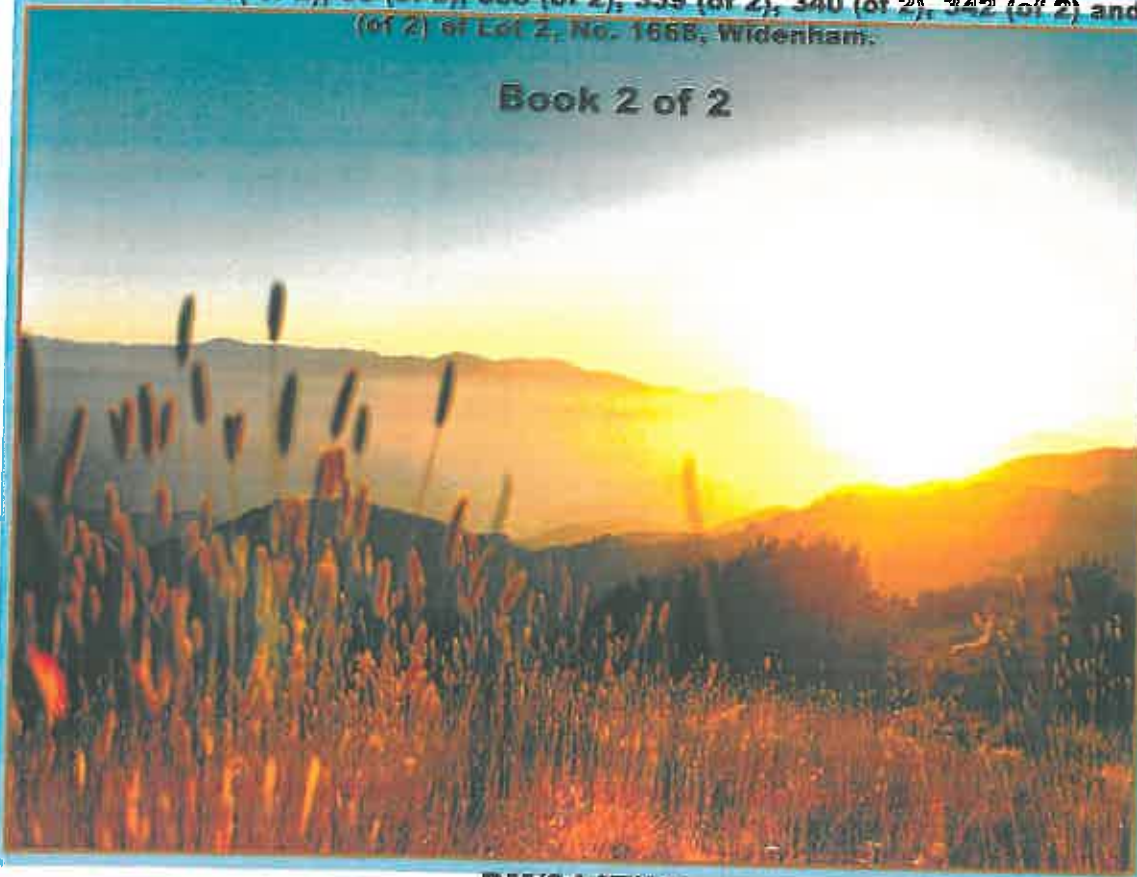


# ADDENDUM TO BASIC ASSESSMENT AS REQUESTED BY KZN DEPARTMENT OF AGRICULTURE & ENVIRONMENTAL AFFAIRS

## Widenham Stand

on Portions 25 (of 2), 36 (of 2), 338 (of 2), 339 (of 2), 340 (of 2), 342 (of 2) and 343  
(of 2) of Lot 2, No. 1668, Widenham;

Book 2 of 2



DM/0147/08  
DECEMBER 2013



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13 December 2013

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Department Reference: DM/0147/08

**ATTENTION: MR SHAWN JANNEKER**

**BASIC ASSESSMENT REPORT REJECTED: ADDITIONAL INFORMATION REQUIRED FOR THE PROPOSED CONSTRUCTION OF A 8 BLOCK DEVELOPMENT WITH 2 STOREYS TO ACCOMMODATE A TOTAL NUMBER OF 32 RESIDENTIAL UNITS, TOGETHER WITH PARKING BAYS ON PORTIONS 35 (OF 2), 36 (OF 2), 338 (OF 2), 339 (OF 2), 340 (OF 2), 342 (OF 2) AND 343 (OF 2) OF LOT 2, NO. 1668, WIDENHAM, SITUATED WITHIN THE ETHEKWINI MUNICIPALITY.**

*The correspondence from your Department dated 16/11/2012 refers.*

In the above mentioned correspondence the Department raised some concerns and requested that the applicant/ EAP (on behalf of the applicant) address such concerns in an Addendum to the amended BAR. **This document, which is attached to the Amended BAR represents the Addendum to the Amended BAR and to follow now is the EAP's response to the issues/ concerns raised by the Department:**

1. The EAP agrees with the contents of Item 1, which briefly describes the project and it also **supplies details regarding the applicant and the EAP.**

REG NO: CK 2010/087490/23  
VAT REG NO: 4080260872

BOKAMOSO LANDSCAPE ARCHITECTS AND ENVIRONMENTAL CONSULTANTS CC TRADING AS BOKAMOSO ENVIRONMENTAL

MEMBER: Lizelle Gregory

2. ***Bokamoso Landscape Architects and Environmental Consultants submitted a BAR on behalf of the applicant for review and consideration. The BAR was received by the Department on 31/10/2011 and was reviewed and considered by the Department. The Department issued a decision on 18/1/2012 and rejected the BAR. The Department made further correspondence on 15/2/2012 requesting that the presence of the Pikersgill Reed Frog species be determined, as it was brought to the Department's attention that these indigenous species are present on site. The Department at this stage was made aware of the abovementioned species and therefore requested (16/2/2012) that the Environmental Assessment Practitioner (EAP) together with the applicant establishes whether or not this species is present on the site identified for development.***

### ***Response***

The applicant and the EAP decided not to dispute the possible occurrence of the frog on the study area. The Approach was to rather determine whether the study area could be developed into a save habitat/ haven/ sanctuary for the frog, which will provide in all the needs (i.e. habitat, breeding, feeding) of the frog and which could eventually assist in the co-existence of the frog in the area.

At present the study area is unprotected and it is often flooded and covered with litter, which are released onto the study area at the various storm water discharge points into the site. As mentioned in the BAR, the study area has an indigenous and well developed canopy, but the ground cover is highly invested by weeds and *Pennisetum clandestinum* lawns, which tend to destroy the natural vegetation in watercourses. Drifters / vagrants were found wandering across the study area on numerous occasions and some evidence of illegal squatting were also detected in the densely vegetated and screened areas. This occurrence does not only increase the safety in security risks of the surrounding area, but it is also regarded as a threat to the remaining indigenous vegetation, the frogs and any other fauna species on the study area.

It is also important to note that the study area is currently surrounded by roads and residential developments and apart from a few narrow culverts, the open space is almost an isolated island in between such roads, structures and associated infrastructure.

The EAP investigated the matter and had numerous discussions with the Pretoria Zoo (the Zoo is currently participation in a protection programme/plan for the frog and also keeps one of the frogs at the zoo for research purposes) regarding the habitat requirements, feeding habits, conservation/ protection possibilities and according to the expert at the zoo (Mr Michael Adams) the creation of a sanctuary on the study area is regarded as the best solution for the frog. The zoo also offered to assist with the compilation of a construction and operational phase management and rehabilitation plan for the site, which will specifically focus on the needs of the frog. This will then be one of only two frog sanctuaries in South Africa (the other frog sanctuary is the bullfrog sanctuary established as part of a Total Filling Station development adjacent to the N14 in Gauteng). ***(Refer to Appendix A for additional input regarding the estuary proposal and the specific species)***

- 3. An amended BAR was received by the Department on 23/4/2012. The amended BAR was acknowledged by the Department on the same day and also confirmed that the Comments and Response Document, which is a prerequisite to a BAR prior to acceptance and reaching a decision, was still outstanding. To date, the Department still awaits the Comments and Response Document for the amended BAR received by the Department on 23/4/2012.***

### ***Response***

***Refer to Appendix B for a copy of the comments and response report, which took all the comments and issues listed into consideration.***

4. *The Department has reviewed the amended BAR and has the following concerns:*
- 4.1 *Scientific Aquatic Services (SAS) was commissioned to compile a "Present Ecological State" (PES) and "Ecological Management Class" (EMC) report dated 17/2/2012 of the wetland identified onsite, which was in response to the Department's rejection letter dated 18/1/2012. The report has identified that the wetland system on site has ecological functions, good service provision and receives very high levels of nutrients from upstream, however due to the significant impact from the surrounding residential activities in the catchment area, the system is regarded as been limited in terms of biodiversity and is an isolated system. The recommendations presented suggest that the wetland feature must be carefully protected and managed throughout the life of the proposed residential development. The recommendations do not explicitly state the amount of units that is permitted on site; however it recommends that the development can commence.*

**Response**

Please note that the EAP supplied the wetland specialist with the alternatives that were considered, which included the preferred alternative with 32 units. **Refer to Appendix C for wetland delineation, 1:100 year flood line and proposed layout (preferred 32 unit development) superimposed over the wetland area.**

Also take note that the wetland specialist assisted with the compilation of the storm water management concept for the study area and he agrees with all the proposals as supplied in the BAR. On page 6 (paragraph 1) of the September 2009 wetland report from SAS the wetland specialist specifically refers to the m<sup>2</sup> of encroaching into the flood plain area. The wetland specialist did not specifically take the number of units into consideration, he considered the size of the development footprint and he supplied recommendations regarding the development footprint.

- 4.2 ***In response to the above, the PES and EMC assessment undertaken for the wetland identified on the site for the proposed residential development still does not address the concern raised by the Department, wherein the Department requests for the wetland boundary on site to be delineated. The assessment also fails to look at functionality of the wetland post-development and is viewed as a “status quo” functional assessment, whilst the assessment addresses the functionality of the temporary and permanent wetland zones. To reiterate, the Department requires that a suitably qualified wetland specialist be appointed to delineate the boundary of the wetland and compile a Wetland Delineation Report. The purpose of the Wetland Delineation Report is to confirm the extent of the wetland in terms of the various zones, provide an understanding/comparison of the functionality and health of the wetland pre-development and post-development, confirm whether development is feasible on site and if feasible, recommend appropriate buffers and provide alternative layout options that would have the least impact on the wetland and associated buffers. The wetland zones must be identified in terms of the Department of Water Affairs’ (DWA) guidelines.***

#### ***Response***

According to the wetland specialist, the wetland delineation was done in accordance with the DWA guidelines of 2005. ***Refer to Appendix D for the wetland delineation as supplied by the wetland specialist.***

The boundaries of the wetland, which is significantly modified and enlarged by human activity (i.e. the local authority storm water pipes that discharge onto the study area, the main road constructed across the original drainage channel, the narrow culverts implemented underneath the two road that traverses the drainage line, the concrete storm water canal constructed on the study area etc.) lies almost on the boundaries of the study area. The wetland specialist included a wetland delineation map (***Refer to Appendix D6 page 4 of the wetland report and also refer to Appendix D of this document***) and he also stated that there is no wetland buffer (the surrounding historic developments already encroached into the wetland buffer). He however distinguished between the permanent and seasonal wetland areas and he also regarded the development as an opportunity to increase the ecological value and bio-diversity of the

study area. At present the storm water management function is dominant and the proposed environmentally friendly storm water management measures will help to enhance the ecological, social and economical environments, which will eventually contribute to a sustainable development (one of the principles of NEMA).

- 4.3 WSM Leshika Consulting (Pty) Ltd was commissioned to compile a report and recommendations with regard to sewage disposal for the proposed residential development. WSM Leshika recommends that a Biomite system package treatment plant be installed to dispose sewage. The Biomite system package treatment plant will clean waste water that will flow from the septic tanks and discharge into the natural watercourse. The proposed treatment plant will also be designed to have a by-pass pipe that can connect to the future Umkomaas Regional Waste Water Treatment Works.**

#### **Response**

According to the local authority it will be possible for the development to link-up with the planned Umkomaas Waste water Treatment Works and the proposed on-site sewage treatment facility will only be a temporary facility that will be utilised until the municipal sewage connection is available. The internal sewer network for the development will be designed to automatically link-up with the municipal system as soon as it becomes available.

DWA confirmed that they will support the temporary on-site sewer treatment plant, which is an improvement to the existing surrounding sewer practises, which involve septic tank systems.

A Section 21 WUL will be required for the proposed temporary sewage system and the developer will comply with the license approval conditions as set out in the license issued by DWA.

- 4.4 In response to the above, the DWA stated in their letter dated 18/4/2011, in response to the Draft BAR (not the Final or amended BAR), they do not support**

***the use of septic tanks and package treatment plants. However, there are specific requirements that must be met prior to installation of the appropriate method of sewage disposal. This Department is of the opinion that alternative means of sewage disposal has not been adequately explored in the amended BAR.***

#### **Response**

The letter from DWA has been wrongly interpreted. When we consulted with DWA we specifically requested whether there are any specific package plants that are recommended/ supported by the department. DWA indicated at the meeting and in their letter (under Item 1.2) that they do not approve any specific technology. They however require that such a system comply with specific requirements and the requirements are listed in their letter. The appointed engineers confirmed that the proposed system will comply with the DWA requirements and it is also important to note that the quality of the proposed system will be regulated by the S21WUL to be issued.

The proposed biomite system has been discussed with DWA and they indicated that they will support an on-site package plant. ***Refer to Appendix E***

- 4.5 Scientific Aquatic Services has been commissioned to undertake studies to understand the overall presence of the IUCN Red List of Threatened Species, Pickusgill Reed frog, on the site. The studies undertaken found that the frog is not indigenous to the site and surrounding area and the species has originated in North America with distribution range restricted to North America.***

#### **Response**

Even though Mr Van Staden of Scientific Aquatic Services is a qualified wetland specialist and ecologist, he is not an amphibian specialist. Bokamoso decided to rather



consult with a frog specialist at the Pretoria Zoo, who is currently doing research on the specific frog species.

Also refer to Item 2 above.

