



ETHEKWINI ENGINEERING UNIT

**DM/0038/2014: PROPOSED
BURBREEZE PEDESTRIAN
BRIDGE**

Draft Basic Assessment Report

Issue Date : 14th October 2015
Revision No. : 1
Project No. : 12622

Basic Assessment Report



edtea

Department :
Economic Development, Tourism and
Environmental Affairs

PROVINCE OF KWAZULU-NATAL

(For official use only)

EIA File Reference Number:
NEAS Reference Number:
Waste Management Licence Number:
(if applicable)
Date Received:

DC/
KZN/EIA/

BASIC ASSESSMENT REPORT

Submitted in terms of the Environmental Impact Assessment Regulations, 2010 promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

This template may be used for the following applications:

- **Environmental Authorization** subject to basic assessment for an activity that is listed in Listing Notices 1 or 3, 2010 (Government Notices No. R 544 or No. R 546 dated 18 June 2010); or
- **Waste Management Licence** for an activity that is listed in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) for which a basic assessment process as stipulated in the EIA Regulations must be conducted as part of the application (refer to the schedule of waste management activities in Category A of Government Notice No. 718 dated 03 July 2009).

Kindly note that:

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Economic Development, Tourism & Environmental Affairs. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
9. The KZN Department of Economic Development, Tourism & Environmental Affairs may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Economic Development, Tourism & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

"Leading the attainment of inclusive growth for job creation and economic sustenance"

DEPARTMENTAL REFERENCE NUMBER(S)

File reference number (EIA):	DM/0038/2014
File reference number (Waste Management Licence):	N/A

SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

1. NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	SIVEST S.A. (Pty) Ltd.		
Physical address:	4 Pencarrow Crescent, La Lucia Ridge Office Estate, Umhlanga Rocks		
Postal address:	PO Box 1899, Umhlanga Rocks		
Postal code:	4320	Cell:	
Telephone:	035-581 1576	Fax:	031-566 2371
E-mail:	luvanyan@sivest.co.za		

2. NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Michelle Nevette	M.Sc (Environmental Management)	<ul style="list-style-type: none"> IAIA 	15
Luvanya Naidoo	Currently completing 3rd Year BSc degree (Environmental Sciences)	<ul style="list-style-type: none"> Member of the Occupational Hygiene, Safety & Associated Professionals IAIA 	6

3. NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
GCS - Ryan Edwards	MSc Environmental Science	Wetland Ecologist	Section C 3	Proposed Wewe River Pedestrian Bridge between Sandfields and Burbreeze in

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Name of specialist	Education qualifications	Field of expertise	Section/s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
				Tongaat, eThekweni Municipality, KwaZulu-Natal Wetland and Riparian Zone Assessment Report
David Styles		Vegetation Specialist	Section C 4	Assessment of Vegetation within and surrounding the footprint of a proposed pedestrian bridge at Burbreeze, Tongaat.
Active Heritage – Frans Prins	MA (Archaeology)	Heritage Specialist	Section C 6	A first phase Heritage Impact Assessment of the Proposed Burbreeze Bridge near Tongaat, eThekweni Metro Municipality

SECTION B: ACTIVITY INFORMATION

1. PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

The proposed construction of the Burbreeze Pedestrian Bridge on Impumelelo Place, Tongaat.

2. PROJECT DESCRIPTION

Provide a detailed description of the project:

The eThekweni Municipality, Procurement and Infrastructure Department proposes the construction of a Pedestrian Bridge crossing the Wewe River in Tongaat. The Wewe River is one of the tributaries feeding into the Tongati River between Sandfields and Burbreeze, Tongaat within the eThekweni Municipality.

Residents crossing the river between Sandfields and Burbreeze currently make use of a pipe that crosses the tributary. This is highly dangerous and the height of the water during storms and after is evident by the damage to embankments and planted crops. The crossing is therefore unsafe and a formalised structure for pedestrian traffic is of high importance in this area.

The bridge will be a reinforced concrete structure. It will span approximately 36m and have rock anchored/piled foundations. The bridge deck will be 2m wide.

3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June 2010), Listing Notice 3 (GNR 546, 18 June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

GN R.544 (18 June 2010)	11 (iii)	A bridge measuring 36m in length, no wider than 2 meters will be built over one of the Tongati River tributary.
GN R.544 (18 June 2010)	18 (i)	The construction of the bridge will result in the infilling or depositing of material of more than 5 cubic metres and the dredging, excavation, removal or soil, sand, pebbles or rock from the watercourse.

4. FEASIBLE AND REASONABLE ALTERNATIVES

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Sections B 5 – 15 below should be completed for each alternative.

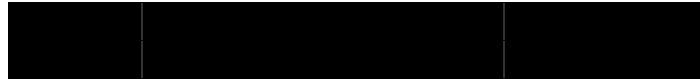
5. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. List alternative sites were applicable.

Alternative:	Latitude (S):		Longitude (E):			
Alternative S1 ¹ (preferred or only site alternative)	29	32	20.04	31	8	24.33

¹ “Alternative S..” refer to site alternatives.

Alternative S2 (if any)
Alternative S3 (if any)



In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

0	'	"	0	'	"
0	'	"	0	'	"
0	'	"	0	'	"

Alternative S2 (if any)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

0	'	"	0	'	"
0	'	"	0	'	"
0	'	"	0	'	"

Alternative S3 (if any)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

0	'	"	0	'	"
0	'	"	0	'	"
0	'	"	0	'	"

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 500m along the route for each alternative alignment.

No alternatives (besides the 'No-Go' Alternative are being considered for the proposed pedestrian bridge. The project is aimed in assisting residents who currently make use of an exposed pipe to cross the Wewe River.

6. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Alternative A1² (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

72m ²
m ²
m ²

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Length of the activity:

m
m
m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

² "Alternative A.." refer to activity, process, technology or other alternatives.

Alternative:

Alternative A1 (preferred activity alternative)
 Alternative A2 (if any)
 Alternative A3 (if any)

Size of the site/servitude:

	m ²
	m ²
	m ²

7. SITE ACCESS

Does ready access to the site exist?

YES ✓	NO
	m

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

N/A

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

8. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this report.

