaans and Northern Sotho, Home Language as a demographic can not be used as a cause or source dependency (using a χ^2 -test).

4.1.2 GENERAL ATTITUDES

General attitudinal questions were asked to gain insight into the respondents' opinions about the quality of residential water. A five-point scale was applied with the following values: 1 - *Do not agree at all*; 2 - *Do not agree*; 3 - *Uncertain*; 4 - *Agree*; 5 - *Definitely agree*. Average scores were then calculated and where relatively large differences were observed, statistical tests were applied.

WATER QUALITY (MEAN SCORES OUT OF 5)

<u>STATEMENT</u>	<i>Normal</i>	<i>Other</i>
<i>My household has no problems with the water we receive here</i>	4,4	4,4
<i>We have a problem with the taste of the water we use</i>	1,9	1,8
<i>We have a problem with the smell of the water</i>	1,9	1,8
<i>The water we use is clear and bright</i>	4,4	4,2
<i>I know how much water my household uses per month</i>	2,7	2,6
<i>The more water our household uses, the more we should pay</i>	4,2	4,3
<i>To supply water to my stand costs money</i>	4,5	4,2
<i>To have clean water costs money</i>	4,3	4,1
<i>We receive our account regularly (once a month)</i>	4,2	3,9
<i>People should receive water even if they do not pay</i>	2,6	2,5

From the results, no statistical significant differences were observed between the *Normal* and the *Other* groups. Both groups were quite satisfied with the quality of the water they received. A problem was observed in the estimation of the quantity of water used (both groups). Only about a third of both groups stated that they know how much water their households used in a month.

The percentage of respondents that agreed with the statement that the supply of water to their stands costs money, was high (90,0%) in the *Normal* group and 84,0% in the *Other* group.

A statistically non-significant difference was seen in the numbers of respondents that agreed with the statement that they had received their accounts regularly: 84,0% of the *Normal* group agreed with this, as opposed to 78,0% of the *Other* group.

An uncertainty was also detected to the statement whether people should receive water even if they do not pay for it. The difference in percentages of both groups that agreed with the statement, however, was not significant (52% and 50%). The uncertainty of the respondents to this statement is, however, a finding that also needs further attention.

4.1.3 ESTIMATION OF WATER CONSUMPTION

Respondents were asked to estimate how much water they used monthly and actual consumption was read from their accounts. The average consumption was used as basis for comparison.

	<i>Normal</i>	<i>Other</i>
Estimated water consumption per month (in kI)	10,5	10,9
Actual water consumption per month (in kI)	24,9	29,8*

It was prevalent that the **actual** water consumption was much higher for both groups than the **estimated** consumption. This under-estimation might be a serious phenomenon that needs to be addressed in future awareness campaigns. If respondents are using much more water than they estimate, it might prove to be an issue that needs careful consideration in information campaigns on methods of saving water, and for improvement of the payment levels for water.

4.1.4 KNOWLEDGE OF WATER CONSUMPTION UNITS

A question was asked to obtain the respondents' knowledge of the units of water consumption (*litres (l)*, *kilolitres (kl)* and *Mega litres (Ml)*). The percentages of respondents that **knew** these quantities are given in the following table.

	<i>Normal</i> %	<i>Other</i> %
<i>Litres</i>	93,3	92,7
<i>Kilo litres</i>	72,1*	56,3
<i>Mega litres</i>	46,2*	32,3

The knowledge of units of water consumption among the respondents decreased significantly as the units increased (from *litres* to *Mega litres*) among both groups, but significantly more in the *Other* category. Although these terms are frequently used in the water supply industry, it seems that the respondents did not know these units that well. In the case of Tshwane, if units of consumption are not printed on the water accounts, it may aggravate the situation.

4.1.5 ATTITUDES ABOUT PAYMENT FOR WATER

Both the *Normal* (90,4%) and *Other* (91,6%) respondents agreed that households should pay for the water they used. Spontaneous mention of the reasons WHY they considered payment for water usage was necessary, were the following:

	<i>Normal</i> %	<i>Other</i> %
<i>Cost is involved to provide us with water – pipes, etc.</i>	63,8	59,8
<i>You have to pay for your water usage every month</i>	34,0	39,1
<i>If you don't pay, the water will be cut off</i>	2,1	1,1

From this table, it seems that the reasons WHY respondents have to pay for water was fairly well understood.

4.1.6 KNOWLEDGE ABOUT THE FREE 6kl OF WATER

The respondents were probed about their knowledge of the free 6kl of water, as announced by the Water Affairs Minister. The reactions to various statements were the following:

“Only those that use a limited number of kl per month qualify for free water”.

	<i>Normal</i> %	<i>Other</i> %
<i>True</i>	49,0	60,0
<i>False</i>	21,2	25,3
<i>Unsure/Don't know</i>	29,8*	14,7

The normal group had less knowledge and were significantly more unsure/didn't know about it.

“6kl is enough water to survive for a month if you are very poor.”

	<i>Normal</i> %	<i>Other</i> %
<i>True</i>	45,2	45,7
<i>False</i>	41,3	41,5
<i>Unsure/Don't know</i>	13,5	12,8

“If my household income is less than R1 100 per month, we can get 6kl free water per month.”

	<i>Normal</i> %	<i>Other</i> %
<i>True</i>	55,8	60,4
<i>False</i>	21,2	24,0
<i>Unsure/Don't know</i>	23,1	15,6

“Push button taps are installed for those households that do not pay for their water accounts.”

	<i>Normal</i> %	<i>Other</i> %
<i>True</i>	46,2	52,1
<i>False</i>	9,6	14,6
<i>Unsure/Don't know</i>	44,2	33,3

“The water meter on our stand is working.”

	<i>Normal</i> %	<i>Other</i> %
<i>True</i>	99,0*	91,7
<i>False</i>	-	6,6*
<i>Unsure/Don't know</i>	1,0	2,1

“Those that qualify for more than 6kl per month will have to pay for the extra litres used.”

	<i>Normal</i> %	<i>Other</i> %
<i>True</i>	72,1	72,6
<i>False</i>	11,5	15,8
<i>Unsure/Don't know</i>	16,3	11,6

“People earning less than R1 100 per month are entitled to register for free water (first 6kl).”

	<i>Normal</i> %	<i>Other</i> %
<i>True</i>	51,9	61,1
<i>False</i>	19,2	25,3
<i>Unsure/Don't know</i>	28,8*	13,7

Considering the tables above and the time of the survey, there were low awareness with regard to who qualifies for free water or what the purpose of push-button taps are.

4.1.7 KNOWLEDGE AND OPINIONS ABOUT THE “PUSH BUTTON TAP”, THE “TRICKLE FLOW” AND THE “CUT-OFF” SYSTEMS

The interviewers explained the three systems to the respondents. Thereafter, the respondents were asked what they thought about each system as a measure to counter-act users that did not pay their accounts.

No significant differences were detected between the two groups.

The majority of the respondents (close to 75% of both groups) thought it was a...

Push-button taps

- *Good system to counter for people that didn't pay.*
- *They don't like it, but at least you have water.*
- *Don't like it – it's not appropriate.*
- *Respondents wouldn't be able to waste water.*
- *Everybody must pay for water.*

Trickle flow system

- *They don't like the system / it's a bad idea.*
- *It will be a good measure for those who can't pay.*
- *At least you have water.*
- *It's a waste of time.*
- *You must pay for water.*

Cut-off system

- *It's the best system; if you don't pay, your water supply must be cut off.*
- *Water is a basic need / cannot live without water.*
- *It is very bad / unfair / cruel.*

4.1.8 GROUPS' ATTITUDES

The scores (out of 5) on the agreement scales (as mentioned in 4.1.2) were:

	<i>Normal</i>	<i>Other</i>
<i>We in this area pay our water and electricity on a regular basis</i>	3,7	3,6
<i>If my neighbour is not paying his/her account, why should I?</i>	2,1	2,0
<i>People here don't pay their accounts because water and electricity is not essential to them</i>	1,9	1,9
<i>If everybody stops paying, there will be no water supply</i>	4,0	3,9
<i>People here don't pay their accounts because we receive bad service from the Council</i>	2,0	2,3
<i>I don't pay because I don't have money or can't afford it</i>	2,1	2,5*

No significant differences were found for the 2 groups, except for the last statement. This is one of the reasons identified in the literature for non-payment.

On average, most (but not all) respondents agree that bills are paid on a regular basis, and "if everybody stops paying, there will be no water supply." It can also be seen that most (but not all) respondents disagreed with the statements that:

If the neighbour is not paying, why should he/she; and

People do not pay accounts because it is not essential to them; because of bad service or cannot afford it.

4.1.9 COMMUNICATION

It is imperative that local authorities keep their respondents informed about new policies, regulations, payment structures (increases and concessions), etc.

Respondents were asked whether they had been informed recently about the latest payment system of the Council. Their responses were:

	<i>Normal</i> %	<i>Other</i> %
Yes, recently	13,5	8,3
Yes, last year	2,9	5,2
No	83,7	86,5

Respondents were also asked **how** they had received information.

	<i>Normal</i> <i>n = 13</i> %	<i>Other</i> <i>n = 10</i> %
Letter was posted to me / Letter with account	61,5	50,0
Pamphlets	23,1	30,0
Spoke to the people at the Council's office	15,4	20,0

It seemed that the *Normal* payers were somewhat more informed than the *Other* group. This could, however, be a function of the respondents of which the water supply had been suspended or cut-off, and were therefore no longer on the Council's postal list.

On the question if they had ever been informed about how to save water in a household (water saving tips) 24,5%* of the *Normal* group answered affirmatively, as opposed to only 16,8% of the *Other* group. The media through which they had received these tips were mainly by a newsletter or pamphlets. Very small percentages (less than 3%) also mentioned radio and television.

When asked about this water saving tips, the following were mainly spontaneously mentioned ranked from highest mention to lowest mention.

	<i>Normal</i> %	<i>Other</i> %
Don't use too much bath water / Share bath water	29,8	35,4
Close taps properly	29,8	22,9
Re-use water	24,0	28,1
Repair leakage	24,0	20,8
Water garden less regularly	23,1	19,8
Don't do the washing every day	19,2	16,7

Non-significant differences were observed between the two groups.

4.1.10 INTENTIONS AND ATTITUDES TO SAVE WATER

A number of statements were provided to study the respondents' attitudes to some aspects of their area and intentions to water saving methods. They were asked to what extent they agreed to the statements on a 5-point scale (see 4.1.2).

STATEMENT	<i>Normal</i>	<i>Other</i>
Our household has plans to save water the next few months	3,9	3,8
We intend to register for free water usage because our household income is less than R1100 per month	2,6	2,9
We will pay our bill earlier to qualify for the discount	3,8	3,8
It is important that all of the respondents here pay their bills	4,4*	4,2
I would like more information on how to save water	3,7	3,8
The electricity service we receive here is very good	4,1*	3,8
We have many electricity failures here	2,0	2,3*
If we have a problem with the electricity, it is solved quickly	3,8	3,5
Our area is very clean	3,6	3,5
Refuse removal is done on a regular basis	4,1	3,9
The streetlights are well kept	4,0*	3,6
Our account is correct	3,8*	3,1
It is our responsibility to repair leaks on our stand	3,7	3,7

Five significant differences were identified between the 2 groups, namely:

- It is important that all of the residents here pay their bills.
- The electricity service we receive here is very good.
- We have many electricity failures here.
- Streetlights are well kept.
- Account is correct.

The following statements were asked on a 3-point agreement scale:

We intend to register for free water usage because our household income is less than R1 100 per month.

	<i>Normal</i> %	<i>Other</i> %
Do not agree	58,8	52,2
Uncertain	13,4	7,8
Agree	27,8	40,0

I would like to have more information on how to save water.

	<i>Normal</i> %	<i>Other</i> %
Do not agree	21,4	13,8
Uncertain	5,8	6,4
Agree	72,8	79,8

The electricity service we receive here is very good.

	<i>Normal</i> %	<i>Other</i> %
Do not agree	4,8	11,7
Uncertain	7,7	12,8
Agree	87,5*	75,5

We have many electricity failures here.

	<i>Normal</i> %	<i>Other</i> %
Do not agree	89,4	80,0
Uncertain	3,8	6,3
Agree	6,7	13,7

If we have a problem with the electricity, it is solved quickly.

	<i>Normal</i> %	<i>Other</i> %
Do not agree	10,9	18,3
Uncertain	11,9	16,1
Agree	77,2	65,6

Our area is very clean.

	<i>Normal</i> %	<i>Other</i> %
Do not agree	19,2	26,3
Uncertain	8,7	9,5
Agree	72,1	64,2

The streetlights are kept very well.

	<i>Normal</i> %	<i>Other</i> %
Do not agree	6,7	17,7*
Uncertain	6,7	14,6
Agree	86,5*	67,7

Our account is correct.

	<i>Normal</i> %	<i>Other</i> %
Do not agree	12,6	28,7*
Uncertain	19,4	24,5
Agree	68,0*	46,8

In analysing the results in these eight tables, two patterns became clear:

- The *Other* group agreed to a greater extent that they would save water, and more of them also needed more information on how such savings could be accomplished. These are good intentions, but whether they will be implemented remain to be seen.
- The second pattern was an “attitude” or “perception” phenomenon: The *Other* group perceived (or experienced) their electricity service less positive, their streetlights were not well kept, and accounts were not correct. This more negative perceptions or experiences may provide an explanation why they did not pay their accounts as regularly as the *Normal* group. It also needs to be investigated whether their negative attitudes are due to these “perceptions”, or real life experiences.

4.1.11 SERVICE CALL CENTRES

On the question whether the respondents had ever reported a water leakage, electricity failure, out-of-order streetlights, and sewerage problems or refuse removal problems at the Council, 22,1% of the *Normal* and 32,6%* of the *Other* group answered affirmatively. The kinds of problems (prompted) were as follows:

	<i>Normal</i> %	<i>Other</i> %
Electricity problem	54,5	51,6
Water problem	40,9	58,1
Streetlights	22,7	12,9
Sewerage	9,1	16,1
Waste removal	4,5	6,5

The focus of the respondents' concerns lay mainly with electricity and water problems. The reasons (though the numbers are too small to come to final conclusions), were:

Negative responses

- *(They) took their time to come out (n = 8).*
- *They did not treat us with respect / rude (n = 4).*
- *Still waiting for answer from the Council (n = 1).*
- *We had to pay to get it fixed (n = 1).*
- *Water meter not working / estimate usage / still not fixed (n = 1).*
- *Water meter broken / they said I am responsible (n = 1).*
- *(They) couldn't solve the problem properly (n = 1).*

Positive responses

- *Quick response / Was able to fix the problem (n = 29).*
- *Good service (n = 5).*
- *Good, but service can improve (e.g. streetlights / reaction) (n = 34).*

4.2 TSHWANE METROPOLITAN MUNICIPALITY: POST-TEST RESULTS AND COMPARISON

4.2.1 COMPOSITION OF THE SAMPLE

The interviews for the post-test survey were repeated in the same households as the pre-test survey, in order to study any differences and correspondence of variables that might have changed between the two surveys.

NOTE In the post-test survey, complete datasets of 169 respondents only, were available for analyses.

It was not in all cases possible to conduct the second interview with exactly the same person in each household. In 84,6 % of the interviews (n = 169), the respondents indicated that they had been interviewed during the pre-test survey. Of these, 78 were in the *Normal* group and 91 in the *Other* group.

4.2.2 COMMUNICATION

Respondents were asked whether they had been informed about the 6kl of free water, which had been announced by the Government. The question was: "*Have you recently received information about the first 6000 litres free water to you household?*" The responses to the question were the following.

	<i>Normal</i> <i>n = 78</i> %	<i>Other</i> <i>n = 91</i> %
Yes	65,4	75,8
No	34,6	24,2

More of the *Other* group than the *Normal* group mentioned that they had heard of the announcement. It was, however, not a significant difference.

When asked WHERE they had received the information from, they mentioned the following sources.

	<i>Normal</i> <i>n = 78</i> %	<i>Other</i> <i>n = 91</i> %
City Council meeting in area/Community meeting	5,9	31,9*
Newsletter from the Council	27,5	14,5
Television	17,6	20,3
Newspaper	17,6	11,6
Friends	3,9	11,6

The primary source of this information might differ in other areas, but is an avenue that Councils may explore to distribute information to respondents.

4.2.3 GENERAL ATTITUDE QUESTIONS

According to the research design for this study, specific questions were repeated in the second (post-test) survey with the aim to examine any differences that might occur from the first to the later surveys.

The same 5-point scale was applied as for the first survey, in order to be able to draw comparisons (1 - *Do not agree at all*; 2 - *Do not agree*; 3 - *Uncertain*; 4 - *Agree*; 5 - *Definitely agree*. (For easier comparison, the scores of pre-test survey are provided in brackets.)

WATER QUALITY AND KNOWLEDGE (MEAN SCORES OUT OF 5)

**Statistical significant difference on a 5% significance Pre- and Post test.

** Outside table applies for Normal and Other.

<u>STATEMENT</u>	<i>Normal</i>	<i>Other</i>	
My household has no problem with the water we receive here	4,6* (4,4)	4,4 (4,4)	
We have a problem with the taste of water we use	1,2 (1,9)	1,3 (1,8)	**
We have a problem with the smell of the water	1,3 (1,9)	1,4 (1,8)	**
The water is clear and bright	4,5 (4,4)	4,4 (4,2)**	
I know how much water my household uses every month	3,2 (2,7)**	2,9 (2,6)	
The more water our household uses, the more we should pay	4,3 (4,2)	4,3 (4,3)	
To supply water to my stand costs money	4,6 (4,5)	4,4 (4,2)	

STATEMENT	Normal	Other	
To have clean water here costs money	4,6 (4,3)	4,5 (4,1)	**
We receive our account regularly (once a month)	4,4 (4,2)	4,2 (3,9)	**
People should receive water even if they do not pay	2,5 (2,6)	2,7 (2,5)	

As in the case of the pre-test situation, the respondents were quite satisfied with the quality of the water they received. Significant differences (**) were found between the pre-test and post-test results with regard to some questions relating to water quality.

The post-test results of knowledge of water usage show a significant increase at the Normal group (**). An attitude shift took place with regard to this issue. Perceptions about the taste and smell of water also changed significantly during the survey period.

With the aim of getting a better perspective into the problem of non-payment, respondents were asked to classify themselves into one of two statements that describe their households best.

STATEMENTS DESCRIBING HOUSEHOLDS

"Please tell me which one of these two statements describes your households best."

	Normal %	Other %
<i>Because we don't know how much water and electricity we use, it is difficult to use less water and electricity and our account is always too much to pay</i>	17,9	30,8
<i>We limit the use of water and electricity in order to afford the payment for water and electricity</i>	82,1	69,2

The option contained two aspects, namely knowledge of the amount of water and electricity used and the affordability of the consumption thereof. As only two options were permitted, the results reflect a mirror image of each other.

From the results, differences between the two groups can be observed. However, the differences between the *Normal* and *Other* group are not statistically significant on a 5% level.

However, most respondents indicated that the use of water and electricity is limited in order to afford the payment for water and electricity.

4.2.4 ATTITUDES ABOUT THE PAYMENT FOR WATER

As was the case in the pre-test survey, very high percentages of both groups in the post-test survey (92,3% and 91,2% respectively) thought that households should pay for the water they used.

When the respondents that answered “YES” were probed what the reasons for their answers were, the following were mentioned. (Pre-test percentages in brackets.)

*One * indicates significant differences between Normal and Other.*

<u>REASONS MENTIONED</u> ¹	<i>Normal</i> %	<i>Other</i> %
<i>Cleaning water costs money/Costs money to provide water to us</i>	75,0* (63,8)	53,0 (59,9)
<i>Everybody must pay for the water they receive</i>	26,4 (34,0)	39,8 (39,1)
<u>OTHER REASONS</u> ¹		
<i>Water/Nothing is for free</i>	12,5	12,0
<i>Everyone must pay</i>	12,5*	1,2

¹ Duplication occurs

The most significant finding from the table above was that during the post-test survey, statistically significantly less from the *Other* group mentioned that the cleaning or provision of water was a costly matter and that everyone must pay. This may be explained by a lack of understanding of the *Other* group of the costs involved for the provision of healthy water.

The respondents that answered “NO” were also probed what the reasons for their answers were.

<u>REASONS MENTIONED</u> ¹	<i>Normal</i> n	<i>Other</i> n
<i>I don't have enough money to pay water and electricity</i>	2	2
<i>Unemployed people should get water for free</i>	2	1
<i>People can't live without water</i>	2	1
<i>We have the right to receive water to survive</i>	1	1

¹ Duplication occurs

As these numbers were very small, no meaningful deductions could be made from the results in the table above.

4.2.5 KNOWLEDGE ABOUT THE FREE 6kl OF WATER

The respondents were again probed about their knowledge of the free 6kl of water, as announced by the Minister of Water Affairs. The reactions to various statements were the following. Pre-test scores are in brackets – One * : Significant differences between “Normal” and “Other”

Two ** : Significant differences between pre- and post surveys.

“6kl is enough water to survive for a month if you are very poor.”

	<i>Normal</i> %	<i>Other</i> %
<i>True</i>	73,1* (45,2)**	56,0 (45,7)
<i>False</i>	14,1 (41,3)**	31,9* (41,5)
<i>Unsure/Don't know</i>	12,8 (13,5)	12,1 (12,8)

“Push button taps are installed for those households that do not pay for their water accounts.”

	<i>Normal</i> %	<i>Other</i> %	
<i>True</i>	66,7 (46,2)	76,9 (52,1)	**
<i>False</i>	5,1 (9,6)	5,5 (14,6)**	
<i>Unsure/Don't know</i>	28,2 (44,2)	17,6 (33,3)	**

“The water meter on our stand is working.”

	<i>Normal</i> %	<i>Other</i> %
<i>True</i>	98,7 (99,0)	95,6 (91,7)
<i>False</i>	1,3 (-)	2,2 (6,3)
<i>Unsure/Don't know</i>	- (1,0)	2,2 (2,1)

“If our household uses more than 6kl per month we will have to pay for the extra litres used.”

	<i>Normal</i> %	<i>Other</i> %	
<i>True</i>	94,9* (72,1)	85,7 (72,6)	**
<i>False</i>	2,6 (11,5)	4,4 (15,8)	**
<i>Unsure/Don't know</i>	2,6 (16,3)**	9,9 (11,6)	

“People earning less than R1 100 per month are entitled to register for free water (first 6kl).”

	<i>Normal</i> %	<i>Other</i> %	
<i>True</i>	79,5 (51,9)**	73,6 (61,1)	**
<i>False</i>	5,1 (19,2)	11,0 (25,3)	
<i>Unsure/Don't know</i>	15,4 (28,8)**	15,4 (13,7)	

During the pre-test survey, no significant differences between the *Normal* and the *Other* groups could be observed. The respondents' levels of information on the topics such as the first free 6kl of water, the installation of push-button taps and the registration of indigents seemed to have increased substantially and statistically significantly from the pre-test to the post-test surveys. This could probably be ascribed to heightened information campaigns (formal and informal) and increased media coverage.

Statistically significant differences were also detected in the post-test survey between the *Normal* and the *Other* groups. More of the *Normal* group (73,1%) agreed with the statement that 6 000 litres was enough water to survive for a month if you were poor, than the *Other* group (56,0%). With regard to the installation of push-button taps for households who did not pay their water accounts, there was, however, more of the *Other* group (76,9%) that said the statement was true, than of the *Normal* group (66,7%).