5. ***In terms of the abovementioned concerns, the Department is still not satisfied with the amended BAR because the minimum requirements in terms of Regulation 22, GNR 543, 18/6/2010, have not been achieved for the following reasons:***

- 5.1 ***A written and approved service agreement has not been attached to the amended BAR. A written and approved service agreement must be obtained from the eThekweni Municipality, indicating that there are sufficient services available to accommodate the proposed residential units.***

***Response***

The applicant is not a developer and he cannot afford (from a financial point of view) to appoint engineers to complete the services agreement if the layout is not even finalised yet.

The applicant however undertakes to conclude a services agreement with the involved local authority as soon as he received a positive decision. The Department can make the provision of the signed services agreement one of the conditions of the approval.

- 5.2 ***The amended BAR makes no mention of the impact/volume of storm water that will be released from the recently authorised Canonbrae Residential development upstream of the site. The Department has reasonable grounds to believe that the site under assessment will be prone to flooding as a result of the increase in storm water as a result of development upstream. The storm water engineer must therefore assess the full impact (i.e. considering the peak storm water flow – post development – from the Canonbrae development) on the site and proposed development.***

***Response:***

The applicant and his project team already made many attempts to obtain copies of the Canonbrae storm water management plans. The engineers of the Canonbrae development refused to supply the necessary detail. This matter has been discussed with DWA and with the Department on several occasions.

WSM Leshika Consulting Engineers however conducted a Hydrological Assessment of the study area and the flood line and the catchment area was addressed in this report.

- 5.3 ***The amended BAR does not mention or indicate that all registered Interested and Affected Parties (I&APs) have been notified and given adequate opportunity to provide comment in terms of Regulation 22 (2) (o) (p) (q). The amended BAR must be submitted to all I&APs for review and comment. The amended BAR must include a Comments and Response Report, listing all the concerns and issues raised and appropriate measures of addressing the concerns and issues raised.***

***Response:***

Bokamoso takes cognisance of this request and proof of this action will be supplied to the Department.

6. ***Ezemvelo KwaZulu-Natal Wildlife (EKZNW), Endangered Wildlife Trust (EWT) and eThekweni Municipality: Environmental Planning and Climate Protection Department (EP&CPD) requested that the Department to meet on 11/9/2012. The purpose of the meeting was to discuss the issues identified on the site.***
7. The abovementioned stakeholders have confidently affirmed the presence of species of high ecological value identified on site ear-marked for development namely the *H. pikersgilli*. This species identified on the site is close to extinction and the International Union for Conservation has listed this species on the Red Data List of critically endangered species. This reed frog is endemic to the KwaZulu-Natal coastline and there are very few habitats left that are conducive to this species. Due to the critical importance of conserving this species and habitat and furthermore that EKZNW are bound by National

and International protocol regarding protecting this species, they are opposed to any development on this site.

***Response***

This aspect was addressed under Item 2 above.

8. ***Some key stakeholders and I&APs have not been given adequate opportunity to provide comment on the proposed residential development.***

***Department of Water Affairs; Endangered Wildlife Trust; Ethikweni Municipality; WESSA; Mkhomazi Conservancy; Ezemvelo Kwazulu-Natal Wildlife & Coastwatch Kwazulu- Natal***

***Response***

Bokamoso takes cognisance of this request and will provide the information to the key stakeholders.

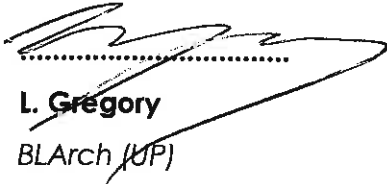
9. ***In terms of the way forward regarding this application subject to environmental authorisation, the Department awaits some form of correspondence with regard to the outstanding information.***

***Response***

This document represents the Bokamoso reply to the Department's correspondence referred to.

***Please do not hesitate to contact writer if there are any queries regarding this addendum document.***

**Regards;**



**L. Gregory**  
BLArch (UP)

*Member: Bokamoso Landscape Architects and Environmental Consultants CC  
Registered Professional Member at SACLAP*



# Appendix A

LEBOMBO GARDENS BUILDING  
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Landscape Architects, Environmental Consultants,  
Environmental Auditing, Water License Applications

## Proposed Sanctuary for *Hyperolius pickersgilli* (Pickersgill's Reed Frog) at Widenham

### 1. BACKGROUND INFORMATION ON *HYPEROLIUS PICKERSGILLI*

In South Africa, almost a third of the frog species are on the Red List. The province with the highest species richness, in terms of frog species, is KwaZulu-Natal and the only critically endangered frog species in this Province is the Pickersgill's Reed Frog (*Hyperolius pickersgilli*). Only two of this species' populations are within formally protected areas (Umlalazi Game Reserve and iSimangaliso Wetland Park), all other sites are under threat due to developments and pollution. This frog's distribution is limited to only a narrow section along the coastal area of KwaZulu-Natal.

An amphibian and reptile specialist of the Pretoria Zoo, Michael Adams, was consulted as they are facilitating the first captive breeding programme for this endangered frog species in South Africa. The specialist confirmed that it is important to maintain corridors for these frogs to move between populations in order to maintain genetic variation. The difficulties with the corridors are known as the few sites where this frog species occur are isolated by roads and existing developments. Especially the males of *H. pickersgilli* are able to travel up to 1.5km for foraging and over-wintering purposes and therefore this will also be a good aim for a conservation buffer. The adult of this frog species feeds on small flying and crawling insects such as baby crickets, fruit flies and termites while the tadpoles eat algae.

REG. NO. Ck 2010/087490/23  
VAT REG. NO. 4080260872

BOKAMOSO LANDSCAPE ARCHITECTS AND ENVIRONMENTAL CONSULTING CC

MEMBER: Lizelle Gregory

The habitat of *H. pickersgilli* is characterized as perennial wetlands with dense reed beds where there is a thick lower level vegetation (such as reeds and sedges) and taller broad-leaved vegetation. They lay their eggs on lower level vegetation above the water of the wetland and tadpoles are then released into the water. Outside of the wetland areas it prefers to be covered by dense natural vegetation. A degraded site with dominating kikuyu will not be preferred by this frog species.

## **2. PROPOSED DEVELOPMENT**

The proposed application site, for a residential development, is wedged in between four roads. Widenham Road forms the western boundary of the study area, Camborne Road forms the northern boundary and St. Catherine Road forms the southern boundary. The Umkomaas Golf Course is situated further to the south, the R102 road, which is used to act as a link road between coastal towns such as Scottburgh and Umkomaas runs along the eastern boundary of the application site. Large sections of this road have however been severely damaged by flooding and such damage caused major interruptions in the continuity of this internal link road, which was often used as picturesque alternative to the N2 freeway that runs inland (mainly in a south-north direction), west of the study area.

The study area is approximately 2, 0144 hectares in extent. It is proposed to consolidate the eight separate erven into one big property and to concentrate the development along the periphery of the proposed application site. Such peripheral development will not only aim to avoid the wet areas on the site, but it will also limit the ecological footprint to the sections of the study area that are most affected by the "edge effect" and that are mainly situated within the wetland buffer or the seasonal wetland areas.

The proposed development area is within an urban area and is surrounded by existing roads and residential developments. Due to the stormwater on site, a permanent and seasonal wetland area formed on the site. The grass layer on the site is dominated by kikuyu grass and alien plant species are also present on the site. Currently the site is open for possible migrants and littering.

### **3. BIODIVERSITY MANAGEMENT PLAN (EWT)**

The Draft Biodiversity Management Plan (BMP) for *H. pickersgilli* has been released for comments in October 2013 by the Endangered Wildlife Trust (EWT). The following threats have been identified in the BMP:

1. Habitat loss as a result of wetland drainage for agricultural, urban and industrial development;
2. Severe habitat fragmentation and small, isolated sub-populations;
3. Alien vegetation and afforestation resulting in drying out of breeding sites; and
4. Pollution from pesticides and other contaminants.

Objectives to achieve the aim of the BMP of *H. pickersgilli*, that is relevant to this project, include the following:

- ~ Prioritise the protection and management of key habitats for *H. pickersgilli* in relation to the scale and imminence of potential impact from urban/industrial development, with the additional objectives of:
  - o Researching relocation and habitat rehabilitation or restoration requirements of *H. pickersgilli* and developing guidelines for the implementation of these processes.
- ~ Create and maintain an enabling environment for landowners, on whose property *H. pickersgilli* occurs, to carry out appropriate management actions required to ensure the survival of the relevant subpopulation and maintain/improve necessary ecological processes.

### **4. FROG SANCTUARY**

It is Bokamoso's opinion that the wetland on the proposed development site (which has been modified and of which large sections are man-made) has been transformed and disturbed. The wetland is currently full of litter and not in a state to enhance any amphibian species conservation value. It is proposed that only one third of the site be developed for residential purposes. This area (to be developed) will be furthest away from the delineated



wetland. In order to be in line with the draft BMP for *Hyperolius pickersgilli* it is proposed that the on-site wetland area should be rehabilitated in such a way that it offers more natural and protected environment for the frog species.

Apart from the maintenance personnel, people will only be able to move through the site on elevated boardwalks. The wetland area will be treated as a conservation area and this areas will then serve as a frog sanctuary to protect and conserve the *Hyperolius pickersgilli* frog species in KwaZulu-Natal. It will increase the awareness public knowledge regarding this critically endangered frog species, which is also an objective of the draft BMP in order to achieve the aim of the BMP. The following actions will form part of the construction and rehabilitation of the proposed frog sanctuary:

- ~ Removal of alien invasive plant species;
- ~ Cleaning of the wetland area;
- ~ Construction of elevated wooden walkways to avoid disturbance of the habitat of *H. pickersgilli* in future;
- ~ Rehabilitate the groundcover to ensure a more natural habitat for the frog species;
- ~ Rehabilitation and construction works should be allocated to one section at a time in order to not disturb or harm *H. pickersgilli* species;
- ~ A portion of the residential levies will be used for maintenance of the frog sanctuary.

The proposed sanctuary and conservation plan was supported by Michael Adams, Pretoria Zoo's Reptile Conservator. When the Zoo's support was confirmed it was established that this individual resigned from their position at the Pretoria Zoo. Chris de Beer, a colleague of Michael Adams at the Pretoria Zoo confirmed that he has knowledge of this proposal and indicated that they are still interested in the project. He undertook to discuss the matter with the Head of Conservation at the Pretoria Zoo and it was agreed that a meeting to discuss the proposed estuary project will take place in early 2014.



# Appendix B

## WIDENHAM - Public Participation - Interested and Affected Parties - Issues and Response Report

Register ed Parties	Contact details	Issue	Response
<b>Comments received during a Public Meeting held on 13 April 2010</b>			
1. Ria Visser	Please refer to the list of registered I&AP's	1. Legal Implications of building structures in a wetland.	1. There is no legislation that prohibits development within wetland areas. There are however legislation and policies that regard development within flood line areas, wetland and wetland buffers as activities that could be detrimental to the environment and therefore requires that authorization be obtained for such developments from the authorities (i.e. Activity 4 and 11 of the 2006 NEMA Regulations, Section 21 of the Water Act in the case of a natural wetland etc.). The applicant will not commence with any development activities until all authorizations and licenses in terms of all the applicable policies and legislation are obtained. If not possible to obtain authorization the
2. Lynette Palmer		2. Desirability of any building in the wetland area and impact of the proposed development on the wetland area.	
3. Derek & Susan Weightman - Mkhomazi Conservancy Chairman		3. Concerned about the constant degradation of the site.	
4. Josephine M de Havilland			
5. W. Khan - Senior Env Health Practitioner Ethekwini Municipal Health Department			
6. Ronny Thorold			
7. Shelly Lawrie			

8. Mid South  
Coast Rising  
Sun

9. Thomas &  
Marinette  
Bolton

10. Graham  
Liversage

11. Carolyn  
Schegman -  
WESSA

12. Cobie  
Steenkamp

13. Steve  
Sheard

14. K Jones

15. Mr. &  
Mrs. P.  
Walter

16. Mrs ME  
Huson

17. E

Pikington

18. J.C.H.  
Hunt

19. Anne  
Hunt

20. Mr. &  
Mrs. Bray

21. Stone  
Family

4. Increase in traffic – roads currently sub-standard and cannot even handle existing traffic.

development will not  
take place.

2. The impacts have been assessed and it is the EAP's opinion that the anticipated impacts can be mitigated to acceptable levels. In fact, if well planned and managed the impacts on the wetland and larger regional open space system (D'MOSS) could even be positive.

3. At present the study area appears neglected and it is invaded by exotic invaders. The applicant originally purchased the study area for development purposes, because the study area is zoned "Residential 1" and not open space/conservation open space. At present the wetland that formed on the study area prevents the applicant from developing the site and the applicant does not have the funds to maintain and manage the site as an open space. It is also not reasonable for the surrounding community or the relevant authorities to expect an individual to manage and maintain a property

- 22. Govender Family
- 23. E.Y. Stone
- 24. Mr. F & Mrs. M Potgieter
- 25. Neil Lamble - Halfway Group
- 26. Mike & Elizabeth Howlett
- 27. Duncan & Gloria Hutchinson
- 28. V Macleod
- 29. BH Few
- 30. Yvonne Stone
- 31. Heather & Tony Butler
- 32. Jody Macbeth
- 33. Sheena Arnesen
- 34. Mike

- 5. Access of construction vehicles to site.
- 6. Weight limit of construction vehicles.

