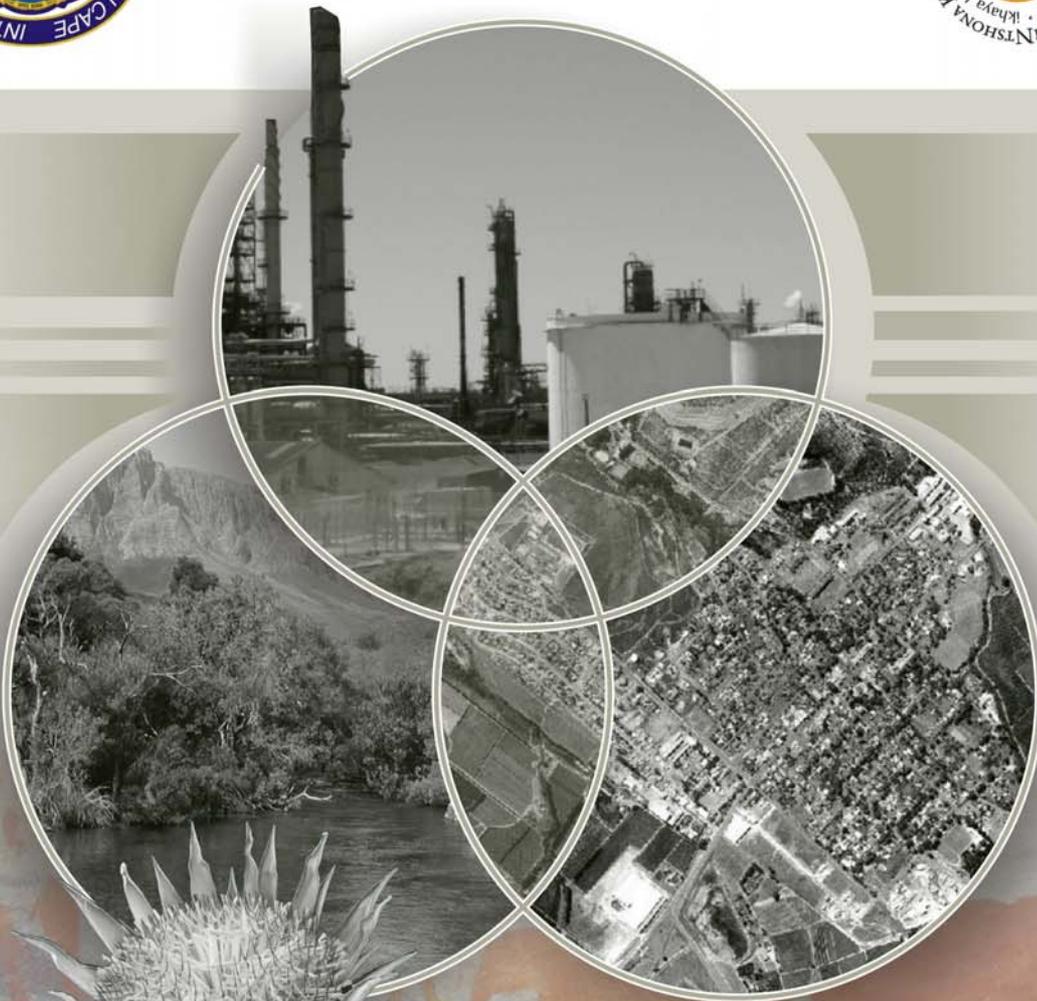


# GUIDELINE FOR THE REVIEW OF SPECIALIST INPUT IN EIA PROCESSES



**PROVINCIAL GOVERNMENT OF THE WESTERN CAPE:  
DEPARTMENT OF ENVIRONMENTAL AFFAIRS  
AND DEVELOPMENT PLANNING**



**CSIR**

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# GUIDELINE FOR THE REVIEW OF SPECIALIST INPUT IN EIA PROCESSES

## *Edition 1*

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These guidelines have been primarily informed by the following documents:

- Review Guidelines for Environmental Impact Assessment in the Cape Metropolitan Area (as modified by DEA&DP for use throughout the Western Cape Province).
- SAIEA Review Checklist (appendix to DEAT Information Series 13: Review in EIA)
- DEAT Integrated Environmental Management Information Series 13: Review in EIA

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# PREFACE

The purpose of an Environmental Impact Assessment (EIA) is to provide decision-makers (be they government authorities, the project proponent or financial institutions) with adequate and appropriate information about the potential positive and negative impacts of a proposed development and associated management actions in order to make an informed decision whether or not to approve, proceed with or finance the development.

For EIA processes to retain their role and usefulness in supporting decision-making, the involvement of specialists in EIA needs to be improved in order to:

- Add greater value to project planning and design;
- Adequately evaluate reasonable alternatives;
- Accurately predict and assess potential project benefits and negative impacts;
- Provide practical recommendations for avoiding or adequately managing negative impacts and enhancing benefits;
- Supply enough relevant information at the most appropriate stage of the EIA process to address adequately the key issues and concerns, and effectively inform decision-making in support of sustainable development.

It is important to note that not all EIA processes require specialist input; broadly speaking, specialist involvement is needed when the environment could be significantly affected by the proposed activity, where that environment is valued by or important to society, and/or where there is insufficient information to determine whether or not unavoidable impacts would be significant.

The purpose of this series of guidelines is to improve the efficiency, effectiveness and quality of specialist involvement in EIA processes. The guidelines aim to improve the capacity of roleplayers to anticipate, request, plan, review and discuss specialist involvement in EIA processes. Specifically, they aim to improve the capacity of EIA practitioners to draft appropriate terms of reference for specialist input and assist all roleplayers in evaluating whether or not specialist input to the EIA process was appropriate for the type of development and environmental context. Furthermore, they aim to ensure that specialist inputs support the development of effective, practical Environmental Management Plans where projects are authorised to proceed (refer to *Guideline for Environmental Management Plans*).

The guidelines draw on best practice in EIA in general, and within specialist fields of expertise in particular, to address the following issues related to the timing, scope and quality of specialist input. The terms “specialist involvement” and “input” have been used in preference to “specialist assessment” and “studies” to indicate that the scope of specialists’ contribution (if required) depends on the nature of the project, the environmental context and the amount of available information and does not always entail detailed studies or assessment of impacts.

	ISSUES
<b>TIMING</b>	<ul style="list-style-type: none"> <li>When should specialists be involved in the EIA process; i.e. at what stage in the EIA process should specialists be involved (if at all) and what triggers the need for their input?</li> </ul>
<b>SCOPE</b>	<ul style="list-style-type: none"> <li>Which aspects must be addressed through specialist involvement; i.e. what is the purpose and scope of specialist involvement?</li> <li>What are appropriate approaches that specialists can employ?</li> <li>What qualifications, skills and experience are required?</li> </ul>
<b>QUALITY</b>	<ul style="list-style-type: none"> <li>What triggers the review of specialist studies by different roleplayers?</li> <li>What are the review criteria against which specialist inputs can be evaluated to ensure that they meet minimum requirements, are reasonable, objective and professionally sound?</li> </ul>

The following guidelines form part of this first series of specialist involvement guidelines:

- Guideline for determining the scope of specialist involvement in EIA processes
- Guideline for the review of specialist input in EIA processes
- Guideline for involving biodiversity specialists in EIA processes
- Guideline for involving hydrogeologists in EIA processes
- Guideline for involving visual and aesthetic specialists in EIA processes
- Guideline for involving heritage specialists in EIA processes
- Guideline for involving economists in EIA processes

The *Guideline for determining the scope of specialist involvement in EIA processes* and the *Guideline for the review of specialist input in EIA processes* provide generic guidance applicable to any specialist input to the EIA process and clarify the roles and responsibilities of the different roleplayers involved in the scoping and review of specialist input. It is recommended that these two guidelines are read first to introduce the generic concepts underpinning the guidelines which are focused on specific specialist disciplines.

***Who is the target audience for these guidelines?***

The guidelines are directed at authorities, EIA practitioners, specialists, proponents, financial institutions and other interested and affected parties involved in EIA processes. Although the guidelines have been developed with specific reference to the Western Cape province of South Africa, their core elements are more widely applicable.

