ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED SOLIDS REMOVAL AND TREATMENT FACILITIES UPGRADE AT THE SOUTHERN WASTE WATER TREATMENT WORKS, MEREWENT, IN THE ETHEKWINI METROPOLITAN MUNICIPALITY

BACKGROUND INFORMATION DOCUMENT

(APRIL 2015)

edtea REF NO: DM/0032/2014 / WASTE MANAGEMENT REFERENCE NO: DM/WML/0050/2014 / WUL REFERENCE NO: 11/U60G/H/1623 / CWDP REFERENCE NO: To be confirmed / DWA EXEMPTION NO: 1747B / Classified as an MHI

What does this document tell YOU?

This document aims to provide you, as an **Interested and Affected Party** (I&AP), with background information regarding the proposed **Southern Waste Water Treatment Works** (SWWTW) **Solids Removal and Treatment Facilities Upgrade** being undertaken by **eThekwini Municipality**.

The document also provides information regarding the **Environmental Impact Assessment** (EIA) being undertaken. The document also advises you how you can become involved in the project – by reviewing information, and making inputs thereon, including raising any possible issues. This sharing of information forms the basis of the **public participation process** and offers you the opportunity to become actively involved in the project from the outset. Public participation allows for local knowledge to be integrated into the EIA as generated.

What does the project entail?

The project can be summarised as follows:

Project name	Southern Waste Water Treatment Works (SWWTW) Solids Removal and Treatment Facilities Upgrade Environmental Impact Assessment
Local authority	eThekwini Metropolitan Municipality – KwaZulu-Natal
Landowner(s)	eThekwini Metropolitan Municipality
Location	SWWTW is located at 2 Byfield Road, Merewent, on the north-eastern bank of the Umlaas Canal. Forms part of a mixed development node of both residential and industrial developments.

Site locality of SWWTW

Current Treatment Process

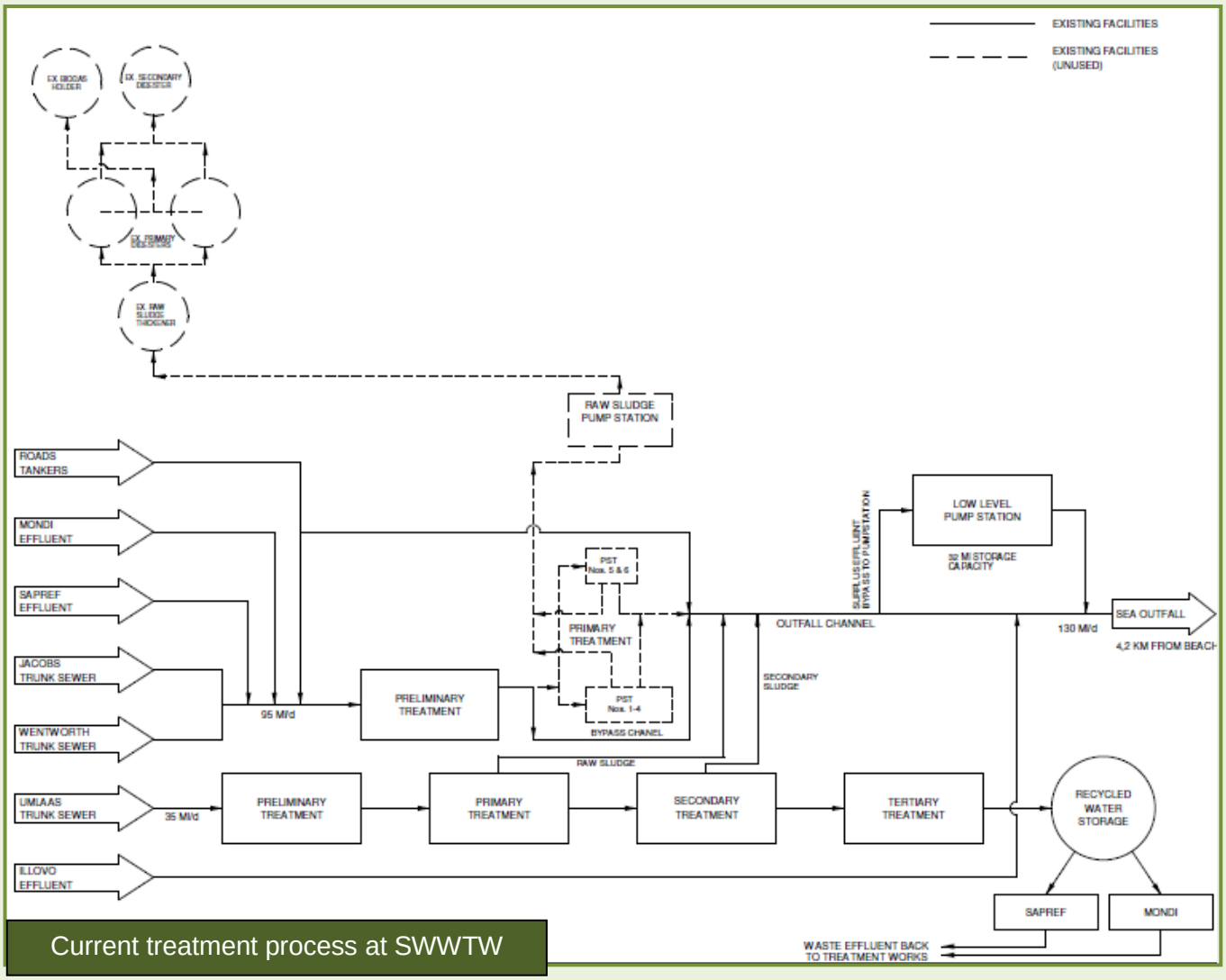
The SWWTW receives the majority of its raw sewage effluent through three large (1,500 mm diameter) trunk sewers, i.e. Main Southern ("Jacobs"), Wentworth Valley, and, Umlaas Trunk Sewers. Other smaller diameter pipelines coming to the Works includes those from Mondi, SAPREF and Illovo.

The total average daily flow to this works is ±130 Mℓ/day. All treated flows leaving the site are currently discharged directly to sea through a 4.2 km long 1,500 mm diameter sea outfall.

The Umlaas trunk sewer, serving Chatsworth and Umlazi, is predominantly domestic in origin. The discharged flow from this source (currently ±35 Mℓ/day) is immediately directed to a separate treatment facility where it undergoes preliminary, primary, secondary, and, tertiary treatment. The secondary and tertiary treatment processes are managed by Veolia Water (a private entity). The tertiary treated (or reclaimed) effluent is stored and sold to industry. The remaining waste is in the form of sludge – all of this is currently discharged to sea.