7. Crime during construction phase.

8. Impact of the development on the fauna species and the larger continuous open space system.

for which the existing land-use rights cannot be exercised. The possibility of the local authority purchasing the property for storm water management purposes was also discussed with the local authority and due to a lack of sufficient funds this option was not regarded as a viable option. After various alternatives were considered, the development option (in a sustainable manner) was regarded as the best option to follow for the study area. The proposed development must take the existing ecological potential and issues, the existing hydrological problems, the existing storm water management functions and problems, the concerns of the surrounding residents (especially with regards to the qualitative environment), the future management and maintenance requirements of the site and the existing; the future role of the study area in the larger regional open space system (D'MOSS) into consideration and the development proposal

<p>McCarthy</p> <p>35. Val Skinner</p> <p>36. Neil MacLeod</p> <p>37. Mr Alan Hutchinson</p> <p>38. Mr Mes Erikson</p> <p>39. Mrs V Govender</p> <p>40. Mr M Govender</p> <p>41. Dr. V Govender</p> <p>42. Uppercoast Feaver</p> <p>43. Mid Southcoast Mail</p> <p>44. Cherryl-ann Vermeulen</p> <p>45. Wanita Westerdale</p> <p>46. Ethikweni Municipality</p>		<p>must equalize of improve the existing ecological, hydrological, aesthetical, security, maintenance, management, infrastructure conditions on and around the study area.</p> <p>All the alternatives were thoroughly investigated and the opinion is that the proposed development (A1, S1) is the preferred alternative for the study area.</p> <p>4. A civil engineer has been appointed to investigate the current conditions of the surrounding roads and the access points to the study area. The proposed development will require some road upgrades and the civil engineer will supply more detail regarding the road upgrading as soon as the negotiations with the local authority has been completed. According to the appointed civil engineers, the additional traffic generated can be accommodated if the necessary upgrading is done and he is of the opinion that the road upgrading will improve</p>
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the existing road and circulation conditions. No upgrading will be done to the local roads without development, because the upgrading of the local roads around the study area is not regarded as a local authority priority project. According to the appointed engineers it is anticipated that at least 50% of the housing units will be utilized as permanent residence, which will contribute towards peak traffic during the mornings and afternoons. Taking into consideration the 50% permanent residency, it can be expected that an additional 16-20 vehicles within a peak hour could be expected. Therefore a traffic impact analysis is not required and it is only required to evaluate the access to the property. Each access will be geometrically designed to reduce any unnecessary damming of traffic, furthermore the design will ensure safe traffic flow by means of taking into consideration sight distances, distances from existing intersections.

accelerations and decelerations lanes and the radius for turning vehicles into and from the property. (Refer to Annexure D (iii) Traffic Impact Analysis)

5. Addressed in the EMP (Refer to Appendix H)

6. Will be imposed and photographs will be taken of the existing local roads prior to construction and the contractors will be responsible for the protection of the local roads and for the fixing of roads damaged by the construction phase immediately after damaging the roads. In order to protect the ecological sensitive areas, these areas will be demarcated and construction vehicles will be prohibited to enter into these areas.

7. According to the local frameworks and policies, the area is known for its high crime rates. It is true that the crime could even increase during the construction phase if no control measures are implemented. In order to prevent an increase in crime during the

9. Number of people/ human density.



construction phase the applicant will appoint a security company to guard the site during the entire construction phase. Furthermore, no workers, except for the security personnel will be allowed to sleep on the site and no workers will be allowed to enter adjacent private properties without written consent of the legal owners to the contractor.

The development phase will include the fencing of the study area, the provision of monitored access points that will supply public access to the wetland area and 24 hour security to be paid by the HOA.

8. The intention of the development is to improve the integrity of the ecological and wetland systems of the study area and the open spaces to which it is linked. There will be short terms impacts on the ecological environment and some fauna species will move away during the construction period, but if well planned, implemented and managed the fauna species that moved

10. Visual impacts (open space not visible from surrounding properties).

away and new fauna and flora species will return/ establish in the newly created habitats, wetlands and eco-systems.

The proposed development plan for the subject property has targeted the northern, western and southern border areas which form the higher lying areas of the site. Immediately adjacent to the study area boundaries there will be some earthworks required to level the areas required for parking, as well as the stairwells of the residential units. The total area of all structures encroaching into the wetland/ flood area is 3166 m<sup>2</sup> of which 1685 m<sup>2</sup> will be developed on raised platforms supported by pillars.

Earthworks will reduce the size of the area under the flood-line by 1481 m<sup>2</sup>. The impact of the alteration of the floodplain areas will have on the wetland system is regarded as being moderate to low in the construction phase of the development and low to positive in the operational phase of

11. Current flooding problems to the north of the site and to the north-east of the site (east of the R102).

12. Up-stream and down-stream impact on the hydrology/ flood line.

the development, provided that strict controls and implementation of mitigation measures are undertaken (as indicated below).

The remainder of the development (the units themselves) are to be constructed on raised platforms supported by concrete pylons. This will be done in order to minimise earthworks and minimise the footprint of the proposed development within the 1:100 year flood-line and to ensure that the units are safe from flooding. With this design the proposed development will encroach into the temporary zone of the wetland and in some areas it is deemed likely to encroach on the seasonal zone of the wetland areas too.

As part of the proposed layout plan, the upper reaches of the stream are to be canalised. The stream in this area has already been physically impacted through incision and sedimentation. The system currently provides very limited habitat for aquatic macro-invertebrates, as

13. Lack of sewage.

well as wetland vegetation requiring permanently inundated soils. As development within the areas upstream in the catchment continues, there will be an increased risk of erosion of these banks which already show signs of instability. As such, the canalisation of this section of the stream is deemed unlikely to significantly alter the ecological functioning and integrity of the system or the social functions of the system. As stated above, the increased development upstream in the catchment will lead to increased demands on the wetland in terms of stream flow regulation, sediment trapping, erosion control, nutrient recycling and toxicant removal. The proposed development plan caters for the creation of three stormwater attenuation dams. These dams will be linked by the stream on the subject property which will be diverted in such a way as to allow the dams to be linked. Through the creation of the dams the ability of the wetland feature to

14. Public access to the open space.

15. Developer's only intention is to make the maximum profit.

fulfill its functions (as outlined above) will be significantly enhanced. The biodiversity of the system will also increase significantly through the creation of the dams providing habitat for wetland avifauna, and habitat and refuge areas for herpeto-fauna and aquatic macro-invertebrates.

16. Implications of Durban Municipality Open Space System on the proposed site.

As part of the proposed development, it is proposed that raised walkways be created through the wetland area which will allow human traffic through the area. The development of the raised walkways will significantly increase the social functions of the wetland feature through increased tourism and recreation facilities, education and research opportunities, and increased cultural significance of the feature through the improved access. For each criterion a score out of 10 was awarded based on the perceived past importance of this system and the current state of the wetland, as well as the perceived future state based on the consideration of the

proposed layout plan .  
The PEI, PES and DFS values were then defined as a percentage of the maximum possible value (140) for a wetland which is highly functional and has an important role in ecological and cultural processes. The findings also allow the importance of the wetland to be determined in terms of the ongoing functioning of the aquatic ecosystem in the area. Based on this assessment method, the system can be said to have provided 19% of the services of a fully functional, ecologically important wetland in the past and as such the system can be considered to be of relatively limited importance. The PES of the system indicates a 28% service provision. The wetland can therefore be considered to be of limited importance and an insignificant deterioration in the service provision of the wetland from the past conditions has occurred. In terms of the PFS of the

system, there is some increase in the importance of the system mostly related to the increased value of the system when more people inhabit the area and the increased importance in managing the effects that an increased population in the area will have on the natural resources. In this regard mention is made of increased importance in terms of sediment trapping and erosion control, stream flow regulation and the removal of inorganic nutrients and toxicants. The importance of the system will also increase due to the increased opportunities for use of the system created by increased accessibility of the feature. The future importance of the system can therefore be described as providing 43% of the functions of a fully functional, ecologically and culturally important wetland indicating that the system can become relatively valuable on a localised scale. It must, however, be noted that in order to fulfill this role, the wetland feature will need to be carefully

protected and managed throughout the life of the proposed development. The mitigatory measures in the EMP should be strictly adhered for the proposed development.

9. There is a need in the market for quality Residential developments and the proposed development will optimally provide in that need. The size of the development is not of extensive magnitude and therefore will not have such a large effect on the human density of the Widenham area. It is also predicted that most of the residential units will be owned by individuals using the units as holiday homes, which will only be occupied during the festive seasons.

The proposed coverage/ ecological footprint is in line with the requirements of the local authority. Due to the fact that the study area incorporates a large wetland area (almost two-thirds of the study area) that requires regular ad on-going maintenance and rehabilitation works, sufficient funds must be



generated on a monthly basis to achieve the maintenance and rehabilitation goals. The applicant and his project team went through extensive exercises to determine the number of residential units required in order to generate sufficient funds from the levies for the management and maintenance of the wetland area. According to the calculations, the ideal number of units will be 54, because this will make the units and the monthly levies more affordable. In order to achieve the maintenance and rehabilitation goals at least one third of the monthly levies must be allocated for open space maintenance and rehabilitation purposes. The town planning guidelines for the area however does not allow for 3 storey developments and therefore the applicant decided to apply for the maximum number of units that will comply with the town planning guidelines, namely a coverage of 30% and height of 2 storeys.

The construction costs for the units will also be extremely high, because the existing site characteristics require that the following special measures be implemented:

- That the residential units be developed along the periphery of the site with multiple accesses;
- The existing channel must be replaced with a storm water management system that distributes the storm water across the entire central wetland area and it will also require the implementation of energy dissipaters, attenuation structures, silt traps etc.;
- The proposed residential structures must be elevated above the 1:100 year flood line by means of concrete platforms and pylons and the existing gradient of the study area must remain unchanged;
- An onsite sewer

treatment facility must be implemented in the north-eastern corner of the study area and the system must make provision for the recycling of the purified water on the site. This will not only require significant piping works, but expensive pumps, back-up pumps and emergency measures to accommodate power failures must also be implemented;

- The piping of the units must also make provision for municipal water supply in circumstances of insufficient grey water supply;
- The sewer man hole must be elevated to daylight above the 1:100 year flood line; and
- Initial rehabilitation works in the wetland area.

All the above mentioned costs will make the development very expensive from the outset, but if well

planned, implemented and managed, all environmental (economical, ecological and social) will eventually benefit from a sustainable development.

10. Due to the topography of the study area and its surroundings (the surrounding properties are located significantly higher than the proposed units) the anticipated visual impacts of the proposed 2 storey units from the surrounding properties are not regarded as significant. The concerns raised were nevertheless taken into consideration and the layout therefore provides for 8 separate blocks with visual axis in between the blocks that allow for attractive views onto the central wetland area and associated landscaping.

11. The applicant appointed a civil engineer to investigate the current problem and to determine whether the proposed development will increase the existing flooding problems. According to the civil

engineers, the flooding problems are caused by storm water system failures (i.e. blocked storm water rains and pipes) and the proposed development will not worsen the situation. If well planned and managed, the storm water management measures to be implemented as part of the development will improve the storm water management on and around the study area. The proposed units will not be affected by flooding, because the units will be elevated and constructed above the 1:100 year flood line. It is however recommended that the existing storm water and flooding problems be reported to the local authority and that the local authorities investigate and resolve the flooding problems. It is also recommended that DWA investigate the flooding and possible pollution problems in the vicinity of the filling station which has apparently been developed within the 1:100 year flood line area.

During a recent meeting

with DWA, Me. Lizelle Gregory of Bokamoso informed DWA of the flooding and pollution risks associated with the filling station and requested that DWA investigate the matter on an urgent basis. DWA undertook to investigate the situation.

12. From a storm water management point of view, the impacts will not be significant, because the storm water design concept will aim to keep the post-development flows similar to the pre-construction flows. From an ecological and hydrological point of view, the storm water management concept and the rehabilitation works will aim to create a better functioning system that will create habitats, purify the storm water, break the speed of the storm water, increase bio-diversity, act as valuable ecological link within the larger regional open space system etc. if well planned, implemented and managed the proposed development will have positive impacts.

The status quo and proposed management measures are as follows:  
Currently it is evident that appalling flooding takes place to residential homes further down of the proposed site. This is mainly because of the following reasons:

- The proposed development site forms a natural drainage line, being the lowest point in the valley of the surrounding area. In addition to the natural drainage of the site is evident that the drainage system receives additional runoff from (at least four) storm water canals in the area. These systems increase the flow in the system significantly and increases the duration of which surface water will persist in the area.

- The construction of the R102 to the east of the site has led to localized changes to the topography of the land thereby leading to altered drainage and

runoff patterns. These changes have led to the formation of a permanent wet area on the eastern boundary of the property. The lack of maintenance to current stormwater canals. Vegetation, rubbish and sediment that is being washed away from upstream developments gets trap in the canals and stormwater in- and outlet structures. Resulting in these important stormwater structures to clog up and prohibiting water not to be effectively distributed downstream.

The above mentioned reasons result in the ineffective attenuating of stormwater flowing down from upstream developments. It is therefore proposed to construct for three stormwater attenuation dams. (Refer to Appendix C (ii) Position of the Attenuation Dams) These dams will be linked by the stream



on the subject property which will be diverted in such a way as to allow the dams to be linked. Through the creation of the dams the ability of the wetland feature to fulfill its functions will be significantly enhanced. The developer also proposes to maintain the stormwater canals and the in-and outlet structures, to prevent these structures of clogging up. The internal roads and parking areas to be utilized as storm water channels to channel stormwater away from the proposed development. (Refer to Appendix H: Environmental Management Plan).

13. This is a problem in the area and will not be solved in the short term. The proposed sewer system in the north-eastern corner of the study area was discussed with DWA during a recent meeting and the department indicated that they would support a system that is designed and managed to comply with DWA standards. The effluent must also be treated to comply with

DWA Special Standards. The only requirement of DWA is that the sewer manhole must daylight above the 1:100 year flood line, because that measure will prevent possible incidents during flooding.

The proposed system will most probably qualify for a General Authorization at DWA and the details of the proposed system will be supplied to the Department as soon as available.

At this stage the proposal is to implement a Calcarnite Treatment System (a DWA acceptable system) and the system will be planned and designed as per the normal engineering requirements stipulated in the "Red Book".

14. The applicant agreed to provide monitored public access to the surrounding residents. Pedestrian entrance gates will be provided from every street and the residents will most probably be furnished with a remote control/key that will allow easy and safe access to the

open space in the central portion of the study area.

Even though the surrounding residents will be allowed to use the study area for passive recreation purposes, it will not be necessary for the surrounding landowners to contribute to the rehabilitation and on-going management and rehabilitation of the central wetland area.

15. It is true that the developer purchased the study area for development purposes. The study area was not zoned open space when he purchased the property. It was zoned for x8 "residential 1" developments across the entire study area. Surely the applicant cannot be penalized for bad planning that took place in the past. The local authority and DWA already acknowledged the problems associated with the development of the study area and agreed that it would be possible to consider a compromise situation that will be beneficial to all parties involved. The applicant did not ignore the comments and concerns raised by the

authorities or the public. The applicant instead entered into lengthy negotiations with the authorities (which involved the compilation and submission of various preliminary concepts and alternatives prior to the compilation of the BA report) and with the public in order to try and accommodate all the issues and aspects raised by the various parties.

It is also important to note that development will serve as residential establishment for individuals working in the surrounding areas, as well as holiday homes. This development will, contribute to economic development in terms of job creation (both during the construction and operational phases). Economic active people will reside in the units, which will in turn again stimulate the local economy in terms of rates and taxes payable to the Local Municipality.

