



**Local Government Skills Forecasting Model**  
Forecast Model Configuration

**Project Closure Report**  
March 2017



**Report prepared for:**

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## 1. BACKGROUND

The Council for Scientific and Industrial Research (CSIR) has been appointed by the Local Government Sector Education and Training Authority (LG SETA) to develop a model to forecast the demand and supply of skills in the local government sector in South Africa. The model will provide information to assist skills planning. Due to sector priorities within the LGSETA, it was decided, with advice from the CSIR, that the current skills research focuses on the water sector in local government, but it is anticipated that in future the model could be expanded to other sectors as well.

The aim of the first phase of the project (Aug 2015-March 2016) was to collect and collate available information on skills forecasting models, the current water system in local government and identify gaps that are not necessarily related to the model but that could be addressed by the LGSETA (Oelofse, 2016). All deliverables and a full report on **Phase I** were completed, submitted and approved by the LGSETA.

This second phase of the project (November 2016 to March 2017) focused on defining the model requirements, describing the model configuration and developing a prototype model. The model definition was informed by the data collected from municipalities as part of the Field Survey of the first phase of the project, as well as from reports, data and information about the water sector from other sources (Seetal, 2017). The **Phase II** final consolidated report was completed and handed to the client on **31 March 2017** together with this closure report.

## 2. PURPOSE OF THIS REPORT

The purpose of this report is to summarise the project life cycle and provide all information necessary to the LGSETA regarding project performance for completing this phase of the project. It also presents proposals and recommendations for the next steps and way forward in accordance with the original and overall project purpose and its indicative work breakdown structure and phases (Figure 1). Specifically, the report lists all the tasks and deliverables that have been completed in this phase of the project and summarises the intended outcomes. Upon acceptance by the LGSETA, the report will formally conclude this phase of the overall project.

### 3. SCOPE OF WORK FOR PHASES I AND II

The Phase I scope of works is summarised as follows:

- i. Examine stakeholders of the operational Water System, their perception indicators, current performance, current plans and strategies, actual required performance, performance gap (planning and requirements gaps including gaps in skills forecasts), previous successes and failures, trends (e.g. technology), drivers of perception indicators and performance gaps (causal diagrams extending into the skills value chain and gaps in the current skills forecasting capability), key drivers (from a sensitivity analysis), uncertainties, functions and performance, system elements (includes financing), enterprises providing system elements, current and required availability, current and planned skills and availability;
- ii. This included an examination of current water system risks, drivers of risk and prevention or mitigation measures;
- iii. It also included desktop research, surveys and workshops;
- iv. A study of leading thinking or best practice in skills demand and supply forecasting in general (e.g. UN and OECD); an examination of lessons learned; a review of prior work done by LG SETA and any of its stakeholders (professional bodies, NRF, HSRC, Department of Labour, Department of Basic Education, Higher Education Institutions and others); and a survey of tools, methodologies, processes and other aspects relevant to skills demand and supply forecasting; and,
- v. Overall management activities including program management, project management, technical integration management and change management (CSIR, 2015).

The Phase II scope of works is summarised as follows:

- I. Stakeholder requirements for the Operating Model to be solicited, defined and analysed. Various Operating Model concepts would be developed and evaluated. Operating Model options will be appraised by stakeholders in a working session with the most feasible concept(s) selected to be taken forward for refinement and implementation;
- II. A functional requirement definition for the Forecasting Model will be generated. An exploratory prototype of the Forecasting Model will be developed to explore technical requirements and to better understand stakeholder expectations, as well as assist in managing the trade-offs between and among Operating Model concepts; and,

- III. Overall management activities including program management, project management, technical integration management, change management, amongst others. The costs related to program/project management will be incorporated into the costs of the deliverables for the current proposal (CSIR, 2016).

#### 4. OVERVIEW OF OUTPUTS

The primary outputs of **Phase I**, as referenced in the phase consolidated report, established that several reported measurements provided insights into the skills gap prevailing in local municipalities in South Africa. In particular, the staff vacancy levels were high in almost all job positions in the municipal water sector. There were serious skills gaps in middle management and Process Controllers (PC) in particular, with practical experience lacking among artisans, engineers and PCs. Staff turnover rates in the water sector were relatively low compared to the rest of the municipal structure; with the highest turnover occurring in the management, artisans and engineers categories, with a concomitant devastating effect on service delivery in municipalities. Municipalities are making steady progress towards reaching their equity targets, but they also report that the targets are not always practical nor achievable.

In addition to providing sufficient numbers of personnel to address the skills gap in municipalities, adequate and efficient training must also be provided. Several entities/organisations have roles to play in providing training and a good rapport among these role-players is needed to ensure that training provision is optimum. The development of the skills forecasting model will go a long way towards providing a tool to the LGSETA to be able to pro-actively identify the staff numbers requirements and crucial training needs and opportunities to address skills demand challenges. In addition, the various other issues and challenges pointed out must be addressed to help streamline the process and to ensure that resources are optimally utilised (Oelofse, 2016). This **Phase I** report has been approved by the LGSETA and the findings have been presented to management to support informed decision-making.