The Jacobs trunk sewer, serving (a) the residential areas of Yellow Wood Park and Woodlands, and (b) the industrial areas of Jacobs and Mobeni, is thus a combination of domestic and industrial effluent. The Wentworth Valley trunk sewer, serving the Bluff, Wentworth, Clairwood, Bayhead, and Island View, is also composed of both domestic and industrial effluent. The flows conveyed by these two trunk sewers (currently ±95 Mℓ/day) currently combine at the main inlet works and undergo preliminary treatment only (i.e. removal of screenings and grit) before being discharged to sea.

In addition to the pipeline discharge of sewage effluent to this works, smaller volumes of effluent are also brought to the SWWTW by road tankers. The effluent from these road tankers undergoes preliminary treatment only, again before being discharged to sea.



Current treatment process at SWWTW

Scope of Work Proposed for the Upgrade of the SWWTW

The aim of the proposed SWWTW upgrades is to reduce the quantity of suspended solids being disposed of to sea by affording primary treatment to the combined effluent discharges from the Jacobs and Wentworth Valley Trunk Sewers. This physical treatment process (through primary settling) will result in the organic load to sea being drastically reduced.

The settled solids (referred to as primary [or raw] sludge) will then be removed and stabilised through a process of anaerobic digestion, before being dewatered.

The options proposed for the disposal of the dewatered sludge are as follows:

- Removal off site to agriculture and/or landfill;
- Thermal drying using sludge gas and then removal off-site to agriculture;
- If not thermal drying, sludge gas will be used for the generation of electricity in the region of 1 MW, to be used internally on the plant (partial provision of the site's needs); and
- Manufacture of fertilizer through a separate sludge pelletizing process using sludge gas to be established on site by a private entity (unconfirmed at this stage) and then removal off-site. *This option may be investigated under a separate study to be undertaken by others and does not form part of this study nor the scope of work described hereunder.*

The work will be undertaken in two phases:

- **Phase 1: immediate required upgrades**, and,
- **Phase 2: future required upgrades**.

Phase 1 will result in the primary treatment of ±60 Mℓ/day (63.5%) of the present combined flow (±95 Mℓ/day) from the Jacobs and Wentworth Valley trunk sewers.

The solids ("sludge") removed will be combined with that currently generated from the Umlaas trunk sewer, with the combined result being pumped to the anaerobic digesters.

Biogas (±60% methane / 40% carbon dioxide) from the anaerobic digestion process will be stored in gas holders. The biogas may be used as follows:

- Consumption of at least $^{1}/_{3}$ of the stored volume for heating of the sludge as part of the digestion process, the balance flared (burnt).
- Using most of the stored gas to dry the sludge through a mechanical thermal drying process.
- Using the waste heat from the drying process to pre-heat the sludge before drying.

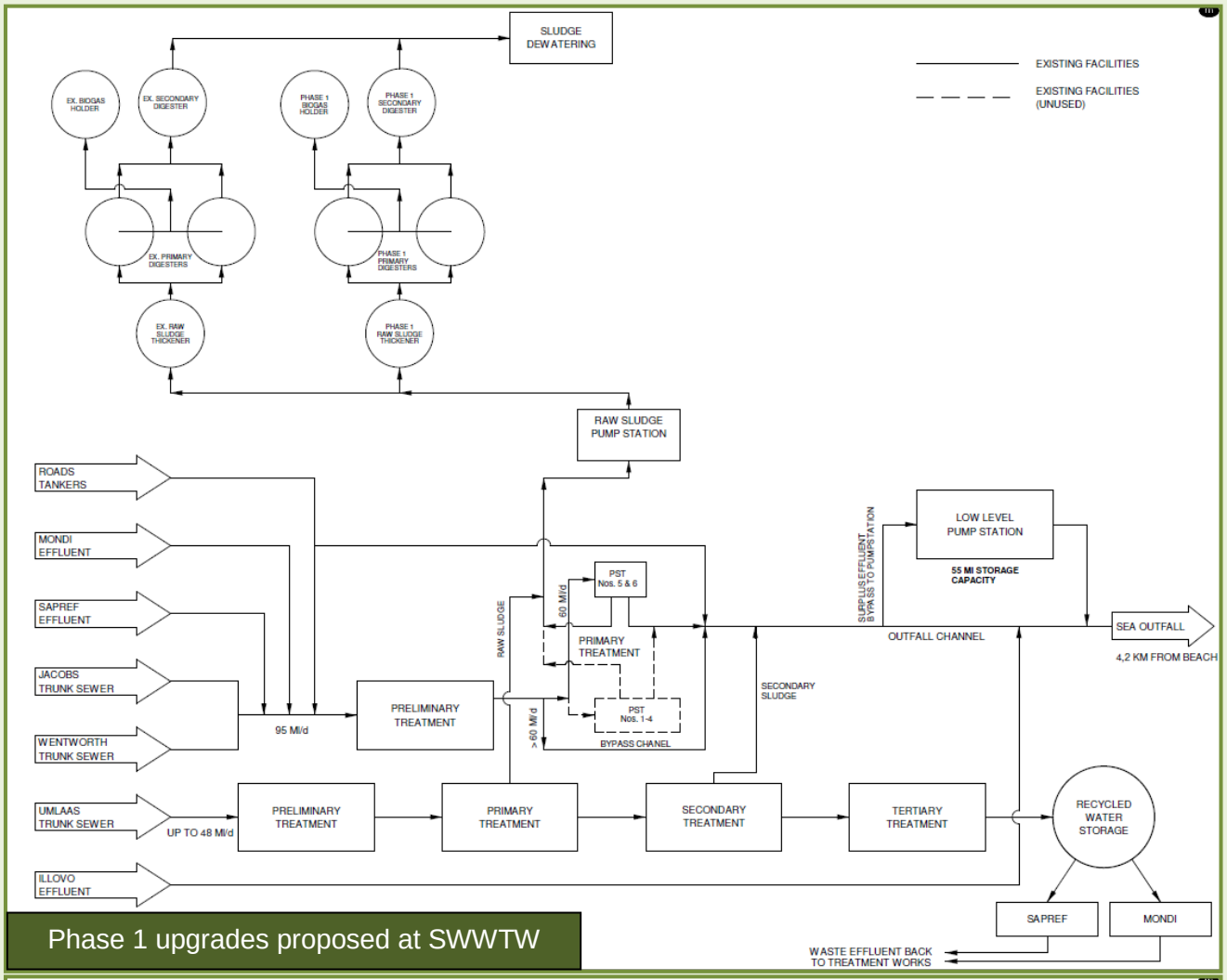
It is important to note that drying of the sludge will greatly reduce the road transportation requirements for removal of sludge off-site.