16. If well planned and managed, the central wetland system will play an important

			role in the largest D'MOSS. The role will not only have a linkage function, but it will also have important ecological and hydrological functions. Special measures will be implemented to control the spreading of <i>Lantana camara</i> as well as <i>Solanum mauritianum</i> . Areas affected by construction will be rehabilitated as soon as the construction is completed.
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**Comments received on the Draft Basic Assessment Report**

2	Gloria Hutchison	There are many reasons why this development should not take place, the impact on wild life, ornithological life in that area, the natural water filter catchment area. It will also erode the natural buffer zone between the sea and various existing developments in the area. Apart from these reasons, the intended structures are against the Widenham by-laws and will cause a serious increase of traffic on the already bad roads in that area.  This development should not take place on the site intended for this development. May I also ask, What is the opinion of the Municipality having introduced the D'Moss overlay? Surely this area is earmarked for non-development?	Refer to Section D8 points 3 & 8 of the Basic Assessment Report. Also refer to Appendix D2: Vegetation & Wetland Assessment & Appendix D6: Wetland & Open Space Rehabilitation Plan.
3	Anne Hunt	1. Wessa has apparently also not approved of this development. We also NEED the wildlife in the area to be left alone.  2. Proposed development is far too big for the area - the original house stands should never have been approved in the first place. The area does not need rezoning - rezoning will be needed if the proposed units are built.  3. The area could not withstand all the extra traffic - if you average two cars per unit then you will end up with a lot of extra cars on the roads around Widenham which will affect all the residents on St Catherine and other roads. Widenham does not need new roads - we are happy with what we have - we also do	1. Refer to Section D8 points 3 & 8 of the Basic Assessment Report. Also refer to Appendix D2: Vegetation & Wetland Assessment & Appendix D6: Wetland & Open Space Rehabilitation Plan.

			<p>not need our rates to go up.</p> <p>4. If the developer does not have money to clear (clean) the plots at present then how does he have the money to pay your bills and others – will this be another development that goes into liquidation? There is NO need for this development – the only need is the developers need to make money. If he really wants to then build free standing homes as the plots were originally designed.</p>	<p>2. Refer to Section B2 point 2 of the Basic Assessment Report. Also refer to Appendix G: Feedback from Town Planners &amp; Alternatives.</p> <p>3. Refer to Section B &amp; also Section D8 points 4 &amp; 13 of the Basic Assessment Report. Also refer to Appendix D3: Traffic Impact Assessment, Appendix D4: Sewerage Disposal Management Report.</p> <p>4. Noted.</p>
4	K. T. Jones		<p>1. Appendix E1 - The owner, it is claimed does not have funds to maintain and manage the site as an open space. The site is elsewhere and variously described at present as being in mess i.e. Page 10 - Activities applied " it is important to note that the groundcover of the wetland area is currently disturbed and invaded..." page 14 - " .. The ground cover is very disturbed and almost taken over by invaders", Page 52 - "at present the study area appears neglected and is invaded by exotic invaders". Figure 14 - Lack of maintenance leads to flooding of downstream properties. Whilst the owner has money to pay for consultants, engineers, ecologist/wetland specialists, storm water engineers etc he can't afford to keep the properties free of alien vegetation! As a legal requirement which has been transgressed for years, how come developing the site [and making it what is being portrayed as an eco haven] is the only option being proposed? Surely, similar to the recommendation you have made re the garage drainage, it should be recommended to the owner that he immediately correct the situation on his erven - not only after development as your report proposes?</p> <p>2. Page 53 - Quote "at least 50% of the units will be utilised as permanent residence". This is contradicted by point 9 of Appendix E1 which states that "most of the units will be used as holiday homes which will only be occupied during the festive season". Which is it? - seems like whatever suits the argument to make report/development look more attractive is used?</p> <p>3. Page 56 Quote "... the visual impact of the two storey units" is stated. However the proposed development is for 3 storey units. An intentional red herring to make report look more attractive and the development of</p>	<p>1. Refer to Section D8 points 3 &amp; 8 of the Basic Assessment Report. Also refer to Appendix D2: Vegetation &amp; Wetland Assessment &amp; Appendix D6: Wetland &amp; Open Space Rehabilitation Plan.</p> <p>2. Not possible to give definite figures.</p> <p>3. Refer to Section 2(b) of Basic Assessment Report. A height of 2 storeys is proposed.</p> <p>4. Noted.</p> <p>5. Noted.</p> <p>6. Would not be viable</p>

less

4. Page 59. Please include after" ...surely the owner cannot be penalized for bad planning that took place in the past" the following: 'Surely bad planning by the owner should not now impact upon the ratepayers of Widenham. Purchasing the even with full knowledge of both the wetland nature, town planning zoning and restrictions, high construction costs of such property etc should not now entitle development which fundamentally changes the controls in place and the nature of Widenham, which others have had to comply with and more importantly why they bought in the area [e.g. a limit of two storey buildings] which he now wants to change to suit his desire for maximum gain!' If his financial calculations had indicated a 6 storey building was financially viable, would we now be facing that as a proposal.
5. The entire report is drafted so as to sound that the development is one that Widenham cannot do without, and only with what the developer proposes will roads etc improve. Truth is that Widenham residents choose to live in the area because of the way it is and don't need a development of this nature, particularly 3 storey units.
6. Page 13:"... it would be better to implement a 'cluster and space' development with development along the periphery than the 8 residential units that will be distributed across the entire study area"  
On page 52, it is stated that the owner bought the study area for development purposes because the study area is zoned 'Residential 1" and not 'open space/conservation open space.'  
On what basis is the claim made that the 'existing land rights cannot be exercised"  
Why can the eight even not be consolidated [as Residential 1] and 8 double story dwellings be built on the same periphery/footprint as proposed for the units. This would be enabling him to exercise the same rights as those which he accepted when he purchased the even. i.e. 8 dwellings on the lots of two storey maximum height. This is not mentioned as one of the options considered.  
No consideration/mention is made of [consolidating the lots if necessary] building 8 residential units along the same periphery as the proposed cluster units as two story buildings [complying with current zoning] each having the same footprint as the proposed cluster units. Why would the 8 residential units have to be built across the entire study area?

7. The description portrays the R102 as a quiet link road between coastal villages. Not so. The R102 is a main road and the so called flood damage interruptions are no longer [the Umzinto bridge interruption at Kelso is some 30km away from the proposed development site and was meant to be completed by the end of this month and will now be completed by end June 2011. The description needs to be reviewed in line with the real situation now - not that of years ago! The R102 is a busy Main Road and one which would become busier if the N2 is tolled as proposed.  
Page 46 -. Land use features should also include sports facilities. There is a children's playground less than 30m from the Widenham Drive boundary of the proposed development site opposite two of the proposed site access points [another concern re traffic not addressed in the report]. There is also a squash court [sports facility] approx 100m from the development site.  
The Local Area Plan for Umkomaas includes two important aspects impacting directly upon the proposed development site namely:  
a) The proposed [major] link road between the N2 and the R102 is indicated as forming the St Catherine Road boundary of the development sites. It is along this new link road that the two access points to the

from an ecological and financial point of view.

7. Noted.  
8. Noted.

	<p>proposed development would still St Catherine road seems to be the answer for most issues in the report. Vehicle access, pedestrian access, sewage treatment plant area etc. However the proposed Link from the N2 to the R012 will make this a main thoroughfare. This has been completely ignored in the report yet will have a major impact on traffic etc!</p> <p>b) The Canonbrae development less than 500m from the proposed development site on the border of Widenham and which will include approx 700 up market units. How come these do not feature in the report and what impact will they have on the proposed development?</p> <p>8. Page 18 -, It is claimed that 4 access points will assist in distribution of traffic thus alleviating the increase in traffic. How can this be when four these access points, i.e. two in Widenham Drive, and two in St Catherine Road all have to be accessed via one entrance road? The IAP's concern remains valid. The 8 residential stands enjoying 8x access points is a smokescreen. The traffic volume from 8 residential stands cannot be compared with that from the proposed development. See also point 12.</p> <p>9. Page 30 - Again the usual - "... there is a need in the market for a higher and more affordable up market residential units in the area". This need is questionable given the Shoals Development at Clanshal [approx 200 stands] and the huge Canonbrae development bordering Widenham not 500m from the proposed development site and with 700 odd stands. Both being upmarket developments</p>	<p>9. Refer to Section B2 point 2 of the Basic Assessment Report. Also refer to Appendix G: Feedback from Town Planners &amp; Alternatives.</p>
<p>5 Mkhomazi Conservan cy Committe e</p>	<p>1. The chief function of the land as it stands is to provide storm-water attenuation and filtration. These functions will apparently be enhanced and hence so will protection of the wider environment (Principally outflow into the "Aliwal Shoal MPA). Refuges for animals, birds and reptiles will be improved and we applaud the provision of monitored public access and future incorporation into D'MOSS. We cannot however support the use of fertilizer in a sensitive environment and can only support the installation of indigenous/endemic plant materials compatible with restoration of the wetland. Costs of the No-Go alternative are also postulated to be prohibitive and confer no benefit to the environment or developed areas. It is beyond the scope of this organization to attempt clearing and maintenance in perpetuity; nor in principle should private land be maintained by the municipality as has been suggested by some.</p> <p>2. Since no member is a wetland, soil, hydrology or other expert, we felt constrained to be guided largely by the opinions of those experts engaged for the BAR. We do not in principle support any development on any wetland area, however we accept that this wetland is heavily compromised in its continued ability to offer meaningful environmental goods and services in the long term. From the BAR we understand that the functionality of this wetland compared with a pristine one is about 19% but that through the planned rehabilitation and environmental management this could be raised to about 43%. (Were Widenham to be planned under present legislation we believe that many areas would be undevelopable due to the prevailing wetland conditions which have been overcome through 'hard' engineering.) We believe it remains the duty of the proponent to clear all IAPs from the site whatever the outcome of this process. We accept the proponent's right to attempt development of land purchased in good faith. However we do not accept that the wetland condition necessarily conflicts with this right. Property is still sold "Voet stoots" and the proponent must have been aware of the wetland on purchase. It is a pity that there is not</p>	<p>1. Refer to Section D8 points 3 &amp; 8 of the Basic Assessment Report. Also refer to Appendix D2: Vegetation &amp; Wetland Assessment &amp; Appendix D6: Wetland &amp; Open Space Rehabilitation Plan</p> <p>2. Refer to Section D8 point 2 of the Basic Assessment Report. Also refer to Appendix D2: Vegetation &amp; Wetland Assessment &amp; Appendix D6: Wetland &amp; Open Space Rehabilitation Plan.</p>



	<p>3. Storm water attenuation is a public good provided by private landowners and thus reduces costs to the Municipality of future flood mitigation in the Camborne Rd./Widenham Dr. area. WE suspect that provision of this service may have a bearing on the opinion of the municipality in this matter.</p> <p>4. The proponent purchased what amounts to 8 stands for 8 homes but intends to apply for rezoning for at least 4 times this number. This is not the original intention of the planners of Widenham which has limited opportunities for cluster homes. We cannot support the developers preferred option of 54 units as this is contrary to the Town Planning scheme which allows only 2 storeys. This will severely detract from the sense of place of a country village with 3 storey blocks. We also feel that given the likely constraints of the sewage system by the hydrology, that we cannot also support even 32 units. However, common sense tells us that with fewer dwellings, purchasers will demand larger homes so the aesthetic gains may be few.</p> <p>5. it is therefore our reluctant conclusion that in order to have any gains at all for the environment and to secure environmental goods and services for the future we must accept some development but with the bare minimum number of units, approaching the original 8 stands as nearly as possible, situated around the periphery as near to the road as is possible.</p> <p>5. Since the stand is to be developed as an "Eco-Resort" we hope that all possible resource use minimization will be encouraged including grey water recycling through toilets, solar water heating and all possible waste minimization measures during the life of the development. We would like to see these incorporated formally by the POA.</p> <p>We remain very concerned about the sewage package plant in view of the high water table and note that stringent engineering conditions apply for the Calcamite system under these conditions. We would like to see a mandatory maintenance plan for the package plant to be drawn up and to be adhered to by the POA since this is where many problems have been reported in other installations. Package plants are certainly not free of problems. We are concerned that the plant will have to cope with severe highs and lows of occupancy. Has this been accounted for in its design? We remain puzzled by the need to irrigate the "garden" area as this is to be returned to its wetland state.</p>	<p>3. Refer to Section D8 points 11 &amp; 12 of the Basic Assessment Report. Also refer to Appendix C2: Storm Water Management Concept</p> <p>4. Refer to Section B2 point 2 of the Basic Assessment Report. Also refer to Appendix G: Feedback from Town Planners &amp; Alternatives.</p> <p>5. Refer to Section B &amp; also Section D8 points 4 &amp; 13 of the Basic Assessment Report. Also refer to Appendix D3: Traffic Impact Assessment, Appendix D4: Sewerage Disposal Management Report.</p>
<p>6 Sinclair L. Stone</p>	<p>1. I object to the construction of the seven or eight residences on the treasured Wetlands displacing the natural habitat of the many and varied animals.</p> <p>2. Another very serious factor is that with additional residents and entourage, crime will inevitably increase. It is the very last thing we want in Widenham.</p> <p>3. Experience has shown that in this area there is no call for additional dwelling places, the existing ones are by and large standing empty. This fact can be borne out by consulting bona fide property agents. Thus, why destroy the beautiful wetlands and resident creatures we all in Widenham love to have in our midst?</p>	<p>1. Refer to Section D8 point 2 of the Basic Assessment Report. Also refer to Appendix D2: Vegetation &amp; Wetland Assessment &amp; Appendix D6: Wetland &amp; Open Space Rehabilitation Plan.</p> <p>2. Refer to Section D8 point 7 of the Basic</p>

