Water services franchising partnerships: Modelling of selected water services operational elements

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This report forms part of a series of seven reports. The reports in the series are:

- Going with the franchise flow: An exploration of franchising partnerships for the operation and maintenance of water services infrastructure. **(Report TT 432/1/10)**
- Water services franchising partnerships: Overview of the concept of franchising and its relevance to water services. **(Report TT 432/2/10)**
- Water services franchising partnerships: Review of policy, regulation and legal aspects. **(Report TT 432/3/10)**
- Water services franchising partnerships: Modelling of selected water services operational elements. **(Report TT 432/4/10)**
- Water services franchising partnerships: Institutional review for the application of franchising. **(Report TT 432/5/10)**
- Water services franchising partnerships: Establishing criteria for the selection of water service franchisors, partnerships and franchisees. **(Report TT 432/6/10)**
- Water services franchising partnerships: Business analysis case study: schools sanitation O&M. **(Report TT 432/7/10)**

Report TT 432/1/10 (*Going with the franchise flow: An exploration of franchising partnerships for the operation and maintenance of water services infrastructure*) is the only one in the series that has been printed. The rest are available on the WRC web site (www.wrc.org.za) from where they can be downloaded.

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Executive summary

Background to the project

The rapid rate of construction and commissioning of new water services infrastructure is severely challenging the institutions responsible for operating and managing this infrastructure. Innovative approaches to water service delivery are required. But even if all the existing institutions were coping with the water services delivery responsibility, there would be good reason to investigate alternative institutional models, on the grounds that it needs to be found out if alternatives:

- could be more cost-effective; and/or
- could allow existing role-players to focus on their other responsibilities; and/or
- could offer a range of other advantages (including greater local economic development).

There is an alternative service delivery institutional model that is suited more for the ongoing operation and maintenance of water services systems than for investment in new infrastructure, and, importantly, that is friendly to small business and local economic development. This alternative is the franchising of water services. However, there is little experience of this approach anywhere in the world, and no experience in South Africa, although some existing partnerships have some of the characteristics of the franchise partnerships approach.

The barriers to entry for the smaller or start-up company are substantial. But if these could be overcome – and franchising is a way to mitigate them – then there will be many opportunities for improved water services and for local economic development. The twin driving forces of the franchising concept are the existence of a successful business model that can be copied widely (there are currently no such models for the water sector) and the profit motive.

Franchising is a way of accelerating the development of a business, based on tried and tested methodology. The franchise system firstly correlates and systematises the business, and then facilitates the setting up of the business, and supports and disciplines it thereafter.

The key is the incentive, to alter services authority franchisor and franchisee alike, to improve efficiency and to provide improved service reliability and quality.

To investigate this approach, the Water Research Commission (WRC) initiated a study (completed in 2005) that explored the concept of franchising partnerships, its relevance to the water services sector, and its prospects as an institutional option for water services operations and management. The study found that the franchising concept, if applied to water services delivery, could in favourable circumstances both alleviate problems encountered in, and raise the efficiency of, water services delivery. At the same time, franchising partnerships would have the added advantage of stimulating small business activities. (Wall, 2005)

The study described at a conceptual level how a water services franchise model could be made available to emerging entrepreneurs, and concluded that franchising water services could be the basis of a viable business. The franchise would be in respect of a component of the value chain that is suitable for small business because it can be readily systematised.

The study found an indisputable need for alternative water services provider systems, and for local economic development, and that there is potential through water services franchising partnerships to simultaneously:

- more consistently deliver water services to specification;
- improve water services efficiency; and
- promote local economic development, small-, medium- and micro-enterprise (SMME) development and black economic empowerment (BEE).

Objectives of the project

The objectives of the project were:

- To further explore the concept of franchising and its relevance to the water services delivery chain.
- To identify and determine those elements in the water services delivery chain which offer the greatest scope for franchising partnerships.
- To review the legal, technical, financial, regulatory, etc. aspects which would impact on franchising partnerships.
- To develop franchising partnership models for a selection of the areas identified by the research, with consideration for the legal, regulatory, etc. aspects.
- To conduct a case study of an element in a hypothetical situation, to see how the model will work.
- To set out the way forward to eventual pilot implementation of franchising partnerships, and inter alia recommend areas for further research.

In summary, the ultimate objective of the project was to identify the scope for franchising partnerships for the operation and maintenance of selected water services infrastructure, to establish the viability of franchising partnerships, and to make a case for outsourcing to franchises to be considered by water services authorities and water services providers.

The context in all instances is South Africa.

Focus of this report

The first report delivered in terms of the current project ("WRC Report TT 432/2/10: Overview of the concept of franchising and its relevance to water services") unpacked (under the headings of "budgets", "skills" and "incentives") generic reasons for current unsatisfactory service in respect of some elements of water services delivery. It then discussed if and how franchising might address some, at least, of these problems.

The current report, Report TT 432/4/10, identifies elements in the water services delivery chain which offer the greatest scope for franchising partnerships, and to set out the results of the business analysis of possible franchising of selected elements.

This report therefore:

- describes the water services value chain, and identifies a number of elements that could be outsourced; and
- models a selection of three of the elements.

Its findings, conclusions and recommendations are summarised below.

Findings from the modelling/business analysis

Once the water services delivery value chain had been set out, with no great difficulty more than a dozen elements of the chain were identified that, on paper at least, both:

- would appear to present good opportunities for outsourcing by a WSA to small or micro-enterprises; and
- represent elements in respect of which many WSAs undoubtedly need assistance.

Three of these elements were then selected, primarily on the grounds of the current researchers' view that they are among the most suitable for franchising partnerships of the dozen or so.

The three elements modelled are:

- caretaker management;
- schools sanitation; and

- pressure control system management.

The objectives of the modelling, or "business analysis", were very much borne in mind when doing the modelling/analysis. Most importantly, the objective to provide a basis for a comparison of performance of the element by franchising methods with performance of the element by other means.

Given that the ultimate purpose of the project is to identify the scope for franchising, and to identify the viability of franchising partnerships and/or to make a case for franchising to be considered by WSAs, it makes good sense to relate the findings from the modelling to the "budgets", "skills" and "incentives" generic reasons for current unsatisfactory service in respect of some elements of water services delivery. Also, the findings from the modelling lend themselves to this classification.

Budgets

Financially speaking, the situations that each of the three models address, are very different.

- The schools sanitation model addresses a constituency (schools, mostly rural) that lacks a basic facility (sanitation) to an extent that varies from school to school. There are no financial savings to be had from improving the service, and operation and maintenance budget will have to be found from the public purse.
- The caretaker model addresses leakage in low-income residential areas that is wasting water, all of it at the cost of the WSA. Hence financial saving, through leakage repair and subsequent maintenance, will accrue to the WSA, although implementation of a caretaker project would also assist in encouraging a spirit of ownership on the part of consumers. (And for those who accept responsibility for paying for water taken, portion of the savings would accrue to them.)
- The pressure control model, in contrast, offers the WSA the opportunity for very rewarding financial savings, and it would be reasonable that part of this is paid to the WSA's private sector partner (PSP) that undertakes the work.

These situations are very material to the budget that the infrastructure owner may have available to pay for the necessary work, irrespective of who does the work, whether in-house or outsourced. If the budget cannot be found, the work will not be done. The first two of these situations would never provide viable opportunities for the private sector unless the private sector partner is paid, by the Provincial Education Department in the one instance, and by the WSA in the other, from sources elsewhere than any savings from undertaking the work.

Whether franchising would be financially viable is subsumed into the larger consideration of whether budget can be found for the work, whoever does it.

It is important to note that outsourcing of the kind of service being considered here must not disturb financial relationships of the delivery model in current use. For example, if equitable share is currently used to subsidise the water services to a set of households when the WSP is a municipal WSP, this must not change, and the same subsidy must flow should the WSP be a SMME.

To sum up: If an activity is currently commercially unviable, outsourcing (franchising partnerships included) will not change this situation. Unless, that is, there is an opportunity for raising revenue or reducing cost that is not currently being taken advantage of by the WSA – and the pressure control model illustrates such an opportunity.

Skills

Skills-wise, the situations that each of the three models addresses might be very different in magnitude and scope but are not much different in principle. The pressure control management

situation is that which needs the highest level of specialist skills. Neither of the other two is very demanding on technical skills.

Which leads to the obvious question. Why, if the technical skills needed are commonplace, have they not been applied by the infrastructure owner? The short answer is that, basic as some of the skills might be, they exceed the skills levels available to the infrastructure owner.

Schools sanitation is a good illustration of this point. It may be that no one at the school knows how to operate and maintain the sanitation facilities (and/or does not see it as their responsibility, vide "incentives" below) or to repair or refurbish them. However, the skills needed are not only technical. Skill (and budget) is needed to motivate budget, procure technical help (e.g., in the rural schools situation, a local builder or local plumber), arrange for delivery of materials, and so on.

The caretaker management model provides another good illustration. The skills needed might be commonplace in an urban area, but they are not being applied, or not being applied sufficiently, to the water services infrastructure in parts of that urban area.

The skills help that a franchisor could typically provide might best manifest in reduction of risk to the service at large and to the small PSP (in this case, a franchisee) in particular. For example, in the caretaker model, compared to the caretaker being a standalone small or microenterprise:

- the franchisor can provide technical help on how to reduce wastage;
- the franchisor can, independently of the WSA, check the WSA's costing, and thus cost-benefit calculation, and thus the caretaker's remuneration;
- the franchisor can assist the WSA to create and maintain a customer database;
- the franchisor can take responsibility for monitoring of quality (and for rectification, thereby providing the WSA with additional assurance that the agreed quality of service will be provided); and
- the franchisor can take responsibility for selection and training of caretakers, and for their ongoing skills development (this is another measure that will reduce the possibility that caretakers are unable to deliver the expected service quality).

Summing up:

- Whereas the credibility of the caretakers will so much depend on the quality of the service they provide, the help from a franchisor will reduce the risk of quality failure. (It would do this inter alia by selection of caretakers, their training, monitoring of quality, and being the service provider of last resort.)
- Having a franchisor help the franchisee to provide the service is assurance to the franchisee as well as to the WSA. The greater (compared to a standalone caretaker) muscle of the franchisor enables the franchisor to more powerfully stand up to the WSA when the contractual rights of the caretaker are threatened (e.g. when the WSA is not paying in full and on time). This is a great comfort to a caretaker franchisee.
- Especially in areas away from the skills resource base that is in the metropoles (but by no means only in those areas), franchising can bring to the franchisees, and hence to the benefit of the water service, the franchisors' expert guidance and quality assurance. Which, as pointed out above, does not always need to be that "expert" but it has to be good enough to meet the need, and to better serve the infrastructure than might otherwise be the case.

All of these (with the possible exception of being the service provider of last resort) are the traditional functions of a franchisor, as applied to the franchising of fast food, printing, video stores, Pick 'n Pay family stores, and so many other familiar situations.

Incentives

It is often in respect of the incentives that the advantages of franchising partnerships, as opposed not so much standalone SMMEs performing a service, but as opposed to in-house performance by a WSA, are most apparent.

Franchisee water services providers, being led by entrepreneurs with a financial and reputational stake in successful service delivery and financial viability, have a greater incentive to perform than, for example, in-house water services authority personnel would usually have.

Pressure control management provides a good illustration of incentives so powerful that they could motivate (and have motivated) even smallish PSPs to take out substantial (for them) loans in order to make capital investments that become the property of the WSA the moment they are installed. (The risk that the PSP would have to accept in these circumstances is substantial. Should the WSA renege on the contract between them, the PSP could lose its investment before a cent of revenue or of cost saving had been generated. But the potential rewards are also substantial.)

Should the kind of pressure control management activity modelled in the report be franchised, a share of the incentive (and of the reward) would be assigned to the franchisees.

The incentive principle applies as much to the two other models, even though the rewards might not have as large an upside potential.

As an aside: it is a mystery to the current researchers that more WSAs do not make similar investments in cost-saving infrastructure in their areas.

Conclusions from the modelling/business analysis

To recap briefly.

Franchising could in many instances bring to water services operation and maintenance the range of benefits that franchising is reported to bring in other, non-water services, sectors, including:

- selection of the small and micro-enterprises, and then initial and ongoing training;
- ongoing monitoring, and assurance that corrective action would be taken when necessary; and
- when needed, a level of expertise that would not normally be available to that infrastructure in that situation.

Together, these should ensure improved quality and reliability of service.

In addition, the franchisor could, with likely more effect than the efforts of a small enterprise alone would achieve, intervene on behalf of a franchise if the WSA is not fulfilling its contractual obligations. For example, if the WSA is delaying payments.

Franchising can bring together skills and incentives. For example, skills may be geographically near at hand (vide the caretaker management model), but the owners of those skills may in a franchise arrangement have the incentive, lacking under other institutional arrangements, to bring them to bear where they are needed.

Can these findings be extrapolated?

For purposes of this first-time modelling of water services franchising partnerships, the researchers chose to model three situations where there appeared, even on cursory examination, to be

opportunities. It appears from this modelling that franchising would in these particular situations bring substantial and sustainable improvements to water services operation and maintenance.

Furthermore, there appear, on paper at least, also to be many other situations where the advantages of franchising would be of great value. Franchising appears to be advantageous in respect of some elements of water services operation and maintenance, and in some circumstances, but not in respect of those same elements in other circumstances. While franchising should therefore be preferred in appropriate situations, not all situations are appropriate.

On opportunities for small and micro-enterprise entrepreneurial development and for BEE

Water services franchising can in many instances not only improve water services operation and maintenance, but it can also be an avenue for local economic development (LED), and SMME and BEE development. Indeed, one of the reasons why the franchise concept could achieve significant impact is its potential for opening the water services industry to smaller enterprises in general and for BEE in particular.

The caretaker management model is a good example of that.

Caveats and cautions

Caveats and cautions include:

- The client WSA needs to have the competence to monitor performance and enforce contract compliance. The client must be sufficiently competent to ensure that in the first place a fair contractual deal is struck, and in the second place that the PSPs (franchisor and franchisee, or any others) live up to their contractual obligations. If necessary, the client should bring in outside help to enable it to do this.

- Franchisees are SMMEs with particular characteristics. In terms of size, they would invariably be towards the small and micro-size end of the range of typical SMMEs. Thus they would with few (if any) exceptions be unable to make capital investments in infrastructure (one possible exception being pressure control management). If, therefore, new infrastructure or refurbishment or replacement is required, this would have to be funded by other parties. If, however, it could be shown that franchising would result in far better utilisation of the infrastructure, and more reliable or otherwise superior service delivery, then a strong case could be made to the other parties (e.g. national government) for that investment to be made.

- That a WSP, or a contractor to a WSP, is a franchisee rather than any other form of SMME or private sector partner, or a public sector entity, must not disturb institutional, financial and other relationships of the delivery model in common use. For example, in respect of funding, if equitable share is currently used to subsidise the water services to a set of households when the WSP is a municipal WSP, and Municipal Infrastructure Grant (MIG) funding would be available for refurbishment or upgrading, this must not change, and the same subsidies and grants must flow should the WSP be a SMME.

- Procurement could present difficulties, as described at length in WRC Report TT 432/3/10. The current report has not taken this issue further, but it does need to be addressed, or application of even the best franchising partnerships models will be limited.

Concluding points

Through water services franchising, there is significant potential to deliver more reliable and sustainable water services. In many instances, this would (for example through reduced wastage of water) result in cost savings to the WSA, thereby improving its financial situation.

A franchising partnership model for water services delivery cannot address a WSA's budget problems, but can undoubtedly greatly contribute to resolution of the skills and incentives problems that are encountered by, or in, many WSAs and WSPs, or to structure alternatives to current water services delivery institutions.

Whereas a business based on a single element of the water services delivery value chain might not be viable, an entrepreneur might be able to make a viable business by offering several water-related services, thereby achieving dual objectives, *viz.*:

- economy of scale; and
- lessening the franchisee's dependence on one or a limited number of clients.

In practice also, an entrepreneur could well, over time, expand service offerings without expanding the range of skills (again, exploiting economies of scale, and building up a critical mass around a specific set of skills). Thus, for example, that plumbing skills would be needed, and that visits to individual properties would be part of the duties of the business, might be found to be a common factor to the following elements, providing opportunity for expansion of the business to include:

- meter reading;
- investigating meter errors that have been reported to the WSA;
- fixing meters; and
- fixing on-site leaks.

Franchising is a concept intended to improve water services quality, coverage and efficiency through introducing a new (to water services) supply-side mechanism, and at the same time offering opportunities to the SMME sector.

All choices of delivery institution are between alternatives. Water services franchising might not, even on paper, be ideal, but it might in many situations offer something better than current institutional means do. WSAs need to keep an open mind.

Franchising aims to improve quality and meeting standards, and is a way of assisting WSAs / WSPs to do this. In particular, many WSAs do not have staff or systems to deliver a reasonable service. A carefully designed set of WSA / franchisor / franchisee arrangements, competently implemented, could assist.

The models described in the current report have been drawn up with close knowledge of the water services sector, but without direct experience to go on of running small businesses providing service in respect of each of the elements modelled. It would therefore be foolish not to be prepared to be flexible and to learn.

It needs to be emphasised that the case for water services franchising partnerships to operate and maintain water services infrastructure owned by the public sector, rests on the service quality and reliability improvements that can in many cases be anticipated.

The current report shows that franchising partnerships can in at least a number of circumstances be feasible business propositions for franchisees and franchisors. They can even reduce costs or increase revenue for the public sector owners, thereby inter alia improving sustainability of the service. But these reasons on their own would seldom constitute sufficient motivation to justify going the franchising partnership route.

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- WRP, Pretoria: Ronnie Mckenzie.
  and
- all the members of this project's reference group that are not among those listed above

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Notes

Words or passages enclosed by square brackets [ ], within quotations from other texts, are the current researchers' interpolations.

All references to or quotations from policy, statutes, regulations and so forth are to the best understanding of the researchers up to date to May 2007. Developments (if any) since that time have not been captured.

"the researchers", or "the current researchers", or "the team" means the team appointed by WRC to undertake the current project.

"the project", or "the current project" means WRC Research Project K5/1610, the "Water Services Franchising Partnerships" project

"the report", or "the current report" means "WRC Report TT 432/4/10: Modelling of selected water services operational elements "

Abbreviations and acronyms

Amanz' abantu	Amanz' abantu Services (Pty) Ltd
BBBEE	Broad-Based Black Economic Empowerment
BEE	Black Economic Empowerment
CBO	community-based organisation
CSIR	Council for Scientific and Industrial Research
DBSA	Development Bank of Southern Africa
DEAT	national Department of Environmental Affairs and Tourism
DoE	national (or provincial) Department of Education
DWAF	national Department of Water Affairs and Forestry
FASA	Franchise Association of Southern Africa
kℓ	kilolitre
KPI	key performance indicator
LDV	light delivery vehicle
LED	local economic development
NAMAC	National Co-ordinating Office for Manufacturing Advisory Centres
NGO	non-governmental organisation
NRW	non-revenue water
MIG	Municipal Infrastructure Grant
PIA	project implementation agent
PSP	Private Sector Partner
PWMSA	Professional Water Management South Africa
SETA	Sector Education and Training Authority
SGB	school governing body
SMME	small, medium and micro enterprise
SSA	support services agent
Waterbility	Waterbility Water and Sanitation Solutions (Pty) Ltd
WRC	Water Research Commission
WSA	water services authority
WSP	water services provider

Definitions used in this report

Frequent reference is made in literature to "**community-based**" or organisations that are "based in the community". It is often not clear if it is intended that these terms exclusively refer to non-profit organisations, or could include profit-seeking organisations. Is the intention of referring to an organisation as "based in the community", to indicate that it is geographically located in the community that it serves, and draws most if not all of its personnel (whether they be volunteers or paid) from that same community? SALGA has in a recent document made its interpretation clear. A "community-based organisation (CBO)" is "a not-for-profit organisation within a specific community, with community representatives, that provides a service to that community with the community's mandate or is representing the overall interests of the community." (SALGA 2005:3)

For the purposes of this report, the term "small, medium and micro enterprise", or SMME, indicates a profit-seeking organisation that might or might not be based in a community, drawing personnel from that community, and serving that community. Usage by the researchers in this report of "community-based organisation", abbreviated CBO, is less rigid, but is generally intended to indicate a non-profit organisation. If, however, the reference to CBOs is a quotation or a paraphrasing from another document, then the meaning intended by the authors of that document is that which rules.

"**Delivery**" embraces not just the placing in service of infrastructure, but the appropriate operation, including maintenance, of that infrastructure for the whole of its designed life.

"**Maintenance**" is in this report used as a generic term to include repair of infrastructure, refurbishment and renewal, and provision for replacement of that infrastructure.

The following definitions are direct quotations from the Water Services Act (South Africa 1997:10).

- ""**Water services**" means water supply services and sanitation services.
- "**Water services authority**" means any municipality, including a district or rural council as defined in the Local Government Transition Act (South Africa 1993), responsible for ensuring access to water services.
- "**Water services institution**" means a water services authority, a water services provider, a water board and a water services committee. This institution can be a statutory authority, private company, group of individuals, or an individual, or any combination of these.
- "**Water services provider**" means any person who provides water services to consumers or to another water services institution, but does not include …… any person who is obliged to provide water services to another in terms of a contract where the obligation to provide water services is incidental to the main object of that contract."

Note that whereas all WSAs are municipalities or groups of municipalities, not all municipalities are WSAs. Nonetheless, in this report the terms "WSA" and "municipality" are used interchangeably unless only one of "WSA" or "municipality" is intended and these specific instances are clearly indicated.

Similarly, in this report the terms "customer" and "end user" are used interchangeably unless only one or the other is particularly intended – these specific instances are clearly indicated.

1. Introduction

1.1 The purpose of Chapter 1

The purpose of Chapter 1 is:

- to briefly motivate the research project;
- to state the objectives and phasing of the project, and introduce the project team; and
- to outline the objectives and structure of this report.

1.2 Background to and objective of the project

1.2.1 Rationale and motivation for the project

In the past decade local government, assisted by DWAF and other players, has been remarkably successful in answering the challenge of services provision. Large numbers of households are now supplied with water services of a wide variety as a result of massive investments in infrastructure and institutional development. Although there are many who are still not able to access services, this achievement is exemplary.

However, this very success provides the seedbed for future problems. As the number and complexity of water services systems increases, so does the operations and maintenance workload escalate. The rising challenge now is to ensure that local government WSP organisations can manage all the new systems sustainably.

Conventional wisdom, supported by research, indicates that the capacity of many local governments in South Africa to adequately provide even basic levels of water services to all their citizens on a sustainable basis is in question. The challenge of exploring a range of options to support these organisations also represents an opportunity to selectively incubate innovations on an experimental basis, following a tradition of South African leadership in public sector-driven partnerships with the private sector, for optimum development impact.

Both Rand Water and DWAF have for a number of years considered that the potential for franchising in the water services industry water ought to be investigated. For various reasons this has never been done.

The barriers to entry for the smaller or start-up company are substantial. But if these could be overcome, perhaps through franchising, then there will be many opportunities for local economic development. The twin driving forces of the franchising concept are the profit motive and the existence of a successful business model that can be copied widely – neither of these is currently in evidence in the water services sector.

Franchising is a way of accelerating the development of a business, based on tried and tested methodology. The franchise system firstly correlates and systematises the business, and then facilitates the setting up of the business and supports and disciplines it thereafter.

The WRC and CSIR during the course of the 2003/2004 and 2004/2005 financial years undertook pioneering research into the concept of water services franchising in South Africa. (Wall, 2005). The study explored the concepts of franchising and its relevance to the water services delivery process. The outcome indicated opportunities in the water services delivery chain, and recommended that these be further explored.