Phase 1 – work to be completed in this phase

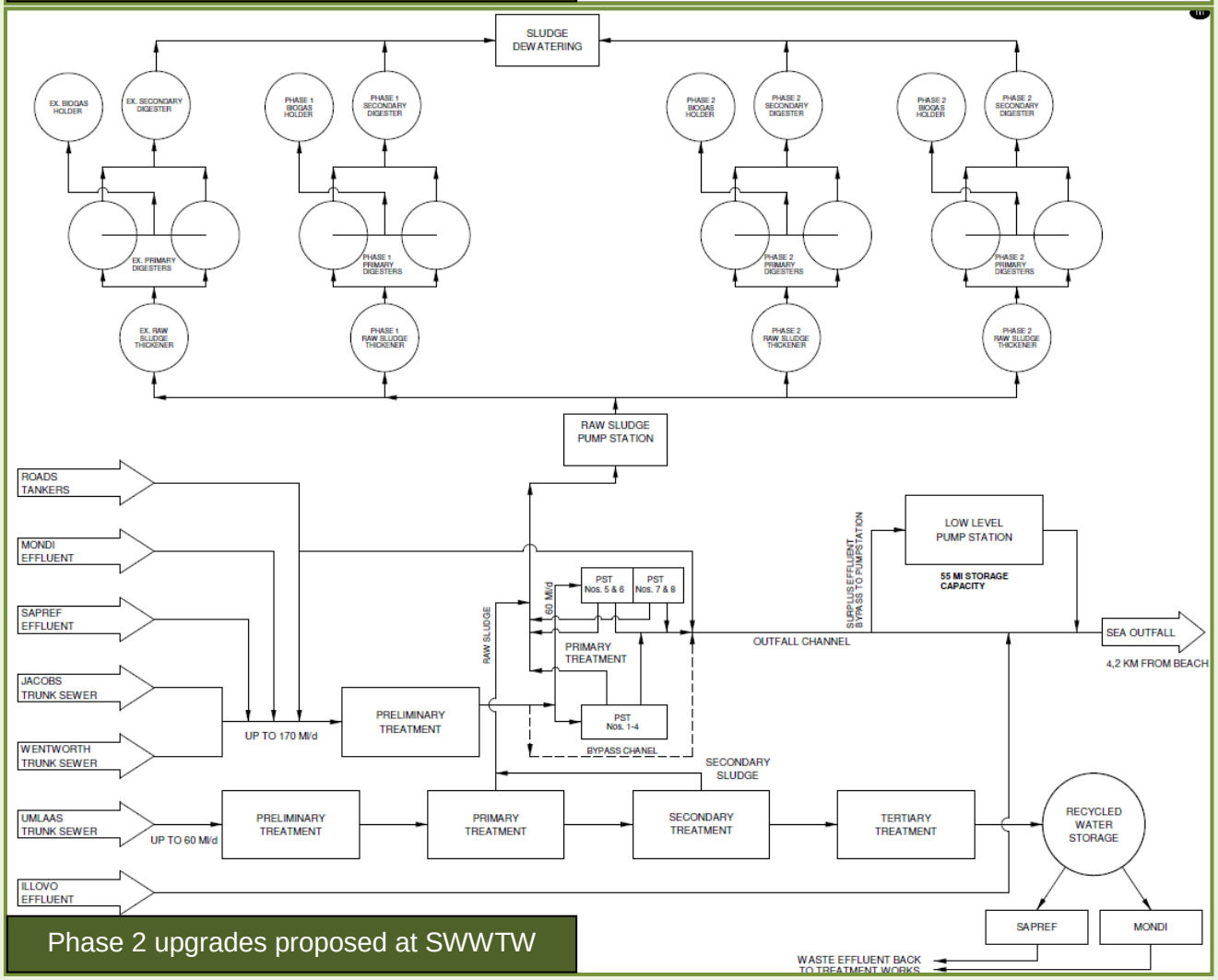
- Refurbish and bring back on line two out of six existing primary settling tanks.
- Refurbish and bring back on line existing two anaerobic primary digesters and secondary digester and construct two new primary digesters and one secondary digester, all of same capacity as existing.
- Refurbish and bring back on line existing raw sludge gravity thickener and construct a new gravity thickener of the same capacity.
- Refurbish and bring back on line existing gas holder and construct a new gas holder of the same capacity.
- Refurbish and bring back on line various existing (currently unused) electrical substation buildings and small pump stations.
- Establishing a new mechanical sludge dewatering facility on site and two 150,000 ℓ fully enclosed steel sludge storage silos.
- Establishment a new mechanical sludge thermal drying facility on site.
- Provide additional effluent storage capacity of 23,000,000 ℓ at an existing low level pumping station, and installation of two new 350 kW pumps.
- Replace the last 70 m of the landline section of the sea outfall pipeline with two new 1,000 mm diameter pipes.
- Construct new road tanker effluent discharge bays in close proximity to the entrance of the Works.
- Install new medium voltage and low voltage electrical cables and equipment.
- Minor road works and a new access road

Phase 2 – work to be completed in this phase

- Refurbish and bring back on line remaining four of the existing six (6) primary settling tanks, and, construct two (2) new primary settling tanks of the same capacity as existing.
- Construct four (4) new anaerobic primary digesters and two new secondary digesters, all of the same capacity as existing.
- Construct a new raw sludge gravity thickener, of the same capacity as existing.
- Construct a new gas holder.
- Install additional mechanical sludge dewatering equipment.
- Construction of a third storage sump of 23 Mℓ.



Phase 1 upgrades proposed at SWWTW



Phase 2 upgrades proposed at SWWTW

What are the potential environmental impacts associated with the proposed project?

A number of potential environmental impacts associated with the project have been identified.

