

2 Governance Framework and Environmental Process

2.1 South African Legislation

There are a number of regulatory requirements at local, provincial and national level with which the proposed project must conform. Some of the key environmental legal requirements include the following:

- National Environmental Management Act 107 of 1998, as amended (NEMA);
- EIA Regulations 2010, promulgated in terms of NEMA;
- National Water Act 36 of 1998 (NWA);
- Water Services Act 108 of 97;
- National Heritage Resources Act 25 of 1999 (NHRA);
- National Environmental Management: Biodiversity Act 10 of 2004 (NEM:BA);
- National Environmental Management: Integrated Coastal Management Act 24 of 2008 (NEM:ICMA);
- Marine Living Resources Act: Act 18 of 1998 (MLRA);
- National Environmental Management: Off-road Vehicle Regulations 1399; and
- Occupational Health and Safety Act 85 of 1993 (OHSA) and the Major Hazard Installation (MHI) Regulations.

A brief summary of SRK's understanding of the relevant Acts and Regulations that are applicable to this study is provided below. Note that other legislative requirements may also pertain to the proposed project. As such, the summary provided below is not intended to be definitive or exhaustive, and serves only to highlight key environmental legislation and obligations.

2.1.1 National Environmental Management Act 107 of 1998, as Amended

NEMA establishes a set of principles which all authorities have to consider when exercising their powers. These include the following:

- Development must be sustainable;
- Pollution must be avoided or minimised and remedied;
- Waste must be avoided or minimised, reused or recycled;
- Negative impacts must be minimised; and
- Responsibility for the environmental consequences of a policy, project, product or service applies throughout its life cycle.

Section 28(1) states that “*every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring*”. If such degradation/pollution cannot be prevented, then appropriate measures must be taken to minimise or rectify such pollution. These measures may include:

- Assessing the impact on the environment;
- Informing and educating employees about the environmental risks of their work and ways of minimising these risks;

- Ceasing, modifying or controlling actions which cause pollution/degradation;
- Containing pollutants or preventing movement of pollutants;
- Eliminating the source of pollution; and
- Remedying the effects of the pollution.

Section 30 deals with control of emergency incidents, including unexpected major emissions which could lead to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed. In the case of such an incident occurring, the responsible person must take all reasonable measures to contain and minimise the effects of the incident; undertake clean up procedures, remedy the effects of the incident and assess the immediate and long-term effects on the environmental and public health.

Legal requirements for this project:

Sedex Desalination (the proponent) has a responsibility to ensure that the proposed activities and the S&EIR process conform to the principles of NEMA. The proponent is obliged to take actions to prevent pollution or degradation of the environment in terms of Section 28 of NEMA, and to ensure that the environmental impacts associated with the project are considered, and mitigated where possible. Measures should also be in place to deal with emergency incidents in terms of Section 30.

2.1.2 EIA Regulations, 2010

Sections 24 and 44 of NEMA make provision for the promulgation of regulations that identify activities which may not commence without an EA issued by the competent authority, which in the Northern Cape is the NCDENC. In this context, the EIA Regulations, 2010¹ (which came into effect on 2 August 2010), promulgated in terms of NEMA, list activities that require EA (“NEMA listed activities”) and govern the process, methodologies and requirements for undertaking EIAs in support of EA applications.

GN R543 lays out two alternative authorisation processes. Depending on the type of activity that is proposed, either a Basic Assessment (BA) process or a S&EIR process is required to obtain EA. GN R544 lists activities that require a BA process, while GN R545 lists activities that require S&EIR. GN R546 lists activities in certain sensitive geographic areas that require a BA process. The regulations for both processes – BA and S&EIR – stipulate that:

- Public participation must be undertaken at various stages of the assessment process;
- The assessment must be conducted by an independent EAP;
- The relevant authorities must respond to applications and submissions within stipulated time frames;
- Decisions taken by the authorities can be appealed by the proponent or any other Interested and Affected Party (IAP); and
- A draft Environmental Management Programme (EMP) must be compiled and released for public comment.

¹ GN R543 –EIA Regulations

GN R544 – Regulations Listing Notice 1 of 2010

GN R545 – Regulations Listing Notice 2 of 2010

GN R546 – Regulations Listing Notice 3 of 2010

GN R660 – Amendments to the EIA Regulations and Listing Notices

GN R543 sets out the procedures to be followed and content of reports compiled during the BA and S&EIR processes.

GN R543 also makes provision for appeal against any decision issued by the relevant authorities². In terms of the Regulations, a 'notice of intention to appeal' has to be lodged with the relevant authority in writing within twenty days of the date of the decision (EA). The appeal must be lodged within 30 days of the lapsing of the 20 days allowed for lodging the notice of intention to appeal.

The proposed project includes activities that are listed in terms of the EIA Regulations (see Table 2-1). Note that the relevance of some of these listed activities will only be finalised following more detailed design and screening of alternatives.

Table 2-1: NEMA Listed Activities Applicable to the Proposed Project

No.	Listed activity
GN R544	
9	The construction of facilities or infrastructure exceeding 1 000 metres in length for the bulk transportation of water, sewage or stormwater - (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more.
11	The construction of: (iii) bridges; (x) buildings exceeding 50 square metres or more; or (xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse.
14	The construction of structures in the coastal public property where the development footprint is bigger than 50 square metres.
15	The construction of facilities for the desalination of sea water with a design capacity to produce more than 100 cubic metres of treated water per day.
16	Construction or earth moving activities in the sea, or within the littoral active zone or a distance of 100 metres inland of the high water mark (HWM) of the sea, whichever is the greater, in respect of – (iii) embankments; (iv) rock revetments or stabilising structures including stabilising walls; (v) buildings of 50 square metres or more; or (vi) infrastructure covering 50 square metres or more.
17	The planting of vegetation or placing of any material on dunes and exposed sand surfaces, within the littoral active zone for the purpose of preventing the free movement of sand, erosion or accretion, excluding where the planting of vegetation or placement of material relates to restoration and maintenance of indigenous coastal vegetation or where such planting of vegetation or placing of material will occur behind a development setback line.
18	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from: (i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, or a distance of 100 metres inland of the high- water mark of the, whichever distance is the greater.
22	The construction of a road, outside urban areas, (i) with a reserve wider than 13,5 meters; or (ii) where no reserve exists where the road is wider than 8 metres.
23	The transformation of undeveloped, vacant or derelict land to – (iii) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares.