4.2.6 SEPARATE ACCOUNTS FOR WATER AND ELECTRICITY

A question was asked to the respondents whether they would prefer to receive a separate account for water.

PREFERENCE OF A SEPARATE WATER ACCOUNT

	<i>Normal</i> %	<i>Other</i> %
<i>Yes</i>	14,3	23,1
<i>No</i>	85,7	76,9

The reasons for the “YES” option, were mostly

- ♦ *Can see the difference between water and electricity better*
- ♦ *To see clearly how much water we use/owe*
- ♦ *At the moment I don't understand my account – too confusing*
- ♦ *The account will be more detailed.*

Most respondents, however, said NO, for reasons:

- ♦ *Will not make any difference, so I prefer it as it is now*
- ♦ *Too much paper and statements/extra expenses*
- ♦ *Less confusion*
- ♦ *Council charge more money for all the paper they use.*

4.2.7 GROUPS' ATTITUDES

As mentioned previously, it was an important goal with the study to gain insight into the neighbours' and adjacent respondents' influence on the individual's payment of water accounts. Most of the differences between the results of the "*Normal*" group and the "*Other*" group were not statistically significant except for the difference on the statement "People here don't pay their accounts because we receive bad service from the council" (Pre-test scores in brackets). The scores on the agreement levels (out of 5, as mentioned in 4.1.2) were:

	<i>Normal</i>	<i>Other</i>
<i>We in this area pay our water and electricity on a regular basis</i>	3,8 (3,7)	3,7 (3,6)
<i>If my neighbour is not paying his/her account, why should I?</i>	2,2 (2,1)	1,9 (2,0)
<i>People here don't pay their accounts because water and electricity is not essential to them</i>	1,7 (1,9)**	1,8 (1,9)
<i>If everybody stops paying, there will be no water supply</i>	4,0 (4,0)	3,9 (3,9)
<i>People here don't pay their accounts because we receive bad service from the Council</i>	1,7 (2,0)**	2,2* (2,3)
<i>I don't pay because I don't have money or can't afford it</i>	2,0 (2,1)	2,9* (2,5*)

Statistical significant reductions between pre- and post-test scores were found in the *Normal* group at two statements. One statement, regarding non-payment, showed a significant increase at the *Other* group.

From the table above it can be deducted that lack of money (and not bad service) is one of the causes of non-payment.

4.2.8 PERCEIVED CHANGES BETWEEN THE TWO SURVEYS

Respondents were asked whether the Council's services had changed since the first survey. Their reactions were:

	<i>Normal</i> %	<i>Other</i> %
<i>Service deteriorated</i>	0	11,0*
<i>Remained the same</i>	96,1*	73,6
<i>Service improved</i>	3,9	15,4*

The results indicate that statistically significant differences between the *Normal* and *Other* groups occurred between the two surveys. Generally, the *Other* group appeared to be more negative in their experiences of the services of the Council, from the pre-test to the post-test surveys. (Keep in mind that these were the respondents of whom the water supply had been suspended, indigents, illegal connectors or push-button tap installations.) Respondents, against whom some action had been taken, were subsequently somewhat more negative than the *Normal* group.

They were also asked if they thought that they had used less water since the pre-test survey.

	<i>Normal</i> %	<i>Other</i> %
Yes	45,9	56,8
No	54,1	43,2

A non-significantly higher % indicated they used less water than the *Normal* group.

The respondents were further probed on the measures they had applied to save water. The most frequently mentioned measures from the two groups were:

	<i>Normal</i>	<i>Other</i>
<u>IF YES, WHAT DID YOU DO TO SAVE WATER?¹</u>	%	%
<i>Don't water garden everyday</i>	29,4	12,8
<i>Re-use water</i>	20,6	14,9
<i>Didn't water my garden in the winter</i>	17,6	14,9
<i>Always try to use less water</i>	20,6	12,8
<i>Use less water to bath</i>	11,8	12,8
<i>Less washing</i>	8,8	8,5
<i>Don't use hose-pipe, use a bucket</i>	8,8	8,5

¹ Duplication occurs

The numbers of respondents that mentioned measures they had applied were very small. However, some useful methods may be deduced from those that were suggested.

The respondents that answered "NO" were also further probed for reasons why they had not applied anything to save water. (Numbers (n) are provided in square brackets.)

	<i>Normal</i>	<i>Other</i>
<u>IF NO, WHY DID YOU NOT SAVE WATER?¹</u>	% [n]	% [n]
<i>Still use the same amount – nothing changed</i>	37,5 [15]	40,0 [14]
<i>Use as little as we can/Already use the minimum</i>	37,5* [15]	11,4 [4]
<i>Don't waste water</i>	15,0 [6]	11,4 [4]
<i>I have been saving water all along</i>	12,5 [5]	11,4 [4]
<i>Account still has the same amount/Useless, we'll pay more</i>	15,0 [6]	5,7 [2]

¹ Duplication occurs

NOTE: The number of respondents who didn't apply any water saving measures was again not large enough to draw meaningful conclusions; the results should therefore be treated with caution. Statistically significant differences between the two groups were, however, observed for the category "We use as little as we can/Already use the minimum" (37,5% of the *Normal* group and 11,4% of the *Other* group).

The following question was: “What method would you prefer in limiting/cutting your water supply if you neglect to pay the Council for the water you used?” (Numbers (n) are provided in square brackets.)

	<i>Normal</i>	<i>Other</i>
<u>RESPONSES TO PROPOSED METHODS</u>	% [n]	% [n]
<i>Installation of a restrictive device that limits the water</i>	27,3 [21]	42,2* [38]
<i>Installation of a pre-paid water meter and buying water first</i>	39,0* [30]	17,8 [16]
<i>Installation of a push-button tap at your water meter</i>	26,0 [20]	26,7 [24]

As the options were supplied to the respondents during the interview, fairly high response rates were obtained.

Statistically significant differences in the options preferred by the two groups revealed that more of the *Other* group chose “to have a restrictive device installed that limits water”. Quite a high percentage (42,2%) of the *Other* group felt that a restrictive device that limited water flow would be acceptable, but the *Normal* group (39%) said that the “installation of a pre-paid water meter” would be preferred. The low income levels and problems of non-paying the water accounts could explain this for the *Other* group. It seems different methods of handling non-payment should be followed for the two groups.

4.2.9 ESTIMATED VS. REAL WATER CONSUMPTION

In the post-test survey, respondents were again asked to estimate their water consumption, which was then compared to their actual figures. (Pre-test figures are provided in brackets.)

	<i>Normal</i>	<i>Other</i>
Estimated water consumption per month (in kl)	12,8 (10,5)	15,0 (10,9)
Actual water consumption per month (in kl)	22,5 (24,9)	31,1* (29,8*)

Respondents' estimation again differed substantially from their actual water consumption. In the case of the *Normal* group, however, not only did they give a closer estimation of their water consumption than the *Other* group, but a decrease in their water consumption was also recorded. The opposite was true with regard to both variables in the *Other* group.

This finding shows that the *Other* group used on average more water per household than the *Normal* group. Is there a lack of personal responsibility regarding water usage in general?

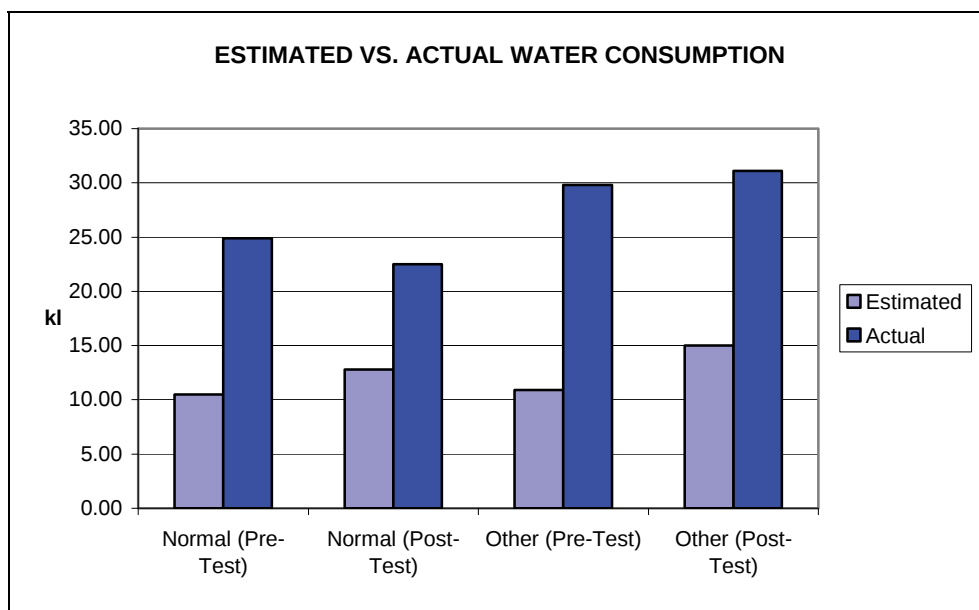
4.2.10 SUMMARY OF RESULTS

Respondents in the selected areas in Tshwane were divided into two groups according to their payment for water consumption behaviour, namely the *Normal* and *Other* groups. Some negativity and signs of a lack of personal responsibility were deduced from the data of the *Other* group's responses on the attitude questions. This could also be interpreted as a resistance to the payment for water.

The average number of people on stands (4,22) was higher for *Other* groups (4,58)* compared to *Normal* groups (3,88).

From the findings it was prevalent that most of the respondents agreed with the general principles of water provision, i.e. the supply of clean and healthy water is a costly process. Very few complaints about the quality of water were observed.

A conspicuous finding was respondents' inability to estimate their water consumption accurately. This under-estimation may be a serious phenomenon that needs further attention in information campaigns. If respondents are using much more water than they estimate, it might prove to be a problem that needs careful consideration in information campaigns about methods of saving water, as well as for the improvement of the payment levels for water. It was found that the *Other* groups were less accurate in estimating water usage than the *Normal* group.



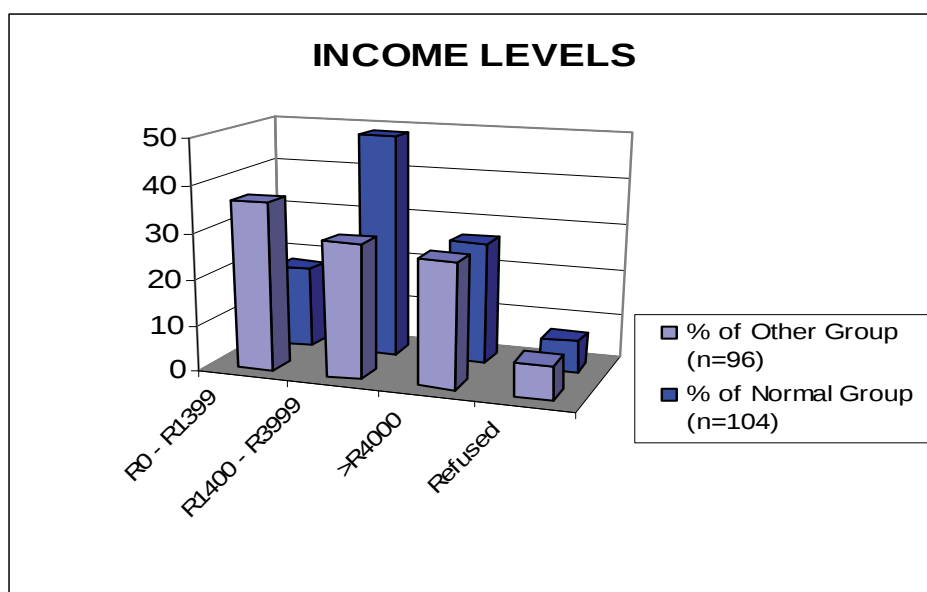
Respondents' knowledge of the units of water consumption decreased as units increase from litres, kilolitres to Mega litres. In Tshwane's case, if the units of consumption are not printed on monthly accounts, the

confusion may be aggravated. About 80% of both groups indicated that they would not prefer a separate water account.

Although the provision of 6kl of free water was still a relatively new concept, about 60% of the respondents mentioned that they were aware of the announcement. A significant increase in awareness levels was observed from the pre-test to the post-test survey.

Mixed opinions were expressed about the installation of “Push button” taps, “Trickle flow systems” and “Cut-off” systems as measures for respondents that did not pay their water accounts regularly. Although some described the systems as good measures, others rejected them. Indications were that respondents who were not far in arrears, approved these measures somewhat more than the *Other* Group, who were further in arrears and therefore experienced the proposed measures as a more immediate possibility.

With regard to communication, the need was visible for respondents to have more information on a regular basis. About 20% of the *Other* group mentioned that they didn't receive their accounts every month. More than 70% mentioned they needed more information on water saving methods. The communication with respondents undoubtedly needs further attention.



Another conspicuous finding was the respondents' reported financial position, as reflected in the graph above. A substantial proportion of the *Other* Group were in lower income levels compared to the *Normal* Group. Their financial disposition may have been an important contributing factor in the non-payment of water accounts.

In conclusion, the following research variables can be identified as being related to non-payment behaviour:

The “*Other*” group

- Had more people living on the stand per household.
- Had more respondents in the lower income category.
- Used more water per household.
- Was less accurate in estimating water consumption.
- Saved less water.
- Had less knowledge about the units of water consumption.
- Was more against measures (e.g. “push button” taps) to assist the lower income groups.
- Showed lack of personal responsibility (based on attitudes towards water usage).
- Received their accounts less on a regular basis.

CHAPTER 5 – RESULTS: JOHANNESBURG MUNICIPALITY

5.1 PRE-TEST RESULTS

5.1.1 DEMOGRAPHICS

In the area of South Hills, 200 respondents (households) were interviewed. However, the data of only 165 households' water payment and water usage records could be analysed. Their average age was 49 years. Female respondents were in the majority (61,2%). The males accounted for 38,8% of the interviewees.

The respondents were divided into three groups according to their account information of payment for water. The groups were the following:

- The first group (Group 1) was composed of respondents who were up to date with payments, or had arrears of up to R100-00 (n = 62).
- Group 2 (n = 81) was in arrears with amounts between R101-00 and R1200-00.
- Group 3 (n = 22) was composed of respondents who were more than R1200-00 in arrears.

EMPLOYMENT STATUS (CLAIMED)

	TOTAL (n = 165)	% of Total	Group 1 (n = 62)	Group 2 (n = 81)	Group 3 (n = 22)
Employed	46	27,9	22,6%	30,8%	31,8%
Unemployed	115	69,7	74,2%	66,7%	68,2%
Self-employed	4	2,4	3,2%	2,5%	-

The average (reported) gross income level of the households was R4132-50 per month. 88,5% lived in formal houses and 11,5% were living in a flat. Twenty (12,1%) of the respondents mentioned that they had a second dwelling on the stand and seven (4,2%) reported a third dwelling. The average number of people living on a stand was 4,15. The reported gross income levels of the three groups were as follows:

GROSS MONTHLY INCOME (REPORTED)

	TOTAL (n = 164)	% of Total	% of Group 1 (n = 62)	% of Group 2 (n = 80)	% of Group 3 (n = 22)
R0 – R1339	56	34,1	40,3%	30,0%	31,8%
R1400 – R3999	44	26,8	19,4%	33,8%	22,7%
> R4000	57	34,7	35,5%	32,6%	40,9%
Refused	7	4,3	4,8%	3,8%	4,5%

OWNERSHIP OF PROPERTY

Own, paid off	40,6%
Own, still paying	39,4%
Renting	18,8%

The average size of the stands was 687,62 m². (Fourteen respondents (8,97%) mentioned that they lived in a flat, and therefore the sizes of their stands were not included in the calculation.)

The home language distribution of the study area was the following.

HOME LANGUAGE

	TOTAL (n = 165)	% of Total	Group 1 (n = 62)	Group 2 (n = 81)	Group 3 (n = 22)
Afrikaans	111	67,3	66,1%	65,4%	77,3%
English	30	18,2	21,0%	18,5%	9,1%
Southern Sotho	3	1,8	1,6%	2,5%	-
Xhosa	7	4,2	4,8%	2,5%	9,1%
Zulu	7	4,2	4,8%	3,7%	4,5%
Venda	1	0,6	-	1,2%	-
Tswana	1	0,6	1,6%	-	-
Tsonga	2	1,2	-	2,5%	-
Portuguese	1	0,6	-	1,2%	-
Swazi	1	0,6	-	1,2%	-
Spanish	1	0,6	-	1,2%	-

5.1.2 GENERAL ATTITUDES

By way of introduction, the respondents were asked whether they agreed that water (over the centuries) is one of our basic needs. Most of the respondents from all three groups agreed with this statement.

The respondents were further asked whether they had heard of *Johannesburg Water* before.

	Group 1 %	Group 2 %	Group 3 %
Yes	79,0	77,5	59,1
No	21,0	22,5	40,9

Although reasonably more respondents from Group 1 and 2 are aware of *Johannesburg Water* than Group 3, the difference was not statistically significant.

A 5-point scale was implemented as for the interviews in the other three areas, in order to be able to do comparisons (1 - *Do not agree at all*; 2 - *Do not agree*; 3 - *Uncertain*; 4 - *Agree*; 5 - *Definitely agree*). The results for the three groups in South Hills are presented in the following table.

WATER QUALITY (MEAN SCORES OUT OF 5)

STATEMENT	Group 1	Group 2	Group 3
<i>My household has no problems with the water we receive here</i>	4,4	4,4	4,6
<i>We have a problem with the taste of the water we use</i>	2,2	2,0	1,6
<i>We have a problem with the smell of the water</i>	2,2	2,1	1,5
<i>The water we use is clear and bright</i>	4,1	4,4	4,5
<i>I know how much water my household uses per month</i>	3,0	2,8	2,8
<i>The more water our household uses, the more we should pay</i>	3,8	4,0	3,6
<i>To supply water to my stand costs money</i>	4,2	4,2	4,2
<i>To have clean water costs money</i>	4,2	4,3	4,2
<i>We receive our account regularly (once a month)</i>	3,9	3,8	4,1
<i>People should receive water even if they do not pay</i>	3,2	3,1	3,3

Generally, all three groups were quite satisfied with the quality of the water they received. They also generally agreed with the principles of water supply.

5.1.3 ESTIMATED VS. REAL WATER CONSUMPTION

Respondents were asked to estimate how much water they used monthly. The interviewers were then asked to see the resident's latest water account. The water consumption was then read as printed on the account.

	Group 1	Group 2	Group 3
Estimated water consumption per month (in kI)	7,2	7,5	11,1
Actual water consumption per monthly account (in kI) ¹	36,9	35,6	47,6

¹ NOTE: As the provision of water was in a process of being transferred from the Johannesburg Municipality to *Johannesburg Water*, the figures for water used on the accounts were probably for a period longer than a month. The actual consumption figures therefore are higher.

It was the case in all the other areas in which the study was conducted, the **actual** water consumption was much higher for all three groups than the **estimated** consumption. Under-estimation of water consumption, might also here be a serious problem, particularly in Group 3, whom had by far the highest amounts for their water accounts in arrears. Whereas Groups 1 & 2 had kept their water consumption fairly reasonable, it seems as if Group 3 didn't take water consumption seriously. This problem may escalate in the future and drastic steps might be necessary to curb the problem.

5.1.4 KNOWLEDGE OF WATER CONSUMPTION UNITS

Knowledge of water consumption units in the South Hills groups (as was also the case of the groups from other areas) showed a similar pattern. The percentages that **knew** these units were as follows.

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Litres (l)</i>	80,6	79,0	68,2
<i>Kilo litres (kl)</i>	67,2	63,0	50,0
<i>Mega litres (Ml)</i>	45,0	39,2	36,4

A constant pattern was again prevalent, i.e. that the groups that were further in arrears knew less about these units than the other groups. Secondly, the smaller units were better known than the bigger units. The explanation may lie therein that the bigger units did not form part of everyday life experiences and were therefore relatively unknown.

5.1.5 ATTITUDES ABOUT THE PAYMENT FOR WATER

The majority of Groups 1 & 2 agreed that households should pay for the water they use (77,4% & 86,4% respectively). Only 50%* of Group 3, (statistically significantly less than the other two groups) agreed with the statement. This is an indication of negativity among Group 3, which can also be seen in the corresponding Group 3 of the other areas of the study. When probed what the reasons were why they thought it was necessary to pay for the water they used, the following main reasons were mentioned:

<u>REASON MENTIONED</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Costs involved / Nothing is for free (if we want quality)</i>	55,3	67,1	63,3
<i>You have to pay for the water you use / service</i>	25,5	24,3	27,3
<i>Water is important / a basic need</i>	12,8	7,1	9,1

Reasons mentioned were fairly generic, the differences in the frequencies of reasons mentioned by the three groups did not display statistical significant variation.

5.1.6 KNOWLEDGE ABOUT THE FREE 6kl OF WATER

The respondents' reactions to the statement "Your local Government recently announced that households will get 6kl of free water. Please say if the following statements are true or false".

"Only those that use a limited number of kl per month qualify for free water".

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	22,6	22,2	9,1
<i>False</i>	19,4	21,0	18,2
<i>Unsure/Don't know</i>	58,1	56,8	72,7

"6kl is enough water to survive for a month if you are very poor."

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	11,3	13,6	4,5
<i>False</i>	56,5	45,7	59,1
<i>Unsure/Don't know</i>	32,3	40,7	36,4

"If my household income is less than R800 per month, we can get a subsidy of R86 for water per month."

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	54,8	42,0	31,8
<i>False</i>	16,1	12,3	22,7
<i>Unsure/Don't know</i>	29,0	45,7*	45,5

"Firstly a warning is laid down for those households that do not pay their water accounts."

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	61,3	64,2	50,0
<i>False</i>	4,8	12,3	18,2
<i>Unsure/Don't know</i>	33,9	23,5	31,8

"Secondly, an opportunity for arrangement of payment of accounts in arrears is provided."

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	61,3	63,0	68,2
<i>False</i>	8,1	17,3	4,5
<i>Unsure/Don't know</i>	30,6	19,8	27,3

"Thirdly, service is terminated if non-payment continues."

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	62,9	55,6	68,2
<i>False</i>	3,2	16,0*	9,1
<i>Unsure/Don't know</i>	33,9	28,4	22,7

"The meter on our stand is working."

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	88,7	87,7	100,0
<i>False</i>	8,1	6,2	-
<i>Unsure/Don't know</i>	3,2	6,2	-

“If those that qualify use more than 6kl per month, they will have to pay for the extra litres.”

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	38,7	33,3	31,8
<i>False</i>	16,1	16,0	18,2
<i>Unsure/Don't know</i>	45,2	50,6	50,0

“Everybody is entitled to free water if consumption is less than 6kl per month.”

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	38,7	45,7	36,4
<i>False</i>	12,9	12,3	22,7
<i>Unsure/Don't know</i>	48,4	42,0	40,9

The respondents were subsequently probed about their thoughts on the system of payment whereby warnings were issued for non-payment and arrangements could be made for accounts that were in arrears.