***What type of environmental assessment processes and developments are these guidelines applicable to?***

The guidelines have been developed to support project-level EIA processes regardless of whether they are used during the early project planning phase to inform planning and design decisions (i.e. during pre-application planning) or as part of a legally defined EIA process to obtain statutory approval for a proposed project (i.e. during screening, scoping and/or impact assessment). Where specialist input may be required the guidelines promote early, focused and appropriate involvement of specialists in EIA processes in order to encourage proactive

consideration of potentially significant impacts, so that negative impacts may be avoided or effectively managed and benefits enhanced through due consideration of alternatives and changes to the project.

The guidelines aim to be applicable to a range of types and scales of development, as well as different biophysical, social, economic and governance contexts.

***What will these guidelines not do?***

In order to retain their relevance in the context of changing legislation, the guidelines promote the principles of EIA best practice without being tied to specific legislated national or provincial EIA terms and requirements. They therefore do not clarify the specific administrative, procedural or reporting requirements and timeframes for applications to obtain statutory approval. They should, therefore, be read in conjunction with the applicable legislation, regulations and procedural guidelines to ensure that mandatory requirements are met.

It is widely recognized that no amount of theoretical information on how best to plan and coordinate specialist inputs, or to provide or review specialist input, can replace the value of practical experience of coordinating, being responsible for and/or reviewing specialist inputs. Only such experience can develop sound judgment on such issues as the level of detail needed or expected from specialists to inform decision-makers adequately. For this reason, the guidelines should not be viewed as prescriptive and inflexible documents. Their intention is to provide best practice guidance to improve the quality of specialist input.

Furthermore, the guidelines do not intend to create experts out of non-specialists. Although the guidelines outline broad approaches that are available to the specialist discipline (e.g. field survey, desktop review, consultation, modeling), specific methods (e.g. the type of model or sampling technique to be used) cannot be prescribed. The guidelines should therefore not be used indiscriminately without due consideration of the particular context and circumstances within which an EIA is undertaken, as this influences both the approach and the methods available and used by specialists.

# SUMMARY

The purpose of this guideline is to improve the quality of specialist contributions to EIA processes by improving the robustness of all reviews of specialist inputs. This includes the review of contributions made by specialists during the pre-application planning, screening, scoping and impact assessment phases of EIA processes.

Several types of problems have been linked to the provision of specialist inputs during an EIA process and these often result in inadequate quality of inputs. Typical problems include: poor terms of reference, over-emphasis on baseline descriptions with inadequate impact assessment, analysis or evaluation of information; use of inappropriate approaches and methods; use or provision of unreliable data; provision of insufficient information for decision-making, and unclear presentation of information.

In the absence of clear guidance to indicate when the review should be undertaken, who should undertake the review, and how the review should be conducted, reviews of specialist studies have varied in their thoroughness and quality, and have perpetuated deficiencies in the quality of final reports.

In responding to the above, the objectives of the guideline are to:

- i) Identify triggers that determine when review should take place and for what purpose.
- ii) Identify who should undertake the review.

- iii) Present specific criteria that support the review process in determining whether or not the specialist input meets the minimum requirements for such inputs and is reasonable, objective and professionally defensible.

With regard to the first and second objective, the guideline identifies triggers for the review of specialist input by different reviewers, including the EIA practitioner, the proponent, financial institutions, authorities, peer reviewers and other stakeholders. The purpose and outcome of these reviews are summarized.

The guideline identifies the relevant qualifications, skills and experience required to provide independent specialist peer review and identifies relevant information required by any reviewer prior to conducting their review. In response to the third objective, the guidelines provide review criteria for overall quality assurance of the specialist input, as well as for the key types of specialist input.

# CONTENTS

Acknowledgements .....	i
Preface .....	ii
Summary .....	v
<b>1. INTRODUCTION</b> .....	<b>1</b>
<b>2. PURPOSE OF THIS GUIDELINE</b> .....	<b>2</b>
<b>3. PRINCIPLES AND CONCEPTS UNDERPINNING THE REVIEW OF SPECIALIST INPUTS TO EIA PROCESSES</b> .....	<b>2</b>
3.1 Principles of sustainable development .....	2
3.2 Principles of ethics and quality .....	4
3.3 Common EIA terms and concepts .....	4
<b>4. THE ROLE AND TIMING OF THE REVIEW OF SPECIALIST INPUT</b> .....	<b>6</b>
<b>5. QUALIFICATIONS, SKILLS AND EXPERIENCE REQUIRED TO REVIEW A SPECIALIST STUDY</b> .....	<b>14</b>
<b>6. INFORMATION REQUIRED TO REVIEW A SPECIALIST STUDY</b> .....	<b>15</b>
6.1 Relevant project information .....	15
6.2 Information describing the affected environment .....	15
6.3 The legal, policy and planning context .....	16
6.4 Specialist terms of reference .....	17
<b>7. REVIEW CRITERIA</b> .....	<b>17</b>
7.1 Overall quality assurance .....	17
7.2 Key types of specialist input .....	19
<b>8. REFERENCES</b> .....	<b>21</b>

***Appendices***

Appendix A: Acronyms.....	23
Appendix B: Model Terms of Reference for specialist input.....	24
Appendix C: Review checklist for specialist input.....	25

***List of tables***

Table 1: Triggers and purpose of review by different reviewers .....	8
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***List of boxes***

Box 1: Definition of sustainable development .....	3
Box 2: Common EIA terms and concepts .....	4

# ***SPECIALIST REVIEW GUIDELINE***

## **1. INTRODUCTION**

Environmental Impact Assessment (EIA) is a process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of any proposed project. EIA also includes an evaluation of reasonable alternatives, as well as recommendations on appropriate management actions for minimising or avoiding negative impacts, measures for enhancing the positive aspects of the proposal, and specific arrangements or recommendations for ongoing environmental management and monitoring. The objective of EIA is to provide decision-makers with relevant and objective environmental information in a form that will allow them to determine whether or not a proposed project will support sustainable development.

Project-level EIA processes typically consist of some or all of the following four distinct stages: pre-application planning, screening, scoping and impact assessment. Specialists are required to provide a range of inputs during each of these phases. Their input could consist of opinions, provision of baseline information, field studies, detailed modelling and impact assessment. Problems arise when the quality and reliability of specialist inputs to EIA processes adversely affect an EIA. These problems include are typically associated with:

- Poor, or non-existent specialist terms of reference.
- Over-emphasis on baseline descriptions with inadequate attention given to impact assessment, analysis or evaluation.
- The use of inappropriate approaches and methods by the specialist.
- The unreliability or inadequacy of data upon which the study may be based.
- Provision of insufficient information.
- Unclear presentation of information.

In the absence of clear guidance to indicate when the review of specialist input should be undertaken, what should be reviewed, who should undertake the review and how the review should be conducted, reviews of specialist inputs have varied widely in their thoroughness and quality, often resulting in the perpetuation of inaccuracies and inconsistencies which are carried through to decision-making

For these reasons, the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) has embarked on the process of developing guidelines for the involvement of specialists in EIA processes, including a guideline for the review of specialist input, with the ultimate aim of improving professionalism and the reliability of EIA processes.

This guideline addresses the review of specialist inputs to EIA processes, and is presented in eight sections. The first section introduces the context and rationale for the guideline. Section 2 describes the specific purpose of the guideline and provides guidance on how it should be applied. Section 3 deals with the principles that inform the review of specialist inputs, while Section 4 outlines the triggers for review by different roleplayers, as well as the purpose and

outcome of these review. The qualifications, experience and skills required of an independent specialist peer reviewer are outlined in Section 5. This is followed by guidance on the types of information that are required to undertake a specialist review (Section 6) and the criteria for review (Section 7).

## 2. PURPOSE OF THIS GUIDELINE

The purpose of this guideline is to improve the quality of specialist contributions to EIA processes by improving the thoroughness of review of specialist inputs. This includes the review of contributions made by specialists during the pre-application planning, screening, scoping and impact assessment phases of EIA processes. The objectives of the guideline are to:

- Identify triggers that determine when review should take place and for what purpose.
- Identify who should undertake the review.
- Present specific criteria that support the review process in determining whether or not the specialist input meets the minimum requirements for such inputs and is reasonable, objective and professionally defensible.

The guideline aim to promote consistency in the review of EIA specialist inputs and thereby improve the clarity, credibility and effectiveness of EIA processes. The guideline aims to be applicable in a range of different types and scales of development and can be applied at any stage of the EIA process where specialist input is provided.