The site or route plans must indicate the following:

- 8.1. the scale of the plan which must be at least a scale of 1:500;
- 8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site;
- 8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 8.4. the exact position of each element of the application as well as any other structures on the site;
- 8.5. the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 8.6. walls and fencing including details of the height and construction material;
- 8.7. servitudes indicating the purpose of the servitude;
- 8.8. sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers, streams, drainage lines or wetlands;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);
- 8.9. for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 8.10. The positions from where photographs of the site were taken.

9. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

10. FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as Appendix C. The illustrations must be to scale and must represent a realistic image of the planned activity/ies.

11. ACTIVITY MOTIVATION

11.1. Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 1.5 million
What is the expected yearly income that will be generated by or as a result of the activity?	n/a
Will the activity contribute to service infrastructure?	YES ✓ NO
Is the activity a public amenity?	YES ✓ NO
How many new employment opportunities will be created in the development phase of the activity?	Approximately 50% of the workforce will be local labour
What is the expected value of the employment opportunities during the development phase?	Unknown at this stage
What percentage of this will accrue to previously disadvantaged individuals?	Unknown at this stage
How many permanent new employment opportunities will be created during the operational phase of the activity?	n/a
What is the expected current value of the employment opportunities during the first 10 years?	n/a
What percentage of this will accrue to previously disadvantaged individuals?	n/a

11.2. Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

Residents crossing the Wewe River between Sandfields and Burbreeze currently make use of an exposed pipe that crosses the tributary. This is highly dangerous as the height of the water during storms and after is evident by the damage to embankments and planted crops. The crossing is therefore unsafe and a formalised structure for pedestrian traffic is of high importance in this area.

The eThekweni Municipality IDP 2014-2015 has identified a backlog in service delivery for infrastructure and household service needs as a Strategic Focus Area. Programme 3.3 aims to deliver pedestrian bridges as part of this Strategic Focus Area.

The proposed pedestrian bridge will also provide a universal access for crossing the Wewe River. It will also provide one safe access for pedestrians across the river rather than many different crossings.

Indicate any benefits that the activity will have for society in general:

- The proposed pedestrian bridge will provide a safe means of crossing the Wewe River between Sandfields and Burbreeze.
- The proposed pedestrian bridge will assist people in wheelchairs to travel across the river.
- The proposed pedestrian bridge will also provide a sense of dignity for people as they will not need to make use of the exposed pipe to cross the river.
- The proposed pedestrian bridge will also provide one formal crossing for pedestrians and will assist in eliminating other informal crossings for the river.
- The proposed pedestrian bridge will allow for easier access to areas where public transport is available.
- The proposed pedestrian bridge will ensure that there is less erosion of the embankment as it will be formalised with an abutment.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

- The proposed pedestrian bridge will provide a safe means of crossing the Wewe River between Sandfields and Burbreeze.
- The proposed pedestrian bridge will assist people in wheelchairs to travel across the river.
- The proposed pedestrian bridge will also provide a sense of dignity for people as they will not need to make use of the exposed pipe to cross the river.
- The proposed pedestrian bridge will also provide one formal crossing for pedestrians and will assist in eliminating other informal crossings for the river.
- The proposed pedestrian bridge will allow for easier access to areas where public transport is available.

12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are relevant to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
Animals Protection Act, Act No 71 of 1962	Department of Agriculture	1962
Atmospheric Pollution Prevention Act, No 45 of 1965	DEAT	1965
Conservation of Agricultural Resources Act, No 43 of 1983	Department of Agriculture	1983

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Title of legislation, policy or guideline:	Administering authority:	Date:
Constitution of the Republic of South Africa Act 108/1996	The Constitutional Court	1996
Environmental Planning Act, Act No 88 of 1967	Development Planning and Management Unit	1967
Forest Act, No 122 of 1984	Department of Agriculture, Forestry and Fisheries	1984
Forest and Veld Conservation Act, Act No 13 of 1941	Department of Agriculture, Forestry and Fisheries	1984
Hazardous Substances Act, No 15 of 1973	Department of Health	1973
Land Survey Act, No 9 of 1921	Department of Land Affairs	1921
Minerals Act, No 50 of 1991	Department of Minerals and Energy	1991
National Environmental Management: Waste Act 59 of 2008	DWEA	2008
The National Heritage Resources Act 25 of 1999	South African Heritage Resource Agency (SAHRA)	1999
National Water Act, Act 36 of 1998	Department of Water Affairs	1998
Occupational Health and Safety Act, No 85 of 1993	Department of Labour	1993
Provincial and Local Government Ordinances and Bylaws	Department of Provincial and Local Government	
Soil Conservation Act, Act No 76 of 1969	Department of Agriculture	1969
Water Services Act No 108 of 1997	Department of Water Affairs	1997
eThekweni Municipality IDP	eThekweni Municipality	2014-2015

13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

13.1. Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES ✓	NO
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If yes, what estimated quantity will be produced per month?

10m ³

How will the construction solid waste be disposed of? (describe)

Solid waste (construction waste and regular household waste) will be collected by independent contractors and disposed of at a registered licensed municipal landfill site with proof of safe disposal required.

Where will the construction solid waste be disposed of? (provide details of landfill site)

The Buffelsdraai Landfill site will be the closest to the proposed site for waste disposal.

Will the activity produce solid waste during its operational phase?

YES	NO ✓
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If yes, what estimated quantity will be produced per month?

N/A

How will the solid waste be disposed of? (provide details of landfill site)

N/A

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine the further requirements of the application.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

YES	NO✓
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If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	NO✓
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If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

13.2. Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO✓
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If yes, what estimated quantity will be produced per month?

N/A	
-----	--

Will the activity produce any effluent that will be treated and/or disposed of on site?

YES	NO✓
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If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO✓
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If yes, provide the particulars of the facility:

Facility name:	N/A		
Contact person:	N/A		
Postal address:	N/A		
Postal code:	N/A		
Telephone:	N/A	Cell:	N/A
E-mail:	N/A	Fax:	N/A

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

N/A

13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO✓
-----	-----

If yes, is it controlled by any legislation of any sphere of government?

YES	NO✓
-----	-----

If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

If no, describe the emissions in terms of type and concentration:

N/A

13.4. Generation of noise

Will the activity generate noise?

YES✓	NO
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If yes, is it controlled by any legislation of any sphere of government?