² Sections 60 - 68

No.	Listed activity
37	The expansion of facilities or infrastructure for the bulk transportation of water or stormwater where: <ol style="list-style-type: none"> a. the facility or infrastructure is expanded by more than 1 000 metres in length; or b. where the throughput capacity of the facility or infrastructure will be increased by 10% or more—excluding where such expansion: <ol style="list-style-type: none"> (i) relates to transportation of water, sewage or stormwater within a road reserve.
39	The expansion of <ol style="list-style-type: none"> (ii) bridges; within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, where such expansion will result in an increased development footprint.
47	The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre - <ol style="list-style-type: none"> (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres.
GN R545	
5	The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent and which is not identified in Notice No. 544 of 2010 or included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case that Act will apply.
14	The construction of an island, anchored platform or any other permanent structure on or along the sea bed excluding construction of facilities, infrastructure or structures for aquaculture purposes.
GN R546	
2	The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres. <ol style="list-style-type: none"> a. In Northern Cape: <ol style="list-style-type: none"> (i) Outside urban areas, in: <ol style="list-style-type: none"> bb. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; dd. Critical Biodiversity Areas (CBAs) as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; ff. Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.
4	The construction of a road wider than 4 metres with a reserve less than 13.5 metres. <ol style="list-style-type: none"> a. In Northern Cape: <ol style="list-style-type: none"> (ii) Outside urban areas, in: <ol style="list-style-type: none"> aa. A protected area identified in terms of National Environmental Management: protected Areas Act (NEM:PAA), excluding conservancies; cc. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; ee. CBAs as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; gg. Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEM:PAA or from the core areas of a biosphere reserve; hh. Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.
12	The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation. <ol style="list-style-type: none"> b. Within CBAs identified in bioregional plans; c. Within the littoral active zone or 100 metres inland from the high-water mark of the sea, whichever distance is the greater.
13	The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, <ol style="list-style-type: none"> a. CBAs and Ecological Support Areas (ESAs) as identified in systematic biodiversity plans adopted by the competent authority. c. In the Northern Cape: <ol style="list-style-type: none"> (ii) Outside urban areas, in: <ol style="list-style-type: none"> cc. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; gg. Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.
14	The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation,

No.	Listed activity
	a. In the Northern Cape : (i) All areas outside urban areas.
16	The construction of: (iii) buildings with a footprint exceeding 10 square metres in size; or (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse. a. In the Northern Cape : (ii) Outside urban areas, in: dd. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; ff. CBAs or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; ii. Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.
19	The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre. a. In the Northern Cape : (ii) Outside urban areas, in: cc. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; ee. CBAs as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; gg. Areas seawards of the development setback line or within 1 kilometre from the HWM of the sea if no such development setback line is determined; hh. Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined.
24	The expansion of d. infrastructure where the infrastructure will be expanded by 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line. a. In the Northern Cape (ii) Outside urban areas, in: cc. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; ee. CBAs as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; gg. Areas seawards of the development setback line or within 1 kilometre from the HWM of the sea if no such development setback line is determined.

Legal requirements for this project:

As such, the proponent is obliged to apply for EA for these listed activities and to undertake an S&EIR process in support of the application, in accordance with the procedure stipulated in GN R543 under NEMA.

2.1.3 National Water Act 36 of 1998

Water use in South Africa is controlled by the NWA. The executive authority is the Department of Water Affairs (DWA). The NWA recognises that water is a scarce and unevenly distributed national resource in South Africa. Its provisions are aimed at achieving sustainable and equitable use of water to the benefit of all users and to ensure protection of the aquatic ecosystems associated with South Africa's water resources. The provisions of the Act are aimed at discouraging pollution and wastage of water resources.

In terms of the Act, a land user, occupier or owner of land where an activity that causes or has the potential to cause pollution of a water resource has a duty to take measures to prevent pollution from occurring. If these measures are not taken, the responsible authority may do whatever is necessary to prevent the pollution or remedy its effects, and to recover all reasonable costs from the responsible party.

Section 21 of the NWA specifies a number of water uses, including:

- (a) *taking water from a water resource;*
- (b) *storing water;*
- (c) *impeding or diverting the flow of water in a watercourse;*
- (f) *discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit; and*
- (i) *altering the bed, banks, course or characteristics of a watercourse.*

These water uses require authorisation in terms of Section 22 (1) of the Act, unless they are listed in Schedule 1 of the NWA, are an existing lawful use, fall under a General Authorisation issued under section 39 or if the responsible authority waives the need for a licence.

Legal requirements for this project:

The proposed project activities are likely to trigger water use activities in terms of section 21 (a), (b), (c), (f) and (i) of the NWA. It is thus expected that a Water Use Licence (WUL) will be required for the Volwaterbaai desalination plant and associated infrastructure from the competent authority, in this case DWA. Activities (a) and (f) relate to the marine environment, and where allowed for in terms of the ICMA, application will be made in terms of that Act³.

2.1.4 Water Services Act 108 of 1997

In terms of Section 7 of the Water Services Act 108 of 1997, no person may “*obtain water for industrial use from any other source other than the distribution of Water Services Provider nominated by a Water Services Authority having jurisdiction over the area in question, without the approval of that Water Services Authority*” (Industrial use is defined as the use of water for mining, manufacturing, construction or any related purpose).

Legal requirements for this project

The proposed desalination plant will provide water to the Zandkopsdrift Mine (for industrial use). Sedex will need to obtain approval from the Water Services Authority in the area to secure water services from a source other than a Water Services Provider nominated by the Water Services Authority.

2.1.5 National Heritage Resources Act 25 of 1999

The protection and management of South Africa’s heritage resources are controlled by the NHRA. The enforcing authority for this act is the South African National Heritage Resources Agency (SAHRA). In terms of the Act, historically important features such as graves, trees, archaeological artefacts/sites and fossil beds are protected. Similarly, culturally significant symbols, spaces and landscapes are also afforded protection.

Section 38 of the NHRA requires that any person who intends to undertake certain categories of development must notify SAHRA at the very earliest stage of initiating such a development and must furnish details of the location, nature and extent of the proposed development. SAHRA has designed the South African Heritage Resources Information System (SAHRIS) database to assist the developer in providing the necessary information to enable SAHRA to decide whether a Heritage Impact Assessment (HIA) will be required.

³ Although it is the intention that activities associated with the abstraction of water and discharge of waste to the marine environment will be dealt with in terms of the ICMA, in the absence of suitable processes to administer the ICMA, these applications would need to be dealt with in terms of the NWA.

Section 38 also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that, if such an assessment is deemed adequate, a separate HIA is not required. There is however the requirement in terms of Section 38 (8) for the consenting authority (in this case the NCDENC) to ensure that the evaluation of impacts on the heritage resources fulfils the requirements of the relevant heritage resources authority (SAHRA), and that the comments and recommendations of the heritage resources authority are taken into account prior to the granting of the consent.

Section 38(1) of the NHRA specifies activities that trigger the need for the proponent to notify SAHRA of the proposed development, in order for SAHRA to determine the need for further Heritage Assessment. The proposed Volwaterbaai and associated infrastructure triggers a number of these activities, including:

- (a) *Construction of a road, wall, power line, canal or other similar form of linear development or barrier over 300 m in length;*
- (c) *Any development or activity that will change the character of a site (i) exceeding 5 000 m² in extent, (ii) involving three or more existing erven or subdivisions thereof; and*
- (d) *Rezoning of a site exceeding 10 000 m² in extent.*

Legal requirements for this project:

The proponent is required to notify SAHRA via the SAHRIS database of the proposed activities and then undertake any assessments deemed necessary by SAHRA. The assessment of heritage, archaeological and paleontological impacts will be undertaken as part of the EIA process in terms of NEMA.

2.1.6 National Environmental Management: Biodiversity Act 10 of 2004

The purpose of the NEM:BA is to provide for the management and conservation of South Africa's biodiversity and the protection of species and ecosystems that warrant national protection. The NEM:BA makes provision for the publication of bioregional plans and the listing of ecosystems and species that are threatened or in need of protection. Threatened or Protected Species Regulations (2007), Guidelines for the determination of bioregions and the preparation and publication of bioregional plans (2009) and a National List of Ecosystems that are Threatened and in Need of Protection (2011) have been promulgated in terms of NEM:BA.

