

**PAPER 2**

# A REVIEW OF THE PUBLIC PROCUREMENT FRAMEWORK TO PROMOTE THE UPTAKE OF WATER AND SANITATION INNOVATIONS

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## 1. ABSTRACT

Public water and sanitation institutions have been able to demonstrate emerging innovations. However, the larger scale uptake of these innovations has proven challenging. The public procurement framework is often attributed as one of the main challenges with the wider uptake of innovations. The Water Research Commission (WRC) commissioned a research study in November 2022 to explore the challenges with the existing public procurement and the impact that this has on the procurement of water and sanitation innovations.

A phased approach was utilized where 86 stakeholders were identified to complete an online survey after the initial desktop review. 23 participants completed the online survey and a further 15 participants were also identified for an in-depth interview. Several workshops were also held to discuss and share the findings of the study. This included three engagements with National Treasury.

The public procurement framework was found to be enabling and allowed for the procurement of innovations. The governing principles of the public procurement framework are enshrined in Section 217 of the Constitution and are:

- Open and effective competition.
- Value-for-money.
- Ethics and fair dealings.
- Accountability and reporting.
- Equity.

The challenge with the procurement of water and sanitation innovations is the application of the public procurement framework rather than the framework itself. Practitioners focus on the acquisition phase of Supply Chain Management (SCM) and there is little focus on the demand phase which is the planning for procurement and is aimed at developing an appropriate procurement strategy that is aligned to the objectives of the business.

The Strategic Sourcing Process (SSP) developed by National Treasury is a collaborative structured approach that could be used for the procurement of water and sanitation innovations. The multi-stage bidding process could also be used for the procurement of innovations that are required to be demonstrated and implemented at a much larger scale.

It is also recommended that Water Sector Institutions develop innovation policies that signals their intent to innovate, and also provides the

innovation strategy for the organisation. Institutions that do not have the capacity and organisational processes in place to innovate should consider engaging national research organisations such as the WRC or CSIR.

## 2. INTRODUCTION

Water resource management and water and sanitation services provision is constitutionally a government / public sector function. Public sector institutions are therefore major drivers of the South African water sector and the various innovations that are deployed to support the provision of more efficient and effective delivery of water and sanitation services. However, these institutions have often faced challenges in procuring these innovations for implementation at scale. Innovations are new and require derisking through demonstration or expert input to determine specification development. Furthermore, it may require working with public officials to increase understanding of planning, resources and technical needs, and to ascertain of the meet regulation and service needs.

The research draws on the reflections and experiences of water sector practitioners and entities involved in developing and implementing innovations for the sector to improve the delivery of services and solve major challenges. This paper presents the findings and recommendations from research commissioned by the Water Research Commission (WRC) to explore the challenges with procurement of water sector innovations and the mechanisms that could be used to enhance their uptake.

## 3. APPROACH AND METHODOLOGY

The research was undertaken in a phased manner as indicated in Figure 1 and was completed between November 2022 and February 2024.

Figure 1 indicates that following the desktop review 86 stakeholders were identified to complete an online survey after the initial desktop review. 23 participants completed the online survey and a further 15 participants



**FIGURE 1:** Study approach

**TABLE 1:** Key principles for procurement in South Africa

| Pillar                         | Principle   |
|--------------------------------|---|
| Open and effective competition | Public sector institutions need to apply effort and research so potential suppliers have access to procurement opportunities. Public sector institutions should also ensure that bias and favouritism for suppliers are eliminated and that the cost of bidding for opportunities does not deter competent bidders.   |
| Value-for-money                | Value-for-money refers to the best available outcome when all relevant costs and benefits over the procurement cycle are considered. Price alone is not considered a reliable indicator that municipalities will obtain the best value for money simply by accepting the lowest price offer that meets mandatory requirements. The principle of Total Cost of Ownership or Life Cycle Costing should be considered. |
| Ethics and fair dealings       | All parties should deal with each other on the basis of mutual trust and respect and conduct their business in a fair and reasonable manner and with integrity. Public sector staff associated with procurement are required to identify any potential conflict of interests and deal with suppliers in a consistent manner.  |
| Accountability and reporting   | All individuals and organisations involved in procurement must be answerable for their plans, actions and outcomes. This includes technical and SCM practitioners. Openness and transparency through public reporting is an essential element of accountability.  |
| Equity                         | Equity in the context of public procurement refers to the application and observance of government policies which have been designed to advance persons or categories of persons disadvantaged by unfair discrimination.  |