YES NO✓

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

Noise, during normal working hours (from 8h00 to 17h00, Monday to Friday) associated with the construction phase of the project is anticipated. Any equipment used during the construction or operational phase will not exceed a noise level of 80 decibel amperes (dbA).

Measures to control daily noise activities during construction will be included in the Environmental Management Programme (EMPr – attached as **Appendix F**) for the project.

14. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

<input checked="" type="checkbox"/> municipal	<input type="checkbox"/> water board	<input type="checkbox"/> groundwater	<input type="checkbox"/> river, stream, dam or lake	<input type="checkbox"/> other	<input type="checkbox"/> the activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

N/A

Does the activity require a water use permit from the Department of Water Affairs?

YES✓ NO

If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

The Client will be undertaking the water use authorisation process at a later stage.

15. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

N/A

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A

SECTION C: SITE/ AREA/ PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

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Section C Copy No.
(e.g. A):

- Subsections 1 - 6 below must be completed for each alternative.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50	–	1:20	–	1:15 – 1:10	1:10	–	1:7,5 – 1:5	Steeper than 1:5
	1:20		1:15		✓	1:7,5			

Alternative S2 (if any):

Flat	1:50	–	1:20	–	1:15 – 1:10	1:10	–	1:7,5 – 1:5	Steeper than 1:5
	1:20		1:15			1:7,5			

Alternative S3 (if any):

Flat	1:50	–	1:20	–	1:15 – 1:10	1:10	–	1:7,5 – 1:5	Steeper than 1:5
	1:20		1:15			1:7,5			

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (Please cross the appropriate box).

Alternative S1 (preferred site):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills ✓	Dune	Sea- front
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Alternative S2 (if any):

Ridgeline	Plateau	Side slope of hill/ mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea- front
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Alternative S3 (if any):

Ridgeline	Plateau	Side slope of hill/ mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea- front
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3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Has a specialist been consulted for the completion of this section?

YES ✓	NO
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If YES, please complete the following:

Name of the specialist:	Ryan Edwards				
Qualification(s) of the specialist:	MSc Environmental Science				
Postal address:	PO Box 819, Gillitts				
Postal code:	3603				
Telephone:	031 764 7130	Cell:	-		
E-mail:	ryane@gcs-sa.biz	Fax:	031 764 7140		
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?					
			<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 50%; background-color: #ADD8E6;">YES ✓</td> <td style="width: 50%;">NO</td> </tr> </table>	YES ✓	NO
YES ✓	NO				

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If YES, specify and explain: The site is situated within a vegetation type designated as KwaZulu- Natal Coastal Belt Grassland (Scott-Shaw & Escott 2011). However the vegetation specialist has confirmed that the site is highly disturbed and is not in its natural state. There are a number of alien species and a limited number of indigenous species that are then only more common plants, pioneers or weeds of disturbance.

Are there any special or sensitive habitats or other natural features present on any of the alternative sites? YES✓ NO

If YES, specify and explain: The proposed location of the Burbreeze Pedestrian Bridge crosses a section of the Wewe River which bisects the Sandfields and Burbreeze suburbs. The Wewe River is a left bank tributary to the oThongathi River.

The site is also surrounded a flood bench, flood plain, terrace and excavated depression (see Wetland and Riparian Zone Assessment attached in Appendix D).

Are any further specialist studies recommended by the specialist? YES NO✓

If YES, specify: N/A

If YES, is such a report(s) attached in Appendix D? YES NO

Signature of specialist: Refer to Appendix D Date:

Is the site(s) located on any of the following (cross the appropriate boxes)?

	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):
Shallow water table (less than 1.5m deep)	YES✓ NO	YES NO	YES NO
Dolomite, sinkhole or doline areas	YES NO✓	YES NO	YES NO
Seasonally wet soils (often close to water bodies)	YES✓ NO	YES NO	YES NO
Unstable rocky slopes or steep slopes with loose soil	YES NO✓	YES NO	YES NO
Dispersive soils (soils that dissolve in water)	YES NO✓	YES NO	YES NO
Soils with high clay content (clay fraction more than 40%)	YES NO✓	YES NO	YES NO
Any other unstable soil or geological feature	YES NO✓	YES NO	YES NO
An area sensitive to erosion	YES✓ NO	YES NO	YES NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUND COVER

Has a specialist been consulted for the completion of this section? YES✓ NO

If YES, please complete the following:
Name of the specialist: David Styles

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Qualification(s) of the specialist:			
Postal address:	PO Box 50030, Musgrave		
Postal code:	4062		
Telephone:	-	Cell:	082 555 8649
E-mail:	davidstyles@vodamail.co.za	Fax:	082 131 555 8649
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?	YES ✓	NO	
If YES, specify and explain:	The site is situated within a vegetation type designated as KwaZulu- Natal Coastal Belt Grassland (Scott-Shaw & Escott 2011). However the vegetation specialist has confirmed that the site is highly disturbed and is not in its natural state (Please see Vegetation Impact Assessment attached in Appendix D).		
Are there any special or sensitive habitats or other natural features present on any of the alternative sites?	YES ✓	NO	
If YES, specify and explain:	The proposed location of the Burbreeze Pedestrian Bridge crosses a section of the Wewe River which bisects the Sandfields and Burbreeze suburbs. The Wewe River is a left bank tributary to the oThongathi River. The site is also surrounded a flood bench, flood plain, terrace and excavated depression (see Wetland and Riparian Zone Assessment attached in Appendix D).		
Are any further specialist studies recommended by the specialist?	YES	NO ✓	
If YES, specify:			
If YES, is such a report(s) attached in <u>Appendix D</u> ?	YES	NO	

Signature of specialist: Refer to Appendix D. Date:

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation^E ✓	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. LAND USE CHARACTER OF SURROUNDING AREA

Cross the land uses and/or prominent features that currently occur within a 500m radius of the site and give a description of how this influences the application or may be impacted upon by the application:

Land use character			Description
Natural area	YES ✓	NO	
Low density residential	YES	NO ✓	
Medium density residential	YES ✓	NO	