A published bioregional plan is a spatial plan indicating terrestrial and aquatic features in the landscape that are critical for conserving biodiversity and maintaining ecosystem functioning. These areas are referred to as CBAs in terms of NEM:BA. Bioregional plans provide guidelines for avoiding the loss or degradation of natural habitat in CBAs with the aim of informing, EIAs and land-use planning (including Environmental Management Frameworks [EMFs], Spatial Development Frameworks [SDFs], and Integrated Development Plans [IDPs]).

Legal requirements for this project:

A number of aquatic CBAs, a terrestrial CBA and an ESA are located in the proposed project area and the impacts of the project on the biodiversity of the area and, in particular, the CBAs and ESAs will need to be assessed. The presence of CBAs and ESAs trigger certain activities listed in GN R546 of the EIA Regulations requiring authorisation.

2.1.7 National Environmental Management: Integrated Coastal Management Act 24 of 2008

NEM: ICMA provides for the integrated management of the coastal zone, including the promotion of social equity and best economic use, while protecting the coastal environment.

Chapter 7 of the Act establishes integrated permitting procedures and other measures to ensure the protection and sustainable use of the coastal zone and its resources. This includes the requirement that adequate consideration be given to the objectives of this Act when considering applications for EA (and planning authorisation) for any development within the coastal zone, and the consideration of impacts on coastal public property, the coastal protection zone and coastal access land.

Chapter 8 of the Act establishes an integrated system for regulating the disposal of effluent and waste into the sea. In terms of Section 69, a coastal waters discharge permit (CWDP) is required from the DEA for the discharge of effluent into coastal waters.

Legal requirements for this project:

The project will include the development of infrastructure in the coastal zone as well as coastal protection zone (defined as being within 1km of the shoreline in rural areas) as well as the discharge of brine from the desalination plant into coastal water. The assessment of impacts on the coastal environment as well as a CWDP is thus required.

2.1.8 Marine Living Resources Act 18 of 1998

The MLRA governs Marine Protected Areas (MPAs) and states that no person shall in any MPA, without permission, take or destroy any fauna and flora other than fish; dredge, extract sand or gravel, discharge or deposit waste or any other polluting matter; or in any way disturb, alter or destroy the natural environment; carry on any activity which may adversely impact on the ecosystems of that area.

Legal requirements for this project:

There are a number of MPAs declared under the MLRA and care must be taken to avoid any possible impact on these areas. The nearest existing MPA is located at Saldanha, approximately 250km south of the desalination plant. However, it is likely that a MPA associated with the Namaqua National Park will be proclaimed in future. The future MPA would be located approximately 20km northwest of the desalination plant (see Figure 4-6). As such the assessment of impacts on the marine environment must include the consideration of possible impacts on the future MPA.

2.1.9 National Environmental Management: Control of Use of Vehicles in the Coastal Zone GN Regulations 1399 of 21 December 2001

In terms of Regulation 6, of the NEM: Control of Use of Vehicles in the Coastal Zone Regulation, any person intending to drive in the coastal zone should lodge an application for a vehicle access permit with the DEA (Oceans and Coasts (O&C)) before driving in the coastal zone.

Legal requirements for this project:

Construction activities (including the abstraction of seawater for construction) as well as maintenance of infrastructure in the coastal zone would require the use of vehicles in the coastal zone, and a permit for the use of vehicles in this zone (or exemption from the requirements of these regulations) will be required.

2.1.10 Occupational Health and Safety Act 85 of 1993 and Major Hazard Installation Regulations

The OHS Act and the MHI Regulations as amended in GN R. 692 of 30 July 2001 require a risk assessment of any MHI for the (permanent or temporary) storage of a quantity of a substance which may pose a risk to the health and safety of employees and the public. The risk assessment must be conducted prior to construction by an inspection authority approved by the Department of Labour.

Legal requirements for this project:

Due to the proposed use and storage of chlorine gas at the desalination plant, a risk assessment and compliance with relevant South African National Standards (SANS) standards is required. The project does not, however, qualify as a MHI as the maximum volume of chlorine gas stored at the plant will be 3 tons or less⁴. A risk assessment is however required by an approved inspection authority once sufficient detailed design information is available. If alternatives to chlorine are found to be feasible, a risk assessment may not be required.

2.2 Planning Policy Framework

This section discusses a number of key formal planning policies relevant to the project. The policies and plans briefly discussed below include regional and local development and spatial plans, including the:

- The Northern Cape Provincial Growth and Development Strategy (PGDS) (2011);
- Northern Cape Provincial Spatial Development Framework (SDF) (2012);
- Northern Cape Province Coastal Management Plan (2005);
- Namakwa District Biodiversity Sector Plan (NDBSP) (2008);
- Environmental Management Framework (EMF) and Strategic Environmental Management Plan (SEMP) for the Namakwa District Municipality (NDM);
- Integrated Development Plans (IDPs) for District and Local Municipalities, which formulate the specific needs in, and desirable developments for, municipalities; and
- SDFs for the District and Local Municipalities, which translate the aims of the IDP into a spatial dimension and, together with the IDP, aim to give effect to the national imperative to increase economic growth and promote social inclusion whilst ensuring that such growth is environmentally sustainable (DEA&DP, 2009).

2.2.1 Northern Cape Provincial Growth and Development Strategy (2011)

The PGDS is a guiding tool for future development in the Northern Cape and identifies poverty as the most significant challenge facing the province. Long- term sustainable economic growth and development is recognised as a priority in order to ensure that challenges associated with poverty are addressed. The PGDS aims to guide and coordinate the allocation of government resources and private sector investment in order to facilitate sustainable development.

The PGDS defines a vision for the Northern Cape: *'building a prosperous, sustainable growing provincial economy to eradicate poverty and improve development for a caring society'*. The overarching objective of the PGDS is to ensure the integration of development processes and, in particular, to facilitate sustainable development throughout the province.

2.2.2 Northern Cape Provincial Spatial Development Framework (2012)

The Northern Cape Provincial Spatial Development Framework (PSDF) is a spatial planning document that guides district and local spatial initiatives such as IDPs and SDFs. The PSDF is based on the principles of the PGDS and one of its overarching functions is to serve as a spatial land-use directive which aims to promote environmental, economic, and social sustainability through sustainable development.

⁴ If 10 tons of chlorine is stored in a single vessel, the plant would be considered an MHI.

The PSDF identifies a number of objectives including the following:

- Provide a spatial rationale and directive for future development in terms of the principles of sustainability as advocated by the National Strategy for Sustainable Development;
- Give spatial effect to the provisions of the PGDS and guide the implementation of key projects;
- Provide guidance to public and private infrastructure investment in the province, taking cognisance of the growth and development potential of the various regions and settlements in the province; and
- Spatially co-ordinate and direct the activities and resources of provincial government departments.