As part of the EIA, these potential impacts will be assessed through the following specialist studies:

Specialist Study	Organisation
Biodiversity Scan	The Ecological Partnership
Major Hazardous Installation Risk Assessment	Ishecon
Heritage Impact Assessment	eThembeni Cultural Heritage
Air Quality Assessment	Royal HaskoningDHV
Process Risk Assessment	Royal HaskoningDHV
Integrated Waste Water Management Plan	Royal HaskoningDHV
Social Impact Assessment	Royal HaskoningDHV
Water Use Licence Compliance Assessment	Royal HaskoningDHV
Coastal Waters Discharge Permit Compliance Assessment	Royal HaskoningDHV
Traffic Impact Assessment	Royal HaskoningDHV

In the **Environmental Scoping Study** (ESS), desk-top specialist studies combined with a site visit, identified any potential issues which require further investigation within the **current EIA phase**. Of particular note, the SWWTW will be classified as a Major Hazardous Installation (MHI). Input from the public (I&APs) through the public participation process will provide valuable input in the identification of issues requiring investigation within this EIA process.

The EIA will highlight areas that should be avoided in order to minimise potential impacts, and evaluate the layout alternatives recommended.

This second phase of the EIA process aims to achieve the following:

- Provide an overall assessment of the social and biophysical environments of the affected area by the proposed construction of the project;
- Undertake a detailed assessment of the preferred site(s) in terms of environmental criteria including the rating of significant impacts;
- Identify and recommend appropriate mitigation measures for potentially significant environmental impacts; and
- Undertake a fully inclusive public participation process to ensure that I&AP issues and concerns are recorded and commented on.

Why are environmental studies needed?

In terms of the **Environmental Impact Assessment** (EIA) **Regulations** Government Notice Regulation (GNR) No. 544 to 546 of 2010 (as amended), published in terms of Section 24(5), and read with Section 44, of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), **eThekwini Municipality** requires **environmental authorisation** from the KwaZulu-Natal Department of Economic Development, Tourism & Environmental Affairs (KZN edtea, previously known as DAEA) for undertaking the proposed project. *Note that as this project began under the then current 2010 regulations and will be completed in terms thereof and not in terms of the new 2014 Regulations (4 December 2014).*

Such an approval is needed as the project includes activities listed under GNR 544, 545 and 546, as well as under Schedules A and B of GNR 921. GNR 921 of 2013 includes the waste activities in terms of the National Environmental Management Waste Act (Act No. 59 of 2008) (as amended).

Activities under these listings may have a detrimental effect on the environment, and includes activities from GNR 545 and 921: Schedule B, hence a full EIA process as prescribed by GNR 543 is to be undertaken.

An EIA is an effective planning and decision-making tool, which allows for the identification of potential environmental consequences of a proposed project, and its management through the planning process.

EThekwini Municipality has via **AECOM** (as lead engineers), appointed **Royal HaskoningDHV** (RHDHV) as independent Environmental Assessment Practitioners (EAP) to undertake the required environmental studies.

As part of these environmental studies, all I&APs will be actively involved through a public participation process.

The environmental studies follow a two-phased approach:

- Phase 1: Environmental Scoping Study (ESS) and Plan of Study (PoS) (***now completed***); and
- Phase 2: Environmental Impact Assessment (EIA) and Environmental Management Programme (EMPr) (***current phase).***

Public Participation Process

It is important that relevant I&APs are identified and involved in the public participation process from the outset of the project.

To ensure effective public participation, the process includes the following steps during the **EIA Phase**:

How can you get involved?

- By responding (by phone, fax or e-mail) to our invitation for your involvement in the process.
- By completing the attached comment form and mailing or faxing it to Novashni Sharleen Moodley at RHDHV.
- By attending the meetings to be held during the course of the project. Should you register as an I&AP you will be invited to attend these meetings. The meeting dates will also be advertised in local newspapers and registered I&APs will be notified by email as well.
- In writing contacting consultants if you have a query, comment or require further project information.
- By reviewing and commenting on the draft and Final EIA Reports within the allowed 40-day review periods.

If you consider yourself an I&AP for this proposed project, we urge you to become involved.

Please make use of the opportunities created by the public participation process to become involved in the process and provide comment. If you have issues and/or concerns which affect and/or interest you, please raise them. Or, if you would simply like more information, let us know.

Your input into this process forms a key part of the environmental studies and we would like to hear from you to obtain your views on the proposed project.

By completing and submitting the accompanying response form, you automatically register yourself as an I&AP for this project, and ensure that your comments, concerns and/or queries raised regarding the project will be noted.

Comments and queries on the project can be directed to

Mrs Novashni (Sharleen) Moodley	PO Box 55, Pinetown, 3600	
	Tel	031 719 5532
Royal HaskoningDHV	Fax	031 719 5505
	Email	novashni.moodley@rhdhv.com

Royal HaskoningDHV
Enhancing Society Together

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED SOLIDS REMOVAL AND TREATMENT FACILITIES UPGRADE AT THE SOUTHERN WASTE WATER TREATMENT WORKS, MEREWENT, IN THE ETHEKWINI METROPOLITAN MUNICIPALITY

BACKGROUND INFORMATION DOCUMENT
(APRIL 2015)

edtea REF NO: DM/0032/2014 / WASTE MANAGEMENT REFERENCE NO: DM/WML/0050/2014 / WUL REFERENCE NO: 11/U60G/H/1623 / CWDP REFERENCE NO: To be confirmed / DWA EXEMPTION NO: 1747B

YOUR COMMENTS AND QUERIES ARE WELCOME

Please **complete** this Comment Form **in full** and return to:

Mrs Novashni (Sharleen) Moodley	PO Box 55, Pinetown, 3600	
	Tel	031 719 5532
Royal HaskoningDHV	Fax	031 719 5505
	Email	novashni.moodley@rhdhv.com

Title (Prof/Mr/Mrs)		**First name**	
Surname			
Capacity (e.g. Secretary / Director)			
Organisation			
Postal address		**Postal code**	
Tel No. ( )		**Cell No.**	
Fax No. ( )		**Email address**	

What comments / concerns would you like to raise regarding this proposed project? (Please use additional pages, if required)