The primary outputs of **Phase II** as referenced in the final consolidated report found that the significance and merits of the phased and iterative approach proposed for this study became increasingly evident during the course of the project. The demonstrated value of the preliminary outputs from the proof-of-concept model warrants further investigation relating to the selection of several plausible scenarios that should be analysed in greater detail to

extract maximum value for the forecasting exercise. What these scenarios should be must be determined by the potential user base for the model, under leadership and coordinated by the LGSETA.

In retrospect, the selection of water and wastewater, which is one of the more complicated local government service delivery sectors in which to undertake skills forecast modelling, required the consideration of a range of factors and dynamics that do not prevail in most other sectors. Hence, out of necessity, the configuration of the prototype forecast model required a very careful selection of the most pertinent input factors in relation to what would be the desired outputs from the exercise.

Further iterations and progressive improvements of the model development will clearly yield improved future products and outputs (Seetal, 2017). The **Phase II** report has been sent to the LGSETA on 31 March 2017 and it is recommended that these findings support decision-making intervention processes at executive management level.

## 5. DELIVERABLES

A list of completed deliverables for **Phase I** has been reported in March 2016 in a consolidated final report. These completed deliverables are listed in table 1 below:

Item	Item name	Type	Status
1.1.1.3	State of the current Water System and gap analysis	Report	Complete
1.1.6.1	Leading thinking/ best practice in skills forecasting (International)	Report	Complete
1.1.6.2	Leading thinking/ best practice in skills forecasting (RSA)	Report	Complete

**Table 1 Phase I completed deliverables**

A list of completed deliverables for **Phase II** is reported in the final consolidated report and will be handed over to LGSETA on 07 April 2017. These deliverables are listed in Table 1 below.

Item	Item name	Type	Status
1.2.1	Operating Model Description	Report	Complete

2.1.1.1	Draft Forecasting Model Requirements Definition	Report	Complete
2.1.1.2	Exploratory Prototype Forecasting Model	Report	Complete
3.2.1	Project Management	Monthly Progress Reports	Complete (close out report)

**Table 2 Phase II completed deliverables**

## 6. OVERALL PROJECT KEY SUCCESSES AND CHALLENGES

The Project has presented a number of successes during its life cycle (2 years). Furthermore, it has unearthed some critical information around the perceptions of various stakeholders about the *status quo* of South Africa’s local government skills levels within the water sector. The key successes are listed as follows:

- Interviews conducted with municipal officials – level of information collected lead to project success;
- High enthusiasm levels from all municipal staff regarding the survey – Municipal skills issues where very close to their hearts;
- CSIR junior staff exposure to a project of this nature – learning and development of skills in collecting and processing data of this nature;
- Focus groups created a lively debate which gave rise to interesting views towards project;
- Available SDF’s and HR Managers where supportive of the project and showed a willingness to contribute to the course.

The project has also had tremendous amount of challenges such as time for forward planning, general project time constraints and logistical issues.

The key challenges are listed as follows:

- Project time frames were too short – data collection of this magnitude requires more time in order for a bigger representative sample to be established;
- Insufficient time for planning interviews with Municipal staff
- Unavailability of key staff like SDF’s in some municipalities, especially for interviews planned during the November-January period when staff are winding down for the year-end break;

- Convincing municipal officials of the validity and significance of the project;
- Worker strikes and protest action in certain municipalities made it impossible to enter municipal offices to conduct interviews

## 6. CONCLUSION

The Project commenced on 01 August 2015 and has come to a completion with Phases I and II on the 31 March 2017. To date CSIR has delivered on the Phase I through a consolidated report that has been accepted by LGSETA. The CSIR has subsequently carried out all activities related to Phase II deliverables and will hand over the final consolidated report to LGSETA together with this Project Closure Report.

The CSIR requests LGSETA to sign off of this report to bring this phase of the project to a close, being of the view that all commitments from the CSIR have been honoured from a project and contractual perspective to date.

Any new proposals that are drafted by the CSIR for LGSETA will fall under the Phase III project operations and will be established within the overall existing Programme Scope and Work Breakdown Structure. The activities and deliverables related to Phase III will be negotiated when the proposal is being developed.

The CSIR wishes to thank LGSETA for the opportunity to partner on a ground-breaking project of this nature. It is indeed a privilege to contribute to the countries skills development at a municipal level and establish a foundation for skills forecasting.

## 7. APPROVALS

Prepared by CSIR	Reviewed by:
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Date: 31 March 2017	Date: 31 March 2017
Signature: 	Signature: 

Approved by LGSETA:
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Date:
Signature: