

Environmental Impact Assessment (EIA) for the
Proposed Construction, Operation and
Decommissioning of a Sea Water Reverse Osmosis
Plant and Associated Infrastructure Proposed at
Lovu on the KwaZulu-Natal South Coast

FINAL EIA REPORT

Appendix B:
Amended EIA Application



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

APPLICATION FORM FOR ENVIRONMENTAL AUTHORISATION¹

| | (For official use only) |
|------------------------|-------------------------|
| File Reference Number: | |
| NEAS Reference Number: | DEA/EIA/ |
| Date Received: | |

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), (the Act) and the Environmental Impact Assessment Regulations, 2010 (the Regulations)

PROJECT TITLE

Environmental Impact Assessment for the Construction, Operation and Decommissioning of a 150 Ml/day Sea Water Reverse Osmosis (SWRO) Plant and associated infrastructure proposed by Umgeni Water at Lovu on the KwaZulu-Natal South Coast.

Kindly note that:

1. This application form is current as of 1 October 2013. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
2. The application must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. Spaces are provided in tabular format and will extend automatically when each space is filled with typing.
3. Where applicable **black out** the boxes that are not applicable in the form.
4. Incomplete applications will be rejected in terms of Regulation 13(2) of GN R. 543 and returned to the applicant for revision and resubmission.
5. The use of the phrase "not applicable" in the form must be done with circumspection. Should it be done in respect of material information required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the Regulations.
6. This application must be handed in at the offices of the relevant competent authority as determined by the Act and Regulations.
7. No faxed or e-mailed applications will be accepted. Only original signed copies will be accepted.

¹ Version 1, dated 1 October 2013

8. Unless protected by law, all information filled in on this application form will become public information on receipt by the competent authority. Any interested and affected party should and shall be provided with the information contained in this application on request, during any stage of the application process.
9. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report and declaration of interest of the specialist must also be submitted.

Queries must be addressed to the contact hereunder:

Departmental Details

Postal address:

Department of Environmental Affairs
Attention: Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Fedsure Forum Building (corner of Pretorius and Lillian Ngoyi Streets)
4th Floor South Tower
315 Pretorius Street
Pretoria
0002

Queries should be directed to the Directorate: Integrated Environmental Authorisation at:

Tel: 012-395-1768
Fax: 012-320-7539
E-mail: EIAAdmin@environment.gov.za

Please note that this form must be copied to the relevant provincial environmental department/s.

View the Department's website at <http://www.environment.gov.za/> for the latest version of the documents.

1. PROJECT DESCRIPTION

Please provide a **detailed** description of the project.

The proposed project will entail the construction and operation of a 150ML/day Seawater Reverse Osmosis (SWRO) desalination plant at Lovu, south of Durban, within the eThekweni Municipality in the province of KwaZulu-Natal. The Project Applicant is Umgeni Water Amanzi (hereinafter referred to as Umgeni Water). The proposed project requires a Scoping and Environmental Impact Assessment (EIA) in terms of the 2010 NEMA EIA Regulations (as amended). The location for the proposed SWRO has been selected based on pre-feasibility and site screening studies. The proposed site for the desalination plant is located several kilometres from the shore, on the right bank of the Lovu River and is currently used to grow sugar cane. Reverse Osmosis (RO) is a membrane filtration process used to reduce the salinity of seawater to potable standards. The process works by applying pressure to overcome the natural osmotic pressure of seawater. This works by forcing pre-treated (filtered) seawater through a semi-permeable membrane, from a region of high salinity (the seawater side) to a region of low salinity (the freshwater side). This process retains the brine (high salinity) on one side and allows freshwater (very low salinity) to be produced as potable water for drinking. The overall output of the SWRO system, from intake structure to finished water, will be a maximum of 40 - 45% desalinated water (i.e. 55-60% of the seawater abstracted will be returned to the sea as brine). Concentrate will exit the RO system at pressure ranging from 0.4 to 0.6 bars, assuming that a pressure exchanger type energy recovery system is used.

An area of approximately 1 ha is required for construction and lay-down of the offshore pipework/tunnels, which will be reinstated.

The proposed project will entail the construction of the following key infrastructural components:

- **Seawater Intake:** On average, 389 ML/day of seawater will be abstracted from the marine environment via an intake structure located approximately 1000 m from the shore at a water depth of about 20 m. The sea water intake pipeline(s) would be sited at 60 to 90° to the coast so as to be optimally located for construction and lifetime wave conditions. Water will be drawn in through coarse screens on the intake structure, at a height of between 4 m and 6 m above the seabed, in order to avoid the intake of marine sediment and floating matter. A low inflow velocity of less than 0.15 m/s will reduce the intake of small fish and other marine organisms. The pipeline will be buried below the seabed through the surf zone and beach area, in order to prevent undermining of the pipelines by scour. Pipeline burial method of pipe installation would require the construction of a temporary jetty during the construction phase of development. Refer to the explanation below regarding the routing of the seawater pipeline.
- **Seawater Pump Station:** A seawater pump station is proposed within a disturbed dune site situated within close proximity to the beach, approximately 200 m inland from the shore. It is anticipated that the excavation for the invert of the pump station sump is likely to be at 9 m below Mean Sea Level (MSL). This is based on the requirement that the sump at the pump station be deep enough to allow for gravitational inflow of the seawater into the sump. The seawater pump station would require a separate laydown area of about 1 ha.
- **Seawater Pipeline:** Four alternative routes are being assessed as part of the EIA Phase for the seawater pipeline beyond the pump station. The brine discharge pipeline will follow the same routing as the sea water intake pipeline. The maximum burial depth for pipelines within the beach area is approximately 3 to 4 m.
 - The Preferred Pipeline Route will comprise of two parallel 1800 mm HDPE pipelines laid in the northern floodplain of the Lovu Estuary by conventional pipe trenching. Where the pipelines cross the railway, R102 and N2 roads, they would pass through separately jacked concrete sleeve pipes. The pipelines are planned to cross the Lovu Estuary by means of a specially constructed pipe bridge (leading to the proposed desalination plant) on the southern bank.

- The Pipeline Route Alternative 1 will extend from the proposed sea water pump station under the local access road, through the local caravan park, under the R102 and under the N2. Beyond the N2 the route will deviate about 200 m north of the railway line servitude for approximately 1.5 km (located entirely in the sugarcane fields) before realigning with the preferred pipeline route alternative. The pipelines are planned to cross the Lovu Estuary by means of a specially constructed pipe bridge (leading to the proposed desalination plant) on the southern bank. This alternative route is longer and lower lying (more excavation and laying of pipe below the water table) than the preferred route.
- Pipeline Route Alternative 2 will consist of two parallel 2000 mm diameter, 1100 m long micro tunnels. These tunnels would extend from the proposed sea water pump station, under the railway, the Lovu Estuary, the R102 and the N2 to the southern bank of the Lovu River. From this point, the two 1800 mm diameter HDPE pipelines would be laid by conventional pipe trenching to the desalination plant (along the southern bank of the river).
- Pipeline Route Alternative 3 will consist of two parallel 2000 mm, 650 m long micro tunnels. These tunnels would extend from the proposed sea water pump station along the northern bank of the Lovu Estuary under the railway, the R102 and the N2. From this point, the two parallel 1800 mm HDPE pipelines would be laid on the northern bank of the Lovu Estuary by conventional pipe trenching, and would cross the estuary by means of a specially constructed pipe bridge to the proposed desalination plant on the southern bank. This routing alternative is very similar to the preferred alternative and follows the same route, except the first section is tunnelled.
- **SWRO Desalination Plant:** The footprint area of the proposed desalination plant itself and associated infrastructure would be about 7 ha. The EIA is assessing two proposed sites for the desalination plant, both being situated close to the Lovu River estuary. The preferred eastern site is situated at an elevation of approximately 10 m above sea level and within 3 km of the coast.
- **Brine Discharge Pipeline:** The brine discharge pipeline from the desalination plant to the pump station will follow the same route as the seawater pipeline described above. Beyond the pump station, a pipeline would extend approximately 650 m offshore, to the diffuser which will be sited at a water depth of approximately 10 m – 12 m. The brine discharge pipelines will be shorter than the seawater intake pipelines to ensure adequate dilutions are obtained and to avoid short-circuiting of higher salinity concentrations at the intake system. Refer to the detailed explanation below.
- **Brine Diffuser System:** Brine will be discharged via a number of outlet ports in the diffuser. The diffuser pipeline on the sea bed will extend approximately 60 m in length. Rosette-style diffusers and pipeline-style diffusers (which consist of nozzles) could possibly be utilised. These pipelines will discharge the dense brine upwards into the water column to provide good mixing with the ambient seawater. The “plume” of higher salinity would be distributed in an along-shore direction (i.e. the prevailing current direction), as well as seaward. Refer to the detailed explanation below.
- **Potable Water Storage and Pipelines:** Two potable water storage reservoirs of 37.5 Ml each are proposed to be located on site. The proposed locations of the Lovu Desalination Plant are situated adjacent to an existing bulk water pipeline. The close proximity of the proposed desalination plant to this existing bulk water infrastructure will result in a minimal length of a new potable water pipeline, which will integrate with the existing system. The potable water pipeline will be developed with a capacity of 150 Ml/day.
- **Power Supply Infrastructure:** The proposed SWRO desalination plant is anticipated to have a total energy demand of approximately 32 MW (i.e. approximately 4 kWh/m³ of potable water produced, while additional power will be required to pump water to the plant from the sea and to deliver potable water to the bulk supply infrastructure). It is expected that the total electrical connection to the 150 Ml/day plant would be approximately 40 Megavolt Amperes (MVA). The extent of energy required for the proposed desalination

plant will be sourced from Eskom's national electricity grid. Power supplied to the proposed desalination plant would be via a substation with a 132 kVA transmission stepped-down to 11 kVA. A single-circuit 132 kV transmission line is planned to be constructed from the nearest substation located outside the boundary of the proposed desalination plant. The nearest 132 kV point of supply is indicated as Kingsburg Major Substation in Illovo, which is located approximately 2.5 km from the proposed desalination plant site. The proposed transmission line will consist of lattice towers and pile type foundations. The power supply to the sea water pump station would be extended from the desalination plant site via an 11 kV overhead line.

Specifically in terms of the effluent generation and discharge process, the proposed desalination plant would have facilities for the collection and environmentally safe disposal of waste streams generated during the water treatment. The proposed plant would generate the following waste streams:

- Concentrate from the RO desalination process (i.e. brine from the proposed SWRO process, which will be discharged to the sea);
- Spent backwash water from the pre-treatment filtration system which will be combined with the brine for discharge at sea;
- Filter-to-waste water which will be combined with the brine for discharge at sea;
- RO and spent (used) membrane cleaning solutions and post-flush water which will be combined with the brine for discharge at sea;
- Sludge liquid (and associated solid) wastes and other water treatment units, which is intended for co-discharge with the return brine;
- Screening material, e.g. large algae retained by the screens, from the fine screens installed at the intake pump station on shore, which will be disposed of at an appropriate waste landfill facility; and
- Sanitary wastewater (i.e. on-site sewage which is proposed to be treated on-site in a septic tank or package plant system or directed to the local sewer for further treatment in the nearby municipal wastewater treatment plant).

Spent filter backwash water, filter-to-waste water, sludge from lime saturators and spent RO membrane cleaning water would be collected in a discharge retention tank fitted with mechanical mixers or recirculation pumps to keep its content uniformly mixed at all times. This tank will have a retention time of about 1 hour and would also be equipped with feed lines for sodium hydroxide, hydrochloric acid and sodium bisulphite to adjust the water quality in the tank in order to meet the specified discharge requirements. The retention tank would have at least two compartments to facilitate periodic cleaning. Alternatively, two separate discharge retention tanks could be constructed: one dedicated to the pre-filtration waste stream (spent filter backwash water, and lime sludge), and another tank for separate handling of the RO membrane cleaning chemicals and flush water. These liquid waste streams would then be mixed with the RO plant concentrate (brine) and discharged to the ocean through the offshore outfall. The total volume of all liquid waste streams generated by the proposed desalination plant (excluding the RO brine concentrate) is estimated to be approximately 10% of the total plant intake flow (i.e. 38.9 to 42.8 Ml/day). More than 99% of this volume will be seawater (same quality as the abstracted seawater) and will be disposed of with the brine whilst the balance would have small amounts of chemicals in it.

As mentioned above, approximately 55-60% of the seawater intake will return to sea as brine. The total volume of effluent expected to be discharged at sea therefore amounts to 239 Ml/day on average. The brine will be approximately 1.7 times the salinity of seawater (i.e. approximately 58 psu) and will be approximately 1.5 °C above the average background temperature of seawater. The brine will also contain small amounts of coagulants, neutralised antiscalant, cleaning chemicals and other metals (depending on intake water quality). The antiscalants (returned as part of the brine to the sea) will be bio-degradable. The brine may also contain an organic scale inhibitor which will be an approved chemical for potable water systems and will be bio-degradable.

Furthermore, it is likely that the use of a biocide will be required to inhibit biological growth in the pipelines and on the intake coarse screens. If sodium hypochlorite is used, it will be neutralised with sodium metabisulphite (SMBS) before the feed water enters the RO membranes as the chlorine damages the membranes. The brine stream is therefore not anticipated to contain any active biocide.

Brine is negatively buoyant and will generally sink towards the seabed. To ensure optimum dilution in the near-field, it is envisaged that the nozzle would be configured to discharge at an angle of 60° above horizontal, at a depth of approximately 10 to 20 m below MSL. The brine will be dispersed in ambient seawater in a moving current and at a rate which will depend on the diffuser design and the current velocity.

Between 20 and 100 kg/month of screening material, e.g. large algae retained by the screens, from the fine screens installed at the intake pump station on shore will be collected and disposed of at an appropriate waste landfill facility approximately twice per month. Such screenings are of natural origin and they are biodegradable and can be disposed to a general waste landfill facility.

An effluent flow chart is shown below (Figure 1).

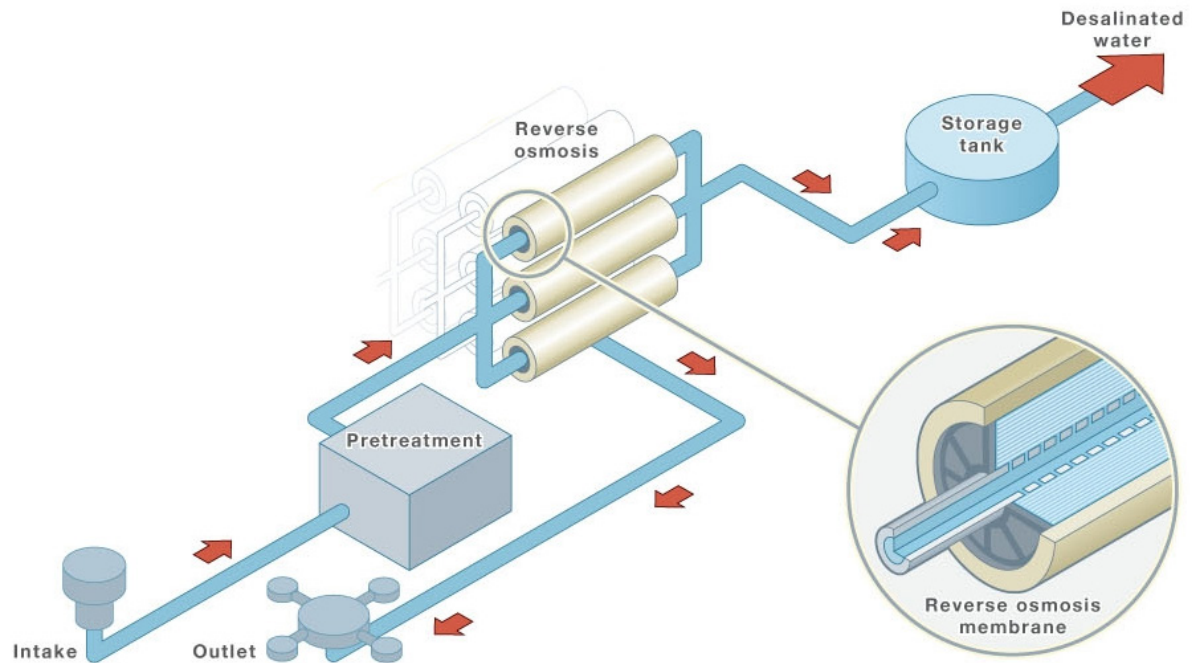


Figure 1: Diagram illustrating how a conventional SWRO operates (Source: <http://lochland.wikispaces.com/>)

| | | |
|--|-----|--|
| Does the project form part of any of the Strategic Infrastructure Projects (SIPs) as described in the National Development Plan, 2011? | YES | |
|--|-----|--|

If YES, please indicate which SIPs are applicable in **Appendix 1**.