1.2.2 Objectives of the project

- To further explore the concept of franchising and its relevance to the water services delivery chain.
- To identify and determine those elements in the water services delivery chain which offer the greatest scope for franchising partnerships.
- To review the legal, technical, financial, regulatory, etc. aspects which would impact on franchising partnerships.
- To develop franchising partnership models for a selection of the areas identified by the research, with consideration for the legal, regulatory, etc. aspects.
- To conduct a case study of an element in a hypothetical situation, to see how the model will work.
- To set out the way forward to eventual pilot implementation of franchising partnerships, and inter alia recommend areas for further research.

In summary, **the ultimate objective of the project was to identify the scope for franchising partnerships for the operation and maintenance of selected water services infrastructure, to establish the viability of franchising partnerships, and to make a case for outsourcing to franchises to be considered by water services authorities (WSAs) and water services providers (WSPs).**

In this report, WRC Research Project K5/1610, the "Water Services Franchising Partnerships" project, is referred to as "the current project" or "this project".

1.2.3 Methodology

The project was divided into two phases, in order to facilitate the achievement of the objectives of the research project in an ordered and logical way over the contract period. (See Figure 1.1 on the next page)

The first phase consisted inter alia of:

- Survey of water services provision that has like-franchising elements;
- Determination of relevance of franchising to water services delivery, and determination of the magnitude of that potential;
- Review of service delivery mechanisms, and identification of generic funding streams; and
- Review of policy, legal, regulatory and other aspects which impact on water services.

The second phase included:

- Definition of a franchise structure, and preliminary identification of potential franchisors and other key role-players; and
- A case study of an element in a hypothetical situation, to see how the models would work.

Note that a further two phases, not part of this project, would be needed in order to take the work into pilot implementation. These phases comprise pilot project preparation, and then pilot project implementation.

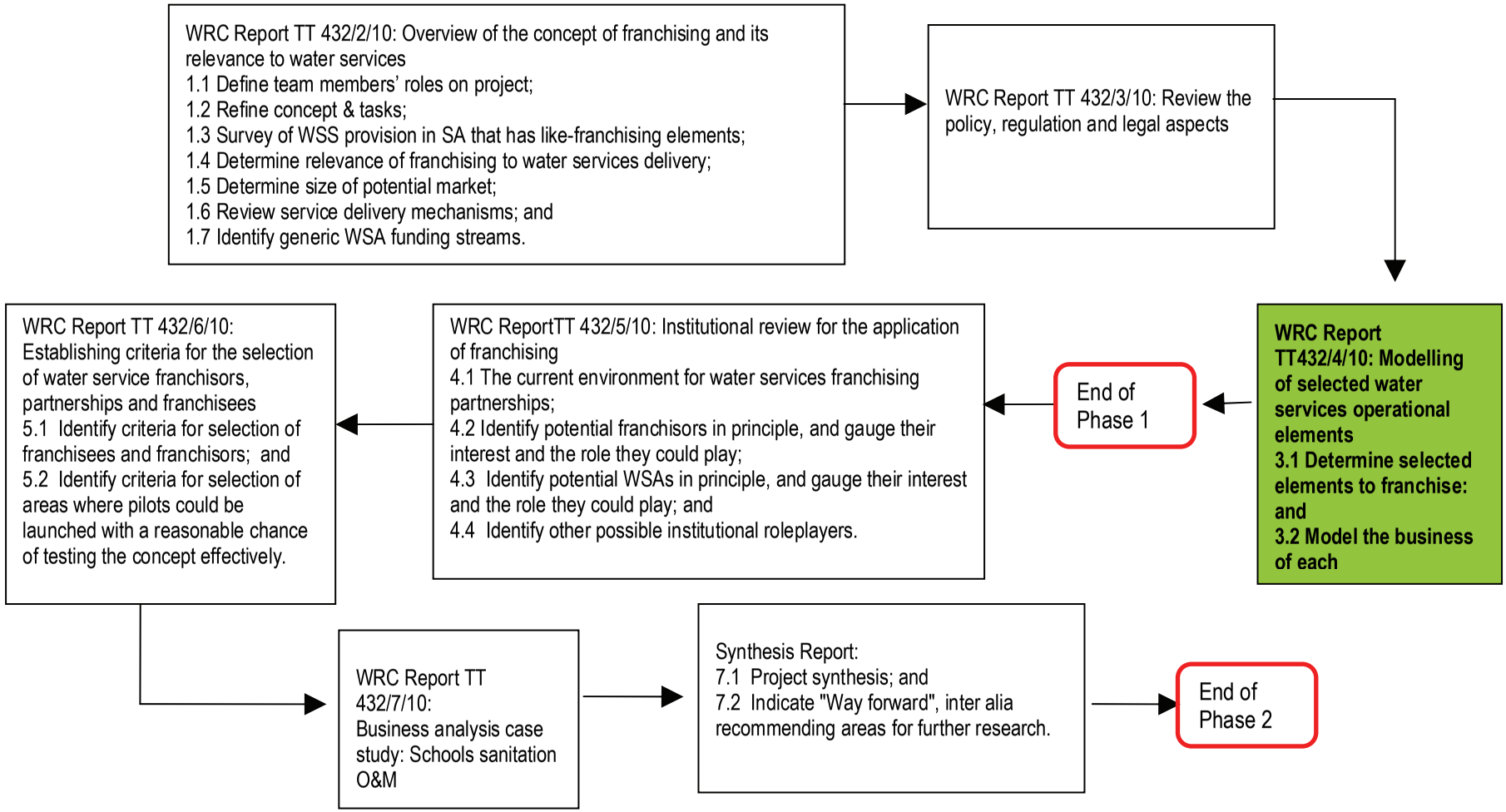

Figure 1.1 Water services franchising partnerships: project schematic

1.3 About this report

1.3.1 Specification

This report is to:

- Identify those elements in the water services delivery chain which offer the greatest scope for franchising, and set out the results of the business analysis of possible franchising of selected elements.

More specifically, that:

- Those elements of the water services value chain most suitable for franchising would probably be those which can best be systematised – these need to be identified. Then selected elements need to be modelled, in order to develop a business concept around each.

This "Report TT 432/4/10: Modelling of selected water services operational elements" is hereinafter referred to as "the report" or "this report" or "the current report".

1.3.2 Purpose of this report

In a nutshell, the purpose of this report is:

- set out the water services value chain, and identify a number of elements that could be outsourced, and from which a selection, for modelling purposes, can be made;
- decide on what is meant by "modelling" and "business analysis", and then draw up a tentative standard format for modelling/business analysis, and standardise terminology;
- model three selected elements, thereafter modifying the format if necessary.

1.4 Structure of this report

The structure of this report reflects its purpose (described in Section 1.3.2 above). Thus the report consists of an introduction (Chapter 1), followed by six chapters that between them deal with the objectives of the report. Chapter 8 draws conclusions.

The middle six chapters thus respectively –

- Chapter 2 describes the water services value chain, and identifies discrete elements, all of which would involve operation and maintenance activity year by year through the life of the infrastructure;
- Chapter 3 step-by-step narrows down the choice of elements to be modelled, briefly describes each of the elements on the shortlist, and explains the selection of the three elements that in due course are modelled;
- Chapter 4 describes what is meant by "modelling", and then draws up a standard format for modelling – and standardises terminology; and
- Chapters 5, 6 and 7 each model one of the elements.

2. The water services delivery value chain

2.1 The purpose of Chapter 2

The purpose of Chapter 2 is to outline the full water services delivery value chain, then identify discrete elements of the water services value chain, drawing up a "long list" of these.

The chapter thus describes the water service value chain (or supply chain), and then lists the key elements involved in delivering water to end users and dealing with wastewater, by on-site or off-site means.

The sequence of Chapter 2 is:

- starting with a description of the entire water service delivery value chain (Section 2.2)
- "interrogate the chain", and come up with a long list (Section 2.3).

2.2 The water services delivery value chain

The water services delivery value chain (or supply chain) is most simply set out in the form of a diagram as shown in Figure 2.1, which is based on a Department of Water Affairs and Forestry document. (DWAF 2001:19-20)

Note that Figure 2.1 shows both a full formal scheme value chain (e.g. with off-site wastewater disposal and treatment) and an alternative value chain, with different elements (e.g. with on-site sanitation).

Capturing the formal scheme value chain in the form of a sequence of main activities, and adding to Figure 2.1 some detail based on the researchers' experience, produces the following list:

- Operating and maintaining storage dams and transfer schemes;
- Transfer and transport of raw water;
- Treatment of raw water to potable water standards;
- Operating and maintaining water treatment plant and facilities;
- Transport of potable water to municipal storage facilities;
- Operating and maintaining municipal storage facilities;
- Operating and maintaining primary and secondary municipal water reticulation networks;
- Transport of potable water to end-users (customers) (including quality control);
- Operating and maintaining ancillary municipal infrastructure and facilities (e.g. sites);
- Support services to maintenance of infrastructure;
- Meter reading;
- Billing, and collecting revenue (where applicable, i.e. not where free basic services policy is implemented);
- Operating and maintaining the customer data base;
- Managing the relationship with the customer;
- Operating and maintaining end-user on-property water services infrastructure;
- Collection of effluent from end-users and conveyance to wastewater treatment works;
- Operating and maintaining wastewater networks and outfall sewers;
- Treating wastewater to acceptable standards; and
- Operating and maintaining wastewater treatment works.

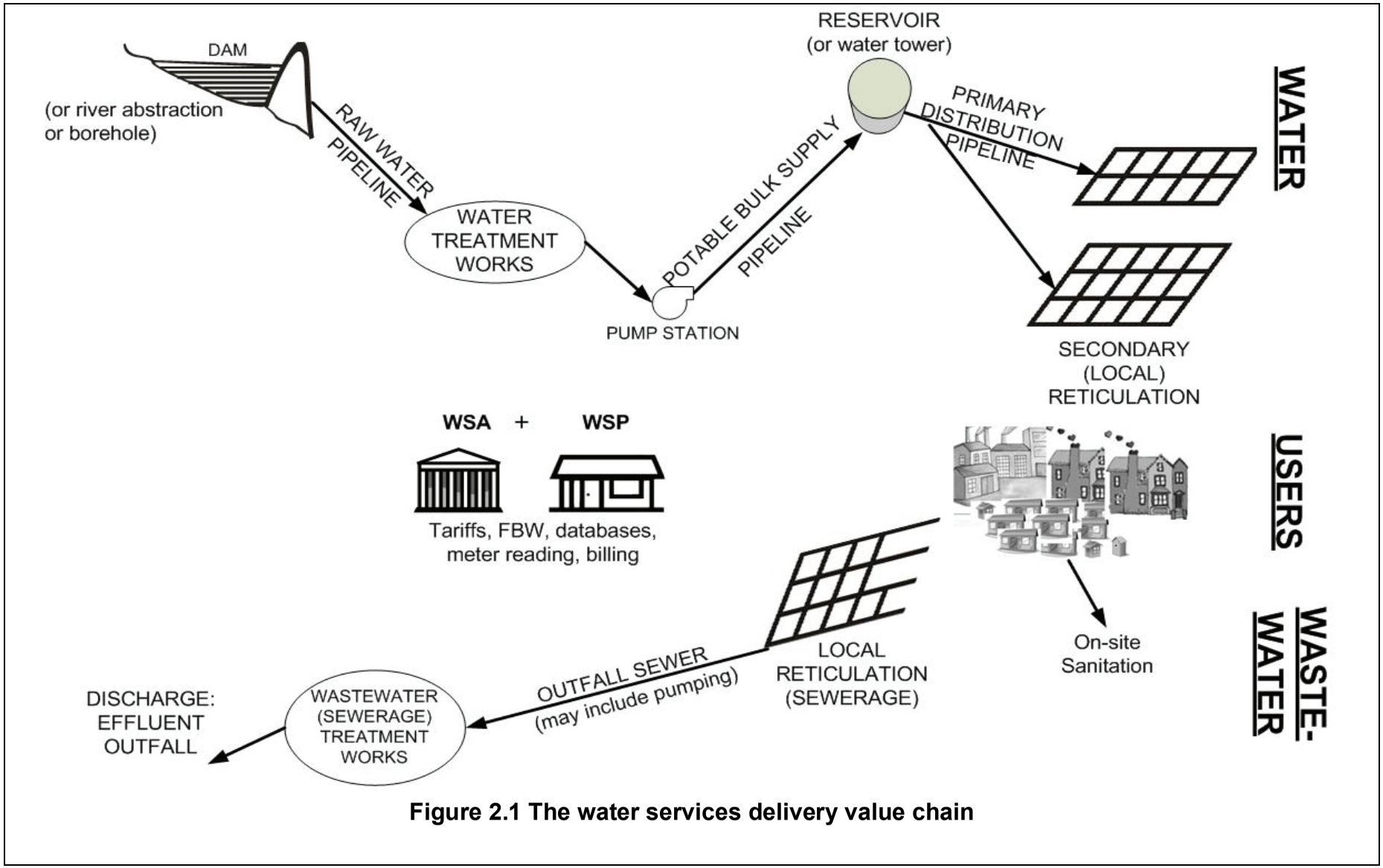

Figure 2.1 The water services delivery value chain

In some instances, e.g. where some of the above elements are absent, it could be that the water services value chain has some of the following elements instead:

- Operating and maintaining groundwater abstraction (including boreholes, pumps etc);
- Operating and maintaining river abstraction (including pumps etc);
- Operating and maintaining micro water schemes (those consisting for example of protected spring, gravity main, filtration and storage); and
- Operating and maintaining on-site sanitation, products of soakaways, wastewater discharged onto surfaces, and any other ways of catering for wastewater.

All of the above are presented in a different format in Annexure A – with some preliminary consideration of whether the activities identified have or do not have franchising potential.

2.3 Long list of elements

The work of this section is largely based on the current researchers' experience in Mogale City Local Municipality, City of Johannesburg, eThekwini Water and Sanitation, Emfuleni Local Municipality, Odi Retail Water Services, the Maluti a Phofung contract, and in many municipalities in the Eastern Cape.

The list set out below is the result of the researchers' brainstorming in order to compile a long list of water service elements, all of which would involve operation and maintenance activity year by year through the life of the infrastructure. Other than that, they are, deliberately, listed without any consideration being given of whether they are suitable or not suitable for outsourcing (let alone for outsourcing to SMMEs, let alone for franchising partnerships). That selection is made in Chapter 3.

"Without any consideration", that is, with the exception of planning, design and construction of capital works. These are not listed because it is evident from the research already done for this project that they are inherently unsuitable for franchising. Franchising needs to provide an ongoing business opportunity. A construction project, that begins and ends within a specific time span, is for that reason not likely to be suitable for franchising partnerships (although it could be suitable for short-term contracting by an SMME, whether a franchisee or not). Also, because franchisees are SMMEs, and thus by definition don't have substantial financial resources, a business opportunity that requires substantial investment in infrastructure before the ongoing business can be run is not likely to appeal.

Franchising opportunities may lie among those elements of the water services value chain which are ongoing, i.e. they are repeated regularly.

To reiterate:

- It is accepted that all of the physical infrastructure elements listed in this Section 2.3 have to be planned, designed and constructed, upgraded, refurbished from time to time, and eventually taken out of service, scrapped and replaced. Therefore "construction", for example, does not appear in the long list below;
- Bearing in mind the objectives of the current project, the list below focuses on those "ongoing" "repeated regularly" elements of the value chain, for the most part operational (including maintenance) elements; and
- All main operational elements are listed, including elements which may have limited or no potential for outsourcing to SMMEs or franchised SMMEs.

The long list

As noted above, this list is the result of the researchers' brainstorming in order to compile a long list of water service elements, all of which would involve operation and maintenance activity year by year through the life of the infrastructure.

- Water resource management, including assistance with licensing, monitoring and raw water resource management. (Although this is primarily a DWAF and catchment management agency function, rather than a WSA function);
- Infrastructure operation (i.e. day-to-day operation. Which could be of the whole of a system, or of part of a system, for example, just of the pumps.);
- Process optimisation (e.g. of water or wastewater treatment works);
- Site and property management;
- Fleet management;
- Infrastructure maintenance and repair. (i.e. planned maintenance of infrastructure, and also unplanned maintenance. Of civil, mechanical and electrical infrastructure or of only parts. Including general plumbing services (for example, drain-cleaning) and pit-emptying);
- Water loss management and water demand management (e.g. water balances, pressure control management, monitoring of leakage, leak detection, flow logging and responding appropriately so as to reduce loss and/or manage demand);
- Risk and governance issues;
- Part or whole of customer relations, such as:
  - general communications;
  - receiving customer complaints;
  - (managing response to customer complaints (maybe including keeping records of work done on the infrastructure); and
  - revenue collection (even if this is only running the kiosks or counters where customers pay). And it needs to be considered if there is a way to make it more of a service and less of a policing;
- Customer education, as for example, when new infrastructure is provided. Including promoting health and hygiene awareness, and water conservation awareness;
- Measuring of performance (by telemeter or any other method) of any or all parts of the infrastructure. For example, of pump performance, reservoir levels, pressure at chosen points in system, breakages/leakages, quality of water (or wastewater, as applicable). Also keeping the records of the measurements, analysing these, and reporting, and feeding back to improve performance;
- Water quality issues and/or including advice on corrective action that needs to be taken by the WSP. (Components of this could include taking samples, testing the samples, advising DWAF or whoever needs to be advised in terms of e.g. authorisation to operate waste water treatment works, advising WSP on necessary corrective action.) (This could be for the retail side only, or for the bulk side, or both. Could include groundwater and stream flow);
- Keeping records of work done on the infrastructure, and relating these to:
  - customer complaints;
  - costs; and
  - the service levels that the WSA has agreed to provide the customer with;
- Data management, including checking/cleaning it. Possibilities include:
  - customer records;
  - billing;
  - revenue collection;
  - debtors' management; and
  - evaluating debtor data;
- Meter reading and billing services;
- Health and safety requirements; and

- Consumables supply and management (e.g. chemicals for treatment works).

Intrinsic to nearly all, if not all, of the above are the following, which, however, could be specialised activities, and could be (but by no means necessarily would have to be) performed by specialist undertakings:

- staff are recruited;
- staff are trained;
- services and materials are specified and procured;
- services and materials are supplied; and
- contracts are negotiated and then administered.

In respect of many of the above long list, different parts of the infrastructure or different parts of the service could be dealt with together or separately. The possible combinations are many. For example:

- Full formal schemes could be dealt with together or separately from small-scale schemes.
- Water supply and wastewater could be dealt with together or separately.
- Similarly, reticulated systems could be dealt with separately from non-reticulated. (For an example on water supply, boreholes and pumps could be dealt with separately from reticulated systems. For an example on sanitation, on-site sanitation facilities could be dealt with separately from reticulated systems.)
- Similarly, infrastructure above a certain size could be dealt with separately from infrastructure below a certain size (e.g. bulk mains separately from local reticulation).
- Similarly, water services for one type of facility could be dealt with separately from water services for other facilities (e.g. a focus on schools sanitation).

Although certain of the activities related to each identified element could be the same as or similar to the activities required for other elements, and common sense may say that the activities can be combined, this may not be practical for reasons such as geographical location, required skills-set, tooling and support required by the SMME or franchisee. Hence the list recognises that activities represent the provision of specialised services in every instance. Some activities could, however, be dealt with together, especially those activities related to ongoing maintenance of facilities, plant and infrastructure.

It is evident that one or other skill may be dominant in the performance of each of the elements. This suggests the possibilities of grouping elements according to skills, and that a service provider could optimise use of the skills base that he has by undertaking two or more elements that require more or less the same skills. Experience with the Odi Retail Water services contracts as well as the Maluti a Phofung contract showed the potential of this approach, highlighting the areas where an entrepreneur could maximise opportunities for success and sustainability.

Chapter 3 takes forward the process of short listing elements that are perceived to have franchising potential.

3. Selecting elements of the water services delivery value chain to be modelled

3.1 The purpose of Chapter 3

The purpose of Chapter 3 is to describe the water services delivery value chain and draw up a long list of discrete elements. Then, reviewing that long list of elements, Chapter 3 considers which can be short listed for modelling, and why, and goes on to select three elements of the chain, in order to model each of them in subsequent chapters.

The sequence of Chapter 3 is:

- recall earlier findings on the relevance and potential of franchising (Section 3.2);
- clarify whether discussion is of standalone SMMEs or of SMME franchisees (Section 3.3);
- set out the criteria for possible selection of the elements to model (Section 3.4);
- then interrogate the chain some more, and come up with a shortlist (with motivation of our choice) (Section 3.5);
- interrogate the shortlist, then pick the final selection for Chapter 5 et al, and explain why these (Section 3.6).

3.2 Relevance and potential of franchising partnerships

Before identifying which elements of the water services delivery value chain might be franchisable, it is of great value to recall the findings of WRC Report TT 432/2/10 on the relevance and potential of franchising partnerships. Clearly, it is important to identify not just elements that are possibly franchisable, but elements that BOTH:

- are franchisable, and
- that franchising them would enhance water services operation and maintenance.

There is no point in modelling the franchising of an element if franchising partnerships would not bring worthwhile advantages.

WRC Report TT 432/2/10 states that:

> "A franchising partnerships model for water services delivery cannot be expected to address a WSA's budget problems. The franchising concept has however undoubted potential to structure alternatives to current water services delivery institutions. Any measures that led to more reliable and sustainable water services would (for example through reducing wastage of water) result in cost savings to a WSA, thereby improving its financial situation.
>
> Franchising can also assist with the resolution of skills and incentives problems that are encountered by or in many WSAs and WSPs. Franchisee water service providers, dependent for their livelihood on the success of their business, would have a strong incentive to perform, and would also enjoy the benefit of the franchisor's expert guidance and quality assurance. On this latter point, a franchisor can ensure a professional approach, and provide quality control, ongoing training, and well as advice and help when needed.
>
> This help from the franchisor would be of particular value to WSAs away from the major urban centres, few of which can afford to employ sufficiently skilled staff – which shows in the state of their infrastructure. Significant improvements would soon be seen if the generally under-qualified or under-resourced water services staff in these WSAs could have this ongoing support, mentoring and quality control – or if the WSA could contract all or elements

of its infrastructure operations and maintenance responsibility, entering into agreements with SMMEs that, through franchising agreements, enjoy the necessary ongoing support, mentoring and quality control.

Given that the costs of the franchisor's higher levels of specialist expertise are shared by several franchisees, the franchisor could afford to make this expertise available to each franchisee on an as-needed basis, and could provide other resources normally only available to larger water services providers. This holds significant benefits for WSAs.

There are many situations where the principles of franchising would be of great value to improving water services. Franchising appears to be advantageous in respect of some elements of water services delivery infrastructure, and in some circumstances, but not in respect of those same elements in other circumstances. Franchising should therefore be preferred in appropriate situations – but not all situations are appropriate. As just one example: given the huge geographic areas that many municipalities cover, a locally based institution would have a distinct cost advantage over an organisation more centrally based in the municipality, and therefore at a greater physical distance – and the customers would receive better service.

A WSA client's competence to monitor performance and enforce contract compliance is key to it effectively using the SMME sector. However if a client is short of skills, it would be putting these skills to more efficient use in managing the work of the contractor then in trying to cope with the operational issues itself.

Whereas franchisees, being SMMEs, are generally unable to assist with capital investment in infrastructure, a very strong case can be made for capital funding, whether for new infrastructure or for refurbishment or replacement, to be made available by national government.