<u>THOUGHTS MENTIONED¹</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>A warning is fair / The system is OK</i>	35,5	33,8	23,8
<i>Gives everybody a chance to pay (even slowly / get chance to catch up)</i>	32,3	26,3	28,6
<i>They are just talking (come once and then cut off)</i>	8,1	11,3	19,0
<i>Ignore / Don't know about the warnings / nobody pays attention to the warnings</i>	14,5*	3,8	9,5

¹ Duplication occurs

The signs of negativity with regard to Group 3 were more prevalent from the results in the table above. Non-significantly less of Group 3 thought the system was fair and some of them also expressed non-confidence in the local authority. Group 1's responses on *ignoring and no knowledge of warnings* were significantly higher than Group 2.

Their thoughts on the system of registration of indigents were also probed.

<u>THOUGHTS MENTIONED</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>It's good; it will help people (pay less / more affordable)</i>	61,3	57,5	54,5
<i>Everybody should register so the Council knows who qualifies</i>	6,5	17,5	27,3*
<i>It's a good idea – there will be negotiations</i>	8,1	12,5	4,5

¹ Duplication occurs

The approval for the system of being registered as an indigent was high for all three groups (more than half thought it would assist respondents).

They were also probed on the type of penalties that should be imposed for the non-payment of water.

<u>PENALTIES MENTIONED</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Just warnings (written) / No penalties</i>	33,9	37,3	52,4
<i>Cut off the water</i>	23,7	20,9	19,0
<i>Add interest to outstanding amount / They should be fined</i>	25,4	17,9	14,3
<i>Be fair and first see what the problem is (find a solution)</i>	10,2	9,0	9,5

¹ Duplication occurs

Group 3 again showed a different pattern than the other two groups. Not surprisingly they were more in favour of just getting warnings, they seemed less in favour of having interest added to their outstanding accounts or being fined.

Respondents were also asked what they thought of the total “cut-off” system when water accounts were not paid.

<u>THOUGHTS MENTIONED</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>It is a health hazard / very bad / unfair / cruel / indecent</i>	57,4	60,8	85,7*
<i>The best / good punishment / If you don't pay they must cut off your water</i>	23,0	17,6	9,5
<i>Depends on the reasons why they are not paying</i>	9,8	13,5	-

¹ Duplication occurs

Once again, the pattern in the data of Group 3 differed substantially and statistically significantly from the other two groups. Group 3 was more outspoken about the system of “cut-off” as being unfair, and seemed entirely uninterested in the Council taking non-payment seriously.

5.1.7 GROUPS' ATTITUDES

As mentioned previously, it was an important aim with the study to gain insight into the neighbours' and adjacent respondents' influence on the individual's payment of water accounts. The results of the agreement levels (as mentioned in 4.1.2) were:

	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
<i>We in this area pay our water and electricity on a regular basis</i>	4,1	4,1	4,2
<i>If my neighbour is not paying his/her account, why should I?</i>	1,9	2,0	2,0
<i>People here don't pay their accounts because water and electricity is not essential to them</i>	1,6	1,7	1,6
<i>If everybody stops paying, there will be no water supply</i>	3,7	3,7	3,9
<i>People here don't pay their accounts because we receive bad service from the Council</i>	2,3	2,3	2,2
<i>I don't pay because I don't have money or can't afford it</i>	2,2	2,3	1,9

As was the case in the other survey areas, no significant differences were observed in the agreement levels of the three groups to the various statements with very similar agreement or disappointment scores.

5.1.8 COMMUNICATION

On the question whether the respondents had been informed in the recent past about the latest payment system of the Council, a huge proportion answered negatively.

<i><u>Have you been informed recently about the latest payment system of the Council?</u></i>	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
	<i>%</i>	<i>%</i>	<i>%</i>
<i>Yes, recently</i>	8,1	6,2	9,1
<i>Yes, last year</i>	8,1	2,5	9,1
<i>No</i>	83,9	91,4	81,8

From the table it can be deduced that more than 80% of the respondents had not been informed about the new payment system. There seemed to be a lack of communication to respondents from the local authority.

When probed HOW they had been informed the frequencies (f) of the responses were the following.

<i><u>How were you informed?</u></i>	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
	<i>f</i>	<i>f</i>	<i>f</i>
<i>Letter posted to me / my account / monthly statement</i>	4	2	3
<i>Metropolitan / City Council</i>	1	1	-
<i>Pamphlets</i>	-	1	-
<i>Word of mouth (neighbours / daughter / people talking)</i>	2	1	-
<i>Newspaper</i>	1	1	-
<i>TV News</i>	1	-	-
TOTAL	9	6	3

Respondents were further probed about information they had received on measures of saving water. Between 17% and 21% of the three groups reported affirmatively that they had been informed. The ways through which they had received this information were very limited. Spontaneous answers were Radio, TV, newspapers, magazines, a colleague at work or the Council (n = 1).

A variety of measures, through which households could save water, were also mentioned. The methods mentioned by the three groups were of a huge variety (many substantial differences were prevalent between the three groups):

- Use less water (less regularly/washing/garden/toilet)
- Re-use bath water (share/on garden/to wash clothes)
- Close taps properly/Don't leave water dripping
- Check/Repair/Report all leaks
- Collect/Use rain water (for garden)
- Use a bucket (wash car/garden)
- Wash dishes only when it is hot
- Don't waste water (bathing/washing a car/garden)
- Put a brick/bottle in toilet/adjust toilet's level
- Not let children play with water
- Don't water when it is hot/Water in the afternoon
- Water plants with left-over water in kettle
- Use smaller glasses for drinking purposes
- Remove grass to stop watering
- When rinsing dishes don't use hot water, use cold.

Again, when the variety of measures mentioned are taken into account, the impression is created that water saving levels would be very high. This was, however, not the case. Some of the methods mentioned (where viable and practical) could be useful and implemented in future information campaigns.

5.1.9 INTENTIONS AND ATTITUDES TO SAVE WATER

A number of statements were provided to examine the respondents' attitudes to some aspects of their area as well as intentions to apply water saving methods. They were asked to what extent they agree to the statements on a 5-point scale (see 4.1.2).

STATEMENT	Group 1	Group 2	Group 3
<i>Our household has plans to save water the next few months</i>	4,2	3,9	3,6
<i>We intend to register for a subsidy because our household income is less than R800 per month</i>	3,1	2,9	2,5
<i>I am aware that I can qualify for payment arrangements if my water</i>	3,5	3,4	3,0

<u>STATEMENT</u>	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
<i>account is in arrears</i>			
<i>It is important that all of the respondents here pay their bills</i>	4,4	4,3	4,5
<i>I would like more information on how to save water</i>	4,4	4,1	4,1
<i>The electricity service we receive here is very good</i>	3,9	3,9	4,3
<i>We have many electricity failures here</i>	2,2	2,3	2,1
<i>If we have a problem with the electricity, it is solved quickly</i>	3,2	3,6	3,9
<i>Our area is very clean</i>	3,7	3,7	3,5
<i>Refuse removal is done on a regular basis</i>	4,1	4,1	3,8
<i>The street lights are well kept</i>	3,6	3,6	3,4
<i>Our water account is correct</i>	3,1	3,0	3,1
<i>It is our responsibility to repair leaks on our stand</i>	2,6	3,0	3,0

Differences between the mean scores of the three groups were not significant. The only noteworthy indications were the decline in scores from Group 1 to Group 3 regarding plans to save water and to register for a subsidy. It also seemed that they were less aware that they could qualify for payment arrangements.

This might be indicative of an underlying negative attitude towards water usage and payment.

5.1.10 QUALITY OF THE WATER SERVICE

Respondents were asked to evaluate the quality of the service related to the water they had received. The mean scores (a score out of 10) for the three groups are indicated below.

<u>RATING OF THE QUALITY OF WATER SERVICE</u>	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
Rating out of 10	8,6	8,4	8,2

All three groups evaluated the water service very highly. The differences between the three groups were also very small and statistically non-significant.

The two reasons mentioned most frequently for their scores were:

<u>Please give a reason for your score.</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>No/No big problems (water is safe/pure/good quality)</i>	74,2	70,4	59,1
<i>I never had any (unnecessary) cut-off/leaks</i>	3,2	8,6	13,6

Statistically non-significantly less of Group 3 gave a positive answer for their score compared to the other two groups.

5.2 POST-TEST RESULTS & COMPARISON: JOHANNESBURG MUNICIPALITY

5.2.1 COMPOSITION OF THE SAMPLE

In the post-test survey, the interviews were repeated with the same respondents in the households as in the pre-test survey, in order to examine any changes that might have occurred. In the post-test survey, the records (from the City Council) for 138 respondents were complete and therefore suitable for analyses. Of these, 53 were in Group 1, 66 in Group 2 and 19 in Group 3.

Respondents were asked whether they had participated in the first (pre-test) survey,

<u>WERE YOU INTERVIEWED LAST TIME?</u>	<i>Group 1</i> (n=45) %	<i>Group 2</i> (n=57) %	<i>Group 3</i> (n=17) %
Yes	84,9	86,4	89,5

A very high percentage (more than 80%) mentioned they had been interviewed in the pre-test survey. Those that were not interviewed previously were still from the same households.

5.2.2 COMMUNICATION

The respondents in the sample were asked whether they had been informed about the 6 000 litres of free water. The question was: *“Our previous interview focussed on perceptions about water volumes like litres, kilo litres and Mega litres, and volume water used, as well as your household's intention to save water. Have you recently received information about the first 6 000l free water to your household?”*

The answers for the three groups were as follows:

	<i>Group 1</i> (n=53) %	<i>Group 2</i> (n=66) %	<i>Group 3</i> (n=19) %
Yes	54,7	48,5	42,1

The more respondents were in arrears, the less they mentioned that they had heard about the free water.

They were subsequently probed on the source WHERE they had received this information. The most frequently mentioned sources were:

IF YES, WHERE DID YOU GET THE INFORMATION? ¹	Group 1 %	Group 2 %	Group 3 %
<i>Heard about it on TV</i>	51,7	28,1	62,5
<i>From newspaper</i>	31,0	50,0	25,0
<i>Radio</i>	20,7	15,6	12,5

¹ Duplication occurs

The awareness levels of all three groups were not very high. Since the implementation of the principle was relatively new, this could be expected.

The respondents were furthermore also asked if they had heard of *Johannesburg Water*. This question had also been asked during the pre-test survey. (For easy comparison, the pre-test results are provided in brackets.)

	Group 1 %	Group 2 %	Group 3 %
Yes	79,2 (79,0)	74,2 (77,5)	68,4 (59,1)
No	20,8 (21,0)	25,8 (22,5)	31,6 (40,9)

As was the case in the pre-test survey, similar patterns can be identified from the post-test namely a decline in percentage response rates from Group 1 to Group 3 that they had heard of *Johannesburg Water*. The non-significant differences within the three groups remained almost unchanged from the pre-test survey.

5.2.3 GENERAL ATTITUDE QUESTIONS

A 5-point scale was again implemented as for the interviews in the other three areas, in order to be able to do comparisons (1 - *Do not agree at all*; 2 - *Do not agree*; 3 - *Uncertain*; 4 - *Agree*; 5 - *Definitely agree*). The results for the three groups in South Hills are presented in the following table (Pre-test scores in brackets) -

WATER QUALITY (MEAN SCORES OUT OF 5)

* = significant differences between groups

** = significant differences between pre- and post-test

STATEMENT	Group 1	Group 2	Group 3	
<i>My household has no problems with the water we receive here</i>	4,5 (4,4)	4,5 (4,4)	4,5 (4,6)	
<i>We have a problem with the taste of the water we use</i>	1,5 (2,2)**	1,5 (2,0)**	1,3 (1,6)	
<i>We have a problem with the smell of the water</i>	1,5 (2,2)**	1,5 (2,1)**	1,2 (1,5)	
<i>The water we use is clear and bright</i>	4,4 (4,1)	4,5 (4,4)	4,5 (4,5)	
<i>I know how much water my household uses per month</i>	2,0 (3,0)	2,3 (2,8)	1,9 (2,8)	**
<i>The more water our household uses, the more we should pay</i>	4,0 (3,8)	4,2 (4,0)	3,9 (3,6)	
<i>To supply water to my stand costs money</i>	4,2 (4,2)	4,3 (4,2)	4,5 (4,2)	
<i>To have clean water costs money</i>	4,3 (4,2)	4,4 (4,3)	4,5 (4,2)	
<i>We receive our account regularly (once a month)</i>	4,1 (3,9)	3,9 (3,8)	3,4* (4,1)	
<i>People should receive water even if they do not pay</i>	2,7 (3,2)	2,7 (3,1)	2,9 (3,3)	

Generally, all three groups were quite satisfied with the quality of the water they received. They also generally agreed with the principles of water supply. The significant differences were observed in Group 1 and 2 from the pre-test survey and were about:

- Problems with the taste of the water
- Problems with the smell of the water

In all three groups significant differences occurred regarding the statement:

- How much water is being used in the household

Respondents seem to realise that they don't know how much water they consume. Group 3 also stated that they receive their account significantly less regularly than the other two groups in the post-test.

Respondents were subsequently provided with two statements to choose from, which described their households best.

STATEMENTS DESCRIBING HOUSEHOLDS

<u>PLEASE TELL ME WHICH ONE OF THESE TWO STATEMENTS DESCRIBES YOUR HOUSEHOLD BEST</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Because we don't know how much water and electricity we use, it is difficult to use less water and electricity and our account is always too high</i>	18,9	25,8	42,1*
<i>We limit the use of water and electricity in order to afford the payment for water and electricity</i>	81,1*	74,2	57,9

The statements fundamentally included two aspects, namely knowledge and consumption (directly related to cost) of water. An increase from 18,9% to 42,1% shows that the households that were further in arrears, knew less how much water they had consumed. (This might probably have been the reason why they were further in arrears.) This might also be indicative of a lower level of personal responsibility involved in the payment of water accounts; households that were further in arrears displayed a degree of despondency, as their accounts also became cumulatively higher in arrears.

5.2.4 ATTITUDES ABOUT THE PAYMENT FOR WATER

THE BASIC PRINCIPLE OF PAYMENT FOR WATER

<u>DO YOU THINK HOUSEHOLDS SHOULD PAY FOR THE WATER THEY USE?</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
Yes	88,7	95,5*	78,9
No	11,3	4,5	21,1

Similarly as in the case of the pre-test survey, most of the respondents from all three groups thought that households should pay for the water they used.

The reasons the respondents gave for their answers are provided below.

<u>IF YES, WHY?</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>It costs the Council money to purify and distribute water</i>	44,7	44,4	40,0
<i>(Reasonable)-You must pay for services that you use</i>	25,5*	23,8	-
<i>Service costs money/No free service at all</i>	14,9	12,7	40,0*
<i>Salaries have to be paid</i>	6,4	20,6*	13,3

¹ Duplication occurs

Most of the reasons mentioned were of an informational nature, i.e. that the respondents knew that the provision of water is a costly procedure. As the numbers of the respondents became smaller towards the less frequently mentioned reasons, meaningful conclusions were not possible.

The number of respondents who didn't think that households should pay for the water they used, were very small (5), and could consequently not be statistically analysed. Reasons mentioned were inter alia "We couldn't survive without water" and "Some people don't work/Pensioners can't afford to pay".

5.2.5 KNOWLEDGE ABOUT THE FREE 6kl OF WATER

The respondents in the sample were asked to indicate whether certain statements were true or false. (The pre-test survey's percentages are provided in brackets.)

"6 000 l is enough water to survive for a month if you are very poor."

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	67,9 (11,3)	66,7 (13,6)	52,6 (4,5)
<i>False</i>	18,9 (56,5)**	21,2 (45,7)**	31,6 (59,1)
<i>Unsure/Don't know</i>	13,2 (32,3)**	12,1 (40,7)**	15,8 (36,4)

**

"If my household income is less than R800 per month, we can get a subsidy of R86 for water per month."

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	64,2 (54,8)	63,9 (42,0)**	57,9 (31,8)
<i>False</i>	9,4 (16,1)	9,1 (12,3)	10,5 (22,7)
<i>Unsure/Don't know</i>	26,4 (29,0)	27,3 (45,7)**	31,6 (45,5)

"Firstly a warning is laid down for those households that do not pay their water accounts."

	Group 1 %	Group 2 %	Group 3 %	
<i>True</i>	84,9 (61,3)	87,9 (64,2)	84,2 (50,0)	**
<i>False</i>	5,7 (4,8)	1,5 (12,3)**	- (18,2)**	
<i>Unsure/Don't know</i>	9,4 (33,9)**	10,6 (23,5)**	15,8 (31,8)	

"Secondly, an opportunity for arrangement of payment of accounts in arrears is provided."

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	83,0 (61,3)**	81,8 (63,0)**	77,8 (68,2)
<i>False</i>	13,2 (8,1)	10,6 (17,3)	- (4,5)
<i>Unsure/Don't know</i>	3,8 (30,6)**	7,6 (19,8)**	22,2* (27,3)

"Thirdly, service is terminated if non-payment continues."

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	69,8 (62,9)	77,3 (55,6)**	57,9 (68,2)
<i>False</i>	17,0 (3,2)**	13,6 (16,0)	21,1 (9,1)
<i>Unsure/Don't know</i>	13,2 (33,9)**	9,1 (28,4)**	21,1 (22,7)

"The meter on our stand is working."

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	96,2 (88,7)	92,4 (87,7)	88,9 (100,0)
<i>False</i>	1,9 (8,1)	3,0 (6,2)	5,6 (-)
<i>Unsure/Don't know</i>	1,9 (3,2)	4,5 (6,2)	5,6 (-)

“If those that qualify use more than 6kl per month, they will have to pay for the extra litres.”

	Group 1 %	Group 2 %	Group 3 %	
<i>True</i>	86,8 (38,7)	86,4 (33,3)	68,4 (31,8)	**
<i>False</i>	1,9 (16,1)	3,0 (16,0)	- (18,2)	**
<i>Unsure/Don't know</i>	11,3 (45,2)**	10,6 (50,6)**	31,6* (50,0)	

“Everybody is entitled to free water if consumption is less than kl per month.”

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	79,2* (38,7)**	72,7 (45,7)**	52,6 (36,4)
<i>False</i>	1,9 (12,9)**	10,6 (12,3)	- (22,7)**
<i>Unsure/Don't know</i>	18,9 (48,4)**	16,7 (42,0)**	47,4* (40,9)

In **the majority** of the tables containing results about the first free 6kl of water, the agreement levels increased statistically significantly and substantially from the pre-test to the post-test surveys. It seemed that the change in water provision from Johannesburg Municipality to *Johannesburg Water*; might have had a noticeable effect on the respondents in the sample. This is a confirmation of the finding that non-significantly more of the respondents in the post-test survey, had heard about *Johannesburg Water*, than in the pre-test survey. This might also be due to the fact that their attention was directed to non-payment issues and the Hawthorn effect could play a role.

It might further also be that the announcement of the first 6kl of water to households was not such a novelty anymore, and was more known and discussed, which lead to increased levels in the post-test survey results. Information campaigns might also have increased their awareness and knowledge levels.

5.2.6 PREFERENCES FOR FORMAT OF ACCOUNTS

The respondents in the sample were asked whether they would prefer to receive a separate account for water.

<u>WOULD YOU PREFER TO RECEIVE A SEPARATE ACCOUNT FOR WATER?</u>	Group 1 %	Group 2 %	Group 3 %
Yes	37,7	31,8	31,6

The majority of the respondents (60 – 70%) would not prefer to have separate accounts for water, electricity and other services.

The most frequently mentioned reasons indicated by those who would prefer a separate account (n = 47) were as follows:

<u>IF YES, WHY?</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>I will be able to see how much water we waste/use</i>	45,0	61,9	33,3
<i>I will know how much I have to pay for water</i>	25,0	23,8	16,7
<i>Will determine how much I use and cut down where I can</i>	10,0	9,50	-

¹ Duplication occurs even though the consumption appear on accounts

Even though the consumption appears on accounts, the reasons mentioned were mainly of a consumption nature and respondents felt that they would be better equipped to establish their actual water use, if the accounts were separated.

Reasons mentioned by those who preferred a single account, were the following:

<u>IF NO, WHY?</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Its better to have water and electricity together</i>	51,5	56,8*	23,1
<i>Why create unnecessary paper work/costs/time</i>	24,2	20,5	23,1
<i>Water usage stated on my account</i>	9,1	9,1	23,1

¹ Duplication occurs

Respondents in this area have received a single account in the past.

5.2.7 GROUPS' ATTITUDES

In accordance with the objectives of the study, it was necessary to gain insight into the neighbours' and adjacent respondents' influence on the individual's payment of water accounts. The results of the agreement levels (as mentioned in 4.1.2) were as follows. (Pre-test survey results in brackets.)

	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
<i>We in this area pay our water and electricity on a regular basis</i>	4,2 (4,1)	4,1 (4,1)	4,2 (4,2)
<i>If my neighbour is not paying his/her account, why should I?</i>	2,1 (1,9)	2,0 (2,0)	2,1 (2,0)
<i>People here don't pay their accounts because water and electricity is not essential to them</i>	1,8 (1,6)**	2,1 (1,7)**	2,2 (1,6)
<i>If everybody stops paying, there will be no water supply</i>	3,6 (3,7)	3,8 (3,7)	3,6 (3,9)
<i>People here don't pay their accounts because we receive bad service from the Council</i>	2,1 (2,3)	2,2 (2,3)	2,1 (2,2)
<i>I don't pay because I don't have money or can't afford it</i>	2,1 (2,2)	2,0 (2,3)	1,7 (1,9)

Two significant differences were observed in the agreement levels of the three groups to the statements namely between pre- and post-survey results for the statement: *People here don't pay their accounts because water and electricity is not essential to them*.

5.2.8 PERCEIVED CHANGES BETWEEN THE TWO SURVEYS

The respondents in the sample were further asked about perceived changes in the Council's services since the pre-test survey.

<u>PLEASE TELL ME IF THE COUNCIL SERVICES YOU RECEIVE HAVE CHANGED SINCE OUR PREVIOUS SURVEY?</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Service deteriorated</i>	7,5	1,5	10,5
<i>Remained the same</i>	84,9	93,9*	78,9
<i>Service improved</i>	7,5	4,5	10,5

More of Group 2 said that the service remained the same.

Respondents were also asked whether they thought they used less water since the previous survey.

<u>DO YOU THINK YOU USED LESS WATER SINCE OUR PREVIOUS SURVEY?</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
Yes	83,0	70,8	68,4

A notable decline from Group 1 to Group 3 said that they used less water since the previous survey.

When probed about measures they had taken to save water, the following were the most frequently mentioned (duplication occurs):

- Use washing water to water garden/Re-use water
- We bath in each other's water/Share bath
- Do no water garden in winter/Water garden less
- Fixed leaking taps/Report leaks
- Wash less/Washing only once a week.

Those who mentioned that they didn't apply any measures to save water, where asked WHY they didn't save water. The most frequent mentions were:

- We always try to save water/Don't waste water
- Still using the same
- Don't know how much water I use
- I haven't noticed a difference.

Finally, the respondents were asked what method they would prefer in limiting/cutting their water supply when they neglected to pay the Council for their households' water used.