	7	Lynette Palmer SAPPI	Lynette.Palmer@ appi.com	<p>The stream that crosses your land crosses ours as well. Since 1994 when the provisional council and then the Ethekweni council took over the area all your land as well as ours has been flooded on a regular basis, due to them leading all stormwater, from Umkomaas golf club, Saiccor village and Widenham down this stream. They have constructed enormous culverts and water drainpipes all over the village which lead down to the stream. We have lived here for 23 years and even during Demoina we were not flooded like we are now. In 2008 we were so badly flooded that water came into our house which has been built up on higher landfilled ground. The water came up approx 5 metres high. Over the years our damages have been in the region of almost a million Rand so far. The municipality said that they were going to canalise the stream and then came up and said they could not do it as the stream runs across private land. As per our title deeds the stream and 10 feet either side is their responsibility.</p> <p>There is also another problem. Above Saiccor village there are forest which have sold off for development as well. When those go up there will be even more flooding as that land also slopes down towards our properties.</p> <p>I drove past your land the other day and they had diggers in there digging large culverts across that piece of land obviously to lead the water out. That piece of ground is being used at the moment as flood mitigation and as far as they seem to be concerned they can use it for their own purposes.</p> <p>We are in the process of seeing a lawyer as we would also like to sell a large part of our property. We have already filled in down the side of the own to make access to the back part of the land. Our ground is approx an acre in size and we are only utilising a third of that. But if we allow this D'moss we will not be able to do so. With this notice it seems that they are cutting back on their costs and trying to bulldoze us into letting them use the property for their own devices. The neighbours next door are in the same predicament, as they also want to develop their land which is larger than ours, as they have 2 plots.</p>	<p>Assessment Report. Also refer to Appendix H: Environmental Management Plan (EMP). 3. Noted.</p> <p>Refer to Section D8 points 11 &amp; 12 of the Basic Assessment Report. Also refer to Appendix C2: Storm Water Management Concept</p>
	8	Heather Butler	<p>Perhaps it would be worth your while to get them to stop using your land and refill all culverts that they have put across it. These people seem to be a law unto their own. We have already been to local government in Pietermaritzburg and they insist that this is illegal.</p> <p>I write in connection with the proposed development on the wetland bounded by Camborne, Widenham and St Catherine's Roads, Widenham, at Umkomaas. I would like to register my complete opposition to any development on this wetland. The marsh was made worse by the building of the R102 years ago, and will be even worse should any development take place there.</p> <p>I have personally seen that area completely flooded at least three times since I have lived in Marlborough Avenue (since the 1980s). It seems to be the catchment for run off from nearby higher ground. Apart from this, and this might be quite out of date, but isn't there a law that restricts development within 1,000m of the high water mark. Surely this falls into this category, if not the By-Laws which has height restrictions as well as density restrictions.</p> <p>I trust this objection will be recorded.</p>	<p>Refer to Section D8 points 11 &amp; 12 of the Basic Assessment Report. Also refer to Appendix C2: Storm Water Management Concept</p>	

9	Maureen Sheard	<p>1. We have recently seen excessive and unusual rains in various parts of our country and others. The report states that provided the steps set out in your report are followed (Assessment of Impacts) the Mitigation possibilities are 'good'. The Hydrology report uses limited statistical historical data to make a conclusion. There appears to be no account taken of greater rains and possibly greater flooding than that experienced in the past in the investigations and recommendations. I would think that any plans to improve the status quo should take this into account. I would appreciate your views.</p> <p>2. The number of storeys requested still confuses me. Do 2 storeys mean that the height of the buildings which will be occupied will be a maximum of 2 storeys up from street level? Or is it 2 storeys plus under unit garaging i.e. 3 storeys. What does 'storeys' mean? At the last meeting we ended up with 5 storeys. Under unit garaging, 3 storeys, plus a loft. I see that 2 storeys is the now the A1 choice. Your clarification will be much appreciated.</p>	<p>1. Refer to Section D8 points 11 &amp; 12 of the Basic Assessment Report. Also refer to Appendix C2: Storm Water Management Concept</p> <p>2. Refer to Section B2 point 2 of the Basic Assessment Report. Also refer to Appendix G: Feedback from Town Planners &amp; Alternatives.</p>
10	Cheryl-Anh Vermeulen	<p>This serves to advise that a Concerned Citizens Group has lodged a request to the Kwazulu Natal Conservation Government Department to stop this development and has applied for the re-zoning of this area.</p> <p>Please note that no meetings must take place without advising this group. The group will seek an interdict against Bokamoso &amp; CCCT Trust to halt this development until such time as proper consultation has taken place between all the "interested and/or Affected" parties, and copies of all letters and documents submitted to you from the public viewing have been reviewed by all the parties involved.</p> <p>The fact that Bokamoso did not act in good faith, by removing the documentation from public view before the specified date, will also be raised at the next round of discussions.</p>	<p>The Draft Basic Assessment Report that was made available to the registered Interested and/or Affected Parties was accidentally collected before the given review period lapsed. Bokamoso Environmental Consultants then granted an additional 15 day period to the affected parties for them to review the draft report. Refer to Appendix E 4: Notification of additional time granted to review Draft Basic Assessment Report.</p>
11	Sue Weightman	<p>I am writing this in my personal capacity but as you know I am member of Mkhomazi Conservancy. I have tried to access the draft report for the Widenham Stand Proposal at Umkomaas Library this morning, which is the closing date, but was told by the librarian that it was removed last Thursday (03 February). In addition I have received calls saying that it is also not available for download at your web-site any longer; only the link</p>	<p>The Draft Basic Assessment Report that was made available to the registered Interested</p>

MKHOMAZI CONSERVANCY		<p>page remains. Has there been a mistake? Please mail me urgently on this as it is a hindrance to the PPP which has already been a little fraught.</p> <p>At least two of us from Mkhomazi Conservancy have tried to access this report without success as it was removed from the Umkomaas library together with all the comments on Thursday 3rd Feb before the closing date. This is contrary to the spirit of the EIA public participation process. I will mail Lizelle Gregory at Bokamoso and let her know. Maybe you would like to do the same. This process has been fraught from the beginning.</p>	<p>and/or Affected Parties was accidentally collected before the given review period lapsed. Bokamoso Environmental Consultants then granted an additional 15 day period to the affected parties for them to review the draft report. Refer to Appendix E 4: Notification of additional time granted to review Draft Basic Assessment Report.</p>
1 2 Cobie Steenkam p		<p>1. Ons in Umkomaas het 'n krisis aangesien die verslag wat jy opgestel het aangaande die Widenham Ontwikkeling reeds, volgens die bibliotekare van Widenham biblioteek, verlede Donderdag (3 Februarie 2011) uit die biblioteek verwyder is. Ek wou die verslag meer in diepte bestudeer en dan oor die naweek my finale kommentaar stuur in my private datum dat kommentaar ingestuur kan word en die Is dit dalk moontlik dat die finale datum dat kommentaar ingestuur kan word verleng kan word en die verslag weer beskikbaar gestel kan word voor dit?</p> <p>Nodeloos om te se dat ek uiters ontsteld was toe ek nie die verslag kon kry nie en moes hoor dat dit reeds weg is. Ek sal bly wees as jy die probleem kan nagaan en aan my kan verduidelik wat gebeur het.</p> <p>2. Baie geluk met 'n puik en professionele omgewingsimpakstudie! Dankie ook dat die tydperk vir opmerkings en kommentaar verleng is.</p> <p>Soos dit is wag ek weereens tot op nommer 99 voor ek reageer, maar dit beteken nie dat ek intussen niks gedoen het nie. Jy het reeds die kommentaar wat deur Sue Weightman ingestuur is ontvang en ek bevestig net dat ek heeltemal daarmee saamstem</p> <p>Niemand wat gekant is teen die ontwikkeling met wie ek gesels het kon my oortuig met FEITE dat die ontwikkeling nie moet plaasvind nie en hoewel ek glo dat daar nie ontwikkeling op vleilande moet wees nie, kan dit in die geval van Widenham Stand net voordelig wees. Dit is egter belangrik dat daar gehou word by die voorskrifte en regulasies en voorstelle.</p> <p>Ek woon nog net vier jaar in Umkomaas en is ietwat verbaas oor die reaksie van sommige inwoners. Die vleiland het skynbaar oor 'n lang tydperk agteruit gegaan sonder dat iemand iets daaroor gese het of iets daaraan gedoen het. Al was dit in private hande kan daar tog sekerlik voorkomende maatreels getref gewees het om die agteruitgang te verhoed. Dit lyk vir my dis net wanneer iemand die grond wil benut vir behuising dat dit 'n hele konsternasie is.</p> <p>Laastens hoop ek van harte dat die ontwikkelaar gaan kans sien om die ontwikkeling te doen, want dat dit duur gaan wees om te hou by al die voorstelle is nie altemif nie!</p> <p>Sterkte vorentoe</p>	<p>1. The Draft Basic Assessment Report that was made available to the interested and/or Affected Parties was accidentally collected before the given review period lapsed. Bokamoso Environmental Consultants then granted an additional 15 day period to the affected parties for them to review the draft report. Refer to Appendix E 4: Notification of additional time granted to review Draft Basic Assessment Report.</p>
			<p>2. Noted</p>

1 3	Yvonne Stone		<p>I am a retired Widenham resident. Resident in Widenham since 1978. Widenham was chosen by myself and family because of its suitability as a quiet retired suburb without business rights etc. That is how we wished to live and the reason why we chose Widenham. We try to keep traffic to a minimum. Most residents have the same point of view and are almost all retired people. In fact, it is an unofficial retirement village without high walls.</p> <p>Hence I object in the strongest terms to the building of these eight or more buildings on the grounds that there will be a marked increase in human traffic, increase in cars, additional servants, additional blaring taxis rushing through our narrow country roads. All this changing the very nature of Widenham as we chose it. I object most strongly.</p>	Noted.
1 4	Mr Shawn Janneker DEPARTMENT: AGRICULTURE, ENVIRONMENTAL AFFAIRS & RURAL DEVELOPMENT KWAZULU-NATAL	Tel: 031 302 2861 Fax: 031 302 2824	<ol style="list-style-type: none"> <li>1. The notice of intent to submit an application subject to a basic assessment received by the Department on 25 September 2008, the application for environmental authorisation received by the Department on 31 March 2011 and the Basic Assessment Report (BAR) received by the Department on 31 October 2011 regarding the above mentioned activity refers.</li> <li>2. Messrs CCCT Family Trust proposes constructing a 08 block development with 02 storeys to accommodate a total number of 32 residential units, together with parking bays. Bokamoso Landscape Architects and Environmental Consultants have been appointed to undertake the Environmental Impact Assessment (EIA) process for the assessment of the listed activities, for the construction of the proposed residential development.</li> <li>3. Bokamoso Landscape Architects and Environmental Consultants submitted BAR on behalf of the applicant for review and consideration. The BAR has been reviewed by the Department and is hereby rejected by this Department for the following reasons: <ol style="list-style-type: none"> <li>a) Two specialist report have not been included as part of the Final BA Report. The Department requested that the following additional specialist studies/inputs be submitted in order to enable the Department to make an informed decision: <ul style="list-style-type: none"> <li>- Wetland delineation by a suitably qualified wetland specialist and a wetland report; and</li> <li>- A functional wetland assessment report to understand the status quo of the wetland from a functional perspective.</li> </ul> </li> <li>b) Alternative means of sewage disposal must be considered and the recently approved Umkomaas Regional Waste Treatment works must also be taken into consideration.</li> </ol> </li> <li>4. Further to the above, a written and approved services agreement must be obtained from the eThekweni Municipality indicating that there are sufficient services available to accommodate the proposed residential unit</li> <li>5. The BAR makes no mention of the impact/volume of storm water that will be released by the recently authorised Canonbrae residential development, upstream of the site. The Department has reasonable grounds to believe that the site under assessment will be prone to flooding as a result of the increase in storm water as a result of development upstream. The storm water engineer must therefore assess the full impact (i.e. considering the peak storm water flow (post development) from the Canonbrae</li> </ol>	<p>These responses also refer to issue no. 15.</p> <ol style="list-style-type: none"> <li>1. Noted.</li> <li>2. Noted</li> <li>3a) Refer to Addendum A for input as supplied by a suitably qualified wetland specialist.</li> </ol> <p>According to the wetland specialist, the wetland delineation (as included in Addendum A, Figure 9 and 10 and Appendix D6 of the BA Report) has already been conducted. This delineation was done in line with the DWA specifications and the wetland specialist did not regard it as necessary to undertake another delineation exercise. The wetland specialist furthermore assisted with the proposed layout concept, which positioned the proposed 8 blocks along the periphery of the study area and</p>

development) on the site and proposed development.

6. Once all of the above has been addressed and an amended BAR completed; all registered I & AP's must be notified and given adequate opportunity to provide comment. The amended BAR must then be submitted to the Department for review and consideration. The amended BAR must include a comments and response report, listing all the concerns and issues raised and appropriate measures of addressing the concerns and issues raised.

7. Construction related activities cannot commence prior to an environmental authorisation being obtained. If any construction related activities commence prior to an environmental authorisation, the development will be viewed as unlawful and the Department may take the necessary legal action.

8. Kindly note that the Department reserves the right to upgrade the Basic Assessment application to a Scoping and Full EIA should it be warranted.

which proposed that the existing concrete channel be removed and replaced by a wide-central area (in the middle of the study area) to be rehabilitated to function as a proper wetland system and attenuation feature.

At present the storm water from the higher lying areas enter into the narrow concrete channel on the site and the wetland fulfils almost no role in the purification of water, water attenuation or flood management. The proposed new concept creates the ideal opportunity for the establishment of a well-functioning wetland that will not only improve the storm water management on and from the study area, but if planned and managed correctly, the proposed new man-made wetland areas will also create new habitats.

b) Refer to Addendum B  
Addendum B supplies more detailed information regarding the proposed sewage

solution for the study area, which cannot be currently connected to a municipal sewage system. According to the appointed engineers the construction of the proposed regional treatment works will not take place in the immediate future and it will therefore be necessary to supply and implement an interim solution for the study area.

The proposed on-site sewage concept has already been discussed with DWA on several occasions (even before Bokamoso submitted the BA application) and DWA already supplied positive comments regarding the proposed on-site sewer concept. Refer to Addendum C for letter from DWA.

The civil engineers however indicated that the internal sewer system will be designed and implemented in such a way that it will be possible to link up with the proposed new waste water treatment

works as soon as it is in operation and as soon as a municipal connection for connection to such a system becomes available on the site. In our opinion and according to the involved civil engineers, the municipal connection option is the preferred option for the study area and its surroundings, but such a project is a long term option and ideally the entire non-serviced area (the study area and its surroundings) must eventually link-up with the municipal sewer connection.

Based on the above, it is recommended that the department include the following condition (should the department decide to issue a positive decision/authorisation) as part of the decision: "The short term on-site sewer treatment facility must be terminated and decommissioned once a municipal sewer connection is provided at the site and once the regional treatment works came into



operation. This system replacement must be completed 6 months after the municipal connection has been provided at the property boundary."