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Land use character			Description
High density residential	YES	NO✓	
Informal residential	YES✓	NO	
Retail commercial & warehousing	YES	NO✓	
Light industrial	YES	NO✓	
Medium industrial	YES	NO✓	
Heavy industrial	YES	NO✓	
Power station	YES	NO✓	
Office/consulting room	YES✓	NO	
Military or police base/station/compound	YES	NO✓	
Spoil heap or slimes dam	YES	NO✓	
Quarry, sand or borrow pit	YES	NO✓	
Dam or reservoir	YES	NO✓	A dam is situated outside the 500m boundary.
Hospital/medical centre	YES	NO✓	
School/ creche	YES	NO✓	
Tertiary education facility	YES	NO✓	
Church	YES	NO✓	
Old age home	YES	NO✓	
Sewage treatment plant	YES	NO✓	
Train station or shunting yard	YES	NO✓	
Railway line	YES	NO✓	
Major road (4 lanes or more)	YES	NO✓	
Airport	YES	NO✓	
Harbour	YES	NO✓	
Sport facilities	YES	NO✓	
Golf course	YES	NO✓	
Polo fields	YES	NO✓	
Filling station	YES	NO✓	
Landfill or waste treatment site	YES	NO✓	
Plantation	YES	NO✓	
Agriculture	YES✓	NO	
River, stream or wetland	YES✓	NO	The proposed pedestrian bridge will be constructed over the Wewe River in Tongaat.
Nature conservation area	YES✓	NO	The site falls within D'MOSS.
Mountain, hill or ridge	YES✓	NO	
Museum	YES	NO✓	
Historical building	YES	NO✓	
Protected Area	YES✓	NO	The site falls within D'MOSS.
Graveyard	YES	NO✓	
Archaeological site	YES	NO✓	
Other land uses (describe)	YES	NO✓	

6. CULTURAL/ HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or within 20m of the site?

YES	NO✓
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If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

Briefly explain the recommendations of the specialist:

Mr. Frans Prins conducted a first phase heritage survey of the proposed Burbreeze Pedestrian Bridge near Tongaat, eThekwin Metro Municipality. The report is attached in Appendix D. Below is a summary of the findings:

- The survey identified no heritage sites or features on the footprint.
- The proposed development may proceed from a heritage point of view.
- It should also be pointed out that the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act No 4 of 2008) requires that operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.

Will any building or structure older than 60 years be affected in any way?	YES	NO ✓
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO ✓

If YES, please submit the necessary application to AMAFA and attach proof thereof to this report.

SECTION D: PUBLIC PARTICIPATION

1. ADVERTISEMENT

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—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) 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
 - (ii) any alternative site mentioned in the application;
- (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;
 - (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;
 - (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;

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- (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;
- (v) the local and district municipality which has jurisdiction in the area;
- (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
- (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (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 district 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 *Gazette* referred to in subregulation 54(c)(ii); and
- (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.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that an application for environmental authorization has been submitted to the KZN Department of Economic Development, Tourism & Environmental Affairs in terms of the EIA Regulations, 2010;(ii)
 - (iii) a brief project description that includes the nature and location of the activity to which the application relates;
 - (iv) where further information on the application can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of subregulation 54(2) in the manner agreed by the KZN Department of Economic Development, Tourism & Environmental Affairs as appropriate for this application. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate.

Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations (regulation 57 in the EIA Regulations, 2010) and be attached as Appendix E to this report.

6. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of this application and provided with an opportunity to comment.

Has any comment been received from the district municipality?

YES ✓	NO
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If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

The eThekweni Municipality had the following comments to the Background Information Document:

Electricity

- The department reviewed the application against services and infrastructure and have no objections or comments to the application.

Coastal, Stormwater and Catchment Management

- A flood report must be undertaken for the bridge.

Framework Planning Branch

- The Framework Planning Branch has assessed the proposed project and had no objections.

Disaster Management

- There were no concerns raised by this department.

Fire and Emergency Services Unit

The department requested the following:

- Full compliance of dredging, excavation, removal of soil with petroleum product of flammable gas pipeline in close proximity.
- Full compliance with other relevant applicable legislative requirements.

Water and Sanitation – Wastewater technical support

- The department has requested that ducts for services be left in the bridge for future use.

Water and Sanitation – Pollution Branch

- No comment.

Geotechnical Branch

- No objections in principle to the bridge locality.
- A geotechnical investigation must be undertaken to confirm depth to competent, rock founding.

eThekweni Transport Authority (ETA)

- No comment.

Durban Solid Waste

- DSW has no requirements for the proposed bridge.

Environmental Planning & Climate Protection

Bridge alternatives must be investigated. A suspension bridge is recommended so that the number of piles within the watercourse may be limited and habitat loss and degradation can be reduced.

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Has any comment been received from the local municipality?

YES NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

N/A

Has any comment been received from a traditional authority?

YES NO ✓

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

N/A

7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES ✓ NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

The residents of the Burbreeze Community have raised concerns regarding the safety of the community. The location of the proposed Burbreeze Pedestrian Bridge is in close proximity to a low cost housing development. The residents believe that the formalisation of the bridge will result in an increased crime rate in the community through easier access.

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

The residents of the Tongaat Community have raised concerns regarding the safety of the community. The location of the proposed Burbreeze Pedestrian Bridge is in close proximity to a low cost housing development. The residents believe that the formalisation of the bridge will result in an increased crime rate in the community.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached as Appendix E to this report):

The interested and affected parties concerns are noted. The residents were also advised to take up all crime related concerns with their Ward councillor.

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the planning and design phase:

Alternative S1 (preferred alternative)

Direct impacts:

Every potential impact arising from the proposed development is an indirect product of activities occurring within the planning and design phase. However, these impacts are not realised until the construction and operational phases of the development. In order to avoid repetition, all identified impacts associated with the proposed development are included in section 2.2 (Construction Impacts) and 2.3 (Operation Impacts) of this report.

No significant direct and indirect impacts are expected to occur during the planning and design phase.

Indirect impacts:

None identified.

Cumulative impacts:

None identified.