were also identified for an in-depth interview. Several workshops were also held to discuss and share the findings of the study. This included three engagements with National Treasury. The final output also included the development of a Practitioners Guide to assist water and sanitation practitioners correctly apply the procurement framework.

#### 4. OVERVIEW OF THE PROCUREMENT FRAMEWORK

##### 4.1. Key Pillars of Procurement

The public sector procurement model in South Africa is underpinned by five key pillars as indicated in Table 1 below, as defined in Section 217 of the Constitution of South Africa.

All procurement processes must adhere to the principles presented in the table above. The principle of equity is embedded in the procurement process through the use of Preference Points. The Preferential Procurement Regulations (2022) specify that the 80/20 preference points system for the acquisition of goods or services with a Rand value equal to or below R50 million with a maximum of 20 points being awarded to a tenderer for the specific goals specified for the tender.

The regulations also specify that the 90/10 preference points system for the acquisition of goods or services with a Rand value above R50 million with a maximum of 10 points being awarded to a tenderer for the specific

goals specified for the tender. Any specific goal for which a point is awarded, must be clearly specified in the invitation to submit a tender. The goals specified must be measurable, quantifiable and monitored for compliance.

##### 4.2. The Procurement Process

The key elements of the procurement process are presented in Figure 2.

##### 4.3. Demand Management

Demand Management is the start of the SCM process. This requires a needs assessment to be undertaken to ensure that goods and services are acquired to deliver a particular service. The demand management system must include timely planning and management processes to ensure that all required goods and services are quantified, justified and budgeted for and timeously delivered at the correct location.

##### 4.4. Acquisition Management

Acquisition management refers to the manner in which the market is approached to obtain a required good or service. The total cost of ownership must be considered, along with ensuring that the bid documents are completed correctly and evaluated accordingly. This is typically the focus of the SCM process, but consideration should also be given to other elements.

##### 4.5. Logistics Management

Logistics management refers to the receipt and distribution of material. This includes the storage and transport management of goods. The financial system should be activated to generate payments and the performance of vendors monitored.

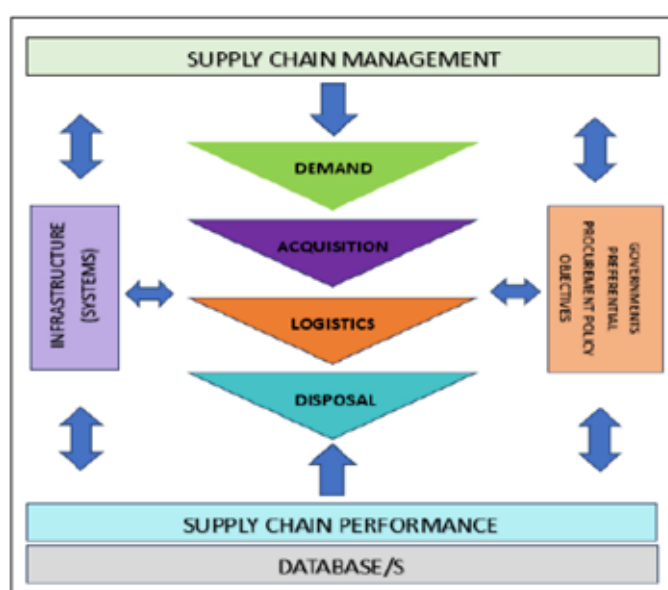
##### 4.6. Disposal Management

Disposal management refers to the development of a disposal management strategy and the execution of the physical asset disposal process. Material should be inspected for potential re-use and a database of redundant material maintained. This could then be linked to the acquisition process for the replacement of any assets that are disposed.