Please indicate which sector the project falls under by crossing out the relevant block in the table below:

Table 1

| | | | |
|--|--|--|--|
| Green economy + "Green" and energy-saving industries | | Greenfield transformation to urban or industrial form (including mining) | |
| Infrastructure – electricity (generation, transmission & distribution) | | Biodiversity or sensitive area related activities | |

| | | | |
|---|---|--|--|
| Oil and gas | | Mining value chain | |
| Biofuels | | Potential of metal fabrication capital & transport equipment – arising from large public investments | |
| Nuclear | | Boat building | |
| Basic services (local government) – electricity and electrification | | Manufacturing – automotive products and components, and medium and heavy commercial vehicles | |
| Basic services (local government) – area lighting | | Manufacturing – plastics, pharmaceuticals and chemicals | |
| Infrastructure – transport (ports, rail and road) | | Manufacturing – clothing textiles, footwear and leather | |
| Basic services (local government access roads) | | Forestry, paper, pulp and furniture | |
| Basic services (local government) – public transport | | Business process servicing | |
| Infrastructure – water (bulk and reticulation) | X | Advanced materials | |
| Basic services (local government) – sanitation | | Aerospace | |
| Basic services (local government) – waste management | | Basic services (local government) - education | |
| Basic services (local government) water | X | Basic services (local government) - health | |
| Agricultural value chain + agro-processing (linked to food security and food pricing imperatives) | | Basic services (local government) - housing | |
| Infrastructure – information and communication technology | | Basic services (local government) security of tenure | |
| Tourism + strengthening linkages between cultural industries and tourism | | Other | |
| Basic services (local government) – public open spaces and recreational facilities | | | |

Provide details on the anticipated socio-economic values associated with the proposed project

Table 1

| | |
|--|---|
| Anticipated CAPEX value of the project on completion | R3.5 billion at each site. |
| What is the expected annual income to be generated by or as a result of the project? | R450 million (dependent on tariff and assuming ultimate demand of 150MI/d). |
| New skilled employment opportunities created in the construction phase of the project | Unknown at this stage. |
| New skilled employment opportunities created in the development phase of the project | Unknown at this stage. |
| New un-skilled employment opportunities created in the construction phase of the project | Anticipated average workforce during the estimated 30 months construction phase is approximately 300 workers (at peak) |

| | |
|---|--|
| | times). |
| New un-skilled employment opportunities created in the development phase of the project | Approximately 30 employees working over two shifts of 8 hours per day |
| What is the expected value of the employment opportunities during the development and construction phase? | R 2 870 000.00 |
| What percentage of this value that will accrue to previously disadvantaged individuals? | Unknown at this stage but in line with Umgeni Water policies in place. |
| What percentage of this value that will accrue to previously disadvantaged individuals? | Unknown at this stage but in line with Umgeni Water policies in place. |
| The expected current value of the employment opportunities during the first 10 years | Unknown at this stage. |
| What percentage of this value that will accrue to previously disadvantaged individuals? | Unknown at this stage but in line with Umgeni Water policies in place. |

Table 2

| | |
|---|----|
| Does the listed activity/ies applied for form part of a larger project which is not a listed activity itself e.g. a road that is a listed activity that is needed to access a drilling site where the drilling does not constitute a listed activity. | NO |
| If indicated yes above, please provide a brief description on how the activity/ies relate to the larger project that forms part there of: | |

2. GENERAL INFORMATION

| | | | |
|---|--|--------------|--|
| Project applicant: | Umgeni Water Amanzi | | |
| Registration no (if any): | 4960102673 | | |
| Trading name (if any): | Umgeni Water | | |
| Responsible position, e.g. Director, CEO, etc.: | CEO – Mr. C.V. Gamede | | |
| Contact person: | Phumi Ndlovu | | |
| Physical address: | 310 Burger Street Pietermaritzburg 3201 | | |
| Postal address: | P.O. Box 9 Pietermaritzburg | | |
| Postal code: | 3200 | Cell: | 083 581 1904 |
| Telephone: | (031) 268 7172 | Fax: | (033) 341 1349 |
| E-mail: | Phumi.Ndlovu@umgeni.co.za | BBBEE status | N/A – Umgeni Water is a state owned entity |
| Provincial Authority: | KwaZulu-Natal Department of Agriculture and Environmental Affairs | | |
| Contact person: | Yugeshnie Govender | | |
| Postal address: | 357 Dr. Pixley Kaseme Street (Old West Street) 16 th Floor, Murchies Passage Eagle Building Durban | | |
| Postal code: | 4001 | Cell: | 082 921 9340 |
| Telephone: | 031 302 2861 | Fax: | 031 302 2824 |
| E-mail: | yugeshnie.govender@kzndae.gov.za | | |

| | | | |
|--------------------|--|-------|----------------|
| Local municipality | eThekweni Municipality | | |
| Contact person: | Dr. Debra Roberts | | |
| Postal address: | P.O. Box 680 Durban | | |
| Postal code: | 4000 | Cell: | |
| Telephone: | (031) 311 7527 | Fax: | (031) 311 7134 |
| E-mail: | RobertsD@durban.gov.za | | |

In instances where there is more than one local authority involved, please attach a list of those local authorities with their contact details as **Appendix 2**.

Note from CSIR: The eThekweni Municipality is a Metropolitan Municipality and as such constitutes both the Local and District Municipality.

| | | | |
|-----------------|--|-------|--|
| Landowner: | | | |
| Contact person: | | | |
| Postal address: | | | |
| Postal code: | | Cell: | |
| Telephone: | | Fax: | |
| E-mail: | | | |

In instances where there is more than one landowner, please attach a list of those landowners with their contact details as **Appendix 3**. If the applicant is not the owner or person in control of the land, proof of notice to the landowner or person in control of the land on which the activity is to be undertaken must be submitted in **Appendix 3**.

Note from CSIR: Please refer to **Appendix 3** for the full list of landowners and proof of notice to all landowners.

| | |
|---|--|
| Identified Competent Authority to consider the application: | National Department of Environmental Affairs (DEA) |
| Reason(s) in terms of Sec 24C of NEMA 1998 as amended | Section 24C of NEMA 1998 as amended states that EIA's pertaining to state owned enterprises should be dealt with by the National DEA. Umgeni Water constitutes a state owned enterprise and therefore the National DEA has been identified as the Competent Authority. |

3. ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) INFORMATION

| | | | |
|---|---|-------|--------------|
| EAP: | Paul Lochner | | |
| Professional affiliation/registration: | EAPASA | | |
| Contact person (if different from EAP): | Annick Walsdorff | | |
| Company: | CSIR | | |
| Physical address: | 11 Jan Celliers Street, Stellenbosch 7600 | | |
| Postal address: | PO Box 320 | | |
| Postal code: | 7599 | Cell: | 083 390 9009 |
| Telephone: | 021 888 2661/2589 | Fax: | 021 888 2693 |

E-mail:

| |
|-----------------------|
| awalsdorff@csir.co.za |
|-----------------------|

If an EAP has not been appointed please ensure that an independent EAP is appointed as stipulated by Regulation 16 of GN R.543, dated June 2010, prior to the commencement of the process. The declaration of independence and the Curriculum Vitae (indicating the experience with environmental impact assessment and the relevant application processes) of the EAP must also be submitted to the Department.

Alternatively, exemption may be applied for from the provisions of this regulation.

4. SITE DESCRIPTION

Provide a detailed description of the site involved in the application.

| | | | | | | |
|---|------------------------|--|--|------------------------|--|--|
| Province | KwaZulu-Natal | | | | | |
| District Municipality | eThekweni Municipality | | | | | |
| Local Municipality | eThekweni Municipality | | | | | |
| Ward number(s) | 97 and 98 | | | | | |
| Nearest town(s) | Illovo, Winklespruit | | | | | |
| Farm name(s) and number(s) | | | | | | |
| Portion number(s) | | | | | | |
| Coordinates of corner points of study area (if there are more than 7 co-ordinates, please attach a list as Appendix 4) For linear developments a list of turning points must be attached | Latitude (S) (DDMMSS) | | | Longitude (E) (DDMMSS) | | |
| | | | | | | |
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Note from CSIR: The eThekweni Municipality is a Metropolitan Municipality and as such constitutes both the Local and District Municipality. The list of coordinates for the study area is attached in **Appendix 4**.

SG 21 Digit Code(s)

(If there are more than 4, please attach a list with the rest of the codes as **Appendix 4**)

| | | | | | | | | | | | | | | | | | | | |
|---|---|--|--|---|--|--|---|--|--|---|--|--|--|--|--|--|--|--|--|
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| | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | | | 3 | | | 4 | | | 5 | | | | | | | | | |

Note from CSIR: Refer to **Appendix 4** for the list of SG 21 Digit Codes for the study area.

Please attach a copy of the title deed(s) and SG diagram(s) to the application as **Appendix 5**.

| | | |
|---|--|----|
| Are there any other applications for Environmental Authorisation on the same property? | | NO |
| If YES, please indicate the following: | | |
| Competent Authority | | |
| Reference Number | | |
| Project Name | | |
| Please provide details of the steps taken to ascertain this information: | | |
| <p>As indicated below, the National Department of Environmental Affairs was requested to provide information on any Environmental Authorisations on the properties falling within the proposed project area. Given the fact that no response was provided to date, it is assumed that no other applications for Environmental Authorisations exist on DEA's database for the affected properties. Additionally, where possible, the proponent engaged with landowners during the prefeasibility stage of the project and no such information was provided by affected landowners.</p> | | |

Please provide copies of Environmental Authorisations obtained for the same property as **Appendix 6**.

5. ACTIVITIES TO BE AUTHORISED

For an application for authorisation that involves more than one listed activity that, together, make up one development proposal, all the listed activities pertaining to this application must be indicated.

It is important to note that this Application for Environmental Authorisation was submitted to the DEA and accepted in terms of the 2010 EIA Regulations (as amended), prior to the promulgation of the new EIA Regulations in GN 982, 983, 984 and 985 on 8 December 2014. However, Section 53 (1) of the Transitional Arrangements, included in Chapter 8 of the 2014 EIA Regulations (i.e. GN R982), states the following:

“53. (1) An application submitted in terms of the previous NEMA regulations and which is pending when these Regulations take effect, including pending applications for auxiliary activities directly related to prospecting or exploration of a mineral or petroleum resource; or extraction and primary processing of a mineral or petroleum resource, must despite the repeal of those Regulations be dispensed with in terms of those previous NEMA regulations as if those previous NEMA regulations were not repealed”.

Therefore, in accordance with the Transitional Arrangements included in the 2014 EIA Regulations, i.e. Regulation 53 (1) of the 2014 EIA Regulations, it is understood that the proposed application will be assessed and processed in terms of the 2010 EIA Regulations (as amended). However, for purposes of completeness and relevance, the relevant listed activities of the 2014 EIA Regulations that apply to the proposed project and corresponds to the listed activities included in the original Application for Environmental Authorisation (in accordance with the 2010 EIA Regulations) has been included in this Draft EIA Report (as specified in the Transitional Arrangements of the 2014 EIA Regulations). The applicable activities in terms of the 2010 and 2014 EIA Regulations are provided in Table below.

Linked to the above, Section 53 (2) of the Transitional Arrangements of the 2014 EIA Regulations states:

“If a situation arises where an activity or activities, identified under the previous NEMA Notices, no longer requires environmental authorisation in terms of the current activities and competent authorities identified in terms of section 24(2) and 24D of the National Environmental Management Act, 1998 (Act No. 107 of 1998) or in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), and where a decision on an application submitted under the previous NEMA regulations is still pending, the competent authority will consider such application to be withdrawn”.

Therefore, based on the above, it is understood that certain listed activities that were included in the original Application for Environmental Authorisation that was submitted to the DEA on 12 December 2013 may no longer be applicable to the proposed project. An updated list of listed activities is presented in the Table below.

| Detailed description of listed activities associated with the project | | |
|---|--|--|
| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| <p>GN R544 Item 9 (i, ii):</p> <p>The construction of facilities or infrastructure exceeding 1000 metres in length for the bulk transportation of water, sewage or storm water -</p> <p>(i) with an internal diameter of 0,36 metres or more; or</p> <p>(ii) with a peak throughput of 120 litres per second or more,</p> <p>excluding where - such facilities or infrastructure are for bulk transportation of water, sewage or storm water or storm water drainage inside a road reserve; or where such construction will occur within urban areas but further than 32 metres from a watercourse, measured from the edge of the watercourse.</p> | <p>GN R983 Item 9 (i, ii):</p> <p>The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water -</p> <p>(i) with an internal diameter of 0,36 metres or more; or</p> <p>(ii) with a peak throughput of 120 litres per second or more;</p> <p>excluding where-</p> <p>(a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve; or</p> <p>(b) where such development will occur within an urban area.</p> | <p>Pipelines will be required to transport raw water abstracted from the sea to the proposed desalination plant, and potable water from the desalination plant to Umgeni Water's bulk water supply systems. These pipelines will cumulatively exceed 1 000 m in length and will be designed with an internal diameter greater than 1.0 m. The rates of peak throughput are anticipated to exceed 120l/s. These will be confirmed during the detailed engineering design phase.</p> <p>Portions of the pipeline routing may occur within existing road reserves, while construction of pipeline infrastructure would occur outside of urban areas. This will be confirmed in the detailed engineering design phase.</p> |
| <p>GN R544 Item 10 (i):</p> <p>The construction of facilities or infrastructure for the transmission and distribution of electricity, outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts.</p> | <p>GN R983 Item 11 (i):</p> <p>The development of facilities or infrastructure for the transmission and distribution of electricity –</p> <p>(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts.</p> | <p>Electrical infrastructure will be required to provide power to the proposed development and will most likely be located outside an urban area. The voltage and exact location of such infrastructure will be finalised during the detailed engineering design phase.</p> <p>Based on the detailed feasibility study undertaken in June 2015 by the Applicant and their appointed consulting engineers, the power supply to the proposed 150 Ml/day desalination plant is approximately 32MW, with the following requirements:</p> <ul style="list-style-type: none"> • A 132kV transmission line from the nearest substation located outside the desalination plant boundary. The nearest 132kV point of supply is indicated as Kingsburg Major Substation in Illovo and is approximately 2.5km from the proposed desalination plant site. • A 132kV to 11kV step-down substation. • 30 MVA bulk supply point at 11kV. |

| Detailed description of listed activities associated with the project | | |
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| | | <p>The power supply to the sea water pump station at the beach would be extended from the desalination plant site via an 11kV overhead line to be installed between the desalination plant and the sea water pump station.</p> <p>A dual supply involving a proposed tee-off from two existing 88kV lines running passed Kingsburgh Major Substation will ensure a continuity of supply in the event of one substation becoming locked out.</p> |
| <p>GN R544 Item 11 (iii, vi, viii, x, xi):</p> <p>The construction of:</p> <ul style="list-style-type: none"> (iii) bridges; (vi) bulk storm water outlet structures; (viii) jetties exceeding 50 square metres in size; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more <p>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.</p> | <p>GN R983 Item 12 (iii, vi, viii, x, xii; a and c):</p> <p>The development of-</p> <ul style="list-style-type: none"> (iii) bridges exceeding 100 square metres in size; (vi) bulk storm water outlet structures exceeding 100 square metres in size; (viii) jetties exceeding 100 square metres in size; (x) buildings exceeding 100 square metres in size; (xii) infrastructure or structures with a physical footprint of 100 square metres or more; <p>where such development occurs –</p> <ul style="list-style-type: none"> (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; - <p>excluding-</p> <ul style="list-style-type: none"> (aa) the development of infrastructure or structures within | <p>Pipeline infrastructure proposed as part of the desalination project or will traverse watercourses in the region and or will require the construction of a bridge across the estuary near the proposed desalination plant. Bulk storm water systems and associated outlet structures at the desalination plant will be appropriately designed during the detailed design phase and may be located within 32 m of a watercourse. The laying down of the marine pipelines on the seabed will require the construction of a temporary jetty which will exceed 100 square metres. The construction of new buildings and supporting infrastructure exceeding 100 m² and may be required within 32 m of a watercourse. Further investigation into these aspects of the proposed development will form part of the detailed engineering design phase.</p> |

| Detailed description of listed activities associated with the project | | |
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| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| | existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; or (ee) where such development occurs within existing roads or road reserves. | |
| GN R544 Item 13: The construction of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic metres. | GN R983 Item 14: The development of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres. | Pre- and post- water treatment chemicals will be required at the proposed desalination plant and the capacity of is not expected to exceed 80 m ³ . However, at this stage it is uncertain exactly what quantities of dangerous goods will be used during operation of the desalination plant. Further investigation into these aspects of the proposed development will form part of the detailed engineering design phase and will be based on the results of the pilot plant. This activity is therefore kept in this EIA application in the event that the results from the pilot plant investigations show that the quantities of chemicals required to be stored exceed the anticipated amounts. |
| GN R544 Item 14: The construction of structures in the coastal public property where the development footprint is bigger than 50 square metres, excluding (i) the construction of structures within existing ports or harbours that will not increase the development footprint | GN R983 Item 15: The development of structures in the coastal public property where the development footprint is bigger than 50 square metres, excluding – (i) the development of structures within existing ports or harbours that will not increase the development footprint | The intake and discharge marine pipelines will transect the Coastal Public Property and will cover an area exceeding 50 m ² . The laydown of the sea water pipelines will also require the construction of a temporary jetty and supporting structures within the littoral zone. |

| Detailed description of listed activities associated with the project | | |
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| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| <p>or throughput capacity of the port or harbour;</p> <p>(ii) the construction of a port or harbour, in which case activity 24 of Notice 545 of 2010 applies; and</p> <p>(iii) the construction of temporary structures within the beach zone where such structures will be demolished or disassembled after a period not exceeding 6 weeks.</p> | <p>of the port or harbour;</p> <p>(ii) the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(iii) the development of temporary structures within the beach zone where such structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared; or</p> <p>(iv) (iv) activities listed in activity 14 in Listing Notice 2 of 2014, in which case that activity applies.</p> | |
| <p>GN R544 Item 15:</p> <p>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.</p> | <p>GN R983 Item 16:</p> <p>The development and related operation of facilities for the desalination of water with a design capacity to produce more than 100 cubic metres of treated water per day.</p> | <p>The proposed project constitutes the development of a desalination plant and is being designed with a generation capacity of 150 MI (or 150 000 m³) of potable water per day when operating at full capacity.</p> |
| <p>GN R544 Item 16 (i, v, vi):</p> <p>Construction or earth moving activities in the sea, an estuary, or within the littoral active zone or within a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever is the greater, in respect of –</p> <p>(i) fixed or floating jetties and slipways;</p> <p>(v) buildings of 50 square metres or more; or</p> <p>(vi) infrastructure covering 50 square metres or more but excluding:</p> <p>(a) if such construction or earth moving activities will occur behind a development setback line; or</p> <p>(b) where such construction or earth moving activities will occur within existing ports or harbours and the construction or earth moving activities will not increase the development footprint or throughput</p> | <p>GN R983 Item 17 (i, ii, iii, v, and a, e, f):</p> <p>Development-</p> <p>(i) in the sea;</p> <p>(ii) in an estuary;</p> <p>(iii) within the littoral active zone;</p> <p>(v) if no development setback exists, within a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever is the greater;</p> <p>in respect of-</p> <p>(a) fixed or floating jetties and slipways;</p> <p>(e) buildings of 50 square metres or more; or</p> <p>(f) infrastructure with a development footprint of 50 square metres or more -</p> <p>but excluding-</p> | <p>Construction and earth moving activities required for the proposed project will occur within the sea (marine intake and discharge pipelines and associated infrastructures, including temporary jetty), in the Lovu estuary (bridge), the littoral active zone (pipelines) and within 100 m inland of the high-water mark of the sea and of the Lovu estuary (e.g. preferred desalination plant site, pipelines from the pump station to the plant). Infrastructure and buildings associated with the proposed project will cover an area that exceeds 50 m².</p> |