The environment for emergent business in South Africa is not by any means what it should be, and that for this reason alone, being part of a franchise network rather than a standalone business is hugely advantageous to both the SMME and its client

It is impossible to quantify the potential of water services franchising, but undoubtedly there are many situations where the principles of franchising would be of great value. Franchising should however only be preferred in <u>appropriate</u> situations – it is not a panacea, for widespread application.

The main obstacles foreseen lie in:

(i) the apparent reluctance of many WSAs to go a private sector route,
(ii) assurance of funding for the service (i.e. will the franchisee be paid in terms of its contract with the WSA or WSP?), and
(iii) whether sufficient numbers of existing or potential local entrepreneurs would perceive that water services franchising presents them with a viable business opportunity.

A three-step breakthrough is required.

- The first step is the breakthrough to acceptance by WSAs of outsourcing the operation and maintenance of infrastructure that they, the WSAs, own. (This outsourcing need not necessarily be to the private sector – it could be to NGOs or CBOs as well.)
- The second is the acceptance that the private sector institutions in question could be SMMEs.
- The third step is the acceptance that these SMMEs could be franchisees. (The third should not be a problem once the second level of acceptance is in place. Franchised

SMMEs should be a concept easier to sell to clients of any sort than the idea of SMMEs that are standalone.)

One of the reasons why the franchise concept could achieve significant impact is its potential for opening the water services industry to smaller companies in general and for BEE in particular." (End of quote, from WRC Report TT 432/2/10 pages v and vi.)

3.3 SMMEs and franchises

This report sets out a method for analysing opportunities that are perceived by the researchers to be suitable for small business/SMMEs. Generally, it does not draw any distinction between generic types of SMMEs, except in one very important respect, and that is that franchisees have inherent advantages, by virtue of being part of a franchise support system, that the researchers perceive to be of major value in taking up the opportunities analysed and making them into sustainable businesses.

Generally, therefore, in this report, unless otherwise stated or clear from the context, any business opportunity described as being suitable for a SMME could provisionally be regarded as suitable also for franchising partnerships, since franchisees are after all particular types of SMMEs. The converse does not necessarily apply, because of the advantage of being part of a franchise system. How the support system of franchising will support a franchisee, and will enable a sustainable business in circumstances where the chances of a standalone business not succeeding, or not succeeding so readily, are significant, will be made clear in the report. (Of course it will often be the case that business opportunities will not be suitable for any kind of SMME, franchised or not.)

The opportunities that are modelled in Chapters 5, 6 and 7 that follow, have been identified as worth investigating for franchising. By definition, therefore, the analysis that takes place in those chapters is also an analysis of SMME opportunities. The chapters do not always draw the distinction, however, except when, and this is a very important exception, it is shown how franchising can manage the difficulties, assumptions and risks and other issues raised in the analyses, and can manage them satisfactorily whereas they could threaten the viability of standalone SMMEs, and/or threaten the service being provided. And conversely how franchising can proactively bring advantages (i.e. not just keep threats at bay), thereby making the service better or the business more viable or both.

Bear in mind that when a WSA procurement process investigates partnering, it will, if not overtly stated, be clear from the context (size of contract, particularly) if the WSA does or does not want to attract SMMEs. However, it is currently most unlikely that a WSA will make any reference to, let alone express a preference for, franchises. The case must therefore be made in this project that franchisees are SMMEs, but SMMEs that have many inherent advantages, and these advantages can in many instances make all the difference between sustainable and non-sustainable service delivery, a topic which would of course be of prime concern to the WSA. (Of no less importance, but to potential franchisees and franchisors, would be that franchising a SMME opportunity would in those and many other circumstances also be crucial to a business being viable as opposed to it not being viable.)

This discussion notwithstanding, for reasons of common sense but also in accordance with the wishes of the WRC, the analysis tries not to be purist in defining franchising as strictly the “business format franchising” or any other definition. The focus is rather on the business analysis, and on identifying business issues that may require the special skills or processes, or any other resources that franchising can bring.

3.4 Criteria for selection for shortlist for modelling

3.4.1 Franchisability, and improvement potential

As noted in Section 3.2 above, it is clearly important to identify not just elements of the water services value chain that are possibly franchisable, but elements:

- that are franchisable, AND
- that franchising them would improve water services operation and maintenance.

There is no point in modelling the franchising of an element if franchising would not bring worthwhile advantages.

Thus, briefly, the criteria for selection of elements to model are:

- the aim is to deliver that element "better" (measured in various ways, e.g. more reliable service?) than the alternatives will, and particularly better than the way it is being done now;
- SMME/Black Economic Empowerment (BEE) and so on;
- financial viability; and
- with a motivation for any trade-offs employed if all the above cannot be met all of the time.

More detailed issues that need to be considered in the modelling, all highly relevant to determining franchisability and the services improvement potential in franchising, should include:

- Capital intensity of the business opportunity (start up cash needed);
- Complexity of the process;
- Possibility of standardizing the systems in operation;
- Operating expenses required to run such a service delivery operations;
- How critical is it to the success of the municipality?;
- What impact will it have on the successful running of this function?;
- Potential of a pilot project;
- Any current best practices available in the market; and
- Any financial information that can be found to assist performance measurement should this element be selected for implementation as a pilot project.

Recall the finding from WRC Report TT 432/2/10, quoted above, that "a three-step breakthrough is required. The first step is the breakthrough to acceptance by WSAs of outsourcing the operation and maintenance of infrastructure that they, the WSAs, own." Some of the long list of elements from Chapter 2 above might in theory be franchisable, but the chance of a WSA accepting that they be outsourced would be very slim, on account of their importance to the WSA when looking at accountability and importance to the politicians who lead the municipality. Some of the activities might have franchising potential in circumstances other than those of the local government and water services sphere in South Africa, but the cost of franchising them, and the complexity of the procurement processes that would need to be followed, appear to eliminate any chance that the WSA will allow them to be franchised.

The final selection of the activities that could be viewed as possibilities for franchising partnerships will need to meet criteria both from a business case point of view as well as the impact on the WSA from a political and sustainable point of view.

3.4.2 Experience

Applying the above criteria results in the shortlist seen in Section 3.5 immediately below. However, in reducing that list to three elements, a practical consideration, hitherto not mentioned in this report, comes into play. This is best explained as follows:

“Colonel” Harland Sanders (1890-1980) was an expert in the total business of cooking and selling fried chicken. When he wanted to expand the business but did not want to open any more branches, he decided to franchise some of the outlets. So he looked at the entire operation of marketing, procuring chicken, training, running outlets, quality control, etc., etc., and he asked himself which part of this could be systematised, and could be the basis of a viable franchise opportunity. He zeroed in on this part, and modelled it, non-financially to start with (what activities, what skills, what resources?). This modelling was probably iterated quite a few times over until he came out with something that he liked and was viable. It is probable that he found it advisable to change the part that he was modelling, i.e. to add or subtract activities.

Then he modelled the financial side. When he saw what the financial bottom line was like, he probably went back to the beginning and tried other combinations of activities. Many iterations later, he had, on paper at least, the model of a viable business.

That (with less iterations than the Colonel had the time to enjoy the luxury of) is in essence what the current researchers have attempted to do, and are documenting in this report. However, it needs to be emphasised that they do not have the advantage of Colonel Sanders, who had spent his life cooking and selling fried chicken, and knew the business (including the financial implications) intimately.

The shortlist identifies elements of the water services value chain that could be franchised, at least on paper. But several of them have not, to the current researchers’ knowledge, been undertaken by small business, and any franchising modelling of them would as a consequence be disadvantaged.

Modelling of water services infrastructure operation and maintenance, a brand-new arena for franchising, is true pioneering, and requires creativity. The researchers strongly feel that there is no need for them to be defensive, i.e. in fear of external criticism.

Sanders started franchising with one outlet, after a lifetime of running branches of his business. He then, through gradually opening many more outlets and learning from each experience, refined the fried chicken take-away business over the course of several years. Eventually he had the confidence, born of experience, to offer to potential franchisees a proven model, and to say to them "take it or leave it".

The current researchers do not have that direct experience. The model that would be offered, even in the pilot phase (i.e. beyond Phase 2 of the current appointment) would have been drawn up without any direct experience of running "outlets" to go on.

Therefore, whatever the current researchers put forward has to be sufficiently flexible to accommodate good ideas and learning experience and it must contain learning elements.

The practical difficulty facing the researchers is very much that which would have been faced by Sanders had he not been in the business of cooking and selling fried chicken for several years before he decided to franchise his business. (Or, for that matter, Glenn Pratt of The Drain Surgeon, had he not run a successful plumbing business prior to franchising.)

A very important consideration in selecting which three elements to model has therefore been whether a member of the team, through direct experience, has sufficiently close familiarity with the business of one or more short listed element. Alternatively, could someone who has had direct experience write the first draft of a modelling description of that element, to which the current researchers could add value from their extensive, albeit indirect, combined experience? And would the "someone" be prepared to do that for this project, bearing in mind that some practitioners who had direct experience had indicated that they were not prepared to assist, because modelling their operation would reveal too much of their competitive advantage?

Fortunately, between the team and Michael Rabe of Re-Solve Consulting, three modelling opportunities were identified. Thus it is on the basis of direct experience that the required modelling descriptions have been drawn up. The current researchers' indirect experience has been brought to bear on them, with the result seen in Chapters 5, 6 and 7.

For example, the caretaker management model of Chapter 5 is founded on Mr Rabe's extensive background in urban community water supply, and particularly his pivotal experience in managing the recently completed Munsieville (in Mogale City Local Municipality) private property leak repair project. (USAID 2006). For a second example, the schools sanitation management model of Chapter 6 is founded on the extensive experience of Amanz' abantu in water and sanitation delivery to rural communities, and to community facilities (including schools), in the Eastern Cape.

All of the above is simply common sense. So is that franchising an activity absolutely has to be based on extensive experience of that activity in a reasonably similar environment is a point of view strongly supported by the Franchise Association of Southern Africa. "Before franchising should be contemplated, the existing business must be well established in its market, generate sound profits, and show sustained signs that it is ready to expand." And "unless all systems and procedures are in place, the business is not ready to be franchised". (FASA 2005:21-22). Which conditions the current team cannot fulfil to the letter, but nevertheless they do offer extensive experience in closely analogous circumstances. Furthermore, there will have to be piloting of franchising partnerships in the chosen areas, and refinement of the models, before they can be made available widely.

Or, as the chairman of the WRC reference group on the current project put it at the reference group meeting held in May 2007: it would not be right to use untested business models. "We don't want to experiment with poor people" – i.e. to use aspirant franchisees as "guinea pigs".

3.5 Shortlist of elements

3.5.1 Introduction

It was early in the project agreed that the current project should not give the full-service alternative much attention, but that the focus of modelling should rather be on the opportunities in franchising partnerships for the operation and maintenance of parts, as distinct from the whole, of the water services division value chain. Demonstrating cost-benefit and other advantages at the level of the whole service would in any event be more difficult.

It was also agreed that, if possible, selection of elements would also be influenced by the needs of the sector. In particular, if franchising partnerships could assist where capacity problems exist.

Note that an entrepreneur might be able to make a viable business by offering several water-related services, whereas a business in his area based on a single element of the water services delivery value chain might not be viable. Combining two or more related activities, or two or more activities subject to economies of scale, might make all the difference. For example, a meter reader on his rounds could also do the routine maintenance, and repair what needs to be repaired. Or the entrepreneur could run an electrical service together with a water service, or a shop.

The schools sanitation programme described in Chapter 6 is an example of the type of creative thinking needed.

Finally, in terms of improving both the financial viability of a franchising business and the value that franchising could add to water services operation and maintenance, to reiterate that possible creative combination of elements into one business should be borne in mind. However,

combinations are not considered in this report, which presents the modelling of single elements only.

3.5.2 The shortlisted elements

These are presented below in random order. No preference is indicated or intended.

All reflect opportunities in outsourcing parts, as distinct from the whole, of the water services division value chain. This selection is also influenced by the needs of the sector. Franchising these elements would improve water services operation and maintenance in important respects.

Whether in fact any would be franchisable remains to be seen. At this stage, all those listed do appear to be prospects.

The list below is not an exhaustive list of possibilities. Persons or institutions with knowledge of the water sector and a feel for entrepreneurship will no doubt in future be able to see more opportunities.

(i) Leak detection

Realising that a municipal main is leaking may be one thing, but identifying the nature and place of the leak may be another. For a variety of reasons, surface manifestation (if there is any, there might be none) of an underground leak might occur some horizontal distance away from the position of the leak.

Sophisticated leak detection equipment is now available. Manufacturers and suppliers of this equipment are generally not interested in providing the leak detection service, and prefer to sell the equipment outright. The sale is generally accompanied by training in the use of the equipment.

However, franchising has the potential to assist the more widespread use of these techniques, and to ensure more skilled use of the equipment. The franchisor could be the supplier, or could be a firm that has purchased the equipment, and wishes to expand but does not wish to establish branches in other centres.

(ii) Caretaker management

Improvements in water services reliability and efficiency, achieved in an area with the assistance of an agency external to the area, need to be safeguarded once the agency has moved on.

The concept is that individuals with the necessary skills and who have been part of the improvement process would thereafter be key to normalising the management of those water services. Each would be assigned a portion of the area improved. Each would become the "caretaker" of that area, and would, under supervision, be responsible for operation and maintenance of the municipal water services in that area. These caretakers could also undertake plumbing work on private properties, thereby improving their income stream.

Franchising has the potential to improve the quality and reliability of the service, and also to enable the caretakers to acquire additional skills. The supervisor could become the franchisor, and the caretakers would then be franchisees.

The caretaker role requires very little working capital, and the initial setup cost is minimal, therefore it is very suitable for entry-level entrepreneurs.

(iii) Borehole management

There is a need for boreholes to be operated once the borehole company moves on, leaving behind some combination of motors, pumps and piping that need to be operated and maintained. A way to do this is not dissimilar in concept to the caretaker management outlined above.

The borehole drilling company, or the supplier of the surface infrastructure left behind, could conceivably be the franchisor, and a local small or micro-enterprise be the franchisee that has the responsibility to operate and maintain all the plant.

Very similar to a borehole situation would be that pertaining to an abstraction plant, that draws water from a surface resource and needs to be operated and maintained.

(iv) Management of municipal treatment package plants

Water treatment and wastewater treatment package plants are often installed and become the responsibility of the municipality to operate and maintain, but for the usual reasons (e.g. budget, skills) are not operated and maintained as they should be.

This presents an opportunity for a small or micro-enterprise to provide that service, contracted to the municipality. Specialising in package plants, it shouldn't be too difficult for someone with the right qualifications and prior experience to soon become more skilled in operating and maintaining package plants than anyone in the municipality.

This role requires very little working capital, but more skills than average, and would therefore be an entry-level opportunity only for those with these skills. However, franchising partnerships would enable suitable entrepreneurs to acquire those skills. The franchisor would provide the quality control, and would also intervene on those occasions when higher levels of skill would be required.

Possible franchisors include the package plant suppliers.

(v) Management of treatment plants

The company Professional Water Management SA (PWMSA), as described in Section 3.6 of WRC Report TT 432/2/10, has made management of water treatment and wastewater treatment plants into a viable business, and has franchised that business. Its successes thus far have almost all been in the private sector. The customers whose treatment plants it and its franchisees operate are invariably manufacturing and industrial concerns, and the plants are on the main property of the concerns and not at dispersed locations.

It supports its franchisees in all the ways that franchisees in other activity sectors are supported, but also assists them to widen their product offerings and to lessen their dependence on one or a small number of clients.

However, it would like to break into the municipal sector, and win contracts to operate and maintain municipal water and wastewater treatment works. It would then like to franchise these also.

PWMSA is of course by no means the only company with ability to perform the franchisor role in this area.

(vi) Water demand management, and aspects thereof, such as pressure control management

The potential offered by effective demand management on the success of water service delivery, and the lack of attention in many municipalities to demand management, makes it an intervention with potentially high financial return.

From a franchise point of view, the systems that have been created by the private sector are good.

The working capital needed could be small, as many aspects of water demand management are more of a monitoring function than a practical operational action. Some aspects require improvements to the infrastructure, in which case alternative funding sources must be sought. However, it is sometimes practical to arrange financing on the basis that it will be paid off quickly from savings that are the direct result of the water demand management.

An aspect of water demand management is pressure control management.

(vii) Meter reading

Meter reading is a relatively simple process, and has been successfully outsourced by some municipalities. There is therefore enough experience to fulfill one of the key requirements for franchising and that is that the process should have been successful operationally to prove the viability of the franchised concept.

Meter reading also requires very little working capital, and the initial setup cost is minimal, therefore it is very suitable for entry-level entrepreneurs.

Many municipalities struggle with meter reading (both of water and of electricity), for a number of reasons, including community resistance not to the reading of meters in itself, but to paying for water and electricity. Nonetheless most municipalities have to find a way to greatly improve the frequency and reliability of their reading of meters, as the revenue from the sale of water is invariably an important part of their revenue stream. And even if the water is not paid for, or is intentionally supplied for free, the municipality would wish to have the consumption information that the meter would provide.

Meter reading can easily be supervised by a franchisor, and, as franchisees, the meter readers would be able to acquire additional skills.

(viii) General plumbing services, including drain-cleaning

Essentially, this is the service offered by The Drain Surgeon. In the hands of Glenn Pratt (and others – his is not the only successful franchise business offering this or a similar service), its franchise potential has been proven.

For a description, see Section 3.3 of WRC Report TT 432/2/10.

(ix) Pit-emptying services

Essentially, this is the service that eThekwini Municipality is proposing to set up as a partially franchised operation.

For a description, see Section 3.6 of WRC Report TT 432/2/10.

(x) Laboratory services

Laboratory services are often outsourced by WSAs. These include testing of the output from both water and wastewater treatment works, and also testing at specified sampling points in a reticulation system, or of free waters (e.g. groundwater or streams).
The services are offered by commercial laboratories, and also by the CSIR (particularly in respect of a long-running testing service provided to municipalities in the Northern Free State), Rand Water, Johannesburg Water, ERWAT and others. In a franchising situation, it is possible that some of the treatment works chemicals suppliers, e.g. Zetachem, would see the opportunity to become franchisors.

The usual way in which this is done is that the testing contractor visits the designated sites and takes samples, which are then transported to a laboratory elsewhere, and the testing undertaken.

Given the increasing availability of testing kits that can be carried in a car or even in a suitcase, have become a lot cheaper, and require less skill to operate, the barriers to entry for small entrepreneurs have in recent years been considerably lowered. It is a matter of some dispute whether these portable kits can perform all of the required tests, and do them satisfactorily, and the current researchers understand that not all results from these kits can be made available immediately, because some parameters require tests that take hours or even days. However, if the important question is whether outsourcing would provide a better service than is currently enjoyed, it is a fact that very little if any testing is done in some municipal areas and so it could be argued that the equivalent of half a laboratory service is better than no service at all.

There is considerable scope for franchising partnerships to improve the quality of service currently provided by small entrepreneurs, and by all except the larger laboratories. Franchising could also facilitate the entry of new service providers.

(xi) Data management

The extent to which a municipality is reliant upon data being complete and up-to-date is not always appreciated. Without data on who its customers are, where they live, their mailing address, and so on, and linking this to reliable water services consumption figures, the municipality cannot hope to implement an effective billing system. There is striking experience of the results from a thorough cleanup of a municipality's data, with for example, doubling of revenue being directly attributed to improved data and more effective billing.

Other data that a municipality has to manage includes data on its infrastructure, and repairs and maintenance to that infrastructure.

Sometimes, usually with the help of an external agency, a municipality succeeds in cleaning up its data. However, maintenance of that data, in the sense of discovering and recording all changes and new developments, and constantly or very frequently updating the database, has to be done but often isn't.

At least one private sector data management company is investigating franchising of the service it provides to municipalities. It presently, to do the work, sets up a team always involving local SMMEs, which it usually has to train in some aspect of data collection. High technical qualifications are not required of these small entrepreneurs, as often as not, a former teacher proves to have sufficient qualification.

Given, however, that it is often contracted to clean up the data and, once that is done, its appointment ends, the company is proposing to offer a service to municipalities whereby its local small entrepreneurs as franchisees receive a multi-year contract to maintain the data, with it as franchisor.

(xii) Site and property management

Given the extent to which municipalities outsource on annual or multi-year contracts the maintenance of sites and properties, for example, the cutting of grass at reservoir sites, or building maintenance, there is evident scope for improving quality and reliability of these services through the franchising of the usually small enterprises that currently provide the services. In fact, it is understood, some of them are already franchisees.

(xiii) Vehicle management

The same as is said above about site and property management could be said about the management of municipal vehicles. Annual or multi-year contracts for the maintenance of municipal vehicles are not uncommon. (Some municipalities have gone much further, for example to no longer owning vehicles or mobile plant, but leasing this from the private sector on an exclusive-use basis.)

The local garage or private sector mechanic in a small town that has a contract to manage the vehicles and plant belonging to the municipality based in that town, could see benefit in becoming a franchisee. He could thereby receive, for example, additional technical and business training, assistance with technical issues beyond his current skills levels, and all the other advantages that a relationship with a franchisor can bring.

(xiv) Schools sanitation

Many schools, especially rural schools, do not have staff sufficiently skilled to ensure operation and maintenance of the school water services facilities. Additionally, in many schools these facilities are run down, or do not exist. Even if the services are restored to a satisfactory level, there is a danger that many will soon start to deteriorate again.

Alternatives have been considered, including operation and maintenance by the provincial Department of Education. Given the dispersed location of so many schools, it cannot be a practical solution to attempt to operate and maintain them from a distant depot belonging to the Department. Another alternative considered would be utilising a local contractor, under the supervision of a member of the school's staff. A disadvantage here is often that the staff member is not sufficiently skilled to provide adequate supervision.

Franchising has potential to improve the quality and reliability of the service. External larger water services providers would be the franchisors. They would bring the usual advantages of improving quality and reliability, and transferring skills to local contractors, who would be their franchisees.

Backword

To reiterate the comment made at the introduction to this section: Note that whereas a business based on a single element of the water services delivery value chain might not be viable, an entrepreneur might be able to make a viable business by offering several water-related services, thereby achieving several objectives, principally:

- economy of scale; and
- lessening dependence on one or a limited number of clients.

3.6 The elements selected for modelling

On the basis that:

- the researchers are (with the outside assistance mentioned in Section 3.4) sufficiently familiar with these elements,
- that (on paper at least) the elements appear to present good opportunities for outsourcing to small or micro-enterprises (and it is in each chapter explained why that is thought),
- that the researchers think these elements are among the most suitable for franchising partnerships (and, again, it is in each chapter explained why that is thought), and
- that there is undoubted need to assist WSAs with these services,
- the following three elements are selected from those short listed in Section 3.5 immediately above.

The three discrete elements selected for modelling are as follows:

- caretaker management;
- schools sanitation; and
- pressure control system management.

These three are modelled, one in each of Chapters 5 through 7 that follow.

This selection also represents a useful spread in that one element is of relatively high technology, whereas the other two are low technology, and also between them they would in practice have a mix of local and provincial clients.

4. Modelling format

4.1 The purpose of Chapter 4

The purpose of Chapter 4 is to describe what is meant by "modelling", and then to propose a standard or generic format for modelling.

4.2 What is meant by “modelling”

For the purposes of this report, the term “modelling” refers to a process of limited conceptual testing rather than an actual process of planning and starting a franchise undertaking. This report is simply doing a first-order analysis of selected possibilities for franchising, with a view to deciding in general terms the feasibility of the approach. Its purpose is to establish if there is in respect of each of the selected possibilities firstly a service that needs to be rendered, secondly a business opportunity for an SMME, and thirdly how, if at all, franchising can improve service delivery and financial sustainability, and can reduce the risks.