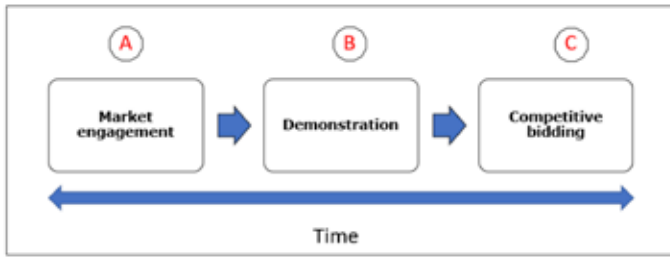
#### 5. KEY FINDINGS

##### Legislation is enabling

The legislative framework in spirit encourages and generally allows for the procurement of innovations in the public sector. It requires every institution to develop a procurement policy and system(s) that complies with the legislative framework. The challenge lies with the application



**FIGURE 2:** Procurement Process (National Treasury, 2004)



**FIGURE 3:** Current approach to procure innovations

of the public procurement framework rather than the framework itself. The barriers identified in the study indicate that there may be a lack of knowledge regarding the way the procurement system was designed to work at a leadership and practitioner level.

The preface of the Supply Chain Management (SCM) Guide for Accounting Officers notes the following challenges of the procurement system (National Treasury, 2004):

- Procurement are rules driven and value for money is equated to lowest cost;
- Procurement activities are not linked to budgetary planning;
- Bid documentation is not uniform and causes uncertainty to bidders and practitioners; and
- The costs and outcomes of the Preferential Procurement Policy Framework Act (PPPFA) are not fully quantified, making it challenging to evaluate the merits of the system effectively.

These challenges persist, even though the document was initially published in 2004.

**5.1. Disconnect between SCM and technical water services unit**

Many of the water sector practitioners engaged expressed their frustration with regard to the way the SCM policy is applied. It was often mentioned that practitioners in technical positions were unable to use single or sole source quotations to obtain parts to fix critical equipment in emergency situations due to demands from SCM about processes to be followed, despite single or sole source quotations being allowed in the SCM policy as part of the definition of competitive tendering.

However, it is not often mentioned that the SCM policy also specifies that poor planning should not be used as a reason to deviate from the competitive bidding process. Therefore, it is possible that the SCM decision makers may deem certain practices as uncompetitive due to poor planning on the part of technical staff. It would appear that even though single and sole source bidding is included in the definition of competitive tendering, this approach could only be used if the market is severely limited, and thorough market research has been undertaken.

**5.2. Policing as compared to support**

It was noted during the engagements with numerous stakeholders that the manner in which SCM approaches their function has transitioned from a supportive function towards a more compliance function and focussed towards ensuring that the procurement bidding process will be able to withstand the scrutiny of the Auditor General.

The result of this approach is that practitioners are often afraid of being identified as responsible for deviations from the competitive bidding process and avoid using these aspects of the SCM process. As an example, this included a process to issue the same Expression of Interest (EoI) on four separate occasions to the market as the EoI only received two responses on each occasion. This was even though the practitioners knew that it was a specialised request to the market and that there were only two known suppliers that could provide the required product. This delayed the project by over a year and resulted in the required goods not being available during the period.

**5.3. Current procurement methods for innovations**

The approach currently used to procure water sector innovations is presented in Figure 3. The activities presented in Figure 3 could be undertaken by the WRC, Water Services Authorities (WSAs), Water Boards and academics/ research institutions independently or through a combination of institutions at different stages of the project.

Table 2 provides a description of the diagram and the associated challenges.

**5.4. Misconceptions about the procurement process**

There were several misconceptions about the procurement process that were identified during the study. These are presented in Table 3.