The three groups reacted as follows to the suggested measures:

<u>PREFERRED METHOD</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
Nothing must be done	34,0	31,8	26,3
Installation of a restrictive device that limits the water flow	28,3	25,8	42,1
Install of a "push button " water outside your stand	11,3	24,2	21,1
Cutting of the water with no supply	17,0	10,6	10,5
Installation of a pre-paid water meter and buying water	13,2	9,1	5,3

¹ Duplication occurs

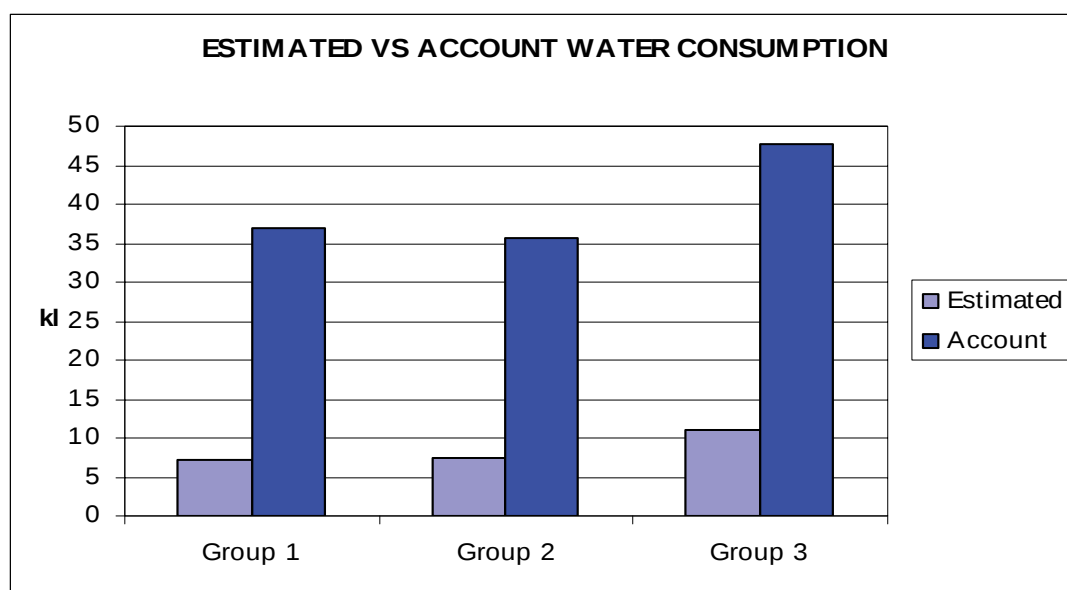
5.2.9 SUMMARY OF RESULTS

The groups in South Hills were divided into three categories, based on their payment information for water accounts.

Generally, all three groups were quite satisfied with the quality and provision of water in their area. As was the case with the areas in Tshwane Metropolitan Municipality, respondents were not able to estimate the water they used accurately. The estimated use of water was again about three to five times less than the actual use. Group 3's estimation was especially further distanced from their actual use. It can be deduced that this problem may escalate in the future and particular attention will have to be directed to Group 3, who were also already further in arrears with their payments. Group 3 didn't seem to take cutting down on their consumption seriously. This group also knew less of water consumption units than the other two groups.

It was conspicuous that less of Group 3 had heard of *Johannesburg Water* before, than the other two groups.

The differences between the estimated and actual water consumption can be seen in the following graph.



A detectable negativity could also be observed in the attitudes about payment for water in Group 3. This negativity was also observed in Tshwane Metropolitan Municipality for the group that was further in arrears. The underlying negativity was also exposed by other results: Less of Group 3 thought any suggested system of payment for water was fair, and some also expressed non-confidence in their local authority. Although they were more outspoken about the "cut-off" system being unfair, they were less in favour of the system of being a good way of managing outstanding accounts.

A matter of concern was that more than 80% of respondents said that they had not been informed about the new payment system (pre-test survey). The principle of providing each household with 6kl of free water was widely welcomed and awareness levels increased from the pre- to the post-test surveys. It seems that the change in water provision from Johannesburg Municipality to *Johannesburg Water* might have had a significant positive impact on the respondents in the surveys. This is a confirmation of the finding in the post-test survey, more of the respondents had heard about *Johannesburg Water*, than in the pre-test survey.

The respondents in the sample indicated that they would prefer a consolidated account, rather than separate account for water. It was also evident from the findings that the service provider should keep communication flowing to its respondents, in order to disseminate vital information on a regular basis.

In conclusion the following research variables were identified as being related to non-payment behaviour for Group 3:

- Used more water per household than the other groups
- Showed negative attitudes towards payment and related matters
- Was less informed about changes in Johannesburg Municipality
- Was less accurate in estimating water consumption
- Was less inclined to cut down on water consumption

CHAPTER 6 - RESULTS: DURBAN METRO WATER

6.1 PRE-TEST RESULTS

6.1.1 DEMOGRAPHICS

The 200 households that were selected in the Durban area were in the suburb Chesterville. The average age of the respondents was 52,25 years, of which 25,6% were male and 74,4% female.

Three groups were identified according to their payment behaviour, namely Group 1 (up-to-date with payments), Group 2 (R100 to R1200 in arrear) and Group 3 (R1200 and more in arrear).

EMPLOYMENT STATUS (CLAIMED)

	TOTAL (n = 195)	% of Total	Group 1 (n = 51)	Group 2 (n = 63)	Group 3 (n = 81)
Employed	60	30,8%	37,3%	27,0%	29,6%
Unemployed	120	61,5%	56,9%	61,9%	64,2%
Self-employed	16	7,7%	5,9%	11,1%	6,2%

The average gross income of the households (reported) was R2088-66 per month. The income levels were distributed as follows:

GROSS MONTHLY INCOME (REPORTED)

	TOTAL (n = 194)	% of Total	% of Group 1 (n = 51)	% of Group 2 (n = 62)	% of Group 3 (n = 81)
R0 – R1399	104	52,8	45,1%	54,8%	58,0%
R1400 – R3999	63	32,5	39,2%	30,6%	29,6%
> R4000	27	13,9	15,7%	14,5%	12,3%

The data in the table display a high association of Income level and arrears in water payment. The lower the income levels were, the further the respondents were in arrears.

The majority of the type of dwellings was formal houses (59,5%) and the rest were informal houses (40,5%). Quite a number of households reported that there were other dwellings on the property.

NUMBER OF OTHER DWELLINGS ON PROPERTY

Number of other dwellings	Frequency	%
0	95	48,7
1	65	33,3
2	20	10,3
3	8	4,1
4	4	2,1
5	3	1,5

The relatively large number of households living on a stand resulted in an average of 6,26 people per stand on an average size of 477m². (It should be noted that 80,5% of the respondents didn't know what the size of their stand was, and was subsequently excluded in the calculation.)

OWNERSHIP OF PROPERTY

Own, paid off	67,2%
Own, still paying	10,3%
Renting	22,6%

The composition of the home languages of the interviewees was predominantly Zulu, as shown in the following table.

Home language	%
Zulu	97,4
Venda	1,5
Xhosa	1,0

The total number of respondents interviewed was 200, but for 5 households' water account information could not be verified.

6.1.2 GENERAL ATTITUDES

The same 5-point scale was implemented as for the interviews in the other three areas, in order to be able to do comparisons (*1 - Do not agree at all; 2 - Do not agree; 3 - Uncertain; 4 - Agree; 5 - Definitely agree*). The results for the three groups in Chesterville are presented in the following table.

WATER QUALITY (MEAN SCORES OUT OF 5)

STATEMENT	Group 1	Group 2	Group 3
<i>My household has no problems with the water we receive here</i>	4,3	4,3	4,4
<i>We have a problem with the taste of the water we use</i>	1,4	1,3	1,3
<i>We have a problem with the smell of the water</i>	1,3	1,3	1,2
<i>The water we use is clear and bright</i>	4,4	4,6	4,6
<i>I know how much water my household uses per month</i>	2,2	2,0	2,3
<i>The more water our household uses, the more we should pay</i>	3,8	3,5	3,5
<i>To supply water to my stand costs money</i>	4,5	4,2	4,3
<i>To have clean water costs money</i>	4,3	4,4	4,4
<i>We receive our account regularly (once a month)</i>	2,9	2,4	2,5
<i>People should receive water even if they do not pay</i>	3,1	3,2	3,4

The pre-test survey results from the other municipal areas revealed very small internal group differences between the subgroups. However, they were not statistically significant. It was also true for the Durban group.

Generally, the Durban groups were quite satisfied with the quality and supply of water they received and the subgroups' evaluations were very similar. Two of the variables that the respondents were somewhat uncertain about, were that they didn't know how much water they used every month, and that they didn't receive their accounts regularly.

When asked whether they had ever reported a water leakage to *Durban Metro Water*, about half of all three groups mentioned affirmatively. The types of problems they had reported included leaks at meters, pipes, taps, toilets, underground pipes, stopcocks, and blockages of water pipes. The service they had received from Durban Metro Water was rated between 56% (Groups 2 & 3) and 65%* (Group 1), and the groups were generally satisfied with the variety of services they had received; Group 3, however, was somewhat more negative in their evaluation of the service.

6.1.3 ESTIMATED VS. REAL WATER CONSUMPTION

Respondents were asked to estimate how much water they used monthly. *Durban Metro Water* supplied the actual figures. The average consumption for January, February and March was used as basis for comparison.

	Group 1	Group 2	Group 3
Estimated water consumption per month (in kI)	3,9	3,3	4,3*
Actual water consumption per month (in kI)	16,7	17,2	35,5

In the case of Chesterville, it was also clear that the **actual** water consumption was much higher for all three groups than the **estimated** consumption. The under-estimation might also here be a serious problem, particularly in Group 3, which had by far the highest amounts for their water accounts in arrears. Whereas Groups 1 & 2 had kept their water consumption fairly reasonable, it seems as if Group 3 didn't take reducing their consumption seriously. The problem may escalate in future and drastic steps might be necessary to curb the problem.

6.1.4 KNOWLEDGE OF WATER CONSUMPTION UNITS

Knowledge of water consumption units in the Chesterville groups (as in the case of groups from other areas) showed a similar pattern. The percentages that **know** these units are as follows.

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Litres</i>	100,0	96,8	97,5
<i>Kilo litres</i>	51,0	34,9	35,8
<i>Mega litres</i>	7,8	3,2	3,7

A constant pattern emerged, i.e. that the groups that were further in arrears knew less about these units than the other groups. Secondly, the smaller units were better known than the bigger units. The explanation may lie therein that the bigger units did not form part of everyday life experiences.

6.1.5 QUESTIONS ON THE “FLOW LIMITOR” SYSTEM

Durban Metro Water had only recently introduced the system of a “flow limiter”. Only one household in Group 1 and two in Group 2 reported that they had a “flow limiter” installed in their respective households. None was reported for Group 3. When asked what they thought of the “flow limiter” system, some of the remarks were:

- *“Helps me to use only that specific amount of water per day.”*
- *“Helps me paying for high accounts.”*
- *“The water finishes very early.”*

All three of these respondents said they would recommend it to other people in their area, because *“It reduces your monthly bill”* and *“It makes you save water.”*

Respondents were further probed in order to gain insight into their knowledge and perceptions about the “flow limiter”. They responded as follows.

KNOWLEDGE ABOUT A “FLOW LIMITOR”

	Group 1 %	Group 2 %	Group 3 %
Have you ever heard about a “flow limiter” before?	48,0	42,6	38,3

Almost half of the respondents had heard about the concept before, and it might be worthwhile to implement as a future option to decrease water consumption. It is notable that there is a decline in the percentage awareness from Group 1 to Group 3.

PERCEPTIONS ABOUT A “FLOW LIMITOR”¹

<u>MOST FREQUENT MENTIONS</u>	Group 1 %	Group 2 %	Group 3 %
Will help us to consume less water / Helps us to not to use so much water	29,2	30,5	27,4
Reduces a high water bill	14,6	15,3	20,5
It is good / Good thing	20,8	11,9	12,3
We won't get sufficient water	12,5	13,6	13,7
Don't like it / Bad idea	12,5	11,9	15,1
What happens if we sometimes need more water – funerals, etc?	8,3	11,9	15,1
Helps you not to use more water than you can afford to pay	10,4	8,5	11,0
Only good for small households / For households less than 5 people	6,3	6,8	5,5

¹ Duplication may occur.

6.1.6 ATTITUDES ABOUT THE PAYMENT FOR WATER

The majority of Group 1 agreed that households should pay for the water they use (90,2%), however, although still very positive, statistical non-significantly less of Group 2 (82,5%) and Group 3 (82,7%) agreed with the statement. When probed what the reasons for their answers were, the following were mentioned.

<u>REASON MENTIONED</u>	Group 1 %	Group 2 %	Group 3 %
<i>The process of cleaning / supplying water to us costs money</i>	73,3	82,7	75,8
<i>Water is our basic need, we can't live without it</i>	20,0	17,3	21,2
<i>Because nothing is for free</i>	15,6	9,6	13,6

6.1.7 KNOWLEDGE ABOUT THE FREE 6kl OF WATER

The respondents' reactions to the announcement of the free 6kl of water and other related statements were the following.

“Only those that use a limited number of kl per month qualify for free water”.

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	29,4	17,5	25,9
<i>False</i>	23,5	31,7	27,2
<i>Unsure/Don't know</i>	47,1	50,8	46,9

“6kl is enough water to survive for a month if you are very poor.”

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	45,1	47,6	48,1
<i>False</i>	25,5	19,0	19,8
<i>Unsure/Don't know</i>	29,4	33,3	32,1

“The “flow limiter” can help my household to use less than 6kl of water per month.”

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	52,9	63,5	53,1
<i>False</i>	21,6	11,1	16,0
<i>Unsure/Don't know</i>	25,5	25,4	30,9

“The water meter on our stand is working”

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	86,3	88,9	82,7
<i>False</i>	3,9	1,6	7,4
<i>Unsure/Don't know</i>	9,8	9,5	9,9

"If my household use more than 6kl per month I will have to pay for the extra litres used"

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	60,8	60,3	55,6
<i>False</i>	9,8	11,1	16,0
<i>Unsure/Don't know</i>	29,4	28,6	28,4

"Durban Metro Water has a good system of paying for water"

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	54,9	49,2	48,1
<i>False</i>	17,6	14,3	18,5
<i>Unsure/Don't know</i>	27,5	36,5	33,3

From the information in the tables above, it can be deduced that the implementation of the first 6kl of free water was still relatively new to the respondents. Only about a quarter agreed with the statement that only those that used a limited amount of water per month would receive it for free.

Slightly more than half of the respondents agreed that implementing a "flow limiter" would assist them in using less than 6kl of water per month. This could again be ascribed to a lack of knowledge of the system, or the relatively low levels of agreement could also be interpreted that they didn't have much faith in the system.

The respondents were asked what they thought of the new payment system of *Durban Metro Water*. The most frequent responses were as follows:

SOME THOUGHTS ABOUT THE NEW PAYMENT SYSTEM¹

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>A good system / Helpful</i>	46,0*	27,0	25,6
<i>They give different options / arrangements of paying for water</i>	24,0	27,0	23,1
<i>Good for those who cannot afford to pay high water bills</i>	18,0	31,7	21,8
<i>This system will work because they will not disconnect</i>	8,0	7,9	15,4
<i>Allow us to have water in our household</i>	8,0	17,5*	5,1
<i>The community will definitely save water / Use less water</i>	10,0	3,2	12,8*
<i>Don't like it / Not a good idea / Bad system</i>	8,0	11,1	6,4
<i>Helps you to reduce your water account</i>	10,0	1,6	11,5*
<i>It must be used for those who fail to pay water accounts</i>	10,0*	1,6	6,4

¹ Duplication occurs.

Whereas 46% of Group 1 thought that the new payment system could be seen as a good and helpful system, only 27% and 25,6% of Groups 2 & 3 respectively, thought likewise. This is an indication that the respondents, who were in arrears, didn't consider the new payment system, which includes a limit on the flow of their water, as a suitable option. It may be that most (3 out of 4) of the respondents in Groups 3 considered this measure negatively.

6.1.8 GROUPS' ATTITUDES

It was a prominent aim with the study to gain insight into the respondents' and adjacent neighbours' influence on the individual's payment of water accounts. As before, the differences of the results of the three groups were very small and not statistically significant. The scores on the agreement levels (as mentioned in 8.2) were:

	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
<i>We in this area pay our water and electricity on a regular basis</i>	3,6*	3,1	3,1
<i>If my neighbour is not paying his/her account, why should I?</i>	1,8	2,1	1,8
<i>People here don't pay their accounts because water and electricity is not essential to them</i>	1,7	1,7	1,7
<i>If everybody stops paying, there will be no water supply</i>	3,8	4,0	3,9
<i>People here don't pay their accounts because we receive bad service from the Council</i>	2,0	2,2	2,4
<i>I don't pay because I don't have money or can't afford it</i>	2,3	2,8	3,3*

It seems that neighbours did not influence respondents about paying for water in all three groups and they generally agreed with the fundamentals of water supply. A significant difference was observed, however, between the agreement levels of Group 1 and Group 3 on the first and last statements. Group 1 tended NOT to agree with the statement that they didn't pay because they didn't have money or couldn't afford it and agreed that they pay on a regular basis. This might be a real problem of low income or unemployment characterising Group 3.

6.1.9 COMMUNICATION

On the question whether the respondents had been informed in the recent past about the latest payment system of *Durban Metro Water*, a huge proportion answered negatively.

<u>Have you been informed recently about the latest payment system of Durban Metro Water?</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
Yes, recently	15,7	17,5	23,5
Yes, last year	5,9	7,9	7,4
No	78,4	74,6	69,1

It is clear that about three-quarters of the respondents had not been informed about the new payment system.

When probed HOW they had been informed the responses were the following.

<u>How were you informed?</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>By an employee of Durban Metro Water</i>	27,3	37,5	24,0
<i>A friend, neighbour told me</i>	27,3	12,5	28,5
<i>Durban Metro sent us brochures / pamphlets / letters</i>	27,3	12,5	20,0
<i>At a community meeting</i>	9,1	18,8	12,0
<i>Radio programme</i>	9,1	12,5	12,0
<i>People from Durban Metro Water came to houses to tell people about it</i>	9,1	6,3	4,0
TOTAL (n)	11	16	25

¹ Duplication occurs.

Respondents were also probed about information they had received on measures of saving water. Between 35% and 40% of the three groups reported affirmatively that they had been informed. The ways through which they had received this information were very limited. Spontaneous answers were: Pamphlets, at community meetings, by a local council employee that had visited them, radio, Metro Water newsletters and magazines, posters, and television.

A variety of measures, by which households could save water, were also mentioned. The methods mentioned by the three groups were of a wide variety (not many substantial differences were prevalent between the three groups):

- Do not leave tap running (when doing washing and dishes)
- Don't do washing daily / Do washing only once/twice a week
- Check for leaks / underground leaks
- Re-use household water for different purposes
- Do not flush unnecessarily
- Close taps properly / Do not leave taps leaking
- Fix leaking taps / pipes
- Reduce the amount of water you use every day
- Do not use too much bath water
- Report leaks immediately
- Use bucket to pour water / Use containers to keep water
- Use little soap, so you don't have to use much water
- Use stopper when you wash dishes
- Use limited water for gardening
- Take a short shower
- Wash car with bucket, not hose-pipe
- Do not water garden with a hose-pipe
- Use less water when washing clothes
- Use a cup when brushing your teeth
- Don't allow children to play with water
- Keep drinking water in a bottle fridge
- Use a broom when cleaning yard instead of hose-pipe
- Put a brick in the toilet tank
- Lock outside tap so that squatters can't steal water
- Never water garden on a windy day
- Grow plants that use less water
- Close the stopcock

With such a variety of measures mentioned, the impression is created that water saving levels would be very high. This is, however, not the case. Some of the methods mentioned (where viable and practical) could be implemented in future information campaigns.

6.1.10 INTENTIONS AND ATTITUDES TO SAVE WATER

A number of statements were provided to examine the respondents' attitudes to some aspects of their area and intentions to water saving methods. They were asked to what extent they agree to the statements on a 5-point scale (see 4.1.2).

<u>STATEMENT</u>	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
Our household has plans to save water the next few months	3,9	4,0	4,0
We intend to register to use a "flow limiter" device	2,3	2,3	2,7
It is important that all of the respondents here pay their bills	4,6	4,3	4,3
I would like more information on how to save water	4,8	4,4	4,8
The electricity service we receive here is very good	4,5*	4,4	4,0
We have many electricity failures here	1,9	2,1	2,3
If we have a problem with the electricity, it is solved quickly	3,9	3,7	3,5
Our area is very clean	4,1	4,0	3,8
Refuse removal is done on a regular basis	4,3	4,3	4,2
The streetlights are well kept	4,1	3,9	3,7
Our water account is correct	3,2	2,9	2,8
It is our responsibility to repair leaks on our stand	2,1	2,3	1,9

Although very small differences can be observed between the three groups' agreement levels, most are not significant. The respondents in Group 3 however, expressed an encouraging intention to either implement some form of water saving, or gain more knowledge of how to do so. Group 1, however, differed significantly from Group 3, agreeing more that the electricity service received is very good.

6.2 POST-TEST RESULTS & COMPARISON: DURBAN METRO WATER

6.2.1 COMPOSITION OF THE SAMPLE

The interviews for the post-test survey were repeated in the same households as the first survey, in order to observe the differences and correspondence of variables that might have changed between the two surveys as the result of specific interventions, namely an information campaign and the installation of a “flow limiter”.

It was not always possible to conduct the second interview with exactly the same person in each household. In 16,7% of the cases (n = 32), the interview was done with another member of the household. However, in all instances it had to be the head of the household, or his/her spouse.

The demographic distribution of the post-test sample (n = 192) varied insignificantly from the pre-test sample (n = 195) and comparisons of results can therefore be made with great confidence. The same three subgroups were used, based on the respondents’ payment records for water.

6.2.2 COMMUNICATION

A question was asked during the post-test survey about the first 6kl of free water. The question was: “*Have you recently received information about the first 6 000 litres free water to your household?*” The responses to the question were the following.

KNOWLEDGE OF THE 6kl FREE WATER

	Group 1 %	Group 2 %	Group 3 %
Yes	56,0	55,7	46,9
No	44,0	44,3	53,1

It is noticeable that about 10% less of Group 3 (although not statistically significant), who had the worst payment record than the other two, mentioned that they had heard about the free water grant, as announced by the Government. When asked WHERE they had received the information, the general pattern was that more of Group 3 had received this information from neighbours and on radio. However, less of Group 3 got the information from *Durban Metro Water*/Local Council and pamphlets/booklets/brochures.

6.2.3 THE NEW PAYMENT SYSTEM OF DURBAN METRO WATER

To the question whether the respondents had been informed of the *Durban Metro Water* latest payment system, the following paragraph was read to them:

"I am going to explain to you how the system of payment of Durban Metro Water works. Your household gets an account based on the water you use. If you do not pay, or your account is in arrears, it will be disconnected except if you arrange to pay the outstanding amount. If you cannot pay, you can arrange a payment, which will be paid in conjunction with each month's water consumption. If you do not stick to this payment you can request to have a flow limiter to help you consume less water."

The responses to this paragraph were as follows. (For easier comprehension, the answers to the same questions in the *Durban Metro Water* pre-test survey are provided in brackets.)