Alternative S2 (if any)

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

Indirect impacts:

Cumulative impacts:

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Alternative S2

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b. Process, technology, layout or other alternatives

List the impacts associated with any process, technology, layout or other alternatives that are likely to occur during the planning and design phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

Indirect impacts:

Cumulative impacts:

Alternative A2 (if any)

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<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

No-go alternative (compulsory)
<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:	Alternative A2:

2.2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the construction phase:

Alternative S1 (preferred site)

Direct impacts:

WETLAND AND RIPARIAN ZONE

- Reduction/ degradation in freshwater ecosystems and biodiversity as a result of physical disturbance impacts

The proposed construction of the pedestrian bridge will likely involve the physical modification of the riparian and in-stream areas within the construction footprint. The physical clearing of the construction servitudes will result in the clearing of riparian vegetation and topsoil, and the exposure of the bare surfaces to the elements. Such clearing and physical modification activities will likely result in the erosion and sedimentation of onsite and downstream riparian and in-stream areas during rainfall events. Furthermore, sedimentation is likely to occur as a result of soil and bank destabilization associated with the physical modification activities irrespective of rainfall events.

ASSESSMENT CRITERIA	RATING
EXTENT (GEOGRAPHICAL)	Local
DURATION	Medium – Short term
PROBABILITY	Definite
REVERSIBILITY	Reversible
IRREPLACEABLE LOSS OF RESOURCES	No loss
CUMULATIVE IMPACTS	Limited
SIGNIFICANCE RATING – PRE MITIGATION	Medium
SIGNIFICANCE – POST MITIGATION	Low

- Reduction/ degradation in freshwater ecosystems and biodiversity as a result of water quality impacts.

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The undertaking of construction work within the riparian and in-stream habitat will expose these habitats to increased pollution risks. Surface runoff and/or river water contamination may occur during the construction phase as a result of negligence, inappropriate planning, lack of supervision and general handling errors. Potential pollutants include cement, oils, hydrocarbons, chemical admixtures and waste from chemical toilets. The degree of contamination depends on the extent of the chemical spill or the cumulative effects of a number of chemical spills.

ASSESSMENT CRITERIA	RATING
EXTENT (GEOGRAPHICAL)	Local
DURATION	Medium – Short term
PROBABILITY	Probable
REVERSIBILITY	Reversible
IRREPLACEABLE LOSS OF RESOURCES	No loss
CUMULATIVE IMPACTS	Moderate
SIGNIFICANCE RATING – PRE MITIGATION	Medium - Low
SIGNIFICANCE – POST MITIGATION	Low

VEGETATION

- Disturbance to vegetation

The proposed development will destroy, damage or alter some vegetation. Impacts will occur within and close to the footprint which will result in further increase of alien vegetation.

ASSESSMENT CRITERIA	RATING
EXTENT (GEOGRAPHICAL)	Site
DURATION	Construction – Long Term
PROBABILITY	Definite - Probable
REVERSIBILITY	Reversible
IRREPLACEABLE LOSS OF RESOURCES	No loss
CUMULATIVE IMPACTS	Low
SIGNIFICANCE RATING – PRE MITIGATION	Low
SIGNIFICANCE – POST MITIGATION	Medium (Positive)

HERITAGE

No impacts were identified as part of the first phase heritage survey undertaken.

Indirect impacts:

General Construction Impacts:

- Erosion from vegetation removal and/or compaction of sand

Potential erosion problems as a result of the removal of vegetation and the compaction of sand during the construction phase. The stabilizing vegetation cover of soils will be removed from certain areas in order to facilitate construction. Soils may also be compacted by heavy vehicles and equipment used for construction. Once disturbed, soils become more susceptible to erosion.

ASSESSMENT CRITERIA	RATING
EXTENT (GEOGRAPHICAL)	Site
DURATION	Construction Period/Short term

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PROBABILITY	Possible
REVERSIBILITY	Reversible
IRREPLACEABLE LOSS OF RESOURCES	Low
CUMULATIVE IMPACTS	Low
SIGNIFICANCE RATING – PRE MITIGATION	Low
SIGNIFICANCE – POST MITIGATION	Low

- Degeneration of the Wewe River and surrounding areas as a result of direct construction related disturbances and alien vegetation encroachment during the construction phase.

Disturbance of the soils in and around the Wewe River will likely lead to further alien invasive encroachment into these areas if the construction sites are not properly rehabilitated and managed after construction.

ASSESSMENT CRITERIA	RATING
EXTENT (GEOGRAPHICAL)	Local
DURATION	Construction Period/ Short term
PROBABILITY	Possible
REVERSIBILITY	Reversible
IRREPLACEABLE LOSS OF RESOURCES	Medium
CUMULATIVE IMPACTS	Medium
SIGNIFICANCE RATING – PRE MITIGATION	Medium
SIGNIFICANCE – POST MITIGATION	Low

- Degeneration of the Wewe River and surrounding areas as a result of the contamination of the groundwater and/or runoff entering the wetlands and streams during the construction phase.

Groundwater and surface runoff contamination may occur during the construction phase as a result of negligence, inappropriate planning, lack of supervision and general handling errors. Pollutants include hydrocarbons i.e. diesel or hydraulic oils from construction machinery, stored fuels, bitumen based substances and cement in solution. The degree of contamination depends on the extent of the chemical spill or cumulative effects of a number of chemical spills.

ASSESSMENT CRITERIA	RATING
EXTENT (GEOGRAPHICAL)	Local
DURATION	Construction Period/Short term
PROBABILITY	Possible
REVERSIBILITY	Reversible
IRREPLACEABLE LOSS OF RESOURCES	Medium
CUMULATIVE IMPACTS	Medium
SIGNIFICANCE RATING – PRE MITIGATION	Medium
SIGNIFICANCE – POST MITIGATION	Low

Cumulative impacts:

Alternative S2 (if any)

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

Wetland and Riparian Zone:

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- Slow degeneration in the health of the floodplain wetland over time.
- Continued degeneration of the Wewe River
- Continued alien plant infestation

Employment:

- No employment/training opportunities for the local people during the construction phase.

Social and Economic

- Continued informal crossing of the river.