| Detailed description of listed activities associated with the project | | |
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| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| <p>capacity of the port or harbour;</p> <p>(c) where such construction or earth moving activities is undertaken for purposes of maintenance of the facilities mentioned in (i)-(vi) above; or</p> <p>(d) where such construction or earth moving activities is related to the construction of a port or harbour, in which case activity 24 of Notice 545 of 2010 applies.</p> | <p>(aa) the development of infrastructure and structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(bb) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) the development of temporary infrastructure or structures where such structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared; or</p> <p>(dd) where such development occurs within an urban area.</p> | |
| <p>GN R544 Item 17:</p> <p>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;</p> <p>where the planting of vegetation or placement of material relates to restoration and maintenance of indigenous coastal vegetation or,</p> <p>where such planting of vegetation or placing of material will occur behind a development setback line.</p> | <p>GN R983 Item 18:</p> <p>The planting of vegetation or placing of any material on dunes or exposed sand surfaces of more than 10 square metres, within the littoral active zone, for the purpose of preventing the free movement of sand, erosion or accretion, excluding where –</p> <p>(i) the planting of vegetation or placement of material relates to restoration and maintenance of indigenous coastal vegetation undertaken in accordance with a maintenance management plan; or</p> <p>(ii) such planting of vegetation or placing of material will occur behind a development setback.</p> | <p>Post-construction activities would involve the planting of vegetation within the littoral active zone as part of the site stabilization and rehabilitation measures should trenching of the pipelines be undertaken instead of tunneling/pipe jacking.</p> |
| <p>GN R544 Item 18 (i, ii, iii, iv):</p> <p>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 of more</p> | <p>GN R983 Item 19 (i, ii, iii):</p> <p>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 of more than 5</p> | <p>Construction activities required for the proposed project (such as trench digging and pipe laying, construction of preferred desalination plant site) would result in the infilling, depositing, dredging, excavation, removal or moving of more than 5 m³ of material from the sea, watercourse, the seashore, the littoral</p> |

| Detailed description of listed activities associated with the project | | |
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| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| <p>than 5 cubic metres from:</p> <p>(i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater, but excluding where such infilling, depositing, dredging, excavation, removal or moving:</p> <p>(a) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or (b) occurs behind the development setback line.</p> | <p>cubic metres from –</p> <p>(i) a watercourse; (ii) the seashore; or (iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater but excluding where such infilling, depositing, dredging, excavation, removal or moving-</p> <p>(a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.</p> | <p>active zone, estuary and within a distance of 100 m inland of the high-water mark of the sea and estuary.</p> |
| <p>GN R544 Item 22 (i, ii, iii):</p> <p>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</p> | <p>GN R983 Item 24 (ii):</p> <p>The development of-</p> <p>(i) a road for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;</p> <p>but excluding-</p> <p>(a) roads which are identified and included in activity 27 in Listing Notice 2 of 2014; or (b) roads where the entire road falls within an urban area.</p> | <p>The proponent intends to use existing roads to access the proposed facility (pending approval from relevant authorities). However, if a new access road needs to be constructed, it may have a reserve wider than 13,5 meters or may be wider than 8 m and would be located outside of urban areas.</p> <p>The final road design will however be determined during the detailed engineering design phase.</p> |
| <p>GN R544 Item 23 (ii):</p> | <p>GN R983 Item 28 (ii):</p> | <p>The proposed desalination plant will cover an area of land approximately 7 Ha in extent and will be constructed on land</p> |

| Detailed description of listed activities associated with the project | | |
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| The transformation of undeveloped, vacant or derelict land to 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, except where such transformation takes place for linear activities. | Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development: (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes. | which is largely undeveloped and has a current land use zoning of "Agriculture". Some portions of the land are currently used for sugar cane growing. The implementation of the proposed project would therefore result in the transformation of more than 1 Ha of undeveloped Agricultural land to industrial use, and this would occur outside an urban area. |
| GN R544 Item 24: The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, at the time of the coming into effect of this Schedule or thereafter such land was zoned open space, conservation or had an equivalent zoning. | Not applicable in Listing Notice 1 of the 2014 EIA Regulations. | The implementation of the proposed project would result in the transformation of approximately 7 Ha of undeveloped Agricultural land to industrial use. Components of the terrestrial pipelines will traverse land zoned as open space. The portion of pipelines and powerline traversing land zoned as opened space are detailed in Chapter 6 Terrestrial ecology study. |
| GN R544 Item 47 (i, ii): The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre - (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, excluding widening or lengthening occurring inside urban areas. | GN R983 Item 56 (i, ii): The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre – (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; excluding where widening or lengthening occur inside urban areas. | The proponent intends to use existing roads to access the proposed facility (pending approval from relevant authorities). However, existing roads may be required to be widened by more than 6 m, or lengthened by more than 1 km. The details will be confirmed as part of the detailed engineering design phase. |
| GN R545 Item 5: The construction of facilities or infrastructure for any process | GN R984 Item 6: The development of facilities or infrastructure for any process | The operation of the proposed desalination plant requires a Coastal Waters Discharge Permit in terms of the National Environmental Management: Integrated Coastal Management |

| Detailed description of listed activities associated with the project | | |
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| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| or activity which requires a permit or licence 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. | or activity which requires a permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding (i) activities which are identified and included in Listing Notice 1 of 2014; (ii) activities which are 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 the National Environmental Management: Waste Act, 2008 applies; or (iii) the development of facilities or infrastructure for the treatment of effluent, wastewater or sewage where such facilities have a daily throughput capacity of 2000 cubic metres or less. | Act (Act 24 of 2008) in order to permit the disposal and discharge of effluent to sea. |
| GN R545 Item 14: The construction of an island, anchored platform or any other permanent structure on or along the sea bed. | GN R984 Item 14: The development and related operation of- (i) an island; (ii) anchored platform; or (iii) any other structure or infrastructure on, below or along the sea bed; excluding - (a) development of facilities, infrastructure or structures for aquaculture purposes; or (b) the development of temporary structures or infrastructure where such structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared. | Permanent structures (Sea water intake and brine discharge pipelines) required for the proposed project will be constructed along the sea bed. The pipelines will be buried through the surf zone. |
| GN R545 Item 24 (iii, iv, viii, ix): Construction or earth moving activities in the sea, an estuary, | GN R984 Item 26 (I, ii, iii, and v; and c, d, g and h): Development-- | Construction and earth moving activities will occur within the sea, the littoral zone and 100 metres inland of the high- |

| Detailed description of listed activities associated with the project | | |
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| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| <p>or within the littoral active zone or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater, in respect of:</p> <p>(iii) inter- and sub-tidal structures for entrapment of sand; (iv) breakwater structures; (viii) tunnels; or (ix) underwater channels, but excluding:</p> <p>(a) activities listed in activity 16 in Notice 544 of 2010, (b) construction or earth moving activities if such construction or earth moving activities will occur behind a development setback line; (c) where such construction or earth moving activities will occur in existing ports or harbours where there will be no increase of the development footprint or throughput capacity of the port or harbour; or (d) where such construction or earth moving activities takes place for maintenance purposes.</p> | <p>(i) in the sea; (ii) in an estuary; (iii) within the littoral active zone; (v) if no development setback exists, within a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever is the greater;</p> <p>in respect of - (c) inter- and sub-tidal structures for entrapment of sand; (d) breakwater structures; (g) tunnels; or (h) underwater channels;</p> <p>but excluding the development of structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> | <p>watermark of the sea and the estuary. Depending on design and technical criteria of the desalination plant, structures such as inter- and sub-tidal structures for entrapment of sand, breakwater structures and tunnels and/or underwater channels may be used in the construction and operation phase of the proposed development. This will also be subject to further investigation and analysis in the detailed engineering design phase.</p> |
| <p>GN R546 Item 2 (a) (iii) [(dd) (gg)]:</p> <p>The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres, in</p> <p>(a) the KwaZulu-Natal province (iii) outside urban areas, in: (dd) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.</p> | <p>GN R985 Item 2 (d) [(v), (viii), (x), (xii) [(bb)]]</p> <p>The development of reservoirs for bulk water supply with a capacity of more than 250 cubic metres.</p> <p>in: (d) In KwaZulu-Natal: viii. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; x. Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, or zoned for a conservation purpose; xii. Outside urban areas:</p> | <p>Two 37.5 Ml freshwater holding reservoirs and a 6Ml reservoir for screened water will be required for the proposed project and will be located at the desalination plant site (estuarine site). These reservoirs will be constructed within an area which has been identified as CBA (OCO) by the EKZNW Terrestrial Systematic Conservation Plan (Figure 4.1).</p> |

| Detailed description of listed activities associated with the project | | |
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| <p>GN R546 Item 4 (a) (ii) [(ee)]:</p> <p>The construction of a road wider than 4 metres with a reserve less than 13,5 metres in</p> <p>(a) the KwaZulu-Natal province</p> <p>(ii) outside urban areas, in</p> <p>(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.</p> | <p>GN R985 Item 4 (d) [(viii) (x)]:</p> <p>The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p> <p>(d) In KwaZulu-Natal:</p> <p>viii. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>x. Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose;</p> | <p>The proposed project may require the construction of an access road to the proposed desalination plant. If required, this road would be located outside urban areas within an area which has been identified as CBA (OCO) by the EKZNW Terrestrial Systematic Conservation Plan.</p> <p>The details will be confirmed as part of the detailed engineering design phase.</p> |
| <p>GN R546 Item 10 (a) (i) (ii) [(ee) (hh) (jj)]:</p> <p>The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres in</p> <p>(a) the KwaZulu-Natal province,</p> <p>(ii) outside urban areas in:</p> <p>(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.</p> <p>(ii) Areas on the watercourse side of the development setback line or within 100 m from the edge of a watercourse where no such setback line has been determined.</p> <p>(jj) Within 500 m of an estuary</p> | <p>GN R985 Item 10 (d) (vi) (ix) (xi):</p> <p>The development of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.</p> <p>d) In KwaZulu-Natal:</p> <p>vi. Within 500 metres of an estuarine functional zone;</p> <p>ix. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>xi. Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose;</p> <p>xiii. Outside urban areas:</p> | <p>The proposed project will require that chemicals such as coagulants, acids, bases, antiscalants and biocides be stored on-site for the pre-treatment/conditioning of the source water, cleaning of the reverse osmosis membrane filters and conditioning of the potable water. It is expected that the combined capacity of these chemicals storage will exceed 30 m³.</p> <p>The exact volumes will be confirmed as part of the detailed engineering design phase and will be based on the results of the pilot plant investigations. These volumes may exceed 80 m³.</p> <p>Construction of such storage facilities will occur in an area which has been identified as CBA (OCO) by the EKZNW Terrestrial Systematic Conservation Plan, within 100m of a</p> |

| Detailed description of listed activities associated with the project | | |
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| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| | (cc) Areas within 100 metres from the edge of a watercourse. | watercourse and within 500 m from the Lovu estuary. |
| <p>GN R.546 Item 12 (a), (b), (c):</p> <p>The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation,</p> <p>(a) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</p> <p>(b) Within critical biodiversity areas identified in bioregional plans;</p> <p>(c) within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas.</p> | <p>GN R 985 Item 12 (b):</p> <p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>b) In KwaZulu-Natal:</p> <p>iv. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</p> <p>v. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>vi. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas;</p> <p>vii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning;</p> <p>xi. Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose;</p> <p>xiii. In an estuarine functional zone.</p> | <p>The proposed desalination plant and supporting infrastructure would require an area greater than 300 m² to be cleared of vegetation, in an area identified as critically endangered by NEMBA (threatened ecosystem – Southern Coastal Grassland KZN18) and as CBA by the EKZNW Terrestrial Systematic Conservation Plan. Given the fact that the desalination plant and associated infrastructure is to be primarily situated on land which is utilised for agricultural practices, it is not anticipated that 75% of the vegetation to be cleared would constitute indigenous vegetation (refer to Chapter 7). This will however need to be ground truthed.</p> <p>However, should 75% of the cleared vegetation constitute indigenous vegetation (pump station site), this may occur within the littoral active zone or 100 m inland from high water mark of the sea within the development setback line.</p> |

| Detailed description of listed activities associated with the project | | |
|---|---|---|
| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| <p>GN R.546 Item 13 (a) (c) [(i) (ii) [(gg)]]: The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation</p> <p>(a) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p> <p>(c) in the KwaZulu-Natal province,</p> <p>(i) in an estuary</p> <p>(ii) outside urban areas in:</p> <p>(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.</p> | <p>Not applicable in Listing Notice 3 of the 2014 EIA Regulations.</p> | <p>Listed activity not applicable as per Section 53 (2) of the Transitional Arrangements of the 2014.</p> |
| <p>GN R.546 Item 14 (a) (i): The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation in all areas outside urban areas in the KwaZulu-Natal province.</p> | <p>Not applicable in Listing Notice 3 of the 2014 EIA Regulations.</p> | <p>Listed activity not applicable as per Section 53 (2) of the Transitional Arrangements of the 2014.</p> |
| <p>GN R546 Item 16 (i) (iii) (iv) [(a) [(i) (ii) [(ff) (ii)]]]:</p> <p>The construction of:</p> <p>(i) jetties exceeding 10 square metres in size;</p> <p>(iii) buildings with a footprint exceeding 10 square metres in size; or</p> <p>(iv) infrastructure covering 10 square metres or more,</p> <p>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,</p> <p>(a) in the KwaZulu-Natal province:</p> | <p>GN R 985 Item 14 (b) (iii) (vi) (viii) (x) (xii) (a) (c) (d) [(i) (vii) (viii) (x) [(bb)]]:</p> <p>The development of –</p> <p>(iii) bridges exceeding 10 square metres in size;</p> <p>(vi) bulk storm water outlet structures exceeding 10 square metres in size;</p> <p>(viii) jetties exceeding 10 square metres in size;</p> <p>(ix) slipways exceeding 10 square metres in size;</p> <p>(x) buildings exceeding 10 square metres in size;</p> <p>(xii) infrastructure or structures with a physical footprint of 10 square metres or more;</p> <p>where such development occurs</p> | <p>The construction of new supporting infrastructure exceeding 10 m² will be required within 32 m of a watercourse to accommodate crossing of the estuary near the proposed desalination plant. Construction activities associated with the temporary jetty will occur within 32 m of the Lovu estuary mouth.</p> <p>Bulk storm water systems and associated outlet structures at the alternative desalination plant site will be appropriately designed during the detailed design phase and may be located within 32 m of a watercourse. The construction of new buildings and supporting infrastructure exceeding 10 m² may be required within 32 m of a watercourse, if the Alternative</p> |

| Detailed description of listed activities associated with the project | | |
|---|--|--|
| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| <p>(i) In an estuary;</p> <p>(ii) Outside urban areas,</p> <p>(ff) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p> <p>(ii) in 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.</p> | <p>(a) within a watercourse;</p> <p>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> <p>(d) In KwaZulu-Natal:</p> <p>i. In an estuarine functional zone;</p> <p>vii. Critical biodiversity areas or ecological support areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>viii. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;</p> <p>x. Outside urban areas:</p> <p>(bb) 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.</p> | <p>site is chosen. Further investigation into these aspects of the proposed development will form part of the detailed engineering design phase.</p> <p>Such construction will occur outside urban areas in areas which have been identified as CBA by the EKZNW Terrestrial Systematic Conservation Plan and within 1 km of the high water mark (Pipelines).</p> |
| <p>GN R546 Item 19 (a) (ii) (ii):</p> <p>The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre,</p> <p>(a) In the KwaZulu-Natal province</p> <p>(ii) outside urban areas, in:</p> <p>(ii) Areas on the watercourse side of the</p> | <p>GN R 984 Item 18 (d) (viii) (x):</p> <p>The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.</p> <p>(d) In KwaZulu-Natal:</p> <p>viii. Critical biodiversity areas as identified in systematic</p> | <p>The proponent intends to use existing roads to access the proposed facility (pending approval from relevant authorities). However, existing roads may be required to be widened by more than 4 m, or lengthened by more than 1 km.</p> <p>The details will be confirmed as part of the detailed engineering design phase. The proposed project may require the construction of an access road to the proposed</p> |

| Detailed description of listed activities associated with the project | | |
|--|--|---|
| Listed activity as described in GN R544, R545 and R546 (EIA Regulations, 2010) | Listed activity as described in GN R983, R984 and R985 (EIA Regulations, 2014) | Description of project activity that triggers listed activity |
| development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined. | biodiversity plans adopted by the competent authority or in bioregional plans; x. Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose; | desalination plant. If required, this road would be located outside urban areas within an area which has been identified as CBA by the EKZNW Terrestrial Systematic Conservation Plan. The details will be confirmed as part of the detailed engineering design phase. |

Please note that any authorisation that may result from this application will only cover activities specifically applied for. Co-ordinate points indicating the location of each listed activity must be provided with the relevant report (ie. either BAR or EIR).

Should any activities in GN R.546 be applied for, please provide a map indicating the triggering area (e.g. critical biodiversity area, World Heritage Site, etc) overlaid by the study area in **Appendix 7**.