<u>Have you been informed recently about the latest payment system of Durban Metro Water?</u>	Group 1 %	Group 2 %	Group 3 %
Yes, recently	26,0 (15,7)	21,3 (17,5)	27,2 (23,5)
Yes, last year	10,0 (5,9)	8,2 (7,9)	13,6 (7,4)
No	64,0 (78,4)	70,5 (74,6)	59,3 (69,1)

From the table above, it can be deduced that there was an increase from pre-test to post-test over all groups. However, none were statistically significant.

The respondents were asked what their thoughts on the new payment system were. (Pre-test percentages are again provided in brackets.)

THOUGHTS ABOUT THE NEW PAYMENT SYSTEM¹

	Group 1 %	Group 2 %	Group 3 %
<i>Good for those who cannot afford to pay high water bills</i>	28,6 (10,4)**	18,3 (8,5)	18,5 (11,0)
<i>A good system / Helpful</i>	20,4 (20,8)	13,3 (11,9)	17,3 (12,3)
<i>They give different options/ Arrangements for paying for water</i>	8,2	11,7	13,6
<i>Helps pay arrears as well as new account</i>	10,2	11,7	6,2

¹ Duplication occurs.

A variety of slightly more than 30 thoughts were given in the post-test survey and about 15 in the pre-test survey. Two patterns are prevalent from the data: Firstly, the thoughts mentioned during the pre-test survey are very different from those mentioned in the post-test surveys. In the post-test survey, there seems to be more practical thoughts about **the variation of options available for payment** of water accounts (such as “Gives us a chance to pay our accounts, Will help us pay our water accounts while receiving water” etc.). However still a small shift, this might be a very useful avenue to explore. Secondly, the general attitude towards the “flow limiter” system seems to be more favourable among the respondents in Group 1. This could be ascribed to the general underlying negativity, which increases from Group 2 to Group 3.

6.2.4 GENERAL ATTITUDE QUESTIONS

With the research design of this study in mind, specific questions were repeated in the second (post-test) survey in order to gauge any differences that might have occurred in the time between the surveys

Again, the same 5-point scale was implemented as for the interviews in the other three areas, in order to be able to do comparisons (1 - Do not agree at all; 2 - Do not agree; 3 - Uncertain; 4 - Agree; 5 - Definitely agree). The results for the three groups in Chesterville are presented in the following table. (Pre-test scores are given in brackets.)

WATER QUALITY (MEAN SCORES OUT OF 5)

STATEMENT	Group 1	Group 2	Group 3
<i>My household has no problems with the water we receive here</i>	4,7 (4,3)	4,5 (4,3)	4,2 (4,4)
<i>We have a problem with the taste of the water we use</i>	1,4 (1,4)	1,5 (1,3)	1,5 (1,3)
<i>We have a problem with the smell of the water</i>	1,3 (1,3)	1,3 (1,3)	1,5 (1,2)
<i>The water we use is clear and bright</i>	4,7 (4,4)	4,7 (4,6)	4,6 (4,6)
<i>I know how much water my household uses per month</i>	2,0 (2,2)	2,3 (2,0)	2,0 (2,3)
<i>The more water our household uses, the more we should pay</i>	4,0 (3,8)	3,6 (3,5)	3,7 (3,5)
<i>To supply water to my stand costs money</i>	4,5 (4,5)	4,4 (4,2)	4,3 (4,3)
<i>To have clean water costs money</i>	4,7 (4,3)	4,6 (4,4)	4,4 (4,4)
<i>We receive our account regularly (once a month)</i>	4,1 (2,9)	3,5 (2,4)	3,1 (2,5)
<i>People should receive water even if they do not pay</i>	3,4 (3,1)	3,7 (3,2)	3,3 (3,4)
<i>We regularly do not pay for water as a request from our community</i>	1,9	1,6	2,1

**

As in the case of the pre-test survey, the respondents were quite satisfied with the quality of the water they received from *Durban Metro Water*. A noticeable difference was observed to the frequency of which they received accounts for water consumption. Statistically significantly more of Groups 1 & 2 agreed with the statement that they receive their accounts regularly (once a month) compared to the pre-test. The mean score for Group 3 was also higher than in the pre-test survey. *Durban Metro Water* might have stepped up on the regular distribution of water accounts, due to a greater awareness of the problem. It might also be an increase in the awareness levels of the respondents to pay more attention to their water accounts, and thus reported higher levels. Whichever it may be, this may have some positive impact on the payment for water.

With the aim of getting greater clarity to the problem of the payment for water consumption, a further question was posed, asking respondents to classify themselves according to two possibilities.

STATEMENTS DESCRIBING HOUSEHOLDS

"Please tell me which one of these two statements describes your household best."

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Because we don't know how much water we use, it is difficult to use less water and our account is always too much to pay</i>	20,0	36,1	37,5*
<i>We limit the use of water in order to afford the payment for water</i>	80,0*	63,9	62,5

The two options were provided to gain a better understanding of the respondents' behaviour and underlying attitudes. As respondents were only allowed two options, the resulting answers reflect a mirror image of each other. The option contained two components, namely knowledge of the amount of water used and the consumption of water. From the results, statistically significant differences between the three groups were observed. 80% of Group 1 indicated they were aware of water usage, and/or also that they limited the use of water to afford the payment thereof. Groups 2 & 3 showed much lower percentages (63,9% and 62,5% respectively). It should be kept in mind that Groups 2 & 3 were the respondents that were further in arrears with the payment for their water accounts.

6.2.5 QUESTIONS ON THE “FLOW LIMITOR” SYSTEM

In the pre-test survey, three respondents mentioned that they had a “flow limiter” installed, and in the post-test survey, only one reported likewise. It is therefore not feasible to analyse the topic further here, except for their knowledge about a “flow limiter”. (Pre-test percentages in brackets.)

KNOWLEDGE ABOUT A “FLOW LIMITOR”

	Group 1 %	Group 2 %	Group 3 %	
Have you ever heard about a “flow limiter” before?	78,0 (48,0)	86,9 (42,6)	82,7 (38,3)	**

In all three groups, substantial and statistically significantly more respondents were aware of a “flow limiter” system in the post-test survey (between 30% (Group 1) and about 44% (Groups 2 & 3)). These results probably reflect the effects of some effort from *Durban Metro Water* to distribute information about the system.

The respondents were again probed about their thoughts of the “flow limiter” system. (Pre-test percentages appear in brackets.)

PERCEPTIONS ABOUT A “FLOW LIMITOR”¹

	Group 1 %	Group 2 %	Group 3 %
<u>MOST FREQUENT MENTIONS</u>			
Will help us to consume less water / Helps us to not to use so much water	34,7 (29,2)	23,7 (30,5)	35,0 (27,4)
Reduces a high water bill	6,1 (14,6)	6,8 (15,3)	11,3 (20,5)
It is good / Good thing	10,2 (12,2)	15,3 (15,3)	12,5 (10,0)
We won't get sufficient water	6,1 (20,8)	6,8 (13,6)	11,3 (13,7)
Don't like it / Bad idea	12,2 (12,5)	11,9 (11,9)	10,0 (15,1)
What happens if we sometimes need more water – funerals, etc?	10,2 (8,3)	15,3 (11,9)	12,5 (15,1)
Helps you not to use more water than you can afford to pay	6,1 (10,4)	3,4 (8,5)	6,3 (11,0)
Only good for small households / For households less than 5 people	10,2 (6,3)	8,5 (6,8)	10,0 (5,5)

¹ Duplication may occur.

The first eight (of 18) spontaneous perceptions mentioned in the pre-test survey, reappeared in the post-test survey. Although a clear pattern doesn't arise from the table, it seems that particularly in Group 3, the

information they had received, had increased their perception that the “flow limiter” would help them consume less water. It did not, however, achieve in changing their perceptions that it would reduce their water bills.

6.2.6 ATTITUDES ABOUT THE PAYMENT FOR WATER

As was the case in the pre-test survey, the majority of Group 1 agreed that households should pay for the water they use (92,0%). This pattern also repeated itself in the post-test survey, with statistical significantly less for Group 2 (86,9%)* and Group 3 (86,4%)* agreeing with the statement. These percentages were slightly higher than in the pre-test survey. When probed what the reasons for their answer were, the following was mentioned. (Pre-test percentages in brackets.)

<u>REASONS MENTIONED (PRE- & POST-TESTS)</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>To cover expenses for cleaning water because it costs money / supplying water to us costs money</i>	71,1 (73,3)	59,6 (82,7)**	58,8 (75,8)**
<i>Water is our basic need, we can't live without it</i>	13,3 (20,0)	17,3 (17,3)	19,1 (21,2)
<i>Because nothing is for free</i>	6,7 (15,6)	5,8 (9,6)	10,3 (13,6)
<u>OTHER REASONS MENTIONED (POST-TEST)</u> ¹	%	%	%
<i>Durban Water does a lot of work/Have to pay workers</i>	26,7	23,1	26,5
<i>Maintenance of pipes/Pipes cost money</i>	13,3	9,6	10,3
<i>Should pay for service we receive</i>	8,9	9,6	11,8

¹ Duplication occurs

Statistically significantly less respondents from Groups 2 & 3 mentioned in the post-test survey that they thought the reason why households should pay for the water they receive, was to cover expenses for providing clean water. This might be explained due to lack of understanding of the cost for clean and healthy water provision, and might also provide some explanation for their non-payment behaviour.

6.2.7 KNOWLEDGE ABOUT THE FREE 6kl OF WATER

The respondents' reactions to the announcement of the first free 6kl of water were also repeated in the post-test survey.

“Only those that use a limited number of kl per month qualify for free water”.

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	20,0 (29,4)	19,7 (17,5)	14,8 (25,9)
<i>False</i>	40,0 (23,5)	29,5 (31,7)	27,2 (27,2)
<i>Unsure/Don't know</i>	40,0 (47,1)	50,8 (50,8)	58,0* (46,9)

“6kl is enough water to survive for a month if you are very poor.”

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	58,0 (45,1)	57,4 (47,6)	51,9 (48,1)
<i>False</i>	24,0 (25,5)	19,7 (19,0)	24,7 (19,8)
<i>Unsure/Don't know</i>	18,0 (29,4)	23,0 (33,3)	23,5 (32,1)

“The “flow limiter” can help my household to use less than 6kl of water per month.”

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	64,0 (52,9)	78,7 (63,5)	71,6 (53,1)**
<i>False</i>	8,0 (21,6)	6,6 (11,1)	18,5* (16,0)
<i>Unsure/Don't know</i>	28,0* (25,5)	14,8 (25,4)	9,9 (30,9)**

“The water meter on our stand is working”

	Group 1 %	Group 2 %	Group 3 %
<i>True</i>	84,0 (86,3)	85,2 (88,9)	84,0 (82,7)
<i>False</i>	0,0 (3,9)	3,3 (1,6)	1,2 (7,4)
<i>Unsure/Don't know</i>	16,0 (9,8)	11,5 (9,5)	14,8 (9,9)

“If my household use more than 6kl per month I will have to pay for the extra litres used”

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>True</i>	84,0 (60,8)**	70,5 (60,3)	75,3 (55,6)**
<i>False</i>	4,0 (9,8)	3,3 (11,1)	7,4 (16,0)
<i>Unsure/Don't know</i>	12,0 (29,4)**	26,2 (28,6)	17,3 (28,4)

“The Durban Metro Water has a good system of paying for water”

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %	
<i>True</i>	88,0* (54,9)	70,5 (49,2)	71,3 (48,1)	**
<i>False</i>	2,0 (17,6)**	6,6 (14,3)	10,0 (18,5)	
<i>Unsure/Don't know</i>	10,0 (27,5)**	23,0 (36,5)	18,8* (33,3)**	

From the information in the tables above, it can be deduced that the implementation of the first 6kl of free water was still relatively new to the respondents. Only about 20% agreed with the statement that only those that used a limited amount of water per month would receive it for free.

Only about half of the respondents agreed that implementing a “flow limiter” would assist them in using less than 6kl of water per month in the pre-test and about 70% in the post-test. In Group 3 this percentage increased significantly.

A statistically significant **higher** level of agreement for Group 1 and Group 3 were observed to the statement that if their household used more than 6kl of water per month, they would have to pay for the extra water used.

Another prominent finding was significant increases in the post-test results across all 3 groups' rating *Durban Metro Water* as having a good system of paying for water.

6.2.8 FORMAT OF ACCOUNTS

As confusion sometimes happens with water and electricity accounts, the respondents were asked whether they would prefer to have one account for water, electricity and other municipal services. Their responses were the following.

<u>WOULD YOU PREFER TO RECEIVE ONE ACCOUNT FOR WATER, ELECTRICITY AND OTHER MUNICIPAL SERVICES?</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
Yes	34,0	34,4	32,5
No	66,0	65,6	67,5

A third of the respondents indicated that they would prefer to receive only one account. It can be deduced that separate accounts were still preferred. Some of the reasons for their options were as follows.

<u>REASONS FOR A "YES" ANSWER¹</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Pay for all the services at once</i>	35,3	66,7	48,0
<i>Will save time</i>	35,3	19,0	16,0
<i>It will control my budget</i>	11,8	9,5	16,0
<i>All municipal letters should be together</i>	11,8	4,8	4,0
<i>Will help not displacing different accounts</i>	5,9	4,8	8,0

¹ Duplication occurs

It seems that the convenience of paying for all services at once could be singled out as the best explanation for one account.

<u>REASONS FOR A "NO" ANSWER¹</u>	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Too difficult to cover all expenses on one account</i>	27,3	34,2	21,2
<i>I have pre-paid electricity</i>	9,1	10,5	21,2
<i>I am used to separate bills</i>	24,2	10,5	9,6
<i>I need to see what I am paying for</i>	9,1	10,5	15,4
<i>It will confuse me</i>	9,1	10,5	9,6
<i>If you pay, water AND electricity can be disconnected</i>	9,1	7,9	9,6

¹ Duplication occurs

The reasons given by the 33 respondents who responded with a “No” answer seemed to be of a practical nature. For example using pre-paid electricity and being used to separate bills.

6.2.9 GROUPS’ ATTITUDES

As previously mentioned, it was a prominent aim of the study to gain insight into the respondents’ and adjacent neighbours’ influence on the individual’s payment of water accounts. As before, the differences of the results of the three groups were very small. (Pre-test results in brackets.)

	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
<i>We in this area pay our water and electricity on a regular basis</i>	3,7 (3,6)	3,6 (3,1)**	3,3 (3,1)
<i>If my neighbour is not paying his/her account, why should I?</i>	1,7 (1,8)	1,9 (2,1)	2,0 (1,8)
<i>People here don’t pay their accounts because water and electricity is not essential to them</i>	1,6 (1,7)	1,5 (1,7)	1,6 (1,7)
<i>If everybody stops paying, there will be no water supply</i>	4,1 (3,8)	3,6 (4,0)	4,0 (3,9)
<i>People here don’t pay their accounts because we receive bad service from the Council</i>	1,8 (2,0)	2,1 (2,2)	2,2 (2,4)
<i>I don’t pay because I don’t have money or can’t afford it</i>	2,2 (2,3)	2,9 (2,8)	3,2* (3,3*)

Small positive shifts (only significant at Group 2) were detected among all three groups to the statement “*We in this area pay our water and electricity on a regular basis*”. These are short-term movements, but are trends that could be exploited in future information campaigns. A statistical significant difference between the means also occurred in the post-test survey with regards to the last statement in Group 3: “*I don’t pay because I don’t have money or can’t afford it*”. This again points to an economical/affordability situation. The provision of more options to paying for water accounts may alleviate the problem.

6.2.10 PERCEIVED CHANGES BETWEEN THE SURVEYS

The respondents were asked if the Council services they received, had changed since the first interview. They responded as follows.

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Service deteriorated</i>	6,0	6,6	11,3
<i>Remained the same</i>	54,0	63,9	66,3
<i>Service improved</i>	40,0*	29,5	22,5

The results indicate that significant differences were prevalent between the three groups, particularly in Group 2. Groups 1 & 2 were much more positive about the services of the Council than Group 3. The data in the table perhaps explain something of the negative attitude of the respondents in Group 3. It could be argued that these differences were possibly caused by the *Hawthorne effect* (the artificial situation created whereby respondents who know they are being tested/observed, react differently), but such an effect (if it did occur) hypothetically would apply to all three groups and can therefore be disregarded.

They were also asked if they thought that they used less water since the previous survey.

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
<i>Yes</i>	79,6	75,4	69,2
<i>No</i>	20,4	24,6	30,8

Steady decline in water usage can be seen from the % in the table, from Group 1 to Group 3.

They were further probed on the measures they had applied to save water. The most frequent measures from all three groups were:

<u>IF YES, WHAT DID YOU DO TO SAVE WATER?</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
Do not wash daily	34,2	23,9	29,6
Limit usage of water	23,7	26,1	20,4
Fix leak/No leaking pipes	7,9	15,2	16,7
Always close taps tight	10,5	19,6	9,3
Re-use water	15,8	10,9	13,0
Not flushing toilet unnecessarily	5,3	17,4*	3,7
Do not open taps fully	5,3	6,5	9,3
Use less water when bathing	7,9	13,0*	1,9
Wash dishes in a bucket	7,9	6,5	7,4

¹ Duplication occurs

Various measures to save water were mentioned by the respondents, but the numbers of respondents that applied them were relatively low. (Numbers are given in square brackets.)

<u>IF NO, WHY DID YOU NOT SAVE WATER?</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3</i> %
We are too many and use a lot of water	20,0 [2]	-	29,2 [7]
Only use what we need	10,0 [1]	20,0 [3]	16,7 [4]
Don't know how to save water	20,0 [2]	13,3 [2]	16,7 [4]
Never waste water	20,0 [2]	20,0 [3]	8,3 [2]
Monthly water account is always high	10,0 [1]	20,0 [3]	4,2 [1]

¹ Duplication occurs

The numbers of negative responses to the question were too small to come to a meaningful conclusion. The provision of more options for water payment might yield some improvement.

6.2.11 ESTIMATED VS. REAL WATER CONSUMPTION

Respondents were again asked to estimate how much water they used monthly. Durban Metro Water supplied the actual figures. The average consumption for June was used as basis for comparison. (Pre-test figures in brackets.)

	Group 1	Group 2	Group 3
Estimated water consumption per month (in k/l)	4,6 (3,9)	4,1 (3,3)	4,2 (4,3)
Actual water consumption per month (in k/l)	18,8 (16,7)	16,5 (17,2)	31,7 (35,5)

Almost identical to the pre-test estimations, the **actual** water consumption was again much higher more than the **estimated** figures. Groups 1 & 2 estimated their water consumption about four times lower than their real consumption, and for Group 3 it was seven times lower. The situation did not change from the pre-test survey and the deduction might be that the issue of estimation of water consumption had not been clearly addressed. This is an area of huge concern.

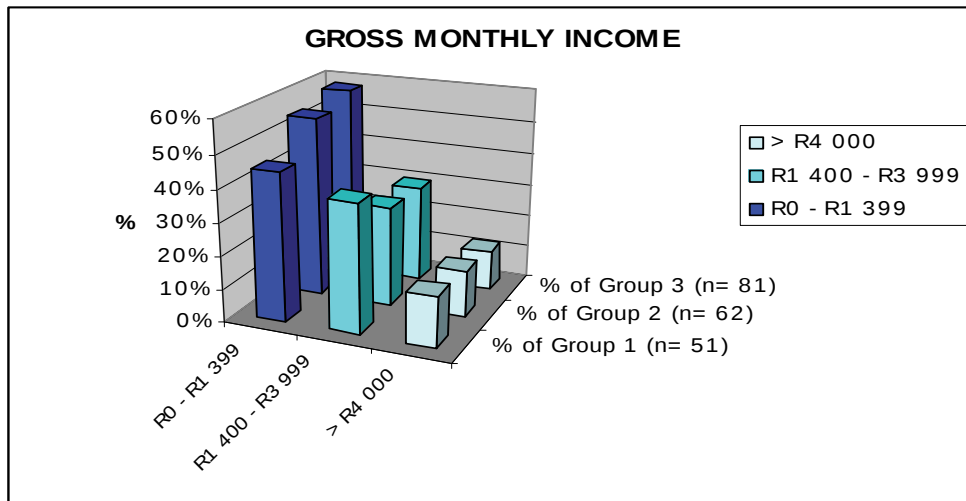
Lastly, the respondents were asked which method of limiting/cutting their water supply they would prefer if they neglected to pay their water accounts.

	<i>Group 1</i> %	<i>Group 2</i> %	<i>Group 3*</i> %
Installation of a restrictive device that limits the water to your house but you still have water (flow limiter)	42,0	26,2	33,3
Nothing must be done	28,0	36,1	33,3
Installation of a pre-paid water meter	16,0	29,5	19,8
Installation of a restrictive device that will allow a trickle of water to fill cups and toilet cisterns (trickle feed)	10,0	4,9	7,4
Cutting of water with no supply	4,0	3,3	6,2

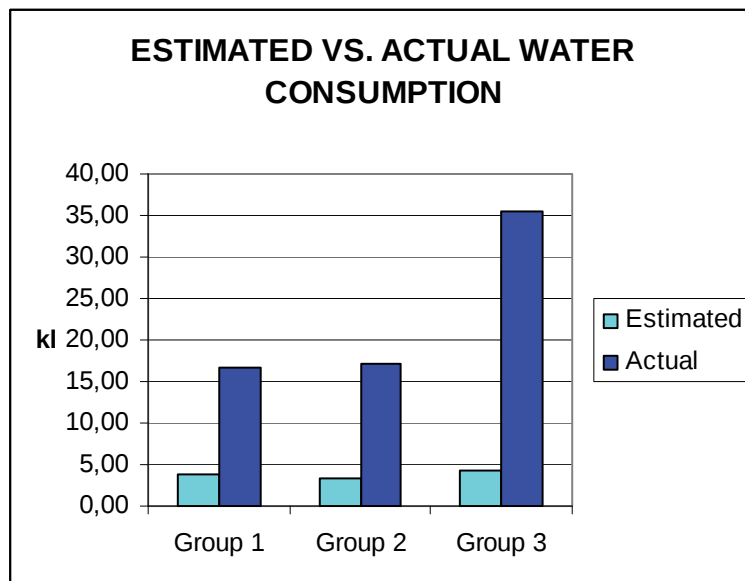
Of the three options, all three groups were the strongest opposed to the cutting of water with no alternative supply and the installation of a trickle feed device. The installation of a pre-paid water meter was somewhat less opposed, while the “flow limiter” seems to be the option with the most support. Considering the very low level of “flow limiters” installed at the time of the post-test survey, as well as the respondents’ relatively low levels of comprehension of operation of the device, this is perhaps an area that should be addressed in future information campaigns.

6.2.12 SUMMARY OF RESULTS

The respondents in the Durban survey were also divided into three groups, based on their water payment behaviour. The income levels of the three groups displayed a noticeable pattern, as presented in the following graph.



In general, the respondents were satisfied with the quality and the provision of water. A common problem, also observed with regard to the respondents in the other survey areas, was that consumers drastically under-estimated their water consumption, as can be seen in the following graph. This was particularly evident in the case of respondents who were further in arrears. This problem may be compounded, if not rectified as early as possible.



One of the important findings was that if more options for payment are available to water consumers, the better they will be able to choose an option that might suit them.