Indirect impacts:

Cumulative impacts:

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1	Alternative S2
<p><u>WETLAND AND RIPARIAN ZONE</u></p> <p><u>Bridge alignment and crossing design recommendations:</u></p> <ul style="list-style-type: none"> • The proposed bridge must not impact any existing sewerage infrastructure. • The bridge must be aligned so that the river is crossed at as close to right angles to the direction of flow as possible. • Wherever possible, the piers / plinths should be located outside of the active bed and channel. Where unavoidable for substantiated reasons, only one pier/plinth must be established within the active channel. <p><u>General site setup recommendations:</u></p> <ul style="list-style-type: none"> • The location of the existing sewer pipelines must be surveyed and demarcated prior to construction commencing. • During the construction phase, the edge of the active channel, macro channel and artificial wetland depression must be clearly demarcated using danger tape and stakes. • Access routes to the construction zone and the location of the construction laydown / storage areas must be agreed on by the Environmental Control Officer (ECO) prior to construction commencing. Thereafter, the access route and laydown/ storage must be clearly demarcated and all areas outside of these areas considered no-go areas. • Laydown and storage areas must not be located within 20m of the active channel or macro channel. <p><u>Construction and rehabilitation recommendations for bridge crossing:</u></p> <p>Timing:</p> <ul style="list-style-type: none"> • Construction should be undertaken in the winter months between the months of April and August. • A photographic record of the state of the riparian areas prior to construction must be compiled for reference and rehabilitation purposes. 	

<p>Right of Way (ROW) Construction Areas</p> <ul style="list-style-type: none"> • Disturbance to the delineated riparian areas along the bridge route should be restricted to a one-way construction right-of-way (ROW) corridor. The width of the ROW corridor should be as narrow as practically possible and should be demarcated and fenced off during the site setup phase to the satisfaction of the ECO. • Once the construction ROW is established, all areas outside of the demarcated ROW must be considered no-go areas. Encroachment into no-go areas without prior approval from the ECO must be penalised with a fine. • The construction ROW should comprise a one-way running track of a maximum width of 4m. • Wherever possible, the running track should not be established within the active channel and should extend into the riparian areas from each valley side to the furthest pier construction site. • Where a running track across the active channel is necessary, the running track must be established on top of either a berm of sandbags or imported rock. The running track across the active channel should be as narrow as possible and must be strictly one way. • Flow should be diverted through the running track berm using short flume pipes established during the running track establishment or using the coffer dam method whereby the running track is only established from one side to the plinth/pier site. • Erosion control must be established at flume pipe or coffer dam diversion outlets. • If dewatering is required, a dewatering area must be designated on the floodplain 20m from the edge of the active and macro-channels. The pumped water should be discharged into discharge areas comprising haybales. <p>Vegetation:</p> <ul style="list-style-type: none"> • Before clearing, indigenous plants suitable for rescue are to be relocated to a temporary holding area by a vegetation specialist / botanist. Indigenous plants suitable for rescue include small ingenious shrubs and trees (saplings) and grass clumps. • Before stripping, all vegetation within the wetland and riparian areas must be chopped down by hand prior to more intensive clearing and alteration. Any fauna encountered during the clearing process must be relocated to the adjacent habitats under the supervision of the ECO. • Thereafter, the working servitude is to be stripped of topsoil and vegetation to a nominal depth and this top soil placed at a temporary stockpile area and maintained for re-use. • Soil stockpiles must be located outside of the demarcated active and macro channel banks. The location of these soil stockpiles must be agreed upon by the ECO prior to construction commencing. • Topsoil and subsoil must be stored separately. • Wherever possible, excavations within the watercourses should be undertaken by hand. • If this is unfeasible for sound reasons, a small excavation vehicle may be used. • Once the bridge is completed, the running track must be removed by hand wherever possible. • Once completed, the disturbed bed and banks of the streams and wetlands must be reshaped under the supervision of the ECO. • Compacted riparian soils along the running track must be ripped to a depth of 30cm. 	
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- Once the riparian areas are re-shaped and the compacted soils are ripped, topsoil from that particular area must be reinstated to the satisfaction of the ECO.
- The prepared soils along the construction corridor must be re-vegetated via hand broadcasting and plugs by a professional. For un-shaded areas, the seed mix should comprise an indigenous grass mix comprising of 'runner' grasses like *Cynodon dactylon* var. Sea Green. If the construction corridor is shaded, the grass mix should comprise shade tolerant species. In addition, the rescued indigenous plants must also be replanted within the construction corridor by a professional.
- The banks must be armoured against erosion using biodegradable geofabrics to facilitate establishment of vegetation e.g. Geojute®. *C. dactylon* var. Sea Green plugs should be planted on the unshaded banks.
- The areas to be hand broadcasted must be lightly watered before planting to ensure that the seed material does not come into contact with dry ground.
- The seed mixture must be evenly broadcasted over the entire surface of the construction corridor. In this regard, a mechanical seeding device may be used in order to ensure a uniform distribution of grass seed over the area to be rehabilitated.
- The grass seed must be lightly worked into the upper topsoil layer by means of hand labour (using a rake).
- The seeded area must be watered daily until planting has been completed.
- The soil must be kept moist for the first two weeks after hand broadcasting to ensure seed germination. Thereafter irrigation should be applied weekly until reasonable groundcover is obtained.
- Watering should be gentle so that rill erosion is avoided and minimised.
- Any erosion damage resulting from watering/irrigation must be repaired immediately.
- The disturbed area should be monitored for erosion and alien plant encroachment weekly for a month, and monthly for 3 months.
- Alien plants within the rehabilitated area must be eradicated immediately. The alien plant species should be removed by hand-pulling where possible. Herbicides should be utilised where hand pulling is not possible.
- ONLY herbicides which have been certified safe for use in watercourses by independent testing authority to be used.
- The ECO must undertake a close-out audit after the monitoring period and sign-off on the success of the rehabilitation.
- A detailed method statement for the bridge crossing must be submitted to the ECO by the contractor for approval prior to construction commencing.

General construction management measures:

- All contractor staff working onsite must undergo an environmental induction prior moving onto site and all site managers must be well acquainted with the construction phase environmental management programme (EMPr). This EMPr must be kept onsite at all times. Failure to show proof of staff inductions and failure to keep the EMPr onsite must be penalised with a fine. The education of the contractor staff is the responsibility of the site manager. The appointed ECO must oversee the induction programme.
- Strict solid waste management and disposal measures must be included in the construction phase environmental management programme (EMPr).

- Chemical toilets must be provided for the construction workers and these toilets must be located within 32m of the delineated watercourses and should be regularly serviced.

Alien plant removal recommendations:

- All bare surfaces across the construction site must be checked for alien plants at the end of every week and alien plants removed by hand pulling and adequately disposed.