Independent specialist peer review is an extremely important part of quality assurance in EIA processes, allowing a specific piece of work to be considered by individuals who are knowledgeable in that particular field, and provides an effective system of quality control (Scholes, 2003). Review also helps to ensure that work is accurate, comprehensive and clearly presented (DEAT, 2004). In the context of EIA processes, review can result in better informed decisions and can reduce the cost of projects to proponents by providing early information on whether or not to proceed with a project.

## 3. PRINCIPLES AND CONCEPTS UNDERPINNING THE REVIEW OF SPECIALIST INPUTS TO EIA PROCESSES

Most of the information used in EIA processes is provided by specialists in response to expressed information needs and the issues provided or raised by the proponent, authorities, the EIA practitioner, specialists, interested and affected parties and other stakeholders.

### 3.1 PRINCIPLES OF SUSTAINABLE DEVELOPMENT

The overall objective of review in the context of an EIA process is to ensure that the EIA information is sufficiently reliable to enable decision-making for sustainable development. **Box 1** shows the definition of sustainable development used in South African legislation.

***Box 1: Definition of Sustainable Development***

The National Environmental Management Act (Act No.107 of 1998) defines sustainable development as: “the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations”. Sustainable development has also been defined in several other policy-level documents (WCED, 1987; IUCN, 1991; SADC, 1995). The common attributes of these definitions include concern for the welfare of future generations, the improvement of the quality of life and the maintenance of essential ecological processes, as well as the adoption of decision-making processes that integrate ecological, social, and economic systems.

Several key principles contained in the National Environmental Management Act (Act No. 107 of 1998), Agenda 21 (United Nations, 1992) and the Report of the 2002 World Summit on Sustainable Development (United Nations, 2002), provide a general framework within which environmental management must be carried out, decisions taken to protect the environment and to support sustainable development. Key aspects of these principles, which relate to the biophysical, social and economic components of sustainable development, are summarised below.

***Biophysical Aspects***

- Adoption of the precautionary principle when there is insufficient information to determine with confidence the consequences of an action.
- Maintenance of ecological integrity so that natural capital is maintained.
- Respect for carrying capacity.
- Sustainable use and equitable sharing of benefits of natural resources.

***Social Aspects***

- Equitable access to resources and to the benefits of development (including access by neighbouring states and future generations).
- Social justice to ensure that adverse impacts do not unfairly impact any individual or group, and that the costs of impacts are borne by the project proponents.
- Participation of all interested and affected parties, including women and youth.
- Transparent and fair decision-making processes.

***Economic Aspects***

- Transformation of livelihoods through the provision of economic benefits.
- No one should be worse off as a result of development.

Reviewers must consider the extent to which specialist inputs to EIA address these aspects of sustainability. It is important to note, however, that not all of these aspects will be relevant to every specialist study.

### 3.2 PRINCIPLES OF ETHICS AND QUALITY

In addition to considering the alignment of specialist input with the principles of sustainable development, reviews of such input must also be guided by other principles, the most important of which are presented below:

- Professional rigour. This includes an evaluation as to whether or not the approaches and methods used are appropriate; the conclusions are supported by the information presented; and the report responds to and addresses all of the tasks identified in the terms of reference.
- Clear and easily understood reporting. Specialist inputs should be easily understood, clearly laid out and an accepted style of report structure should be used. Tables, figures and illustrations should be appropriate and included where deemed necessary.
- Consistency with national, regional and local legislation, policies and plans, as well as with international commitments and obligations.
- Impartiality, objectivity and independence of the specialist (e.g. the specialist should have no vested financial interest in the outcome of the development application).
- The qualifications, experience and competence of the specialist should be commensurate with the complexity of the specialist input required.

### 3.3 COMMON EIA TERMS AND CONCEPTS

Common EIA terms and concepts used throughout this series of guidelines are summarised in Box 2.

#### *Box 2: Common EIA terms and concepts*

The following definitions aim to clarify common EIA terms and concepts:

- **Environmental impact assessment:** A process that is used to identify, predict and assess the potential positive and negative impacts of a proposed project (including reasonable alternatives) on the biophysical, social and economic environment and to propose appropriate management actions and monitoring programmes. The EIA process is used to inform decision-making by the project proponent, relevant authorities and financial institutions. The process includes some or all of the following components: pre-application planning, screening, scoping, impact assessment (including the identification of management actions and monitoring requirements), integration and decision-making. Suitably qualified and experienced specialists may be required to provide input at various stages of the EIA process.
- **Pre-application planning:** The process of identifying and incorporating environmental opportunities and constraints into the early stages of project planning and design, prior to the submission of an application for statutory approval. This includes the identification of potential fatal flaws and negative impacts of potentially high significance, as well as the identification of alternatives and management actions that could prevent, avoid or reduce significant impacts or enhance and secure benefits. This process is sometimes referred to as “pre-application screening”, “positive planning” or “fatal flaw assessment”.
- **Screening:** A decision-making process to determine whether or not a development proposal requires environmental assessment, and if so, what level of assessment is appropriate. Screening is usually administered by an environmental authority or financial institution. The outcome of the screening process is typically a Screening Report/Checklist.
- **Scoping:** The process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an impact assessment. The main purpose is to focus the impact assessment on a manageable number of important questions on which decision-making is expected to focus and to ensure that only key issues and reasonable alternatives are examined. The outcome

of the scoping process is a Scoping Report that includes issues raised during the scoping process, appropriate responses and, where required, terms of reference for specialist involvement.

- **Impact assessment:** Issues that cannot be resolved during scoping and that require further investigation are taken forward into the impact assessment. Depending on the amount of available information, specialists may be required to assess the nature, extent, duration, intensity or magnitude, probability and significance of the potential impacts; define the level of confidence in the assessment; and propose management actions and monitoring programmes. Specialist studies/reports form the basis of the integrated Environmental Impact Report which is compiled by the EIA practitioner.
- **Trigger:** A particular characteristic of either the receiving environment or the proposed project which indicates that there is likely to be an issue and/or potentially significant impact associated with that proposed development that may require specialist input. Legal requirements of existing and future legislation may also trigger the need for specialist involvement but are not discussed in this guideline.
- **Issue:** A context-specific question that asks “what will the impact of some activity/aspect of the development be on some element of the biophysical, social or economic environment?” (e.g. what is the impact of atmospheric emissions on the health of surrounding communities?).
- **Impact:** A description of the effect of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space (e.g. an increased risk of respiratory disease amongst people living within a 10km radius from the industry, for the duration of the life of the project, due to sulphur dioxide emissions from the industry).
- **Root cause/source of impact:** A description of the aspect of the development that will result in an impact on the biophysical, social or economic environment (e.g. atmospheric emissions from industrial stacks).
- **Risk situation:** A description of the environmental or operating circumstances that could influence the probability of a significant impact occurring.
- **Scenarios:** A description of plausible future environmental or operating conditions that could influence the nature, extent, duration, magnitude/intensity, probability and significance of the impact occurring (e.g. concentration of sulphur dioxide emissions during normal operations vs during upset conditions; dispersion of atmospheric pollutants during normal wind conditions vs during presence of an inversion layer).
- **Alternatives:** A possible course of action, in place of another, that would meet the same purpose and need but which would avoid or minimize negative impacts or enhance project benefits. These can include alternative locations/sites, routes, layouts, processes, designs, schedules and/or inputs. The “no-go” alternative constitutes the ‘without project’ option and provides a benchmark against which to evaluate changes; development should result in net benefit to society and should avoid undesirable negative impacts.
- **Best practicable environmental option:** This is the alternative/option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term.
- **Impact significance:** A term used to evaluate how severe an impact would be, taking into account objective or scientific data as well as human values. A specific significance rating should not be confused with the acceptability of the impact (i.e. an impact of low significance is not automatically “acceptable”).
- **Thresholds of significance:** The level or limit at which point an impact changes from low to medium significance, or medium to high significance.
- **Management actions:** Actions – including planning and design changes - that enhance benefits associated with a proposed development, or that avoid, mitigate, restore, rehabilitate or compensate for the negative impacts.
- **Monitoring programmes:** Programmes established to observe, take samples or measure specific variables in order to track changes, measure performance of compliance, and/or detect problems.
- **Review:** The process of determining whether specialist input meets minimum requirements, is reasonable, objective and professionally sound.

