

CAPACITY BUILDING GUIDELINES IN URBAN AND REGIONAL PLANNING FOR MUNICIPAL ENGINEERS AND ENGINEERING STAFF WITHIN MUNICIPALITIES.

Ms. I. Jansen van Rensburg & Prof. C.B. Schoeman

Masters Student in Urban and Regional Planning ó North West University (Potchefstroom Campus)
Unit for Environmental Sciences and Management ó North West University (Potchefstroom Campus)

ABSTRACT

Urban and Regional Planning responsibilities have been assumed by newly established and existing local municipalities. Of these municipalities, many does not have the financial means to employ full-time Urban and Regional Planners to manage these responsibilities. Recognizing the need for capacity building in physical development planning at all levels, including all local-, district- and national authorities, for equipping them with a user friendly and comprehensive user guideline, the project will assist in carrying out their Urban and Regional Planning duties and associated responsibilities. The project is proposed to serve in this need although it is *not aimed at training* engineering staff to become Urban and Regional Planners *but rather to enable them* to engage with planning specialists. The purpose of this project is to provide an understanding of Urban and Regional Planning and associated practices, the policy and legislative framework that it accompanies and the implications it has for spatial development, transportation, the environment, land development and layout planning, the provision of engineering services and housing, sustainable development, statutory planning processes, etc. A basic knowledge of this will build capacity within staff working in related disciplines. The project will also inform all parties involved of the changes SPLUMA will bring and attempt to guide them through the transition from the old legislation towards an integrated approach. Thus the project will contribute to changing the face of the Municipal Engineer from an Urban and Regional Planning perspective. The interface between Urban and Regional Planners and Municipal Engineers and its staff is contextualised and formalized through this project.

Contents: Part 1: Orientation and Context

Prof. C.B. Schoeman

Unit for Environmental Sciences and Management ó North West University (Potchefstroom Campus)

INTRODUCTION AND BACKGROUND

With the approval of the Spatial Planning and Land Use Management Act (SPLUMA) (Act 16 of 2013) and its Regulations on 23 March 2015, the last bastion of spatial and statutory planning legislation reform (dating back to previous political dispensations) within municipalities were removed. Although the transitional arrangements of this process is still in process within Provincial and Municipal Spheres of Government by formulating its own new transformation structures and procedures (migration to a new land development system), the question remains if the historic disjointedness in municipalities and lack of integration will be addressed efficiently and effectively on all strategic, functional and operational levels?

This project is an endeavour to address and resolve the implications of the historical lack of integration between spatial planning and the role of municipal engineer in planning activities. The improvement of the relationship between professions in an effort to promote sustainable urban and territorial planning will enhance the quality of planning documents to support delivery and normalization within all spatial systems.

The availing of a capacity building guideline will address the need for closer co-operation between the two core professions directing planning and infrastructure development. The need for an improved understanding between the two professions result from the goals and objectives as included in the National Transport Master Plan (NATMAP) (2011); National Development Plan (NDP) (2012); Draft Integrated Urban Development Framework (DIUDF) (2014) and the Draft National Transport Strategic Framework (NLTsf) (2014).

The complexities of the South African policy and legislative framework in the light of division of powers, functions and duties of the various spheres of government can clearly be depicted in Figure 1.

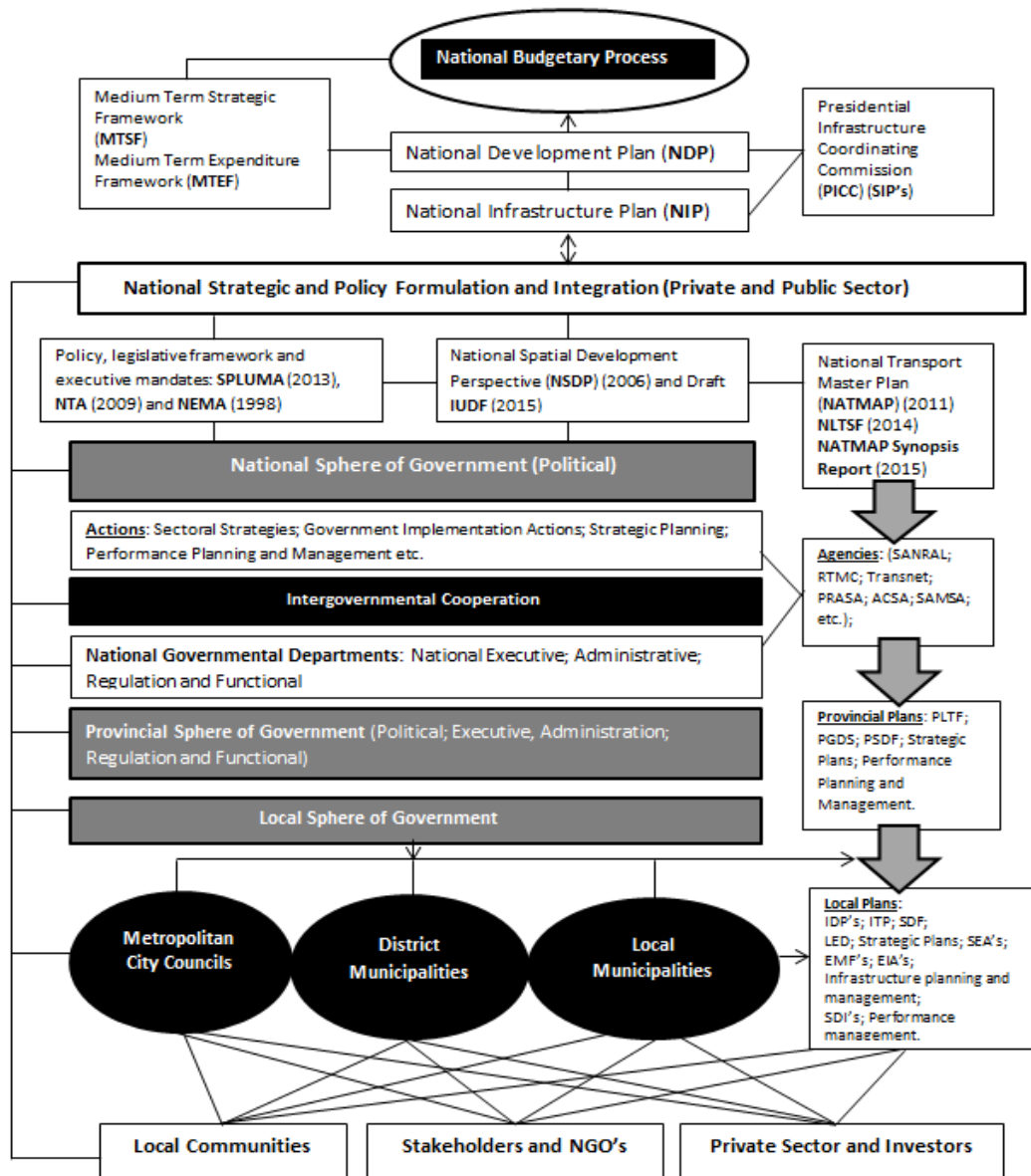


Figure 1: Complexities of integration between Spheres of Government in South Africa.
Source: Own synthesis, 2015.

ORIENTATION AND CONTEXT

The cooperation and integration between activities within professions depend on the nature of the profession, its definition, competencies, training and eventually the professional service rendered to clients and the

public. It is within this context that the research project endeavours to improve the understanding of the roles of Urban and Regional Planners and Municipal Engineers.