It is modelling at its simplest and most straightforward, but that is all that is needed at the present time.

A perusal of the substantial literature on modelling suggests that the following are included among the most desirable characteristics of models at the level that this project requires (given the market for the literature, it is not surprising that the language is usually very much that of the private sector):

- They are simple, and confine themselves to broad principles, not detail
- They are replicatable. (i.e. others can follow the thought process and apply it to their own situations, with consistency and comparability of results)
- The assumptions built into them are stated
- They describe how the undertaking expects to provide a service and/or make money;
- They articulate the value proposition (i.e. they indicate how the undertaking fits within a broader value chain. Also how the undertaking offers products (including services) that others perceive to have value)
- They identify the customers/market segment
- They broadly outline how the undertaking fits together, in the sense that they describe, inter alia, how the various activities inter-depend on each other and on external influences
- They describe what is meant to happen, and why
- They describe the capabilities and competencies necessary
- They describe the cost structure and the income structure – especially dimensions, sources, main cost items and their nature (e.g. what causes them to change)
- They must be flexible, and therefore able to be modified readily should circumstances change, such as should input factors change, forecasts not be met, or assumptions be disproved
- They can be drawn up from different points of view, in particular from the point of view of the entrepreneur and from the point of view of the customer.
  (References include http://en.wikipedia.org)

One reference that was consulted set out a basic generic model as a set of questions to be answered. As follows:

- Who pays?
- What for? (e.g. goods, services, expertise, assurances of quality.);
- To whom?; and

- Why?

A business plan, on the other hand, is a much more detailed document, with financial projections and the like. Its purposes would include informing a lending institution of the kind of information that it needs to assess credit worthiness.

All of the above are generic to business modelling, and not specific to modelling a franchising opportunity and indeed, they make no reference to franchising. Nonetheless, they have contributed to informing the modelling format that is set out in Section 4.4.

4.3 Why a generic modelling format

If a different format were to be used for modelling each of the short listed franchising opportunities, this would not facilitate refining and improving the models. Applying broadly the same modelling format to each of the identified franchising opportunities will enable readers of this research report (not to mention the researchers themselves) to follow the logic applied to one and all of the opportunities.

Accordingly, a standard or generic format has been derived, and is described in Section 4.4.

The generic format described in the following section was derived initially from the researchers' brainstorming. The result was compared with the modelling format set out in the FASA franchise manual (FASA 2005) and suggestions made in other documents consulted (e.g. NAMAC 2004, DWAF et al., 2005a and 2005b, and Vodounhessi, 2006), and minor modifications were accordingly made.

Therefore, derived though it might be for the water services sector and for this project, the modelling process in this report is compatible with the well tried and tested process of FASA.

There are seven steps to the generic modelling format described in Section 4.4. They are as follows:

- Step A: High-level introduction.
- Step B: Definition of responsibilities.
- Step C: Information for comparison.
- Step D: Assumptions, risk and mitigation.
- Step E: Financial outline.
- Step F: Model review.
- Step G: Model conclusions.

4.4 The generic modelling format

4.4.1 Introduction

The model must systematically analyse the opportunity that has been identified for provision of a water services element. The reader needs to be constantly reminded how each part of the analysis fits into the whole model.

The model must enable the modellers to determine the viability or otherwise of the opportunity from a theoretical perspective, prior to it even being considered for pilot testing in the field.

In the sense of the opportunity appearing, from the analysis, to be an attractive business proposition, the modelling is also a "business analysis".

For the purposes of this report, there are seven steps that a model (in this instance, a model of the undertaking of an element of water services provision) must progress through. (By "the undertaking" is meant the joint effort of the several parties to provide that element of the water service). Iteration may be necessary (the discussion of Section 3.4.2 refers).

Considerable freedom of emphasis is permitted within each of the seven steps, in order to best to allow for the description and discussion of each model.

Where useful and possible, three alternative institutional approaches to providing the service being discussed in each chapter are set out in such a way as to indicate the advantages that franchising partnerships could bring. (The three alternative approaches being respectively in-house by the municipality, by standalone small or micro-enterprise, and by franchisee small or micro-enterprise.) Thus one or another of them is described, and then the implications of one or both of the other two are described.

For example, in Section 5.5, a comparison is tabled of:

- assumptions, risk and risk mitigation in a non-franchised situation; then of
- how the franchised model could further mitigate the risk.

4.4.2 Step A: High-level introduction

To start with, the model must describe at a high level:

- the service, the need it will fulfil, those whose need it will fulfil (they must be described in terms of numbers, ability to pay for the service, location, etc), why the undertaking will succeed, and the undertaking's short, medium and long-term objectives (and how these will be measured); (i.e. what we do and why we do it);
- the resources required, including finances (capital and operating, not forgetting revenue income and subsidy income, if these are anticipated), and core skills; (i.e. what we use to do it); and
- linkages (e.g. with other stakeholders) and institutional environment, indicating prioritisation (e.g. priority stakeholders), and why.

4.4.3 Step B: Definition of responsibilities

The model must describe what needs to be done, i.e. that for which the party is responsible, by each party (in particular by the franchisees' client (e.g. WSA), franchisee and franchisor). (That is, what each party must do in order to provide the service. But not how they would do it.)

However, it should not for the purposes of this report describe this in detail that is enough for franchisors and franchisees to be able to use this description to accurately cost what is required, were they to apply the model to a particular geographical area. Nevertheless franchisors and franchisees, were they to see this report, must be provided with enough information to understand what is expected, and what resources will be required, and for them to be able to make an order of magnitude estimate of the cost, and to be able to see if what is being described may or may not be an attractive business opportunity. They must also be provided with enough information to understand the assumptions that have been made by those who have described the model.

4.4.4 Step C: Information for comparison

The model must provide sufficient information so that performing this element in a particular area by the proposed method (i.e. franchising) can tentatively (and no degree of accuracy is required) be compared with performing it by another method (e.g. in-house by a WSA). So that the WSA, or

other interested party, could roughly see how franchising compares (in respect of finance, quality of service, employment, or any other criteria) with performing the service by another method.

(Which is not to say that the model must. for example. cost the performance of the element by a range of other institutional alternatives. But it must indicate what information about other alternatives would be needed if a fair comparison were to be made.)

4.4.5 Step D: Assumptions, risk and mitigation

The model must describe its assumptions, and it must indicate probability of that assumption not proving true, and what the resulting risk would be. The model must describe how this risk might be mitigated, and who should be doing this mitigating. If useful to do so, it must indicate how franchising is able to better (or not so well) mitigate risk.

The model must, if this is useful, indicate assumptions with respect to, inter alia, regulatory environment, credit environment (e.g. interest rates), political environment (e.g. with respect to relationships with a WSA client), end user environment (e.g. householders' ability to pay, and willingness to pay, for services charged for), skills levels required, recruitment (and retention) and training of staff.

Obviously, the number of combinations of assumptions is huge. So, for this report, just a few scenarios (of alternatives to the assumptions of D, and the consequences thereof) need to be outlined.

4.4.6 Step E: Financial outline

The model must outline financial implications. It should estimate costs and income for the whole operation for a typical year or costs and income for some identifiable portion of that operation, such as a suburb or costs and income per unit (e.g. per meter read). It does not matter which, so long as comparison of the franchised versus the non-franchised situation can best be made.

Income must include services charges and subsidies. Savings that are the result of the modelled activity, and who they accrue to, must be identified.

The financial outline must address both the start-up period and ongoing operation. It must state assumptions and options, for example, it must identify the cost of capital and options for sourcing of funding.

4.4.7 Step F: Model review

The model need not, for the purposes of this report, address issues such as marketing and business strategy, nor describe key performance indicators (KPIs), management systems, or internal controls.

However, the model would need to express some tentative views on topics such as:

- definition of structure of franchisee and franchisor;
- determination of contract type/s applicable;
- empowerment and BEE development opportunities;
- impact of free basic services;
- support, training, quality control, monitoring; and
- product improvement/development.

On the topic of pricing of services:

- choices of institution are between alternatives, and therefore that franchising might be more expensive to consumers than a strictly public-sector provider should not be a no-no, especially if the franchise provided a superior service, or provided some kind of a reliable service whereas the public sector failed to provide a reliable service; and
- apart from competition in terms of product differentiation (the preceding point), competition in some forms of franchising partnerships could be more direct, e.g. The Drain Surgeon has competition in the form of standalone plumbing firms.

4.4.8 Step G: Model conclusions

Conclusions must be stated with respect to, principally, the ability of the modelled undertaking to deliver the service and at the same time to be sustainable.

Ideally, the following need to be addressed, if not in this section of each chapter, then elsewhere in the chapter on each model:

- Can it be ring fenced?
- How much of the outcome is dependent on the franchisor and franchisee? How much isn't dependent on them, and how can they reduce the risks of something going wrong in what they can't control, and what is the cost of reducing these risks?
- Can it open up a BEE angle?
- Will there be a benefit to the municipality and/or to the consumers, compared to the best alternative way that the service could be rendered, and in particular compared to the municipality providing the service in-house?
  - Also the payoff could be in other than financial terms, for example, in better quality of service, or may be that a community gets a service through franchising that it presently doesn't have at all. Or more reliable, or cheaper, or more labour-intensive, or more friendly to SMME and BEE, or more environmentally friendly, or whatever else;
- Can it be sold as a viable business in the small and micro-enterprise market?
- Will the business be able to attract financiers, and at what cost, and with what conditions?
- What are the key go/no-go decision points, both when starting up the undertaking, and when running it?
- What do funding stakeholders, such as DWAF and the Development Bank of Southern Africa (DBSA), need to be shown in order to get their cooperation?

4.4.9 Iteration

It is not envisaged that modelling of an undertaking will be a process that begins with Step A, completes that step, then moves on to B, ending with G. It is envisaged rather that modelling will be an iterative process, during which issues will be raised in any of the above, and a revisiting of earlier steps will be required.

5. Modelling a sustainable community-level caretaker management business

5.1 The purpose of Chapter 5

The purpose of Chapter 5, like that of Chapters 6 and 7, is to model an element of the water services value chain.

The format for modelling is that set out in Chapter 4.

5.2 Step A: High-level introduction

Broadly

This model proposes a franchised caretaker management structure at community level in disadvantaged urban areas in support of the sustainable provision of water and sanitation services.

Concepts outlined and developed in this model are based on work recently undertaken at the community level in the municipalities of Emfuleni, Mogale City, Johannesburg and eThekwini. This work brought home to the researchers that hard-won improvements in water services reliability and efficiency, achieved at some capital cost in an area with the assistance of an agency external to the area, need to be safeguarded once the agency has moved on. A strategy is needed to ensure the longer term sustainability of achieved results.

The nub of the proposal is that:

- Individuals in possession of basic plumbing and other relevant skills (see more detail at the end of Step A), would be part of the team bringing about these improvements; and "normalising" the management of water services to a beneficiary community; and
- At the end of the improvement phase, or even before that, they would become "caretakers" to a designated district or group of customers. In that role they would be assigned responsibilities relating to the on-going maintenance and repair of on-property plumbing fixtures, and potentially also other duties as agreed upon with the municipality.

As indicated, a phased approach towards the assignment of responsibilities is proposed, with the caretakers only assuming their second phase role once efficient and effective water provision to the beneficiary community has been achieved and the consumers are empowered to assume ownership of consumption and plumbing fixtures on their properties.

Prerequisites for success are that:

- the municipality repairs its own infrastructure (water network) to an acceptable level in the beneficiary area prior to implementation;
- the municipality ensures a reliable service is provided; and thereafter
- the concept of ownership of consumption and on-property fixtures is created in the minds of the consumers.

Also that:

- the municipality is willing, able and supports this unique solution to service delivery involving a specialized franchise approach;
- a Section 78 process is followed, concluded and the necessary approvals gained; and
- agreement is reached between all three parties relating to contractual arrangements and the level of remuneration to be received by the franchisee.

With the above prerequisites in place, a small but meaningful revenue stream can be created for the caretakers, thereby ensuring their long term sustainability.

As part and parcel of this proposal, it would be necessary to appoint a "supervisor" or "implementing agent" to oversee clusters of caretakers and monitor their performance. It would also be necessary to set up discrete bulk-metered water supply districts, consisting of between 300 and 500 residential units, with each of these being assigned to an individual caretaker. Setting up these districts would allow for the measurement and management of the performance of individual caretakers.

Whereas a municipality could oversee and support the work of the caretakers, i.e. be the "supervisor", the proposal reviewed in this chapter is that this be outsourced to a suitable SMME. Better still if that SMME is willing to become a franchisor, the caretakers would then be franchisees. That is also reviewed here.

In more detail

Historically the mindset of ownership of consumption and on-property plumbing fixtures by consumers in the previously disadvantaged urban areas of South Africa has never effectively been conferred on the consumer, and "ownership" remains for the most part a foreign concept. That ownership, and, with it, responsibility for consumption and for the fixtures, has not been conferred, has been for a number of reasons, including the fact that most township properties did not belong to occupiers even up to five years ago.

This lack of ownership, and hence of responsibility, has in turn given rise to water wastage, bad debt, non-payment and a general misconception in the eyes of the consumers as to the quantitative and qualitative value of the service provided, and responsibility therefore.

The result is unsustainable service provision by municipalities.

This state of affairs presents an opportunity to implement a franchised caretaker management structure designed to cost-effectively address these same issues, manage the supply of water (and sanitation) at the community level, and in the medium to longer term to transform householders' perceptions of ultimate responsibility for the service.

The steps in implementing the caretaker management model would be as follows:

The need in the short term is:

- for municipalities to make financial and organisational provision for the caretaker system;
- to establish sectored supply districts and a means to perform a water balance for each of these districts;
- to make the necessary improvements until the municipal water (and sanitation) network in the beneficiary area is (are) in good working order and identified leaks have been repaired;
- to appoint a caretaker for each district;
- to appoint a caretaker supervisor (bearing in mind the franchising option, this could be a franchisor) to oversee between 6 and 10 caretakers;
- to train caretakers in their duties and responsibilities; and

- to inform the community and create awareness of the proposed intervention in the community.

The need in the medium term is:

- to normalize the supply of water (and sanitation) services in the beneficiary community and eliminate on-property wastage;
- to monitor the performance of each caretaker;
- to create remunerative incentives for caretakers, based on their individual performance;
- to establish individual caretakers as franchisees;
- to enhance the management of water supplied to the beneficiary community; and
- to educate individual consumers on all relevant issues pertaining to wet services.

The need in the long term is:

- to create a culture of payment in the beneficiary community for services rendered that are in excess of free basic allocations;
- to create a sustainable revenue stream for the franchisee caretakers;
- to improve efficiency and ensure the cost-effectiveness of service provision;
- based on the success of this pilot, to showcase, replicate and scale up this model in other areas;
- to continuously improve water and sanitation services delivered to the community; and
- to create additional operational and management capacity.

The franchised caretaker option is the most sustainable option when compared to either an option involving standalone SMMEs or an in-house operation performed by the municipality because:

- incentives are created through the award of risk-reward type contracts for the franchisee to create efficiencies, eliminate wastage and thus benefit financially from the exercise;
- obligations are placed on the municipality to maintain the franchised system and thus sustainability is entrenched; and
- the franchisor provides initial and ongoing support to the caretakers, and thus the chances of this initiative being successful in achieving set objectives are increased.

Indeed, it is argued that the caretaker concept would generally not be sustainable unless it is a franchise. Only a franchise arrangement will give:

- **the initial and ongoing support to the caretakers; and**
- **the returns to each that would incentivise all three parties, *viz.* caretaker, franchisor and municipality, to perform, and to continue to perform.**

The franchising partnerships model represents a win-win-win intervention situation for the municipality, the caretaker and the consumer, especially when considering the opportunity to reduce the widespread water wastage prevalent in many communities.

Based on work undertaken in Mogale City, Johannesburg and Emfuleni, it is believed that this model can work in any area where water wastage can be reduced sufficiently so that a minimum of R30 per residential property per month (this figure representing the opportunity cost for the franchise operation without increasing the cost of the service to the end-user or municipality) can be paid to the franchisee. Working on an average of 300 properties per caretaker area, this equates to an operational cost to the municipality of R9 000 per month, to cover the cost of the caretaker and a prorated portion of the cost of the supervisor. This does not include any capital repayment cost associated with the project and more specifically with the installation of individual and bulk water meters and the sectoring and ring-fencing of the supply area for each caretaker. (For more details, see Step E.)

Capital costs associated with meter installation and sectoring of supply zones are estimated at around R600 per connection, or R120 per year, over a five-year period. Including interest this gives a repayment amount of R13 per month and implies that the model can work in any area where savings in water supplied of R43 or more per month are possible.

The saving in water wastage must therefore exceed this benchmark.

It is reasonable that some part of that saving is paid to whoever is made responsible for keeping the infrastructure in a good state, delivering the service reliably, and preventing significant leakage recurring.

But the value to the municipality of the caretakers, and hence their remuneration, should not only depend on the cost of water saved. The caretakers would add value in household education and customer relations, and could also do meter reading and other tasks. Value would further be increased if another result was greater service reliability.

Through the Municipal Infrastructure Grant (MIG) grant it may be possible to fund the capital cost, and through the equitable share it should be possible to fund the operating cost of this model. Thus savings achieved through better water services management can be attributed directly to the municipality.

Contractors could be assigned, or could assume other duties, such as some responsibility for operation and maintenance of municipal infrastructure (i.e. infrastructure not on-property), meter readings, collection of payments for services, and so on. These could make for a more viable business.

A key go/no-go decision point would be acceptance of the caretaker structure by local politicians, municipal trade unions, and the recipient community, including some sort of commitment related to payment for services in excess of free basic allocations and the assuming of ownership of consumption and plumbing fixtures.

It would be necessary for the caretakers to possess basic plumbing skills as well as basic computer skills to maintain and operate a meter database for his/her district. These skills can be imparted to the caretaker through a Sector Education and Training Authority (SETA) accredited technical training institution as well as through a course in basic computer literacy. Such training is inexpensive and represents only a small percentage of the total project cost. Potentially these costs could be covered through the learnership programme of SETA.

Competent management skills in the municipality and at the supervisor/franchisor level are of course necessary, especially while this model is being implemented.

5.3 Step B: Definition of responsibilities

The performance of caretakers is crucial to the success of this initiative and to this end it will be necessary to install bulk and customer meters on the water supply pipeline to each district and the individual water connections to each property respectively.

Based on certain assumptions around the volume of water used by a household per month, including assumptions around acceptable levels of non-revenue water (NRW) for a district of say 300 residential units, it would be possible to determine an acceptable theoretical volume of water (or a quota) to be delivered to that specific district (or block) in any supply month. This theoretical volume could then be compared to the actual volume of water supplied to that specific district, and either a deficit or credit relating to water supplied for the month in question determined.

Remuneration to each caretaker can be based on a two-tier system, with the first tier representing a basic salary, payable subject to acceptable overall performance and containment of water supply to an acceptable level. In this case the theoretical volume of water to be supplied to the block in question (or allocated quota).

The second tier of remuneration would be a prorated amount, based on a reduction in the actual volume of water supplied when compared to the quota given to that specific caretaker. The purpose of this second tier would be to ensure that the caretakers remain incentivised and apply diligence in reducing potential water wastage in their assigned area or block of dwellings as well as ensure that consumers are taking responsibility for consumption and plumbing fixtures.

This second tier in essence represents a shared savings approach to the remuneration of caretakers and allows for sufficient payment to be made to cover all expenses that may be incurred by the caretaker in maintaining private property plumbing fixtures.

Overall as a benchmark and assumption, remuneration of individual caretakers is not expected to exceed R6000 per month.

The implementation of a community-based caretaker system is a management intensive exercise. In the setting out, below, of responsibilities, an approach is taken that delegates maximum responsibility to the supervisor, with the municipality only monitoring overall performance. This approach is based on the assumption that municipalities generally lack capacity and that the private sector can, if given sufficient incentive, provide the experienced level of project management which is sought. The assumption is also made that the private sector is more cost-effective in providing the required services than a municipality.

Responsibilities that the municipality would need to assume in implementing this project include:

- procurement of capital required for the implementation of technical measures associated with the project;
- the sectoring and establishment of each of the caretaker supply districts including ensuring discreteness of each district;
- the installation of district meters to each district including the reading on a regular basis of these meters;
- the installation of individual meters to each consumer in the project area;
- ensuring political support of the project;
- maintaining a customer service centre; and
- ensuring that a toll free telephone number is available for customers to call in the event of disputes.

Responsibilities that the supervisor would need to assume in implementing this project include:

- project managing and co-ordinating implementation of this project;
- selecting, recruiting and appointing caretakers and supervisors;
- providing training and support to the caretakers especially upfront during the first few months of operation;
- providing and equipping an office for administrative support to the caretakers;
- providing the caretakers with training material relating to education and awareness of the community;
- providing back-office support to the caretakers;
- establishing the caretakers as SMMEs and opening up bank accounts for each;
- resolution of disputes relating to any interaction between the caretaker and the customer; and
- monthly verification of water supplied to each caretaker district and calculation of the payment owing to each caretaker.

Whereas the supervisor could be the municipality, the researchers consider that this task is best outsourced to a SMME. Best of all, that the supervisor be a franchisor, and the caretakers be franchisees.

Responsibilities assigned to the caretakers include:

- monitoring and, if needs be, managing the consumption of individual consumers;
- monitoring the municipal water (and sanitation) network for visible bursts and leakages;
- regularly inspecting the network and connections for possible illegal connections;
- maintaining on-property fixtures to avoid water wastage; and
- generally educating and informing consumers about water (and sanitation) issues.

Optional additional duties could include:

- inspecting and reading individual water meters if installed;
- collecting revenue for services delivered;
- undertaking an education campaign in the beneficiary community; and if needs be
- enforcing disconnections (and reconnecting) in the event of continued By-Law violation.

It is envisaged that a service level agreement with clearly defined roles, responsibilities, risk allocation and tasks to be performed would be signed between the municipality and the caretakers. If the supervisor is playing a management contractor role, then there would be a contract between him and the municipality, and another between him and each caretaker. However, if the arrangement was a franchised one, then the contracts would be:

- directly between the municipality and each caretaker; and
- a franchise agreement (for support, etc, in exchange for royalty, etc. fees) between the franchisor supervisor and each caretaker.

5.4 Step C: Information for comparison

Whereas both the SMME caretaker model and a customer service agent model undertaken in-house by a municipality with in-house employees, are designed to create efficiencies and eliminate water wastage, so that significant savings can be accrued to the municipality, the caretaker model will be more efficient for the following reasons:

- caretakers are given a discrete area with established boundaries;
- caretakers are incentivised through the two tier remuneration system to achieve their water savings quota for any particular month;
- caretakers are assigned definite responsibilities, risk is allocated and performance can be monitored and measured;
- caretakers are set up as SMMEs and therefore operate as a business;
- caretakers can see a career path;
- because caretakers are selected from the beneficiary community, they are relationally closer to the end-user than municipal employees;
- caretakers are forced to view their beneficiaries as customers rather than consumers and hence a stronger service provision ethic and relationship can be created at the customer level; and
- both the municipality and the customer are obliged to recognise the value of the service provided, with the result that the system will be more sustainable in the long term.