The respondents' knowledge of bigger water consumption units (kilo and Mega-litres) were also fairly low, and could form part of future information campaigns. Although the respondents were fairly positive to the implementation of a "flow limiter", the respondents were not generally familiar with the system during the pre-test survey. During the post-test survey, however, the percentages increased dramatically. The responses to this system, linked to other findings, revealed a further fairly negative attitude among the consumers who were further in arrears, than among the other groups. The opinions expressed about *Durban Metro Water* were more positive among the groups that were less in arrears, confirming a degree of negativity among respondents who were further in arrears. Group 3 was also more negative in their attitude about the implementation of a "flow limiter". A degree of financial disposition and unemployment was also prevalent, especially in Group 3.

Knowledge of the first 6kl of free water was still relatively new to the respondents. Relatively low levels of knowledge of the new payment system of *Durban Metro Water* were observed. Even during the post-test survey, about 64,1% of the sample still mentioned that they had not heard about the new payment system. This also applied to the regularity with which respondents receive their water accounts. This needs to be communicated effectively in information campaigns.

The variety of measures mentioned by the respondents for saving water, were extensive. Whichever of these suggestions are viable and feasible, could provide useful practical solutions for the non-payment of water accounts. The majority (about two-thirds) of the respondents in Chesterville preferred separate accounts for water, electricity and other municipal services.

In conclusion the following research variables were identified as being related to non-payment behaviour in Group3:

- Water usage - non-payers use more water than regular payers
- Negative attitude towards payment and related water matters
- Income - lower in the non-payment group
- Less accurate in estimating water consumption
- Less inclined to cut down on water consumption
- More negative in their attitude about implementation of a "flow limiter"

CHAPTER 7 – RESULTS: CAPE TOWN METROPOLITAN COUNCIL

7.1 PRE-TEST RESULTS

7.1.1 DEMOGRAPHICS

Respondents from three areas in Cape Town were interviewed, i.e. Weltevreden Valley, Guguletu and Langa. 200 households were selected for the sampling framework, however, only 160 complete datasets for water consumption were available. By complete datasets we understand to include payment records of water consumption from the Council.

REALISED SAMPLE

(With regard to the study variable: *Payment behaviour*)

<u>AREA</u>	Number of respondents in expected sample	Number of respondents in realised sample	Realised sample as % of expected sample
Weltevreden Valley	66	43	65,2%
Guguletu	66	59	89,4%
Langa	68	58	85,3%
<u>TOTAL</u>	200	160	

According to the research design of this study, pamphlets explaining water saving methods were handed to every second household at completion of the interview. (At 97 households, pamphlets were handed out.) The potential effects of this method are reported on in the post-test survey, as a variable that might affect water consumption behaviour. Another variable, namely the mailing of “mock” bills to the respondents in Weltevreden Valley was also examined for potential effects.

The respondents were, after inspection of their payment behaviour (as in the case of Tshwane), divided into two groups, according to their water account information. Group 1 comprised of respondents who were up to R100 in arrears on their April account, Group 2 was in arrears from R101 upwards.

NOTE: Although the respondents living in Guguletu and Langa were on a fixed rate or unbilled system where some of the respondents were not billed at the time of the survey, their accounts also mounted into arrears. The datasets that were complete for Group 1 were for 51 respondents and Group 2 had 109. It is also very important to note that in comparison to the total sample (200), differences of results of the realised sample (160) mostly didn't differ at all from the total sample, or only on the first decimal point, but in no case were these differences statistically significant. It can therefore be assumed that for all practical considerations, the results of the expected and realised samples are the same.

The average age of the respondents in the sample was 47,56 years. The gender distribution of the interviewees consisted of 28,1% males and 71,9% females. This is due to the fact that more females were at home to interview. The average monthly household income was R2 796-13. The respondents who were willing to disclose their income, were categorised as follows:

GROSS MONTHLY INCOME (REPORTED)

	TOTAL (n = 155)	% of Total	% of Group 1 (n = 47)	% of Group 2 (n = 108)
R0 – R1399	53	34,1	31,9%	35,2%
R1400 – R3999	62	40,0	27,7%	45,3%*
> R4000	40	25,8	40,4%*	19,5%

The occupational levels were the following:

EMPLOYMENT STATUS

	TOTAL	% of Total	Group 1	Group 2
Employed	89	45,3	48%	39,8%
Unemployed	95	48,3	42%	53,7%
Self-employed	13	6,6	10%	6,5%

The type of dwelling of the respondents can be classified as follows.

TYPE OF DWELLING

	%
Formal house	83,5
Townhouse/duplex/cluster house	14,6
Flat	1,3
Informal dwelling	0,6

NUMBER OF OTHER DWELLINGS ON THE PROPERTY

	N
0	102
1	35
2	13
3	2
4	2
5	3
6	1
7	1

The majority of the respondents mentioned that there was only the main dwelling on their property, although in one case, there were as many as seven. 90% mentioned that there was only one household/family living on the property and 11% accommodated more than one family. The average number of people on the properties was 5,4. (Group 1 = 4,8 and Group 2 = 5,7)

OWNERSHIP OF PROPERTY

	%
Own, paid off	48,1
Own, still paying	45,0
Renting	6,9

The average size of the stands was 431 m². 18,4% (29) of the respondents didn't know what the size of their stands was, and was therefore not included in the calculation.

HOME LANGUAGE

<u>HOME LANGUAGE</u>	%
Afrikaans	6,3
English	18,1
Southern Sotho	1,3
Northern Sotho	0,6
Xhosa	68,8
Zulu	1,9
Afrikaans & English	3,1

The majority of the sample said their home language was Xhosa, followed by English and the others.

As part of the survey, interviewers from MSSA handed out pamphlets explaining water saving methods to every second household, which the Cape Town Metropolitan Council wanted to provide to the respondents.

(97 pamphlets were distributed in this way.) The pamphlets were part of the research design, to investigate any effect it might have on the respondents' water saving behaviour.

7.1.2 GENERAL ATTITUDES

As a departure point, a general question was asked whether the respondents agreed that water (over the centuries) is one of our basic needs to stay alive. With the exception of one respondent, everybody agreed with the statement.

Again, the same 5-point scale was implemented as for the interviews in the other three areas, in order to be able to do comparisons (1 - *Do not agree at all*; 2 - *Do not agree*; 3 - *Uncertain*; 4 - *Agree*; 5 - *Definitely agree*). The results for the groups in the Cape Town area are presented in the following table.

WATER QUALITY (MEAN SCORES OUT OF 5)

STATEMENT	Group 1	Group 2
<i>My household has no problems with the water we receive here</i>	4,4	4,5
<i>We have a problem with the taste of the water we use</i>	2,1	2,1
<i>We have a problem with the smell of the water</i>	1,9	2,0
<i>The water we use is clear and bright</i>	4,3	4,3
<i>I know how much water my household uses per month</i>	2,7	2,7
<i>The more water our household uses, the more we should pay</i>	3,7	3,4
<i>To supply water to my stand costs money</i>	4,0*	3,6
<i>To have clean water costs money</i>	4,0	3,7
<i>We receive our account regularly (once a month)</i>	4,1	4,1
<i>People should receive water even if they do not pay</i>	3,4	3,5

The pre-test survey results from the other municipal areas revealed very small (non-significant) internal group differences between the subgroup divisions. This was also true for the Cape Town subgroups except for the statement "*to supply water to my stand cost money*". Respondents seemed to be quite satisfied with the water quality and their (reported) knowledge of their water consumption.

The systems of billing in the areas, and the planned new billing systems, were as follows:

BILLING SYSTEMS

<u>GUGULETU & LANGA</u>	<u>WELTEVREDEN VALLEY</u>
• No meter reading • Fixed charge	• No reading • No fixed charge • Mock (dummy) bills
<u>LATER:</u>	<u>LATER:</u>
• Meter reading • Volumetric charge	• Meter reading • Real bills

Respondents were asked to estimate how much water they used monthly. Similar to other areas, the actual water consumption of households was substantially higher than the respondents' estimation thereof. The actual figures were obtained from the respondents' latest water accounts. The average consumption for January, February and March was used as basis for comparison in the pre-test survey.

GUGULETU & LANGA

	Group 1	Group 2
Estimated water consumption per month (in k/l)	5,4	4,7
Actual water consumption per month (in k/l)	Not available	Not available

WELTEVREDEN VALLEY

	Group 1	Group 2
Estimated water consumption per month (in k/l)	7,3	6,7
Actual water consumption per month (in k/l)	14,8	19,5

As in the case of the other areas, it is again prevalent that the **actual** water consumption was higher for both groups than the **estimated** consumption. The under-estimation might also be a serious problem, particularly in Group 2, which had by far the highest amounts for their water accounts in arrears. Whereas Group 1 had kept their water consumption fairly reasonable, it seems as if Group 2 was perhaps slightly more careless. This problem may escalate in future and drastic steps might be necessary to curb the problem. However, compared to the water consumption of the other areas, the water consumption of the Cape Town respondents was not as excessive. The surveys were done during the rainy season (June and August).

7.1.3 KNOWLEDGE OF WATER CONSUMPTION UNITS

The knowledge of water consumption units in the Cape Town areas, as in the case of the groups from other areas, showed a similar pattern. The percentages that **know** these units are as follows.

	<i>Group 1</i> %	<i>Group 2</i> %
<i>Litres</i>	86,3	94,5
<i>Kilo litres</i>	76,0	61,9
<i>Mega litres</i>	20,8	20,4

A small, but constant pattern also emerged in the two groups from Cape Town, i.e. that the group that were further in arrears knew less about the larger units than the other group. Secondly, the smaller units were better known than the bigger units. The explanation may lie therein that the latter units did not form part of everyday life experiences.

7.1.4 ATTITUDES ABOUT THE PAYMENT FOR WATER

About three-quarters of respondents from both groups thought that households should pay for the water they used. When probed what the reasons for their answers were, the following were mentioned.

<u>REASON MENTIONED</u>	<i>Group 1</i> %	<i>Group 2</i> %
<i>Will waste if for free / Must pay for what you use</i>	92,3	89,7
<i>Will help control water use / Will learn to save</i>	5,1	10,3
<i>Because we don't want water to be cut off</i>	2,6	-

The respondents were asked whether their household pay the fixed rate of R10-85 for their water per month. The results are:

	<i>Group 1</i> %	<i>Group 2</i> %
<i>Yes</i>	26,5 (n = 13)	31,8 (n = 34)
<i>No</i>	73,5 (n = 36)	68,2 (n = 73)

Although more respondents in Group 2 (31,8%) mentioned that they paid a fixed rate than in Group 1 (26,5%), the % were not statistically significant. Of the respondents who did make use of the fixed rate payment system, 85% thought that the payment they made is enough for the water they consumed each month.

Some of the reasons the respondents that paid a fixed rate, mentioned WHY they thought the payment they made was enough for the water they consumed each month were as follows:

- I think it is fair for what I receive
- We fear that if it is increased we might not afford it
- My water I use is not that much – the price is right
- We have no money.

Reasons WHY a few respondents (n = 5) that don't pay a fixed rate, mentioned that they thought it was fair to pay for the water they received and others not, were:

- Can't start taking responsibility for wasting water
- There are people out there who can't afford water
- If everybody pays the water bill will be less.

7.1.5 KNOWLEDGE ABOUT THE FREE 6kl OF WATER

The respondents' reactions to the announcement by their local government about the free 6kl of water and other related statements were the following.

“Only those that use a limited number of kl per month qualify for free water”.

	<i>Group 1</i> %	<i>Group 2</i> %
<i>True</i>	37,3	43,1
<i>False</i>	25,5	29,4
<i>Unsure/Don't know</i>	37,3	27,5

“6kl is enough water to survive for a month if you are very poor.”

	<i>Group 1</i> %	<i>Group 2</i> %
<i>True</i>	37,3	42,5
<i>False</i>	29,4	25,5
<i>Unsure/Don't know</i>	33,3	32,1

“Water usage is measured at most households in Cape Town.”

	<i>Group 1</i> %	<i>Group 2</i> %
<i>True</i>	52,9	52,8
<i>False</i>	15,7	13,9
<i>Unsure/Don't know</i>	31,4	33,3

“The water meter on our stand is working”

	<i>Group 1</i> %	<i>Group 2</i> %
<i>True</i>	60,8	61,1
<i>False</i>	19,6	18,5
<i>Unsure/Don't know</i>	19,6	20,4

“If my household use more than 6kl per month I will have to pay for the extra litres used”

	<i>Group 1</i> %	<i>Group 2</i> %
<i>True</i>	60,0	49,5
<i>False</i>	12,0	14,7
<i>Unsure/Don't know</i>	28,0	35,8

From the information in the tables above, it can be deduced that the implementation of the first 6kl of free water was still relatively new to the respondents in the selected areas in Cape Town.

7.1.6 OPINIONS ABOUT THE PROPOSED MEASUREMENT OF WATER

Respondents were also asked what they thought about the fact that their water usage would be measured in the near future. The most frequent reactions were:

<u>REACTION</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %
<i>Then they know what you are using</i>	24,4	34,0
<i>Will be able to control our water usage</i>	42,2*	23,4
<i>Have no problem with it</i>	15,6	14,9
<i>It warns me because we don't have money to pay for water</i>	11,1	7,4
<i>They are already doing it</i>	11,1	3,2

¹Duplication occurs

Significantly more respondents in Group 1 were of the opinion that the proposed system would assist them to control their water usage. In other words less of Group 2 thought it would help them to control their water usage.

They were also asked what they thought of the “cut-off” system, which would be applied when water accounts were not paid.

<u>THOUGHTS MENTIONED</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %
<i>Not a good idea at all</i>	57,1	66,3
<i>Good system because everyone must pay for the water they use</i>	36,7*	15,8
<i>Advise people before they cut then they can make arrangement</i>	14,3	24,8

¹ Duplication occurs

Most respondents said it was not a good idea. However, 1 out of 3 respondents from Group 1 suggested that it would be a good system, because everyone should pay for the water they used.

7.1.7 GROUPS' ATTITUDES

As mentioned before, it was a prominent aim with the study to gain insight into the respondents' and adjacent neighbours' influence on the individual's payment of water accounts. As in the case of other areas, the differences of the results between the two groups were very small and not statistically significant.

The scores on the agreement levels out of 5 were:

	<i>Group 1</i>	<i>Group 2</i>
<i>We in this area pay our water and electricity on a regular basis</i>	3,5	3,3
<i>If my neighbour is not paying his/her account, why should I?</i>	2,4	2,6
<i>People here don't pay their accounts because water and electricity is not essential to them</i>	2,1	2,2
<i>If everybody stops paying, there will be no water supply</i>	3,0	3,0
<i>People here don't pay their accounts because we receive bad service from the Council</i>	2,3	2,2
<i>If respondents don't know how much water they use, they will waste water</i>	3,6	3,7
<i>It is unfair for areas/households to be billed according to water consumed and others not</i>	3,6	3,7
<i>It is a good thing to measure how much water households use</i>	4,0	3,9
<i>I don't pay because I don't have money or can't afford it</i>	2,7	3,0

It seems that neighbours did not influence respondents about paying for water in both groups and they generally agreed with the fundamentals of water supply. However, it didn't seem as if financial factors were so prominent as in the case of the other areas of the study. It appears to be more of an attitudinal than an economic problem in Group 2.

7.1.8 COMMUNICATION

It appeared that the latest billing system of the Council had not been communicated well enough to the two areas' respondents before the pre-test survey. About three-quarters mentioned that they didn't know about it.

<u>HAVE YOU BEEN INFORMED RECENTLY ABOUT THE LATEST BILLING SYSTEM OF THE COUNCIL?</u>	<i>Group 1</i> %	<i>Group 2</i> %
<i>Yes, recently</i>	19,6	23,4
<i>Yes, last year</i>	5,9	6,5
<i>No</i>	74,5	70,1

The respondents were asked then if they could remember WHERE they got the information. The 42 that had received information can be divided as follows:

<u>IF YES, HOW WERE YOU INFORMED?</u> ¹	<i>Group 1</i> n	<i>Group 2</i> n
<i>There was a letter attached to the latest water account</i>	4	8
<i>Read about it in newspapers</i>	1	7
<i>Municipality sent people around</i>	2	6
<i>Council worker told us when they installed the water meter</i>	2	6
<i>Heard on radio</i>	2	3
<i>Saw on TV</i>	1	1
<i>People speaking about it</i>	1	-

¹ Duplication occurs

From the low numbers in the table above, it can be deduced that much more information needs to be given to respondents, in order to reduce misunderstandings and to establish better communication channels.

On the question whether they had any plans to reduce water consumption in their households, 46% of Group 1 and 62,9%* of Group 2 responded affirmatively.

The respondents were also probed on HOW households could save water. The methods mentioned by the two groups were of quite a variety (although no significant differences were prevalent between the two groups):

- We will use less water for everything
- I will reduce, but I will need tips on how to use less
- Fix any leaks
- I will always measure the water whenever I use water
- I will first see how much they charge
- At least I will save some money as well as not wasting water
- Put some containers at the corners of the house when raining
- Same as card system in electricity

The respondents that didn't intend to save water, mentioned the following:

- We are not wasting water, we only use what's necessary
- We need water to survive

7.1.9 INTENTIONS & ATTITUDES TO SAVE WATER

A number of statements were again provided to investigate the respondents' attitudes to some aspects of their area, and intentions to water saving methods. They were asked to what extent they agree to the statements on a 5-point scale (see 4.1.2).

STATEMENT	<i>Group 1</i>	<i>Group 2</i>
It is important that all of the respondents here pay their bills	3,9	3,8
I would like more information on how to save water	4,3	4,4
The electricity service we receive here is very good	4,3	4,2
We have many electricity failures here	2,0	2,3
If we have a problem with the electricity, it is solved quickly	4,1	3,9
Our area is very clean	3,3	3,3
Refuse removal is done on a regular basis	4,2	4,1
The street lights are well kept	3,7	4,0
Our water account is correct	4,0	3,8
It is our responsibility to repair leaks on our stand	3,0	3,0

Differences between the mean scores of the two groups were again very small and non-significant.

7.1.10 SERVICE CALL CENTRES

On the question whether the respondents had ever reported water related problems at the Council 35,3% of Group 1 and 27,5% of Group 2 answered affirmatively. The kinds of problems (prompted) were as follows.

<u>KIND OF PROBLEM</u> ¹	<i>Group 1</i> n	<i>Group 2</i> n
Water/Tap leakage	8	20
Drain was overflowing	8	5
Toilet blocked	1	5

¹ Duplication occurs

The area's main concerns were leakage and overflowing of drains.

7.1.11 QUALITY OF THE WATER SERVICE

Respondents were asked to evaluate the quality of the service related to the water they received. The mean scores (a score out of 10) for the two groups are indicated below.

<u>RATING OF THE QUALITY OF WATER SERVICE</u>	<i>Group 1</i>	<i>Group 2</i>
	8,7*	8,2

There is a significant difference between the ratings of Group 1 and Group 2.

The reasons mentioned the most frequently (numbers in square brackets) for their scores were:

<u>Please give a reason for your score</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %
<i>Because I have no problems with the water service</i>	48,9 [23]	34,6 [36]
<i>The service we get is good</i>	27,7 [13]	40,4 [42]
<i>When there is a water cut, it doesn't take long to repair</i>	4,3 [2]	8,7 [9]
<i>The water was brown/red/didn't look clean</i>	4,3 [2]	5,8 [6]

¹ Duplication occurs

Consistent with the respondents' scores for the quality of service they received, the problems they mentioned seemed to be quickly attended to.

7.2 POST-TEST RESULTS & COMPARISON: CAPE TOWN METROPOLITAN COUNCIL

7.2.1 SAMPLE COMPOSITION

As in the case of other post-test surveys in this study, the interviews for the post-test survey in Cape Town (Guguletu, Langa and Weltevreden Valley) were repeated in the same households as the pre-test survey. The aim was to examine differences and correspondence of variables that might have changed between the two surveys as the result of specific interventions, such as the distribution of a pamphlet with water saving tips to every second household. In the post-test survey 48,1% said they had received such a pamphlet and 51,9% indicated that they had not.

The second interview could not always be conducted with exactly the same person in each household. In only 0,5% (n = 1) of the households, the interview was done with another member of the household.

The variation in the demographic distribution of the post-test sample (n = 146) was insignificant from the pre-test sample (n = 160) and comparisons of results can therefore be made with confidence. The same definition for two subgroups, based on payment behaviour, was used, based on the respondents' payment records for water. In the post-test groups, 113 were households on a fixed rate or unbilled system, and 33 were billed.

7.2.2 COMMUNICATION

During the post-test survey, a question was asked whether they had recently received information from their local Council about the 6 000 litres of free water that households were going to receive.

<u>HAVE YOU RECENTLY RECEIVED</u>		
<u>INFORMATION ABOUT THE FIRST 6000 LITRES</u>	<i>Group 1</i>	<i>Group 2</i>
<u>FREE WATER TO YOUR HOUSEHOLD?</u>	%	%
Yes	81,3	85,7

More than 80% of both groups in the post-test sample mentioned that that had received information about the 6000 free litres of water as announced by the Government.

When probed WHERE they got the information from, they answered as follows.

<u>SOURCE</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %
Heard from interviewer	20,5	32,1
Letters with the account/Water bill	28,2	15,5
Pamphlet in the post box/In letter box	12,8	25,0
Radio	15,4	14,3
Friend/Neighbour	5,1	8,3

¹ Duplication occurs

A cross tabulation of the question by households that had received pamphlets, issued by the fieldworkers of MSSA, however shows the following.

	Pamphlet	
<u>HAVE YOU RECENTLY RECEIVED INFORMATION ABOUT THE FIRST 6000 LITRES FREE WATER TO YOUR HOUSEHOLD?</u>	Yes %	No %
Yes	86,4	77,9

It should be noted that every second household received a pamphlet from fieldworkers. When the answers of respondents who had received a pamphlet were compared to those who had not, statistically non-significant less of the latter had received information on the first free 6kl of water.

7.2.3 THE NEW PAYMENT SYSTEM OF THE CITY COUNCIL OF CAPE TOWN

Respondents were asked whether they had been informed about the latest payment system of the Cape Town Metropolitan Council (where all households will be billed (charged) according to the water they use monthly and not a fixed rate).

<u>HAVE YOU RECENTLY BEEN INFORMED ABOUT THE LATEST PAYMENT SYSTEM OF THE CAPE TOWN METROPOLITAN COUNCIL?</u>	<i>Group 1</i> %	<i>Group 2</i> %
Yes	39,6 (n = 19)	54,1 (n = 53)

Although the percentage of Group 2 (54,1%) is higher than Group 1, the difference is not significant.

	Pamphlet	
<u>HAVE YOU RECENTLY BEEN INFORMED ABOUT THE LATEST PAYMENT SYSTEM OF THE CAPE TOWN METROPOLITAN COUNCIL?</u>	Yes %	No %
Yes	53,4	46,3

The results from the table indicate that more of the respondents, who had received pamphlets, mentioned that they had been informed about the latest system of the Council, compared to those who had not received a pamphlet. However, this difference is not statistically significant.

The respondents were then asked WHERE those that had been informed, received their information from. Their spontaneous answers were:

<u>SOURCE</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %
There was a letter attached to the rates water account	37,5	34,8
Heard from interviewer	12,5	28,3
Pamphlets/Flyers	6,3	21,7
Read about it in newspaper/Local paper	18,8	10,9

¹ Duplication occurs

More of Group 2 mentioned that they heard it from the interviewer, although not statistically significant, and more of Group 2 also mentioned that they had received the information from pamphlets/flyers, but also not statistically significant.