A project schedule, indicating the different phases and timelines of the project, must be attached as **Appendix 8**.

6. EXEMPTIONS (IF APPLICABLE)

Should the applicant wish to apply for exemption from any provision of the Act as it relates to environmental impact assessment or from any provision of GN R. 543, as allowed by GN R543 (50), details of the exemption application must be provided as **Appendix 9** in the form of a table as shown below.

| Regulation number | Regulation description | Reason(s) for exemption | Supporting documentation attached | Notification done i.t.o GN R. 543(51)(3) | |
|-------------------|------------------------|-------------------------|-----------------------------------|--|----|
| | | | | YES | NO |
| | | | | YES | NO |
| | | | | YES | NO |
| | | | | YES | NO |

Please note that any exemptions from the Act or GN R.543 must first be approved in writing by the competent authority **before** the implementation of such exemptions.

Supporting documentation and proof of notification to the landowner or person in control of the land and all potential or registered I&APs as required by Regulation 51 of GN R. 543 must be attached as **Appendix 10**.

7. PUBLIC PARTICIPATION

Provide details of the public participation process proposed for the application as required by Regulation 54(2) of GN R. 543, dated June 2010.

In terms of regulation 54 of the EIA Regulations, the public participation process that will be followed is indicated in the table below:

| | |
|--|-----|
| 2. (a) fixing a notice board at a place conspicuous to the public at the boundary or on the fence of - | |
| (i) the site where the activity to which the application relates is or is to be undertaken; and | Yes |
| (ii) any alternative site mentioned in the application | Yes |
| (b) giving written notice to – | |
| (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land; | Yes |
| (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; | Yes |
| (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken; | Yes |
| (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area; | Yes |
| (v) the municipality which has jurisdiction in the area; | Yes |
| (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and | Yes |
| (vii) any other party as required by the competent authority; | Yes |

| | |
|---|--|
| (c) placing an advertisement in - | |
| (i) one local newspaper; or | Yes |
| (ii) any official <i>Gazette</i> that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations; | Yes |
| (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official <i>Gazette</i> referred to in subregulation (c) (ii); and | Yes |
| (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to – (i) illiteracy (ii) disability; or (iii) any other disadvantage. | Not applicable at this stage, but will be complied with as agreed by the competent authority should the need arise as part of the public consultation process. |

Should any of the aspect(s) of the Public Participation process be considered unfeasible or unreasonable for this application, please complete Section 9 below.

8. DEVIATIONS FROM PUBLIC PARTICIPATION (IF APPLICABLE)

Should the applicant wish to apply for deviations from the public participation process applied for in terms of Regulation 54(5) of GN R. 543, details of the request for deviation must be provided as **Appendix 11** in the form of a table as shown below.

| Regulation number | Regulation | Reason for deviation | Proposed deviation |
|---|---|--|---|
| e.g. GN R. 543 Item 54(2)(b)(iii): | <i>The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by giving written notice to— (iii) owners and occupiers of land</i> | <i>The proposed power line stretches over 250 km and it is unfeasible to provide written notification to all land owners and occupiers.</i> | <i>Notices will be placed in all local community newspapers.</i> |

| | | | |
|--|--|--|--|
| | <i>adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;</i> | | |
| | | | |
| | | | |

Note from CSIR: No deviations from public participation in terms of regulation 54(2) of the EIA Regulations are required at this stage.

Note:

- Any deviations from the public participation process must first be agreed upon in writing by the competent authority **before** such deviations may be put into place.
- Should you not request to deviate from any requirements of regulation 54(2) or if the Department has not agreed to any deviation applied for in writing then the applicant or EAP must comply with the full requirements of regulation 54(2).
- Deviation from public participation is only applicable to regulation 54(2) and does not for example apply to the requirement of regulation 10(2) (d) that requires the applicant to publish a notice of the decision taken by the Department in newspapers. An application for exemption must be applied for should the applicant wish to be exempted from the requirements of regulation 10(2) (d).

9. OTHER AUTHORISATIONS REQUIRED

| LEGISLATION | AUTHORISATION REQUIRED | | APPLICATION SUBMITTED | |
|--|------------------------|-----|-----------------------|----|
| SEMAS | | | | |
| National Environmental Management: Air Quality Act | | NO* | | NO |
| National Environmental Management: Biodiversity Act | | NO* | | NO |
| National Environmental Management: Integrated Coastal Management Act | YES | | YES | |
| National Environmental Management: Protected Areas Act | | NO* | | NO |
| National Environmental Management: Waste Act | | NO* | | NO |
| National legislation | | | | |
| Mineral Petroleum Development Resources Act | | NO* | | NO |
| National Water Act | YES | | | NO |
| National Heritage Resources Act | | NO* | | NO |
| Others: Please specify | | NO* | | NO |

Note from CSIR: *Confirmation of the need for these authorisations will be determined as part of the EIA process and associated specialist inputs.

Please provide proof of submission of applications in **Appendix 12**.

If authorisation is necessary in terms of the National Environmental Management: Waste Act, please contact the Department for guidance on the **Integrated Permitting System**.

10. LIST OF APPENDICES

| | | SUBMITTED | |
|-------------|---|-----------|-----|
| Appendix 1 | Strategic Infrastructure Projects | YES | |
| Appendix 2 | List of Local Municipalities (with contact details) | YES | |
| Appendix 3 | List of land owners (with contact details) and proof of notification of land owners. | YES | |
| Appendix 4 | List of co-ordinates and/or SGIDs | YES | |
| Appendix 5 | Title deed(s) and SG diagram(s) | YES | |
| Appendix 6 | Copies of Environmental Authorisations obtained for the same property | | N/A |
| Appendix 7 | Map indicating triggered areas for GN R.546 | YES | |
| Appendix 8 | Project schedule | YES | |
| Appendix 9 | Details of application for exemption | | N/A |
| Appendix 10 | Supporting documentation and proof of notification of I&APs for exemption application | | NO |
| Appendix 11 | Details of request for deviation | | NO |
| Appendix 12 | Proof of submission of additional applications | | NO |
| Appendix 13 | Declaration of Applicant | YES | |
| Appendix 14 | Declaration of EAP | YES | |

APPENDIX 1 STRATEGIC INFRASTRUCTURE PROJECTS

| | |
|---|--|
| <p>SIP 1: Unlocking the northern mineral belt with Waterberg as the catalyst</p> <ul style="list-style-type: none"> • Unlock mineral resources • Rail, water pipelines, energy generation and transmission infrastructure • Thousands of direct jobs across the areas unlocked • Urban development in Waterberg - first major post-apartheid new urban centre will be a “green” development project • Rail capacity to Mpumalanga and Richards Bay • Shift from road to rail in Mpumalanga • Logistics corridor to connect Mpumalanga and Gauteng. | |
| <p>SIP 2: Durban-Free State-Gauteng logistics and industrial corridor</p> <ul style="list-style-type: none"> • Strengthen the logistics and transport corridor between SA's main industrial hubs • Improve access to Durban's export and import facilities • Integrate Free State Industrial Strategy activities into the corridor • New port in Durban • Aerotropolis around OR Tambo International Airport. | |
| <p>SIP 3: South-Eastern node & corridor development</p> <ul style="list-style-type: none"> • New dam at Mzimvubu with irrigation systems • N2-Wild Coast Highway which improves access into KwaZulu-Natal and national supply chains • Strengthen economic development in Port Elizabeth through a manganese rail capacity from Northern Cape • A manganese sinter (Northern Cape) and smelter (Eastern Cape) • Possible Mthombo refinery (Coega) and transshipment hub at Ngqura and port and rail upgrades to improve industrial capacity and performance of the automotive sector. | |
| <p>SIP 4: Unlocking the economic opportunities in North West Province</p> <ul style="list-style-type: none"> • Acceleration of investments in road, rail, bulk water, water treatment and transmission infrastructure • Enabling reliable supply and basic service delivery • Facilitate development of mining, agricultural activities and tourism opportunities • Open up beneficiation opportunities in North West Province. | |
| <p>SIP 5: Saldanha-Northern Cape development corridor</p> <ul style="list-style-type: none"> • Integrated rail and port expansion • Back-of-port industrial capacity (including an IDZ) • Strengthening maritime support capacity for oil and gas along African West Coast • Expansion of iron ore mining production and beneficiation. | |
| <p>SIP 6: Integrated municipal infrastructure project Develop national capacity to assist the 23 least resourced districts (19 million people) to address all the maintenance backlogs and upgrades required in water, electricity and sanitation bulk infrastructure. The road maintenance programme will enhance service delivery capacity thereby impacting positively on the population.</p> | |
| <p>SIP 7: Integrated urban space and public transport programme Coordinate planning and implementation of public transport, human settlement, economic and social infrastructure and location decisions into sustainable urban settlements connected by densified transport corridors. This will focus on the 12 largest urban centres of the country, including all the metros in South Africa. Significant work is underway on urban transport integration.</p> | |
| <p>SIP 8: Green energy in support of the South African economy Support sustainable green energy initiatives on a national scale through a diverse range of clean</p> | |

| | |
|---|--|
| energy options as envisaged in the Integrated Resource Plan (IRP2010) and support bio-fuel production facilities. | |
| Indicate capacity in MW: | |
| SIP 9: Electricity generation to support socioeconomic development Accelerate the construction of new electricity generation capacity in accordance with the IRP2010 to meet the needs of the economy and address historical imbalances. Monitor implementation of major projects such as new power stations: Medupi, Kusile and Ingula. | |
| Indicate capacity in MW: | |
| SIP 10: Electricity transmission and distribution for all Expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development. Align the 10-year transmission plan, the services backlog, the national broadband roll-out and the freight rail line development to leverage off regulatory approvals, supply chain and project development capacity. | |
| SIP 11: Agri-logistics and rural infrastructure Improve investment in agricultural and rural infrastructure that supports expansion of production and employment, small-scale farming and rural development, including facilities for storage (silos, fresh-produce facilities, packing houses); transport links to main networks (rural roads, branch train-line, ports), fencing of farms, irrigation schemes to poor areas, improved R&D on rural issues (including expansion of agricultural colleges), processing facilities (abattoirs, dairy infrastructure), aquaculture incubation schemes and rural tourism infrastructure. | |
| SIP 12: Revitalisation of public hospitals and other health facilities Build and refurbish hospitals, other public health facilities and revamp 122 nursing colleges. Extensive capital expenditure to prepare the public healthcare system to meet the requirements of the National Health Insurance (NHI) system. The SIP contains major builds for 6 hospitals | |
| SIP 13: National school build programme A national school build programme driven by uniformity in planning, procurement, contract management and provision of basic services. Replace inappropriate school structures and address basic service backlog and provision of basic services under the Accelerated School Infrastructure Delivery Initiative (ASIDI). In addition, address national backlogs in classrooms, libraries, computer labs and admin buildings. Improving the learning environment will strengthen outcomes especially in rural schools, as well as reduce overcrowding | |
| SIP 14: Higher education infrastructure Infrastructure development for higher education, focusing on lecture rooms, student accommodation, libraries and laboratories, as well as ICT connectivity. Development of university towns with a combination of facilities from residence, retail to recreation and transport. Potential to ensure shared infrastructure such as libraries by universities, FETs and other educational institutions. Two new universities will be built - in Northern Cape and Mpumalanga. | |
| SIP 15: Expanding access to communication technology Provide for broadband coverage to all households by 2020 by establishing core Points of Presence (POPs) in district municipalities, extend new Infracore fibre networks across provinces linking districts, establish POPs and fibre connectivity at local level, and further penetrate the network into deep rural areas. While the private sector will invest in ICT infrastructure for urban and corporate networks, government will co-invest for township and rural access, as well as for e-government, school and health connectivity. The school roll-out focus is initially on the 125 Dinaledi (science and maths-focussed) schools and 1525 district schools. Part of digital access to all South Africans includes TV migration nationally | |

| | |
|---|---|
| from analogue to digital broadcasting. | |
| <p>SIP 16: SKA & Meerkat SKA is a global mega-science project, building an advanced radio-telescope facility linked to research infrastructure and high-speed ICT capacity and provides an opportunity for Africa and South Africa to contribute towards global advanced science projects.</p> | |
| <p>SIP 17: Regional integration for African cooperation and development Participate in mutually beneficial infrastructure projects to unlock long-term socio-economic benefits by partnering with fast growing African economies with projected growth ranging between 3% and 10%. The projects involving transport, water and energy also provide competitively-priced, diversified, short and medium to long-term options for the South African economy where, for example, electricity transmission in Mozambique (Cesul) could assist in providing cheap, clean power in the short-term whilst Grand Inga in the DRC is long-term. All these projects complement the Free Trade Area (FTA) discussions to create a market of 600 million people in South, Central and East Africa.</p> | |
| <p>SIP 18: Water and sanitation infrastructure A 10-year plan to address the estimated backlog of adequate water to supply 1.4m households and 2.1m households to basic sanitation. The project will involve provision of sustainable supply of water to meet social needs and support economic growth. Projects will provide for new infrastructure, rehabilitation and upgrading of existing infrastructure, as well as improve management of water infrastructure.</p> | X |

**APPENDIX 2 (IF APPLICABLE)
LIST OF LOCAL MUNICIPALITIES**

| | | | |
|--------------------|--|-------|----------------|
| Local municipality | eThekweni Municipality | | |
| Contact person: | Dr. Debra Roberts | | |
| Postal address: | P.O. Box 680 Durban | | |
| Postal code: | 4000 | Cell: | |
| Telephone: | (031) 311 7527 | Fax: | (031) 311 7134 |
| E-mail: | RobertsD@durban.gov.za | | |

Note from CSIR: The eThekweni Municipality is a Metropolitan Municipality and as such constitutes both the Local and District Municipality.

APPENDIX 3
LIST OF LAND OWNERS
PROOF OF NOTIFICATION OF LAND OWNERS

(Overleaf)

Table 3.1: List of directly affected land owners for the Proposed Lovu Desalination Plant and Associated Infrastructure.

| Component | Property Description | Farmtown name | SG Doc Ref | 21 Digit Surveyor-General Code |
|---|---|---------------|--------------|--------------------------------|
| Marine pipeline | Rem of Erf 372 of Kingsburgh No. 0163 | Kingsburgh | SG 871/1951 | N0ET01630000037200000 |
| Marine pipeline | Rem of Erf 1029 of Isipingo No 0156 | Isipingo | SG810/1962 | N0FT01560000102900000 |
| Marine pipeline and pump station | Rem Portion 1 of Erf 206 of Kingsburgh No. 0163 | Kingsburgh | SG 1427/1993 | N0ET01630000020600001 |
| Marine pipeline and pump station | Portion 2 of Erf 206 of Kingsburgh No. 0163 | Kingsburgh | SG 2437/1999 | N0ET01630000020600002 |
| Pump station Preferred pipeline Alternative 1, 2, 3 Power line | Rem of Erf 206 of Kingsburgh No. 0163 | Kingsburgh | SG 1783/1938 | N0ET01630000020600000 |
| Preferred Pipeline Alternative 1, 2, 3 Power line | Erf 915 of Kingsburgh No. 0163 | Kingsburgh | SG 3731/1939 | N0ET01630000091500000 |
| Preferred Pipeline Alternative 1, 3 Power line | Erf 916 of Kingsburgh No. 0163 | Kingsburgh | SV 632/7 | N0ET01630000091600000 |
| Preferred Pipeline Alternative 1, 3 Power line | Erf 193 of Kingsburgh No. 0163 | Kingsburgh | SG5988/1959 | N0ET01630000019300000 |
| Preferred Pipeline Alternative 1, 3 Power line | Erf 191 of Kingsburgh No. 0163 | Kingsburgh | SG5987/1959 | N0ET01630000019100000 |
| Preferred Pipeline Alternative 1, 2, 3 Power line | Rem of Erf 190 of Kingsburgh No. 0163 | Kingsburgh | SG 3947/1939 | N0ET01630000019000000 |
| Preferred Pipeline Alternative 1, 3 Power line | Portion 3 of Erf 2906 of Kingsburgh No. 0163 | Kingsburgh | | N0ET01630000290600003 |
| Preferred Pipeline Alternative 1, 2, 3 Power line | Portion 4 of Erf 2906 of Kingsburgh No. 0163 | Kingsburgh | SG 2333/1991 | N0ET01630000290600004 |

| | | | | |
|--|---|--------------|--------------|-----------------------|
| Preferred Pipeline Alternative 1, 3 Power line | Portion 1 of Erf 932 of Kingsburgh No. 0163 | Kingsburgh | SG 1854/1970 | N0ET01630000093200001 |
| Preferred Pipeline Alternative 1, 3 | Rem of Erf 932 of Kingsburgh No. 0163 | Kingsburgh | SV 728/77 | N0ET01630000093200000 |
| Preferred Pipeline Alternative 1, 3 Power line | Rem of Togo No. 9374 | Togo | GV 307/11 | N0ET00000000937400000 |
| Preferred Pipeline Alternative 1, 3 Power line | Rem of Illovo No. 16946 | Illovo | SG 2051/1997 | N0ET00000001694600000 |
| Preferred Pipeline Alternative 1, 3 Power line | Erf 930 of Kingsburgh No. 0163 | Kingsburgh | SG 5039/1949 | N0ET01630000093000000 |
| Preferred Pipeline Alternative 1, 3 Power line | Portion 1 of Erf 62 of Winklespruit No. 0385 | Winklespruit | SG 5097/1954 | N0ET03850000006200001 |
| Alternative 1 | Rem of Lot 23 No. 3253 | Lot 23 | GV 61/71 | N0ET00000000325300000 |
| Preferred Pipeline Alternative 2 | Portion 1 of Erf 2906 of Kingsburgh No. 0163 | Kingsburgh | SG 440/1987 | N0ET01630000290600001 |
| Preferred Pipeline Alternative 2 | Portion 2 of Erf 2906 of Kingsburgh No. 0163 | Kingsburgh | - | N0ET01630000290600002 |
| Pipeline Alternative 2 | Erf 2958 of Kingsburgh No. 0163 | Kingsburgh | SG 113/1996 | N0ET01630000295800000 |
| Pipeline Alternative 2 | Rem of Erf 194 of Kingsburgh No. 0163 | Kingsburgh | SG 868/1951 | N0ET01630000019400000 |
| Pipeline Alternative 2 | Portion 1 of Erf 919 of Kingsburgh No. 0163 | Kingsburgh | - | N0ET01630000091900001 |
| Pipeline Alternative 2 | Portion 1 of Lot 30A Little Amanzimtoti, Farm No. 10899 | | SG 1856/1970 | N0ET00000001089900001 |
| Pipeline Alternative 2 | Remaining of Lot 30A Little Amanzimtoti, Farm No. 10899 | | GV387/20 | N0ET00000001089900000 |
| Pipeline Alternative 2 | Portion 1 of ERF 189 of Kingsburgh No. 0163 | Kingsburgh | SG 2597/1984 | N0ET01630000018900001 |
| Pipeline Alternative 2 | Rem of ERF 189 of Kingsburgh No. 0163 | Kingsburgh | SG 867/1951 | N0ET01630000018900000 |
| Pipeline Alternative 2 Desalination site (Preferred and Alternative) | Nogi No. 17469 | Nogi | SG 648/2001 | N0ET00000001746900000 |
| Desalination site (Preferred and Alternative) | Portion 1 of Lot 15 No. 7773 | Lot 15 | SG 3231/1984 | N0ET00000000777300001 |
| Desalination site (Preferred and Alternative) | Portion 2 of Lot 15 No. 7773 | Lot 15 | SG 78/2000 | N0ET00000000777300002 |