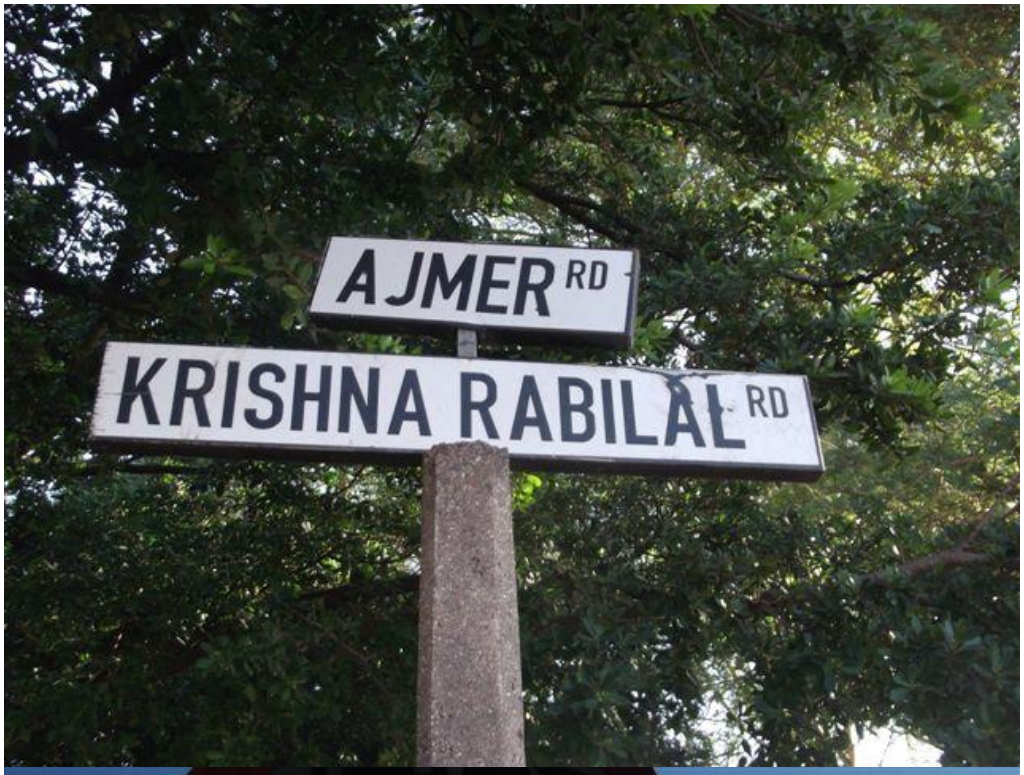
PLEASE REGISTER THE FOLLOWING PERSON(S) ON THE PROJECT DATABASE:

Title (Prof/Mr/Mrs)		**First name**	
Surname			
Capacity (e.g. Secretary / Director)			
Organisation			
Postal address		**Postal code**	
Tel No. ( )		**Cell No.**	
Fax No. ( )		**Email address**	

Signature	

IF YOU PREFER NOT TO RECEIVE ANY FURTHER INFORMATION REGARDING THIS PROPOSED PROJECT, AND, WOULD PREFER TO BE REMOVED FROM THE PROJECT DATABASE, PLEASE TICK THE BOX BELOW AND RETURN THE FORM TO THE PUBLIC PARTICIPATION CONSULTANTS (CONTACT DETAILS AS PROVIDED ABOVE).

Yes, remove my name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KRISHNA RABILAL RD


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I'm looking forward
to a million new jobs..."
TOGETHER
FOR JOBS
WASP
United struggle for
real service


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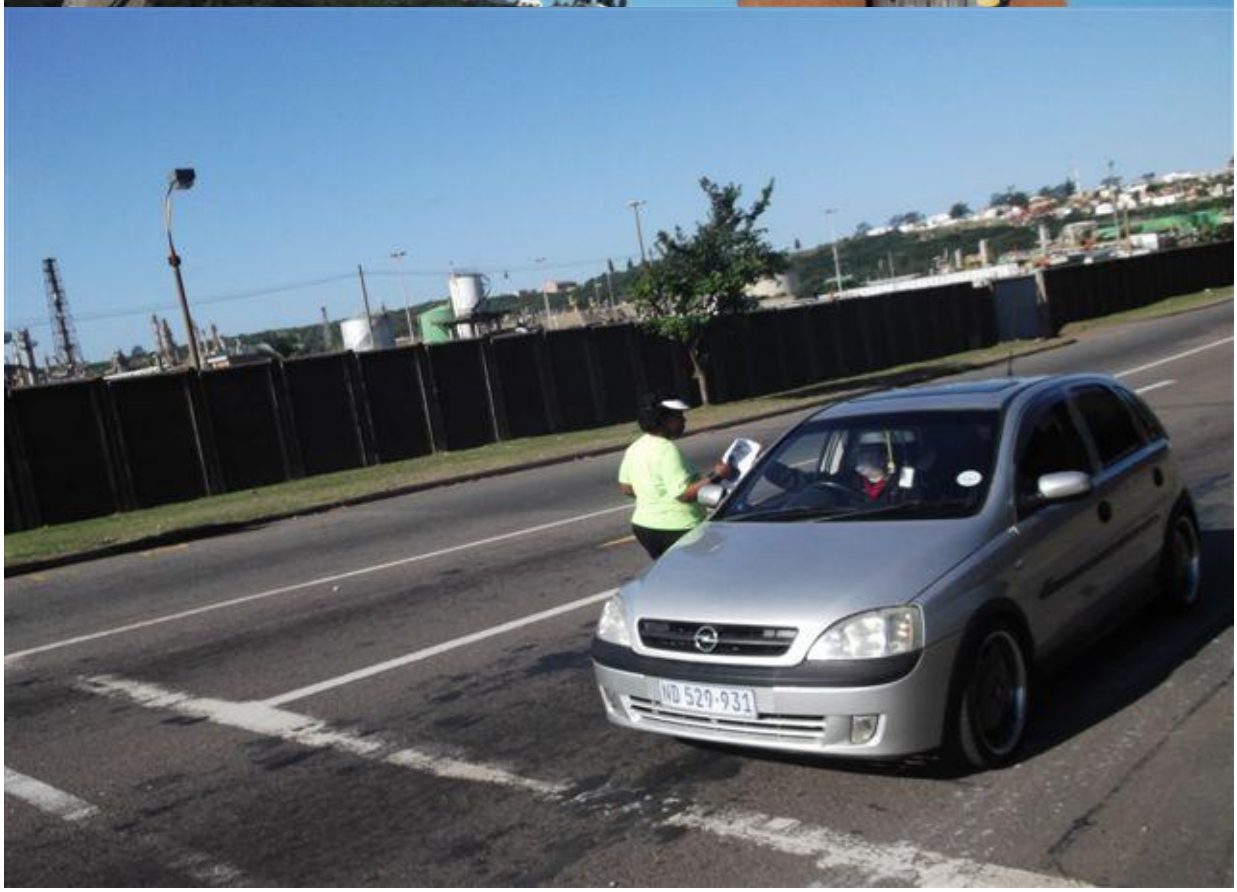