It is important to ensure that the Section 33 mechanism is well understood to enable proper planning, project preparation, public consultation, budgeting and Council approvals. These processes are important as a financial obligation on the municipality will exist beyond the mandate of the existing Council.

**5.5. The Strategic Sourcing Process**

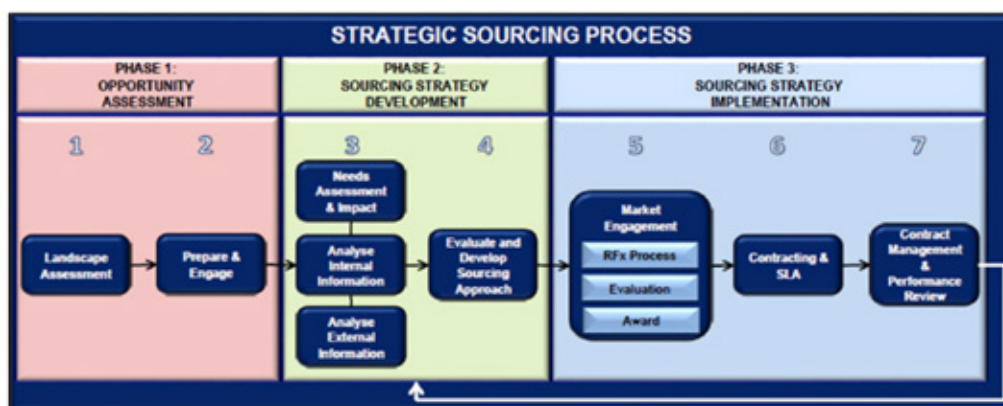
The Strategic Sourcing Process, as defined by National Treasury, is a collaborative and structured approach to analysing government spending and using the information from the analysis to acquire commodities and services effectively. Strategic procurement assists supply chain managers in planning, managing and developing the supply base to achieve governments service delivery objectives. The Strategic Sourcing Process is in Figure 4. (OPCO - NT, 2016).

**TABLE 2:** Description and challenges with current procurement process for innovations

| Item   | Description   | Challenge   |
|--|---|---|
| A – Market Engagement                        | Expressions of Interest are used to obtain information for demonstration projects that meet specific criteria. This could be in the form of Expression of Interest, Request for Information, Request for Proposal or Request for Quotation. | The full costs associated with the prototype may not be known at this stage. Operating risks are largely theoretical and the costs of mitigating these may not be included in the project costs.  |
| B – Technology and/ or Service Demonstration | Technology demonstration projects that are used to confirm the performance of the innovations and end user acceptance. The performance of the innovation can be confirmed by independent verification by an Evaluator.                      | The identification and selection of suitable test sites and demonstration partners. Reliable independent data (flow rates, quality of effluent, etc) is not collected.  |
| C – Competitive Bidding Process              | Innovators respond to adverts issued by public sector institutions requesting proposals or quotations for solutions.  | Evaluations may be cost based and does not include strategic considerations that innovations may provide. Innovators do not have the track record in supplying innovations at the required scale. Implementation is more operational than strategic resulting in a preference for the status quo. |