When comparing the franchised SMME caretaker model to a standalone SMME caretaker model, the franchised model will for the following reasons be more efficient and effective:

- franchised caretakers are provided with ongoing training and support by the franchisor, who has a stake in ensuring that their performance is up to scratch;
- the franchisor plays a critical role relating to facilitation, dispute resolution and support;

- the franchisor ensures that risk and responsibility are better assigned and allocated to the franchisees; and
- a greater qualitative and quantitative business opportunity is presented to the caretaker when compared to a standalone SMME approach.

5.5 Step D: Assumptions, risk and mitigation

The assumptions listed in Table 5.1 on the following pages are made regarding the implementation of a community based non-franchised caretaker management structure for water. The risk of each is indicated. Only in the last column is franchising introduced. In all other columns, where there is reference to a supervisor, that supervisor is not a franchisor.

Where franchising can further reduce the risk, sometimes through the intrinsic nature of franchising, and sometimes through the assistance of the franchisor, is indicated in the last column.

In addition, whereas the credibility of the caretakers will so much depend on the quality of the service they provide, the help from a franchisor will, inter alia, by raising their standards and improving their procedures, reduce risk of quality failure.

It is considered that the greatest risks to the success of the project relate to the technical and political assumptions taken above.

The ultimate aim of transferring ownership of consumption and plumbing fixtures to the customer is not an easy call due to the many risks associated with such an initiative. It is argued though that this is achievable through the implementation of the franchised model outlined in this chapter.

5.6 Step E: Financial outline

Capital costs associated with this project relate mainly to meter installation and sectoring of supply zones. The cost to provide each residential unit with a water meter is estimated at R370 and the estimated cost to establish supply districts, meter water supply to each district and ensure discreteness is conservatively estimated at R100 000 per district (or R330 per dwelling unit).

One-off capital costs per residential unit are therefore estimated at R600. Capital repayments per month per residential unit amount to around R13 (at an interest rate of 10%), equivalent to a total repayment amount of R780 per residential unit over a five year period.

Due to the nature of this initiative and objectives related to employment and poverty alleviation, it is proposed that capital be provided by the municipality (perhaps through MIG funding) and that the municipality assume direct responsibility for the technical aspects related to implementation such as meter installation and sectoring of districts.

Operational costs associated with this initiative are estimated at around R30 per residential unit per month. This cost equates to R9000 per district per month, which includes an amount of R6000 as maximum remuneration for the caretaker per month as well as an amount of R1000 as remuneration towards the supervisor appointed to supervise the caretakers. The remaining funds can be used by the caretaker to purchase and repair plumbing fixtures. It is considered that motorized transport for the caretaker is unnecessary as the district consisting of around 300 properties can easily be walked in a day by the caretaker (the benchmark used for a meter reader is 300 properties per day).

Table 5.1: Caretaker management model – assumptions, risk and mitigation

Dimension	Assumption	Level of risk if assumption is not valid	In the SMME non-franchised situation, how risk can be mitigated	Who in the non-franchised situation (for purposes of illustration, a supervisor) has to attempt to mitigate the risk	How the franchised model could mitigate the risk further, compared to the SMME non-franchised situation
Selectively	Beneficiary area is a previously disadvantaged area.	Low level of risk that model will not achieve desired outcomes.	Beneficiary area to be chosen according to stated assumption.	Municipality	
	Beneficiary area is a formal residential area with Freehold Land Ownership and Title.	Low level of risk that beneficiaries will not take responsibility for plumbing fixtures and for consumption	Beneficiary area to be chosen according to stated assumption.	Municipality	
	Beneficiary area has individual water (and sanitation) connections to each formal dwelling unit.	Low level of risk that model cannot be successfully implemented	Beneficiary area to be chosen according to stated assumption	Municipality	
Consumptively	Beneficiary area has a minimum level of water wastage averaging at least 10 kl per property per month.	High level of risk that model is based on an opportunity cost related to the level of wastage	Supply data and meter reading data related to the beneficiary area to be made available	Municipality	Franchisor provides technical help to further reduce wastage
Technically	Beneficiary area has been properly metered and discreteness established. ("Discrete" in the sense of "clear identification".)	High level of risk that model cannot be implemented and incentive for caretakers cannot be created.	Undertake proper district metering and ring-fencing exercise.	Municipality	Franchisor assists with technical help to ensure discreteness
	The supply cost per kilolitre of water supplied is established.	Low level of risk that cost-benefit cannot be established and caretaker remuneration calculated.	Supply cost per kilolitre to be established upfront	Municipality	Franchisor independently (of the municipality) checks the municipality's costing
	The only capital cost associated with the project is that relating to metering.	Medium level of risk that cost-benefit could be much higher than estimated, making the initiative unsustainable from a financial point of view.	Beneficiary area to be chosen in accordance with minimal capital needs	Municipality	Franchisor independently (of the municipality) checks the municipality's costing
Institutionally	The municipality is willing and able to implement this type of project.	High level of risk that buy-in from municipal officials will not be obtained.	An established relationship with a capacitated municipality must exist	Supervisor	Franchisor helps to "sell" the project to municipality
	A database of customers in the beneficiary area should be available.	High level of risk that the long-term objectives of the project will not be attained.	Database of beneficiary area to be established prior to implementation.	Supervisor, with municipality	Franchisor assists municipality to create and maintain this database

Dimension	Assumption	Level of risk if assumption is not valid	In the SMME non-franchised situation, how risk can be mitigated	Who in the non-franchised situation (for purposes of illustration, a supervisor) has to attempt to mitigate the risk	How the franchised model could mitigate the risk further, compared to the SMME non-franchised situation
Politically	Political support for initiative is obtained.	High level of risk that project will not succeed in obtaining stated objectives.	Political endorsement of initiative obtained prior to implementation.	Supervisor, with municipality	Franchisor helps to "sell" the project to municipality
	The beneficiary community is supportive of the initiative	High level of risk that project will not succeed in obtaining stated objectives.	Community endorsement of initiative obtained prior to implementation.	Municipality and caretaker	The franchised model is better aligned to community concerns such as job creation
Financially	Consumers can afford to pay for additional services, such as plumbing improvements.	Medium level of risk that project will not succeed in obtaining stated long-term objectives.	An assessment of the socio-economic standing of the beneficiary community is made prior to implementation.	Municipality, with supervisor	Franchisor can assist with its knowledge of least-cost alternatives
	Ownership of consumption and plumbing fixtures taken by customers in the long-term	High level of risk that project will not succeed in obtaining stated long-term objectives.	Project to be properly implemented.	Municipality, with supervisor	Greater onus and level of commitment required from the consumers with the franchised option.
	The municipality will honour all agreements, and will make payments in full and on time	High level of risk that municipality will not honour. This will threaten the viability of caretakers. (See end of Step E.)	(There won't be very much that a standalone caretaker could do about this.)	Supervisor	The greater (compared to standalone caretakers) muscle of the franchisor will be brought to bear on the municipality
Skills and quality	Caretakers are adequately skilled to start with, and/or learn on the job	Medium level of risk that caretakers will be unable to deliver the expected benefits to service provision	Caretakers are adequately skilled and trained	Municipality (in respect of selection of supervisor and caretakers). Supervisor (in respect of training).	Franchisor takes responsibility for selection and training of caretakers, and for their ongoing skills development. Franchisor also takes responsibility for monitoring of quality, and for rectification of quality problems.

As noted in Step A, this cost of R30 should be paid by the municipality, as it is at present the norm in respect of the areas where the caretaker concept would be applied. (i.e. where the households are either indigent and thus the recipients of free basic water, or they are unwilling or unable to pay for water in excess of free basic applications (or are unwilling to pay if their on-property plumbing fixtures have not been repaired).

Also as pointed out in Step A, it is reasonable that some part of that saving is paid to whoever is made responsible for keeping the infrastructure in a good state , delivering the service reliably, and preventing significant leakage recurring.

Through the MIG grant and equitable share it may be possible to fund both the capital and operating cost of this model and thus savings achieved through implementation and revenue collection can be attributed directly to the municipality or used to supplement remuneration from the consumers.

As indicated in Step B, most of the required remuneration of the caretakers (both first and second tier remuneration) can realistically flow from savings achieved through the upfront elimination of wastage of potable water, especially wastage relating to leaks occurring beyond the domestic meter (or on the private property). It may or may not at present be the case that customers are billed for this wastage. Either way, due to non-payment, the outstanding amounts default back to the municipality. This situation creates the opportunity to implement a SMME caretaker model, with the municipality remunerating the caretakers from savings achieved as a result of intervention, including interventions on the private properties on behalf of the consumer. The caretakers would keep the system in a good state of repair, because an incentive exists in terms of the "second tier" of their remuneration to control and minimize wastage.

Ultimately though the intention is that through the metering and revenue collection process, the consumer should take ownership of consumption and fixtures, and be charged according to metered consumption for any consumption above free basic water allocations.

Some actual, if very approximate, figures might suffice to demonstrate the order of financial savings that could accrue, firstly, from once-off improvement to the water services infrastructure of a residential township that to all intents and purposes has not been maintained for more than four decades, and, secondly, from the ongoing management and maintenance that could be provided by the proposed caretaker system. In these savings lie opportunities for viable businesses.

The example chosen is Sebokeng, located in the Emfuleni Local Municipal area in southern Gauteng. The bulk cost of water supplied to this township, as paid by the municipality to Rand Water, was until recently approximately R 130 million per annum, most of it going to waste. Since the introduction of a bulk pressure management scheme, this has dropped to around R 90 million. It is estimated that R 50 million of that is still wastage. In other words, the cost of water should be around R 40 million per annum. The municipality is still getting almost zero revenue from householders. This situation needs to be "normalised", in other words leaks (whether municipal water or on private property) need to be fixed, and, subsequently households that should be paying the set tariffs actually begin paying for services delivered.

If the infrastructure was repaired, and wastage cut as far as would be financially justifiable to do so, the bulk cost of water would drop to around the R 40 million figure mentioned above. At the household level, this would be a cut from a broad average current consumption of the order of 50 kl per month, to something more like 15 kl per month, a saving of the order of R 100 per month per household. (Given that households are presently not paying, that is a saving accrued to the municipality.) The primary function of the caretakers would then be to maintain this more normalized situation.

Were the households paying for their water, then they would want the caretakers to keep the on-property plumbing system in a good state of repair. But if they weren't paying for their water, including the situation where they are receiving free basic water sufficient for most of their needs, would they care if the plumbing system, so recently fixed, started up to leak again? More to the point, would they care sufficiently to take steps to repair, and be able to afford the services of a person qualified to perform the repair? Perhaps they would not immediately, but with a little coercing from the caretakers, this problem could probably be overcome in the medium term.

Currently, however, given the current payment regime in Sebokeng, and that the prime beneficiary of the infrastructure being repaired is the municipality (by default only and not because they desire to be in this position), the primary beneficiary of infrastructure being kept in a good state is again the municipality. It is therefore the municipality that should pay the caretakers to keep the on-property plumbing system in a good state. Alternatively, the municipality should be the guarantor of payment to the caretakers. Were the infrastructure condition to be allowed to deteriorate, it would undoubtedly be the municipality that would have to pay for the water wasted. This is not an ideal situation, and the caretaker proposal aims to ultimately change the situation to that of one where responsibility resides with the consumer.

Putting it crudely, if the infrastructure were fixed, what is it worth to the municipality to keep it that way? Consideration of that point should help determine the remuneration of the caretakers. The savings made should, however be shared, for example, not all the savings should go to the caretakers, as this would then not be a win for the municipality.

Thus in the envisaged model the municipality would be paying the caretakers a basic fee to keep the on-property plumbing system in a good state, or (less likely) would be guaranteeing the payment by the householders. (This is the "two-tier" fee described in Step B.)

The viability of the caretakers business could well, however, not solely depend on this basic fee. The caretakers could do other jobs (e.g. installing plumbing in houses), getting paid for it by the householders as a strictly private transaction. They could perform routine tasks on the municipal water services infrastructure. They could also subcontract their skills to building contractors. Another possibility is that they could read meters, and yet another is that they could collect revenue on behalf of the municipality, and/or sell cards for prepaid meters. There are other possibilities.

A risk is that the municipality reneges on agreements. Once the initial fixing up of infrastructure has taken place, would the municipality have strong enough incentive to pay to keep it fixed up? Despite any agreements that might be in place, a short-term view might be why should the municipality pay to prevent something happening?

That is admittedly a high risk. A cash-strapped municipality, wanting to make short-term economies, might decide to stop paying and say "we'll worry about infrastructure deterioration when it happens". That suppliers, and especially that small-scale suppliers are heavily dependent, on the vagaries of the financial state of their municipal clients, is a common problem. (This topic is discussed at some length in Chapter 6 of WRC Report TT 432/2/10)

A standalone caretaker would be powerless were this to happen, and would go under. A franchisor has more, albeit limited, clout, as noted in Report TT 432/2/10, in Section 4.5.2 (the story of the SSA using its influence to ensure that the SMME would be paid) and elsewhere.

5.7 Step F: Model review

Even though water is delivered within a monopolistic environment, it is believed that sufficient checks and balances in the form of political structures, management structures, signed contracts and appointed supervisor/s are in place to ensure that the risk of collusion, corruption, and

exploitation are minimized. In addition, charges, if any, levied by the municipality would be according to a promulgated tariff structure and therefore the cost of the service rendered is sufficiently regulated. It would be necessary to provide a toll free number to customers (indicating that they can report misconduct and irregularities) should the need arise. This responsibility should be that of the municipality.

The franchised caretaker proposal is aimed at empowering previously disadvantaged individuals and providing sustainable business development opportunities. This can only be achieved through much initial handholding and by lowering the barriers to entry for these individuals, whilst not sacrificing quality or end objectives.

Because the franchised caretaker proposal is not aimed at increasing the level of revenue generated for the municipality, but rather at reducing wastage, and thereby saving significant cost to the municipality's bulk water bill, the presence or absence of free basic water has no influence on its cost-effectiveness.

In terms of training it is proposed that one of the responsibilities assigned to the caretakers should be the repair/replacement of plumbing fixtures on private properties in the event of failure (as an incentive exists for the caretaker to minimize wastage and gain a performance bonus this should be an easily transferable responsibility). Caretakers should therefore receive formal training from an accredited plumbing institution related to plumbing installations. Although the franchisor would provide training, particularly on-the-job training, formal accredited training of caretakers in plumbing installations is deemed necessary, especially considering the long term objectives of this exercise. In addition, consideration can be given to placing the caretakers on a career path towards full plumbing accreditation and qualification.

Some form of back-office support would be required to assist caretakers with administrative functions including tax and VAT issues, database maintenance, meter reading information, invoicing and payments, etc. This would require the appointment of an administrative assistant and the provision and equipping of an office by the municipality in the beneficiary community.

Each caretaker should have access (with training) in the office to a computer/database for customers in his/her district, including access to a householder database. This would allow for the collection and generation of useful data (exception reports) and allow for the management of supply to individual customers.

While the franchisor would assist franchisee caretakers as described, responsibility for monitoring their performance and holding them accountable for the execution of their duties and responsibilities lies with their client, the municipalities. This might or might not be different to the non-franchised model. However, the supervisor in this model would probably be a management contractor of some sort, and thus the municipality is his client, and the municipality is not the client of the caretakers. However, in the franchise model, the municipality could contract the franchisors for assistance if it so wished.

As it would be necessary to undergo a selection process when recruiting the caretakers, gender equality and the employment of women could be set as an additional objective of this process. As an integral part of this project it is also proposed that the caretaker candidates undergo approved training in basic plumbing skills prior to appointment, in order to equip them for their roles and responsibilities. The caretakers should also be equipped with promotional material and instructed on educating consumers about proper water use.

5.8 Step G: Model conclusions

The franchised caretaker model described above is a viable option for addressing many of the service delivery difficulties experienced by municipalities in providing services to former 'townships' consisting of formal properties with individual metered water connections and waterborne sanitation.

This conclusion is reached based on the notion that service delivery in these areas has never been properly institutionalized (in terms of management structures, allocation of resources, creation of capacity, institution of systems and processes) for various reasons including past restrictive political policies.

Even with the post-1994 political dispensation, municipalities are preoccupied and swamped with many other issues. To make matters worse, the unsustainable service delivery practices in many of these areas places municipalities in an even weaker position to overcome difficulties and provide meaningful interventions.

Many of the problems experienced in the previously disadvantaged areas as well as the present-day characteristics of these same areas have given rise to unprecedented wastage of potable water supplied by the municipality. The cost associated with this wastage is ultimately borne by the municipality, which remains liable for the payment to the bulk supplier for the water received from it. "Wastage" is usually due to one or more of the following:

- *insufficient maintenance* over an extended period of time of municipal water supply infrastructure;
- a *lack of ownership of properties* afforded to residents and therefore a *resulting lack of ownership of private plumbing fixtures* by residents due to past political policies;
- a *lack of ownership of consumption* due to continued non-payment for water services by consumers (high leakage rates and entrenched non-payment are inexorably linked);
- a *lack of domestic metering* by the municipality of residential properties;
- a *lack of capacity and trained staff in municipal water utilities* (including a scarcity of project managers and engineers);
- the widespread *use of poor quality plumbing fixtures* in previously disadvantaged areas with an accompanying high level of failure of these fixtures (in particular the *toilet cistern and internal mechanism* tends to be the major cause of wastage);
- the culture of non-payment, and an attitude (on the part of consumers) that wasting water carries no financial penalty or social stigma;
- a *lack of municipal or water utility programmes* and systems to address these same issues; and
- the *'detached' status of the toilet* and toilet structure on these properties which historically was located separate from the house in the backyard;

Drastic intervention is required to address this mismatch including the application of innovative solutions such as the implementation of a franchised caretaker model in appropriate communities.

The franchised caretaker model is considered the most appropriate model to implement in these communities in addressing these issues because:

- the franchised option taps into the resources of the private sector;
- the franchised model is a proven value-adding component in the supply chain of many end-user service provider type businesses and can easily be adapted to water supply;
- the franchised model can create the required efficiencies and sustainability of service delivery;

- the franchised model clearly delineates responsibilities of and between all parties and thus correctly creates obligation and onus amongst all role-players including the municipality and the customer;
- the franchised model represents the shortest path to ownership and revenue collection for services rendered;
- the franchised option correctly views end-users as customers and not just consumers;
- the franchised option accommodates the objectives and mandate provided by the government of the day.

It is also concluded that because this model is aimed at improving management and creating custodianship for services and service delivery, services can be improved over time and a better and more affordable service attained in the longer run.

6. Modelling a sustainable schools sanitation business

6.1 The purpose of Chapter 6

The purpose of Chapter 6 is to model another of the elements of the water services value chain.

The modelling in this chapter is of an innovative approach to resolve a serious sanitation problem in the Eastern Cape. Note that this is not a model of a hypothetical instance, but a simplified first draft outline modelling of a currently proposed innovative approach to resolve a serious sanitation problem in the Eastern Cape.

The format for modelling is that set out in Chapter 4.

6.2 Step A: High-level introduction

6.2.1 Eastern Cape current context

The sustainable schools sanitation programme described in this chapter was conceptualised by the current researchers following studies which revealed that the sanitation facilities of majority of schools in the Eastern Cape province are below the minimum standard.

Table 6.1: State of sanitation in Eastern Cape schools

Sanitation system	No of Schools.	Comments
Waterborne / flush	1108	Many toilets are blocked and leaking
Flush to septic tank	62	
Flush to pond/plant	134	
Ventilated Improved Pit	1619	High percentage of pit latrines are full
Pit latrines	2511	55% of schools do not meet basic standards
Bucket	27	
Other	69	
None	887	
Total schools in province	6417	

An analysis of the management capacity of the provincial Department of Education (DoE), and the schools themselves, revealed that the schools not meeting the minimum standard were not able to refurbish, upgrade or carry out the basic operations and maintenance related to their sanitation facilities. Thus:

- whereas schools themselves (more accurately, School Governing Bodies (SGBs) and headmasters) are responsible for the maintenance function, the majority of them are not equipped to undertake this task; and
- assuming the responsibility at the provincial level would result in prohibitively high costs.

Clearly this is an unacceptable situation, not least because schools sanitation should be setting the example. For example, it would be intolerable if in a village the sanitation facilities at the school were inferior to those in private homes.

The DoE during 2006 resolved to appoint a Project Implementation Agent (PIA) to set up suitable arrangements to undertake the schools sanitation refurbishment, repairs and operation and maintenance programmes, and in particular to involve the private sector. Amatola Water has been appointed as the Department's PIA, and in turn appointed a firm of consulting engineers as project managers. The first phase of this programme involves Amatola Water focussing on an initial 2-year programme which included the following sub-components:

- assessment of the existing schools water and sanitation facilities for the designated education districts;
- the refurbishment of existing water and sanitation facilities at schools, and the construction of new facilities; and
- the piloting of an SMME training programme for operation and maintenance of the water and sanitation facilities.

The PIA is currently setting up arrangements for the training and directing of CBOs and SMMEs. Once the refurbishment programme is complete, these will individually be appointed by the DoE to operate and maintain the sanitation facilities in schools. Each CBO or SMME will be appointed as the operations and maintenance service provider for the schools within a designated area. It is anticipated that each will be responsible for of the order of 50 schools. It is possible that 60 such CBOs or SMMEs may be required to service approximately 3000 rural and peri-urban schools on an ongoing basis.

The duties of each CBO and SMME service provider will be:

- refurbishment – minor upgrade and repairs;
- maintenance – routine maintenance for facilities;
- operations – pit emptying, treatment and process management;
- health and hygiene (H&H) awareness; and
- other – basic plumbing services.

Major refurbishment would be done under separate contracts. Existing toilet facilities would be brought up to the agreed minimum structural and hygienic standards.

As far as the CBO and SMME service providers are concerned, inter alia:

- They would be responsible for minor structural refurbishment, including replacement of doors, windows and plumbing
- Routine maintenance includes a monthly routine visit to each school to undertake cleaning, minor repairs, process inspection and reporting
- Routine pit emptying would be undertaken on a planned basis as required for each facility. It is estimated that a typical facility with a conservancy / septic tank design will require emptying once every year. Pits will also require regular emptying, and, depending on the usage volumes and technology choices, this could also be as often as every year.

The appointed service providers should have the necessary plant, equipment and trained staff to provide the ongoing services for these schools on a routine and call-out basis. They should also have access when needed to the expertise and equipment necessary for non-routine specialised and/or intermittent tasks, such as emergency pit/tank emptying, the removal and disposal of waste, and servicing of electro-mechanical equipment.

6.2.2 The franchise alternative

A franchising partnerships alternative has been proposed for consideration. Amatola Water and the DoE have not yet decided on their preferred arrangement. It could be that the franchising alternative is not accepted.

However, for the purposes of the current report, a franchised schools sanitation model has been formulated and is presented in this chapter.

It is argued that the franchising concept would be superior, not only to the current operation and maintenance by the DoE and the individual schools, but also to the standalone SMME (or CBO), even given the level of PIA support that is described in Section 6.2.1 above.

A franchise arrangement would be the best to:

- give the initial and ongoing support to the small service providers (whether they are SMMEs or CBOs); and
- give the financial returns, and returns in terms of improved service, that would incentivise all the parties, *viz.* the DoE and its agents, the PIA, the franchisor (if there is one) and the small service providers, to perform, and to continue to perform.