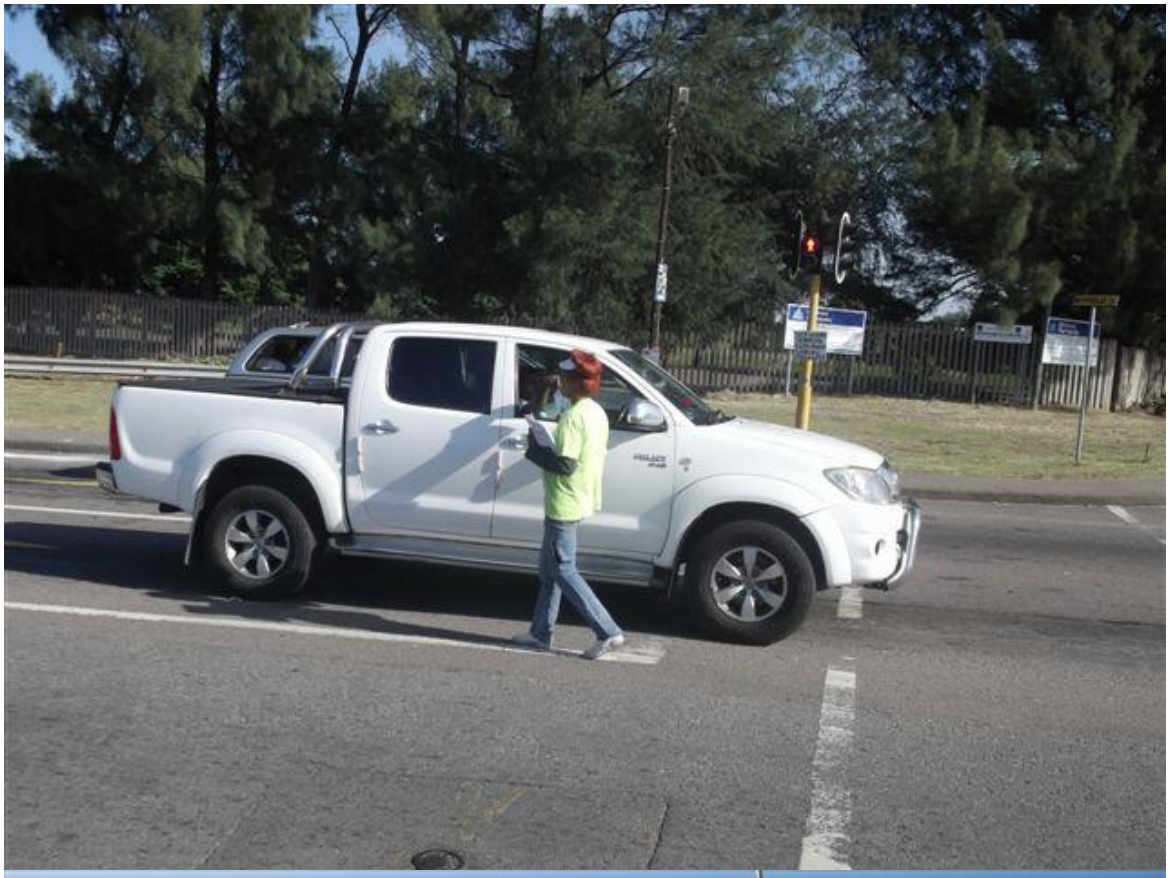

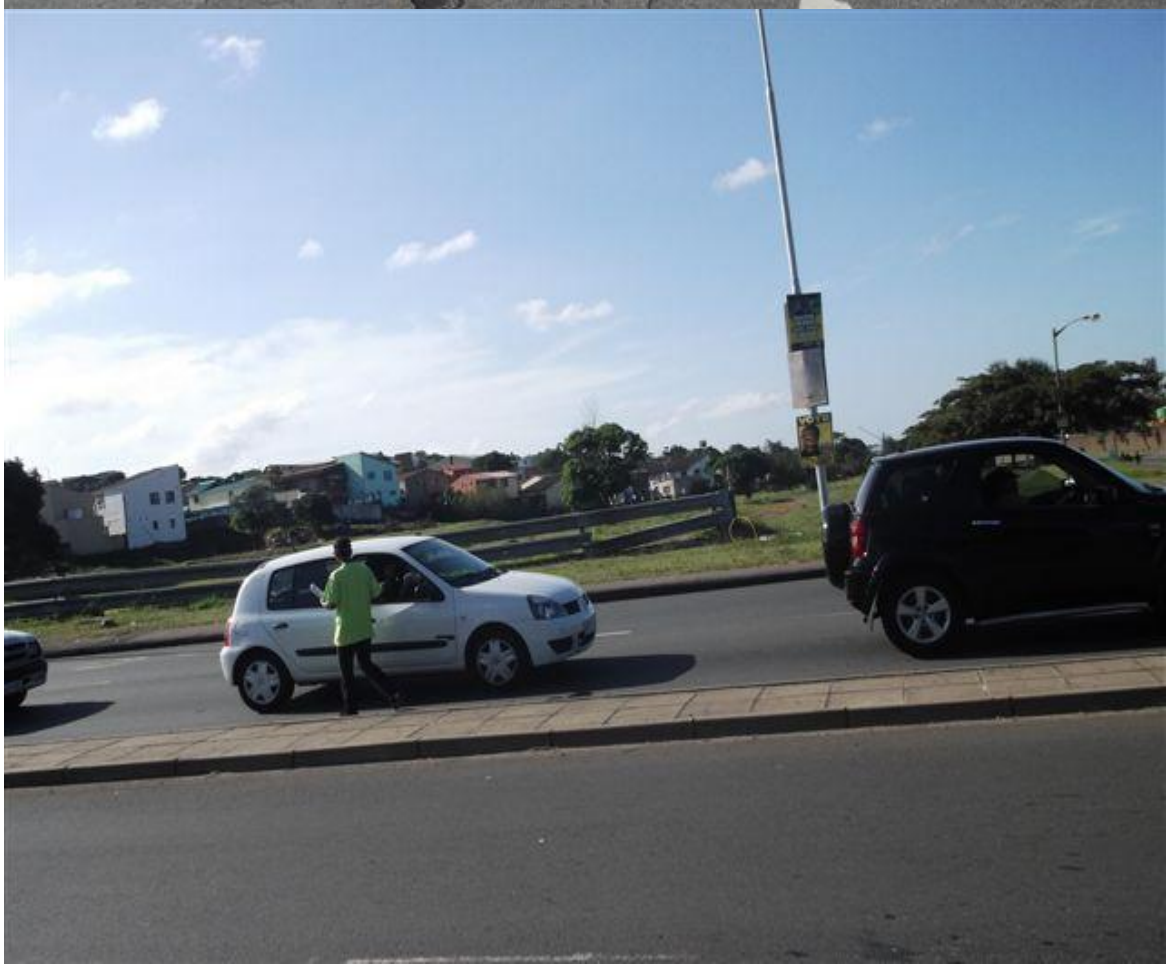


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PARBHANI RD.