Stormwater management and erosion control recommendations:

- Stormwater and erosion control measures must be implemented during the construction phase to ensure that erosion and sedimentation impacts to the riparian and in-stream habitats are minimised and avoided. In this regard, the following measures should be implemented:
- Clearing activities must only be undertaken during agreed working times and permitted weather conditions. If heavy rains are expected, clearing activities should be put on hold. In this regard, the contractor must be aware of weather forecasts.
- Construction activities should be scheduled to minimise the duration of exposure to bare soils on site, especially on steep slopes.
- The full length of works must NOT be stripped of vegetation prior to commencing with other activities.
- The unnecessary removal of groundcover from slopes must be prevented, especially on steep slopes.
- Sandbags and silt fences must be available for use to control runoff, especially on sloping surfaces.
- The berms, sandbags and/or silt fences must be monitored for the duration of the construction phase and repaired immediately when damaged. The berms, sandbags and silt fences must only be removed once vegetation cover has successfully re-colonised the embankments.
- After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gulleys must be filled-in with appropriate material and silt fences must be established along the gully for additional protection until grass has re-colonised the rehabilitated area.

Hazardous substances handling, storage and disposal recommendations:

- If applicable, hazardous storage and refuelling areas must be bunded prior to their use on site during the construction period. The number of bunds and their location and their construction should occur during the site setup phase.
- Mixing and/or decanting of all chemicals and hazardous substances must take place on a tray, shutter boards or on an impermeable surface and must be protected from the ingress and egress of stormwater.
- Cement and concrete mixing must not take place within the 10m of the active and macro-channels.
- Every effort must be made to capture concrete/cement spillage during the establishment of the piers / plinths within the macro and active channels.
- No vehicles transporting concrete, asphalt or any other bituminous product may be washed on site.

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- Vehicle maintenance should not take place on site unless a specific bunded area is constructed for such a purpose.
- Ensure that transport, storage, handling and disposal of hazardous substances is adequately controlled and managed. Correct emergency procedures and cleaning up operations should be implemented in the event of accidental spillage.
- Implement appropriate operation and maintenance of construction equipment to avoid petrochemical products from polluting the soil.
- A spill contingency plan for both the construction phase must be drawn up and incorporated into the EMP. This should include procedures to guide the clean-up of accidental spillages and its disposal.
- Bins should be provided to all areas that generate waste e.g. worker eating and resting areas and the camp site. General refuse and construction material refuse should not be mixed.

VEGETATION

- The *Phragmites mauritianus* reeds must be relocated to another suitable habitat should they be found within the construction footprint. The western/Sandfields side of the river is preferable as the vegetation on this side is less transformed than the eastern/Newtown side. A horticulturalist or suitably qualified person must be appointed to undertake the relocation.
- Alien vegetation during and post-construction must be destroyed for a radius of approximately 30 metres from the site.
- All refuse and litter must be removed from in and around the site.

General Construction Mitigation Measures

Erosion from vegetation removal and/or compaction of sand

- Clearing activities should occur during agreed weather conditions to minimize runoff and therefore erosion.
- Clearing of vegetation must be undertaken in phases in order to prevent large areas at a time from being exposed and susceptible to erosion.
- Exposed areas must be revegetated as soon as possible.
- Silt fences and sandbags should be established within and around the development area to control soil erosion.

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the construction phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

Indirect impacts:

Cumulative impacts:

Alternative A2

Direct impacts:

Indirect impacts:

"Leading the attainment of inclusive growth for job creation and economic sustenance"

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

Indirect impacts:

Cumulative impacts:

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:

Alternative A2:

2.3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the operational phase:

Alternative S1 (preferred alternative)

Direct impacts:

WETLAND AND RIPARIAN ZONE

- **Reduction/ degradation in freshwater ecosystems and biodiversity as a result of flow alteration impacts.**

Physical bank and bed modification and the establishment of piers / plinths within the riparian and in-stream habitat will likely to alter flow paths which could also lead to some channel erosion and sedimentation, especially during large storm events. Further erosion will contribute to increased bank disturbance and in-stream sedimentation and ultimately increased invasion of the riparian areas by alien and indigenous pioneer plant species and increased turbidity and bed sedimentation. Due to the already poor state of the in-stream and riparian habitat, the change in the state of the riverine habitat as a result of the anticipated flow diversion will likely be moderately-low at most and the impact will likely be localized. However, the impact will be long-term in duration and definite in terms of probability.

ASSESSMENT CRITERIA	RATING
EXTENT (GEOGRAPHICAL)	Site
DURATION	Long Term
PROBABILITY	Definite
REVERSIBILITY	Reversible
IRREPLACEABLE LOSS OF RESOURCES	No Loss
CUMULATIVE IMPACTS	Limited
SIGNIFICANCE RATING – PRE MITIGATION	Medium – Low
SIGNIFICANCE – POST MITIGATION	Medium – Low

- **Reduction/ degradation in freshwater ecosystems and biodiversity as a result of solid waste impacts.**

The establishment of the bridge will result in the increased temptation to dispose of solid waste and other waste materials (e.g. grey water) directly into the river, which would contribute to a degradation in water quality and in-stream bed and bank habitats. Due to the already poor state of the in-stream and riparian habitat, the change in the state of the riverine habitat as a result of increased solid waste inputs will likely be moderately low at most and the impact will likely be

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localized to the Wewe Siphon Dam. Furthermore, the impact will be long-term in duration and probable in terms of probability.

ASSESSMENT CRITERIA	RATING
EXTENT (GEOGRAPHICAL)	Local
DURATION	Long Term
PROBABILITY	Definite
REVERSIBILITY	Reversible
IRREPLACEABLE LOSS OF RESOURCES	No Loss
CUMULATIVE IMPACTS	Medium
SIGNIFICANCE RATING – PRE MITIGATION	Medium
SIGNIFICANCE – POST MITIGATION	Medium – Low

STORMWATER MANAGEMENT

- Flooding as a result of effects on the flow of the river post construction**
 The surface water elevation during a 100 year flood is estimated to increase by a negligible value post construction. Therefore the construction of the pedestrian bridge would not pose a significant impact on the receiving areas.