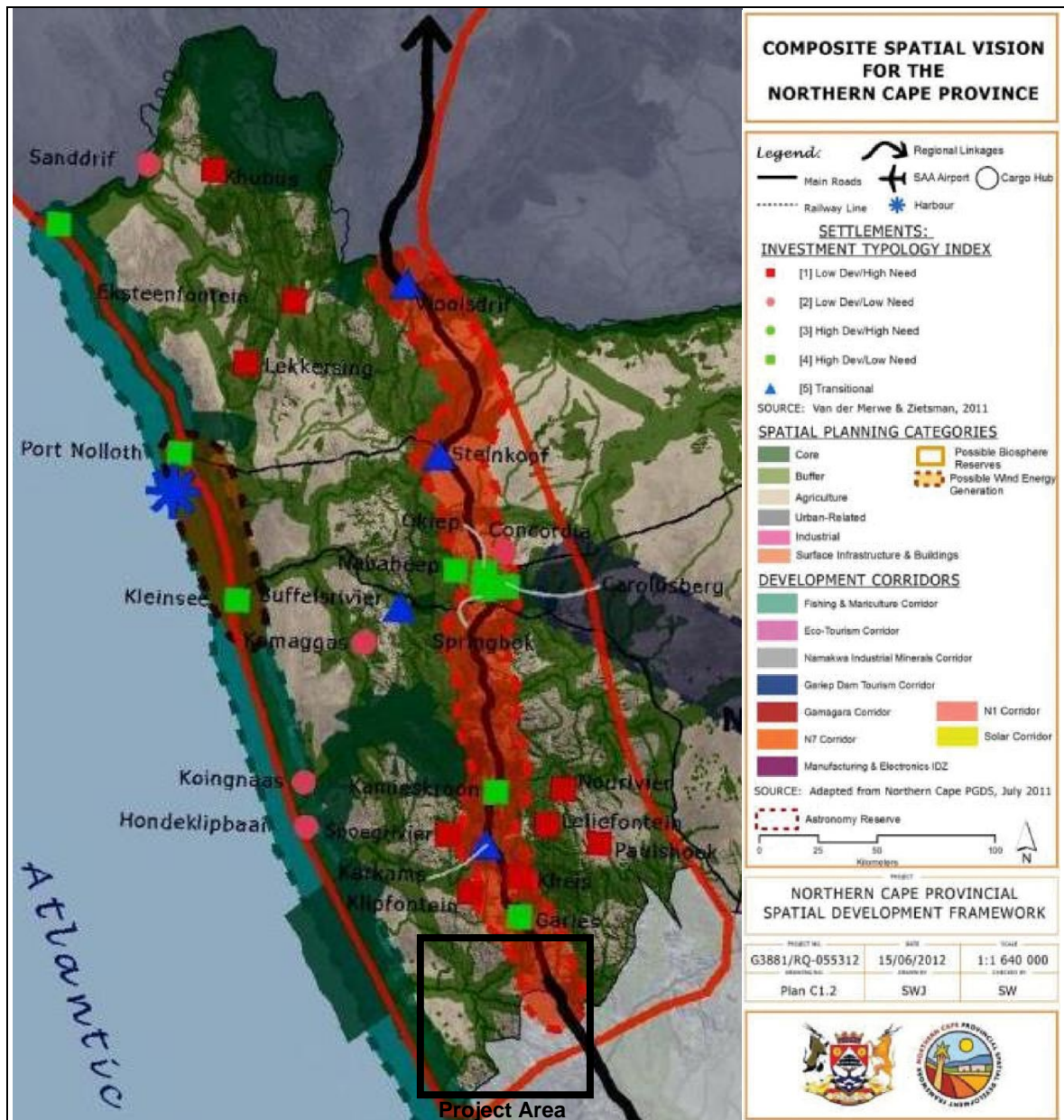


Figure 2-1: PSDF: Composite Spatial Plan

Source: Northern Cape Provincial Government (NCPG) (2012)

The PSDF identifies a number of Spatial Planning Categories (SPCs). These SPCs were formulated in terms of bioregional planning principles and collectively illustrate the desired matrix of land- use throughout the province. The SPCs are used to define a spatial vision for the province and are

illustrated in the composite spatial vision of the Northern Cape Province (Figure 2-1). The SPCs also provide a framework to guide decision-making regarding land-use at all levels of planning.

The SPCs identified for the area surrounding the proposed development area include core, buffer and agricultural areas. Core areas are defined as statutory protected areas, while buffer areas include ecological corridors. The agricultural areas in the vicinity of the project area are considered to be suitable for grazing. According to the composite spatial vision for the Province, the N7 is identified as an important development corridor and the western coastline is highlighted as an important fishing and mariculture corridor.

The PSDF identifies a general approach to the investment of public and private funds. This is based on the business principle that investment should be directed where the best return on such investment can be generated. Garies and Kamieskroon are identified as having a high level of development potential and a low level of human need. They are therefore considered as being high priority areas for public and private investment and infrastructural development. Investment into social capital is not deemed essential in these areas and investment can be directed toward infrastructural development and large scale capital investment, producing secondary economic and social benefits.

2.2.3 Northern Cape Province Coastal Management Plan (2005)

The Northern Cape Province Coastal Management Plan (2005) has adopted a vision: *'to promote sustainable coastal development and the realization of livelihoods that reflects the true range of ecological and socio-economic opportunities in Namaqualand coastal zone'*. The aim is to achieve this by creating co-operative governance institutions and capacity in order to promote integrated coastal management. A number of goals and strategies are identified in terms of the Plan. These aim to:

- Preserve, protect or promote historical and cultural resources and activities of the coast;
- Promote the diversity, vitality and long-term viability of coastal economies and activities;
- Maintain an appropriate balance between built, rural and wilderness coastal areas;
- Appropriately manage and ensure that the public has the right to physical access to the sea and the opportunities and benefits of the coast;
- Alleviate coastal poverty through proactive coastal development initiatives;
- Manage coastal settlements to be in harmony with local and regional aesthetic, amenity, biophysical and cultural opportunities and constraints;
- Maintain the diversity, health and productivity of coastal processes and ecosystems;
- Establish coastal protected areas;
- Use non-renewable coastal resources in a manner that optimises public interest and retains options for alternative and future uses;
- Plan and manage coastal developments with regard to natural hazards to minimise the risk of damage caused by coastal processes (climate change, sea-level rise, etc.);
- Implement pollution control and waste management measures in order to prevent, minimise and strictly control harmful discharges into coastal ecosystems; and
- Manage polluting activities to ensure that they have minimal adverse impacts on the health of coastal communities, and on coastal ecosystems and their ability to support beneficial human uses; and

- Rehabilitate damaged or degraded coastal ecosystems and habitats.

2.2.4 Namakwa District Biodiversity Sector Plan (2008)

The NDBSP served as a guideline to inform the Namakwa Bioregional Plan that was published in terms of NEM: BA in 2010. It aims to help guide land-use planning, environmental assessments and natural resource management in order to promote sustainable development in the NDM through the identification of potentially sensitive environmental areas, including CBAs.

The NDBSP identifies terrestrial and aquatic CBAs (Type 2), and terrestrial and aquatic ESAs within the study area (Figure 2-2). Type 2 terrestrial and aquatic CBAs are listed as important areas known to be of high biodiversity value and should be maintained as near-natural landscapes with no or limited loss of biodiversity patterns and a limited loss of ecosystem processes.