Indeed it is argued that the outsourced franchised model is the model that addresses, far better than any alternative does, the need for sustainable schools sanitation in the long term. Primarily, this is because:

- **Responsibility is uniquely shared between franchisor and franchisee. Both franchisor and franchisee are strongly incentivised not only to perform in their own right, but also to assist each other to perform.**
- **Compared to standalone CBOs or SMMEs, or to in-house management by the school or by DoE, a franchisor is much the best placed to provide the expertise that is required in this specialised area.**

6.3 Step B: Definition of responsibilities

The principal stakeholders, franchising option or not, are:

Table 6.2: Stakeholder roles and responsibilities

Stakeholder	Role and responsibility
Water Services Provider (i.e. municipality or other external WSP)	Provision of municipal water and sanitation services to DoE, i.e. to the boundaries of school properties
Provincial Department of Education (DoE)	Employer – Appoints Provincial Sanitation Manager who is the Employer's Representative. District Inspectors of the DoE have an ongoing responsibility for schools inspection.
DWAF and national Department of Environmental Affairs and Tourism (DEAT)	Regulation Water resource management Environmental authorisation and monitoring
School (Headmaster and School Governing Body)	Acts as local Client and on behalf of DoE for matters relating directly to the individual requirements for each school.
SMME	Contractor – provider of sanitation services to schools

Parent Teacher Association	Dissemination of Health and Hygiene information Special fundraising activities for facility improvement etc.
Learners	Users of toilet facilities Beneficiaries of the Health and Hygiene awareness activities

As the services provided by the SMME are fairly routine and manual in character, it is anticipated that each SMME would be based in and would operate within the area where its designated schools are situated.

Most SMMEs would need to be directly employed and supervised by the established service provider company until such time as they had gained the necessary basic skills to operate more independently. They would at that point cease to be subcontractors, and would become franchisees, while the established company would become their franchisors.

Over time these SMMEs, when ready, would be able to assume greater responsibility and would be able to develop their own asset and skills base located in the area they serve.

It is anticipated that a typical SMME would have the following staff, plant and equipment:

- a small store and workshop, along with a simple office and telephone / fax facility;
- owner / manager, who would also be responsible for the day-to-day management of the business, and the direction and oversight of the sanitation servicing team/s;
- two sanitation teams each with a light delivery vehicle (LDV) equipped with basic safety clothing, tools and equipment. Other labour from the local communities will be employed for labour-intensive work; and
- storeman/office clerk responsible for procurement and management of plant and equipment, tools, as well as the spares and materials necessary for servicing the school toilet facilities.

The SMME would hire the following when needed:

- special equipment, including slurry and diaphragm pumps, pressure jets, water tankers and sludge tankers etc;
- specialised technical expertise; and
- specialised cleaning teams (“Frogs”) which are equipped with breathing and safety suits to enter pits to undertake specialised cleaning.

6.4 Step C: Information for comparison

A franchising partnership arrangement, whereby the franchisee SMMEs are associated with a franchisor, would provide additional benefits, through enabling the SMMEs to provide improved services. This includes provision by the franchisor to the franchisee of:

- training and recruiting;
- quality assurance systems and audits;
- improved safety systems and procedures;
- administration systems and support;
- access to specialised plant and equipment (e.g. Mini-excavators (“Bobcats”), tractor-loader-backactors, specialised pumps, vacuum tankers etc.);
- specialised cleaning and maintenance support teams (“Frog teams”);
- process advice;
- management assistance and advice;
- legal and contractual support for the SMME; and

- helping franchisee SMMEs to get loans (for the usual reason that lenders prefer franchisee SMMEs to standalone SMMEs, everything else being equal).

The current PIA brief is structured as a short-term project for the re-establishment of the water services to the schools. However, this arrangement would in the medium-term be better replaced by a more sustainable arrangement whereby the schools would themselves manage their water services through having direct access to their service providers (the SMMEs), which in turn would be supported through the franchising arrangement. Replacing the PIA approach with a franchised approach would empower the schools to undertake their responsibilities in managing their facilities as delegated through the DoE to the School Governing Bodies.

The franchisor would need to be an organisation with suitable expertise and resources including:

- technical know-how relating to the construction and process elements of schools sanitation;
- capability to mobilise loans or capital to enable the franchisee has the necessary support in raising and managing working capital;
- access to the required specialised plant and equipment;
- administrative and contractual capability;
- knowledge of the water services sector and environmental legislation and procedures;
- knowledge of the public sector procedures, in particular procurement and supply chain management;
- an establishment in and a working knowledge of the geographic areas required for coverage by the programme;
- an ability to support the franchisees in their training and development;
- capability to manage Health and Hygiene awareness and training programmes;
- ability to implement Quality Assurance and Occupational Health and Safety; and
- suitable ownership and structure to be able to meet the broad-based black economic empowerment (BBBEE) criteria of the South African public sector clients.

Should the DoE structure such a framework for procuring schools sanitation services, it is anticipated there will be sufficient interest from existing private sector organisations to undertake the franchisor role and provide the capacity needed to support the SMME franchisees. Providing institutional sanitation services is a specialised business. Thus if clients (e.g. DoE, Public Works, Department of Health, etc.) were to call for expressions of interest from service providers which are linked to franchised business models, it is probable that established companies already working in the water services sector would form commercial entities with the resources and structure suitable to act as franchisors.

All references in Sections 6.4 through 6.6 of this chapter to "SMME" should be construed as "SMME franchisee" unless otherwise stated.

6.5 Step D: Assumptions, risk and mitigation

Risks to be considered include:

- the capacity of the clients to provide the necessary leadership and direction, and to manage their side of the contracts;
- political stability, particularly within the local political situation; and
- crime and particularly the stability of the community and school children with respect to civil obedience and behaviour.

However, the highest risk of all is the risk that the clients (the DoE or the schools, depending who has the responsibility and budget, and how the contracts are structured) will not pay on time, or will not pay at all. With a schools sanitation contract probably representing the main income source for

a SMME, or possibly even its sole income source, even late payment could jeopardise its financial viability.

This payment risk would need to be substantially reduced through ensuring that good contracts and systems are implemented. That would be necessary irrespective of the presence or absence of franchising. However:

- a franchisor would have the incentive to ensure that contract arrangements were fair and equitable; and
- in addition, the franchisor could assist the franchisee by engaging with the Department on behalf of the franchisee, should there be problems relating to timeous payment.

Assessed operational risks, together with mitigating measures include:

- Day-to-day risks can which can be adequately insured against include:
  - Accidents and Injury to staff and third parties.
  - Theft (vehicles, equipment and material etc.)
  - Professional Indemnity (for design activities)
- Financial risks include:
  - The ability in the contract to accommodate fluctuation in the interest rates and inflation.
  - Cash flows, which will need to be properly managed through ongoing budgeting, monthly reviews of debtors and the proper planning of the cash management of the SMME businesses.
  - Bad debts due to the financial instability of clients, poor administration or unwillingness of client to honour their contractual obligations.
  - The risk of the business being unprofitable due to poor pricing, insufficient work or excessive costs.
- Environmental risks will need to be mitigated through agreeing procedures with the relevant Government Departments (including Water Affairs and Environment). These include:
  - Disposal of waste.
  - Ground water pollution.
  - Land use.
- Safety risks will need to be managed through the adoption and implementation of clear safety plans. Safety risks include:
  - Risk to personnel through working with plant and machinery.
  - Health risk to personnel working with potentially hazardous waste, gasses and viruses etc.
  - Normal safety risks related to excavation, scaffolding etc.
- The impact on the business by external parties such as trade unions, civic associations and competing business must be adequately assessed.

The franchisor would, by reason of its knowledge of the business and its greater resources, and also simply by virtue of economies of scale, be able to assist the franchisee in respect of all of the above. For two examples only:

- Standalone SMMEs generally lack the financial management capacity to adequately manage financial risks. When however they are part of a franchising arrangement, the franchisor can provide the necessary information and assistance.
- Safety risks will need to be managed through the adoption and implementation of clear safety plans. SMME franchisees will be required to adopt the safety and health procedures of the franchisor, and will be subjected to regular safety audits by the franchisor. This would in turn give greater assurance to clients who under the Occupational Health and Safety Act are responsible for ensuring that their contractors take adequate safety measures.

Assuring that quality service is provided will assist in ensuring the client satisfaction with these services. The franchising arrangement will greatly enhance the clients' confidence and reduce the risk of non-conformance.

6.6 Step E: Financial outline

A high-level financial model was drawn up, to determine the preliminary financial feasibility of SMME businesses providing sanitation services to schools. The following are assumed:

- SMME franchisees will be contracted to each service an average of 50 schools in a defined area.
- The franchisor would need to have a regional structure in place which could be easily accessible to franchisee SMMEs. In order to be commercially viable, sufficient franchise fees would need to flow to the franchisor in order to cover the minimum staff structure required by the franchisor to provide the necessary administrative and technical services to the franchisees in a region. It is for present purposes assumed that the regional franchisor business would be viable with a minimum of 10 such SMME franchisees.
- The SMME franchisee staff complement will comprise an owner/manager with an administrator, storeman, two team leaders and two general workers
- The SMME franchisee will have a small office, store and workshop located at a central point in its area.
- The workshop and store will act as a local depot for the two maintenance teams per franchisee. Each team will be equipped with LDVs and the necessary tools and equipment.
- The franchisee will enter into a 3-year service contract with the DoE and the contract will be measured monthly on the basis of certain fees, rates and cost-plus activities for the provision of materials and specialised services.
- The routine work will be undertaken by the SMME with its directly employed staff and plant.
- However, where specialised work is needed (e.g. electrical and mechanical repairs and maintenance, specialised training, professional consulting, tanker services, provision of specialised plant and equipment, laboratory and process support and assistance with procurement) these will be provided by the franchisor through the service agreement, and at a pre-agreed cost to the franchisee. (Alternatively, specialised service providers could, with the assistance of the franchisor, be procured.).
- The franchisor will charge a franchise fee based on the usual franchising principles. This fee will cover the normal support services provided by the franchisor (e.g. administration, contractual and quality management systems, etc), but not the specialised work that is described in the bullet point above.

Of the three franchise businesses described in these Chapters 5, 6 and 7, it is the schools sanitation franchise business that is chosen for the detailed case study to come in Report 6. That report includes a full costing of the business (built up from knowledge of typical costs in non-franchised but otherwise similar circumstances in the Eastern Cape), and a rigorous financial plan.

From that detailed analysis it emerges that the franchised small business model for providing schools with sanitation refurbishment, repairs and monthly operational servicing is sustainable.

6.7 Step F: Model review

This schools sanitation programme provides an excellent opportunity to both:

- ensure satisfactory and improving provision of an important service, and

- foster the development of small business, and especially BEE small businesses, within a business environment suitable for ongoing opportunity which should lead to the emergence of sustainable small entities.

Contracts should be for 3 years or more, thereby enabling the SMME to raise finance to invest in equipment and facilities which over time once fully paid off would provide the necessary assets for the SMME to properly undertake the work. The added security of contractual service agreements would provide the SMME with confidence to invest in building their business.

In addition, the SMME franchisees, once up and running successfully, and having acquired the necessary experience and financial stability, would be in a position to offer similar services (sanitation operation and maintenance) but to new clients, including clinics, local business and households, thereby further expanding their businesses.

Success will largely be dependent on the credibility and capability of the franchisor to provide the necessary support and training to the SMME. This dependency, and the dependency of the franchisor on the franchisees for at least part of his income, will ensure that the franchisor will provide the necessary support. However, if the SMME fails to deliver the service, the franchisor may find it necessary to step in and assume the management of the SMME until the SMME is once again able to perform or, if preferable, the SMME is replaced.

As the franchisor's business will depend on the ongoing success of all its franchisees, the franchisor will need to ensure regular quality audits and that effective reporting is maintained. The franchisor will interface with the DoE at a provincial and regional level, whereas the franchisee will interface directly with the SGBs, headmasters and designated staff of the schools. The dual level of communication will ensure the needs at both levels are satisfied, thereby overcoming the current problem of poor communication between the schools and the province relating to their ongoing water and sanitation requirements.

The franchise model offers an alternative whereby the DoE would be able to standardise on the technology choices, equipment and methodology, thereby streamlining the activities with the associated cost and efficiency benefits. A further benefit is the flexibility that outsourcing offers to the Department. Provided they are given enough notice, SMMEs would within reason be able to grow and shrink their activities to suit the requirements of the Department.

6.8 Step G: Model conclusions

The following conclusions can be drawn from this first order modelling exercise.

Firstly, irrespective of franchising:

- the SMME approach should provide a higher quality of service;
- the SMME approach should prove more cost-effective than the alternative option of the DoE employing full-time schools support teams; and
- the SMME would be free to enter into contracts with local clinics and other institutions for the provision of similar services, thereby assisting it to operate at the level required to maintain efficient operations.

Then, relating to the franchising alternative:

- the SMME will require start-up capital, administrative support and specialist support relating to contract, technical and methodology. These support functions can be provided through a franchised business approach; and

- whereas the geographical spread of the rural schools requires self-regulating and self-supervising entities due to the remoteness of the operations from the larger centres, franchising can provide both the expertise for this and the incentive to deploy that expertise.

Whilst it is clear the SMME model is appropriate for the provision of sanitation services to the schools (and other institutions), it is proposed that without a business support structure, such as a franchising arrangement, the SMMEs would have great difficulty in developing their businesses beyond a mere hand-to-mouth approach.

The sustainability of the SMME franchisees is significantly dependent on the support they receive from the franchisor. The franchisor, in turn, is dependent on the franchise fee revenue streams. This inter-dependency ensures that the respective franchise partners will hold each other accountable for the quality and reliability of their portions of the overall supply chain.

7. Modelling a sustainable pressure control management business

7.1 The purpose of Chapter 7

The purpose of Chapter 7 is to model another element of the water services value chain.

The modelling in this chapter is of a sustainable pressure control system management business for urban water supply.

The format for modelling is, as always, that set out in Chapter 4.

7.2 Step A: High-level introduction

Broadly

This model proposes a franchised operation to manage pressures in water networks in urban areas in support of the sustainable and efficient provision of water (and sanitation) services to especially disadvantaged areas.

Concepts outlined and developed in this model are based on technical and social efficiency interventions undertaken in Emfuleni Local Municipality (in Gauteng).

Within many previously disadvantaged communities across South Africa there are a high number of private properties with leaking plumbing fixtures and resulting water wastage. This situation can be attributed to a lack of responsibility by consumers (of fixtures and consumption of water) together with the widespread use of poorly maintained “low cost” plumbing fixtures which are/have been poorly maintained over an extended period of time.

Historically and mainly because of past political policies, a culture that encourages ownership of consumption and on-property plumbing fixtures by consumers in previously disadvantaged urban areas of South Africa, has never been created, instilled or enforced and for the most part remains an unaddressed challenge in many of these communities. Fundamentally this problem could not have been addressed even up to five years ago, due to the fact that most residential properties in township areas were owned by state entities and did not belong to the occupiers of same.

The result of these factors, working either in combination or in isolation, is uncontrolled water wastage on a grand scale, underpayment and non-payment for services rendered by municipalities, bad debt, a lack of understanding in the eyes of the consumers as to the quantitative and qualitative value of the service provided, excessive water demand and water networks that appear unable to cope with the demand.

In the absence of a culture which holds the consumer accountable, the government is then held accountable (by default) and in most instances the accepted norm and expectation is that either local or national government will provide, irrespective of the extent of subsidies required.

The problem is exacerbated when municipalities, who are under duress to address backlogs and expand/ improve service delivery, increase water supply pressures to overcome intermittent supply problems and ensure that all households receive a continuous supply of water. Higher water pressures hasten fixture failure which in turn gives rise to higher wastage and increased water demand.

Consumers and municipalities alike find themselves in a catch-22 situation with increasing demand, increasing costs, increasing mistrust and an ever decreasing ability to address the root cause of the problem and the issues at hand.

A cost-effective longer term sustainable technical solution that partially addresses these problems presents itself in the form of advanced pressure management involving the reduction of operating pressures in water networks especially during off-peak periods, in order to reduce volumes of water being wasted and curb the failure of fixtures and pipes.

The planning, installation, commissioning, operation, maintenance and management of pressure management plant is a specialized activity (outside the normal scope of expertise of municipal technical officials) and thus lends itself to outsourcing as a franchised operation, undertaken by a specialized contractor in terms of a performance based contract, the monitoring and verification of which could be done by a franchisor.

Compared to the other two water services delivery elements being modelled (viz. community-level caretaker management and schools sanitation), the specialist skills for performance of this element would need to be at a relatively high level. Given that, this chapter does not spend time first considering a non-franchising situation of a supervisor and standalone small and micro-enterprises, as it is not likely that such a supervisor would have the necessary specialist skills.

Also, compared to the other two models, the cost-savings involved in improved pressure management, and thus the return on capital improvements made, could be substantial. A franchise is by its nature the best placed institutional arrangement to incentivise both franchisor and franchisee to put themselves at financial risk in order to take the steps (including, where appropriate, capital investment) to make the improvements that could result in the cost savings.

Therefore, the nub of this proposal is that

- specialized performance-based shared savings tenders be called for by municipalities for the financing, installation, commissioning, managing, operation and maintenance of pressure management equipment aimed at reducing the volume of water being wasted in specific identified areas;
- pressure management contractors acting as franchisees be appointed in terms of the above performance-based contracts, to undertake technical pressure management interventions aimed at reducing water wastage over an agreed operational period of, say, five years;
- the franchisees be remunerated a percentage of the savings accruing from the implementation of pressure management (i.e. based on performance) as verified by the franchisor; and
- a franchisor be appointed in tandem to (or ahead of) the appointment of pressure management contractor/s by the participating municipality/ies – the franchisor's function would be to train, manage, measure performance, control quality and verify savings achieved by the franchisees.

The shared savings contracts allow for additional interventions based on the successful implementation of pressure management initiatives.

Prerequisites to success are:

- water wastage and total water supplied to each potential implementation area (or zone) is adequately quantified upfront of any appointment of a franchisee;
- the overall cost per unit of water supplied by the municipality to customers is known and agreed to;
- a future projection of water demand is established and agreed to;
- a franchisor is appointed upfront to lead and guide the appointment of franchisee/s;

- the franchisee has a high level of technical expertise relating to water demand and pressure management and has access to capital;
- municipalities are willing, able and support this unique solution to service delivery involving a specialized franchise approach;
- a section 78 process is followed, concluded and the necessary approvals gained: and
- agreement is reached between all three parties relating to contractual arrangements and the level of remuneration to be received by the franchisee.

In more detail

The pre-contract steps in implementing a franchised pressure management model would be:

First steps:
- the municipality to take in-principle decisions relating to approval of an alternative service delivery mechanism including finalization of Section 78 processes;
- the municipality to establish sectored and metered potential pressure management supply zones;
- the municipality to establish minimum night flows and a long term supply history for each potential pressure management zone;
- the municipality to appoint a franchisor to take the process forward;
- the municipality to commence with a competitive franchisee procurement process; and
- The municipality to appoint a project manager to take the process forward internally.

Second steps:
- the municipality/franchisor to complete a franchisee procurement process,
- the franchisor to draft a performance contract for negotiation with the nominated franchisee,
- the municipality to liaise with the beneficiary community and create awareness of the proposed intervention,
- the franchisor finalize a baseline related to the supply history of water into any potential pressure management zone,
- the franchisor, municipality and nominated franchisee agree on a projected baseline of supply over the proposed contract period for each potential pressure management zone, should no intervention take place,
- the franchisor, municipality and nominated franchisee agree on the proposed franchisee remuneration structure for services rendered,
- the municipality provides sufficient guarantee of payment to the franchisor and franchisee, and
- the franchisee provides detailed design drawings relating to the required plant and equipment.

Third steps:
- the franchisor, municipality and franchisee enter into negotiations and agree to the terms and conditions laid out in the performance contract;
- the franchisor, municipality and franchisee sign the approved performance contract;
- the franchisor plan, install and commission the required plant and equipment;
- the franchisor provides site and construction supervision relating to the installation of the plant and equipment.

During the contract period, the following, inter alia, must be performed:
- the franchisee operates and maintains the installed plant and equipment;
- the franchisor monitors and verifies the savings achieved by the franchisee;
- the franchisor provides monthly reports to the municipality relating to operations and maintenance, savings in water supplied and the verification thereof;

- the franchisor investigate the feasibility of undertaking additional efficiency interventions in the applicable pressure management zones in terms of the signed contract between the parties and using the services of the procured franchisee;
- the franchisee undertake an education and awareness program relating to water services in the beneficiary community; and
- the municipality utilises the savings in operating expenditure to create additional operational and management capacity.

The franchised pressure management model represents a win-win intervention to all parties because:

- the performance contract suitably allocates and transfers risk of operation to the franchisee;
- except for the monitoring and management of the franchisor, no additional risk or responsibility is created for the municipality;
- a profit incentive based on performance exists to the private sector franchisee or operator;
- water savings are created and sustained over the contract period;
- savings in operating expenditure are created for the municipality and thus existing capacity can be better utilized and additional capacity created to address other challenges facing the municipality;
- monitoring and verification is undertaken by the franchisor who remains accountable and responsible to the municipality to ensure performance of the franchisee; and
- the franchisor provides initial and ongoing support to the franchisee and thus mitigates the risk of poor performance and failure of the contract.

Indeed it is argued that the outsourced franchised pressure management model is the model that addresses, far better than any alternative does, the risks associated with the installation and operation of pressure control management plant in the long term. Primarily, this is because:

- **Responsibility is uniquely shared between franchisor and franchisee. Together with the way in which reward is shared, both franchisor and franchisee are strongly incentivised not only to perform in their own right, but also to assist each other to perform; and**
- **Compared to standalone SMMEs, or to in-house pressure management by the municipality, a franchisor is much the best placed to provide the expertise that is required in this specialised area.**

Capital for infrastructure improvement, and/or to refurbish any existing pressure control management infrastructure, restoring it to full operational capability, would in many cases be needed. This could be accessed from the private sector lending institutions, motivating to them on the basis of the potential returns on this investment, and the security of their loans.

Alternatively it may be possible to obtain capital funding through the MIG grant, and through the equitable share it should be possible to fund the resulting operational cost. In this event, savings in operating expenditure achieved through the implementation of this model can be accrued in total to the municipality.

A key go/no go decision point would be acceptance of the franchised pressure management model by local politicians, municipal trade unions and the recipient community.

7.3 Step B: Definition of responsibilities

The initiation of a franchised pressure control management model involves specialised activities and therefore it is important to define and allocate responsibilities of especially the franchisor and the franchisee accordingly.

Although the technical requirements during the operations and maintenance period are not as onerous, the franchisees would still require the periodic services of a specialist engineer or technician. These services could be provided by the franchisor as and when needed by the franchisee, the franchisor distributing the cost of this engineer or technician over the several franchisees and no doubt its own (i.e. the franchisor's) activities as well.

In proposing the delegation of responsibilities below, the approach is taken that maximum responsibility is delegated to the franchisor and franchisee, with the municipality only retaining responsibilities associated with procurement, supervision and management. It goes without saying though that officials of the municipality should possess competent management skills.

The approach taken above does however assume that capacity is stretched within municipalities and that the private sector can better provide the required skills. The assumption is also made in that the private sector is cost-competitive in providing the required services.