Definitions for Urban and Regional Planning as a profession

The planning profession is being controlled by the Planning Profession Act (2002) (Act 36) through a Professional Body called the South African Council for Planners (SACPLAN). SACPLAN (2015) includes the following definition for urban and regional planning:

The core of Urban and Regional Planning is concerned with people and how they use space:

- Where and under what conditions people live;
- How people make their livelihoods;
- How people move between their homes and other destinations;
- How and under what conditions land is used.

These concerns are manifested as spatial systems and networks.

Planning is a strategic, rather than a comprehensive activity, which implies selectivity and a focus on what really makes a difference to the fortunes of an area over time. It is a field of expertise which involves initiating and managing change in the built and natural environment, across a spectrum of contexts, ranging from urban to rural; and delineated at different geographic scales (national, regional, sub-regional, city, town, village, neighbourhood), in order to further human development and environmental sustainability.

Planning operates specifically in the fields of:

- Delimiting, regulating and managing land uses;
- Organisation of service infrastructure, utilities, facilities and housing for sustainable human settlements;
- Co-ordination and integration of social, cultural, economic and physical components of settlements through synthesis and integration of information, for preparation of strategic, policy, statutory and other development plans.

The term 'planning' also implies a mode of governance driven by policies through a deliberative process and judgment of collective action in relation to these policies. Therefore, planning is not a neutral technical exercise: it is shaped by values which must be made explicit. Planning itself is fundamentally concerned with making ethical judgements.

The Planning Profession is also directed by the South African Planning Institute (SAPI) and the South African Association of Consulting Professional Planners (SAACPP). These voluntary organizations support SACPLAN in fulfilling its function and role.

In 2013, SACPLAN appointed service providers to formulate a comprehensive Report of Competencies and Standards (Phase 1) *inter alia* inclusive of the following outputs:

- Consolidated Report on Competencies and Standards;
- Guidelines for Competencies and Standards for Curricula Development;
- Job Profiling Guidelines;
- Registration Guidelines.

SACPLAN (2015) is at present in the process of formulating the following reports (Phase 2) of the Competencies and Standards Project (2015) in order to enhance professionalization:

- Accreditation Criteria;
- Continued Professional Development (CPD) Policy;
- Formulation of an Examination System;
- Development of Qualifications in SAQA format;
- Policy for Recognition of Prior Learning (RPL).

Abovementioned should be interpreted in terms of the Draft Rules and Code of Conduct for Registered Persons (Notice 445 of 2013) as published in the Government Gazette. In essence the outcome of the

Competencies and Standards Project (Phase 1 and Phase 2) will result in completing professionalization of the Planning Profession and eventually Work Reservation for Planners.

Context of spatial planning

Spatial planning (inclusive of land use planning) functions within a specific interface with transportation planning and environmental management. This relationship is determined by the policy and legislative frameworks guiding such disciplines (Refer to Table 1 and Table 2)

Table 3 shows the focus, interface and planning instruments as provided in Spatial Planning, Transportation Planning and Environmental Management. However, for the purposes of this presentation, the need to promote improved cooperation between Urban and Regional Planning and Municipal Engineers does not only stem from SPLUMA (2013). It also relates to the need for engineering input into Spatial Development Frameworks (SDFs) and land development in general. In this the identification of policy levers as identified in the Draft Integrated Urban Development Framework (DIUDF) (2014) is of importance:

- Integrated Spatial Planning;
- Integrated Transport and Mobility;
- Integrated and Sustainable Human Settlements;
- Integrated Urban Infrastructure;
- Efficient Land Governance and Management;
- Inclusive Economic Development;
- Empowered and Active Communities;
- Effective Urban Governance.

Alignment of roles, functions and focuses between Urban and Regional Planning (URP's) and Municipal Engineering (ME's)

The need for alignment in roles, functions and focuses between the two professions and other disciplines (as described above) should also be considered from the perspectives as provided in documents such as: Municipal Infrastructure: Roles and Responsibilities of National Sector Departments, Provincial Counterparts and Municipalities (DPLG and CoGTA) (DPLG, 2006) and the policies as contained in the Municipal Infrastructure Grant (MIG) (CoGTA, 2006-2007).

The IMESA President in his Presidential Address in 2014 referred to the importance to resolving certain crucial issues in the achieving of the goals of the NDP. This in itself is indicative of the need for the Research Project as Reported on in Part 2 of this presentation to build capacity between URP and Municipal Engineering. SPLUMA (2013) and the DIUDF (2014) makes this integration essential. Figure 2 demonstrates the need for alignment to ensure system wide sustainability in planning, infrastructure development and service delivery.

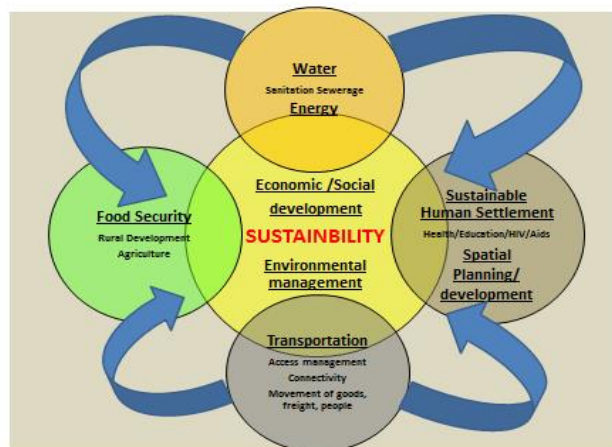


Figure 2: Enhancement of sustainability through alignment and integration.

Source: Own synthesis, 2015.

Table 1: Core policies guiding the interface between spatial planning, transportation planning and environmental management

Urban and regional planning	Transportation planning	Environmental management
Reconstruction and Development Plan (1994) Growth, Economic and Redistribution Strategy (1996) White Paper on South African Land Policy (1997) Urban Development Framework (1997) Rural Development Framework (1997) White Paper on Water and Sanitation (1997) White Paper on Local Government (1998) Green Paper on Development and Planning (1999) National Integrated Rural Development Strategy (2000) King Report II on Corporate Governance for South Africa (2002) White Paper on Spatial Planning and Land Use Management (2001) National Spatial Development Perspective (2003) Mining Charter (2003) Construction Charter (2005) ASGISA, 2006 National Spatial Development Perspective (2006) Housing Atlas (2006) Sustainable Human Settlement Planning: Resource Book (2008) (NDoH) Area Based Planning. Department of Rural Development and Land Reform (2008/2009) NPC: A Guide to the National Planning Framework (2009) NPC: Green Paper. National Strategic Planning (2009) Comprehensive Rural Development Programme. Department of Rural Development and Land Reform (2009) National Planning Commission Diagnostic Overview (2011)* National Development Plan (2012)* Draft Integrated Urban Development Framework (2015)	White Paper on National Transport Policy (1996) Moving South Africa (1996) Rural Transport Strategy for South Africa (2003) Draft minimum requirements for the preparation of integrated transport plans (ITP) (2007) NDOT: Public Transport Strategy (2007) NDOT: Public Transport Action Plan (2007-2010) National Land Transport Strategic Framework (2006-2011) (2002) (Draft) NDOT: Road Infrastructure Strategic Framework for South Africa (2006) NDOT: Rural Transport Strategy for South Africa (2007) NDOT: Implementation Strategy to Guide the Provision of Accessible Transport in South Africa. (2009) NDOT: Final Draft National Scholar Transport Policy (2009) NDOT: Transport Action Plan (2010) NDOT: National Transport Master Plan 2050 (NATMAP) (2010) NDOT: Road Freight Strategy for South Africa (2011) NDOT: Non-Motorized Transport (NMT) Policy (2012) NDOT: Department of Transport Strategic Plan (2012-2014) TRANSNET: Long Term Planning Framework (2012) PRASA: PRASA National Strategic Plan (2012) NDOT: Draft National Land Transport Strategic Framework (NLSF) (2014) NDOT: NATMAP Synopsis Report (Draft) 2015*	Global Biodiversity Strategy: Guidelines for action to save, study and use earth's biotic wealth sustainably and equitably (Published by the WRI; IUCN and UNEP in 1992) Balancing the Scales: Guidelines for increasing Biodiversity's Chances through Bioregional Management, (Published by the World Resources Institute in 1996). Minimum requirements for the Classification, Handling and Disposal of Hazardous Waste (Second Edition (1998) (DWAF) Integrated Environmental Management Guidelines Series (1992) DEAT: An Environmental Policy for South Africa (Green Paper) (1996) White Paper on Integrated Pollution and Waste Management for South Africa (2000) Strategic Environmental Assessment in South Africa (2000) DEAT (2002a) <i>Screening, Information Series 1</i> , Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2002b) <i>Scoping, Integrated Environmental Management</i> , Information Series 2, Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2002c) <i>Specialist Studies, Information Series 4</i> , Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2002d) <i>Impact Significance</i> , Integrated Environmental Management, Information Series 5, Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2004a) <i>Overview of Integrated Environmental Management</i> , Integrated Environmental Management, Information Series 0, Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2004b) <i>Criteria for determining Alternatives in ELA</i> , Integrated Environmental Management, Information Series 11, Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2004c) <i>Environmental Impact Reporting</i> , Integrated Environmental Management, Information Series 15, Department of Environmental Affairs and Tourism (DEAT), Pretoria. Strengthening Sustainability in the Integrated Development Planning Process (2001) State of the Environment Reporting: Draft Guidelines for Local Municipalities (2005) DEAT Information Series (2004-2009) National Framework for Sustainable Development (2008)