ASSESSMENT CRITERIA	RATING
EXTENT (GEOGRAPHICAL)	Site
DURATION	Short term
PROBABILITY	Unlikely
REVERSIBILITY	Irreversible
IRREPLACEABLE LOSS OF RESOURCES	Low
CUMULATIVE IMPACTS	Low
SIGNIFICANCE RATING – PRE MITIGATION	Low
SIGNIFICANCE – POST MITIGATION	Low

Indirect impacts:

Cumulative impacts:

Alternative S2 (if any)

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

Indirect impacts:

Cumulative impacts:

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Alternative S2

WETLAND AND RIPARIAN ZONE

Educational Signs:

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- Educational signs must be established on, or adjacent to, the bridge entrances to educate the local residents on the Wewe River and prohibitions with regards to solid waste and other hazardous substances.

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the operational phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

Indirect impacts:

Cumulative impacts:

Alternative A2

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

Indirect impacts:

Cumulative impacts:

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1

Alternative A2

2.4. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING OR CLOSURE PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the decommissioning or closure phase:

Alternative S1 (preferred alternative)

It is difficult to quantify the impacts that would likely result in the future should the proposed development be decommissioned.

The applicant will therefore need to assess the impacts that may result from the decommissioning or closure phase in terms of applicable legislation at the time of decommissioning.

Alternative S2

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

Indirect impacts:

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Cumulative impacts:

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Alternative S2

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the decommissioning or closure phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

Indirect impacts:

Cumulative impacts:

Alternative A2

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

Indirect impacts:

Cumulative impacts:

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1

Alternative A2

2.5. PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

Alternative S1 (preferred site)

Alternative S2

- The EMPr (Appendix F) setting out procedures and mitigation measures will need to be adhered to during the planning, construction and operational phases.
- The EMPr must be approved by the relevant authority before construction commences.
- The contractor must sign that he has read and understands the EMPr.
- A qualified Environmental Control Officer must be appointed to conduct monthly audits and submit a monthly report to the contractor and relevant authority during construction

Alternative A1 (preferred alternative)

Alternative A2

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative S1 (preferred site)

The eThekweni Municipality, Procurement and Infrastructure Department proposes the construction of a Pedestrian Bridge crossing the Wewe River in Tongaat. The Wewe River is one of the tributaries feeding into the Tongati River between Sandfields and Burbreeze, Tongaat within the eThekweni Municipality.

Residents crossing the river between Sandfields and Burbreeze currently make use of a pipe that crosses the tributary. This is highly dangerous and the height of the water during storms and after is evident by the damage to embankments and planted crops. The crossing is therefore unsafe and a structure for pedestrian traffic is of high importance in this area.

The public participation process was undertaken for the Basic Assessment Process and has highlighted the issue of increased crime as a result of the construction of the pedestrian bridge. The residents of the Burbreeze Community have raised concerns regarding the safety of the community. The location of the proposed Burbreeze Pedestrian Bridge is in close proximity to a low cost housing development. The residents believe that the formalisation of the bridge will result in an increased crime rate in the community through easier access.

The development of the proposed construction of the pedestrian bridge between Burbreeze and Sandfields has been assessed by a number of independent specialists and a summary of the findings and recommendations made by the following specialists are provided below:

- Wetland Assessment
- Vegetation Assessment
- Heritage Assessment

Mr Ryan Edwards of GCS conducted a wetland delineation and functional assessment for the site. The proposed pedestrian bridge will cross a section of the Wewe River and is surrounded by a flood bench, flood plain, terrace and excavated depression. The section of the Wewe River in-stream and riparian habitat delineated was assessed as being of low ecological importance and sensitivity. However, the Wewe River in-stream habitat is likely moderately sensitive to pollutant inputs due to the damming of flow and water stagnation that is encouraging the accumulation of sediment and pollutants. Although disturbed and characterised by low aquatic biodiversity, conservation plans still ascribe value to the system and thus the portion of the river habitat assessed should likely be considered of moderate ecological importance and sensitivity.

Mr David Styles conducted the Vegetation Assessment for the site. The vegetation present at the site falls into two categories, dryland and wetland vegetation. Both the dryland and wetland vegetation consists mainly of alien vegetation with a few indigenous species. Given the poor state of the vegetation evidenced by the number of alien species and the limited number of indigenous species that are then only more common plants, pioneers or weeds of disturbance, the construction of the bridge is not considered to have an important impact on flora. The construction and more importantly increased activity and disturbance around the crossing that is then enabled is likely to somewhat increase the amount of alien vegetation.

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Mr F Prins of Active Heritage was appointed to assess the site in order to establish whether the proposed development would impact on any features of heritage significance. The Heritage Specialist confirmed that no aspects of heritage value were found on the site.

In conclusion the site has been highly disturbed and transformed, however there are still some sensitive features on the site that need to be protected. With the recommended mitigation measures, the construction of the proposed pedestrian bridge will impact positively on the site. The need for the pedestrian bridge has been identified in the eThekweni Municipality IDP (2014-2015). The construction of the proposed pedestrian bridge will also assist in providing a formalised crossing for the Wewe River.

Alternative S2

Alternative A1 (preferred alternative)

Alternative A2

No-go alternative (compulsory)

The no-go alternative refers to the option of not constructing the proposed pedestrian bridge. The need for the pedestrian bridge is of high importance in this area. The river during favourable weather conditions is still passable and pedestrians will continue to cross the river via informal crossings.

SECTION F. RECOMMENDATION OF EAP

Is the information contained in this report and the documentation attached hereto in the view of the EAPr sufficient to make a decision in respect of this report?

If "NO", please contact the KZN Department of Economic Development, Tourism & Environmental Affairs regarding the further requirements for your report.

YES ✓	NO

If "YES", please attach the draft EMPr as Appendix F to this report and list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

- The Environmental Management Programme needs to be adhered to.
- A qualified Environmental Control Officer must be appointed to conduct monthly audits and submit a monthly report to the contractor and relevant authority.
- Recommendations contained within the Wetland and Riparian Zone Assessment Report prepared by Ryan Edwards of GCS (October 2014) must be followed.
- Recommendations contained within the Vegetation Report prepared by David Styles (August 2014) must be followed.
- Recommendations contained within the Heritage Impact Assessment prepared by Active Heritage (September 2014) must be followed.

SECTION G: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other information