## 4. THE ROLE AND TIMING OF THE REVIEW OF SPECIALIST INPUT

Specialists can be involved for different purposes and at different intensities during various stages of the EIA process, regardless of whether the process is initiated before or upon submission of an application for statutory approval. Specialists can, therefore, provide input during pre-application planning or following the submission of an application for statutory approval of the proposed development (i.e. during screening, scoping and/or impact assessment).

- **Pre-application planning stage**, to identify environmental opportunities and constraints, alternatives and potential fatal flaws to the proposed project that should be considered during early project planning and design.
- **Screening stage**, to assist decision-makers determine whether or not a proposed project requires environmental assessment and, if so, what level of assessment is required.
- **Scoping stage**, to identify key issues and alternatives associated with a proposed project, to respond to issues raised by other stakeholders and, where further specialist input is required, to assist in drafting and reviewing specialist terms of reference.
- **Impact assessment stage**, to predict and assess potential impacts of a proposed development and recommend management actions and monitoring programmes.

Depending on the nature of the project, the stage of project planning and the EIA process, the environmental context and the amount of available information, specialist involvement will vary in intensity (i.e. level of detail) and may include any or all of the following examples of approaches:

- Provision of a specialist opinion or comment;
- Archival research and literature review;
- Detailed baseline survey (including site visit/s);
- Consultation and interviews;
- Mapping and simulation modelling;
- Assessment of impacts and their significance.

A specialist's role in the EIA process could be to assist with any or all of the following:

- Describing the affected environment
- Describing the legal, policy and planning context
- Identifying and responding to issues
- Identifying alternatives
- Identifying opportunities and constraints
- Developing specialist terms of reference (TOR)
- Predicting and assessing impacts
- Recommending management actions and monitoring programmes

Project planning and related decision-making needs to benefit from the review of specialist input at the different stages of the EIA process. Specialist review can be undertaken by different

roleplayers, for different purposes and should be appropriate to the intensity and purpose of specialist input. For example, if an independent specialist peer reviewer is appointed to review a baseline description of the affected environment, the reviewer should not expect the specialist to have included the prediction and assessment of impacts. A series of review questions for the different roles/purpose of specialist input are included in Appendix C and are discussed further in Section 7.

Table 1 provides a summary of the triggers that initiate the review of specialist inputs, as well as the purpose and outcome of such reviews. The triggers for, and purpose of, the review apply regardless of whether input is provided during pre-application planning, screening, scoping or impact assessment. It should be borne in mind that some pre-application processes are confidential; in these cases, review by authorities and interested and affected parties (I&APs) may not be appropriate until the proposed project enters the statutory approval process. The review outcomes refer to the decision made by the reviewer regarding the adequacy and quality of specialist input. It should, therefore, not be confused with the decision-making outcome regarding whether or not to proceed with project planning or to approve the proposed project which will ultimately be based on the integrated EIA report.

*Table 1: Triggers and purpose of review by different reviewers*

Reviewer	Trigger for review of specialist input	Purpose of review	Outcomes of the specialist review
Internal peer review <sup>1</sup>	<ul style="list-style-type: none"> <li>▪ Specialist's organizational quality control requirements.</li> <li>▪ Submission of specialist input for internal peer review prior to submission to EIA practitioner.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To ensure that the specialist inputs are accurate, meet the terms of reference as well as internal quality requirements (e.g. ISO9000 quality management system requirements).</li> <li>▪ To ensure consistency in the quality of specialist inputs provided by the organisation that employs the specialist.</li> <li>▪ To ensure that organizational experience is reflected in the specialist input.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Specialist input is revised to incorporate internal peer review comments prior to submission to EIA practitioner for review.</li> </ul>
EIA practitioner	<ul style="list-style-type: none"> <li>▪ Submission of specialist input to EIA practitioner in accordance with agreed schedule described in the terms of reference.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To ensure that the specialist inputs meet the terms of reference.</li> <li>▪ To ensure that specialist inputs are provided in a form and quality that can be incorporated into the integrated report and can be understood by non-specialists.</li> <li>▪ To identify any conflicting information or inconsistencies between the findings and recommendations of different specialists' inputs.</li> </ul>	<p>Either:</p> <ul style="list-style-type: none"> <li>▪ Acceptance<sup>2</sup> of specialist input and incorporation into integrated report; or</li> <li>▪ Provisional acceptance subject to the incorporation of review comments; or</li> <li>▪ Submission of specialist input for independent specialist peer review; or</li> <li>▪ Rejection of specialist input with clear motivation and justification. Appointment of a new specialist.</li> </ul>
Project proponent	<ul style="list-style-type: none"> <li>▪ Submission of specialist input to project proponent in accordance</li> </ul>	<ul style="list-style-type: none"> <li>▪ To ensure that the specialist input is based on accurate project information, that all</li> </ul>	<p>Either:</p> <ul style="list-style-type: none"> <li>▪ Acceptance<sup>2</sup> of specialist input; or</li> </ul>

<sup>1</sup> Only applicable where the specialist works in an organisation employing more than one specialist within a particular discipline

<sup>2</sup> "Acceptance" does not necessarily mean agreement with the recommendations made.

Reviewer	Trigger for review of specialist input	Purpose of review	Outcomes of the specialist review
	with agreed schedule described in the terms of reference (usually following an initial review by the EIA practitioner).	<p>assumptions are valid and alternatives considered are reasonable and acceptable.</p> <ul style="list-style-type: none"> <li>To understand the time, cost, planning, design and risk implications associated with the specialist's findings and recommendations.</li> </ul>	<ul style="list-style-type: none"> <li>Provisional acceptance subject to the incorporation of review comments; or</li> <li>Submission of specialist input for independent specialist peer review; or</li> <li>Rejection of specialist input with clear motivation and justification. Requests EIA practitioner to appoint a new specialist.</li> </ul>
Financial institution <sup>3</sup>	<ul style="list-style-type: none"> <li>Specialist input distributed or made available for comment in accordance with statutory requirements for public input where specialist input is used to inform authority decision-making and/or as agreed between the EIA practitioner and the project proponent.</li> </ul> <p><i>Note: Depending on the nature of the project and the EIA process, specialist input may be provided as a stand-alone study or may be incorporated into the integrated Screening, Scoping and/or Environmental Impact Report.</i></p>	<ul style="list-style-type: none"> <li>To ensure that the specialist input meets internal requirements or procedures (e.g. World Bank Group policies and guidelines)</li> <li>To ensure that the specialist input is based on accurate project information, that all assumptions are valid and alternatives considered are reasonable and acceptable.</li> <li>To understand the time, cost, planning and design and risk implications associated with the specialist's findings and recommendations.</li> <li>To identify possible ethical concerns regarding the independence of the specialist that may have influenced the accuracy and quality of the specialist's input.</li> </ul>	<ul style="list-style-type: none"> <li>Written review comments and recommendations submitted in accordance with EIA process to the EIA practitioner (or stakeholder engagement practitioner) for consideration by the specialist, the EIA practitioner, the proponent and the decision-making authority.</li> </ul>
Decision –making authority	<ul style="list-style-type: none"> <li>Submission of specialist input for review by the decision-making authority in accordance</li> </ul>	<ul style="list-style-type: none"> <li>To ensure that specialist input (and the process followed in providing input) meets legal requirements and the specialist terms of</li> </ul>	<p>Decision either to:</p> <ul style="list-style-type: none"> <li>Accept<sup>2</sup> specialist input; or</li> </ul>

<sup>3</sup> Only applicable where a financial institution (e.g. World Bank Group, Industrial Development Corporation, Development Bank of Southern Africa, or a commercial bank) has adopted a policy of subjecting potential projects seeking finance to an EIA process.