*Cross cutting policies

Source: Own synthesis, 2015

Table 2: Core legislative Framework guiding interface between spatial planning, transportation planning and environmental management

Urban and regional planning	Transportation planning	Environmental management
<p>National Building Regulations and Building Standards Act (103 of 1977)</p> <p>Town Planning and Township Ordinance, Ordinance 15 of 1986</p> <p>Land Use Ordinance (Cape of Good Hope), Ordinance 15 of 1985</p> <p>Removal of Restrictions Act 84 of 1967</p> <p>The Less Formal Township Establishment Act, Act 113 of 1991</p> <p>The Physical Planning Act, 88 of 1967 (Sec 6, 8 and 11)</p> <p>Development Facilitation Act, Act No. 67 of 1995 (DFA)</p> <p>Constitution of the Republic of South Africa (108 of 1996)</p> <p>Bill of Human Rights (1996)</p> <p>Physical Planning Act (88 of 1967)</p> <p>Municipal Structures Act (117 of 1998)</p> <p>Restitution of Land Rights Act (22 of 1993)</p> <p>Interim Protection of Informal Rights Act (76 of 1995)</p> <p>Prevention of Illegal Eviction from Unlawful Occupation of Land Act (19 of 1998)</p> <p>Reconstruction and Development Programme Act (79 of 1998)</p> <p>Municipal Systems Act 32 of 2000</p> <p>Development Facilitation Act 67 of 1995 (DFA)</p> <p>Physical Planning Act 125 of 1991</p> <p>Less Formal Township Establishment Act 113 of 1991 (LEFTEA)</p> <p>Subdivision of Agricultural Land Act 70 of 1970 (SALA)</p> <p>Removal of Restrictions Act 84 of 1967</p> <p>Community Land Reform Act 28 of 1996 (CLARA)</p> <p>Housing Act (107 of 1997)</p> <p>National Land Use Management Bill (Draft 2008)</p> <p>Local Government: Municipal Integrated Development Planning Regulations, 2001.</p> <p>Spatial Planning and Land Use Management Act (SPLUMA) (Act 16 of 2013)*</p> <p>R. 239 SPLUMA Regulations (23 March 2015)*</p>	<p>Advertising on Roads and Ribbon Development Act (21 of 1940)</p> <p>Fencing Act (31 of 1963)</p> <p>National Land Transport Transition Act (Act 22 of 2000)*</p> <p>Urban Transport Act (Act 78 of 1977)</p> <p>National Transport Interim Arrangements Act (Act 45 of 1998)</p> <p>Transport Appeal Tribunal Act (At 39 of 1998)</p> <p>Cross Border road Transport Act (Act 4 of 1998)</p> <p>Road Traffic Act (Act 29 of 1989)</p> <p>National Road Traffic Act (Act 93 of 1996)</p> <p>The South African National Roads Agency Limited and National Roads Act (7 of 1998)</p> <p>National Land Transport Act, 2009 (Act 5 of 2009) and Regulations (R.1208, 2009)</p> <p>R. 877 National Land Transport Act (5/2009): National Land Transport Regulations on Contracting for Public Transport Services.</p>	<p>Health Act (63 of 1977)</p> <p>Water Act (54 of 1956)</p> <p>National Water Act (36 of 1991)</p> <p>Water Services Act (108 of 1997)</p> <p>National Environmental Management Act 107 of 1998 (NEMA)</p> <p>National Environmental Management: Air Quality Act (39 of 2004)</p> <p>National Environmental Management: Waste Act 59 of 2009</p> <p>National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA)</p> <p>National Environmental Management: Protected Areas Act 57 of 2003 (NEMPAA)</p> <p>National Heritage Resources Act 25 of 1999 (NHRA)</p> <p>Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA)</p> <p>World Heritage Convention Act 49 of 1999</p> <p>Biodiversity Act 10 of 2004</p> <p>R.543: National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2010 (33306)</p> <p>R.544: Listing Notice 1: List of activities and competent authorities identified in terms of sections 24 (2) and 24D (33306)</p> <p>R.545: Listing Notice 2: List of activities and competent authorities identified in terms of sections 24 (2) and 24D (33306)</p> <p>R.546: Listing Notice 3: List of activities and competent authorities identified in terms of sections 24 (2) and 24D (33306)</p> <p>R.547: Environmental Management Framework Regulations, 2010</p>

* *Cross cutting legislation*

Source: Own synthesis, 2015.

Table 3: Interface in focus and instruments as provided for in Spatial Planning, Transportation Planning and Environmental Management.

SPLUMA (2013)	NLTTA (2000)/NTA (2009)	NEMA (1998)
<ul style="list-style-type: none"> • Development principles and norms and standards • Intergovernmental support • Spatial Development Frameworks (SDFø) • National Spatial Development Framework (NSDF) • Provincial Spatial Development Framework (PSDF) • Regional Development Framework (RSDF) • Municipal Development Framework (MSDF) • Land Use Management (LUM) • Land Development Management (LDM) • Municipal Land Use Plans (MLUP) • Statutory Planning (SP) 	<ul style="list-style-type: none"> • General principles for transportation planning • Types of transportation plans • Provisions on transportation planning • National Land Transport Strategic Framework (NLTSF) • Provincial Land Transport Frameworks (PLTF) • Integrated Transport Plans (ITPs) • Freight Transport Plans (FTP) • Transportation plans and changes in land use and public transport infrastructure and services • Rationalization of public transport services (RATPLANS) • Public Transport Plans (PTPø) • Commuter rail plans (CRP) • Transport Impact Studies (TISø) • Traffic Impact Assessments (TIAø) 	<ul style="list-style-type: none"> • General objectives • Environmental Implementation Plans (EIPø) • Environmental Management Plans (EMPø) • Integrated Environmental Management (IEM) • Environmental Impact Assessments (EIAø) • Environmental Authorizations (EAø) • Strategic Environmental Assessments (SEAø) • Environmental Management Programme (EMPø) • Monitoring and Performance Assessment (M&PAø) • Mine Closure Plans (MCPø)

Source: Own synthesis from SPLUMA (2013), NLTTA (2000), NLTA (2009) and NEMA (1998).