PROOF OF NOTIFICATION OF LAND OWNERS

List of REGISTERED LETTERS
Lys van GEREГИSTREERDE BRIEWE
(with an insurance option/met 'n versekeringsopsie)
Full tracking and tracing/Volledige volg en spoor



Name and address of sender: CSIR, PO BOX
 Naam en adres van afsender: 17001
CONGELLA
4013

Enquiries/Navrae
 Toll-free number
 Tolvry nommer
0800 111 502

| No | Name and address of addressee Naam en adres van geadresseerde | Insured amount Versekerde bedrag | Insurance fee Versekeringsgeld | Postage Posgeld | Service fee Diensgeld | Affix Track and Trace customer copy Plak Volg-en-Spoor-afskrif |
|--|---|-------------------------------------|-----------------------------------|--------------------|---|---|
| 1 | ILLOVO SUGAR SOUTH AFRICA LTD P O Box 194, DURBAN, 4000 | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 903 268 541 ZA | |
| 2 | ETHEKWINI MUNICIPALITY, P O Box 680, DURBAN, 4000 | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 903 268 569 ZA | |
| 3 | SOUTH AFRICAN NATIONAL ROADS AGENCY LTD, P.O.Box 100410, SCOTTSVILLE | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 903 269 255 ZA | |
| 4 | DEPT. OF PUBLIC WORKS, PIENAR X 54 315, DURBAN, 4000 | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 903 269 272 ZA | |
| 5 | SOUTH AFRICAN RAIL COMMUTER BOXES CORP. LTD, BEDFORDVIEW, 2008 | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 903 269 136 ZA | |
| 6 | SOUTHERN UMHLAZI SR CC (ETHEKWINI MUNI) P O Box 680, DURBAN, 4000 | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 903 269 153 ZA | |
| 7 | TRANSNET LTD, P O Box 72501 PARKVIEW, 2122 | | | | CUSTOMER COPY 301028R REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 903 269 034 ZA | |
| 8 | SOUTH SUGAR | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 903 269 017 ZA | |
| 9 | ILLOVO SUGAR SOUTH AFRICA LTD P O Box 194, DURBAN, 4000 | | | | CUSTOMER COPY 301028R | |
| 10 | | | | | | |
| Number of letters posted Getal briewe gepos | | Total Totaal | R | R | R | R |

Signature of client
 Handtekening van klient [Signature]

Signature of accepting officer
 Handtekening van aanneembeampte [Signature]

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R200,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentere bewys betaalbaar nie. Opsionele versekering van tot R200,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.



**APPENDIX 4 (IF APPLICABLE)
LIST OF CO-ORDINATES AND/OR SGIDS**

(List of co-ordinates is attached overleaf – Refer to Appendix 3 for SG codes)

Note that micro-siting based on detailed site studies and specific aspects such as geotechnical conditions and foundation designs may lead to minor adjustments in these coordinates of the project location.

The following amendments have been recommended as part of the EIA and will lead to minor adjustments of the coordinates:

- **Re-routing of the Preferred pipeline route further south, to run along the existing disturbed areas of the cane field.**
- **For the Alternative 2 pipeline route, the reception pit for tunnelling on the south bank should be moved by at least 100-130m further west.**
- **For the Preferred site, the development should be moved back to create an ecological corridor of at least a 25 metre extension between the development and the channel.**
- **In the event of selecting the Alternative site, setback the site by at least 25m from the edge of watercourses 3 and 3A.**
- **Powerline to be turned towards the south just short of the riparian area, within the cane field zone.**

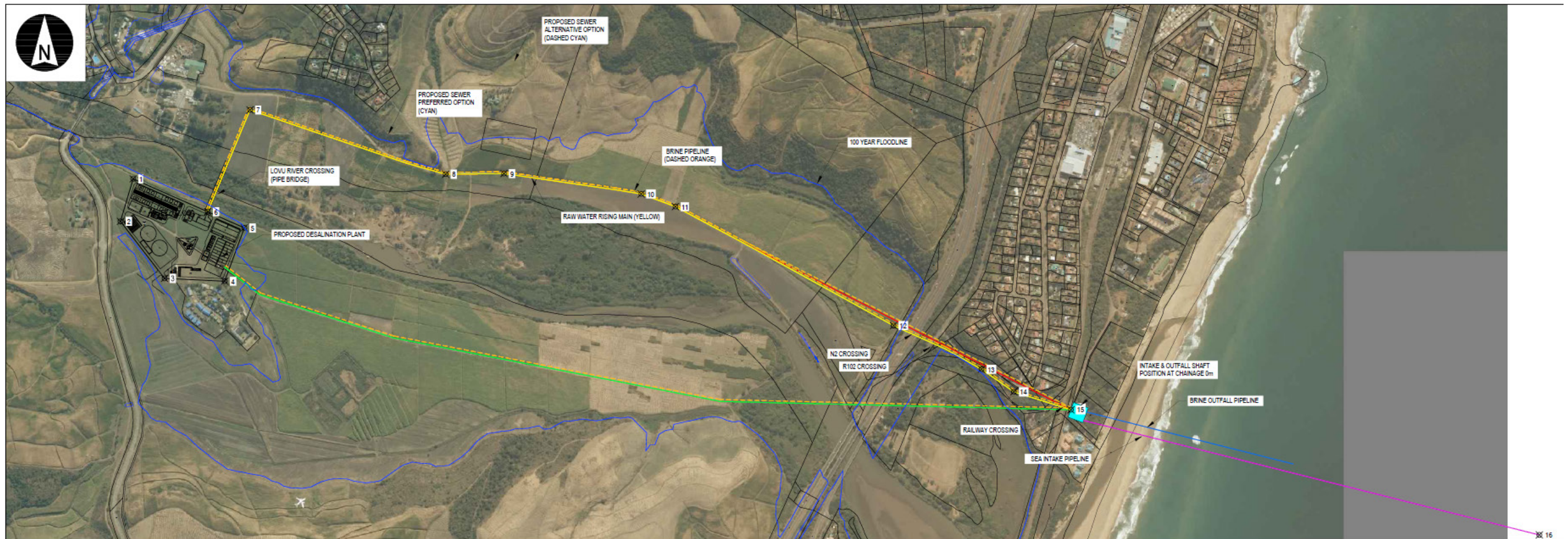


Figure 4.1: Locality Map for the Proposed Lovu Desalination Plant and Associated Infrastructure, Coordinates for the Proponent Preferred site and Preferred pipeline route (and Alternative 3).

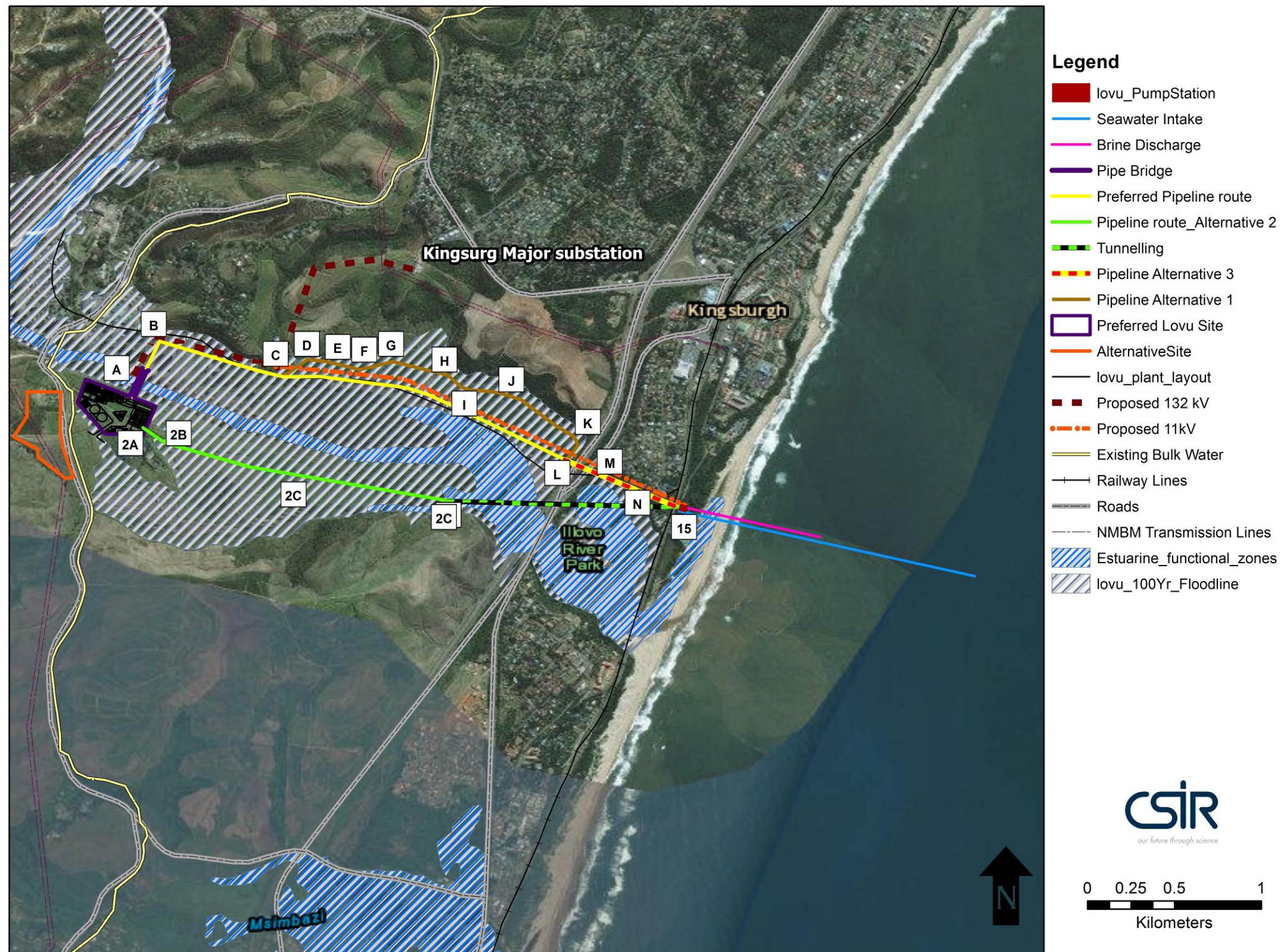


Figure 4.2: Coordinates for the Alternative 1 and 2 pipeline routes.



Figure 4.3: Coordinates for the Alternative site

GPS Coordinates for Project Site

| Point | Location | Latitude | Longitude |
|---------------------------------------|---|-----------------|-----------------|
| Preferred desalination plant | | | |
| 1 | Outline of desalination plant footprint | S30° 05' 57.30" | E30° 49' 27.98" |
| 2 | Outline of desalination plant footprint | S30° 06' 01.66" | E30° 49' 26.47" |
| 3 | Outline of desalination plant footprint | S30° 06' 07.52" | E30° 49' 31.66" |
| 4 | Outline of desalination plant footprint | S30° 06' 07.82" | E30° 49' 38.76" |
| 5 | Outline of desalination plant footprint | S30° 06' 02.35" | E30° 49' 41.09" |
| Preferred Pipeline route | | | |
| 6 | Pipelines | S30° 06' 00.67" | E30° 49' 36.78" |
| 7 | Pipelines | S30° 05' 50.24" | E30° 49' 41.78" |
| 8 | Pipelines | S30° 05' 56.87" | E30° 50' 04.85" |
| 9 | Pipelines | S30° 05' 56.81" | E30° 50' 11.74" |
| 10 | Pipelines | S30° 05' 58.93" | E30° 50' 27.94" |
| 11 | Pipelines | S30° 06' 00.23" | E30° 50' 31.97" |
| 12 | Pipelines | S30° 06' 12.48" | E30° 50' 57.69" |
| 13 | Pipelines | S30° 06' 16.96" | E30° 51' 08.07" |
| 14 | Pipelines | S30° 06' 19.29" | E30° 51' 11.89" |
| Pump station | | | |
| 15 | Centre of sea water pump station | S30° 06' 21.21" | E30° 51' 18.88" |
| Marine pipelines | | | |
| 16 | Brine pipeline | S30° 06' 22.64" | E30° 51' 24.37" |
| 17 | Brine pipeline | S30° 06' 23.31" | E30° 51' 29.05" |
| 18 | Brine pipeline | S30° 06' 21.53" | E30° 51' 45.49" |
| 19 | Intake Pipeline | S30° 06' 32.95" | E30° 51' 51.40" |
| Alternative desalination plant | | | |
| N1 | Outline of desalination plant footprint | S30° 05' 59.67" | E30° 49' 17.10" |
| N2 | Outline of desalination plant footprint | S30° 05' 59.67" | E30° 49' 23.35" |
| N3 | Outline of desalination plant footprint | S30° 06' 06.71" | E30° 49' 23.25" |
| N4 | Outline of desalination plant footprint | S30° 06' 09.89" | E30° 49' 23.75" |
| N5 | Outline of desalination plant footprint | S30° 06' 15.54" | E30° 49' 25.75" |
| N6 | Outline of desalination plant footprint | S30° 06' 15.84" | E30° 49' 24.36" |
| N7 | Outline of desalination plant footprint | S30° 06' 11.80" | E30° 49' 19.11" |
| N8 | Outline of desalination plant footprint | S30° 06' 10.38" | E30° 49' 19.11" |
| N9 | Outline of desalination plant footprint | S30° 06' 08.07" | E30° 49' 14.63" |
| N10 | Outline of desalination plant footprint | S30° 06' 04.20" | E30° 49' 17.09" |
| Alternative 1 Pipeline route | | | |
| A | Pipelines | S30° 06' 00.67" | E30° 49' 36.78" |
| B | Pipelines | S30° 05' 50.24" | E30° 49' 41.78" |
| C | Pipelines | S30° 05' 56.87" | E30° 50' 04.85" |
| D | Pipelines | S30° 05' 54.28" | E30° 50' 07.56" |
| E | Pipelines | S30° 05' 54.14" | E30° 50' 12.04" |
| F | Pipelines | S30° 05' 55.07" | E30° 50' 18.64" |
| G | Pipelines | S30° 05' 53.95" | E30° 50' 23.78" |
| H | Pipelines | S30° 05' 56.29" | E30° 50' 31.79" |
| I | Pipelines | S30° 05' 59.60" | E30° 50' 36.19" |
| J | Pipelines | S30° 06' 02.09" | E30° 50' 48.73" |
| K | Pipelines | S30° 06' 08.65" | E30° 50' 59.66" |
| L | Pipelines | S30° 06' 12.48" | E30° 50' 57.69" |

| Point | Location | Latitude | Longitude |
|--|-----------|-----------------|-----------------|
| M | Pipelines | S30° 06' 16.96" | E30° 51' 08.07" |
| N | Pipelines | S30° 06' 19.29" | E30° 51' 11.89" |
| Alternative 2 Pipeline route | | | |
| 2A | Pipelines | S30° 06' 05.60" | E30° 49' 37.32" |
| 2B | Pipelines | S30° 06' 09.37" | E30° 49' 43.45" |
| 2C | Pipelines | S30° 06' 13.73" | E30° 49' 58.44" |
| 2D | Tunnels | S30° 06' 20.26" | E30° 50' 37.37" |
| Alternative 3 Pipeline route | | | |
| Same route as the Preferred route | | | |

Geographic Coordinate System: GCS_WGS_1984
Datum: D_WGS_1984
Prime Meridian: Greenwich
Angular Unit: Degree

Note that micro-siting based on detailed site studies and specific aspects such as geotechnical conditions and foundation designs may lead to minor adjustments in these coordinates of the project location.

The following amendments have been recommended as part of the EIA and will lead to minor adjustments of the coordinates:

- Re-routing of the Preferred pipeline route further south, to run along the existing disturbed areas of the cane field.
- For the Alternative 2 pipeline route, the reception pit for tunnelling on the south bank should be moved by at least 100-130m further west.
- For the Preferred site, the development should be moved back to create an ecological corridor of at least a 25 metre extension between the development and the channel.
- In the event of selecting the Alternative site, setback the site by at least 25m from the edge of watercourses 3 and 3A.
- Powerline to be turned towards the south just short of the riparian area, within the cane field zone.