Reviewer	Trigger for review of specialist input	Purpose of review	Outcomes of the specialist review
	<p>with statutory requirements.</p> <p><i>Note: Depending on the nature of the project and the EIA process, specialist input may be provided as a stand-alone study or may be incorporated into the integrated Screening, Scoping and/or Environmental Impact Report.</i></p>	<p>reference.</p> <ul style="list-style-type: none"> <li>▪ To ensure that key issues are appropriately addressed.</li> <li>▪ To ensure that reasonable alternatives have been appropriately considered by the specialist.</li> <li>▪ To ensure that the specialist has given due consideration to the strategic context relevant to the specialist domain.</li> <li>▪ To ensure that specialist input is relevant, appropriate and clearly communicated in order to adequately inform decision-making.</li> <li>▪ To identify possible ethical concerns regarding the independence of the specialist that may have influenced the accuracy and quality of the specialist's input.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provisional acceptance subject to the incorporation of review comments; or</li> <li>▪ Submit specialist input for independent specialist peer review; or</li> <li>▪ Reject specialist input with clear motivation and justification. Require that EIA practitioner appoints a new specialist.</li> </ul>
Other authorities providing comments to the decision-making authority	<ul style="list-style-type: none"> <li>▪ Where the specialist findings have implications that fall within the scope of responsibility of these other authorities.</li> <li>▪ Submission of specialist input for review by "commenting" authorities in accordance with statutory requirements or as agreed through the EIA process where no statutory requirements apply.</li> </ul> <p><i>Note: Depending on the nature of</i></p>	<ul style="list-style-type: none"> <li>▪ Where relevant, to verify the accuracy of information provided by the authority to the specialist and/or information pertaining specifically to their mandate.</li> <li>▪ To ensure that specialist input is relevant, appropriate and clearly communicated in order to adequately inform authority inputs to the statutory EIA process and/or concurrent licencing/permitting processes (i.e. to understand the possible implications of the specialist's findings and recommendations for the authority).</li> <li>▪ To identify possible ethical concerns</li> </ul>	<ul style="list-style-type: none"> <li>▪ Written review comments and recommendations submitted in accordance with the EIA process, to the EIA practitioner (or stakeholder engagement practitioner) or the decision-making authority (as agreed at the outset of the EIA process) for consideration by the specialist, the EIA practitioner, the proponent and the decision-making authority.</li> </ul>

Reviewer	Trigger for review of specialist input	Purpose of review	Outcomes of the specialist review
	<i>the project and the EIA process, specialist input may be provided as a stand-alone study or may be incorporated into the integrated Screening, Scoping and/or Environmental Impact Report.</i>	regarding the independence of the specialist that may have influenced the accuracy and quality of the specialist's input.	
Independent specialist peer reviewer	<p>The appointment of an independent specialist peer reviewer may be triggered where any or all of the following apply:</p> <ul style="list-style-type: none"> <li>▪ Project proposed for location in a highly sensitive environment and/or it may impact on vulnerable communities.</li> <li>▪ Complex and controversial projects.</li> <li>▪ There are no precedents to draw on (e.g. project entails application of new technologies).</li> <li>▪ Incomplete or potentially inaccurate information is used.</li> <li>▪ High levels of uncertainty and risk and low levels of confidence in the findings provided by the specialist.</li> <li>▪ Where conclusions drawn are inconsistent with the information provided by the specialist.</li> <li>▪ Specialist input contains internally contradictory</li> </ul>	<ul style="list-style-type: none"> <li>▪ To provide an independent quality check by a suitably qualified and experienced specialist to evaluate the accuracy, reliability and quality of the specialist input.</li> <li>▪ To evaluate the adequacy of the terms of reference for the specialist, including the appropriateness of the time and space boundaries for the study.</li> <li>▪ To ensure that appropriate and accurate information has been used.</li> <li>▪ To ensure that the appropriate approach and method has been used and that any assumptions, limitations and uncertainties are clearly communicated.</li> <li>▪ To ensure that the specialist has given due consideration to the strategic context relevant to their specialist domain.</li> <li>▪ To ensure that the specialist's conclusions are consistent with the information, approach and method used.</li> <li>▪ To identify possible ethical concerns regarding the independence of the specialist that may have influenced the accuracy and quality of the specialist's input.</li> </ul>	<p>Review report is submitted indicating whether the specialist input is:</p> <ul style="list-style-type: none"> <li>▪ Acceptable in its entirety; or</li> <li>▪ Provisionally acceptable subject to recommendations being incorporated; or</li> <li>▪ Should be rejected based on clear motivation and justification.</li> </ul>

Reviewer	Trigger for review of specialist input	Purpose of review	Outcomes of the specialist review
	<p>information, or contradicts the information/findings provided by different specialists on the EIA project team.</p> <ul style="list-style-type: none"> <li>▪ Where the independence, credibility, competence and ethics of the specialist have been called into question.</li> </ul> <p><i>Note: Where it is likely that an independent specialist peer review will be required during the EIA process it is preferable to involve the reviewer as early as possible in the process e.g. to assist in drawing up appropriate terms of reference and ensure that the specialist's input is appropriately scoped.</i></p>	<p>Where relevant to the scope of specialist input:</p> <ul style="list-style-type: none"> <li>▪ To ensure that all key issues, relevant to the specialist's domain, have been identified.</li> <li>▪ To ensure that key issues are appropriately and accurately addressed or assessed.</li> <li>▪ To ensure that reasonable alternatives have been adequately and appropriately considered by the specialist.</li> <li>▪ To ensure that management actions and monitoring programmes are practicable and appropriate.</li> </ul>	
Interested and affected parties	<ul style="list-style-type: none"> <li>▪ Specialist input distributed or made available for public comment in accordance with statutory requirements where specialist input is used to inform authority decision-making.</li> </ul> <p><i>Note: Depending on the nature of the project and the EIA process, specialist input may be provided as a stand-alone study or may be incorporated into the integrated</i></p>	<ul style="list-style-type: none"> <li>▪ To ensure that the specialist input adequately addresses issues raised by I&amp;APs.</li> <li>▪ To ensure that the specialist input is relevant, appropriate and clearly communicated.</li> <li>▪ To verify that information about the affected environment and/or communities has been accurately reflected and taken into account by the specialist.</li> <li>▪ To identify possible ethical concerns regarding the independence of the specialist that may have influenced the accuracy and</li> </ul>	<ul style="list-style-type: none"> <li>▪ Written review comments and recommendations submitted in accordance with the EIA process, to the EIA practitioner (or stakeholder engagement practitioner) for consideration by the specialist, the EIA practitioner, the proponent and the decision-making authority.</li> </ul>

Reviewer	Trigger for review of specialist input	Purpose of review	Outcomes of the specialist review
	<i>Screening, Scoping and/or Environmental Impact Report.</i>	quality of the specialist's input.	
Independent EIA reviewer <sup>4</sup>	<ul style="list-style-type: none"> <li>▪ Where the review of the integrated Screening, Scoping or Environmental Impact Report has resulted in the need to review the original specialist inputs that were incorporated into these reports.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To verify that specialist input has been accurately reflected in the integrated reports produced through the EIA process, e.g. the Screening, Scoping and/or Environmental Impact Report.</li> <li>▪ To identify possible ethical concerns regarding the independence of the specialist that may have influenced the accuracy and quality of the specialist's input.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Review report submitted, which indicates (amongst other aspects of the EIA review) whether or not specialist input should be subject to further independent specialist peer review.</li> </ul>

<sup>4</sup> Only applicable where the EIA process has been subject to independent EIA review and the EIA reviewer requests to review the specialist input that informed the integrated reports.

## 5. QUALIFICATIONS, SKILLS AND EXPERIENCE REQUIRED TO REVIEW A SPECIALIST STUDY

Although many types of reviewers are involved in the review of specialist input (see Section 4), the qualifications of the independent specialist peer reviewer are particularly important and are the subject of discussions in this section.

The independent specialist peer reviewer has an important role in ensuring that the structure and clarity of the specialist study meets accepted professional standards. In order to competently review those requirements of a specialist input to an EIA process the reviewer should have the following experience, qualifications and skills:

- Report writing skills that can be verified through an examination of samples of the reviewer's written work.
- Proven written communication skills.
- Experience in reviewing specialist inputs to EIA processes.
- Be able to distil out the key shortcomings of a study, and differentiate between those deficiencies that make the study inadequate and unacceptable, and those which are relatively minor and would be acceptable after revision.

In order to competently review the accuracy and quality of content of the specialist input, the reviewer should have relevant qualifications, skills and experience. S/he should:

- Have at least an undergraduate degree in an area related to the specialist input, together with an appropriate depth of recent professional experience in the specific field of specialist input.
- Have appropriate (recognised) professional experience in the subject being reviewed. This experience will need to be commensurate with the complexity of both the proposed project and the contribution of the specialist input. In the case of a large, highly controversial, complex or unprecedented project, the best available reviewer with many years of experience and who is highly respected by peers, should be chosen. For relatively small projects, which are unlikely to be controversial or particularly complex, reviewers with relatively less experience could be appointed.
- Be recognised by peers as being competent in the subject of the specialist study. Such recognition could be attained through membership of the relevant professional body or authorship of peer-reviewed publications in the relevant field.
- Be certified by the relevant professional body/ies, such as the South African Council for Natural and Scientific Professions (SACNASP).
- Be abreast of recent developments in the specialist field being reviewed.
- Ideally be familiar with the geographical region in which the development is proposed.