Part 2: The need for capacity building

Ms. I. Jansen van Rensburg

Masters Student in Urban and Regional Planning ó North West University (Potchefstroom Campus)

PROJECT BACKGROUND

Urban and Regional Planning is included as one of the main role players in the vast multi-disciplinary sector that is the built environment. The role of Urban and Regional planning is unavoidable and integral in the success of, among others, sustainable and efficient development (Schoeman, 2010).

Along with the democratisation of South Africa in 1994, the new government inherited the long list of spatial planning and development problems that was the result of failed attempts to address possible spatial planning problems and development regulations in the past. These problems included segregation, fragmented and spatial system and other problems with regards to, not only spatial problems but also economic implications (Drewes, 2013; Schoeman, 2010; van Wyk, 2012:25 & 25).

As a result of the implementation of òwall-to-wallö municipalities after the 1994 elections in South Africa, a large amount of new municipalities were developed, such as local, district and local municipalities (Drewes, 2013; van Wyk, 2012:101-127). This development resulted in Urban and Regional Planning responsibilities being assumed by newly established and existing local municipalities. Of these municipalities, many do not have the financial means to employ full-time Urban and Regional Planners to manage these responsibilities (IMESA, 2009).

Recognizing the need for capacity building in physical development planning at all levels, IMESA (Institute of Municipal Engineers of Southern Africa) identified the need in all municipalities, including all local-,

district- and national authorities, for equipping them with a user-friendly and comprehensive user guideline, the project will assist in carrying out their Urban and Regional Planning duties and associated responsibilities. The project is proposed to serve in this need (IMESA, 2009). Further need assessment was conducted in order to confirm the presumed need and to establish whether or not the project will be adequate and sufficient.

The project is further described by Schoeman (2014) as:

*“The project consists of **capacity building guidelines** to empower municipal engineers and engineering staff to have a basic understanding of the theory, concepts, definitions, practices and procedures underpinning the Profession of Planning. The point of departure is **not to train** engineering staff to become Urban and Regional Planners **but to enable** such members of staff to engage with planning specialists and related applications such as spatial plans, land development applications etc.”*

Urban and regional planning in the built environment

The domain of Urban and Regional Planning can be viewed from an interface perspective with the inclusion of other disciplines (Schoeman, 2013) such as engineering, architecture, environmental management, etc. It is stated that the planning education and, the interfaces within the academic and research environment, are used to form the basis for developments such as residential development (Schoeman 2013).

Urban and Regional Planning and its associated policy and legislative framework, serves as the foundation and integration between other disciplines (*see* Part 1). There are several challenges that the current Urban and Regional Planning Domain should address, in order to promote the interfaces between professions in human settlement development (Schoeman, 2013).

The micro and macro context, in which Urban and Regional planning is included within a multi-disciplinary system, will also illustrate the close proximity of engineering and in particular “Engineering Planning”. Through Figure 1 it is clearly indicated that engineering is a fundamental and vital aspect to Urban and Regional Planning (URP). It is also clear that engineering will not be able to stand on its own, with no support from other disciplines. This results in an interdependent relationship between not only the two fields in question, but also within the fields indicated as “Fields fundamental to URP” (Schoeman, 2010).

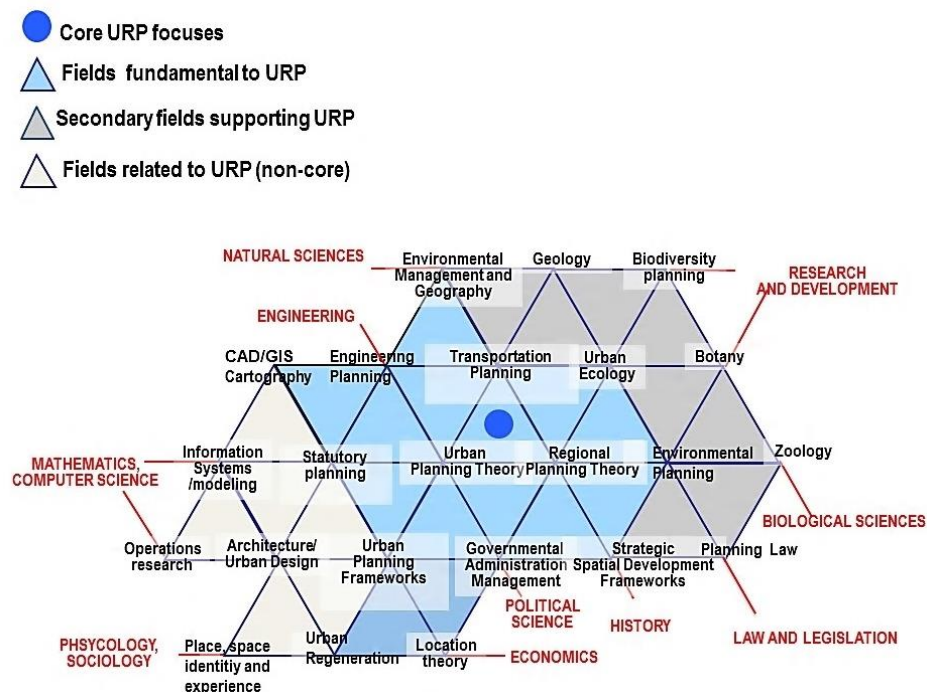


Figure 3: Micro and macro interface relationships between Urban and Regional Planning and other disciplines.

Source: Adapted from (Schoeman, 2010; Schoeman, 2013).

In view of the above mentioned, it is clear that Engineering plays an integral and vital role in Urban and Regional Planning and its associated practices. It is thus important that an understanding of this profession is generated in the endeavours of those persons in Engineering and associated professions, have an understanding of what the implications of Urban and Regional Planning procedures entails as well as their impacts thereon.

AIMS AND OBJECTIVES

The primary aim of the project is to provide capacity building guidelines in Urban and Regional Planning practices in order to enhance effectiveness and efficiency of municipal engineers and engineering staff in their engagement, participation and contribution in statutory land development applications, policy compilations, spatial planning and related development processes within municipalities.

The secondary aims will:

- Explore the interface and relevance of Urban and Regional Planning in the built environment;
- Explore the interaction of Urban and Regional Planning within a multi-disciplinary environment;
- Determine, explain and provide an understanding of Urban and Regional Planning practices and the working thereof in the built environment;
- Provide an overview of the policy and legislative frameworks relevant to the goal of this document;
- Establish a framework in order to determine which information should be included in the document, thus deemed as important information regarding capacity building;
- Provide and illustrate understandable information serving as summarisations of the information determined as important and relevant to the aim of the capacity building guidelines;
- Ensure that the information provided is easily understandable and will enhance capacity building as determined by the aim of the guidelines.

The following objectives will be addressed in accordance with the aim and sub-aims of this document, the reader will:

- When facing a problem in the practitioners field, be able to refer to policies, legislation, regulations, principles, guidelines, and/or knowledge from urban and regional planning to help solve a problem in a multi-disciplinary manner;
- Be able to participate in conversation regarding Urban and Regional Planning;
- Be able to better understand the information relevant to urban and regional planning regarding statutory land development applications;
- Be able to provide adequate and accurate comments on statutory land use planning applications;
- Be able to participate in the compilation and implementation of developmental policies;
- Be able to better assist in processes regarding spatial planning and related development processes;
- Be able to refer to the document, when having questions and concerns regarding the content, related to Urban and Regional Planning problems;
- Have the capacity to substantiate their decisions regarding Urban and Regional Planning practices relevant to their specialised fields.

THE PURPOSE & CONTENT OF THE PROJECT

The purpose of this project is to provide an understanding of Urban and Regional Planning and associated practices (IMESA, 2009), the policy and legislative framework, that it accompanies and the implications it has for spatial development, transportation, environment, land development and layout planning, the provision of engineering services and housing, sustainable development, etc. A basic knowledge of this will build capacity with staff working in related disciplines (*see Part 1*).

The project will also enable an understanding of the processes supporting statutory planning and the content of processes documents required for the development of various categories of land applications to be submitted to all municipalities and tribunals, along with an understanding of the engineers' responsibility regarding the scope and extent of their planning related responsibilities.

Figure 2 illustrates the proposed contents of the project, this however was adapted through the course of the project to obtain the proposed and existing content layout indicated later in this paper.

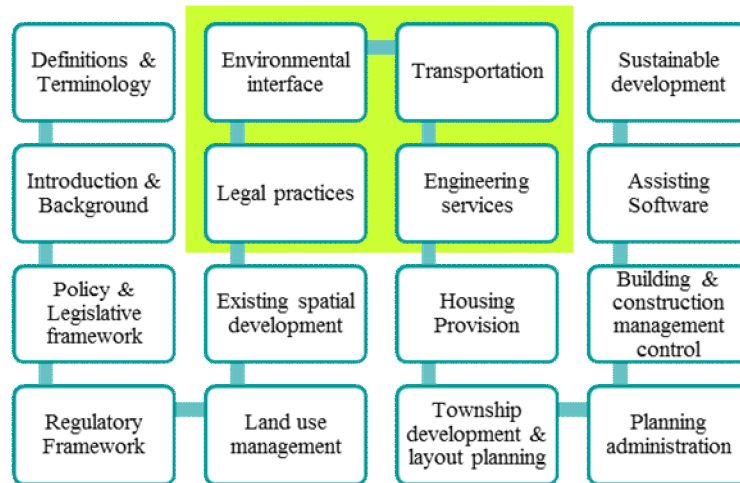


Figure 4: Project contents.
Source: Own Synthesis.

The changes, as a result of the imminent Spatial Planning and Land Use Management Act (SPLUMA) No. 16 of 2013, is included in the project. This will enable the relevant parties to make a transition from the old legislation towards an integrated approach as proposed by the Act. As a result the Act will also form an important focus of the project, as it will have a large influence in the town planning applications and its associated processes. SPLUMA commenced on 01 July 2015, with implications on various municipalities. The municipalities however, are granted with a transitioning period. Up until the new policies for each municipality or province have been developed, the existing processes will be used, if it is not in contradiction with SPLUMA, or has been repealed.

The interaction between Urban and Regional Planning and Engineering forms an integral part of this project, as it will be attempted to not only guide the engineer needing to deal with town planning applications, but also the town planner to understand the role of the engineer in the applications they present. The project includes a summarisation of what the role of the engineer will be regarding the particular topic, as well as whom he/she can contact for assistance, what resources (documents) and practitioner can be consulted, the processes that need to be followed, etc. It will typically be presented in a table similar to the following, with accompanying explanations where processes should be explained.

Table 1: Example of a table of 'Important knowledge to take note of'.

Concept	Township Related Issues – Town Planning Applications
Process to follow	<p>The following processes can be seen as the general processes in all land development applications (SPLUMA, 2013):</p> <ol style="list-style-type: none"> 1. Submission of application 2. Fees and documents to accompany application 3. Simultaneous submission of applications 4. Screening of application 5. Registration of application 6. Notice of category 1 land development application 7. Notice of a category 2 land development or land use application 8. Objections 9. Comments pursuant to circulation 10. Amendments to application prior to referral 11. Referral of application by administrator 12. Decision and determination by land development officer

	13. Procedure of tribunal 14. Consolidation and separation of applications 15. Continuation of application by new applicant 16. Power of tribunal to conduct site inspection 17. Decisions of tribunal 18. Conditions determined by tribunal 19. Non-compliance with conditions determined by tribunal 20. Approval of land development application that requires amendment of land use scheme 21. Approval of land development application on land where no town planning or land use scheme applies 22. Notification by administrator of decision of tribunal 23. Amendment of approval 24. Withdrawal of application 25. Effective date of decision by tribunal or land development officer
The role of the Engineer	<p>It is the responsibility of the municipal engineer to provide comments on all town planning applications. These comments should include aspects such as;</p> <ul style="list-style-type: none"> • Roads (maintenance and provision thereof); • Stormwater (possible impact); • Water & sanitation and electricity (sufficiency of capacity for proposed development); etc. <p>Consideration should be made to aspects including <i>inter alia</i> bulk- and internal services, cost effectiveness, development contributions.</p>
What is important to know	<p>Not all town planning applications are the same; circumstances and applicable legislation differ; SDF, LUMS and other policies should be consulted for each application and should not be seen as blue prints as some are adaptable and can be changed; illegal developments may warrant the proposed development even though the municipal documentation does not necessarily support the application completely. The aspect of urban fragmentation should be considered for each application as it influences its validity.</p>
How it should be implemented	<p>It is good to provide consequent and rigid comments on applications, it prevents the establishment of precedents, however if the proposed development does not necessarily comply with the policy documents, it should be considered with greater diligence. Engineering comments should be provided in the required timeframe, the delay in the provision thereof, causes a ripple effect in the delay regarding the completion of the applications, resulting in a bottle-neck effect in all municipal departments. Engineering contributions should be explained in greater detail as the developers and owners are not educated in understanding the difference in green- and brown field developments and the difference in contributions.</p>
Consultants to contact for assistance	<p>Town Planner; Land Surveyor; Attorney; Consulting Engineers; Environmentalists; Government Departments; etc. these consultants, and others, can make significant contributions and should be consulted.</p>
Resources to consult	<p>Policy and legislative documentation including <i>inter alia</i> Town Planning Scheme, SDF, IDP, LUMS, ITP, environmental guidelines.</p>

Source: Own synthesis.

SUPPORTING RESEARCH

As previously mentioned quantitative and qualitative data have been collected in order to support the evaluation of the proposed programme developed for capacity building in Municipal Engineers. Firstly a need assessment is conducted by means of survey distribution. This was used to determine the current level of skills in Urban and Regional Planning and related fields and the expectations and experience from the related professions towards each other. Secondly, an evaluability assessment will be conducted on the proposed programme after the evaluation of the qualitative and quantitative data collected through the

questionnaires has been completed. A summary for the programme monitoring regarding the current and future use of the programme is included.

Questionnaires were handed out during the IMESA Conference 2014 on the basis of group-administered and hand-delivered practices. A total of 817 delegates were registered to attend the conference of which 175 feedbacks were received during the conference time frame from 28-31 October 2014. The questionnaires contained three (3) sections, including quantitative and qualitative questions. An incentive was provided to encourage feedback from the conference delegates. A brochure was circulated along with the questionnaires in which the purpose, goal, background and competition details were explained, a description of the topics included in Section B of the survey was also provided. The following sections will illustrate the data collected during this survey.