Terrestrial and aquatic ESAs are listed as areas that support key biodiversity resources (e.g. water) or ecological processes (e.g. movement corridors) in the landscape and should be maintained as near-natural landscapes. Some loss of biodiversity and a limited loss of ecosystem processes are permissible in these areas.

Linear engineering structures as well as water projects and transfers are listed as restricted activities within both terrestrial and aquatic CBAs (Type 2) and ESAs, but are not considered to be unsuitable activities in terms of the NDBSP and are not actively discouraged.

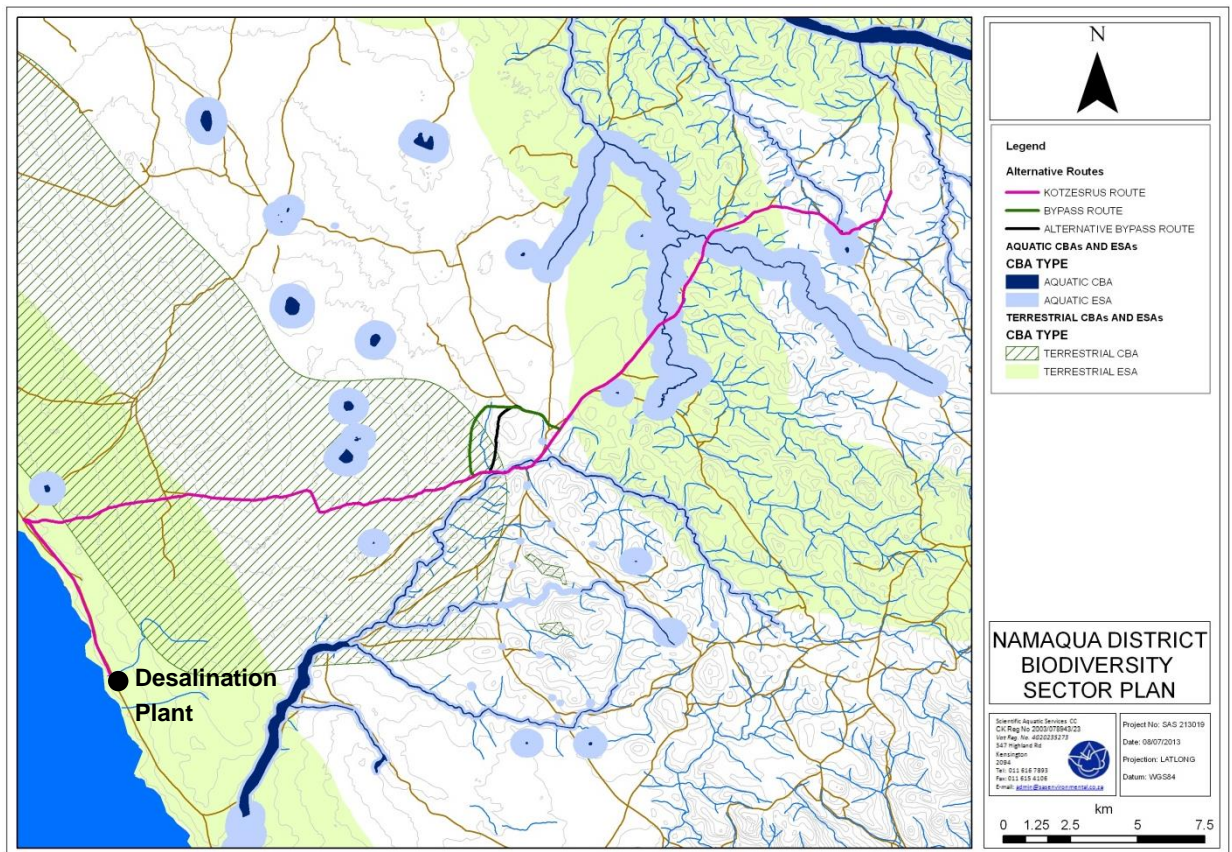


Figure 2-2: Critical Biodiversity Areas (Namaqua District Biodiversity Sector Plan)

Source: Van Staden et al., 2013

2.2.5 Environmental Management Framework and Strategic Environmental Management Plan for the Namakwa District Municipality

The EMF and SEMP for the NDM provides a high level implementation plan for sustainable development. The document defines the state of the environment, describes the inherent environmental opportunities and constraints in the area and provides monitoring and management measures that can be used to achieve the environmental vision that is outlined for the NDM and the desired state of the environment (Chidley et al., 2011).

The vision for the NDM in terms of the EMF and SEMP is: *'to ensure that economic and social development in the NDM advances to meet inhabitants' needs whilst ensuring that environmental goods and services are protected where stressed and used where sustainable'*.

The EMF and SEMP identifies a number of environmental opportunities and constraints, including:

- Water scarcity and the poor and unreliable overall quality of groundwater resources (particularly in the vicinity of Garies);
- The effect of climate change in the Namaqua District which will likely include more variable and severe climatic conditions, an increase in water demand, less reliable water supply, reduced recharge and increased salinization of groundwater resources.
- The unique biodiversity of the NDM is important for economic, cultural, aesthetic, scientific and educational purposes. Major threats to biodiversity in the area include invasive species, habitat loss due to agriculture, mining and urbanisation, exploitation of species of interest; and climate change;
- Wetlands are an important biodiversity resource and are of provide important functions in terms of groundwater recharge, water treatment, habitat provision and tourism;
- The coastal area has an abundance of marine and coastal resources, however, coastal infrastructure is not well developed and this has hampered the fishing and mariculture industry;
- Mining has played an important economic role in the District; and
- Large portions of the coastal area have been transformed through diamond mining (especially on the northern coastline of the NDM near Alexander Bay and Hondeklipbaai).

The EMF and SEMP identifies a number of strategic management measures to ensure that environmental resources in the NDM are managed sustainably. Relevant measures applicable to the project include:

- Discourage new human settlements and development where water supplies cannot be secured;
- Seek alternative water sources to ensure security of water supplies and investigate interim solutions such as the provision of potable water from desalination;
- Ensure storage reservoirs have a very low surface area to storage volume ratio to reduce water loss;
- Encourage current industries and proposed developments to make use of water and energy conservation measures and encourage effective water re- use and recycling;
- Encourage mining where environmental impacts are deemed to be acceptable, the appropriate environmental controls are in place and economic benefits will exceed potential environmental impacts;
- Secure access to the coastline in the less disturbed southern parts of the NDM in order to encourage tourism;

- Ensure that longitudinal developments that traverse biodiversity corridors incorporate mitigation measures to ensure that the biodiversity corridors are not severed; and
- Protect visually and ecologically sensitive areas in order to promote conservation and tourism.

The EMF and SEMP divides the NDM into a number of Environmental Management Zones (EMZs). These zones provide an indication of sensitivity and the resilience of the receiving environment to various types of development. EMZs identified in the project area include EMZ B (the NDM coastal area) and EMZ C (the area surrounding Kotzesrus). Areas in EMZ B are considered to have *very high* sensitivity while areas in EMZ C are considered to have *high* sensitivity. No critically sensitive areas (EMZ A) are identified in the project area.

The following management measures are suggested for the EMZ B and EMZ C areas respectively:

- EMZ B: Restrict development in terms of type and magnitude of impact. Do not exclude development where compelling economic and social benefits will be derived for the local and regional population; and
- EMZ C: Ensure that development serves to complement the area and limit development, where relevant.