**TABLE 3:** Common misconceptions about the procurement process

| Item  | Comment  |
|---|--|
| Competitive bidding means open tender.                                | Competitive bidding includes bidding such as single and sole source approaches which could be used as specified in Section 4.7.8 of the SCM Accounting Officers Guide and based on a thorough analysis of the market. However, the limited bidding approach should be justified through a thorough analysis of the market and the reasons for limited competition are understood.          |
| Municipal contracts are limited to a maximum of three years.          | Section 33 of the MFMA outlines the process to be used for a contract that will impose a financial obligation beyond three years. Section 28 of the PFMA requires a multi-year budget to be tabled annually but does not specify the period for multi-year. It should also be noted that infrastructure departments usually undertake longer term projects that extend beyond three years. |
| Single and sole source bids are not allowed                           | Limited bidding options can be used as a part of the competitive bidding process (Section 4,12 of the SCM Accounting Officers Guide). This must be based on a thorough analysis of the market.   |
| Process is long and onerous   | The planning process for the procurement of innovation is important to confirm the value proposition to the institution and confirm the business case. The risk management process and approvals are also required to ensure that public funds are spent in the best interests of the communities served.  |
| Current conventional processes are cost-effective                     | Value-for-money assessments are based solely on capital costs and do not account for the full life cycle costs, potential savings that may accrue, as well as other strategic benefits.  |
| Bids must be readvertised if less than three quotations are received. | There is no reason to readvertise if the competitive bidding process was complied with and tenderers were provided sufficient time (minimum of 21 days for RFP) to prepare a response. The reasons must be documented by the municipality and records maintained for audit purposes.   |



**FIGURE 4:** Strategic Sourcing Process (OPCO – NT, 2016)

Strategic Procurement is not intended for the purchase of good and services on a day-to day basis. It is rather a long-term and all-encompassing means of achieving procurement and strategic business goals (OPCO - NT, 2016). The uptake of innovation within the water sector is a strategic objective and is therefore aligned to the Strategic Procurement Process.

The Strategic Sourcing Process provides a framework and structure that public entities can use to implement innovations within their departments. The documents also include useful tools, guides and processes that can assist practitioners overcome many of the barriers for the procurement of innovations that currently exist.

**6. RECOMMENDATIONS**

**6.1. Multi-stage bidding**

Multi-stage bidding can be advantageous over a single-stage process for complex projects, particularly where there is room for innovation. This process can assist in ensuring that solutions are aligned to needs and improve the final quality of proposals. However, it must be noted that the multi-stage process can take longer, be more complex to manage and more expensive for all parties involved. Care should also be taken to retain competitive pressure, protect intellectual property and maintain transparency. (The World Bank, 2022)

Figure 5 indicates the way the multi-stage bidding process could be used to procure emerging water and sanitation innovations. This process

includes the potential to invite innovators using an EoI process to demonstrate a particular group of innovations. However, the EoI would also specify the performance criteria that will be used to evaluate the innovations during the demonstration phase, as well as the quantities required to be supplied post the demonstration phase. Thereafter, innovators that meet the specified performance criteria will be invited to respond to an RFP

process to provide solutions at a larger scale. The RFP process will also allow for innovators to provide a price for scaled-up solution once the demonstration phase has been completed.

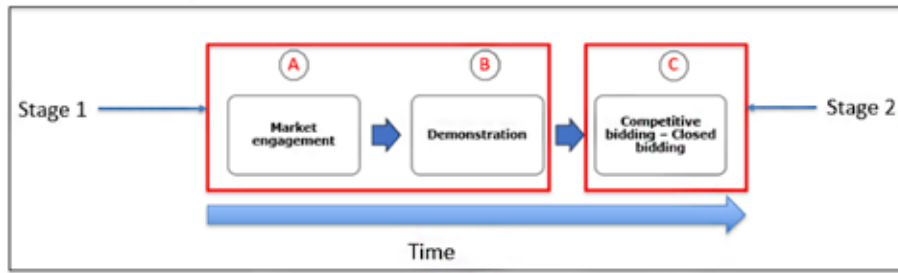
It is envisaged that the process in Figure 5 could be implemented with various partners during the demonstration and implementation. However, it is important to ensure the demonstration and implementation components of the process are included in the different organisations planning and budgeting processes. It may also be possible to make use of an implementing agent or programme manager during the implementation phase if organisational support or additional capacity is required.

**6.2. Example of the multi-stage bidding process**

Non-Sewered Sanitation Systems (NSSS) are a cluster of emerging sanitation innovations that can be used to treat wastewater and produce effluent that could be used to flush toilets or reused for agricultural purposes. The benefit of NSSS is that these can be implemented during a shorter timeframe (3 – 6 months) than a bulk sewer connection (4 – 6 years from planning to commissioning) and provides users a higher level of a sanitation service as compared to a VIP.

Using the multi-stage process would allow for entity such as the WRC to issue an EoI for the demonstration of NSSS at ten schools in Gauteng. The EoI would specify that all innovations that are able to produce effluent at the required quality, resource efficiency benefits and has an operating costs less than R16/kl will be invited by the Department of Basic Education (DBE) for implementation of the NSSS at 100 schools.





**FIGURE 5:** *Alternative procurement method*

An additional benefit that may arise from the process is that suppliers may be able to provide more competitive prices as they are able to achieve supplier discounts on raw materials due to economies of scale. Innovators are also able to access funding from commercial banks based on the order being received from the public sector institution thereby assisting with cashflow challenges often faced by emerging suppliers.

### 6.3. Use the Strategic Sourcing Process to procure innovations

It was therefore recommended that the Strategic Sourcing Process is used to procure innovations. The multi-stage bidding process could be considered as a possible procurement approach should this be supported by the data gathered and analysed during the sourcing strategy development process for a particular cluster of technology, such as NSSS. Consideration should also be given to the municipal budgeting processes to ensure that any planned spend by a municipality is captured in the appropriate budgets.

The use of the Strategic Sourcing Process (outlined above) would ensure the identification of efficient procurement processes that support the uptake of innovation, as well as provide a blueprint for the implementation of the multi-stage bidding process that other organisations, and possibly sectors, could implement to effectively promote the uptake of innovation.

### 6.4. Advancing the development of innovation policies

From an innovation perspective, one of the central challenges to widespread uptake is a lack of innovation policies and procedures within Water Boards and municipalities in SA. However, the need for the uptake of innovation within these entities also emerged as a high-priority area through the study, a potential strategic lever, and central to shifting toward innovative behaviours and practices within institutions. Bureaucratic challenges and a lack of internal integration and support for innovation were also cited as indicative of a lack of formalised institution-wide processes and policies.

Therefore, it is recommended that the development of internal innovation policies and procedures in Water Boards and Water Services Authorities that could improve knowledge, activity and reflect a return on investment made on innovations for by these institutions.

The following principles inform the institutions' innovation policy and its alignment to supply chain / procurement, governance structures and budgeting processing and structures:

- Implementation of innovations should improve the delivery of services;
- Large scale uptake of innovation may not necessarily prove practical, and the associated risks should be managed;
- Implementing innovations should become part of usual utility business; and
- Innovation process development.

### 6.5. Roadmap for improving the maturity of innovation systems

The implementation of innovation policies may assist the higher skilled and capacitated water sector institutions to successfully procure innovations. However, other organisations require support in the innovation development process to develop capacity and skills to move towards the uptake of innovations.

Research Institutions (including CSIR and WRC) could provide support to WB and WSA to develop the capacity and skills to implement innovations. This could be in the form of assisting with the demonstration of technologies at test sites provided by the institutions.

### 6.6. Skills and capacity building

A key finding of the research is that the regulatory environment/framework allows for the uptake of innovations, but the actual implementation of the framework was inconsistent and there were several behavioural factors within the sector that resulted in the perception that the regulatory framework inhibited the widescale implementation of innovations.

It is proposed that National Treasury: Office of the Chief Procurement Officer (OCPO), in association with the WRC, undertake capacity building sessions that delve into the various mechanisms that can be used for Innovation projects and Adoption. This could include providing practitioners with an overview of the manner in which the procurement framework was designed and how it could be used.

It is also proposed that the findings from the study and the Practitioners Guide is distributed widely and presented at Roadshows. This will enable the dissemination of the findings and improve water sector's practitioners understanding and awareness of the procurement framework.

It is important to promote the coordination and collaboration between SCM, Technical and Financial Practitioners. This will ensure the development of integrated solutions and better alignment within each of the different fields.

## 7. ACKNOWLEDGEMENTS

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