Need assessment

Figure 5 illustrates that 71 (55.9%) of the participants indicated that they are of the opinion the Municipal Engineers of South Africa do not have sufficient working knowledge of the domain of Urban and Regional Planning. Furthermore, 118 (93.7%) of the participants are of the opinion that it is necessary to broaden the understanding of Urban and Regional Planning under Municipal Engineers. This is then substantiated with the low levels of average knowledge provided in Figure 6.

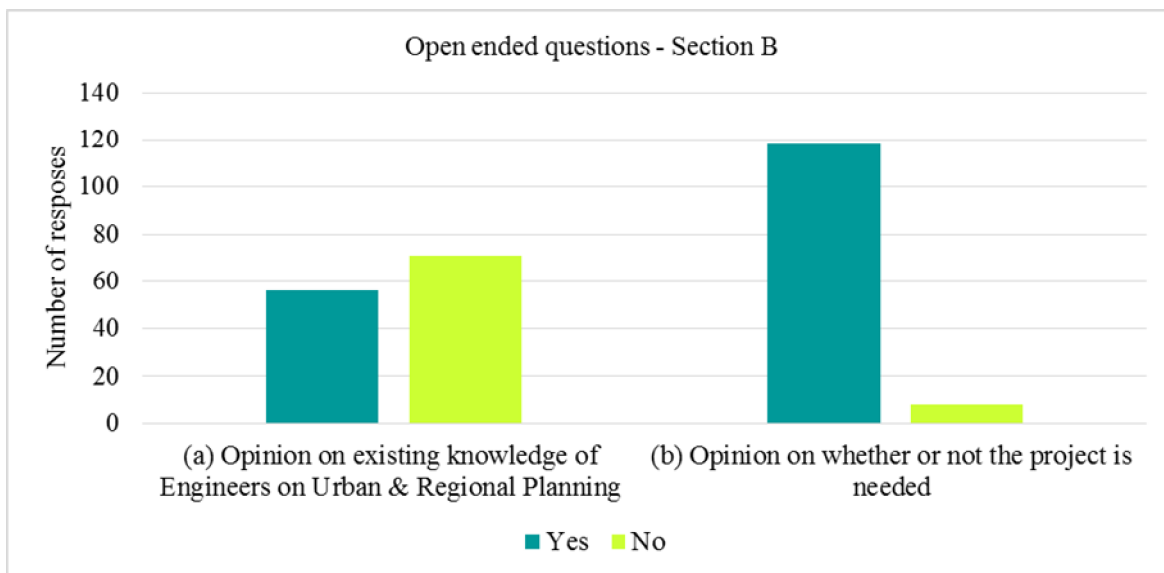


Figure 5: Open ended questions - Section B.
Source: Own synthesis from IMESA Conference 2014 Questionnaires.

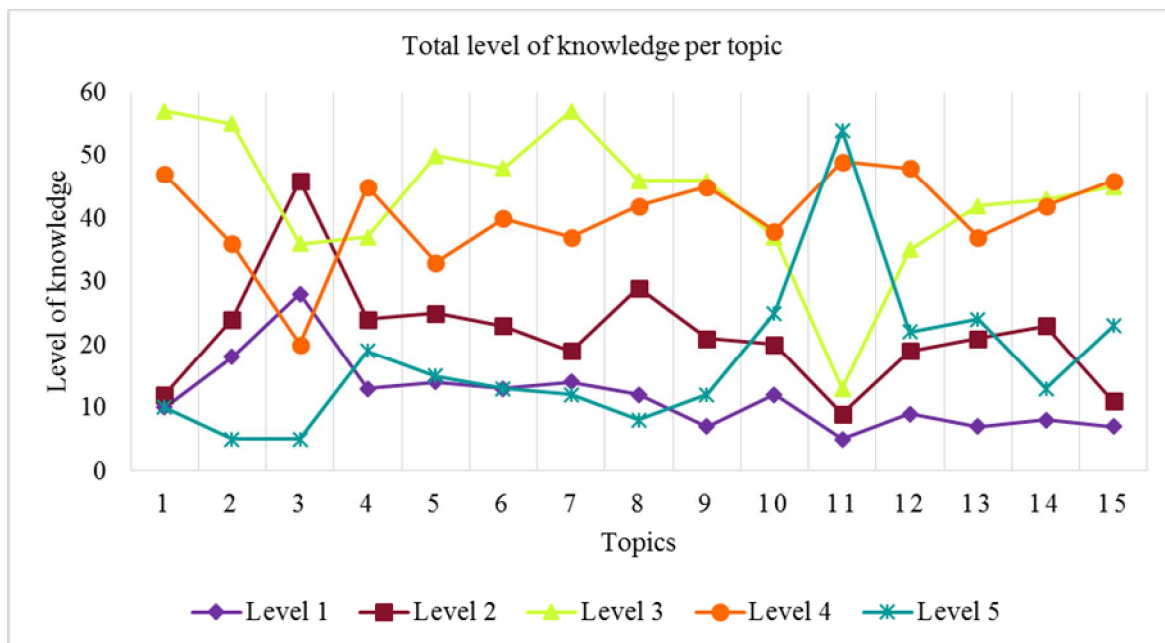


Figure 7: Total level of knowledge per topic.
Source: Own synthesis from IMESA Conference 2014 Questionnaires.

Generally the data is extremely reliable, receiving a .944 through the use of Cronbach's Alpha, subsequently a factor analysis the Kaiser-Meyer-Olkin Measure of sampling adequacy was determined as .916 with a Bartlett's test resulted in a 0 factor score. Two (2) factors were extracted through factor analysis. These factors are known as the Baseline knowledge and Output driven knowledge. Though a Varimax- and Oblimin rotation, the knowledge areas were linked to these two (2) factors. These factors are known as the Baseline knowledge and Output driven knowledge.



Figure 6: Two (2) knowledge groups.
Source: Own synthesis from IMESA Conference 2014 Questionnaires.

Figure 8 illustrates the level of knowledge relating to the private and public sectors as indicated during the IMESA Conference 2014 survey. Although it is expected that the average level of knowledge for Baseline

knowledge should generally be much higher for the public sector than for the private sector, it is evident that it is not the case. Engineers in the private sector do not generally deal directly with Urban and Regional Planning, thus it is expected that their average Output driven knowledge is higher than that of Baseline knowledge. In contrast the engineers in the public sectors are required to provide opinions and comments on most of the Town planning applications received by the municipalities, as well as policies and legislation rolled out by the municipalities and governmental departments. As a result they are expected to have a much higher average level of Baseline knowledge with a very small difference between the averages of that of Output driven knowledge, resulting in the confirmation of the need for a project such as the Capacity Building Guidelines.