4. At present the study area will not have a municipal sewer connection. The engineer confirmed that water and electricity will be available for the proposed development. The engineer confirmed that they will enter into a services agreement with the involved local authority as soon as the decision (if a positive decision is issued) has been issued. At present the applicant has severe budget constraints and according to the involved financial institutions, further financial assistance will only be provided as soon as the project received the go-ahead. It is therefore proposed that the Department include the following condition as part of the conditions of approval (should the project receive the go-

ahead from the department): "A copy of the services agreement between the local authority and the developer must be submitted to the Department prior to the commencement of construction."

5. Refer to Addendum D for comments from WSM Consulting Engineers. It is also important to note that Bokamoso tried, on various occasions to obtain copies of the storm water management plans for the Canonbrae Development, but the involved engineers preferred not to supply such information. It was however mentioned to us, at a later stage, that the Canonbrae Development provided for storm water attenuation features on the Canonbrae study area and in other sections of the catchment area and that the storm water situation at the study area will not change. Furthermore WSM Leshika confirmed in

1 5	Mr Shawn Janneker DEPARTME NT: AGRICULT URE, ENVIRONM ENTAL AFFAIRS & RURAL DEVELOPM ENT KWAZULU- NATAL	Tel: 031 302 2861 Fax: 031 302 2824	<p>Messrs CCTT Family Trust proposes constructing an 08 block development with 02 storeys to accommodate a total number 32 residential units, together with parking bays. Bokamoso Landscape Architects and Environmental Consultants have been appointed to undertake the Environmental Impact Assessment (EIA) process for the assessment of the listed activities, for the construction of the proposed residential development.</p> <p>Bokamoso Landscape Architects and Environmental Consultants submitted a Basic Assessment Report (BAR) on behalf of the applicant for review and consideration. The BAR has been reviewed by the Department and was rejected by this Department. The Department awaits the amended BAR.</p> <p>It has been brought to the Departments attention that a Pikusgill frog (<i>Lithobates palustris</i>) has been seen on the site identified for the proposed residential development.</p> <p>The BAR makes no mention of the impact on the Pikusgill frog (<i>Lithobates palustris</i>) as a result of the proposed development.</p> <p>The Department recommends that a sweep be undertaken to confirm if a Pikusgill frog (<i>Lithobates palustris</i>) exists on site. If this frog is found to be present on site, a specialist must be appointed to assess the impacts on the frogs as a result of the proposed residential development.</p> <p>Construction related activities cannot commence prior to an environmental authorisation being obtained. If any construction related activities commence prior to an environmental authorisation, the development will be viewed as unlawful and the Department may take the necessary legal action.</p>	<p>the e-mail, attached as Addendum D that they already took the storm water run-off of all the surrounding developments, including the Canonbrae Development, into consideration when they did their calculations.</p> <p>6. Refer to Addendum E for proof of correspondence distributed to I&amp;AP's.</p> <p>7. Noted.</p> <p>8. Noted.</p>
			<p>We are working on the issue with the Pikusgill frog. All the other additional information from the engineer and wetland specialist has been obtained. As soon as the information for the Pikusgill frog has been obtained, all information will be sent through to you as an addendum to the BAR since an amendment will require public participation and will set back the processing and authorisation of the application even further.</p>	

1 6	MS Mabuza  DEPT NT WATER AFFAIRS	Tel: 031 336 2823	<p>7. Kindly note that the Department reserves the right to upgrade the Basic Assessment application to a Scoping and Full EIA should it be warranted.</p> <p>This Department's letter dated 04 March 2011 regarding the DBAR for the Proposed Widenham Stand Development:</p> <p><b>1. SEWAGE TREATMENT AND DISPOSAL.</b></p> <p>(1.1) It is understood from the above report that there is no existing sewer reticulation system in the area to connect to, hence the need for an on-site sewerage treatment system.</p> <p>(1.2) With regards to the on-site sewerage treatment system, please note that this Department does not approve of any specific technology i.e. Lilliput system, Calcamite system, etc. However the use of such system must comply with the following requirements:</p> <p>(1.2.1) The proposed Package Sewage Treatment Plant must be easily capable of processing the sewage generated at the proposed development.</p> <p>(1.2.2) The impact of this sewage treatment package plant and of the proposed development on the surroundings, both before and after, must be ascertained through baseline studies. This should include monitoring of the water resource both upstream and downstream of any discharge point.</p> <p>(1.2.3) The Wastewater Treatment Plant must be located as far away as possible from any water-logged soils and the drainage line on site.</p> <p>(1.2.4) The quality of the final effluent must be regularly tested to ensure that the plant is operating correctly.</p> <p>(1.2.5) The discharge of final effluent from the treatment plant either into a water course or onto the gardens for irrigation purposes will need to comply with section 21 (f) and (h) (page 18-25), and section 21(e) (page 11-17) respectively, of the General Authorisations (Government Notice No. 26187, 26<sup>th</sup> March 2004) in terms of section 39 of NWA, 1998 (Act 36 of 1998). Please find attached a copy of the General Authorisation. If the quantity and quality is expected to exceed the values as per the General Authorisations, a licence will need to be applied for.</p> <p>(1.2.6) The sewage treatment and disposal systems must not pose a risk to human health and the surrounding environment and this includes surface and groundwater.</p> <p>(1.2.7) A spill contingency plan must be drawn up to handle possible sewer spillages should there be accidental damage to the sewer line.</p> <p>(1.2.8) It is understood that the system will be designed to treat the wastewater to the Special Limit Values of the General Authorisations, and that this treated effluent will be used for irrigation purposes.</p> <p>(1.2.9) The activity of discharge into a water resource or irrigation will need to be registered with this Department. Please find the relevant forms attached.</p> <p>(1.2.10) Adequate measures must be in place to prevent storm water from entering the sewer.</p> <p>(1.2.11) Measures to prevent pollution to the watercourse which passes through the property must be in place.</p> <p>(1.2.12) Spare parts must be kept on hand to accommodate any failure to the treatment system.</p> <p>(1.2.13) The plant operator must be well trained to ensure effective operation and maintenance of the plant.</p> <p>(1.2.14) The plant must be fenced in and unauthorized access prohibited.</p> <p>(1.3) It is noted that the preferred and recommended sewage disposal system is a level 4 Calcamite System. This system must not pose a risk to human health and surrounding environment and this includes surface and groundwater.</p> <p>(1.4) Should the preferred system result in the creation of any unacceptable health hazards or pose a</p>	Noted. Please refer to Environmental Management Plan attached as Appendix H.
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problem to the environment ( includes surface and groundwater ), an alternative treatment and disposal system would need to be installed.

**(2) SOLID WASTE**

(2.1) The ongoing removal and disposal of solid waste from the dwellings to a permitted waste disposal site is required and this is the responsibility of the eThekweni Municipality.

(2.2) All solid waste prior to being collected for safe disposal, must be stored under cover and within a designated solid waste collection/storage area.

Contaminated materials are to be disposed of at a permitted hazardous landfill site that is authorized to accept such waste material.

(2.3) All waste generated at the proposed development should be disposed of in a suitable manner so as not to cause any surface water pollution or health hazard.

(2.4) Should private contractors be used, all solid waste must be disposed of at a permitted landfill site and proof of this must be made available to this Department.

**(3) STORMWATER MANAGEMENT:**

(3.1) It is imperative that the Storm Water Management Plan/System be drawn up and implemented to ensure proper management of storm water on site during and after construction. This Department requires a detailed storm water and designed plans to be drawn and approved by the Municipality.

(3.2) The eThekweni Municipality must be contacted with regard to any discharges either to the storm water drainage system or to the municipal sewer system, if supplied in the area.

(3.3) Drainage must be controlled to ensure that runoff from the Development will not culminate in off-site pollution or cause water damage to properties downstream from the site.

(3.4) The storm water drainage system must not be contaminated by other waste sources and must therefore be separated from other waste water drainage systems.

(3.5) After construction, the site should be contoured to ensure free flow of run off and to prevent ponding of water.

**(4) EROSION CONTROL**

(4.1) Soil erosion on site must be prevented at all times, i.e. pre, during and post construction activities.

(4.2) Erosion control measures should be implemented in areas sensitive to erosion such as near water supply points, edges of slopes, etc. to ensure that there is reduced sediment load to any water courses. Measures must be implemented prior to construction to minimize problems during the construction phase of the project.

(4.3) These measures could include the use of sand bags, hessian sheets, retention or replacement vegetation.

**(5) WETLANDS**

(5.1) According to the National Water Act 1998, (Act 36 of 1998) a wetland is defined as a water resource. It is the mandate of the Department of Water Affairs and Forestry to protect, use, develop, conserve, manage and control the water resources of South Africa.

(5.2) All wetlands on site must be delineated according to this Department's guideline entitled "a practical field procedure for identification and delineation of wetlands and riparian areas". (DWAf, 2005). The contents of the Wetland Report (Appendix D2) are acknowledged and recommendations supported.

(5.3) Although this Department would prefer to have a 20 meter buffer from the edge of the temporary wet zone of the wetland to the edge of any structural development, the Water Quality Management section of this Department is aware that this requirement will make the project unviable. In addition, due to the nature of the project, it is anticipated that there will be some disturbances to wetland /riparian areas.

- (5.4) Based on the above and the requirements of the Water Resources Management section, the Water Quality Management section has the following comments with regard to wetlands/riparian areas:
- (5.4.1) The extent of damage must be minimized.
  - (5.4.2) The wetland areas must be rehabilitated immediately after disturbance and this rehabilitation plan must be included in the Environmental Management Plan (EMP).
  - (5.4.3) The banks adjacent to the construction site must be stabilized to prevent collapse and erosion.
  - (5.4.4) Areas to be utilized by heavy machinery, etc must be clearly demarcated and a responsible person must be appointed to ensure that there is full compliance with the EMP.
  - (5.4.5) this Department reserves the right to request that additional measures be taken should the activity be deemed to cause a significant impact to the environment.
  - (5.5) The wetland must be included as part of the detailed Storm Water Management Plan as mentioned in condition (3.1) of this letter, should a certain percentage of storm water from the site be allowed to drain towards the wetland. It is vitally important that the storm water discharging to the wetland is dissipated prior to entering the permanent, seasonal or temporary Zone of the wetland so that it does not cause gully erosion or negatively impact on the hydrological functioning of the wetland.
  - (5.6) A copy of the Wetland Rehabilitation and Maintenance plan must be forwarded to this Office for comment and Authorization (i.e. General Authorization or license).
  - (5.7) This Department may dispense with a license if the Rehabilitation Plan as well as this Department's comments are adequately addressed in the ROD.

**(6) GENERAL**

- (6.1.) No forms of secondary pollution should arise from the disposal of sewage and refuse. Any pollution problems arising from the above development are to be addressed immediately by the Developer.
- (6.2) Storage of any material, chemicals, fuels, etc must not pose a risk to the surrounding environment and this includes groundwater. Such storage areas must be located as far-away as possible from the channelled wetland system and any water-logged soils and must be fenced to prevent unauthorized access into the area. Temporary bunds must also be constructed around chemical or fuel storage areas to contain possible spillages.
- (6.3) There must be no unacceptable impact on the quality of both surface and groundwater in the area.
- (6.4) Proper measures must be in place to protect the stream running through the property from any form of pollution.
- (6.5) A spill contingency or emergency response plan must be drawn up for the construction phase of the project, if it is not adequately addressed in the EMP and should include the following actions that need to be taken into account in the event of a spill.
  - (6.5.1) Stop the source of the spill
  - (6.5.2) Contain the spill
  - (6.5.3) All significant spills must be reported to this Department and other relevant authorities
  - (6.5.4) Remove the spilled product for treatment or authorized disposal
  - (6.5.5) Determine if there is any soil, groundwater or other environmental impact
  - (6.5.6) if necessary, remedial action must be taken in consultation with this Department & other relevant authorities.

			<p>(6.5.7) Incident must be documented.</p> <p>(6.6) The proposed development is not in conflict with local municipal plans or by-laws.</p> <p>(6.7) The construction of new access roads must have no unacceptable impact on the environment, surface water and groundwater. Measures must be in place to minimize/ control dust.</p> <p>(6.8) The conditions and responsibilities in the Environmental Management Plan (EMP) (Appendix H) are acknowledged. Compliance for the Final Approved EMP must be undertaken by the designated environmental control officer.</p> <p>(6.9) notwithstanding the above, the responsibility rests with the applicant to identify any sources or potential sources of pollution from his undertaking and to take appropriate measures to prevent any pollution of the environment. Failure to comply with the requirements of the National Water Act, 1998 (Act 36 of 1998) could lead to legal action being instituted against the applicant.</p>	
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<b>Comments received on the Addendum to the Basic Assessment Report</b>			
1 6	Jenny Longmore EZEMVELO KZN WILDLIFE		<p>1. Ezemvelo KZN Wildlife, the biodiversity authority in the Province, has been alerted to a new record for Pickersgill's reed frog in the vicinity of the Widenham Town House Development. Given the endangered status of this frog it is imperative that our animal ecologist reviews the layout and buffers afforded to the wetlands to ensure that the proposed development will not have an adverse impact on this frog species.</p> <p>2. The content of your mail is most concerning. It is my understanding that Ezemvelo's animal ecologist, Dr Adrian Armstrong, Ecologist Coast, Dr Uys and frog expert Ms Jeanne Tarrant of EWT found this new record for Pickersgill's reed frog. I appreciate that you are not from KZN. Please be advised that Ezemvelo KZN Wildlife is the authority mandated to conserve biodiversity in the Province of Kwazulu-Natal, South Africa, under the KZN Nature Conservation Management Act, Act 9 of 1997. Section 22 of the Act 9 provides for a process to ensure comment can be made on land-use changes outside protected areas where such changes could detrimentally affect ecological processes and biodiversity in the Province. Ezemvelo's IEM Section acts as an advisory body to DAEDARD and provides comments and recommendations on all land use change applications. It is of concern that the assessing officer did not direct you to us for comment. Please can you advise a.s.a.p. who the assessing officer is at DAEDARD so I can make contact with him/her and alert them to potential biodiversity concerns. Also, please could you forward me the BAR and associated documents a.s.a.p.</p> <p>3. Given that Ezemvelo KZN Wildlife's (Ezemvelo's) Animal Ecologist, Dr A. Armstrong, has positively identified that the site under consideration supports <i>H. pickersgilli</i>, a critically endangered frog species, Ezemvelo, as</p>