2.2.6 Namakwa District Municipality Integrated Development Plan (2012 -2016)

The NDM's IDP (NDM, 2012) is a strategic plan that is used to guide the development of the District for a specific period. It guides the planning, budgeting, implementation, management and future decision making processes of the District Municipality. The IDP identifies the high level of unemployment and low education level in the District as an indication of the urgent need to develop human capital in the District in order to reduce poverty.

The key outcomes of the District Municipality's implementation plan identified in the IDP and the projects identified to achieve each of the following desired outcomes are as follows:

Outcomes identified in the IDP:

- Improved quality of basic services;
- Decent employment through inclusive economic growth;
- A skilled and capable workforce to support an inclusive growth path; and
- An efficient, competitive and responsive economic infrastructure network.

Associated projects identified in the IDP:

- The transformation and development of the mining sector: implementation of the Social and Labour Plans (SLPs);
- Job creation through infrastructure development;
- The transformation and development of the mining sector: data capturing and information management to determine the impact of all SLPs in the District;
- Infrastructure development;
- Socio- economic development; and
- Trade and investment.

2.2.7 Namakwa District Municipality Spatial Development Framework

The NDM's SDF (CNdV, 2012) aims to provide a framework for the spatial management of growth in urban and rural environments in order to ensure that urbanisation and the associated impact on resources can be accommodated. The SDF intends to show desired patterns of land use, directions for future growth, indicate the alignment of urban edges, and depict other special development areas in the NDM.

The SDF defines the spatial vision for the NDM as: *'an exciting mix of cultural wilderness, floristic, river and coastal tourism; mining and mining beneficiation; agriculture including intensive irrigation and dry land farming, livestock grazing and game; and mariculture and coastal opportunities that includes fishing and abalone ranching'*.

According to the SDF, the following actions should be taken to achieve this vision:

- Ensure adequate and appropriate infrastructure;
- Maximise the amount of beneficiation that occurs from mining and agriculture through providing necessary facilities, training, education, environmental development and business support with a focus on economic empowerment; and
- Eradicate poverty and improve social development by strengthening the economy and thriving sectors.

The SPCs that were identified in the PSDF are included in the NDM's SDF. The SDF identifies five broad SPCs including: core areas, buffer areas, agricultural areas, urban settlements and industrial areas (Figure 2-3). The SPCs that were identified in the project area include: buffer areas (ecological corridors and river corridors) and agricultural areas (mostly extensive agriculture/ grazing).

The SDF provides policies for development within each of the SPCs. Policies for buffer areas and agricultural areas include low density development (1 building per 10 hectares), clustered development, and no further subdivisions of agricultural land below a minimum farm size. The SDF also identifies Garies and Kamieskroon as economic growth points as both these settlements have high development potential.

The SDF identifies a number of opportunities associated with the coastal areas within the District Municipality including tourism, fishing, mining, coastal wind farms and desalination plants. The SDF advises that gravel roads between settlements should be upgraded and maintained so that they can provide access for tourism and the transportation of agricultural produce. The SDF also states that the Kamiesberg area (within which the project falls) is considered to be a major agricultural area and that good roads are necessary in order to stimulate economic activity and tourism.

According to the SDF, two existing mines are identified to the southwest of Garies and a potential mine is identified to the northeast of the town. A nuclear disposal site is located to the northwest of Garies and the SDF iterates that no development should be allowed in this area. The SDF also highlights the development of a proposed gas pipeline from Hondeklipbaai south towards Saldanha Bay harbour. This pipeline falls within the project area.



Figure 2-3: Namakwa District Municipality Draft Municipal SDF: Kamiesberg Area

Source: CNDV(2012)

2.2.8 Kamiesberg Local Municipality Integrated Development Plan

The Kamiesberg Local Municipality (KLM)'s IDP identifies certain areas of concern in the Municipality that must be addressed, and aims to provide for the implementation of strategies to address these. These strategies incorporate the vision, mission, values and objectives of the Municipality. The IDP defines the vision for the Municipality: *'to better the guiding of life for all its inhabitants'*. The objectives of the IDP include:

- Meeting Basic Needs;
- Stimulating the Economy;
- Improving Service Delivery; and
- Capacitating Local Government.

The KLM IDP identifies a number of sectors with economic growth and development potential. These include: livestock grazing, mining and tourism. The IDP also identifies two emerging sectors, viz. aquaculture and conservation and ecological restoration. However, according to the IDP, these sectors cannot provide sufficient employment to address high unemployment levels in the area and it is considered unlikely that the Municipality will become an economic driving force in the region. Major challenges faced by the Municipality include:

- Water scarcity, which is one of the biggest concerns in the area;
- Poor roads and accessibility;
- The lack of railways, harbours and airports;
- Low education levels resulting in the lack of skills and qualifications;
- Dispersed nature of settlement. (Large portions of the population live in dispersed settlements that are approximately 80 km from each other and connected with gravel roads); and
- The downscaling of the mining industry, which this is the core employment source in the area.

However, due to its location and physiographic characteristics, there are a number of opportunities which could be utilised to the benefit of the people of the Kamiesberg area. These include opportunities for investment in mariculture, alternative energy, tourism, mining, livestock farming and a conservation based economy.

2.2.9 Kamiesberg Local Municipality Spatial Development Framework (2010- 2015)

The KLM's SDF is a component of the Municipality's IDP. It essentially illustrates the form and extent of development that the KLM wants to promote, taking the strategic approach adopted by the IDP into consideration (Figure 2-4). The SDF aims to guide and inform all decisions on spatial development and land use management within the Kamiesberg Municipal area.

The SDF iterates that effective linkages and good accessibility are considered to be of prime importance to achieve the objectives of the IDP. This is considered necessary to ensure growth in the tourism industry, linkages to other regions, effective service delivery, access to internal and external markets for the agricultural industry and access to external markets for the mining industry.