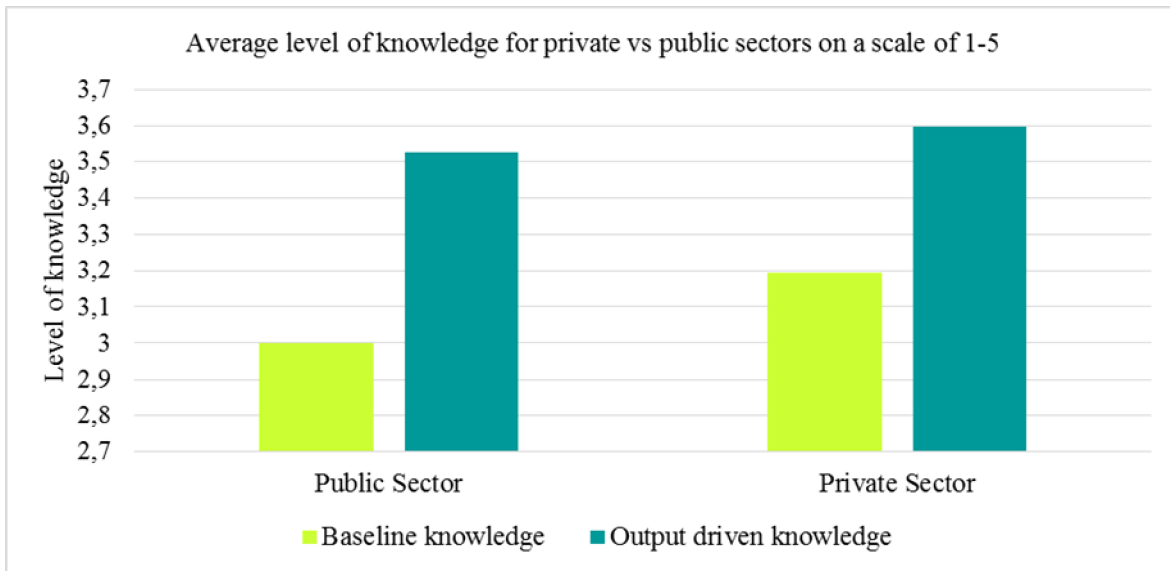


Figure 8: Average level of knowledge for private vs public sectors.
Source: Own synthesis from IMESA Conference 2014 Questionnaires.

Figure 9 illustrates the average level of knowledge per group of years of experience by participants. Included in this figure is the amount of responses received for each group, ensuring better interpretation of the results obtained. Even though several of the participants indicated that they are of the opinion. That engineers with more experience will have a greater knowledge regarding Urban and Regional Planning, the results of the survey indicated that the engineers with less experience do indeed have the greatest average level of knowledge followed by those with the most amount of experience, this however can be attributed to the amount of responses received per years of experience group. The cause of this can be either the result of

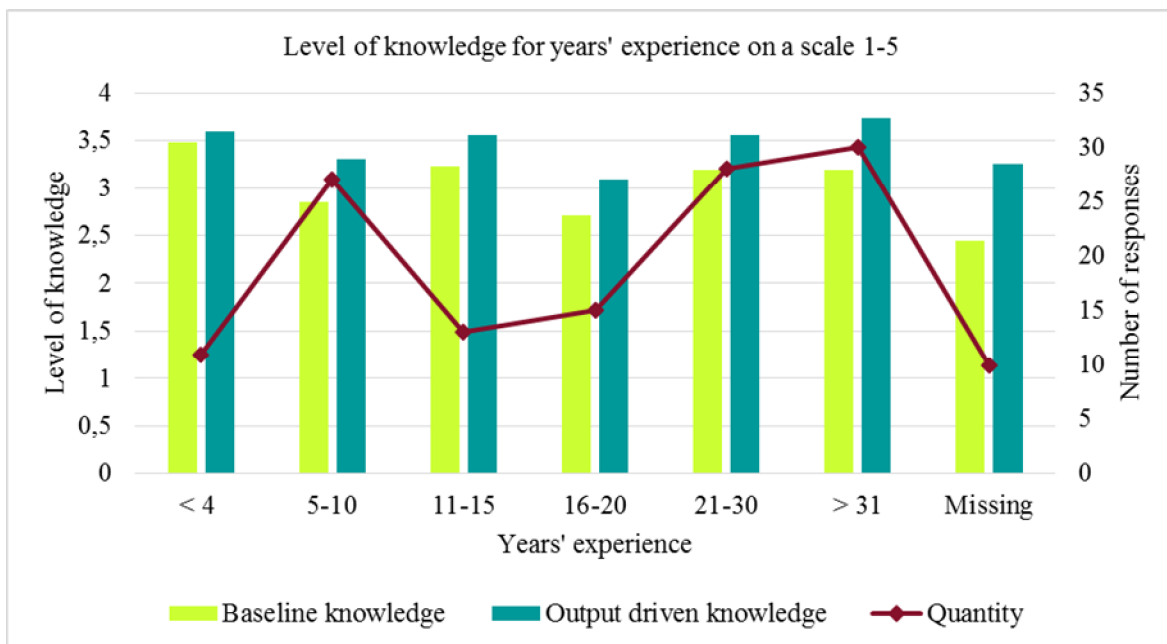


Figure 9: Level of knowledge for years of experience.
Source: Own synthesis from IMESA Conference 2014 Questionnaires.

engineers having to conduct Urban and Regional Planning related responsibilities or that they have received a more comprehensive tertiary education. Again the need for the programme is stressed.

Further research regarding the origin of the lack of capacity was done through the determination of modules included in qualification provided at tertiary institution accredited by ECSA and supported by SAICE. This shortfall was confirmed through the questionnaires circulated and feedbacks received.

Evaluability assessment

The problem statement and substantiation provides the pre-conditions for evaluability assessment. These pre-conditions are in line with the need assessment done regarding the project. As a result this exemplifies the evaluability of the project and establishes that the project can be evaluated on grounds of the content thereof, in light of the need that has been established. Included in the project is several main topics/themes with several sub-themes provided with detailed explanations and descriptions included under each. Figure 10 provides a short description of what is included in the project:

Programme monitoring

1. Introduction & background	•Purpose of the project, aims & objectives, etc.
2. Policy framework	•SDF, LED, IDP, LUMS, NEPAD, etc.
3. Legislative framework	•RDP, NDP, NSDP, SPLUMA, etc.
4. Spatial development	•Regulations, land use management, etc.
5. Environmental & developmental interface	•NEMA, geographical-, climate considerations, etc.
6. Transportation & Provision of Engineering services	•NATMAP, service design, guidelines, formalization, etc.
7. Provision of Housing	•Integrates settlement, housing development, housing in S.A., etc.
8. Township related issues	•Applications, township establishment, layout planning & design, etc.
9. Planning & development administration	•Sector plans, public participation, asset management , etc.
10. Sustainable development	•Sustainable cities, challenges, settlements, etc.
11. Supporting software	•GIS, CAD, etc.

Figure 10: Project contents.
Source: Own synthesis.

Programme monitoring was done in several forms and will continue to be done beyond the completion of the research project. The manner in which programme monitoring took place included:

- The review and adaptation from the original proposed 'Table of Content' provided by IMESA, in order to obtain the contents provided in Figure 10. The original contents was deemed as inadequate by the practitioners in the field of Urban and Regional Planning;
- Correspondence took place between the Research Team and the project initiators (IMESA) regarding the amendment and improvement of the project;
- IMESA Executive Committee members, received feedback during the IMESA Conference 2014, as provided by the researchers;
- Limited responses and feedback was provided to the researcher, thus it is possible that the project could not reach its full potential, resulting in the possible provision of a revised version in order to enable the project in reaching its full and expected potential.

The programme is proposed to be implemented on a national bases with distribution of a summary done by IMESA. It is hoped that the project will then be provided in numerous ways including the publication thereof on the IMESA website, provision of short courses, etc. Figures 11 & 12 illustrates the responses received during the IMESA Conference 2014 regarding the participants' preference receiving to such a project. Preference was given to receiving a short course with the submission of an assignment (69.5%), subsequent preference was given to receiving a soft- (46.8%) or digital copy (31.9%) of the project.