7.2.4 GENERAL ATTITUDE QUESTIONS

In accordance with the aim of the study, some questions were repeated in the post-test survey, in order to observe effects that might have occurred between the two survey periods.

The same 5-point scale was implemented as for the interviews in the other three areas, in order to be able to do comparisons (1 - *Do not agree at all*; 2 - *Do not agree*; 3 - *Uncertain*; 4 - *Agree*; 5 - *Definitely agree*). The results for the three groups in Langa, Guguletu and Weltevreden Valley are presented in the following table. (Pre-test scores are given in brackets.)

WATER QUALITY (MEAN SCORES OUT OF 5)

STATEMENT	Group 1	Group 2
<i>My household has no problems with the water we receive here</i>	4,3 (4,4)	4,3 (4,5)**
<i>We have a problem with the taste of the water we use</i>	2,1 (2,1)	2,0 (2,2)
<i>We have a problem with the smell of the water</i>	2,1 (1,9)	1,9 (2,1)
<i>The water we use is clear and bright</i>	4,3 (4,3)	4,2 (4,4)
<i>I know how much water my household uses per month</i>	2,4 (2,7)	2,5 (2,7)
<i>The more water our household uses, the more we should pay</i>	3,8 (3,7)	3,7 (3,4)
<i>To supply water to my stand costs money</i>	4,2 (4,0*)	4,0 (3,6)**
<i>To have clean water costs money</i>	4,1 (4,0)	3,9 (3,7)
<i>We receive our account regularly (once a month)</i>	4,1* (4,1)	3,7 (4,1)**
<i>People should receive water even if they do not pay</i>	2,8 (3,4)	3,0 (3,5)
<i>We regularly do not pay for water as a request from our community</i>	2,4	2,5

**

In general, the respondents were satisfied with the quality of the water they received. This also applies to the quality of the water provision service. From the table statistical significant differences between pre and post responses are identified with **, especially with regard to Group 2.

During the post-test survey, the respondents were asked to estimate their water consumption. Their estimations were compared to the information on the accounts they had received.

GUGULETU & LANGA

	kl
Estimated water consumption per month	6,4
Actual water consumption per month	11,6*

WELTEVREDEN VALLEY

	kl
Estimated water consumption per month	5,3
Actual water consumption per month	23,2*

As in the case of the pre-test survey, the respondents were not able to estimate their water consumption accurately. In comparison to the pre-test survey, the respondents from Weltevrede Valley (who received mock (dummy) water bills) used on average about twice as much water as the respondents from Guguletu and Langa, who were on a fixed rate system.

Respondents were further requested to classify their households into one of two descriptions.

<u>OPTION CHOSEN</u>	<i>Group 1</i> %	<i>Group 2</i> %
<i>Because we don't know how much water and electricity we use, it is difficult to use less water and our account is always too high to pay</i>	55,3	48,0
<i>We limit the use of water in order to afford the payment for water</i>	44,7	52,0

The respondents were asked which of the two statements described their household best. The options may yield a better understanding to their behaviour and underlying attitudes. The two variables contained in the options were knowledge of the amount of water used and the consumption (i.e. cost) of water consumed. No significant differences could, however, be identified.

7.2.5 ATTITUDES ABOUT THE PAYMENT FOR WATER

As the results of the pre-test survey indicated, just over three-quarters of respondents from both groups thought that households should pay for the water they used. When probed what the reasons for their answers were, if they had answered "yes", the following reasons were mentioned.

	<i>Group 1</i> (n = 38) %	<i>Group 2</i> (n = 76) %
<u>IF YES, REASONS MENTIONED¹</u>		
<i>Procedure to supply water/It costs money to provide clean water</i>	13,2	21,1
<i>Everything you use have to be paid for/Services costs money</i>	15,8	9,2
<i>Costs Council money to purify water</i>	23,7*	9,2
<i>Then people will not waste water/Teaches them to save water</i>	5,3	11,8
<i>Nothing is free/Right thing to do/Everything costs money</i>	18,4*	3,9
<i>They already have 6kl free, if you use more, you must pay</i>	7,9	10,5
<i>Workers must be paid</i>	10,5	3,9

¹ Duplication occurs

Almost all of the reasons mentioned in the table referred to financial matters. It seems that the respondents in both groups were aware that the provision of clean and healthy water was an expensive matter. Significant differences were identified between Group 1 and Group 2 regarding “*Cost Council money to purify water*” and “*Nothing is free/Right thing to do/Everything costs money*”.

When probed what the reasons for their answers were, if they had answered “no” to the question that they thought households should pay for the water that they used, the following reasons were mentioned.

	<i>Group 1</i> (n = 10) %	<i>Group 2</i> (n = 22) %
<u>IF NO, REASONS MENTIONED¹</u>		
<i>We are not all working/Unemployed/Financial problems</i>	70,0	36,4
<i>Water should be free</i>	20,0	22,7
<i>It is a need/Very important resource/Basic need</i>	10,0	22,7
<i>Government should give free water to the poor</i>	-	9,1

¹ Duplication occurs

As was the case of the respondents who answered “yes” to the question, most of the reasons mentioned by respondents who answered “no”, were also of a financial nature. The core of this finding was that the lower-income groups experienced a variety of financial problems to pay for their water.

7.2.6 KNOWLEDGE ABOUT THE FREE 6kl OF WATER

The respondents’ reactions to the announcement of the free 6kl of water and other related statements were the following (Pre-test scores in brackets). Significant changes took place from the pre-test scores to the post-test scores.

“Only those that use a limited number of kl per month qualify for free water”.

	Group 1 %	Group 2 %	
<i>True</i>	31,3 (37,3)	31,6 (43,1)	
<i>False</i>	47,9 (25,5)	42,9 (29,4)	**
<i>Unsure/Don’t know</i>	20,8 (37,3)	25,5 (27,5)	

However, when the potential effects of the pamphlets were examined on the same statement, it was found that it did not have a statistical significant effect.

“Only those that use a limited number of kl per month qualify for free water”.

	Pamphlet	
	Yes %	No %
<i>False</i>	44,3	42,1

“6kl is enough water to survive for a month if you are very poor.”

	Group 1 %	Group 2 %
<i>True</i>	31,3 (37,3)	41,8 (42,5)
<i>False</i>	14,6 (29,4)	20,4 (25,5)
<i>Unsure/Don’t know</i>	54,2 (33,3)**	37,8 (32,1)

Group 1’s responses increased significantly from pre to post testing with regard to this statement.

“Water usage is measured at most households in Cape Town.”

	<i>Group 1</i> %	<i>Group 2</i> %
<i>True</i>	66,7 (52,9)	58,2 (52,8)
<i>False</i>	18,8 (15,7)	15,3 (13,9)
<i>Unsure/Don't know</i>	14,6 (31,4)**	26,5 (33,3)

“The water meter on our stand is working”

	<i>Group 1</i> %	<i>Group 2</i> %
<i>True</i>	70,8 (60,8)	61,2 (61,1)
<i>False</i>	18,8 (19,6)	25,5 (18,5)
<i>Unsure/Don't know</i>	10,4 (19,6)	13,3 (20,4)

“If my household use more than 6kl per month I will have to pay for the extra litres used”

	<i>Group 1</i> %	<i>Group 2</i> %	
<i>True</i>	87,5 (60,0)	81,6 (49,5)	**
<i>False</i>	2,1 (12,0)	5,1 (14,7)**	
<i>Unsure/Don't know</i>	10,4 (28,0)	13,3 (35,8)	**

Significant differences occurred in this last statement from the pre-test to the post-test. Also in the case of this statement, if the possible effects of the pamphlets are examined, the following is evident:

“If my household use more than 6kl per month I will have to pay for the extra litres used”

	Pamphlet	
	Yes %	No %
<i>True</i>	86,4	81,1

Although a very high percentage of both the respondents that had received the pamphlet as well as those who had not receive it, considered the statement to be true, more, but not statistically significant, of the “pamphlet group” than the “non-pamphlet group” mentioned that the statement was true. It can be concluded that the pamphlet as a communication medium did not have a statistical significant effect on the knowledge of the respondents.

“Cape Town Metropolitan Council has a good system of paying for water”

	<i>Group 1</i> %	<i>Group 2</i> %
<i>True</i>	66,7	61,2
<i>False</i>	4,2	5,1
<i>Unsure/Don't know</i>	29,2	33,7

From the last table, about two-thirds of the respondents agreed with the statement that the Cape Town Metropolitan Council has a good system of paying for water. Some uncertainty was detected in both groups (the “Unsure/don’t know”) category.

7.2.7 PREFERENCES FOR FORMAT OF ACCOUNTS

Respondents were asked in the post-test survey whether they would like only one account for water, electricity and other municipal services, or separate accounts for each. They responded as followed:

	<i>Group 1</i> %	<i>Group 2</i> %
<i>Yes, only one account for all</i>	41,7	39,8
<i>No, separate accounts for each</i>	58,3	60,2

From the table it seemed that less respondents (40%) from both groups would prefer a single account for services. They were also probed for reasons:

<u>IF YES, WHY?</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %
<i>Easier to handle one account/ Simpler/Avoid confusion</i>	42,1	46,2
<i>Less hassles and paperwork</i>	10,5	25,6
<i>One account is OK/Easier and list different charges</i>	10,5	20,5
<i>Cost effective for the Council</i>	21,1	5,1

¹ Duplication occurs

The reasons mentioned for separate accounts, were of a practical nature, because of pre-paid electricity cards. The reasons mentioned by respondents who would like separate accounts, were as follows:

<u>IF NO, WHY?</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %
<i>You will know what you are paying for each item</i>	39,3	25,4
<i>Got energy dispenser for electricity/Pre-paid electricity</i>	21,4	20,3
<i>You can see what you use/To see when you over-use</i>	7,1	10,2
<i>Prefer separate accounts</i>	10,7	10,2

¹ Duplication occurs

Respondents were further asked whether their households had received an account in the last few months based on the water consumed.

	<i>Group 1</i>	<i>Group 2</i>
	%	%
Yes	72,9	65,3
No	27,1	34,7

More than 65% of the respondents responded affirmatively to the question. Slightly more from Group 1 had received accounts than from Group 2 but not statistically significantly more.

7.2.8 OPINIONS ABOUT THE PROPOSED MEASUREMENT OF WATER

Respondents were also asked during the post-test survey what they thought about the fact that their water usage would be measured in the near future. The most frequently mentioned reasons were quite different from the pre-test survey, and can therefore not be compared directly:

REACTION ¹	Group 1 %	Group 2 %
<i>Have no problem with it/Good idea/Fair enough</i>	15,6	25,8*
<i>We have to save water</i>	13,3	23,7*
<i>Then you know what you are using</i>	8,9	7,5
<i>Fixed rate is better measurement/Prefer fixed rate</i>	8,9	6,5
<i>Much better than estimating usage/Usage will be accurate</i>	8,9	3,2

¹Duplication occurs

The proposed measurement of water seems a good idea ($\pm 20\%$) and it will help respondents to save water ($\pm 18\%$).

7.2.9 GROUPS' ATTITUDES

As mentioned previously, it was a prominent aim with the study to gain insight into the respondents' and adjacent neighbours' influence on the individual's payment of water accounts. As in the case of other areas, the differences of the results between the two groups were very small. The scores out of 5 on the agreement levels were:

	Group 1	Group 2
<i>We in this area pay our water and electricity on a regular basis</i>	3,4 (3,5)	3,1 (3,3)
<i>If my neighbour is not paying his/her account, why should I?</i>	2,4 (2,4)	2,2 (2,6)**
<i>People here don't pay their accounts because water and electricity is not essential to them</i>	2,1 (2,1)	2,0 (2,2)
<i>If everybody stops paying, there will be no water supply</i>	3,5* (3,0)**	3,1 (3,0)
<i>People here don't pay their accounts because we receive bad service from the Council</i>	2,2 (2,3)	2,2 (2,2)
<i>It is unfair for areas/households to be billed according to water consumed and others not</i>	4,1* (3,6)**	3,5 (3,7)
<i>It is a good thing to measure how much water households use</i>	4,0 (4,0)	3,6 (3,9)
<i>I don't pay because I don't have money or can't afford it</i>	2,7 (2,7)	2,8 (3,0)

It is evident from the post-test results (as it was also the case in the pre-test survey) that neighbours did not influence respondents about paying for water in both groups (an increase in the post-test for Group 2 can be identified, but it is still relatively low) and they generally agreed with the principles of water supply. However, some negativity can be deducted from the post-test lower average scores. Economic and attitudinal factors played a role in this study area as with the other areas.

A further question was asked to respondents, to give their evaluation whether the services that they had received had changed since the previous survey.

<u>OPINION</u>	<i>Group 1</i> %	<i>Group 2</i> %
<i>Service deteriorated</i>	2,1	2,0
<i>Remained the same</i>	81,3	72,4
<i>Service improved</i>	16,7	25,5

A following question was asked: “Now that you will be billed (charged) according to the water you use each month, do you think you used less water since our previous survey?”

<u>REACTION</u>	<i>Group 1</i> %	<i>Group 2</i> %
Yes	39,6	63,3*
No	60,4*	36,7

Statistically significantly more of Group 2 answered “yes” to the question than of Group 1. It could be that respondents that were not charged for water in the past had a much greater awareness of water usage and intended to use less water.

Probed for the reasons WHY they had answered “yes”, (and what they had done to save water) only small numbers of respondents could give practical methods (18 in Group 1 and 61 in Group 2 (duplicated)). The methods they mentioned most frequently were as follows:

<u>IF YES, METHODS MENTIONED¹</u>	<i>Group 1</i> %	<i>Group 2</i> %
<i>Didn't water lawn/Less water for garden</i>	16,7	13,1
<i>Don't do washing every day/Wash less/Do washing together</i>	-	18,0
<i>Use less bath water/Water for cleaning</i>	16,7	9,8
<i>Use less water/Didn't waste water</i>	11,1	8,2
<i>Use less water for washing cars/Use bucket to wash car</i>	5,6	6,6

¹ Duplication occurs

The methods mentioned were of a practical nature. When the variable “Pamphlet” was considered, no significant differences were observable between the respondents that had received the pamphlet, and the rest.

The respondents that indicated that they had not applied any water saving methods since the previous survey (Group 1 (29) and Group 2 (36) (duplicated)) reacted as follows:

<u>IF NO, REASONS MENTIONED</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %
<i>Don't waste water, only use what we need</i>	31,0	38,9
<i>Use same amount as before/Use same amount every day</i>	20,7	8,3
<i>They didn't tell us they checked meter</i>	6,9	13,9
<i>Always been saving/Used to save water</i>	10,3	2,8
<i>Water is important/Water is everything</i>	10,3	2,8

¹ Duplication occurs

Although the numbers of respondents who reacted to the question were very small, there was a greater intention from Group 2 (although not statistically significant) not to waste water and use only what they needed. This reaction might have been a function of introduction of the new water payment system.

7.2.10 OPINIONS ABOUT THE STEPS THE COUNCIL SHOULD TAKE

The respondents were asked what steps they thought the City Council should take if someone neglected to pay for the water they consumed.

<u>STEPS MENTIONED</u> ¹	<i>Group 1</i> %	<i>Group 2</i> %
<i>Disconnect water/Cut-off supply</i>	40,9	33,7
<i>Take them to court/Prosecute them/Fine them/Should go legal</i>	15,9	10,5
<i>They should get a warning letter before they cut off water</i>	2,3	14,7*
<i>See if people have financial problems then make agreement</i>	15,9	6,3
<i>Must pay interest/Charge extra</i>	2,3	7,4
<i>Should slow down the flow of water/Give limited amount of water</i>	6,8	3,2
<i>They should not cut off water supply</i>	4,5	3,2

¹ Duplication occurs

From the results in the table, one gets the impression that Group 1 suggested more harsh measures than Group 2 (who were also more likely to be on the receiving end of the measures, as they were further in arrears). A common finding, also observed in other areas, is that (a) respondents prefer a variety of options available for payment (and arrears) and (b) closer contact with a friendly individual who visits them at their home. The underlying fears of going to a Council office and being punished (or even arrested), was a real concern in many of these groups. Some individuals actually suggested these fears.

When respondents were given one option to choose from in the case of the water supply being cut off, the responses were:

<u>IF WATER SUPPLY WAS TO BE CUT OFF, WHICH ONE OF THE FOLLOWING SHOULD APPLY?</u>	<i>Group 1</i> %	<i>Group 2</i> %
<i>Account should be paid in full before water service is restored</i>	14,9	16,7
<i>Only a deposit/portion of the account in arrears should be paid for the restoration of water service and the remainder can be collected over time based on a % of future bills</i>	85,1	83,3

More than 80% of both groups chose the second option. The principle of more options or leniency from the Council to respondents, who were in arrears, is confirmed by these results.

The respondents were further probed for alternatives they could suggest that should be considered in order for a household to have access/obtain water? It should be noted that although 138 respondents mentioned a variety of 31 alternatives, the most frequently was mentioned by 14.

<u>SOME ALTERNATIVES MENTIONED¹</u>	<i>Group 1</i> %	<i>Group 2</i> %
<i>People must pay before supply is put on/Connected</i>	6,7	11,8
<i>Perhaps pay cash/Let everyone pay cash for water/Coin system</i>	11,1	9,7
<i>Should supply 6000 litres free water and then cut off</i>	4,4	11,8
<i>Give an amount of water to use/Provide few litres per day</i>	6,7	6,5
<i>Get water from neighbours/Shacks people get water for free</i>	4,4	9,7
<i>They should work something out/An arrangement</i>	13,3	5,4
<i>At least should pay what they cab afford/A small instalment</i>	4,4	5,4

¹ Duplication occurs

The variety of options mentioned by the respondents were again an indication that they need more options/alternatives available in order to make payment for water for them easier.

In order to gain a better insight to the respondent's opinions they were asked to make a further choice of two options. (A statistical method called "Trader".)

	<i>Group 1</i>	<i>Group 2</i>
<u>IF YOU HAD A CHOICE, WOULD YOU...?</u>	%	%
<i>Rather prefer to have access to water outside your property for free.</i>	23,4	28,9
<i>Have water available on your property but not for free.</i>	76,6	71,1

Slightly more of Group 2 than of Group 1 (not statistically significant) preferred the option to have access to water outside their property, but for free. However, more than 70% of both groups preferred the second option, namely to have water available on their property, but not for free.

Finally, a question was asked what the respondents thought about illegal connections. 144 respondents (which include duplication) mentioned a total of 24 thoughts.

<u>SOME THOUGHTS MENTIONED ABOUT ILLEGAL CONNECTIONS¹</u>	<i>Group 1</i> %	<i>Group 2</i> %
<i>Very wrong, it's cheating/Illegal/Fraud</i>	27,1	26,0
<i>Criminal offence, they should be fined/punished/penalised</i>	16,7	21,9
<i>Must go to jail</i>	8,3	16,7
<i>Implement law enforcement against this</i>	12,5	13,5
<i>It has to be dealt with</i>	6,3	6,3
<i>It is tough and unfair to those who pay their accounts</i>	2,1	5,2
<i>Should not be allowed/Should not happen</i>	8,3	3,1

¹ Duplication occurs

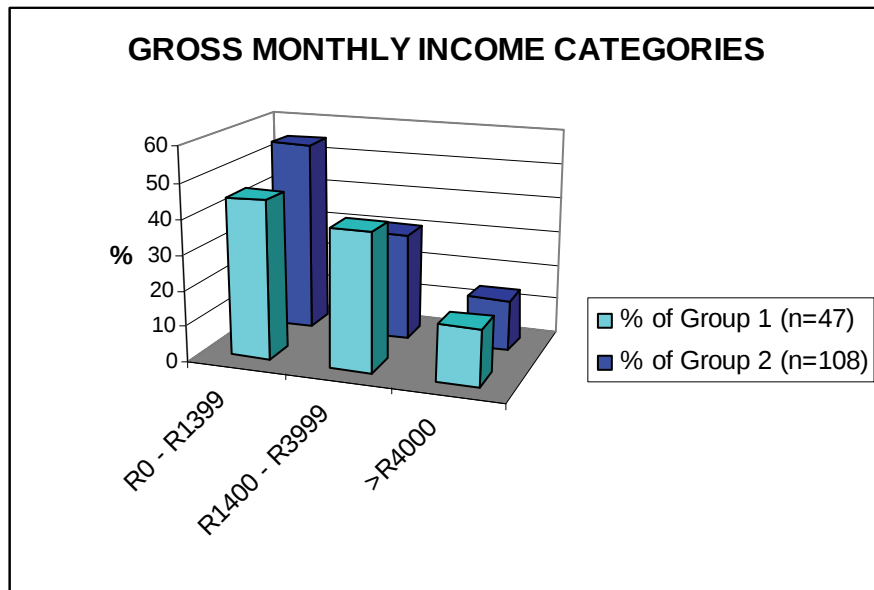
Both groups mentioned various measures that should be taken against illegal connections.

7.2.11 SUMMARY OF RESULTS

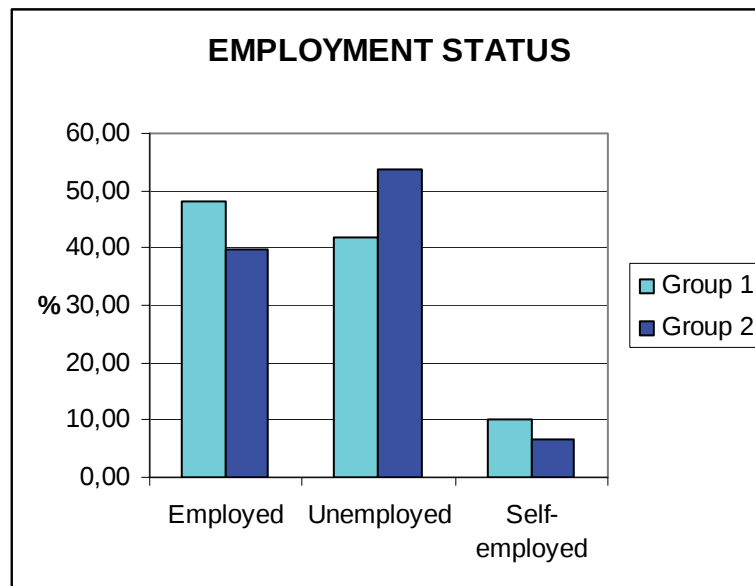
After inspection of the results, it was decided to apply the data to two groups, according to the respondents' water payment behaviour. Other applications resulted in groups that were too small to do meaningful analyses.

Overall, the respondents were satisfied with the quality and provision of water. Similar to water consumers from all the other survey areas, the respondents from Guguletu, Langa and Weltevreden Valley, also were not able to estimate their water consumption accurately. Consumers highly under-estimated their actual water consumption. As mentioned in the case of the other areas' results, this problem may escalate and steps might be necessary to end further escalation of the problem.

The income levels of the two groups were quite low, as can be seen in the following graph. Group 2 was also financially on a lower level than Group 1. These low income levels might have an impact on the payment for water accounts.



Also similar to the findings for the other three areas, the respondents had a relatively low level of knowledge of the bigger units (kilo and Mega-litres) of water consumption. The new payment system (based on consumption) seemed to be acceptable, although the results indicated that the concept was perhaps not fully comprehended. Although this payment system provided an acceptable and affordable payment structure, the financial sustaining thereof may be questionable.