Responsibilities that the municipality would need to assume include:

- official endorsement of the project by politicians, officials and the beneficiary community;
- the appointment of a project manager to take the process forward within the municipality;
- completing the Section 78 process relating to alternative delivery mechanisms;
- the establishment of sectored and metered supply zones where potential to implement pressure management exists;
- the establishment of Minimum Night Flows for each potential pressure management zone;
- the reading of bulk supply water meters on a monthly basis;
- the approval of the baseline and projected baseline for each potential pressure management zone;
- the appointment of a franchisor;
- the undertaking of a competitive procurement process for the appointment of a franchisee;
- the undertaking of an education and awareness program;
- the provision of sufficient guarantee of payment to the franchisee;
- the approval of detailed design drawings and contract documentation;
- maintaining a customer service centre and toll free telephone extension.;

Responsibilities that the franchisor would need to assume include:

- the appointment, in consultation with the municipality, of franchisees;
- the determination of a supply history to each pressure management zone and the determination of a suitable baseline for each;
- the determination of the projected baseline over the contract period in agreement with the parties;
- the drafting of a performance contract for negotiation with the franchisees and municipality;
- negotiation of the proposed shared saving percentage to be paid to the franchisees as remuneration for all services rendered;
- finalisation and signing of the performance contract between the parties;
- the monitoring and verification of savings achieved by the franchisees;
- the certification of franchisee payment certificates;
- reporting to the municipality relating to operations and maintenance, and quantity of water saved;

- investigation into other potential efficiency interventions that could be undertaken by the franchisee in terms of the signed contract between the parties; and
- assistance with resolution of contractual disputes that may arise between the municipality and franchisee.

Responsibilities that the franchisee would need to assume include:

- compiling of a detailed technical and financial proposal relating to the issued tender for pressure management in the specified supply zones;
- negotiating and approval of the performance contract;
- construction and installation of the required plant to the correct specification;
- commissioning of the required plant;
- operating and maintaining the required plant;
- reading of meters on a monthly basis in order to determine savings achieved;
- invoicing of the client in terms of the agreed to remuneration structure;
- the undertaking of an education and awareness campaign in the beneficiary communities;
- reporting of material changes to water supply as per contract requirements; and
- reporting to the municipality and to the franchisor relating to the plant including savings achieved and discrepancies, tendencies detected.

The above outline of responsibilities between the parties may differ slightly from situation to situation, but should remain applicable for the most part.

7.4 Step C: Information for comparison

When compared to a project in which a specialized external contractor is procured to install pressure management equipment, and/or an in-house programme in which a municipality employs internal staff to manage installed pressure management equipment, the outsourced franchised option in which a specialist franchisor is employed to install and/or refurbish and operate pressure management equipment over an agreed period of time, will invariably be a more efficient and effective model for the following reasons:

- specialist skills that are beyond the level of expertise of municipal technical staff can be accessed for the planning, installation, commissioning, operation, maintenance and management of pressure management plant;
- monitoring and verification are performed by an independent third party (the franchisor), thus enhancing the level of integrity and minimising the risk of collusion;
- remuneration of the franchisee is based on performance and therefore an incentive exists to maximise savings and minimise wastage resulting from excessive pressures;
- performance of the franchisee can be accurately measured;
- potentially the municipality stands to gain from reduced operating expenses with no increased financial or technical risk;
- through the performance based contract technical and financial risk are effectively transferred to the franchisee;
- the municipality can better allocate scarce capacity to service delivery extension;
- through the franchise model, the services and support of the franchisor are made available to both parties including processes relating to dispute resolution;
- quantitative and qualitative management data is made available to the municipality; and
- greater qualitative and quantitative business opportunities for medium sized enterprises are created.

Incidentally, it would be impossible for the franchisor, wishing to increase his revenue, to inflate its claims of water savings attributable to his and the franchisees combined efforts. These claims are easily checked against the bulk meter reading records of the municipality and of the bulk water supplier.

7.5 Step D: Assumptions, risk and mitigation

The assumptions listed in Table 7.1 on the following pages are made regarding in-house pressure control management or the implementation of a non-franchised outsourced model for the operation of a pressure control management system. (There is no point in making a comparison with not undertaking pressure control management since the advantages under many circumstances of undertaking this management would be blindingly obvious.)

The risks of each are indicated. Only in the last column is franchising introduced. In all other columns, where there is reference to a contractor, that contractor is not a franchisor.

Where franchising can further reduce the risk, sometimes through the intrinsic nature of franchising, and sometimes through the assistance of the franchisor, is indicated in the last column.

It is considered that the greatest risks to the success of the project relate to the financial and political assumptions made above. The greatest risks do not relate to the technical assumptions – the risk of these going awry is low.

7.6 Step E: Financial plan

This is best covered by means of an example of a project that offers good insight into the magnitude of water and cost savings that can be achieved through pressure management and hence good insight into the potential to firstly outsource this kind of intervention to the private sector, and secondly to do this in a franchised form.

Although the description, relating as it does to an existing project that was undertaken by a contractor using subcontractors, does not directly refer to franchising, it is suitable for franchising in that:

- the margins, in suitable circumstances of existing substantial water wastage, are attractive; and
- much of the work that on the present project was done by subcontractors is eminently suitable to franchising partnerships (and there would be franchisees, not subcontractors), with the franchisor providing the support that a franchisor would normally provide in business relationships other than in pressure control management.

It is a suitable example for a number of reasons that are clearly set out in the text below. But also in that it could in practice complement the caretaker model described earlier, in that:

- it describes a business model that would lead to reducing pressures and thus the rate of loss through leaks in an area's reticulation, but doesn't address the leaks; whereas
- Chapter 5 describes a business model that would lead to repair of leaks.

A firm of consulting engineers ("the contractor" for the purposes of this description) was some years ago contracted to plan, design, install, commission, operate and maintain a large pressure management installation, in terms of a shared savings contract signed with Emfuleni Local Municipality.

The municipality at the same time appointed another consultant to fulfil an independent technical facilitative and auditing role for the project.

Table 7.1: Pressure control management model – assumptions, risk and mitigation

Dimension	Assumption	Level of risk if assumption is not valid	In the non-franchised situation, how risk can be mitigated	Who in the non-franchised situation has to attempt to mitigate the risk (see Note 1, below foot of table)	How the franchised model could mitigate the risk further, compared to the non-franchised situation
Selectively	Project area has high minimum night flows resulting in water wastage that could be reduced by pressure management	High risk that model will not achieve desired outcomes if assumption that water wastage is sufficiently high is not valid.	Project area to be chosen according to logging results taken over an acceptable period of time.	Municipality	The franchisor's specialised knowledge could assist the municipality to better establish the feasibility for any potential project area.
Consumptively	Project area has a minimum level of water wastage averaging at least 20 kl per property per month.	High risk in that model is based on an opportunity cost related to the level of wastage and prospective shared savings percentage.	Supply data and meter reading data related to the project area to be made available to all parties prior to contract negotiations	Municipality	The franchisor's specialised knowledge could, prior to the project, assist the municipality to better establish levels of wastage for the project area.
	The financial cost to the municipality of wasted water can be quantified.	High risk in that success of the model is based on wastage being reduced with an agreed percentage of the savings going to the franchisee as remuneration. And if predictions turn out to have been heavy overestimates, the project feasibility will be undermined	All costs related to purchase/purification and supply of water to be properly quantified and ring-fenced.	Municipality	The franchisor's specialised knowledge could, prior to the project, assist the municipality to better establish levels of wastage for the project area.
	A history of water supplied into the project area can be established, in order to determine a baseline for same.	High risk in that success of the model is based on the quantification of savings achieved as measured against the baseline	Short term Minimum Night Flows could be used as an alternative to a supply history baseline.	Contractor	Contract could be concluded with franchisor and franchisee without any known project area, and they be appointed to establish baselines for each project area.
Technically	Project area has been properly zoned, metered and discreteness established.	High risk in that, without this, model cannot be implemented and remuneration structure for franchisee cannot be created.	Undertake proper sectoring, metering and zoning exercise.	Municipality	Contract could be concluded with franchisor and franchisee without project zones being established, and they be appointed to establish zones.
	Number of water supply points into the project area is limited to three.	Medium level of risk, in that technically implementation much more costly and difficult if more than three supply points into the project area.	Supply points to be minimized through a proper sectoring and zoning exercise.	Municipality	Contract could be concluded with a franchisee without any known project zones and the franchisee assigned to establish same zones.
	Pressure management	High risk in that cost-benefit	Supply cost per kilolitre to be	Contractor	Franchisor possesses the skills and

Dimension	Assumption	Level of risk if assumption is not valid	In the non-franchised situation, how risk can be mitigated	Who in the non-franchised situation has to attempt to mitigate the risk (see Note 1, below foot of table)	How the franchised model could mitigate the risk further, compared to the non-franchised situation
	equipment is installed and commissioned.	might not be established closely enough, and return on investment calculated.	established upfront		expertise to ensure proper installation of equipment.
	Pressure management equipment is operated effectively and efficiently.	Medium risk, in that cost-benefit could be much higher than estimated making the initiative unsustainable from a financial point of view.	Beneficiary area to be chosen in accordance with minimal capital needs	Contractor	Franchisor possesses the skills and expertise to ensure proper operation of equipment.
	A statistical projection into the future of the baseline water supply over the proposed contract period can be made.	High risk, in that success of the model is based on the quantification of savings achieved as measured against the projected baseline.	Short term Minimum Night Flows could be used as an alternative to a supply history baseline.	Contractor	Franchisor and franchisee could be appointed without any known project area, and they be appointed to establish baselines for each project area.
Institutionally	The municipality is willing and able to implement this type of project.	High risk in that buy-in from municipal officials may not be obtained.	A working relationship with a willing and able municipality should exist prior to initiating model.	Contractor	Franchisor helps to "sell" the project to municipality
	Public participation structures are in place	High risk, in that buy-in from the community may not be obtained.	A good relationship should exist between the community and their political representation.	Municipality	Franchisor helps to "sell" the project to community
Politically	Political support for the initiative is obtained	High risk, in that project will not succeed in obtaining stated objectives.	Official political endorsement of initiative obtained prior to implementation	Municipality	Franchisor helps to "sell" the project to municipality
Financially	Municipality will honour shared savings payment to the contractor	High risk, in that project will fail should the contractor not be remunerated.	An ESCROW account [1] could be set up by the municipality.	Municipality	The franchisor and franchisee could withhold ownership of the asset until the end of the contract period
	Contractor can raise the capital needed to fund the project.	High level of risk, in that model will not be implemented should contractor not be able to secure a loan.	The municipality could provide a guarantee of payment of a percentage of savings to the contractor	Contractor	Franchisor has the ability to establish a Special Purpose Vehicle endorsed by a financial institution for the implementation of such projects.
Skills and quality	Personnel (in-house and contractor) are adequately	Medium level of risk that contractor will be unable to	Contractor staff are adequately skilled and trained	Municipality (in respect of selection of contractor).	Franchisor takes responsibility for selection and training of franchisees,

[1] An ESCROW account is a fund established to hold moneys pledged and to be used solely for a designated purpose. A typical example is when a debt is due or a formula split was agreed upon. Income, when received, is paid into the account, and the funds are allocated to these designated purposes (i.e. are paid to these other accounts) within a set period.

Dimension	Assumption	Level of risk if assumption is not valid	In the non-franchised situation, how risk can be mitigated	Who in the non-franchised situation has to attempt to mitigate the risk (see Note 1, below foot of table)	How the franchised model could mitigate the risk further, compared to the non-franchised situation
	skilled to start with, and/or learn on the job	deliver the expected benefits to service provision		Contractor (in respect of training).	and for their ongoing skills development. Franchisor also takes responsibility for monitoring of quality, and for rectification of quality problems.

In terms of the Sebokeng/Evaton pressure control management project, pre-intervention water supply quantities averaged around 60 kℓ per property per month and Minimum Night Flows for the whole area equated to 2 800 kℓ per hour (representing the continuous background flow as a result of leaks in the network and on private properties).

Through the implementation of pressure control management, including a capital outlay of approximately R 6 million, an average reduction of 1000 kℓ per hour in the Minimum Night Flow was been achieved from the start (fine tuning has since enabled further reduction). This equates to a saving per property per month (65 000 properties) of around 11kℓ, or a total saving in water supplied for the area of 732 000 kℓ per month. The financial value of this saving (purchase price for the water from Rand Water only) is equivalent to R 2.2 million per month, of which 80% is retained by the municipality and 20% goes to the contractor for the duration of the five-year shared savings contract.

The savings are clearly shown in the shaded portion of Figure 7.1, which is based on the initial logging results from July 2003 compared to the corresponding period in July 2005. It should be noted that the graph does not take the escalation of the water demands from 2003 to 2005 into account which would result in a larger shaded area (although this is taken into account when calculating the annual savings).

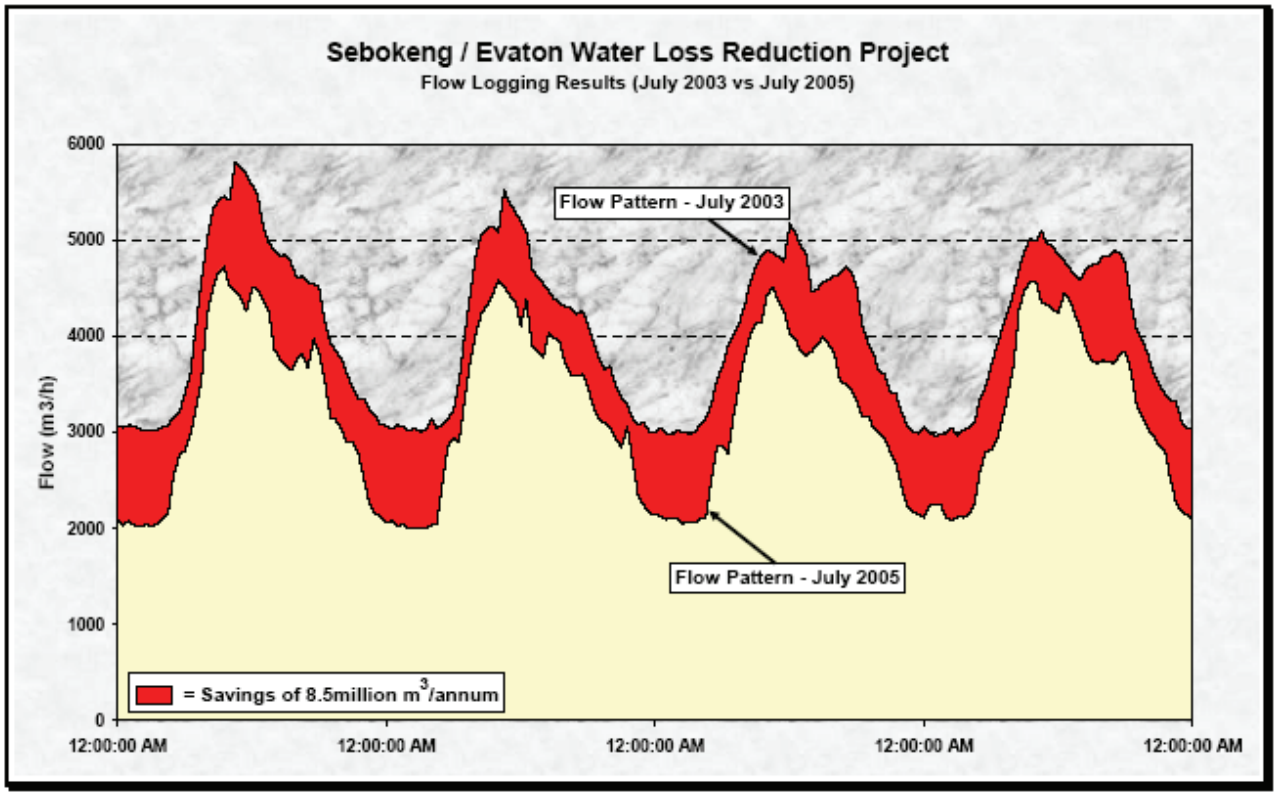

Figure 7.1 Sebokeng/Evaton: Comparison of water use in July 2003 with that in July 2005
(Mckenzie et al., 2006, page 8)

Net income to the contractor, after covering capital and capitalised operational costs, amounts to around R140 000 per month, a healthy profit margin.

However, it must be noted that Sebokeng/Evaton, where water wastage on a grand scale was taking place, provided an opportunity for savings at an unusually high level. Pressure control management is in this instance therefore very effective in reducing minimum night flows.

Intervention is lucrative even at the low (20%) shared saving percentage payments to the contractor.

In other locations where minimum night flows are not as high and the volumes of supplied water are not as great, a much higher percentage of the savings will need to be allocated to the contractor in order to create a sensible business case. With shared savings contracts where the contractor is required to carry all technical and financial risk, it would not be unreasonable for up to, say, two-thirds of the savings to go to the contractor.

In terms of a successful business case for the implementation of pressure management, a benchmark equivalent to savings of at least 10kℓ per household per month can be established.

It is noted that other minor costs associated with ring-fencing, sectoring and metering of supply zones would also be incurred (most likely by the municipality) prior to the implementation of pressure management. These costs could be capitalized by the municipality over the life of a shared savings contract and paid for out of savings achieved and accruing to the municipality.

It is also noted that some or all of the capital and operational costs could be covered by MIG and Equitable Share. Hence even in cases where the business case for pressure management is borderline, a sharing of the costs by the municipality using either MIG or Equitable Share funds could provide the financial input to make the project viable.

7.7 Step F: Model review

A franchised version of the contract described above could be that:

- the franchisor supplies the specialist expertise needed with project initiation. Principally as follows: designing the pressure control management scheme, facilitating capital funding, supervising repair and refurbishment of the existing infrastructure, and supervising installation of new infrastructure;
- the franchisor supplies the ongoing specialist expertise related to operation and maintenance;
- the franchisee, trained by the franchisor, operates and maintains the project control management system; and
- savings are shared between the municipality, franchisor and franchisee, in terms of contracted arrangements.

All these, are in addition to the franchisor/franchisee arrangements normal to franchising in other spheres. For example, franchisor assisting with selection and training of franchisees, and with the monitoring of quality of service.

Relational arrangements that engage the franchisee would be both through the franchisor and through the municipality, as would be necessary where more than two parties are involved. A participatory framework allows parties from different structures and at different levels in those structures to communicate and efficiently and effectively address issues of a technical, political and social nature. Therefore, it is believed that sufficient checks and balances in the form of political structures, management structures, and signed contracts will be in place to ensure that the risk of corruption or unfair exploitation of one of the parties is minimized.

It is envisaged that, in addition to the contract between the municipality and the franchisee, a Service Level Agreement with clearly defined roles, responsibilities, risk allocation and tasks to be performed could be signed between the municipality and the franchisor. This latter agreement would be put in place in order to ensure that the franchisor is responsible and accountable to the municipality for certain deliverables. For example, for the rectification of quality problems that the

franchisee is unable to address or neglects to address. These would of course both be in addition to the franchise agreement, between the franchisor and the franchisee.

7.8 Step G: Model conclusions

The franchised pressure control management model is a financially viable option for reducing water wastage, provided that the wastage is high enough so that savings can be meaningful for all three parties, viz. municipality, franchisor and franchisee. Everything else being equal, the higher the initial wastage, the more financially attractive the proposition.

It will help to address many of the same problems identified in the chapter on the caretaker model and listed in Chapter 5. With the important addition that pressure management saves water wastage across all current usages, and particularly that consumers' attitudes to ownership of their properties and to infrastructure on their properties is irrelevant. The savings from pressure control management are achieved irrespective of the property ownership or indeed of the type of property or its ownership, or further indeed of the type of water usage or whether any of these usages are metered.

The cost associated with the following are ultimately borne by the municipality, which is legally liable to pay for water received from box suppliers and to continue providing the service to end-users. Why therefore more municipalities do not solicit pressure control management services is a mystery to the current researchers.

The following are the principal reasons for high wastage of potable water:

- *poor institutional arrangements* relating to reporting structures to and within the municipality;
- *poor or lack of planning* for future development and preventative maintenance;
- *lack of technical understanding within municipality structures* of what is required to ensure service delivery;
- *lack of technical expertise within municipality* of how to address the technical needs required in order to achieve effective service delivery;
- a *lack of capacity and trained staff in municipal water utilities* (including a scarcity of project managers and engineers);
- *insufficient maintenance* over an extended period of time of municipal water supply infrastructure;
- a *dearth of responsible attitudes* to water usage – and that excessive water usage is condoned or ignored; and
- a *lack of municipal or water utility programmes* and systems to address these same issues.

Municipalities are preoccupied and swamped with many other issues and many are today in a lesser position to address these issues than say ten years ago. To make matters worse, the unsustainable service delivery practices in many areas places municipalities in an even weaker position to overcome experienced difficulties and provide meaningful interventions.

Drastic intervention is required to address this mismatch and any innovative solution requires a technical and institutional component in order to redress the status quo.

The implementation of an outsourced franchised pressure management model is considered to be an appropriate technical and institutional solution that goes a long way towards addressing these issues because:

- the franchised option taps into the resources of the private sector;

- the franchised pressure management model can create the required efficiencies and hence service delivery can be sustained;
- the franchised model clearly delineates responsibilities of and between all parties, and thus creates incentives and obligations for all role-players including the municipality; and
- the franchised model represents in many circumstances the shortest path to create water savings quickly and effectively.

The model is not aimed at increasing the level of revenue generated for the municipality, nor is it aimed at preventing usage. Rather, it aims to reduce wastage, thereby saving significant operational costs especially relating to the purchase of bulk water by the municipality. Hence service delivery by the municipality is not affected, nor is the provision of Free Basic Water.

Pressure control management of the franchised variety (as indeed of the non-franchised variety) can be put in place without adding strain to the municipality's financial or human resources and without requiring significant (if any) financial input from the municipality.

Because this model is aimed at improving management and creating custodianship for services and service delivery, delivery can be improved over time and overall a better and more affordable municipal water supply service attained in the longer run.

8. Conclusions and recommendations

8.1 On the objective of the current report

WRC Report TT 432/2/10, stated (Section 7.1):

> "Many public sector owners in South Africa of the water services infrastructure, and/or their appointed water services providers, are not coping with their operation and maintenance responsibilities. If, despite efforts having been over the years made to capacitate or otherwise support these institutions, water services operation and maintenance is in many areas still not adequate, then it is imperative that alternatives be investigated. It might be found that these alternatives have little potential to improve matters – but it might also be found that they do have potential. The need for alternative water services provider systems is indisputable.
>
> The water services delivery model in common use (i.e. a heavy reliance on WSA's/municipality's own in-house resources) is not intrinsically flawed. The model is not the reason for many of the owners of the water services infrastructure and/or their appointed water services providers not being able to deliver satisfactorily. Evidence of this lies in that in many instances water services are being delivered satisfactorily, or more-or-less satisfactorily, using the same model. It is in the implementation of the model, and not in the model itself, that the problems lie."

Report TT 432/2/10 unpacked (in Section 4.3, under the headings of "budgets", "skills" and "incentives") generic reasons for current unsatisfactory service in respect of some elements of water services delivery. It then discussed if and how franchising partnerships might address some, at least, of these problems.

The discussion in that report was not taken further, because it is the job of the current report, Report TT 432/4/10, to do that. As described as follows under "deliverables" in "Annexure A" to the contract agreement:

> "Draft document identifying those elements in the water services delivery chain, which offer the greatest scope for franchising, and setting out the results of the business analysis of possible franchising of selected elements."

This report therefore –

- sets out the water services delivery value chain, and identifies a number of elements that could be outsourced; and
- models a selection of three of the elements.

8.2 Findings from the modelling/business analysis

Once the water services value delivery chain had been set out (Chapter 2), without too much effort more than a dozen elements of the chain were identified (Chapter 3) that, on paper at least, would appear to present good opportunities for outsourcing by a WSA to small or micro-enterprises.

Three of these elements were then selected (Chapter 3), primarily on the grounds of the current researchers' view that they are among the most suitable for franchising partnerships and that there is undoubted need to assist WSAs with their performance of these elements.

Thus the three elements modelled are:

- caretaker management;
- schools sanitation;
- pressure control system management.