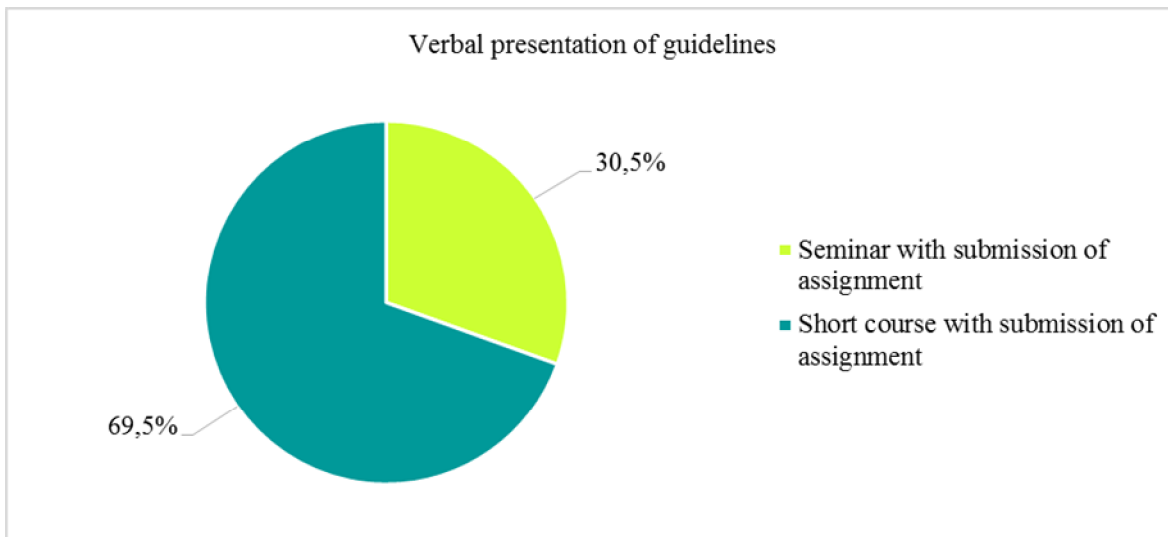


Figure 11: Verbal presentation of guidelines.
Source: Own synthesis from IMESA Conference 2014 Questionnaires.

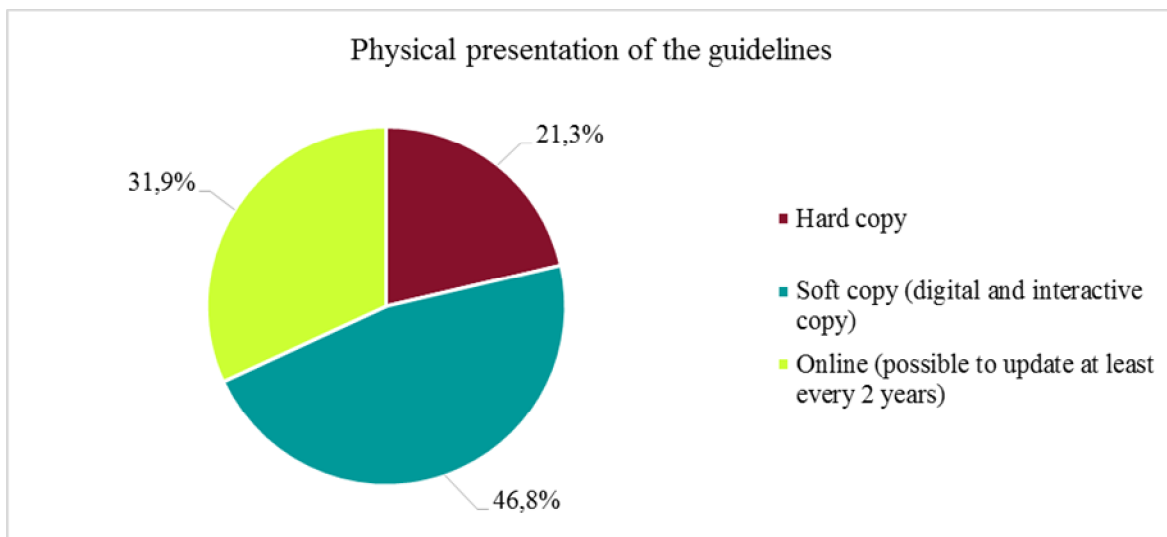


Figure 12: Physical presentation of the guidelines.
Source: Own synthesis from IMESA Conference 2014 Questionnaires.

CONCLUSION

To conclude, the purpose of this paper was to provide an overview and report back on the description of the Capacity Building guidelines, including the substantiation and the evaluation thereof. The inclusion of comprehensive descriptions of all Urban and Regional Planning related topics, and information for specifically the engineers, will contribute in enabling engineers to not only improve their comprehension of Urban and Regional Planning, but will enable them to make more meaningful contributions in their related fields of expertise. The process of the project is evaluated in order to ensure its sufficiency and effectiveness. Through further research the need for a project of this magnitude was again reiterated along with the specific areas to which the need relates. This resulted in the provision of a suitable Capacity Building Guideline for Engineers and Engineering staff within Municipalities.

It is recommended that the project be implemented on a national basis with the use of short courses in order to provide orientation and much needed information to those engineers in need. At a later stage the project can be distributed to the majority of local-, provincial- and district municipalities with the inclusion of knowledge assessment prior to receiving the information and a re-evaluation after the course has been completed.

Proposals have been made regarding possible negotiations with Skills Education Training Authorities (SETA) for the accreditation of the project in order for it to be included regarding education and training of engineers and engineering staff in municipalities and other professions that may require information in Urban and Regional Planning. These SETA's may include the Construction Education & Training Authority (CETA); Education, Training & Development Practices SETA (ETDP); Local Government, Education and Training Authority (LGSETA); Manufacturing, Engineering & related Services Education and Training Authority (MERSETA); etc. (Serviceseta, 2012). Other proposals include the inclusion of the programme for Continued Professional Development (CPD) provided by IMESA and its branches.

Further research can be done at each municipality in order to determine where the least amount of average knowledge is located, this can result in the better implementation of the project. The specific role of the engineer in Urban and Regional Planning can also be evaluated and determined.

For future reference, a more specific determination can be made on what the specific sub-themes is in which capacity building is needed. This will ensure a more precise provision of information as it is possible that not all the included information for this study is required.

Part 3: Strategy and Way Forward

Prof. C.B. Schoeman

Unit for Environmental Sciences and Management 6 North West University (Potchefstroom Campus)

From the Research Project the following conclusions can be deduced:

- Professional capacity: From the research it is evident that both the professions of Urban and Regional Planning and Municipal Engineers can be classified as scarce skills in all municipalities.
- Need for Capacity Building: The implementation of the SPLUMA (2013) will give rise to a more important responsibility for URP's and ME's staff to improve alignment in planning, infrastructure development and services provision.
- Planning Instruments and Processes: Municipal Engineers need to be involved in all cycles of spatial planning inclusive of IDP's, SDF formulation, Strategic Planning, and urban regeneration in terms of the policies and considerations as included in the DIUDF (2014).
- Complexities within Governance: In the longer term the debate relating to the positioning of Municipal Engineering within Municipalities should be considered. The importance of infrastructure and service delivery to the public necessitates considerations such as depoliticising such services and to locate it in new structures such as Infrastructure Agencies on a regional basis. Planning is political sensitive and should remain within Municipalities.
- Training and Education of Professionals: Planning Schools and Engineering Departments within the tertiary sector should consider to improve the knowledge and exposure of students to both planning and engineering skills and practices.
- Presentation of the Research Project to IMESA Branches: Capacity building on SPLUMA (2013) and the body of the research to be presented at all IMESA Branch Meetings.

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