1. Bokamoso appointed Mr Stephen van Staden from Scientific Aquatic Services to undertake a study in which he must inspect the probability of the occurrence of the Pickusgill frog in the subject area. He has written a response to the authorities where he is of the opinion that it is highly unlikely that the Pickusgill frog (*Lithobates palustris*) would be found within the subject property or surroundings due to it being endemic to Northern America and if it occurred on the subject property, should be considered to be an alien species to be eradicated. The response was submitted to the Kwazulu-Natal

	Diane van Rensburg on behalf of Geoff Tooley	tooleyg@durban.gov.za		<p>the authority mandated to conserve biodiversity in KwaZulu-Natal under the KZN Nature Conservation Management Act, Act 9 of 1997 objects to the application as proposed, as per the precautionary principle.</p> <p>Ezemvelo staff is presently liaising with external specialists with the aim of trying to find a "win-win" solution. It is recommended that no decision be made on this application in the absence of Ezemvelo's final comment.</p> <p>Ezemvelo is cognisant of the fact that this application is in the final stages of the EIA process and will endeavour to treat this application as a priority. The Department is reminded that Ezemvelo was omitted from the EIA process through no fault of its own. It is further requested that this application is subjected to the draft ROD process, as agreed to by our respective organizations.</p>	<p>Department of Agriculture, Environmental Affairs and Rural Development as part of an Addendum which was made to the Basic Assessment Report for the proposed development.</p> <p>2. Mr Shawn Janneker at the Kwazulu-Natal Department of Agriculture, Environmental Affairs &amp; Rural Development is assessing the Basic Assessment and the Addendum thereto. His contact details are Tel: 031 302 2861, Fax: 031 302 2824, Email: shawn.janneker@kzndae.gov.za.</p> <p>3. Bokamoso Environmental confirms that Ezemvelo KZN wildlife was omitted from the EIA process through no fault of its own.</p>
17	Diane van Rensburg on behalf of Geoff Tooley	tooleyg@durban.gov.za		<p>The sewer layout provided is for the wrong development. We would need to see the revised storm water management plan.</p>	<p>Addendum B, the "Low volume treatment works" (sewer) report is replaced by the revised (Revision 2) Services Report for the study area. The proposed sewer layout has been corrected and included as Annexure B of the</p>



1 8	Richard Evans & Associates	suzanne@reada.co.za	<p>We are on record in this matter, representing interested and affected parties. One of our clients has advised us that she has received a document from you which is apparently entitled "Addendum to the Basic Assessment Report". My firm has not received this document from you. Please let me know why we have been omitted from your distribution list, let me have a copy of that document and advise whether we are required to comment thereon and, if so, by what date.</p>	<p>Services Report. The storm water concept entails that the internal roads and parking areas will be utilized as storm water channels to channel storm water away from the proposed development. Storm water channels will be utilized to divert all storm water to the main storm water drainage system across the site, which would act as storm water attenuation structures and water features on the site. Reference is made to the Hydrology Report (Annexure D1 of the Final Basic Assessment Report) for design flow calculations and flood line determination.</p>
				<p>it seems that misters Stephan Barkhuizen and George Gericke, who has worked on the project and handled the public participation previously, has neglected to put Richard Evans &amp; Associates on the Interested and Affected Party (I&amp;APs) list/record. So unfortunately Ms Juanita de Beer (who handles the public participation) and myself, Nicolene Lotter, (who handled the Addendum to the Basic Assessment) were not</p>

1	Jeanne Tarrant EWT	<p>THE ENDANGERED WILDLIFE TRUST'S COMMENTS ON THE PROPOSED DEVELOPMENT AT WIDENHAM STAND AND THE PRESENCE OF THE CRITICALLY ENDANGERED PICKERSGILL'S REED FROG (<i>Hyperolius pickersgilli</i>)</p> <p><i>Introduction</i></p> <p>The Endangered Wildlife Trust (EWT) was established in 1973 and is a non-governmental, non-profit, citizen organisation dedicated to conserving the diversity of species in Southern Africa. It is a fully accredited non-governmental member of the World Conservation Union (IUCN).</p> <p>The EWT is dedicated to conserving threatened species and ecosystems in Southern Africa to the benefit of all people. In order to fulfill this mission it:</p> <ul style="list-style-type: none"> <li>o Initiates and implements conservation research and action programs;</li> <li>o Prevents species extinctions and maintains biodiversity and ecosystem functioning;</li> <li>o Supports sustainable natural resources and management;</li> <li>o Communicates the principles of sustainable living and empowering people by capacity building, education and awareness programs to the broadest possible constituency;</li> <li>o Takes a strong leadership and advocacy role in promoting environmental and social justice.</li> </ul> <p>The EWT achieves its conservation goals through specialist, thematic programs, designed to maximise effectiveness in the field and enhance the development of skills and capacity. Our dedicated, specialist programs collectively coordinate around 80 projects throughout Southern Africa. These programs focus on specific issues, species and ecosystems ranging from conserving wetlands and grasslands to addressing the irresponsible use of poisons and agro-chemicals to protecting the last remaining Blue Swallows that breed in South Africa.</p> <p>The EWT programme with a specific interest and focus in the proposed project area is the EWT's Amphibian Conservation Programme (EWT-ACP), represented by Mrs Jeanne Tarrant. Jeanne Tarrant (BSc, M.Env.Sci) has just completed her PhD titled "Conservation assessment of threatened amphibians in KwaZulu-Natal, and a national assessment of chytrid infection in South African threatened species". One of the focus species of her study was the Pickersgill's Reed Frog (<i>Hyperolius pickersgilli</i>). She therefore has up to date insight into the status of amphibians in KwaZulu-Natal Province, which allows her to provide scientifically sound information on the species of concern for the Widenham stand, the Pickersgill's Reed Frog (<i>Hyperolius pickersgilli</i>).</p> <p><i>General comments on the specialist assessment by Scientific Aquatic Services (Addendum F)</i></p> <p>Regarding the report by Stephen van Staden, Scientific Aquatic Services on the probability of "Pickusgill Frog (<i>Lithobatus palustris</i>)": The correct common name for <i>L. palustris</i> is the Pickerel Frog, but the reasons for its inclusion in this report are unclear as it does not occur in Southern Africa at all, but is native to North America.</p>	<p>aware that you were part of the I&amp;APs and thus the reason for the mishap for not informing you about the Addendum.</p> <p>The desktop study was undertaken in response to a fax received from the Department of Agriculture, Environmental Affairs &amp; Rural Development of KwaZulu Natal who requested that "a sweep be undertaken to confirm if a Pickusgill frog (<i>Lithobatus palustris</i>) exists on the site". The study was undertaken to address this concern and brief. Scientific Aquatic Services did however realise that the authorities had most likely made a mistake and therefore did a brief desktop assessment to determine the Probability of Occurrence of <i>Hyperolius pickersgilli</i>. The study was undertaken as a desktop sweep study based on the available published literature. It is acknowledged that the status of the species was changed in 2010 from that of 2004 which was an oversight of the report desktop assessment however the assessment relied strongly on</p>
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This may be an indication that the appointed consultant is unfamiliar with South African amphibian species and the relevant associated literature. This lack of knowledge is further highlighted by the second part of the assessment, which deals with Pickersgill's Reed Frog, *Hyperolius pickersgillii*. The assessment appears to be based on the 2004 IUCN Red Listing. Since then, the species has been listed as Critically Endangered (IUCN 2011; Measey, 2011). This information is readily available online.

The report does not indicate whether a field survey for the Pickersgill's Reed Frog, *H. pickersgillii*, or any other amphibian species, was actually conducted at the proposed site. For assessment of any species, particularly those which are Red Listed, an on-site survey is crucial, and appropriate recommendations regarding mitigation should be outlined. The report by Scientific Aquatic Services does not describe the methods used for assessing the site for *H. pickersgillii* (or any frog species) nor does it provide information on the potential impacts that the development would have on the frog species and supporting habitat at the site. As a minimum, such a survey should have been carried out after dark, during the breeding season.

As a result of such a survey, all frog species detected should have been listed within the report. It appears, therefore, that the assessment was based purely on a desk-top study using out-of-date information. Furthermore, it would be expected that the following impacts would be discussed in such a report and recommendations on mitigation outlined where appropriate and possible:

- Wetland and buffer-zone habitat destruction:
  - Frogs require the habitat surrounding wetlands for over-wintering and foraging. Construction of the proposed units and adjoining parking and sewage systems will significantly reduce essential buffer habitat. Should development take place on the periphery of the wetland as proposed, much of this buffer zone would be lost, thereby compromising the species.
  - Previous development of the R102 and other surrounding roads has already reduced this crucial buffer-zone habitat, and the proposed development could result in extirpation of the species by further eliminating essential habitat.
  - The proposed sewage system could discharge harmful effluent into the wetland and negatively impact on species occurring therein.
  - Changes to the hydrology of the wetland as a result of the development could also have serious negative impacts on the system.
  - Construction of hard-surface parking bays and units would compromise species migration and dispersal through the destruction of connective habitat.

**Direct mortality:**

- The construction process would result in direct mortality of frogs, as well as inevitable destruction of vegetation.
- Increased traffic volumes on the property during construction would also result in direct death.
- Continuous vehicle traffic once the development is completed would inevitably lead to direct mortalities, particularly in the parking and access road areas.

*Updated information on the status of Pickersgill's Reed Frog (Hyperolius pickersgillii) at the proposed development site at Widenham*

As a joint project for Ezemvelo KZN Wildlife and J. Tarrant's PhD research, extensive surveying for Pickersgill's Reed Frog, *H. pickersgillii*, was conducted between 2009 and 2012 by J. Tarrant and Dr. Adrian Armstrong

published literature on the species of concern. If a full herpetofaunal specialist study was undertaken additional effort to consult with local authorities would have been made and more in depth consideration of the latest IUCN data. In addition if a site visit was undertaken, the study would have a substantially higher level of confidence than a desktop assessment.

		<p>(Scientific Services, Ezemvelo KZN Wildlife), who detected the species at the proposed development site at Widenham, Umkomaas, on 6 January 2012. The species was heard calling at the site, and was visually encountered between 22:00 and 23:00 in the eastern portion of the wetland. This sighting was, at the time, a range extension of the species' distribution of approximately 18 km to the south (the species has subsequently been discovered further south at Sezela).</p> <p>Pickersgill's Reed Frog is an obscure species from the coastal lowlands of KwaZulu-Natal, discovered only in 1977. At the time of its description it was known from just seven localities. The species is currently Red Listed as Critically Endangered B2ab (from Endangered in 2004) based on its small Area of Occurrence (AOO) of 9 km<sup>2</sup>, fragmented distribution and continuing decline in habitat. This species is endemic to a narrow strip within 16 km of the coast of KwaZulu-Natal, known previously from St Lucia in the north to near Kingsburgh in the south. This area has been and continues to be under severe pressure from agriculture (especially sugarcane), sylviculture and urban development. Of the twelve localities known to have had extant populations as at early 2010, only two occurred within formally protected areas (Umlalazi Game Reserve and ISimangaliso Wetland Park World Heritage Site). The species is currently known from 17 localities, the majority of which are severely fragmented and experiencing decline in habitat quality as a result of human threat.</p> <p><i>Recommendations regarding this development based on the presence of Pickersgill's Reed Frog</i></p> <p>Given the presence of a Critically Endangered species (<i>H. pickersgilli</i>) at the proposed development site and the potential impacts of the development on this population and the species in general, it is highly recommended that no development goes ahead on this property. The recommendation for meeting biodiversity targets regarding habitat protection for Critically Endangered species is that no further loss of habitat takes place. This is particularly pertinent considering the "B" (Distribution and habitat) Red List criteria on which the Pickersgill's Reed Frog was assessed. Most of its localities are severely fragmented, with the result that any loss of habitat has dire consequences for the total population of the species. The proposed development at Widenham would significantly compromise survival of this sub-population of <i>H. pickersgilli</i> due to significant loss of essential buffer-zone habitat. The loss of any sub-population of this species represents a loss of approximately 5% of the global population of <i>H. pickersgilli</i>, which is not acceptable for a Critically Endangered species. Retention of habitat connectivity between sites is crucial to maintain population dynamics of a species, and therefore ensure its long-term survival. Although in need of restoration, the wetland habitat extends throughout the property. As such, the option of the area being a "No-go" zone is highly recommended, whereby the proposed development does not go ahead and either existing management or new management rehabilitate the area, in particular the wetland to secure long-term survival of this threatened species as well as any other flora and fauna of biodiversity importance on the site.</p>	<p>The wetland can be seen as man made since it is storm water induced. However, Bokamoso Environmental, the applicant and engineers are of the opinion that through an effective</p>
<p>2 0</p> <p>Cherry-ann Vermeulen</p>		<p>I have read the report and I find many contradictions in the comments. I am still of the opinion that any development of the wetland area will be detrimental to the environment and strongly oppose the construction in this natural area. I am forwarding a copy of this report to the members of the "concerned residents group" and to a lawyer who I have appointed to review the documentation. The information will also be forwarded to the DA ward representative for investigation.</p>	

1 9	Carolyn Schwegman an WESSA			<p>storm water system and environmental practices implemented, the whole study area and function of the system will benefit from the development. It is also proposed and planned that the remaining open spaces on the study area will be rehabilitated and conservation of the Pickersgill Reed frog be accommodated and its occurrence encouraged through walkways and signage containing information regarding the frog species. Some of the open spaces will be rehabilitated according to the habitat requirements for the frog species' life cycle and requirements to serve as feeding and breeding place for the species.</p>
			<p>1. Please can you confirm that the information provided as an addendum to the BAR for the Widenham Stand (DM/0147/08) development is complete and correct. I am unable to reconcile the sewage layout because either</p> <ul style="list-style-type: none"> <li>o The quality of the layout map is poor and I am not able to enlarge it and retain clarity</li> <li>o The information does not pertain to the proposed project site. I note that the report by WLM Leshika has as page headings "Remainder of Erf 198 of the Farm Garsfontein 374 JR".</li> </ul> <p>2. WESSA and Coastwatch (collectively referred to as WESSA) have considered the addenda and comment follows as –</p> <p>WESSA objects to the proposed development in its current form, the reasons are set out in our comment dated 23 February 2011 on the basic assessment report. In addition, the confirmed presence of a Red Data species, <i>Hyperolius Pickersgilli</i> (Pickersgill Reed Frog) has not been considered. Should limited development around the periphery of the site be considered for authorisation it would need to be aligned with the requirements of Ezemvelo KwaZulu-Natal Wildlife (KZNW) in terms of conservation of wetland habitat in general and in particular in terms of habitat integrity for <i>Hyperolius pickersgilli</i>. It is a concern</p>	<p>Addendum B, the "Low volume treatment works" (sewer) report is replaced by the revised (Revision 2) Services Report for the study area. The proposed sewer layout has been corrected and included as Annexure B of the Services Report. A sewer effluent system will be planned and designed in accordance to the standards and specifications of Department of Water</p>

that despite WESSA's indication (comment dated 23 February 2011) that Bokamoso Consultants would need to engage the provincial conservation authority as a commenting authority it appears that KZNW was not engaged during the stakeholder engagement process. We trust that the omission has been addressed.