The overall requirement is that the reviewer should have at least the same professional and academic standing as the specialist, so that his/her competence as a reviewer is not questioned. A recent *curriculum vitae* of the reviewer should substantiate this.

## 6. INFORMATION REQUIRED TO REVIEW A SPECIALIST STUDY

The following sections summarise the key information that reviewers may require in order to evaluate specialist input to the EIA or to provide technical inputs throughout the EIA process. The level of detail provided will vary between the different stages of the EIA process and the nature of the project and the receiving environment. Where this information does not form part of the specialist input being reviewed but is considered relevant to the review process, it should be provided by the EIA practitioner.

A more detailed description of the information required to provide specialist input (and which may be of relevance to the reviewer) is provided in the *Guideline to determine the scope of specialist involvement in EIA processes*.

### 6.1 RELEVANT PROJECT INFORMATION

Project information that will assist in the review of specialist inputs will include:

- The purpose of the project and the need for it. This should include a statement on the rationale, motivation and objectives for the project.
- The description of the project and project aspects, including relevant operating scenarios and root causes of impacts. This may include a description of the design, location, duration and phasing, inputs of raw materials, labour, buildings and other structures, associated infrastructure, on-site processes and outputs such as noise, atmospheric emissions, residues and waste over the entire project life cycle.
- Clear and appropriate project alternatives (refer to Section 7.1.4).

### 6.2 INFORMATION DESCRIBING THE AFFECTED ENVIRONMENT

The information on the affected environment should include:

- A map, and possibly photographs, of the area in which the project will be located to illustrate its spatial context in relation to the proposed development.
- Description of the local and regional context.
- Description of current/baseline conditions as relevant to the specialist's scope of input. This should include appropriate details of the social, economic and bio-physical environment within the main sphere of project influence.
  - Social aspects should identify the main affected communities, as well as their sources of livelihoods and demographic patterns.
  - Economic aspects should include characteristics of the national, provincial and local economy (as relevant).
  - Biophysical aspects should include protected or threatened areas or ecosystems, sensitive, dynamic or vulnerable areas, important ecosystem services, and the

current state of the biophysical environment.

- Description of the desired future state of the environment and development.
- Description of sensitive or significant receptors, resources or components.
- Description of the uses and users of the affected environment.
- Description of the environmental or development trends and pressures.
- Description of plausible future environmental scenarios.
- Description of the potential footprints associated with different aspects of the proposed development.

In addition to reviewing the information provided by the specialist, it may be necessary for the reviewer to visit the proposed development site in order to get a better understanding of the issues that are relevant to the EIA process.

### **6.3 THE LEGAL, POLICY AND PLANNING CONTEXT**

The recommendations contained in specialist studies should be consistent with South Africa's obligations and commitments arising from international, national, provincial and local law as well as the principles and visions set by policies and plans. Information relevant to the review process includes the following:

#### ***Obligations and commitments arising from international laws, agreements and conventions***

A description is required of relevant global laws, agreements, conventions and protocols and the relevant national obligations in the context of the study, and an explanation of whether and how the proposed project will be in compliance with these.

#### ***Obligations relevant to the project arising from regional protocols and treaties***

A description is required of all pertinent regional protocols and treaties and their relevant obligations in the context of the study and an explanation of whether and how the proposed project will be in compliance with these.

As a member of the Southern African Development Community (SADC), South Africa is committed, for example, to ensuring that policies are consistent with the goals of regional coordination. Illustrative in this regard are the Revised Protocols on Shared Watercourses, Energy, and Wildlife Conservation and Law Enforcement, which advocate common and coordinated approaches as well as the consideration of the possible trans-boundary impacts of proposed development projects.

#### ***Obligations relevant to the project arising from national legislation***

A description is required of the relevant national legislation, including an explanation of the implications for the proposed project and decision-making process.

***Obligations and considerations relevant to the project arising from provincial or local laws, policies, plans or strategies***

A description is required of relevant provincial or local by-laws, policies, development plans and strategies and the implications that these may hold for the proposed project.

***Considerations relevant to the project arising from best practice guidelines and standards***

A description is required of relevant project-related guidelines and standards reflecting best practice in terms of alternatives, management actions and monitoring programmes.

## **6.4 SPECIALIST TERMS OF REFERENCE**

Good terms of reference for specialists are of pivotal importance to the outcome of a specialist study (Weaver *et al.*, 2000). Model terms of reference for a specialist input are contained in Appendix B.

A reviewer should receive the terms of reference for the specialist input in order to conduct the review effectively. The terms of reference for any specialist input should be appended to the relevant report to facilitate its review.

## **7. REVIEW CRITERIA**

The criteria for reviewing specialist inputs fall under two broad themes, namely: (i) overall quality assurance and (ii) types of specialist input. The criteria for overall quality assurance are applicable regardless of the scope of specialist input, whereas the criteria applicable to the type of specialist input relate more specifically to the scope of input provided and should, therefore, be used selectively. A checklist summarizing these review criteria in the form of questions for reviewers is provided in Appendix C.

### **7.1 OVERALL QUALITY ASSURANCE**

The main aspects to be considered when evaluating the overall quality of a specialist's input are: the ethical basis by which specialist input is provided (i.e. the objectivity and impartiality of the evaluation); the adequacy of information provided; the clarity of communication; and adequacy of evaluating appropriate alternatives.

#### ***7.1.1 Ethics***

The application of this criterion aims to ensure that the specialist input has been provided in an objective, impartial and independent manner. Aspects of review in this regard are whether or not:

- The specialist has the necessary qualifications, expertise and experience to provide input to the EIA process.
- There has been unethical behaviour in the way issues have been identified and treated, or whether an unethical relationship exists between the specialist and the proponent, authority and/or financial institution.

- There is bias or inappropriate emphasis, unwarranted assumptions, and/or emotive, irrational or unsubstantiated statements in the specialist's work.
- There is a clear distinction between professional opinion, value judgement and credible scientific fact.

### *7.1.2 Adequacy of information*

The specialist input should contain only the information that is required to inform decisions. That is, the level of detail of the study should be sufficient to answer the key questions with a high level of confidence. Important criteria include whether or not the information provided is sufficient in terms of the level of detail and the reliability of findings to justify the conclusions drawn to support impartial decision-making, and whether or not the assumptions underpinning the approach, method, assessment, evaluation and management actions are valid.

### *7.1.3 Clarity of report*

The application of this criterion aims to determine whether or not the specialist findings have been clearly communicated. Good communication ensures that all stakeholders and decision-makers can adequately understand the report. It promotes transparency, removes ambiguity, and enables recommendations to be better considered. Aspects that improve the clarity of the report include:

- The inclusion of a clearly written, non-technical summary, which is written in a way that assists a stakeholder or decision-maker to fully understand the findings of the report, and which enables a decision-maker to make an informed and impartial decision.
- Referencing of all sources of information used by the specialist.
- The inclusion of a summary impact assessment table, where relevant, using defined impact assessment and significance rating criteria for positive and negative impacts. (These criteria need to be agreed upon with the EIA practitioner and should conform to accepted standards of professional EIA practice).
- Clear and unambiguous indication of the consequences of the predicted impacts.
- Clear, unambiguous and practical recommendations for appropriate management actions to avoid, reduce or minimize adverse impacts and enhance positive impacts.
- The provision of a statement of impact significance for each issue, which specifies whether or not some specified threshold of significance (e.g. legislated standard) has been exceeded, and whether or not the impact presents a potential fatal flaw or not. This statement of significance should be provided for anticipated project impacts both before and after application of impact management actions.
- Indication of whether or not impacts are wholly or partially irreversible, or result in an irreplaceable loss to the ecosystem and/or society.
- Specification of the key assumptions, risks and uncertainties that may influence the validity of the impact assessment findings, or which may reduce the degree of confidence that is placed on them.
- Clear statement of the likely beneficiaries of the project, and those parties who would 'lose' from the project.

- Clear specification of the degree of confidence in the impact assessment predictions to ensure that the assessment of impacts is credible.
- The provision of a summary of key management actions that fundamentally affect impact significance.
- The identification of the best practicable environmental option (BPEO) for the alternatives considered within their areas of competence (with reasons given).