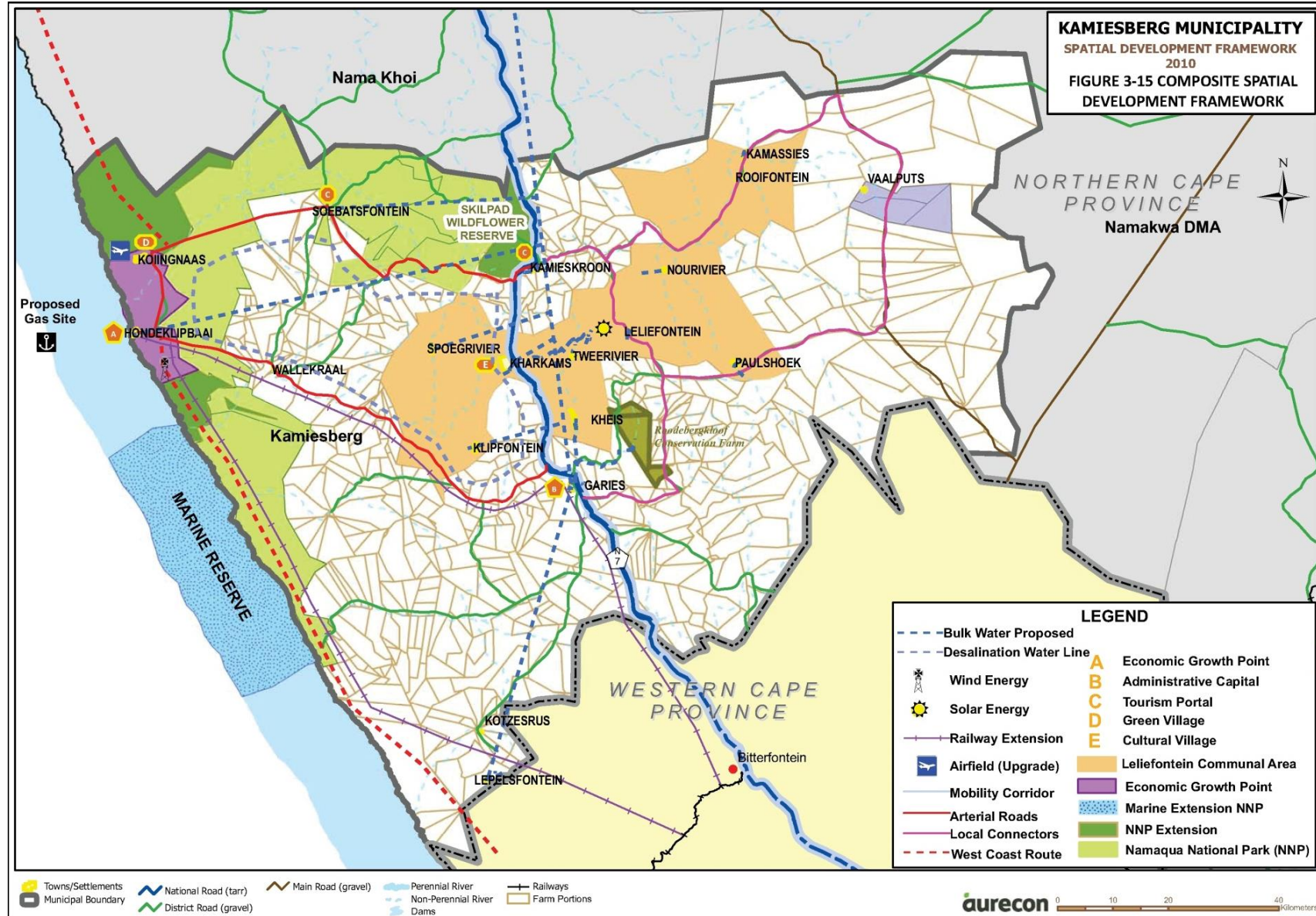


Figure 2-4: Kamiesberg Local Municipality SDF: Composite Plan

Source: Kamiesberg Local Municipality SDF (Higgs et al. 2010)

The SDF identifies a number of small dysfunctional settlements spread throughout the Kamiesberg Municipal area. The majority of the settlements (with the exception of Kamieskroon and Garies) do not have the capacity to function as economic centres or create economically viable livelihoods. The SDF also iterates that the fragmented spatial pattern of the settlements in the Municipality is costly to maintain. Furthermore, these areas are known for high levels of unemployment and poverty. The SDF therefore defines a spatial hierarchy for the Municipality in order to rationalise the provision of services to areas within the Municipality. The town of Garies is identified as a Class B settlement type (administrative node) in terms of the SDF and Kotzesrus and Lepelsfontein are considered to be Class F settlements. The expansion of Class F settlements is not recommended by the SDF.

The area around Koingnaas and Hondeklipbaai is designated as an economic growth point. This area is situated adjacent to the Namaqua National Park, which provides opportunities for tourism development. The SDF supports a proposal that the Park is expanded to include areas to the north, west and east of the existing reserve. The establishment of a MPA adjacent to the reserve is also suggested. This provides an opportunity for the development of resorts and tourist accommodation.

The SDF proposes the development of a desalination plant at Hondeklipbaai in order to address water shortage concerns in the KLM. It is proposed that the plant have sufficient capacity to meet the needs of the Namaqua District Municipality. The Hondeklipbaai area is also highlighted as a potential development node for fishing and mariculture industries and is considered suitable for wind energy generation. A gas field is located approximately 70 to 105 km offshore of Hondeklipbaai and there is therefore the potential to benefit from infrastructure associated with the exploitation of oil and gas resources in the area.

The SDF further emphasises the importance of linkages and accessibility. The N7 is identified as an important mobility corridor, while arterial roads and local connector roads are also considered to be of importance. The route between Garies and Kotzesrus is identified as an access road in terms of the SDF. The west coast road along the Namaqua coastline is also highlighted in the SDF and a bulk water supply pipeline is envisaged between Garies and Lepelsfontein.

2.3 Environmental Assessment Process

The general approach to this study is guided by the principles contained in Section 2 of NEMA and those of Integrated Environmental Management (IEM).

NEMA lists a number of **principles** that apply to the actions of organs of state and that also serve as reference for the interpretation of environmental legislation and administration of environmental processes. The principles most relevant to environmental assessment processes and projects for which authorisation is required are summarised below.

Principles relevant to the EIA process:

- Adopt a risk-averse and cautious approach;
- Anticipate and prevent or minimise negative impacts;
- Pursue integrated environmental management;
- Involve stakeholders in the process; and
- Consider the social, economic and environmental impacts of activities.

Principles relevant to the project:

- Place people and their needs at the forefront of concern and serve their needs equitably;
- Ensure development is sustainable, minimises disturbance of ecosystems and landscapes, pollution and waste, achieves responsible use of non-renewable resources and sustainable exploitation of renewable resources;
- Assume responsibility for project impacts throughout its life cycle; and
- Polluter bears remediation costs.

This S&EIR process complies with these principles through its adherence to the EIA Regulations, 2010 and associated guidelines, which set out clear requirements for, *inter alia*, impact assessment and stakeholder involvement (see below), and through the assessment of impacts and identification of mitigation measures during the Impact Assessment Phase. An analysis of the project's compliance with the aims of sustainable development is provided in Section 3.6 and will be explored more thoroughly in the EIA Report.

In accordance with the **IEM** Information Series (DEAT, 2004), an open, transparent approach, which encourages accountable decision-making, has been adopted.

The underpinning principles of IEM require:

- Informed decision making;
- Accountability for information on which decisions are made;
- A broad interpretation of the term "environment";
- An open participatory approach in the planning of proposals;
- Consultation with interested and affected parties;
- Due consideration of alternatives;
- An attempt to mitigate negative impacts and enhance positive impacts of proposals;
- An attempt to ensure that the social costs of development proposals are outweighed by the social benefits;
- Democratic regard for individual rights and obligations;
- Compliance with these principles during all stages of the planning, implementation and decommissioning of proposals; and
- The opportunity for public and specialist input in the decision-making process.

Although various environmental authorisations, permits or licences are required before the proposed project may proceed, the regulatory authorities are committed to the principle of cooperative governance and in order to give effect to this principle, a single S&EIR process is required to inform all applications.