APPENDIX 5
TITLE DEED(S) AND SG DIAGRAM(S)
(Overleaf)

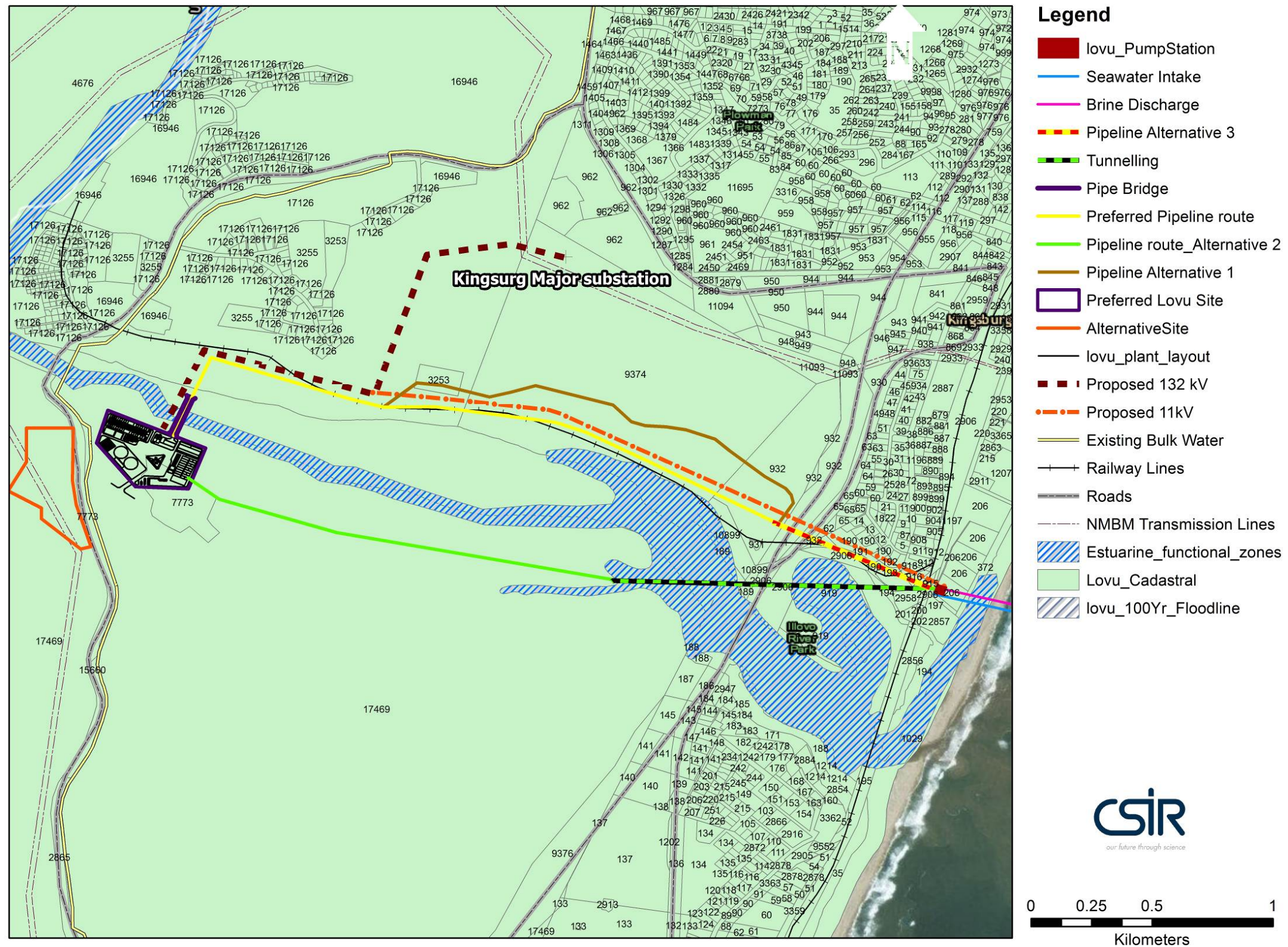
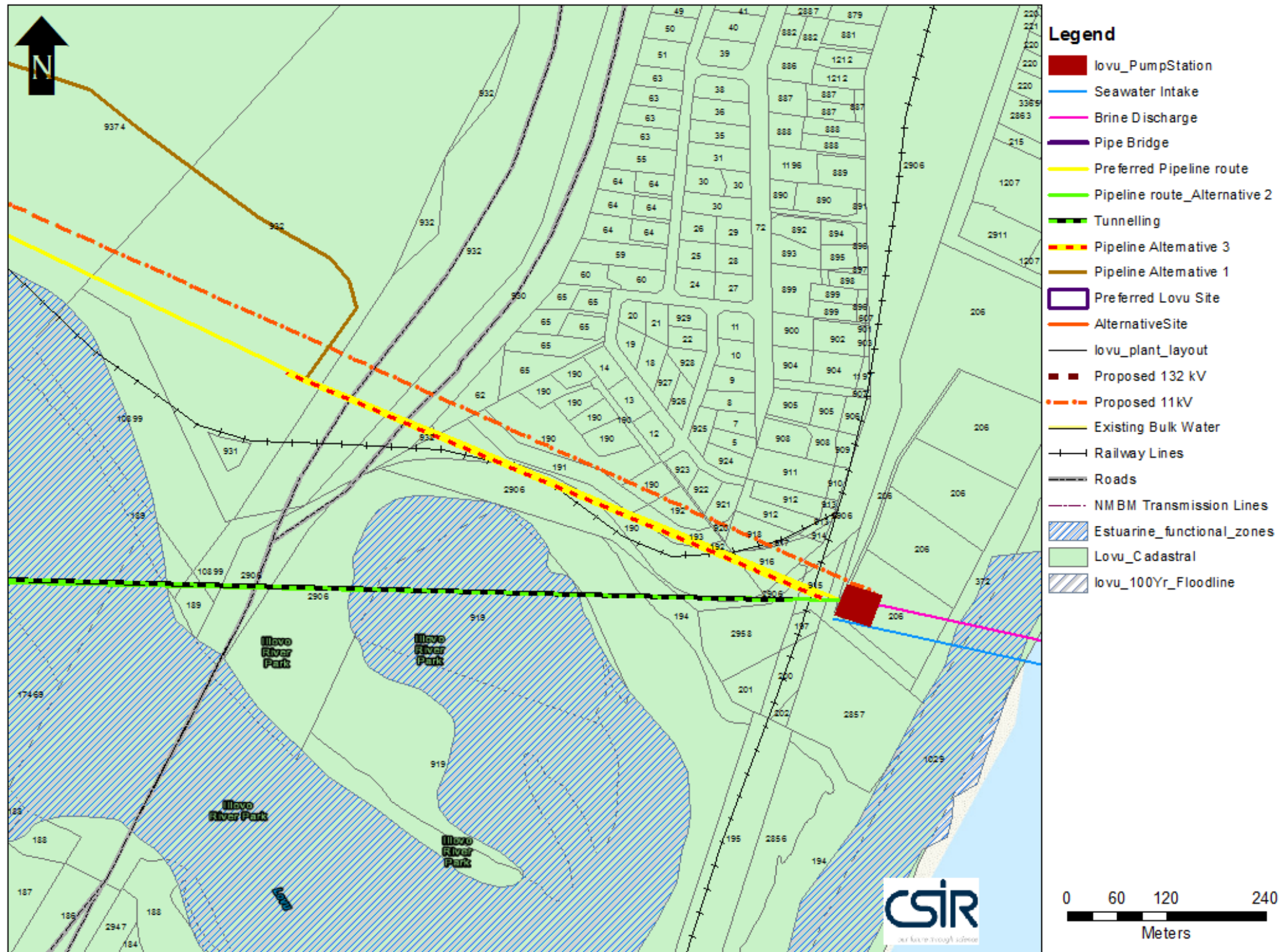


Figure 5.1: SG Diagram for the Proposed Lovu Desalination Plant and Associated Infrastructure.



**TITLE DEEDS FOR PROPERTIES DIRECTLY AFFECTED BY THE LOVU DESALINATION PLANT
AND ASSOCIATED INFRASTRUCTURE**

Printed: 2013/10/22 11:28

Deeds Office Property



LOT 30 A LITTLE AMANZIMTOTI, 10899, 0 (REMAINING EXTENT) (PIETERMARITZBURG)

GENERAL INFORMATION

| | |
|--------------------|----------------------------------|
| Deeds Office | PIETERMARITZBURG |
| Date Requested | 2013/10/22 11:28 |
| Information Source | DEEDS OFFICE |
| Reference | PHUMI NDLOVU - LOVU DESALINATION |

PROPERTY INFORMATION

| | |
|-----------------------|-----------------------------|
| Property Type | FARM |
| Farm Name | LOT 30 A LITTLE AMANZIMTOTI |
| Farm Number | 10899 |
| Portion Number | 0 (REMAINING EXTENT) |
| Local Authority | ETHEKWINI |
| Registration Division | ET |
| Province | KWAZULU NATAL |
| Diagram Deed | G10899/926 |
| Extent | 2.7263H |
| Previous Description | - |
| LPI Code | NOET00000001089900000 |

OWNER INFORMATION

Owner 1 of 1

| | |
|---------------------|-------------------------------------|
| Person Type | COMPANY |
| Name | ILLOVO SUGAR (SOUTH AFRICA) LIMITED |
| Registration Number | 191500087906 |
| Title Deed | T32855/2010 |
| Registration Date | 2010/10/14 |
| Purchase Price (R) | 297,886 * |
| Purchase Date | 2010/03/30 |
| Share | |
| Microfilm Reference | |
| Multiple Properties | YES |
| Multiple Owners | NO |

ENDORSEMENTS (2)

| # | Document | Institution | Amount (R) | Microfilm |
|---|----------------|----------------------|------------|----------------|
| 1 | RENUMBER FROM | NATAL RD , 10899 , 0 | UNKNOWN | - |
| 2 | NATAL RD,10899 | - | UNKNOWN | 1994 0067 1364 |

HISTORIC DOCUMENTS (2)

| # | Document | Owner | Amount (R) | Microfilm |
|---|-------------|------------------|------------|-----------|
| 1 | B13707/1964 | - | UNKNOWN | - |
| 2 | G10899/1926 | ILLOVO SUGAR LTD | UNKNOWN | - |

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Deeds Office Property

ILLOVO, 16946, 0 (REMAINING EXTENT) (PIETERMARITZBURG)

GENERAL INFORMATION

| | |
|--------------------|----------------------------------|
| Deeds Office | PIETERMARITZBURG |
| Date Requested | 2013/10/22 11:27 |
| Information Source | DEEDS OFFICE |
| Reference | PHUMI NDLOVU - LOVU DESALINATION |

PROPERTY INFORMATION

| | |
|-----------------------|-----------------------|
| Property Type | FARM |
| Farm Name | ILLOVO |
| Farm Number | 16946 |
| Portion Number | 0 (REMAINING EXTENT) |
| Local Authority | ETHEKWINI |
| Registration Division | ET |
| Province | KWAZULU NATAL |
| Diagram Deed | T17044/1998 |
| Extent | 185.3198H |
| Previous Description | - |
| LPI Code | NOET00000001694600000 |

OWNER INFORMATION

Owner 1 of 1

| | |
|---------------------|-------------------------------------|
| Person Type | COMPANY |
| Name | ILLOVO SUGAR (SOUTH AFRICA) LIMITED |
| Registration Number | 191500087906 |
| Title Deed | T32855/2010 |
| Registration Date | 2010/10/14 |
| Purchase Price (R) | 297,886 * |
| Purchase Date | 2010/03/30 |
| Share | |
| Microfilm Reference | |
| Multiple Properties | YES |
| Multiple Owners | NO |

ENDORSEMENTS (1)

| # | Document | Institution | Amount (R) | Microfilm |
|---|-------------|-------------|------------|-----------|
| 1 | K1465/2013S | - | UNKNOWN | - |

HISTORIC DOCUMENTS (2)

| # | Document | Owner | Amount (R) | Microfilm |
|---|-------------|------------------|------------|----------------|
| 1 | EX15/2009 | - | UNKNOWN | - |
| 2 | T17044/1998 | ILLOVO SUGAR LTD | CCT | 2006 0618 1578 |

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Deeds Office Property

LOT 15, 7773, 2 (PIETERMARITZBURG)

GENERAL INFORMATION

| | |
|--------------------|----------------------------------|
| Deeds Office | PIETERMARITZBURG |
| Date Requested | 2013/10/22 11:22 |
| Information Source | DEEDS OFFICE |
| Reference | PHUMI NDLOVU - LOVU DESALINATION |

PROPERTY INFORMATION

| | |
|-----------------------|-----------------------|
| Property Type | FARM |
| Farm Name | LOT 15 |
| Farm Number | 7773 |
| Portion Number | 2 |
| Local Authority | ETHEKWINI |
| Registration Division | ET |
| Province | KWAZULU NATAL |
| Diagram Deed | T70577/2002 |
| Extent | 5.2095H |
| Previous Description | - |
| LPI Code | NOET00000000777300002 |

OWNER INFORMATION

Owner 1 of 1

| | |
|---------------------|------------------------|
| Person Type | ASSOCIATION |
| Name | COMMUNITY CARE CENTRES |
| Registration Number | 006766NPO |
| Title Deed | T18914/2003 |
| Registration Date | 2003/04/11 |
| Purchase Price (R) | 600,000 |
| Purchase Date | 2002/11/29 |
| Share | |
| Microfilm Reference | 2005 1142 1756 |
| Multiple Properties | NO |
| Multiple Owners | NO |

ENDORSEMENTS (1)

| # | Document | Institution | Amount (R) | Microfilm |
|---|-------------|--|------------|----------------|
| 1 | K4164/2005S | MOTHER OF PEACE-ILLOVO-BUILDING FAMILIES BUILDING A NATION | UNKNOWN | 2005 1142 1723 |

HISTORIC DOCUMENTS (2)

| # | Document | Owner | Amount (R) | Microfilm |
|---|-------------|-----------------------|------------|----------------|
| 1 | T70577/2002 | ILLOVO SUGAR LTD | CRT | 2003 0342 0877 |
| 2 | T18913/2003 | REYNOLDS BROTHERS LTD | 520,000 | 2003 0342 0882 |

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Deeds Office Property

NOGI, 17469, 0 (REMAINING EXTENT) (PIETERMARITZBURG)

GENERAL INFORMATION

| | |
|--------------------|----------------------------------|
| Deeds Office | PIETERMARITZBURG |
| Date Requested | 2013/10/22 11:25 |
| Information Source | DEEDS OFFICE |
| Reference | PHUMI NDLOVU - LOVU DESALINATION |

PROPERTY INFORMATION

| | |
|-----------------------|-----------------------|
| Property Type | FARM |
| Farm Name | NOGI |
| Farm Number | 17469 |
| Portion Number | 0 (REMAINING EXTENT) |
| Local Authority | ETHEKWINI |
| Registration Division | ET |
| Province | KWAZULU NATAL |
| Diagram Deed | T70578/2002 |
| Extent | 778.1170H |
| Previous Description | - |
| LPI Code | NOET00000001746900000 |

OWNER INFORMATION

Owner 1 of 1

| | |
|---------------------|-------------------------------|
| Person Type | COMPANY |
| Name | ILLOVO SUGAR SOUTH AFRICA LTD |
| Registration Number | 191500087906 |
| Title Deed | T19963/2010 |
| Registration Date | 2010/06/29 |
| Purchase Price (R) | 359,306 |
| Purchase Date | 2010/03/30 |
| Share | |
| Microfilm Reference | |
| Multiple Properties | NO |
| Multiple Owners | NO |

ENDORSEMENTS (6)

| # | Document | Institution | Amount (R) | Microfilm |
|---|------------------|------------------|------------|-----------|
| 1 | EX33/2010 | ILLOVO SUGAR LTD | UNKNOWN | - |
| 2 | CONSOLIDATE FROM | ET , 7773 , 0 | UNKNOWN | - |
| 3 | CONSOLIDATE FROM | ET , 2865 , 2 | UNKNOWN | - |
| 4 | CONSOLIDATE FROM | ET , 15660 , 0 | UNKNOWN | - |
| 5 | CONSOLIDATE FROM | ET , 2865 , 0 | UNKNOWN | - |
| 6 | CONSOLIDATE FROM | ET , 9376 , 0 | UNKNOWN | - |

HISTORIC DOCUMENTS (1)

| # | Document | Owner | Amount (R) | Microfilm |
|---|-------------|------------------|------------|----------------|
| 1 | T70578/2002 | ILLOVO SUGAR LTD | CCT | 2004 0587 0611 |

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APPENDIX 6 (IF APPLICABLE)
COPIES OF ENVIRONMENTAL AUTHORISATIONS OBTAINED ON THE SAME PROPERTY

Note from CSIR: This section is currently not applicable to the proposed project.