The employment status, as can be observed in the graph, was better in the case of Group 1 than Group 2, but not statistically significant.

Although the media coverage of the first 6kl of free water was quite extensive, the knowledge levels of the respondents in the sample were still relatively low. Some negativity was also detected in Group 2

(respondents whose water accounts were further in arrears) and the answers to some questions revealed some suspicion about the application of the 6kl grant. Group 2 also displayed an unfavourable view of the “cut-off” system as a measure for respondents who didn’t pay their accounts.

The group that was further in arrears (Group 2) reacted with suspicion to the proposed new water measurement system, whereby all households’ water consumption will be measured. This may be another indication of their underlying negativity. The negative influence didn’t necessarily come from neighbours. It was more a financial problem, however, another important variable associated with non-payment of water, seemed to be of an attitudinal nature.

The questions pertaining to the existing communication channels with the respondents, revealed a shortcoming. The respondents expressed a definite need for more information to minimise any misunderstandings and that they could keep updated with any new developments.

At the end of the pre-test interviews, a pamphlet with water saving measures was handed to every second household. The possible effect of the information contained in the pamphlet was also examined. It proved that the pamphlet was not successful for any of the variables. When the answers of respondents who had received a pamphlet were compared to those who had not, no statistically significant differences could be identified. In other words, the pamphlet had no statistically significant effect on the answers (knowledge) of respondents.

Although not conclusively, about 60% of the respondents mentioned they would prefer separate accounts for services. A large portion use pre-paid electricity cards. With regard to the measures the Council could take against non-payment for water, Group 1 suggested more harsh measures than Group 2 (who were also more likely to be on the receiving end of such measures, as they were further in arrears).

A common finding, also observed in other areas, is that (a) respondents prefer a variety of options available for payment (including arrears), and (b) closer contact with a friendly individual who visits them at home. The underlying fears of going to a Council office and being punished (or at worst arrested), was a real concern in many groups. This deduction is supported by the respondents’ preference for more options or leniency from the Council.

Regarding the potential effects that the “mock” (or dummy) accounts (to convert from fixed payment to payment based on water consumption) may have had, no conclusive differences could be detected between the results for the respondents from Guguletu/Langa and Weltevreden Valley. Differences between these groups were non-significant, therefore the mock accounts had no significant effects.

In conclusion, the following research variables were identified as being related to non-payment behaviour:

- More lower income respondents were in Group 2 (non-payment group) and experienced financial problems to pay.
- Ratings of the quality of water were lower in Group 2 (although a high score was given to the quality (82%)).
- Negative attitudes towards payment and related matters (e.g. new billing system) were more in Group 2.
- Less understanding in Group 2 that water supply to their stand cost money.
- The “cut-off system” was more unfavourable in Group 2 than Group 1.
- Non-payers use more water than regular payers although much less than in other survey areas.
- Non-payers were less accurate in estimating water consumption.

CHAPTER 8 – CONCLUSIONS & RECOMMENDATIONS

8.1 METRO RELATED FINDINGS FROM THE FOUR SELECTED AREAS

8.1.1 TSHWANE METROPOLITAN MUNICIPALITY

The primary objectives in this area, were to determine and monitor attitudes about payment for and usage of water, based on the classification of “normal” (regular payers) payment behaviour and “other” (irregular payers) payment behaviour.

The secondary objectives were to detect the effect of specific demographics (employment status, income, ownership, language) and other research variables (general attitudes, estimation and knowledge of water consumption units, awareness about the “push button tap”, “trickle flow” and “cut off” systems, communication and intention to save water) on payment behaviour.

With regard to the primary objective the following were found.

Attitudes towards payment:

- Most of the respondents agreed with the general principles of water provision, i.e. the supply of clean and healthy water is a costly matter.
- Some negativity and signs of a lack of personal responsibility of the irregular payers were deducted from the results of the surveys, which can also be interpreted as a resistance to payment for water.

Attitude towards water usage:

- A serious inability to estimate water consumption accurately was observed. If respondents are using much more water than their estimations are, debt will undoubtedly increase and the problem on non-payment for water will be aggravated.
- Respondents understanding of water measurement decreased, as the units (from litres to Mega litres) increased
- The provision of the first free 6kℓ of water was still a relatively new concept. However, the respondents' knowledge of the grant grew statistically significantly from the first to the second survey.

The following demographics and other variables played a role or had an influence on payment behaviour (secondary objectives)

In general:

- The majority of the respondents expressed the need for continuous communication.

Specifically with regard to the 'other' group the following issues were found to relate to non-payment behaviour:

- Number of people living on the stand
- Lower income group
- Water usage (use more water per household on average compared to 'normal' group)
- Less accurate in estimating water consumption
- Save less water
- Have less knowledge about units of water consumption
- More against measures to assist the lower income groups
- Receive their accounts less on a regular basis.
- The installation of "push button" taps, "trickle flow" and "cut-off" systems received mixed reactions. These systems were, particularly among the respondents that were further in arrears, not perceived as sound solutions to the problems of non-payment for water.

8.1.2 JOHANNESBURG MUNICIPALITY

The primary objectives in the Johannesburg area were also to determine and monitor attitudes of respondents regarding payment for and usage of water. However, it was based on the classification of three groups, namely Group 1 (up to date with payments), Group 2 (arrears in payment from R100 up to amounts of R1200) and Group 3 (arrears of more than R1200).

The secondary objectives were to determine the effect of the demographic variables and water related research variables on payment behaviour. In other words, the effect of the variables on the three defined payment groups.

With regard to the primary objectives the following were found:

Attitudes towards payment:

- The awareness levels of the new payment system of *Johannesburg Municipality* were quite low.
- The change in supplier from Johannesburg Municipality to *Johannesburg Water* was perceived as a positive action.

- Group 3 also exhibited signs of negativity; not only to the payment of their accounts, but also to measures such as the cutting of water supply.
- The introduction of the first 6kl of free water grant announced by the Government was widely welcomed as a sign of relief.

Attitudes towards water usage:

- In general, respondents were satisfied with the provision of water they received.
- The inability of consumers to estimate their water consumption accurately, was observed as a major problem area and reason for concern, particularly in the group that was the furthest in arrears with payment of their water accounts.

The following demographic and other variables played a role or had an influence on payment behaviour (Secondary objectives).

In general:

- The respondents expressed the need for continuous flow of communication about the supply of water, options for payment of accounts and other related topics. The warning systems of *Johannesburg Municipality* about accounts in arrears were also viewed in a positive light.

Specifically with regard to Group 3 (households in arrears of more than R1 200). This group:

- used more water per household
- had a negative attitude towards payment and related matters
- was less informed about changes in *Johannesburg Municipality*
- was less accurate in estimating water consumption
- was less inclined to cut down on water consumption

8.1.3 DURBAN METRO WATER

The primary objectives in the Durban area were to determine and monitor the perceptions of introducing a new system called the flow limiter for household that do not pay and cannot afford to pay for their water services according to three groups, namely Group 1 (up to date payments), Group 2 (arrears in payment from R100 – R1200) and Group 3 (more than R1200 in arrears).

The secondary objectives were to identify the effect of demographic variables and other water related variables (as formulated in the questionnaire) on payment behaviour as defined by the groups.

With regard to the primary objective the respondents were fairly positive to the implementation of a 'flow limiter'. However, they were not generally familiar with the system. During the post-test survey respondents were more familiar with the system. The group in arrears (Group 3) was more negative about the implementation of a 'flow limiter'.

The following demographic and other variables played a role or had an influence on payment behaviour (Secondary objectives):

In general:

- Consumers were generally satisfied with the quality and services of their water provider.
- Respondents displayed their inability to estimate their water consumption accurately; their estimations were far below their actual use.
- The options available for payment of accounts were widely perceived as a positive mechanism for payment for water and other services.
- Respondents' knowledge of the bigger units of water consumption (kilo and Mega litres) was fairly low.
- Knowledge of the free 6kl of was relatively new to the respondents, as well as the new payment structure of *Durban Metro Water*.

With regard to the secondary objectives the following issues were found to relate to non-payment behaviour:

- Non-payers use more water than regular users.
- The average income of this group is lower than the other groups.
- Non-payers are less accurate in estimating water consumption.
- Non-payers are less inclined to cut down on water consumption.

8.1.4 CAPE TOWN METROPOLITAN COUNCIL

The primary objective of the research in this area was to research the effect of introducing a billing system based on water consumption to those areas/households, which were previously billed or not billed, and paid a flat rate regardless of their water consumption. The respondents were classified in two payment groups, namely Group 1 (only up to R100 in arrears) and Group 2 (more than R100 in arrears).

The secondary objectives were to determine the effect of demographic variables and other related research variables (as formulated in the questionnaire) on payment behaviour as defined by the two groups.

With regard to the primary objectives the following were found:

- The proposed measure on a consumption scale was perceived as a good idea and it will help respondents to save water.
- The system of a consumption scale for water payment seemed to be acceptable, although the results indicated that the concept was perhaps not fully understood.

The following demographic and other variables played a role or had an influence on payment behaviour (Secondary objectives):

In general:

- Awareness levels of the free 6kl of water were relatively low, and some respondents expressed some suspicion about the grant.
- The mechanism of cutting off defaulters' water supply was not positively perceived.
- Respondents expressed the need to be continuously informed.
- The pamphlets that were distributed to every second household in the survey, proved not to be a success.
- Respondents expressed the need for a friendly official to visit them at their homes in order to discuss payment options.
- Regarding the "mock" (dummy) accounts, conclusive evidence that the mechanism had been successful, could not be established from the results. Differences between the groups were too small to be described as conclusive enough that the mock accounts had any effects.
- Overall, however, respondents were satisfied with the quality of water provision.
- Their estimation of water consumption proved to be far below actual figures.
- Knowledge levels of the larger measuring units of water consumption proved to be low.

With regard to the group in arrears the following issues were found to relate to non-payment behaviour:

- More lower income respondents were in Group 2 (non-payment group) and experienced financial problems to pay.
- Ratings of the quality of water were lower in Group 2 (although a high score was given to the quality (82%)).
- Negative attitudes towards payment and related matters (e.g. new billing system) were more in Group 2.
- Less understanding in Group 2 that water supply to their stand cost money.
- The "cut-off system" was more unfavourable in Group 2 than Group 1.
- Non-payers use more water than regular payers although much less than in other survey areas.
- Non-payers were less accurate in estimating water consumption.

8.2 CONCLUSIONS

The quote by Schlemmer (1999) at the beginning of this report describes the (non-) payment for water very accurately: *“There are no ideal or simple solutions”*. The reality of this disturbing issue was underscored by the findings of this report. However, the findings also revealed that there are signs of possible creative solutions to curb this problem.

The study had as a departure point the study of the (non-) payment behaviour of respondents in four selected areas in South Africa. The payment behaviour of respondents was subsequently identified as the dependent (or study) variable. Various aspects regarding the payment for water were examined, as well as the potential effects certain measures that some water providers had implemented, may have had on the payment behaviour of the respondents.

A significant majority of the respondents in the survey areas of this study agreed that the provision of fresh water was important to sustain a healthy life, and they were quite satisfied with the quality of water they received, as well as the service levels of water providers. The quality of water can therefore not be considered as a cause for non-payment.

An alarming finding was that the respondents highly under-estimated their households' water consumption. Estimations of water consumption varied between three to seven times less than their actual water use. This inability may become a very serious social and financial cause for concern. If the situation is allowed to continue, it may also result in the further escalation of enormous problems for, and escalation of pressure on water providers. Signs were detected that traditional measures, such as the cutting of water supply, may create even bigger social problems. Respondents are becoming increasingly aggressive when their water supply is disconnected. The need for continuous communication of information was frequently expressed.

Various measures of how to limit individual water consumption, such as the installation of “flow limitors”, trickle flow systems and “push button taps”, were also tested among consumers. Although mixed opinions about these measures were observed, the implementation of such measures should not be disregarded.

A significant finding was the underlying or deep-rooted negativity among water consumers who were arrears with their water accounts. They were negative about proposed new payment systems and even more alarming – their water consumption levels were much higher than the groups who were up to date with the payment of their water accounts. Respondents that were further in arrears seem to take less personal responsibility for the situation in which they find themselves. Signs of despondency among these groups were also prevalent.

Another common finding was the respondents' lack of knowledge of the units in which water consumption are expressed. The bigger the units, the less the respondents had knowledge of them. In the case where units are not printed on water accounts, the problem seems to be aggravated.

Some of the respondents preferred a separate water account. They claimed that this would create less confusion. The majority, however, specifically in Tshwane and Johannesburg, preferred a consolidated account.

The provision of the first 6kl of free water, as announced by the Government, was still a relatively new concept. The awareness levels of this grant, however, increased from the pre-test to the post-test surveys. Regarding water saving measures, a wide variety of creative methods were mentioned that could be taken into consideration.

The provision of more options for the payment for water and the accumulated arrears was a further significant finding. The more options that are available to water consumers, the better they will be able to choose an affordable option. Some of the options mentioned might provide avenues worth pursuing. Respondents furthermore expressed the need to have some friendly person from the water provider to visit them at home to discuss alternatives (as is now part of the new successful debt collection initiative of Tshwane). The underlying fear of going to Council office seemed like a daunting experience to many respondents.

As mentioned by Johnson (1999) the most central problem to the non-payment of water accounts, lies in the complex issues surrounding the "entitlement culture" and even a "culture of non-payment". The findings of the current study show that there is no longer a "culture of non-payment", it is now a minority phenomenon and there was an acceptance of the principle of payment, although some resistance were identified "because everybody does it".

It was particularly prevalent in the case of respondents that were getting further in arrears, where this phenomenon was also observed. However, financial problems expressed by the groups in arrears and their excessive water consumption are some of the major causes for non-payment.

In conclusion, the financial, social and psychological dynamics of non-payment for water is a complex and multivariate problem. Poverty, number of people on stand, negative attitudes to payment for water, lack of knowledge about volumes of water consumption, excessive water usage and lack of interest in water saving tips, were identified as major causes of payment default.

Signs of solutions are, however, observed. Multiple payment options, combined with a personal approach (visiting defaulters at home) provide some optimism for alleviating the problem of non-payment for water **in the study areas.**

Although the findings of this study cannot be generalised to other areas (due to the method of selection of the respondents), it is significant to note that the groups in arrears, consistently exhibited similar negative attitudes and behaviour, lack of interest in water saving measures, and excessive water consumption.

8.3 RECOMMENDATIONS

8.3.1 GENERAL

It is recommended that local councils:

- Segment their users of water and other services according to payment behaviour, for example “regular” payers and “irregular” payers based on the arrears of the users. This will facilitate creative use of communication strategies and different messages to the two groups, to improve payment.
- Communicate consumption of water in litres and not in K/ or M/.
- Communicate water saving tips to the “irregular” payers on a continuous basis. Also mention the 6 000/ used, with no cost.
- Provide friendly options to “irregular” payers for example visiting them and discussing options for payment.

With regard to the WRC it is recommended that:

- The WRC undertake a price elasticity study in selected Metropolitan areas to explore new payment strategies for the “regular” payers and the “irregular” payers.

8.3.2 METRO SPECIFIC RECOMMENDATIONS

8.3.2.1 Tshwane Metropolitan Municipality

It is recommended that the installation of “push button taps” be integrated with the indigent policy. More options of payment should also be explored and incorporated into the indigent policy.

8.3.2.2 Johannesburg Municipality

It is recommended that the awareness levels of the new payment system be increased by regular communication campaigns and that the “cut off” policy be integrated with an indigent policy as part of a system with different options available to “irregular” payers.

8.3.2.3 Durban Metro Water

It is recommended that Durban Metro Water continue to provide and to develop different options for payment for the “irregular” payers.

8.3.2.4 Cape Town Metropolitan Council

It is recommended to develop and integrate the “cut off” system with an indigent policy and to develop a communication strategy for those that will switch over from a fixed payment to payment based on consumption.

REFERENCES

- Berger, Arthur Asa *Media Research Techniques*. California: SAGE, 1991
- Bless, C. & Higson-Smith, C. *Fundamentals of Social Research Methods*. Kenwyn: JUTA, 1995
- Churchill, G. A. *Marketing Research*. Hinsdale, Illinois: Dryden Press, 1979
- Hirschowitz, R. *Measuring Poverty in South Africa*. Statistics South Africa: 2000
- Johnson, R. W. *Not so close to their hearts: An investigation into non-payment of rents, rates and service charges in South Africa's towns and cities*. Parklands: The Helen Suzman Foundation, 1999
- Levine, D.M., Berenson, M.L. & Stephan, D. *Statistics for Managers using Microsoft Excel*. New Jersey: Prentice Hall, 1998
- Pretoria News, February 15, 2001, p.5 *Johannesburg's free water to cost R50m*.
- Pretoria News, February 16, 2001 *Samwu needs some clarity on free water allocation*.
- Schlemmer, L. *A Strategic investigation of the issue of non-payment for water services in Gauteng and adjacent regions: An Executive Report*. MARKDATA, Pretoria: October 1999
- SPSS (1993). *SPSS for Windows Base System 6.0*. Chicago: SPSS
- Veck, G.A. & Bill, M.R. *Estimation of the residential price elasticity of demand for water by means of a contingent Valuation Approach*. Pretoria: WRC Report No. 790/1/00, 2000

ANNEXURE A

STRATEGIES USED ON THE PAST TO IMPROVE PAYMENT FOR WATER SERVICES (Identified from literature: Helen Suzman Foundation and Rand Water Report)

- Attention to meter reading
- Repairing leaks
- Reducing supply interruptions
- Attention to water pressure problems
- Improvement to water quality

- ❖ Improving sending of accounts
- ❖ Better specification of accounts
- ❖ Improving other services and administration
- ❖ More appropriate tariffs
- ❖ Pre-payment strategy
- ❖ Introduction of an indigent policy

- ❑ Marketing and information campaigns
- ❑ Educational campaigns
- ❑ Visits to non-payers by senior council officials

- o Disconnections of illegal connectors
- o Disconnections
- o Tough credit control
- o Instituting legal actions

NOTE All of the strategies mentioned above can be considered as *Customer Care* mechanisms (in descending order of user-friendliness) which Water Providers have implemented in the past. Some of them could again be considered as strategic guidelines for specific actions of implementation in other areas, confirmed by this 2001 study by MSSA.

ANNEXURE B

TELEPHONE INTERVIEWS TO DISCUSS APPROACHES BEING USED TO IMPROVE PAYMENT FOR SERVICES (WATER) AT: NELSPRUIT, STUTTERHEIM, QUEENSTOWN AND PORT ELIZABETH

1. NELSPRUIT

Nelspruit established a company “Greater Nelspruit Utility Company” to focus on the water payment and related matters.

Once an account is 60 days in arrears, 7 days notice is given to pay the account or to make some payment arrangement.

A “trickle flow” washer is installed if no payment is received. This allows for enough water for drinking purposes.

If the “trickle flow” washer is illegally removed, a R1000 fine is to be paid.

2. STUTTERHEIM

Stutterheim municipality outsource its debt collection to a private company MRDM (Municipal Revenue Debt Collection Management).

The municipality has a “Indigent Policy” but they register with MRDM and not with the Council.

The advantage using a private company reduces the political leverage of non-payment and also reduces corruption of registering as an indigent. The company goes out to the consumer and they do not need to go to “Council” to register as an indigent.

3. QUEENSTOWN

Water and related services are provided by “Water and Sanitation Services”. However, they do not bill the consumer. The municipality bills the consumer for water and electricity.

In the past only electricity was cut if consumer is in arrears and not water. This policy worked well. However, the last six months this cut-off was stopped to change over to a softer approach. However, according to a representative of Queenstown Council, this is not successful.

4. PORT ELIZABETH

Port Elizabeth Council used to employ a policy that included an “indigent policy” with 12kl free water per month. However, to manage a data base of the indigent cost almost R2 million per year. They also installed “trickle flow” valves when no payment was made – but the Council stopped the process and presently a representative of Council says the arrears book is increasing again.

ANNEXURE C

CAPACITY BUILDING: PROGRESS REPORT

In our previous capacity report during the research period three (domains) areas of capacity building were identified, namely:

- Researchers at MSSA
- Task Teams at the four Councils
- Respondents (800) in the 4 areas
- Fieldworkers in the four areas

Dina Mazibuko, a researcher at MSSA attended and was involved in the first Steering Committee Meeting and all the Working Committee meetings at the four study areas. She was responsible for the minutes of the working committee meetings, and formulation of the research objectives at the local council level. She was also responsible for the pre-study database design and basic cross tabulations in SPSS, a statistical software package. She left MSSA for another research position at SETA at the end of May. The skills acquired at MSSA during this project gave her the opportunity to be promoted in a senior research position at SETA.

With regard to the other researchers at MSSA, Selinah Mthombeni (Assistant Researcher) and Prudence Molongoane (Research Assistant) were also directly involved in the project.

Selinah attended the previous Steering Committee meeting in Pretoria and she was involved in the administration of the follow-up (post survey) of the questionnaires as well as capturing data, cleaning the data base and cross tabulation of the second survey data. She is enrolled for a diploma at UNISA in Marketing Research and wrote her exams at the end of October. This project pays her university fees.

Prudence Molongoane (Research Assistant) was also involved with the second survey database, coding of open questions and data capturing. She is studying for the same diploma at UNISA, which is also funded from this project.

With regard to the Task Teams at the four councils, no follow-up meeting was held. However, the chapters in the draft report dealing with the research at that particular local authority were sent to the task teams electronically.

The 800 respondents at the selected households were interviewed again in our follow-up survey and the intention to save water at the households increased (according to the second survey). The two surveys provided water savings tips to these households and gave them new insight in comparing estimated water usage and real water usage.

The fieldworkers, that conducted the interviews, were from the communities where the four surveys were conducted. They received training and were paid for the completed interviews conducted. Thus, building capacity in Water Research.

The following fieldworkers were involved:

CAPE TOWN (Suzette van Zyl)

- Linda Stemele
- Nonkosi Malala
- Philisiwe Sipambo
- Nomawethu Sokoko
- Banthu Ntsintshe
- Smart Dladloti
- Vicky Viso
- Cwayita Pakathi
- Hilda Kannemeyer
- Sharon Fourie
- Christine Arendse
- Lorette van Heerden

DURBAN (Jeanette Oberrainer)

- Doreen Mxulaba
- Hope Zulu
- Linda Lindiwe
- Phindile Luthuli
- Sibogile Mkhize
- Thabile Nyathi
- Thoko Ndlovu
- Vusi Gumede
- Zoreen Nodola
- Zethu Luthuli

JOHANNESBURG (Marianne du Plessis)

- Anna Masango
- Ouma Mashinini
- Penelope Ndlovu
- Vuyiswa Mkabile
- Yvonne Sebatlelo
- Renay Samsodien
- Mariella Battistini
- Sheila Mashekatini
- Cynthia Visser
- Esmarie Germishuys
- Liandra Meyer
- Reinette van Zyl

TSHWANE (Lena van der Walt)

- Rosina Langa
- Sheila Lehlabe
- Thoko Makhubela
- Thokosile Makulubane
- Mariana Pieterse
- Mrs AM Bouwer
- Koba Botha
- Mrs G de Beer
- Lena van der Walt