#### **7.1.4 Alternatives**

The application of this criterion aims to ensure that, as a minimum, the specialist has adequately considered the range of alternatives discussed and agreed to between the proponent, the authority, the specialist and the EIA practitioner. Where appropriate, the specialist should also have identified additional alternatives prompted by the study that would further avoid or mitigate adverse impacts and/or enhance benefits. These additional alternatives should be confirmed as reasonable by the proponent, authority, the EIA practitioner, independent specialist peer reviewer and/or financial institution.

The alternatives considered by the specialist can include *location, routing or siting* alternatives, *layout* alternatives, *process* and/or *design* alternatives, *scheduling* alternatives, *input* alternatives or *management* alternatives. Any development proposal should include several possible alternatives from some or all of these categories. For projects proposed on public land and/or for public good, fundamental development alternatives related to the nature and location of the proposed development should be considered. The “no-go” alternative in EIA provides a benchmark against which to evaluate potential impacts of the proposed project alternatives.

Alternatives must focus on addressing the significant issues at hand. It would not be reasonable to expect the project proponent to consider alternative water supply options if there is adequate good quality water available. Similarly, if the single issue of concern is the visual impact of the proposed development, alternatives that reduce insignificant noise impacts would not usefully inform decision-making.

## **7.2 KEY TYPES OF SPECIALIST INPUT**

A key role of the review process is to ensure that specialist input meets the purpose for providing the following types of inputs: (i) the description of the project and the affected environment, (ii) a description of relevant legislation, policies and plans, (iii) an identification of key issues (iv) assessment and evaluation of potentially significant positive and negative impacts, and (v) practical recommendations for management actions and monitoring programmes. The following sub-sections describe the purpose underpinning the different types of specialist input. Specific criteria to be used in the review of these different types of input are included in Appendix C.

### **7.2.1 Description of the project and affected environment**

The purpose of providing a description of the project and the affected environment is to ensure that predicted impacts are assessed, and recommendations for alternatives, management

actions and monitoring programmes are made, within the appropriate/relevant context. Specialist input should supply information that is relevant to prediction and assessment of impacts associated with the development proposal. Gaps in scientific information for geographical areas/ ecosystems of habitats, especially where the information is not readily linked to development impacts, or where impacts can be avoided/mitigated without further information, should not be regarded as a short-coming of the specialist input.

### ***7.2.2 Description of legislation, policy and plans***

The purpose of providing the legislative, policy and planning context in relation to the project is to ensure that the proposed activity is consistent with existing statutory provisions and policy commitments and principles, as well as to identify any opportunities and constraints. The important aspects of review include whether or not:

- The policy and planning context of the proposed project is provided, and the project's consistency with that context is appropriately considered.
- The specialist assessment satisfies statutory requirements.
- Other legal requirements relevant to the specialist field, including those arising from international agreements, national, provincial or local laws, are clearly considered or met.
- Any possible inconsistencies, contradictions or risks of non-compliance are clearly identified.
- Any opportunities to assist or expedite implementation of plans or programmes are clearly identified and ways to enhance potential benefits are proposed.

### ***7.2.3 Identification of key issues***

The purpose of this type of specialist input is to ensure that the full range of key issues are identified as early as possible in the EIA process in order to avoid key issues being overlooked or identified too late in the process. Furthermore, specialist input may be required to advise on the need for additional specialist involvement.

### ***7.2.4 Prediction and assessment of impacts***

Specialist input may be required to predict and assess the potential positive and negative impacts of the proposed project on the biophysical, social or economic environment (based on the identification of key issues), including an assessment of direct, indirect and cumulative impacts. This assessment should provide relevant, appropriate and intelligible information in order to inform decision-makers whether or not to proceed with or approve the proposed development.

### ***7.2.5 Recommendations for management and monitoring***

Specialist input may be required to provide practical, clear and unambiguous recommendations for management actions and monitoring programmes. In recommending management actions consideration should be given to a hierarchy of possible measures. Measures for avoiding negative impacts are preferable, followed by measures for mitigating, restoring, rehabilitating or compensating for negative impacts. Recommendations for management actions should also include consideration of possible measures for enhancing project benefits.

The purpose of recommending monitoring programmes is to ensure that information gaps are addressed (where these exist) and/or to ensure that impacts or performance is tracked and measured to determine the accuracy of predictions, to ensure compliance with stated management actions and to detect potential problems as early as possible.

The absence of appropriate monitoring can limit the effectiveness of specialist contributions in EIA since it will be impossible to objectively gauge the accuracy of impact prediction, and the effectiveness of proposed management actions. This situation reduces the ability of EIA to improve project implementation through feedback and learning (Morrison-Saunders *et al.* 2003; Wood 1999; Sadler 1988) and to contribute more effectively to adaptive management and sustainable development.

Monitoring programmes may need to be recommended for the pre-construction, construction, operational and/or decommissioning phases of a project. Recommendations for monitoring programmes should include the specific questions to be answered through monitoring, the frequency of monitoring, responsibility for carrying out monitoring and analysis, targets and indicators to be used in monitoring, significance thresholds, responsibility for implementing adaptive management responses when required, as well as reporting and audit requirements.

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## APPENDIX A: ACRONYMS

### ACRONYMS

<i>BAT</i>	Best Available Technology
<i>BPEO</i>	Best Practicable Environmental Option
<i>DEA&amp;DP</i>	Department of Environmental Affairs and Development Planning
<i>DEAT</i>	Department of Environmental Affairs and Tourism
<i>DWAF</i>	Department of Water Affairs and Forestry
<i>EIA</i>	Environmental Impact Assessment
<i>EIR</i>	Environmental Impact Report
<i>I&amp;APs</i>	Interested and Affected Parties
<i>IDP</i>	Integrated Development Plan
<i>NEMA</i>	National Environmental Management Act
<i>SADC</i>	Southern African Development Community
<i>TOR</i>	Terms of Reference

## **APPENDIX B: MODEL TERMS OF REFERENCE FOR SPECIALIST INPUT**

Terms of reference for specialist input should include the following elements:

- 1) Project description
- 2) Overview of EIA process and timeframes
- 3) Specific issues and information requirements to be addressed by the specialist
- 4) Key sources of information
- 5) Assumptions, limitations and uncertainties
- 6) Approach to be used
- 7) Requirements to attend meetings and workshops
- 8) Requirements to liaise and exchange information with other specialists
- 9) Protocol for stakeholder engagement
- 10) Report template providing structure of contents, formatting styles and standard terminology (including impact assessment criteria if applicable)
- 11) Clarification of review and integration process
- 12) Requirements for specialist sign off on the specialist report and inputs to integrated reports
- 13) Summary of tasks, deliverables and due dates
- 14) Budget and payment schedule, including penalty clause for late delivery
- 15) Confidentiality agreement
- 16) Protocols for communication with outside parties during the project

## APPENDIX C: REVIEW CHECKLIST FOR SPECIALIST INPUT

### CAUTIONARY NOTE

The following review checklist is based on the Draft Review Guidelines for Environmental Impact Assessment in the Cape Metropolitan Area (November 2000), as modified by DEA&DP for use throughout the Western Cape Province (December 2002). Reviewers should refer to these guidelines for a more detailed insight and understanding of the questions being asked.

The checklist provides a guide which non-specialists (authorities, EIA practitioners, proponents, financial institutions and other I&APs) can use when reading and reviewing specialist inputs to EIA processes. The review checklist relies heavily on the competence and judgement of the reviewer to decide whether or not the specialist input is “adequate” or “inadequate”. The checklist therefore does not replace the need for review by qualified, competent and experienced independent specialist peer reviewers (where this is triggered) to ensure, in particular, that appropriate approaches and methods have been used and that the contents are accurate.

It is recommended that the questions included in Review Field 1 (Overall Quality Assurance) are used for all reviews. Review Field 2 (Key Type of Specialist Input) is structured to be used in whole or in part depending on the scope of the specialist input being reviewed.