The objective of the modelling, or "business analysis", was very much borne in mind when doing the modelling/analysis. Most importantly, it is to provide a basis for a comparison of performance of the element by franchising partnerships methods with performance of the element by other means.

The ultimate objective of the project is to identify the scope for franchising, and to identify the viability of franchising partnerships and/or to make a case for franchising to be considered by WSAs. Given that, it makes good sense to relate the findings from the modelling to the "budgets", "skills" and "incentives", by categorising them under these headings, and showing how they could address the generic reasons for current unsatisfactory service in respect of some elements of water services delivery. Also the findings from the modelling lend themselves to this classification.

Budgets

Financially speaking, the situations that each of the three models addresses, are very different. As follows.

- The schools sanitation model addresses a constituency (schools, mostly rural) that lacks a basic facility (sanitation) to an extent that varies from school to school. There are no operational financial savings to be gained from improving the service, and operation and maintenance budget will have to be found from the public purse. (However there are long term capital savings as the facility, through being better operated and maintained, will not as soon have to be refurbished or replaced.)

- The caretaker model addresses leakage in low-income residential areas that is wasting water, all of it (because the consumers are eligible for free basic water, or because of widespread non-payment by those consumers that are supposed to be paying) at the cost of the WSA. Hence financial saving, through leakage repair and subsequent maintenance, will accrue to the WSA – although implementation of a caretaker project would also assist by encouraging a spirit of ownership on the part of consumers. (And for those who accept responsibility for paying for water taken, portion of the savings would accrue to them.)

- The pressure control model, in contrast, offers the WSA the opportunity for very rewarding financial savings, and it would be reasonable that part of this is paid to the WSA's private partner that undertakes the work.

These situations are very material to the budget that the infrastructure owner may have available to pay for the necessary work, irrespective of who does the work, whether in-house or outsourced. If the budget cannot be found, the work will not be done. The first two of these situations would never provide viable opportunities for the private sector unless the private sector partner is paid, by the DoE in the one instance, and by the WSA in the other, from sources elsewhere than any savings from undertaking the work.

Whether franchising partnerships would be financially viable is subsumed into the larger consideration of whether budget can be found for the work, whoever does it.

To sum up: If an activity is currently commercially unviable, outsourcing (franchising included) will not change this situation. Unless, that is, there is an opportunity for raising revenue or reducing cost that is not currently being taken advantage of by the WSA – and the pressure control model illustrates such an opportunity.

However, it is important to note that outsourcing of the kind of service being considered here must not disturb financial relationships of the delivery model in current use. For example, if equitable share is currently used to subsidise the water services to a set of households when the WSP is a municipal WSP, this must not change, and the same subsidy must flow should the WSP be a SMME.

Skills

Skills-wise, the situations that each of the three models addresses are not much different in principle. The pressure control management situation is that which needs the highest level of specialist skills. Neither of the other two are very demanding on technical skills.

Which leads to the obvious question. Why, if the technical skills needed are commonplace, have they not been applied by the infrastructure owner? The short answer is that, basic as some of the skills might be, they exceed the skills levels available to the infrastructure owner. In many instances, moreover, the management of mechanisms for the delivery of these services is where much of the failure occurs, and in this respect may sometimes lie the greatest benefit to the WSP of the utilisation of franchised service providers.

Schools sanitation is a good illustration of this point. It may be that no one at the school knows how to operate and maintain the sanitation facilities (and/or does not see it as their responsibility – vide "incentives" below) or to repair or refurbish them. However, the skills needed are not only technical. Skill (and budget) is needed to motivate budget, procure technical help (e.g., in the rural schools situation, a local builder or local plumber), arrange for delivery of materials, and so on.

The caretaker management model provides another good illustration. The skills needed might be commonplace in an urban area, but they are not being applied, or not being applied sufficiently, to the reticulation in parts of that urban area.

The skills assistance that a franchisor would often provide might best manifest in reduction of risk to the service at large and to the small PSP in particular. For example, in the caretaker model, compared to the caretaker being a standalone small or micro-enterprise, or being a direct employee of an under-resourced municipality:

- the franchisor can provide technical help on how to reduce wastage;
- the franchisor can, independently of the municipality, check the municipality's costing, and thus cost-benefit calculation, and thus the caretaker's remuneration;
- the franchisor can assist the municipality to create and maintain a customer database;
- the franchisor can take responsibility for monitoring of quality (and for rectification, thereby providing the municipality with additional assurance that the agreed quality of service will be provided); and
- the franchisor can take responsibility for selection and training of caretakers, and for their ongoing skills development (this is another measure that will reduce the possibility that caretakers are unable to deliver the expected service quality).

Summing up, whereas the credibility of the caretakers will so much depend on the quality of the service they provide, the help from a franchisor will reduce the risk of quality failure. And it would do this inter alia by selection of caretakers, their training, monitoring of quality, and being the service provider of last resort.

All of these (with the possible exception of being the service provider of last resort) are the traditional functions of a franchisor, as applied to the franchising of fast food, printing, video stores, Pick ‘n Pay family stores, and so many other familiar situations!

Having a franchisor help the franchisee to provide the service is more than just assurance to the municipality. The greater (compared to a standalone caretaker) muscle of the franchisor enables

the franchisor to more powerfully stand up to the municipality when the contractual rights of the caretaker are threatened (e.g. when the municipality is not paying in full and on time). This is a great comfort to a caretaker franchisee.

Especially in areas away from the skills resource base that is in the metropoles (but by no means only in those areas), franchising partnerships can bring to the franchisees, and hence to the benefit of the water service, the franchisors' expert guidance and quality assurance. Which, as pointed out above, does not always need to be that "expert", but it has to be good enough to meet the need, and to better serve the infrastructure than the skills levels otherwise available are able to.

Incentives

It is often in respect of the incentives that the advantages of franchising partnerships, as opposed not so much standalone SMMEs performing a service, but as opposed to in-house performance by a municipality, are most apparent.

Franchisee water services providers, being led by entrepreneurs with a financial and reputational stake in successful service delivery and financial viability, have a greater incentive to perform than, for example, in-house water services authority personnel would usually have.

Pressure control management provides a good illustration of incentives so powerful that they could (and have) motivate even smallish private sector providers (PSPs) to take out substantial (for them) loans in order to make capital investments that become the property of the WSA the moment they are installed. (The risk that the PSP would have to accept in these circumstances is substantial. Should the WSA renege on the contract between them, the PSP could lose its investment before a cent of revenue or of cost saving had been generated. But the potential rewards are also substantial.)

Should this kind of activity be franchised, as is modelled in Chapter 7, a share of the incentive (and of the reward) would be assigned to the franchisees.

The incentive principle applies as much to the models of Chapters 5 and 6, even though the rewards might not have such a large upside potential.

As an aside: it is a mystery to the current researchers that more WSAs do not make similar investments in cost-saving infrastructure in their areas.

8.3 Conclusions from the modelling/business analysis

8.3.1 Can these findings be extrapolated?

For purposes of this first-time modelling of water services franchising partnerships, the researchers chose to model three potential franchise situations where there appeared, even on cursory examination, to be opportunities. Nonetheless there are many other situations where the advantages of franchising would it seems be of great value to improving water service delivery. Franchising appears to be advantageous in respect of some elements of water services operation and maintenance, and in some circumstances, but not in respect of those same elements in other circumstances. Franchising should therefore be preferred in appropriate situations, but not all situations are appropriate.

To recap briefly.

Franchising partnerships could in many instances bring to water services operation and maintenance the range of advantages that franchising is said to bring in other, non-water services, sectors, including:

- selection of the small and micro-enterprises, and then initial and ongoing training;
- ongoing monitoring, and assurance that corrective action would be taken when necessary;
- (sometimes) more ready access to finance for operation and maintenance; and
- when needed, a level of expertise that would not normally be available to that infrastructure in that situation.

(The first and second bullet points above should together ensure quality of service.)

In addition, the franchisor could, with likely more effect than the efforts of a small enterprise alone would achieve, intervene on behalf of a franchisee if the WSA is not fulfilling its contractual obligations. For example, if the WSA is delaying payments.

Franchising brings skills and incentives together, and, by doing so, provides a focused and motivated resource which is available to the WSA to utilise by way of a contractual framework.

For example, skills may be geographically near at hand (vide the caretaker management model), but the owners of those skills may under other institutional arrangements have no incentive to bring them to bear where they are needed.

8.3.2 On opportunities for small and micro-enterprise entrepreneurial development and for BEE

Water services franchising can in many instances not only improve water services operation and maintenance, but it can also be an avenue for LED, and SMME and BEE development. Indeed, one of the reasons why the franchise concept could achieve significant impact is its potential for opening the water services industry to smaller enterprises in general and for BEE in particular.

The caretaker management model is a good example of that.

8.3.3 Limitations

Caveats include that the client water services authority has the competence to monitor performance and enforce contract compliance. The client must be sufficiently competent to ensure that in the first place a fair contractual deal is struck, and in the second place that the PSPs (franchisor and franchisee, or any others) live up to their contractual obligations. If necessary, the client should bring in outside help to enable it to do this.

If the client is unable to manage such contracts, then it is almost certainly the case that it is also unable to manage its own staff. So even if the client perceives problems in managing the franchisee, the franchising alternative may still be the more appropriate solution available to the client.

Franchisees are SMMEs with particular characteristics. In terms of size, they would invariably be towards the small and micro-size end of the range of typical SMMEs size. Thus they would with few (if any) exceptions be unable to make capital investments in infrastructure (one possible exception being pressure control management). If, therefore, new infrastructure or refurbishment or replacement is required, this would have to be funded by other parties. If, however, it could be shown that franchising would result in far better utilisation of the infrastructure, and more reliable or otherwise superior service delivery, then a strong case could be made to the other parties (e.g. national government) for that investment to be made.

That a WSP, or a contractor to a WSP, is a franchisee rather than any other form of SMME or private sector partner, or a public sector entity, must not disturb institutional, financial and other relationships of the delivery model in common use. For example, in respect of funding, if equitable share is currently used to subsidise the water services to a set of households when the WSP is a municipal WSP, and MIG funding would be available for refurbishment or upgrading, this must not change, and the same subsidies and grants must flow should the WSP be a SMME.

Procurement could present difficulties, as described at length in Report TT 432/3/10. The current report has not taken this issue further, but it does need to be addressed, or application of even the best franchising partnerships models will be limited.

8.3.4 On modelling the franchisor's business

At the WRC project reference group meeting in November 2006, the team was asked to pay some attention to the viability of the franchising part of the business of possible franchisors.

The team responded that franchising activity would not usually be the only or even the greater part of a franchisor's business. Mr Ive, stating that Amanz' abantu would be interested in playing a franchisor role, argued that it would never be more than a small part of their total business. It is unlikely that viability of a franchisor would be determined solely, or even largely, by how many franchisees it had.

The franchising part of the business of the possible franchisors that the team can think of would, with few exceptions (e.g. The Drain Surgeon), be a minority part of their business. The viability of this part of their business would be determined by how many franchisees they had, and what the turnover and profitability of these were, and also by the royalty/management fee structure of the franchisor. Far more important to franchisors, however, would be what percentage of their business was related to franchising partnerships.

The owners of franchise operations would also generally structure their business to meet the specific requirements of the franchising activities.

The team decided therefore not to model franchisors' viability, and only to model franchisees'. It was more important to model franchisees' viability, because the business would usually be make or break for a franchisee, whereas franchisors would likely have other irons in other fires, and hence substantial other income sources.

8.3.5 Concluding points

Through water services franchising partnerships, there is significant potential to deliver more reliable and sustainable water services. In many instances, this would (for example through reduced wastage of water) result in cost savings to the WSA, thereby improving its financial situation.

A franchising partnerships model for water services delivery cannot address a WSA's budget problems, but can undoubtedly greatly contribute to resolution of the skills and incentives problems that are encountered by, or in, many WSAs and WSPs, or to structure alternatives to current water services delivery institutions.

Whereas a business based on a single element of the water services delivery value chain might not be viable, an entrepreneur might be able to make a viable business by offering several water-related services, thereby achieving dual objectives:

- economy of scale; and
- lessening the franchisee's dependence on one or a limited number of clients.

In practice, also, an entrepreneur could well, over time, expand service offerings but as far as possible without expanding the range of skills (again, exploiting economies of scale, and building up a critical mass around a specific set of skills). Thus, for example, that plumbing skills would be needed, and that visits to individual properties would be part of the duties of the business, might be found to be a common factor to the following elements, providing opportunity for expansion of the business:

- meter reading;
- investigating meter errors that have been reported to the municipality;
- fixing meters; and
- fixing on-site leaks.

Franchising is a concept intended to improve water services quality, coverage and efficiency through introducing a new (to water services) supply-side mechanism, and at the same time provide opportunities to the SMME sector.

Franchising offers the water services sector with a means to grow the supply-side resource at a faster rate than would be possible through internal recruitment, training and development. One of the key successes of franchising in other fields has been the speed at which the franchised businesses are able to replicate successfully. If this experience in the business franchise sector can be replicated in the water services sector, franchising partnerships would contribute greatly to alleviating the currently identified shortage of skills and resources which are so desperately needed to meet the Millennium Development Goals.

All choices of delivery institution are between alternatives. Water services franchising partnerships might not, even on paper, be ideal, but they might offer something better than current means do, and that is what should count. WSAs need to keep an open mind.

Franchising aims to improve quality and meeting standards, and is a way of assisting WSA/WSPs to do this. In particular, many WSAs do not have staff or systems to deliver a reasonable service. A strong franchisor/franchisee arrangement could assist.

Returning to the analogy with Colonel Sanders (see Section 3.4.2). He started off with one outlet that he managed himself, and refined the fried chicken take-away business over the course of several years and the opening of many more outlets. So he had the confidence, born of experience, to offer a proven model to prospective franchisees. The current researchers, in contrast, have not had that direct experience. The models described in this report have been drawn up with close knowledge of the water services sector, but without direct experience to go on of running "outlets". It would therefore be foolish not to be prepared to be flexible and to learn.

Finally:

It needs to be emphasised that the case for water services franchising partnerships to operate and maintain water services infrastructure owned by the public sector, rests on the service quality and reliability improvements that can in many cases be anticipated.

This report shows that franchising partnerships can in at least a number of circumstances be feasible business propositions for franchisees and franchisors. They can even reduce costs or increase revenue for the public sector owners, thereby inter alia improving sustainability of the service. But these reasons on their own would seldom constitute sufficient motivation to justify going the franchising partnership route.

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Website addresses

Department of Provincial and Local Government:	www.dplg.gov.za
Department of Water Affairs and Forestry:	www.dwaf.gov.za
Department of National Treasury:	www.treasury.gov.za
Franchise Association of Southern Africa (FASA):	www.fasa.co.za
Small Enterprise Development Agency (SEDA):	www.seda.org.za
Water Research Commission:	www.wrc.org.za
WISA:	www.wisa.org.za

The website of FRAIN (www.frain.org.za) has been closed, but searching for it opens up the SEDA website. The website of NAMAC (www.namac.co.za) has been closed.

Annexure A: Water services delivery value chain unpacked

Component		Sub-activity	Type of outsourced service provider	Large-scale service provider	Small-scale service provider	Franchis-ing potential
1.	Planning, design and construction of storage facilities and transfer schemes	Water resource planning	Professional Service Provider	✓	✓	
		Design of storage dams and transfer schemes	Professional Service Provider	✓	✓	
		Financing of storage dams and transfer schemes	Financial Service Provider	✓		
		Supply of goods and equipment	Materials Supplier	✓		✓
			Subcontracted Materials Supplier		✓	
		Construction of storage dams and transfer schemes	Large construction contractor	✓		
			Small construction subcontractor		✓	✓
2.	Transfer and transport of raw water	Operation of plant and infrastructure	Private Sector Operator	✓	✓	✓
		Monitoring of plant and infrastructure	Private Sector Operator	✓	✓	✓
		Management of operations	Management Services Provider	✓	✓	
3.	Maintaining storage dams and transfer schemes	Maintenance of plant and infrastructure	Private Sector Operator	✓	✓	✓
		Maintenance of facilities	Private Sector Operator	✓	✓	✓
4.	Planning, design and construction of water treatment facilities	Planning of water treatment facilities	Professional Service Provider	✓	✓	
		Design of water treatment facilities	Professional Service Provider	✓	✓	
		Financing of water treatment facilities	Financial Service Provider	✓		
		Supply of goods and equipment	Materials Supplier	✓		✓
			Subcontracted Materials Supplier		✓	
		Construction of water treatment facilities	Large construction contractor	✓		
			Small construction subcontractor		✓	✓
5.	Treatment of raw water to potable water standards	Operation of plant and infrastructure	Private Sector Operator	✓	✓	✓
		Monitoring of plant and infrastructure	Private Sector Operator	✓	✓	✓
		Supply of chemicals	Materials Supplier	✓		✓
			Subcontracted Materials Supplier		✓	
		Water quality testing	Scientific Services Provider	✓	✓	✓
		Management of operations	Management Services Provider	✓	✓	
6.	Maintaining water treatment plant and facilities	Planned and reactive maintenance of plant and infrastructure	Private Sector Operator	✓	✓	✓
		Maintenance of facilities	Private Sector Operator	✓	✓	✓
7.	Planning, design and construction of municipal storage facilities	Analysis, modelling and planning of storage need	Professional Service Provider	✓	✓	
		Design of storage plant and facilities	Professional Service Provider	✓	✓	

Component		Sub-activity	Type of outsourced service provider	Large-scale service provider	Small-scale service provider	Franchis-ing potential
		Financing of storage plant and facilities	Financial Service Provider	✓	✓	
		Supply of goods and equipment	Materials Supplier	✓		✓
			Subcontracted Materials Supplier		✓	
		Construction of storage plant and facilities	Large construction contractor	✓		
			Small construction subcontractor		✓	✓
8.	Transport of potable water to municipal storage facilities	Operation of plant and infrastructure	Private Sector Operator	✓	✓	✓
		Monitoring of plant and infrastructure	Private Sector Operator	✓	✓	✓
9.	Maintaining municipal storage facilities	Planned maintenance of plant and infrastructure	Private Sector Operator	✓	✓	✓
		Maintenance of facilities	Private Sector Operator	✓	✓	✓
10.	Planning, design and construction of primary and secondary municipal water reticulation networks	Analysis, modelling and planning of distribution need	Professional Service Provider	✓	✓	
		Design of primary and secondary water reticulation networks	Professional Service Provider	✓	✓	
		Financing of reticulation networks	Financial Service Provider	✓	✓	
		Supply of goods and equipment	Materials Supplier	✓		✓
			Subcontracted Materials Supplier		✓	
		Construction of reticulation networks	Large construction contractor	✓		
			Small construction subcontractor		✓	✓
11.	Transport of potable water to end-users	Operation of infrastructure and plant	Private Sector Operator	✓	✓	✓
		Monitoring of infrastructure and plant	Private Sector Operator	✓	✓	✓
		Water quality testing	Scientific Services Provider	✓	✓	✓
12.	Managing the transport of potable water to end-users	Managing operations and staff	Private Sector Management Services	✓	✓	
		Managing water demand and leakage	Professional Service Provider		✓	
13.	Maintaining Municipal Infrastructure and facilities	Planned and reactive maintenance of infrastructure and plant	Private Sector Operator	✓	✓	✓
		Maintenance of facilities	Private Sector Operator	✓	✓	✓
14.	Support services to maintenance of infrastructure	Provision and maintenance of fleet	Private Sector Service Provider	✓	✓	✓
		Provision and maintenance of specialized equipment	Specialized Materials Provider and Operator		✓	✓
		Train operators and maintenance staff	Accredited Training Institution	✓	✓	✓
15.	Metering and billing of, as well as collecting revenue from	Supply water meters	Materials supplier	✓		
		Install water meters	Installation Contractor	✓	✓	✓

Component		Sub-activity	Type of outsourced service provider	Large-scale service provider	Small-scale service provider	Franchis-ing potential
	customers for potable water supplied	Maintain/replace water meters	Contractor		✓	✓
		Read water meters	Meter reading contractor	✓	✓	✓
		Generate municipal accounts	IT Service Provider	✓	✓	
		Distribute municipal accounts	Postal Service Provider	✓	✓	✓
		Collect revenue from customers	Vendor	✓	✓	✓
		Maintain debtors book	Contractor	✓	✓	✓
		Restrict/Terminate services as necessary	Contractor	✓	✓	✓
		Reconnect services as necessary	Contractor	✓	✓	✓
16.	Maintaining the customer data base	Provision of IT equipment	IT Equipment Service Provider	✓	✓	✓
		Maintenance of data base and records	IT Service Provider	✓	✓	✓
		Maintenance of IT equipment	IT Equipment Service Provider	✓	✓	✓
17.	Managing the relationship with the customer	Educate and communicate with customers	Community Relations Officer	✓	✓	✓
		Operate call centre	Call Centre Operator	✓		✓
		Undertake reactive maintenance programme	Community Caretaker		✓	✓
18.	Maintaining private property plumbing infrastructure as a support service to end-users	Undertake pre-assessment of plumbing fixtures on privately owned properties	Plumbing Contractor	✓	✓	✓
		Repair, replace, retrofit private property plumbing fixtures as necessary	Plumbing Contractor	✓	✓	✓
		Undertake post-assessment of completed plumbing work	Plumbing Contractor	✓	✓	✓
		Unblock private sewers	Plumbing Contractor	✓	✓	✓
19.	Planning, design and construction of municipal wastewater reticulation networks and outfall sewers	Analysis, modelling and planning of wastewater conveyance need	Professional Service Provider	✓	✓	
		Design of reticulation network and bulk wastewater infrastructure	Professional Service Provider	✓	✓	
		Financing of reticulation networks	Financial Service Provider	✓		
		Supply of goods and equipment	Materials Supplier	✓		✓
			Subcontracted Materials Supplier		✓	
		Construction of reticulation networks	Large construction contractor	✓		
			Small construction subcontractor		✓	✓
20.	Collection of effluent and conveyance to wastewater treatment works	Operation of infrastructure and plant	Private Sector Operator	✓	✓	✓
		Monitoring of infrastructure and plant	Private Sector Operator	✓	✓	✓
		Managing operation of infrastructure and	Management Services Provider	✓	✓	

Component		Sub-activity	Type of outsourced service provider	Large-scale service provider	Small-scale service provider	Franchis-ing potential
		plant				
21.	Maintaining wastewater networks and outfall sewers	Planned and reactive maintenance of infrastructure and plant	Private Sector Operator	✓	✓	✓
		Maintenance of facilities	Private Sector Operator	✓	✓	✓
22.	Planning, design and construction of wastewater treatment works	Analysis of flows, selection and planning of suitable wastewater treatment works and process	Professional Service Provider	✓	✓	
		Design of wastewater treatment works	Professional Service Provider	✓	✓	
		Financing of wastewater treatment works	Financial Service Provider	✓		
		Supply of goods and equipment	Materials Supplier	✓		✓
			Subcontracted Materials Supplier		✓	
		Construction of wastewater treatment works	Large construction contractor	✓		
			Small construction subcontractor		✓	✓
23.	Treating wastewater to acceptable standards	Operation of works	Private Sector Operator	✓	✓	✓
		Monitoring of works	Private Sector Operator	✓	✓	✓
		Supply of chemicals	Materials Supplier	✓		✓
			Subcontracted Materials Supplier		✓	
		Water quality testing	Scientific Services Provider	✓	✓	✓
		Managing operation of works	Management Service Provider	✓	✓	
24.	Maintaining wastewater treatment works	Maintenance of infrastructure and plant	Private Sector Operator	✓	✓	✓
		Maintenance of facilities	Private Sector Operator	✓	✓	✓