APPENDIX 7 (IF APPLICABLE)
MAP INDICATING TRIGGERING AREAS FOR GN R.546

(Overleaf)

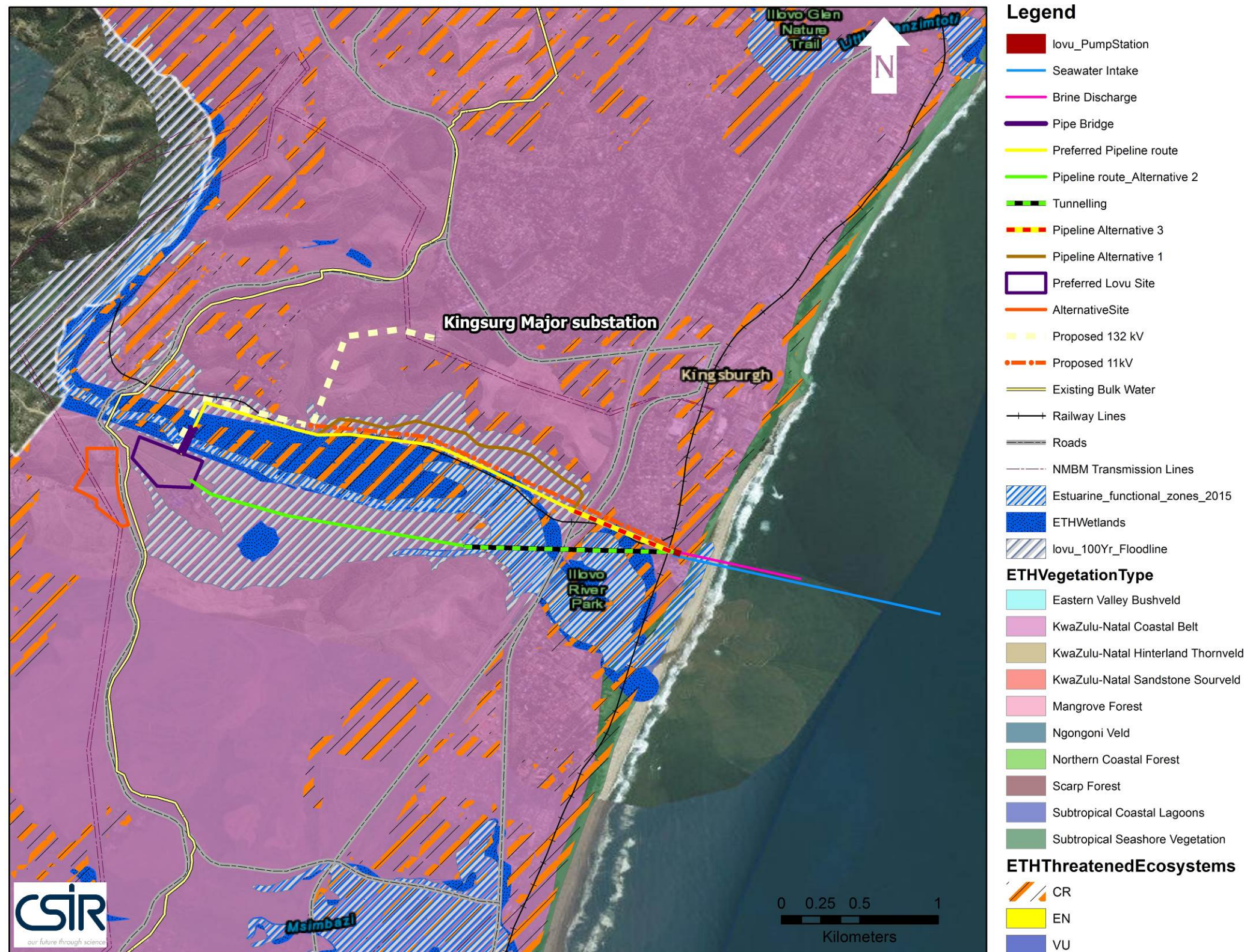


Figure 7.1a: Locality Map for the Proposed Lovu Desalination Plant and Associated Infrastructure in relation to NEMBA Threatened Ecosystems (remaining extent).

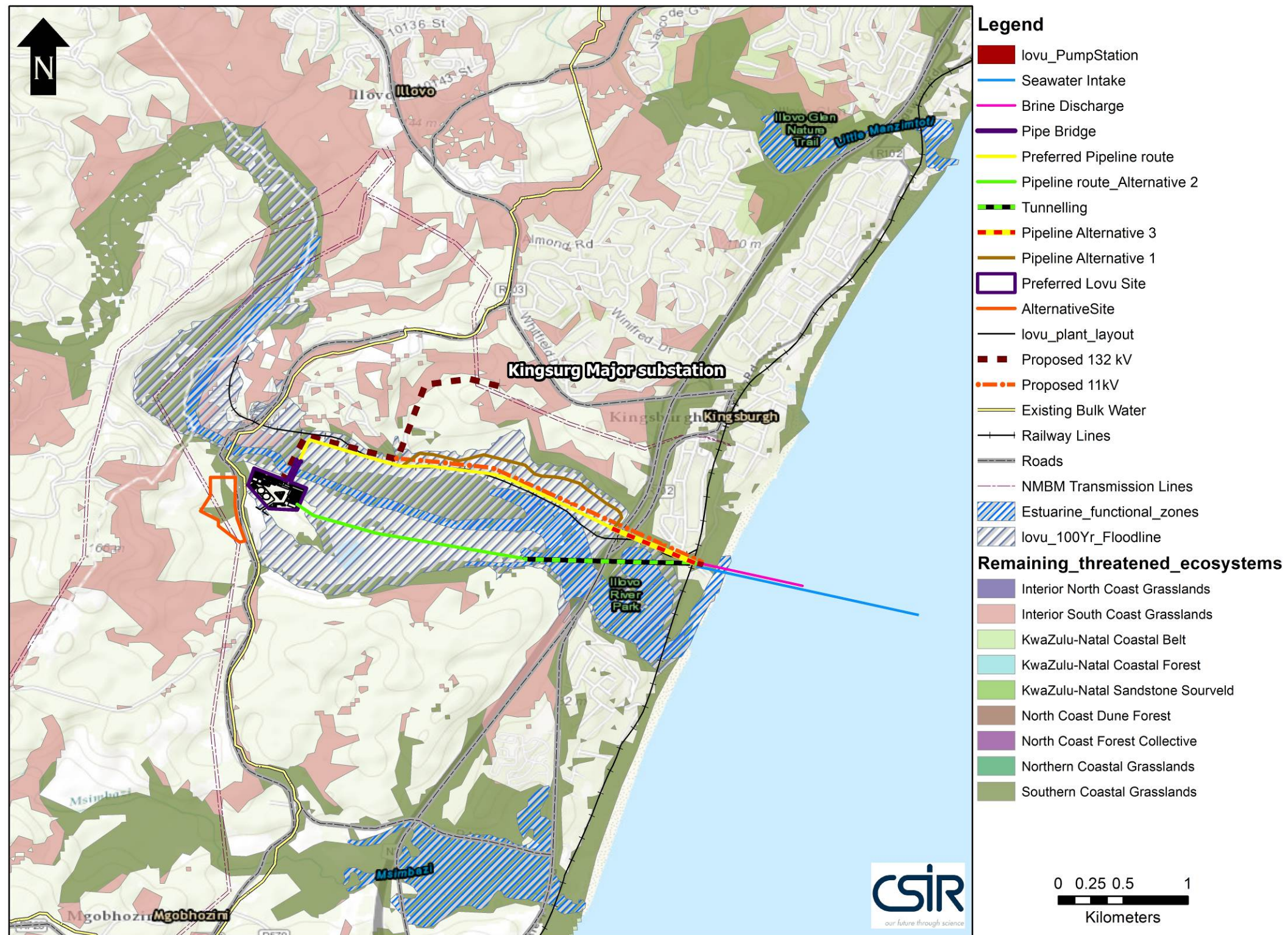


Figure 7.1b: Locality Map for the Proposed Lovu Desalination Plant and Associated Infrastructure in relation to NEMBA Threatened Ecosystems (remaining extent).

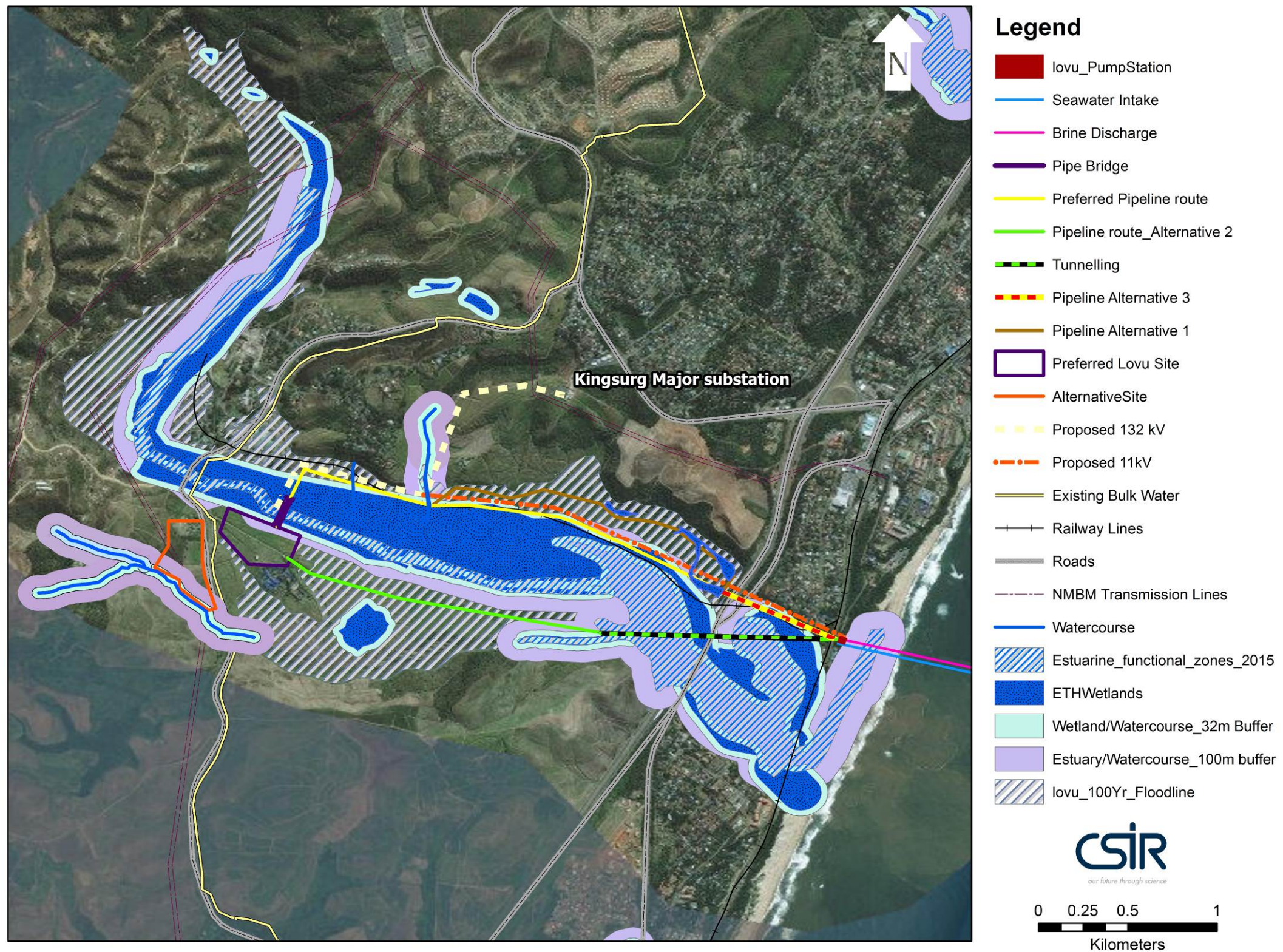


Figure 7.2: Locality Map for the Proposed Lovu Desalination Plant and Associated Infrastructure in relation to Watercourses.

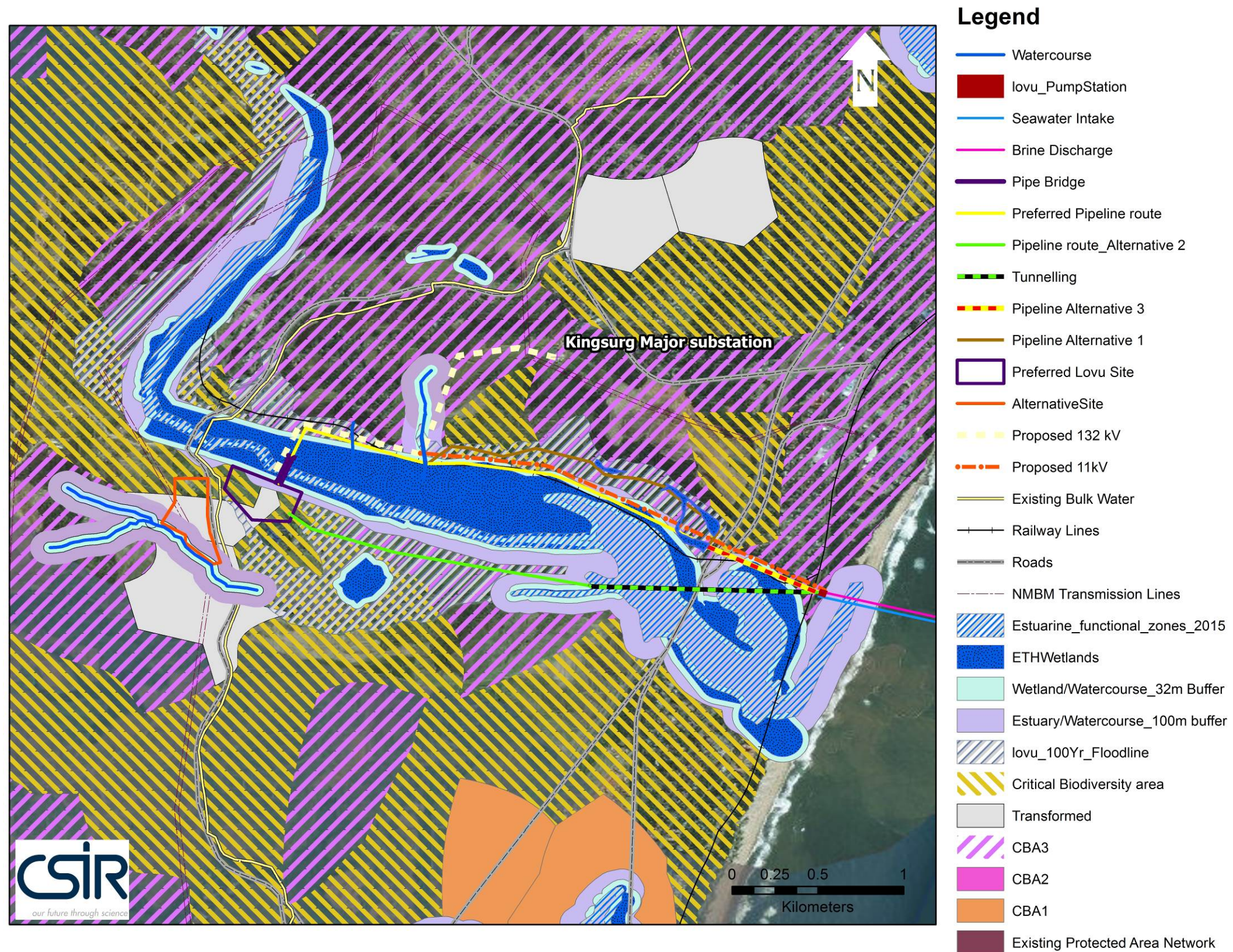


Figure 7.3: Locality Map for the Proposed Lovu Desalination Plant and Associated Infrastructure in relation to critical biodiversity areas as identified by the EKZNW Terrestrial Systematic Conservation Plan.

**APPENDIX 8
PROJECT SCHEDULE**

(Overleaf)

| Tasks | EIA SCHEDULE (MONTHS) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------------|-------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|---|---|
| | 2013 Dec | 2014 Mar | 2014 April | 2014 May | 2014 Jun | 2014 Jul | 2014 Aug | 2014 Sep | 2014 Oct | 2014 Nov | 2014 Dec | 2015 Jan | 2015 Feb | 2015 Mar | 2015 Apr | 2015 May | 2015 Jun | 2015 Jul | 2015 Aug | 2015 Sep | 2015 Oct | 2015 Nov | 2015 Dec | 2016 Jan | 2016 Feb | 2016 Mar | 2016 Apr | 2016 May | 2016 June | 2016 July | | |
| 1. Notify authorities and submit EIA Application | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Establish I&AP database, prepare BID and announce EIA | █ | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. I&AP registration and meetings with key stakeholders to source issues | | █ | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. Prepare Draft Scoping Report (DSR) and Plan of Study for EIA (PSEIA) | | | | █ | █ | █ | █ | █ | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. Public comments period (40 days) on DSR and stakeholder meetings | | | | | | | | █ | █ | | | | | | | | | | | | | | | | | | | | | | | |
| 6. Submit Final Scoping Report (FSR) and PSEIA to authorities for decision (30 days) and I&AP comment period (21 days) | | | | | | | | | | | | | █ | █ | █ | | | | | | | | | | | | | | | | | |
| 7. Specialist studies (including fieldwork) | | | | | | | | | | | | | █ | █ | █ | █ | █ | █ | █ | █ | | | | | | | | | | | | |
| 8. Prepare Draft EIA Report and EMP | | | | | | | | | | | | | | | | | | | █ | █ | | | | | | | | | | | | |
| 9. Public review of Draft EIA Report and EMP (40 days) | | | | | | | | | | | | | | | | | | | | | | █ | █ | █ | | | | | | | | |
| 10. Submit Final EIA Report and Draft EMP to authorities | | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | |
| 11. Decision by authorities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | █ | █ | █ | |
| 12. Appeal process | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | → |

Figure 8.1: Project Schedule for the Proposed Lovu Desalination Plant EIA.

**APPENDIX 9 (IF APPLICABLE)
DETAILS OF EXEMPTION APPLICATION**

Note from CSIR: This section is currently not applicable to the proposed project.

**APPENDIX 10 (IF APPLICABLE)
SUPPORTING DOCUMENTATION FOR EXEMPTION APPLICATION
PROOF OF NOTIFICATION OF I&APS OF EXEMPTION APPLICATION**

Note from CSIR: This section is currently not applicable to the proposed project.

**APPENDIX 11 (IF APPLICABLE)
DETAILS OF REQUEST FOR DEVIATION**

Note from CSIR: This section is currently not applicable to the proposed project.

APPENDIX 12 (IF APPLICABLE)
PROOF OF SUBMISSION OF ASSOCIATED APPLICATIONS

Note from CSIR: Such documents are currently not available for the proposed project. Proof of submission of all associated applications will be provided to the Department during the course of the EIA.