REVIEW AREA	REVIEWER'S COMMENT	ADEQUATE	INADEQUATE	INDEPENDENT PEER REVIEW NEEDED
<b>Review Field 1 : Overall Quality Assurance</b>				
<b>A. Ethics</b>				
A.1 Does the specialist/s have the necessary qualifications, expertise and experience, to provide input to the EIA process?				
A.2 Is there any evidence of unethical behaviour? E.g. bias or inappropriate emphasis, unwarranted assumptions, emotive, irrational or unsubstantiated statements, vested or conflict of interest?				
A.3 Has the specialist confirmed the validity of the information included in the integrated report?				
A.4 Are the specialist's Terms of Reference adequate and appropriate to the proposed development?				
<b>B. Adequacy of Information</b>				
B.1 Is information sufficient for decision-making purposes in terms of the level of detail and reliability of findings?				
B.2 Have impacts been assessed and communicated in terms of the extent to which they support or conflict with the desired future state/vision of the area and sustainable development objectives (as described in relevant policies, plans and legislation)?				
B.3 Has the specialist met all the requirements of the Terms of Reference for the specialist input?				
B.4 Where appropriate, has traditional or indigenous knowledge been included as information in the input?				
B.5 Are there any uncertainties, or low levels of confidence in the assessment or evaluation? Are these uncertainties				

REVIEW AREA	REVIEWER'S COMMENT	ADEQUATE	INADEQUATE	INDEPENDENT PEER REVIEW NEEDED
<b>Review Field 1 : Overall Quality Assurance</b>				
and confidence levels clearly stated?				
B.6 Are the assumptions in the approach and method, assessment, evaluation and management options sound? Do any undermine the credibility of findings?				
<b>C. Clarity of Report</b>				
C.1 Is there a clear, non-technical summary?				
C.2 Are the sources of information clear and explicit?				
C.3 Are opinions or statements justified and adequately motivated?				
C.4 Are conclusions derived from findings of study logically consistent?				
C.5 Is a summary impact assessment table included, using the defined impact assessment and significance rating criteria to evaluate different alternatives both with and without management actions?				
C.6 Are consequences of the predicted impacts made explicit?				
C.7 Is a statement of impact significance provided for each issue, specifying whether thresholds of significance have been exceeded or not, and whether or not the impact presents a potential fatal flaw?				
C.8 Is there a clear indication of whether impacts are irreversible or result in an irreplaceable loss to the ecosystem and/or society?				
C.9 Are key risks and uncertainties that may influence the impact assessment findings clearly specified?				
C.10 Is the degree of confidence in the impact assessment prediction clearly specified?				

REVIEW AREA	REVIEWER'S COMMENT	ADEQUATE	INADEQUATE	INDEPENDENT PEER REVIEW NEEDED
<b>Review Field 1 : Overall Quality Assurance</b>				
C.11 Is a summary of key management actions that fundamentally affect impact significance provided?				
<b>D. Consideration of alternatives</b>				
D.1 Has adequate consideration been given to the identification of reasonable alternatives? <ul style="list-style-type: none"> <li>▪ For projects proposed on public land and/or for the public good, have fundamental development alternatives been considered which would meet the stated need and purpose for the project; e.g. the nature and location of the proposed project?</li> <li>▪ For all projects, both public and private, are incremental alternatives considered; e.g. the siting, process, design, scale, timing, funding and production system alternatives, as and where appropriate?</li> </ul>				
D.2 Have alternatives been addressed at a scale and level of detail that enables adequate comparison with the proposed project?				
D.3 Has the specialist identified the alternative that is the best practicable environmental option (BPEO) from the perspective of their specialist domain?				

REVIEW AREA	REVIEWER'S COMMENT	ADEQUATE	INADEQUATE	PEER REVIEW NEEDESPECIALIS T OPINION
<b>Review Field 2 : Key Types of Specialist Input</b>				
<b>E. Description of the project and the affected environment</b>				
E.1 Has the purpose and need for the proposed project been clearly stated?				
E.2 Is there adequate description of the proposed project and alternatives to identify and assess possible direct, indirect and cumulative impacts (e.g. location, siting, routing, scheduling, activities, inputs and outputs, labour, buildings and structures, infrastructure and operating scenarios)?				
E.3 Is there adequate description of the key characteristics of the affected socio-economic and biophysical environment (as relevant to the specialist domain) including baseline conditions, sensitive receptors or resources, uses/users, anticipated trends and pressures, and future scenarios?				
E.4 Are off-site as well as on-site characteristics adequately described to provide the broader context within which the development is proposed, where it is clear that impacts of the proposed project would extend beyond the immediate site?				
E.5 Are clear and accurate maps, plans and possibly photographs, of the project and affected environment provided?				
<b>F. Description of legislation, policies and plans</b>				
F.1 Is the legal context described and are legal requirements, including those arising from international agreements, clearly considered?				
F.2 Is the policy and planning context of the proposal				

REVIEW AREA	REVIEWER'S COMMENT	ADEQUATE	INADEQUATE	PEER REVIEW NEEDS SPECIALIST OPINION
<b>Review Field 2 : Key Types of Specialist Input</b>				
F.3 Have accepted standards been identified and clearly taken into consideration (e.g. WHO standards, DWAF water quality standards, etc.)?				
F.4 Have opportunities for the proposed project to support or contribute to the implementation of policy, plans or programmes been identified?				
F.5 Have inconsistencies, potential areas of conflict and or likely non-compliance between the proposed project and the legal, policy and planning context been clearly identified and the implications described?				
<b>G. Identification of key issues</b>				
G.1 Has the identification of potential issues through scoping been adequate? If not, has the specialist identified additional key issues?				
G.2 Within the specialist's area of expertise, have key I&APs had input to scoping where the proposed project could have a direct and/or potentially significant effect on their particular or mandated area of responsibility or interest?				
G.3 Where scoping has missed key stakeholders, and/or where additional stakeholder involvement is clearly needed to refine, or better define issues or impacts, has the specialist made adequate provision for such involvement?				
<b>H. Prediction and assessment of impacts</b>				
H.1 Are the time and space boundaries of the study				

REVIEW AREA	REVIEWER'S COMMENT	ADEQUATE	INADEQUATE	PEER REVIEW NEEDS SPECIALIST OPINION
<b>Review Field 2 : Key Types of Specialist Input</b>				
appropriate and adequately motivated?				
H.2 Have plausible environmental and operating scenarios been considered in the assessment?				
H.3 Has a recognised approach and methodology been used by the specialist and has this been clearly motivated?				
H.4 Have linkages to other specialist inputs been identified and taken into account where relevant?				
H.5 Are clear, sufficient and explicit criteria used to assess impacts of different alternatives?				
H.6 Have the issues raised and alternatives suggested by I&APs during scoping, and in comment on draft documents, been addressed satisfactorily?				
H.7 Is there adequate attention to indirect or cumulative effects on significant or sensitive resources? Where potentially significant cumulative effects are possible, but cannot be addressed at the EIA level, has the need for higher order studies been clearly stated?				
H.8 Have explicit and sufficient criteria been used to evaluate significance of impacts of alternatives, taking into account the planned mitigation and management?				
H.9 Are there systematic, explicit and rational links from identification of key issues, through assessment to evaluation of significance?				
H.10 Are the beneficiaries, and those who stand to lose from the proposed development, clearly identified?				
H.11 For trans-boundary projects, have the approach and methodology been agreed to by all countries?				
<b>I. Recommendations for management and monitoring</b>				

REVIEW AREA	REVIEWER'S COMMENT	ADEQUATE	INADEQUATE	PEER REVIEW NEEDS SPECIALIST OPINION
<b>Review Field 2 : Key Types of Specialist Input</b>				
I.1 Has the management of the potential positive and negative impacts been systematically and adequately addressed (i.e. has the specialist considered measures for the avoidance, mitigation, restoration, rehabilitation or compensation of negative impacts in a hierarchical fashion; and have measures for enhancing positive impacts been considered)?				
I.2 Has the precautionary principle been applied to the recommendations for management and monitoring measures where there is uncertainty or high risk associated with impacts?				
I.3 Are recommended management actions practical, viable and in line with best practice? Are these clearly described and motivated?				
I.4 Have potential knock-on impacts of management actions been considered by the other specialist/s and the EIA practitioner?				
I.5 Does the recommended monitoring program(es) include: the specific questions to be asked by monitoring; the frequency, season and timing for monitoring; responsibility for monitoring, analysis and implementation of responsive management actions; targets and indicators for monitoring; significance thresholds; and auditing and reporting requirements?				
I.6 Is the proposed monitoring program(es) practical, viable and in line with best practice? Has it been clearly described and motivated?				