The study will also be guided by the requirements of the EIA Regulations, 2010 (see Section 2.1.2), which are more specific in their focus and define the detailed approach to the S&EIR process, as well as relevant guidelines published by the DEA and, in the absence of guidelines published by NCDENC, the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP)⁵, including:

- DEA's Draft Companion to Environmental Impact Assessment Regulations of 2010 (DEA, 2010); and
- DEA&DP's EIA Guideline and Information Document Series (DEA&DP, 2013), which includes guidelines on Generic ToR for EAPs and Project Schedules, Public Participation, Alternatives, Need and Desirability, Exemption Applications and Appeals, an information; and
- DEA&DP's Information Document on the Interpretation of the Listed Activities (DEA&DP, 2011).

The lead authority for this project will be NCDENC. Supplementary applications will be made as required for the remaining authorisations.

2.3.1 Submission of Applications

Various environmental authorisations, permits or licences are required before the proposed project may proceed. Some application forms must be submitted at the outset of the S&EIR process (e.g. in terms of the EIA Regulations and NHRA) while licences and permits in terms of the NWA and NEM:ICMA are only issued after EA and are submitted towards the end of the EIA process. The required authorisations and their status are listed in Table 2-2.

Table 2-2: Environmental Authorisations, Permits and Licences Required for the Project

Application	Authority	Status
EA	NCDENC	Application was submitted to the NCDENC on 22 April 2013 and accepted on 25 April 2013. Reference numbers NC/EIA/07/NAM/KAM/KOT1/2013 and NCP/EIA/0000225/2013 were issued for the application.
Heritage Application	SAHRA	Application was submitted via the SAHRIS on 29 April 2013. Acknowledgement of receipt was received from SAHRA on 2 May 2013 and Case ID. 2130 was allocated to the project.
WUL	DWA	Application will be submitted <i>during the Impact Assessment Phase</i> .
CWDP ⁶	DEA	Application will be submitted <i>at the start of the Impact Assessment Phase</i> .

2.3.2 S&EIR Process and Phasing

The S&EIR process consists of two phases, namely the Scoping Phase (*the current phase*) and an Impact Assessment Phase (see Figure 2-5 below). The principal aim of the Scoping Phase is to determine the environmental issues and impacts that require further investigation in the Impact Assessment Phase.

⁵ As no specific guidelines are available from NCDENC, reference is made to DEA and DEA&DP guidelines.

⁶ Any other permits or licences required in terms of the NEM:ICMA will be determined in consultation with DEA.

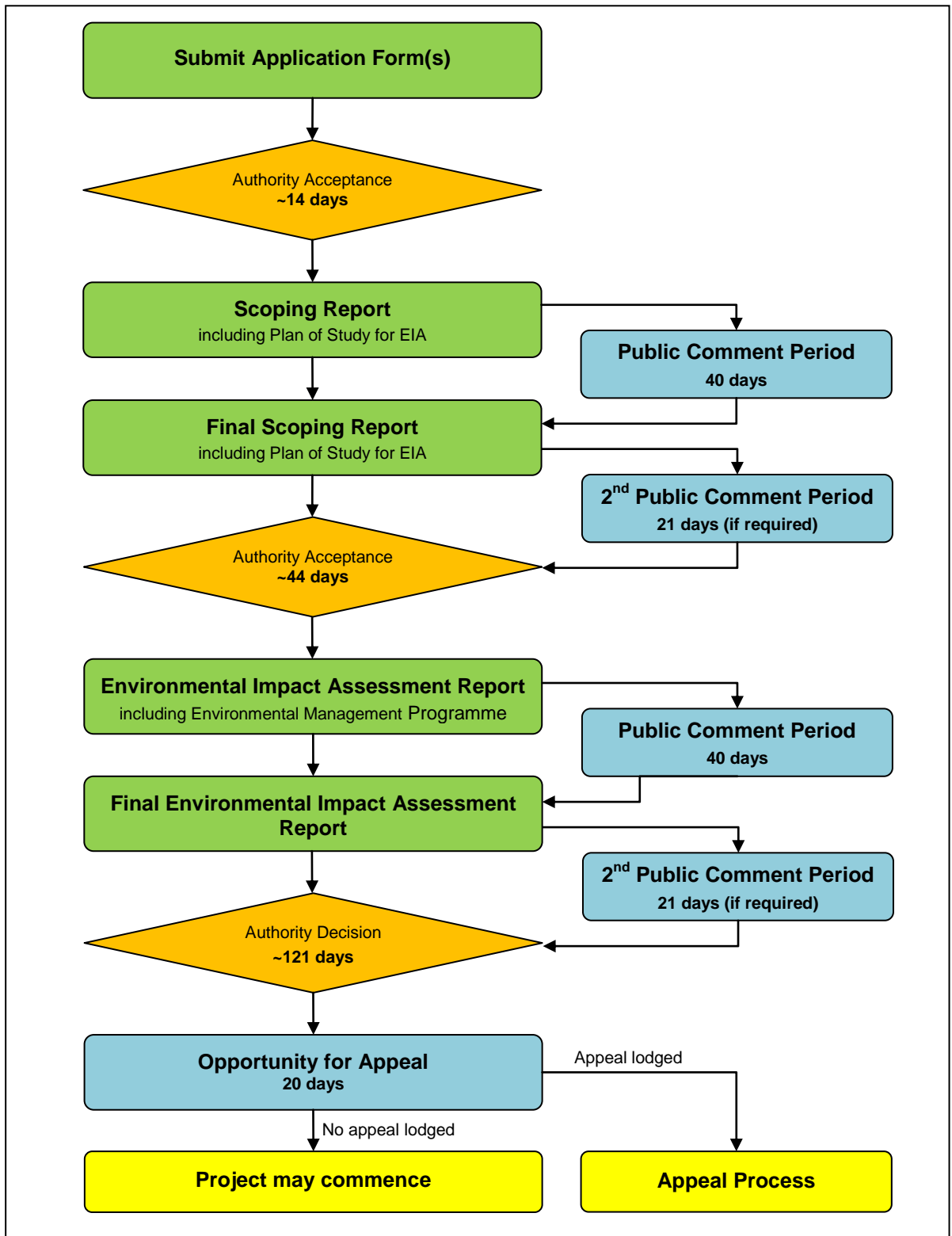


Figure 2-5: S&EIR Process

More specifically, the objectives of the Scoping Phase are to:

- Identify stakeholders and inform them of the proposed activity, feasible alternatives and the S&EIR process;
- Describe the affected environment and present an analysis of the potential environmental issues and benefits arising from the proposed project that may require further investigation in the Impact Assessment Phase;

- Develop ToR for specialist studies to be undertaken in the Impact Assessment Phase;
- Provide stakeholders with the opportunity to participate effectively in the process and identify any issues and concerns associated with the proposed activity, review specialist study ToR and the Plan of Study for EIA; and
- Produce a Scoping Report for submission to the relevant authority (in this case, NCDENC).

The aim of the Impact Assessment Phase will be to:

- Inform and obtain contributions from stakeholders, including relevant authorities, the public and local communities and address their relevant issues and concerns;
- Build capacity amongst stakeholders during the S&EIR process so that they may actively and meaningfully participate;
- Document and contextualise the ecological baseline conditions of the study area and the socio-economic conditions of affected communities;
- Assess in detail the environmental and socio-economic impacts that may result from the project;
- Identify environmental and social mitigation measures to avoid and/or address the impacts assessed; and
- Develop and/or amend environmental and social management plans based on the mitigation measures developed in the EIA Report.