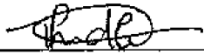
APPENDIX 13 DECLARATION OF THE APPLICANT

I, PHUMI NDLOVU, declare that I -

- am, or represent², the applicant in this application;
- have appointed / will appoint (delete that which is not applicable) an environmental assessment practitioner to act as the independent environmental assessment practitioner for this application / will obtain exemption from the requirement to obtain an environmental assessment practitioner³;
- will provide the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application;
- will be responsible for the costs incurred in complying with the Regulations, including but not limited to –
 - costs incurred in connection with the appointment of the environmental assessment practitioner or any person contracted by the environmental assessment practitioner;
 - costs incurred in respect of the undertaking of any process required in terms of the Regulations;
 - costs in respect of any fee prescribed by the Minister or MEC in respect of the Regulations;
 - costs in respect of specialist reviews, if the competent authority decides to recover costs; and
 - the provision of security to ensure compliance with conditions attached to an environmental authorisation, should it be required by the competent authority;
- will ensure that the environmental assessment practitioner is competent to comply with the requirements of the Regulations and will take reasonable steps to verify that the EAP
 - know the Act and the regulations, and how they apply to the proposed development
 - know any applicable guidelines
 - perform the work objectively, even if the findings do not favour the applicant
 - disclose all information which is important to the application and the proposed development
 - have expertise in conducting environmental impact assessments
 - complies with the Regulations
- will inform all registered interested and affected parties of any suspension of the application as well as of any decisions taken by the competent authority in this regard;
- am responsible for complying with the conditions of any environmental authorisation issued by the competent authority;
- hereby indemnify the Government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action which the applicant or environmental assessment practitioner is responsible for in terms of these Regulations;
- will not hold the competent authority responsible for any costs that may be incurred by the applicant in proceeding with an activity prior to obtaining an environmental authorisation or prior to an appeal being decided in terms of these Regulations;
- will perform all other obligations as expected from an applicant in terms of the Regulations;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

² If this is signed on behalf of the applicant, proof of such authority from the applicant must be attached.

³ If exemption is obtained from appointing an EAP, the responsibilities of an EAP will automatically apply to the person conducting the environmental impact assessment in terms of the Regulations.



Signature⁴ of the applicant⁵/ Signature on behalf of the applicant:

Umgweni WATER

Name of company (if applicable):

18/03/2016

Date:

⁴ Only original signatures will be accepted. No scanned, copied or faxed signatures will be accepted.

⁵ If the applicant is a juristic person, a signature on behalf of the applicant is required as well as proof of such authority. An EAP may not sign on behalf of an applicant.

APPENDIX 14

DECLARATION OF THE EAP

I, Paul Lochner , declare that –

General declaration:

- I act as the independent environmental practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the Regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010;
- ~~I have a vested interest in the proposed activity proceeding, such vested interest being:~~



Signature of the environmental assessment practitioner:

CSIR

Name of company:

24 November 2014

Date:

EAP – PAUL LOCHNER

CSIR
Jan Cilliers Street
PO Box 320
Stellenbosch 7600
South Africa

Phone: +27 21 888 2400
Fax: +27 21 888 2693
Email: plochner@csir.co.za



Curriculum Vitae

Paul Lochner

| | |
|-------------------------|---|
| Name of firm | CSIR |
| Name of staff | Paul Andrew Lochner |
| Profession | Environmental Assessment and Management |
| Position in firm | Project Leader in Environmental Assessment & Management |
| Date of birth | 13 June 1969 |
| Years with firm | 21 years |
| Nationality | South African |

Biographical sketch Paul Lochner commenced work at CSIR in 1992, after completing a degree in Civil Engineering and a Masters in Environmental Science, both at the University of Cape Town. His initial work at CSIR focused on sediment dynamics and soft engineering applications in the coastal zone, in particular, beach and dune management. He conducted several shoreline erosion analyses and prepared coastal zone management plans for beaches. He also prepared wetland management plans.

As the market for environmental assessment work grew, he led Environmental Impact Assessments (EIAs), in particular for coastal resort developments and large-scale industrial developments located on the coast; and Environmental Management Plans (EMPs), in particular for wetlands, estuaries and coastal developments. He has also been involved in researching and applying higher-level approaches to environmental assessment and management, such as Strategic Environmental Assessment (SEA). In 1998 and 1999, he coordinated the SEA research programme within the CSIR, and was a lead author of the Guideline Document

for SEA in South Africa, published jointly by CSIR and the national Department of Environmental Affairs and Tourism in February 2000.

In 1999 and 2000, he was the project manager for the legal, institutional, policy, financial and socio-economic component of the Cape Action Plan for the Environment (“CAPE”), a large-scale multi-disciplinary study to ensure the sustainable conservation of the Cape Floral Kingdom. This was funded by the Global Environmental Fund (GEF) and prepared for WWF-South Africa. The study required extensive stakeholder interaction, in particular with government institutions, leading to the development of a Strategy and Action Plan for regional conservation.

In July 2003, he was certified as an Environmental Assessment Practitioner by the Interim Certification Board for Environmental Assessment Practitioners of South Africa. In 2004 he was lead author of the *Overview of IEM* document in the updated Integrated Environmental Management (IEM) Information Series published by national Department of Environmental Affairs and Tourism (DEAT). In 2004-2005 he was project manager for an Environmental and Social Impact Assessment (ESIA) conducted for a bauxite mine and alumina refinery in the Komi Republic (Russia), prepared in accordance with World Bank and EU policies, guidelines and standards.

In 2004-2005, he was part of the CSIR team that coordinated the preparation of the series of *Guidelines for involving specialists in EIA processes* prepared for the Western Cape Department of Environmental Affairs and Development Planning (DEADP); and authored the *Guideline for Environmental Management Plans* published by the Western Cape government in 2005.

In 2009, he led the EIA for a desalination plant in Namibia, as well as several EIAs for wind energy facilities in South Africa.

Over the past 14 years has been closely involved with several environmental studies for industrial and port-related projects in Coega Industrial Development Zone (IDZ), near Port Elizabeth. This included the SEA for the establishment of the Coega IDZ in 1996/7, an EIA and EMP for a proposed aluminium smelter in 2002/3, and assistance with environmental permit applications for air, water and waste. At the Coega IDZ and port, he has also conducted environmental assessments for port development, LNG storage and a combined cycle gas turbine power plant, manganese export, rail development, and wind energy projects.

| | | | |
|------------------|------|---|----------------------------|
| Education | 1990 | B.Sc. Civil Engineering (awarded with Honours) | University of Cape Town |
| | 1992 | M. Phil. Environmental Science | University of Cape Town |

Employment record

January 1992 to June 1992: Completed Masters thesis, working in conjunction with the Environmental Evaluation Unit at the University of Cape Town. The thesis investigated the potential future ecological and socio-economic impacts resulting from the closure of a large diamond mining operation, and developed actions to mitigate these impacts.

October 1992 to present: Employed by the CSIR in Stellenbosch. Involved in coastal engineering studies; and various forms of environmental assessment and management studies. (A track record of experience is listed below).

PROFESSIONAL INVOLVEMENT IN COMMITTEES:

| | |
|-------------------------|---|
| <i>1996/97:</i> | Committee Member of the Western Cape Branch of the International Association for Impact Assessment (IAIA) |
| <i>1997/98:</i> | Chairperson of the Western Cape Branch of IAIA and member of the national IAIA committee |
| <i>1998/99:</i> | Committee Member of the Western Cape Branch of IAIA |
| <i>1996 to present:</i> | Chairperson of the Blouvillei Environmental Committee at Century City, Cape Town (This committee is tasked with overseeing the restoration and management of a wetland in the midst of a new mixed-use urban development) |

Experience record

The following table presents an abridged list of projects that Paul Lochner has been involved in, indicating his role in each project:

| Completion Date | Project description | Role | Client |
|------------------|---|----------------|--|
| 2012-in progress | SEA for the placement of wind energy projects in SA | Project Leader | National Department of Environmental Affairs |
| 2012-in progress | SEA for the placement of solar energy projects in SA | Project Leader | National Department of Environmental Affairs |
| 2011 - 2012 | EIA for the 100 MW solar photovoltaic project proposed by Mainstream Renewable Power at Blocuso, near Keimoes in the Northern Cape | Project Leader | Mainstream Renewable Power |

| Completion Date | Project description | Role | Client |
|---|--|------------------------------|---|
| 2011 – 2012 | EIA for the 100 MW solar photovoltaic project proposed by Mainstream Renewable Power at Roode Kop Farm, near Douglas, in the Northern Cape | Project Leader | Mainstream Renewable Power |
| 2011 – 2012 | EIA for the 75 MW solar photovoltaic project proposed by Solaire Direct at GlenThorne , near Bloemfontein in the Free State | Project Leader | Solaire Direct |
| 2011 – 2012 | EIA for the 75 MW solar photovoltaic project proposed by SolaireDirect at Valleydora , near Springfontein in the Free State | Project Leader | Solaire Direct |
| 2012 (in progress) | EIA for the 80 MW solar photovoltaic project by CAMAC on Farm O'Poort near postmasburg. | Project Leader | CAMAC International |
| 2010-2011 | More than 10 Basic Assessments (BAs) for solar photovoltaic projects in the western cape, Northern Cape, Eastern Cape and Free State | Project Leader | Various clients including Dutch, German, French and South African companies |
| 2010/2011 (in progress) | EIA for the Langerfontein wind project near Darling, Western Cape. | Project Leader | Mr Herman Oelsner, Khwe Khoa |
| 2012-2013 | EIA for a 100 MW wind project at Zuurbron and a 50 MW wind project Broadlands in the Eastern Cape | Project Leader | WindCurrent SA (German-based company) |
| 2011 | EIA for the proposed 143 MW Biotherm wind energy project near Swellendam , Western Cape, South Africa | Project Leader | Biotherm South Africa (Pty) Ltd |
| 2010-2013 (final report completed) | EIA for the proposed InnoWind wind energy projects near Swellendam, Heidelberg, Albertinia and Mossel Bay (totalling approx 210 MW), Western Cape, South Africa | Project Leader | InnoWind South Africa (Pty) Ltd |
| 2009/2010 (authorisation granted by DEA in Aug 2011) | EIA for the proposed Electrawinds wind energy facility of 45-75 MW capacity in the Coega IDZ, Eastern Cape | Project Leader | Electrawinds N.V. (Belgium) |
| 2009/2010 (authorisation granted by DEA in April 2011) | EIA for proposed 180 MW Jeffreys Bay wind energy project , Eastern Cape | Project Leader and co-author | Mainstream Renewable Power South Africa |
| 2009/2010 (authorisation granted by DEA) | Basic Assessment for the national wind Atlas for South Africa | Project Leader | SANERI and SA Wind Energy Programme, Dept of Energy |
| 2009/2010 (on hold) | EIA for the proposed Gecko soda plant , Otjivalunda and Arandis, Namibia | Project Leader | Gecko, Namibia |
| 2009 | EIA for the proposed desalination plant at Swakopmund, Namibia | Project Leader | NamWater, Namibia |

| Completion Date | Project description | Role | Client |
|-----------------------------------|--|---|--|
| 2009 | EMP for the Operational Phase of the Berg River Dam , Franschoek, South Africa | Project Leader and report co-author | TCTA, South Africa |
| 2009/2010 <i>(in progress)</i> | EIA for the proposed crude oil refinery at Coega, South Africa | Project Leader and lead author | PetroSA, South Africa |
| 2008 | Environmental Risk Review for proposed LNG/CNG import to Mossel Bay, South Africa | Project Leader and lead author | PetroSA, South Africa |
| 2008 | Review of the Business Plan for catchment management for the Berg Water Dam Project, Franschoek, South Africa | Project reviewer and co-author | TCTA, South Africa |
| 2007 – 2010 | EIA for proposed Jacobsbaai Tortoise Reserve eco-development , Saldanha, Western Cape | Project Leader and co-author | Jacobsbaai Tortoise Reserve (Pty) Ltd |
| 2007 – 2010 | Independent reviewer for the EIA proposed Amanzi lifestyle development, Port Elizabeth | Independent reviewer appointed to advise EAP | Public Process Consultants and Pam Golding |
| 2007 – 2008 | EIA for proposed 18 MW Kouga wind energy project , Eastern Cape | Project Leader and co-author | Mulilo Eco-Energy (Approved by DEDEA in March 2009) |
| 2007 | Review of EIA for the proposed Hanglip Eco-Development , Plettenberg Bay, Western Cape | Co-author of review of EIA, undertaken on behalf of DEADP | Dept of Environmental Affairs & Development Planning, Western Cape |
| 2006-2007 | Scoping phase for the EIA for the proposed Coega LNG-to-Power Project at the Port of Ngqura, Coega IDZ | Project Leader and co-author | Eskom and iGas |
| 2006-2007 | Guideline for Scoping, Environmental Impact Assessment and Environmental Management Plans for mining in South Africa | Project Leader and co-author | Dept of Minerals and Energy (DME), South Africa |
| 2006 | Environmental Impact Assessment (EIA) for the extension of the Port of Ngqura, Eastern Cape | Project Leader and co-author | Transnet |
| 2006 | Integrating Sustainability Into Strategy: Handbook (Version 1) | Project Leader and co-author | CSIR (STEP research report) |
| 2005 | Technology Review for the proposed aluminium smelter at Coega, South Africa | Project Leader and lead author | Alcan, Canada |
| 2005 | Environmental and Social Impact Assessment (ESIA) report for the proposed alumina refinery near Sosnogorsk, Komi Republic, Russia | Project manager and co-author | Komi Aluminium, Russia, IFC, EBRD |
| 2005 | Guideline for Environmental Management Plans (EMPs) for the Western Cape province, including conducting a training course for provincial government | Author | Dept of Environmental Affairs & Development Planning, Western Cape |

| Completion Date | Project description | Role | Client |
|-----------------|---|--|--|
| 2005 | Guideline for the review of specialist studies undertaken as part of environmental assessments | Member of Steering Committee and project facilitator | Dept of Environmental Affairs & Development Planning, Western Cape |
| 2004 | Review of Strategic Management Plan for Table Mountain National Park (2001-2004) | Reviewer and co-author | South African National Parks |
| 2004 | Strategic Needs Assessment Process for Muliloing sustainable development into business operations | Researcher and co-author | CSIR (internal research) |
| 2004 | Environmental Monitoring Committees booklet in the IEM Information Series for DEAT | Contributing author | Department of Environmental Affairs and Tourism (DEAT) |
| 2004 | Overview of Integrated Environmental Management (IEM) booklet in the IEM Information Series | Lead author and researcher | DEAT |
| 2003 | Environmental Screening Study for gas power station, South Africa | Project Manager and lead author | Eskom, iGas and Shell |
| 2003 | Environmental Management Programme (EMP) Framework for the proposed Coega Aluminium Smelter; and assistance with preparing permit and licence applications | Project Manager and lead author | Pechiney, France |
| 2003 | Environmental Management Plan for the Operational Phase of the wetlands and canals at Century City, Cape Town | Project Leader and lead author | Century City Property Owners' Association |
| 2002 | Environmental Impact Assessment for the proposed Pechiney aluminium smelter at Coega, South Africa | Project Manager and lead author | Pechiney, France |
| 2002 | Environmental Management Plan for the Eskom Wind Energy Demonstration Facility in the Western Cape | Co-author | Eskom |
| 2001-2002 | Environmental Impact Assessment for the Eskom Wind Energy Demonstration Facility in the Western Cape | Quality control & co-author | Eskom |
| 2001 | Environmental Due Diligence study of four strategic oil storage facilities in South Africa | Project manager and co-author | SFF Association |
| 2000 | Cape Action Plan for the Environment: a biodiversity Strategy and Action Plan for the Cape Floral Kingdom - legal, institutional, policy, financial and socio-economic component | Project manager and contributing writer | World Wide Fund for Nature (WWF): South Africa |
| 1999 | Environmental Management Plan for the establishment phase of the wetlands and canals at Century City, Cape Town | Project manager and lead author | Monex Development Company |
| 1999 | Environmental Management Programme for the Thesen Islands | Process design and Co- | Chris Mulder Associates |

| Completion Date | Project description | Role | Client |
|-----------------|---|---|--|
| | development, Knysna | author | Inc; Thesen and Co. |
| 1999 | Management Plan for the coastal zone between the Eerste and Lourens River, False Bay, South Africa | Project manager and lead author | Heartland Properties and Somchem (a Division of Denel) |
| 1998 | Environmental Assessment of the Mozal Matola Terminal Development proposed for the Port of Matola, Maputo, Mozambique | Project manager and author. | <i>SNC-Lavalin-EMS</i> |
| 1998 | Strategic Environmental Assessment (SEA) for the Somchem industrial complex at Krantzkop, South Africa | Project manager and co-author | Somchem, a Division of Denel |
| 1997 | Strategic Environmental Assessment (SEA) for the proposed Industrial Development Zone and Harbour at Coega, Port Elizabeth, South Africa | SEA project manager and report writer | Coega IDZ Initiative Section 21 Company |
| 1996 | Environmental Impact Assessment of Development Scenarios for Thesen Island, Knysna, South Africa | Project manager and report writer | Thesen and Co. |
| 1996 | Environmental Impact Assessment of the Management Options for the Blouvllei wetlands, Cape Town | Project manager and report writer | Ilco Homes Ltd (now Monex Ltd) |
| 1995 | Environmental Impact Assessment for the Saldanha Steel Project, South Africa | Report writing and management of specialist studies | Saldanha Steel Project |
| 1994 | Environmental Impact Assessment for the upgrading of resort facilities on Frégate Island, Seychelles | Member of the project management team, co-author, process facilitator | Schneid Israelite and Partners |
| 1994 | Environmental Impact Assessment for exploration drilling in offshore Area 2815, Namibia | Project manager and co-author | Chevron Overseas (Namibia) Limited |
| 1994 | Management Plan for the Rietvlei Wetland Reserve, Cape Town | Project manager and lead author | Southern African Nature Foundation (now WWF-SA) |

Language capability

| | <i>Speaking</i> | <i>Reading</i> | <i>Writing</i> |
|----------|-----------------|----------------|----------------|
| English | Excellent | Excellent | Excellent |
| IsiXhosa | Average | Average | Average |