KHAIPU
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NOTICE OF APPLICATION FOR
ENVIRONMENTAL AUTHORISATION & WASTE MANAGEMENT LICENSE
PROPOSED SOLIDS REMOVAL AND TREATMENT FACILITIES UPGRADE AT
THE SOUTHERN WASTE WATER TREATMENT WORKS, MEREWENT,
IN THE ETHEKWINI METROPOLITAN MUNICIPALITY
PUBLIC PARTICIPATION PROCESS
21 May 2014 at the Merewold Community Centre at 19h00
Sites
Review period
21 May 2014 to 2 July 2014
CONTACT PERSON FOR MORE INFORMATION
Ms Nowashni (Sharleen) Moodley
PO Box 10, Pinetown, 3600
Tel 031 719 5832
Royal HaskoningDHV
Fax 031 719 5905
Email
Royal HaskoningDHV
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BULDANA RD


NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND WASTE MANAGEMENT LICENCE
PUBLIC PARTICIPATION PROCESS
WHO SHOULD YOU CONTACT?
Royal HaskoningDHV


BIDAR
PARBHANI RD.
NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND WASTE MANAGEMENT LICENCE
PROPOSED SOLIDS REMOVAL AND TREATMENT FACILITIES UPGRADE AT SOUTHERN WASTE WATER TREATMENT WORKS, MEREWENT, IN ETHEKWINI METROPOLITAN MUNICIPALITY
PUBLIC PARTICIPATION PROCESS
WHO SHOULD YOU CONTACT?
Royal HaskoningDHV


ALWAR RD.
NAGAUR RD.
NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND WASTE MANAGEMENT LICENCE
PROPOSED SOLIDS REMOVAL AND TREATMENT FACILITIES UPGRADE AT SOUTHERN WASTE WATER TREATMENT WORKS, MEREWENT, IN ETHEKWINI METROPOLITAN MUNICIPALITY
PUBLIC PARTICIPATION PROCESS
WHO SHOULD YOU CONTACT?
Royal HaskoningDHV


RAJ MAHAL WEG RD
JUNAGARTH WEG RD
BLUE


APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND WASTE MANAGEMENT LICENCE
PUBLIC PARTICIPATION PROCESS
WHO SHOULD YOU CONTACT?


AJMER RD
RAJ MAHAL RD


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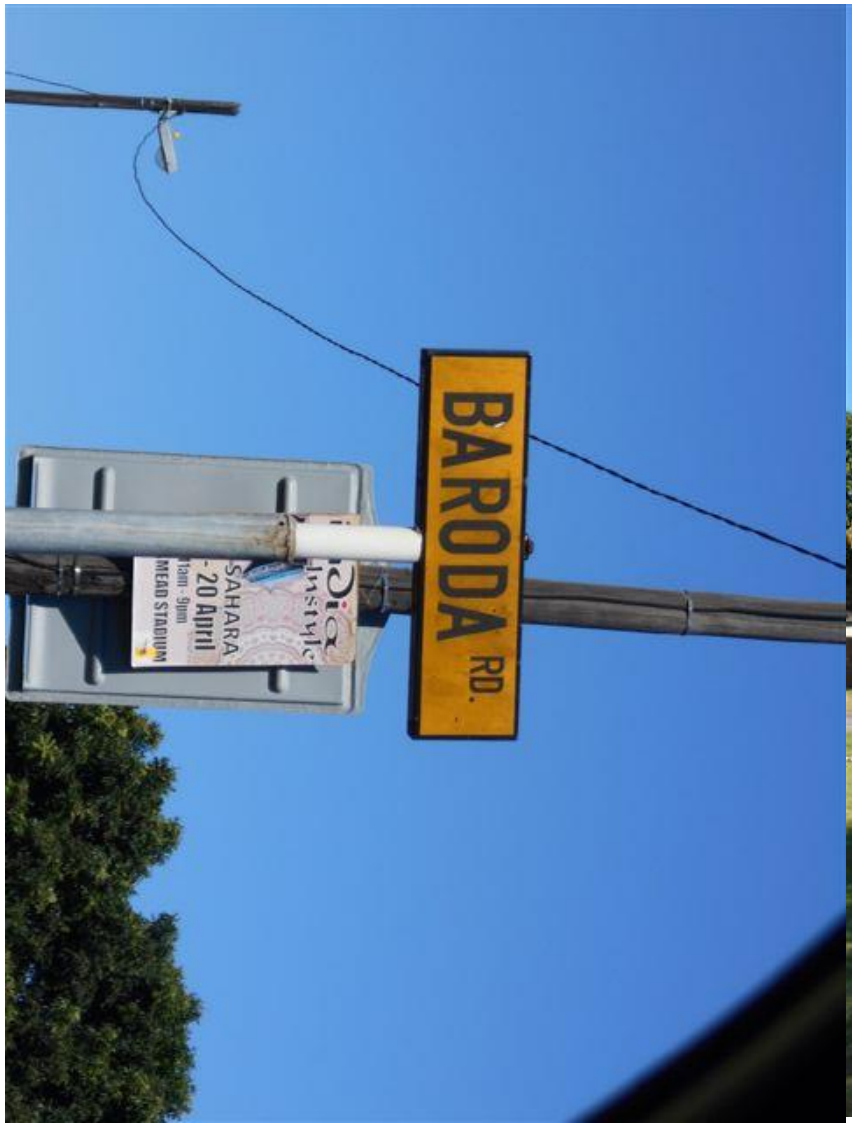
RD.
KRISHNA RABILAL RD



NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND WASTE MANAGEMENT LICENCE

PROPOSED SOLIDS REMOVAL AND TREATMENT FACILITIES UPGRADE AT SOUTHERN WASTE WATER TREATMENT WORKS, MEREWENT, IN ETHEKWINI METROPOLITAN MUNICIPALITY

SIDRA REF NO: DM/0032/2014
EIA REFERENCE NO: DM/WML/0032/2014
WASTE MANAGEMENT REFERENCE NO: 15/9/0032/2014/1/1/23
WML REFERENCE NO: 15/9/0032/KZN/ETH/eNaledi Municipality Southern WWTW
DEA REFERENCE NO: 12/12/20/
DMA EXEMPTION NO: 12/1/2/5
Under auspices of a Major Hazardous Installation

Notice is hereby given in terms of the Environmental Impact Assessment (EIA) Regulations (2010) published in Government Notice No 543 of 18 June 2010 (as amended), the National Environmental Management Waste Act (Act No 59 of 2008), the National Environmental Management: Integrated Coastal Management Act (Act No 44 of 2008), the National Water Act (Act 36 No of 1998) of the initiative by the eThekwini Municipality, Water and Sanitation Department, to undertake the Solids Removal and Treatment Facilities Upgrades at the Southern Works Treatment Works (SWWTW) in Merewent, KwaZulu-Natal Province.

eThekwini Municipality is undertaking the general EIA and Waste Management Licence (WML) processes. The Scoping phase was carried out in 2014, with approval of the Scoping Report and plan for the next phase of the process, being obtained in December 2014. This project is as contemplated in the EIA Regulations for the process of applying for authorisation for the above process development to the Competent Authority, the KwaZulu-Natal Department of Economic Development, Tourism & Environmental Affairs (KZN edtea), as well as a WML application in terms of Section 19(2) of the National Environmental Management: Waste Act (Act No 59 of 2008).

PUBLIC PARTICIPATION PROCESS

All individuals or groups interested in or affected by the project are invited to attend the public meeting to be held at the following venue:

Date: 24 April 2015
Venue: **Merewent Community Centre (Main Hall), Krishna** Rabilal Road, **Merewent**
Time: **10h00**

The meeting will provide Interested and Affected Parties (I&APs) with information regarding the proposed project and will provide them with an opportunity to raise any issues or concerns.

As part of the public participation process, you are invited to review the draft EIA Report and make comment on the document. This report will be available for review at the following public places:

- SDCEA Offices John Dunn House 224 Gountz Crescent, Austerville 4052
- Southern Waste Water Treatment Works,
- Merebank Library, Bombay Square, 12 Naraj Lane, Merebank, Durban, 4052
- Royal HaskoningDHV website: www.rhdhv.co.za

Please note The comment period is from **22 April to 31 May 2015.**

WHO SHOULD YOU CONTACT?

Royal HaskoningDHV, as an independent environmental assessment practitioner, has been assigned to undertake the required EIA and WML Application for the proposed project.

Interested I&APs are invited to register by submitting their name, contact information and interest in the project to the Environmental consultant.

Novashni Sharleen Moodley
Royal HaskoningDHV
PO Box 55, Prestbury, 3600
Tel (031) 719 5832
Fax (031) 719 5905
E-mail: novashni.moodley@rhdhv.com

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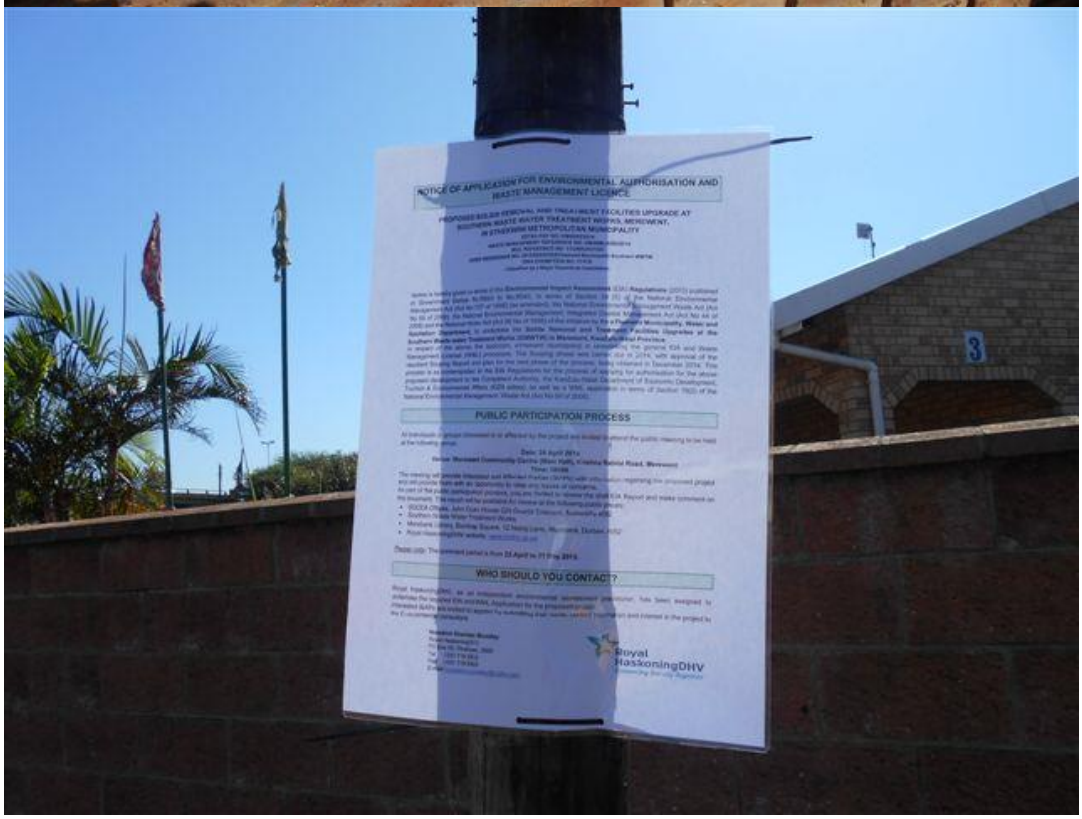
NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND WASTE MANAGEMENT LICENCE
PUBLIC PARTICIPATION PROCESS
WHO SHOULD YOU CONTACT?
Royal HaskoningDHV
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