Draft Basic Assessment Report – Additional Information:

Addendum A: Wetland PES and Ecoservices Description (Scientific Aquatic Services) WESSA notes that the project site obtained a PES classification of Class C and the report recommends that future activities within the system and future management decisions strive to maintain this level. While an expected benefit from the development is the removal of invasive alien plants it has not been determined to what degree this management intervention will support the system to the extent that it can absorb the impacts of the development and retain a classification of C (or higher).

Addendum B – Sewage Treatment

- o Blomite/Calcamite system. Is the system recognised by SEWPACKSA, a division of the Water Institute of South Africa (WISA) and approved for the proposed use?
- o The preferred system, Level 4 Calcamite System, shown in figure 3.5 of the WLM Leshika report indicates that effluent discharges to Evapo transpiration beds; Solids free system; An artificially constructed wetland treatment system; Oxidation ponds; Trunk sewer; Conventional sewage treatment works. These options for effluent discharge suggest the system to be a pre-treatment system requiring further treatment or polishing prior to discharge to the natural environment. Should effluent be discharged to the natural environment or be used for irrigation it appears that chlorination is required. The impacts of effluent which has been chlorinated on the wetland need to be described and assessed.
- o Appendix B of Addendum B. WESSA email to Bokamoso dated 18/05/2012 in which we request confirmation that the sewer reticulation layout plan pertains to development on the Widenham Stand refers. The layout sewer reticulation layout depicted in the report by WLM Leshika is not clear and each page is titled 'Remainder of Erf 198 of the Farm Garsfontein 374 JR'. Should the plan be correct for the project site WESSA requests that an arrangement is made to send a copy which can be clearly read.

Addendum C –Department of Water Affairs Requirements (letter dated 18 April 2011)

- It needs to be shown how the following will be achieved –
- o Point 1.2.3 the treatment plant must be located as far away as possible from any waterlogged soils and the drainage line on the site. The project site is a wetland. Can this be achieved?
  - o Point 1.2.8. The effluent will be treated to special limit values under General Authorisation and the treated effluent will be used for irrigation purposes. Irrigation purposes? – The proposed development is within a wetland environment and purportedly the units will not enjoy landscaped gardens – what will be irrigated?
  - o Point 1.4. Should the preferred system result in the creation of any unacceptable health hazards or pose a problem to the environment, an alternative treatment and disposal system would be required. It would need to be explained what alternative systems could be used in the event of the preferred option inadequately meeting the requirements. This must be identified up front with interim

Affairs and eThekweni Metro Council. It will be a system already approved and accepted by the Metro Council. The system will be a closed system, to ensure no detrimental effect on the environment. Furthermore this will be a temporary measure, since Metro Council has planned to install water born sewer reticulation for the area. Then the sewer effluent of the development will be connected into the newly provided outfall. At present none of the neighbouring stands have a sewer connection.

2. Bokamoso

Environmental confirms that Ezemvelo KZN wildlife was omitted from the EIA process through no fault of its own and that they were engaged during the public participation process for the Addendum to the Basic Assessment.

interventions described. Alternative options have not been considered.

- o Point 5.5: it is vitally important that storm water discharging to the wetland prior to entering the permanent, seasonal or temporary zone of the wetland is dissipated so .... It must be clearly indicated how storm water will be dissipated as required.

Addendum F

The study, a desktop study dated 2 March 2012, firstly seeks to determine the presence of a frog species found on the North American continent and, secondly, fails to consider the known presence of *Hyperollus pickersgilli* (reported to Bokamoso by members of the Widenham/Umkomaas Conservancy in February (pers. com)). The terms of reference for the specialist study appear not to fit the site and development requirements. WESSA looks forward to receiving responses to issues which have been raised during the public participation process.

Addendum A: The alien vegetation

encroachment on the site is severe. The removal of the vegetation from the site will improve the conditions of the wetland to some degree. Additional impacts from the proposed development will occur. If the development ensures that a well-considered and well executed rehabilitation plan is implemented, it is deemed possible to maintain the Present Ecological State of the system and to potentially improve it.

Addendum B: The "Low volume treatment works" (sewer) report is replaced by the revised (Revision 2) Services Report for the study area. The proposed sewer layout has been corrected and included as Annexure B of the Services Report. A sewer effluent system will be planned and designed in accordance to the standards and specifications of the Department of Water Affairs and eThekweni Metro Council. It will be a system already approved and accepted by the Metro Council. The system

will be a closed system, to ensure no detrimental effect on the environment. Furthermore this will be a temporary measure, since Metro Council has planned to install water born sewer reticulation for the area. Then the sewer effluent of the development will be connected into the newly provided outfall. At present none of the neighbouring stands have a sewer connection. It is important to note that the water quality in the system is severely degraded as presented in the initial assessments undertaken on site. The impaired quality of the water will already place severe stress on the aquatic and frog communities on site. With the discharge of additional effluent, there may be additional pressure placed on the system due to effluent of impaired quality or with high concentrations of residual chlorine entering the system. It is however not anticipated that the discharge effluent will be detrimental and pressurise the system even further since it is a requirement that the effluent must comply with the general



discharge limits of waste water discharged into a wetland, as prescribed by the Department of Water Affairs.

Addendum C: Please refer to Annexure B of the revised Services Report for the proposed sewer layout. As can be seen from the layout, the treatment system will be placed in the far north eastern corner of the development. To ensure that waterlogged soils will be affected to the minimum, the plant will be a closed system. Some landscaping will take place on the property and limited irrigation will take place at the garden areas. A meeting will be held with the Department of Water Affairs and eThekweni Metro Council to discuss their approved and accepted treatment systems and discuss the alternatives prior to installation of the system. There is no formal storm water plan, but the storm water concept has been addressed in the revised Services Report. The internal roads and parking areas to be utilized as storm water channels to channel storm water away from

the proposed development. Storm water channels will be utilized to divert all storm water to the main storm water drainage system across the site, which would act as storm water attenuation structures and water features on the site. Reference is made to the Hyatology Report (Annexure D1 of the Final Basic Assessment Report for design flow calculations and flood line determination.

Appendix E: The desktop study was undertaken in response to a fax received from the Department of Agriculture, Environmental Affairs & Rural Development of KwaZulu Natal who requested that "a sweep be undertaken to confirm if a Pijugill frog (*Lithobatus palustris*) exists on the site". The study undertaken was undertaken to address this concern and brief. Scientific Aquatic Services did however realise that the authorities had most likely made a mistake and therefore did a brief desktop assessment to determine the Probability of Occurrence of *Hyperolius pickersgillii*. The

2 0	KaiVin Jones			<p>study was undertaken was a desktop sweep study based on the available published literature. It is acknowledged that the status of the species was changed in 2010 from that of 2004 which was an oversight of the report desktop assessment however the assessment relied strongly on published literature on the species of concern. If a full herpetofaunal specialist study was undertaken additional effort to consult with local authorities would have been made and more in depth consideration of the latest IUCN data. In addition if a site visit was undertaken, the study would have a substantially higher level of confidence than a desktop assessment.</p>
			<p><b>1. Comments on the Addendum to the Basic Assessment Report for the proposed construction of the Widenham Stand: K Jones [I&amp;AP]</b></p> <p>&gt; <u>Addendum A - Wetland PES and Ecoservices description</u></p> <p><b>Claims:</b></p> <p>(i) Present ecological state [PES] moderately modified, the most significant impact is on water quality followed by alien vegetation.</p> <p>(ii) Due to the degree to which the wetland system is isolated from surrounding open space areas and due to the observed ecological conditions of the system, the system is regarded as being of little importance in terms of biodiversity maintenance in the area.</p> <p><b>Comments:</b></p> <p>The inference is that the proposed development will not impact upon the wetland much because of the alien vegetation. The removal of alien vegetation is a legal requirement upon the property owner. The answer is to clear this alien vegetation, not develop the site. The wetland system is <u>not isolated</u> from</p>	<p><b>1. Addendum A:</b></p> <p>Although there is open space adjacent to the subject property it must be considered that the roadways bisecting these areas form substantial migrational barriers to faunal species with special mention of frogs.</p>

surrounding open space. As pointed out previously, immediately on the opposite side of Widenham Drive is [i] a children's play area, and [ii] a huge park stretching from Widenham Drive up to the Western border of Widenham which will link with the proposed Cannonbrae development. Furthermore, as part of the eThekweni Municipality plans for Umkomaas/Widenham [presented at a public meeting in Umkomaas] it is proposed that the park [per ii] above TOGETHER with the proposed development sites and another privately owned lot on the sea side of the R102 form part of DMOSS [Durban Municipality Open Space System] which would further integrate the open spaces.

**Claim:**

The system is regarded as having very limited importance in terms of education, research, recreation and tourism functions.

**Comment:**

What about the buck, mongoose and monkeys seen regularly on the outer edges of the properties on St Catherine Drive? What about the Pickersgills frog found in the wetland? [Mid South Coast Mail dated Friday 18th May 2012]. Do these play no part in terms of education, research etc.?

➤ Addendum B - Low Volume Treatment Works Report regarding sewage disposal

**Comment:**

Difficult to comment on this Addendum.

[i] Appears to be plagiarised or hastily put together from other reports, namely Remainder of Erf 198 of the Farm Garfontein 374 JR and Bundu Lodge in Mookgobong in Limpopo.

[ii] Is the addendum about Sewage disposal or a Rezoning application/relaxation of Title Deeds and proposals to change the Widenham Town Planning Scheme to allow for three storeys? The Annexure claims that "Application is made to amend the Widenham Town Planning Scheme with Rezoning of Lots.....etc."

[iii] There is a separate process for Town Planning matters, rezoning and title deed restriction removal - these have not been advertised and a Basic Assessment report is not the place to seek these.

[iv] Is the proposal for 56 residential units 3 storeys high OR for 32 residential flats of 2 storeys high as per Appendix E?

[v] It would appear that not only is the developer seeking to change the zoning of the lots as defined within the Widenham Town Planning Scheme controls, but that they are wanting to change the Town Planning Scheme itself so as to allow for three storey structures!

[vi] Appendix B of this section of the report [i.e. Appendix B of BAR] is not even applicable to this proposed development but details Bundu Lodge in Limpopo - so how is comment expected?

[vii] This section includes sketches and wastewater limit values seemingly to confuse the reader but nothing in terms of what guarantees the proposed sewage system offers - only what is required.

[viii] How will the stage 4 Calcimite sewage treatment plants [one per unit - i.e. 56 per this Appendix fit into the site to meet the Dept. of water Affairs 20m buffer from the edge of the temporary wet zone to the edge of any structural development?

➤ Addendum C - Comments received from the Department of Water Affairs

**Claim:**

In addition the designation of the open space as play parks limits the suitability for supporting frogs and especially *Hyperolius pickersgillii* which requires densely vegetated marshy areas in coastal bushveld and grassland as part of its biology. Based on the two prior points, the utility of these open spaces for conservation of frogs and especially *Hyperolius pickersgillii* is therefore limited.

The assessment of the wetland use for education was based on the method of Kotze et al (2005). The calculation is based on numerous inputs which provide a score for education and research. Based on the application of the method, the importance for education and research was found to be limited. If *Hyperolius pickersgillii* occur on site and based on the information presented by the I&APs in this document the importance of the site for education and research would be extremely high according to the assessment method of Kotze et al (2005).

Although this Dept. would prefer to have a 20m buffer zone from the edge of the temporary wet zone to the edge of any structural development, the water quality management section of this Dept. is aware that this requirement will make the project unviable. Due to the nature of this project, it is anticipated that there will be some disturbances to the wetland.

**Comment:**

Does this indicate that the Dept. is willing to approve the proposed development even though the requirements cannot be met simply because it would be financially disadvantageous to the developer?

- Addendum D - Comments received from WSM Consulting Engineers

This email only advises that a revised treatment plant application has been sent through the eThekweni Municipality.

**Comment:**

How can comment be expected on this? Has the sewer treatment plant been revised from that per Annexure B? If so, what are the details?

- Addendum E - Letter informing the I&APs about the addendum to the BAR

**Comment:**

Accessed the website [www.Bokamoso.net](http://www.Bokamoso.net) but apart from an indication of the Widenham sites under 'projects', I found nothing more [even under 'current public processes'] - thus cannot comment.

- Addendum F - The probability of occurrence of the Pikusgill frog on the property

**Comment:**

Report would seem to be repudiated / nullified by reported finding of the frog per Mid South Coast mail report [front page article dated 18th May 2012.

**2. GENERAL COMMENT**

- [i] The developer purchased the lots with the full knowledge and acceptance of the nature of the lots, the Town Planning zoning, the title deed restrictions etc.
- [ii] To now want to change the goalposts, develop the wetland and develop the lots as proposed is simply unacceptable.
- [iii] Clearly the lots are unsuitable for the development proposed, by virtue of the fact that the Developer now proposes to not only revise the town planning scheme to suit his proposals [i.e. 3 storeys], and the Dept. of Water Affairs requirements [20m buffer zone from the edge of the temporary wet zone to the edge of any structural development], simply so as to make his proposed development financially viable!
- [iv] Why should consideration be given to relaxing or indeed changing the existing controls/ requirements simply because a developer finds it financially restrictive to develop the lots in accordance with the

**Addendum B:** The "Low volume treatment works" (sewer) report is replaced by the revised (Revision 2) Services Report for the study area. The proposed sewer layout has been corrected and included as Annexure B of the Services Report. A sewer effluent system will be planned and designed in accordance to the standards and specifications of Department of Water Affairs and eThekweni Metro Council. It will be a system already approved and accepted by the

controls applicable when he purchased the lots?

- [v] At no stage has any report substantiated the need and desirability for this proposed development. Numerous houses and residential unit developments [similar to that proposed for this development] in the area are standing empty or construction thereon has been halted. I do not believe there is a need for the development and certainly I do not deem it to be desirable.
- [vi] Is there a need for this development? This has not been answered, yet we are already talking sewage disposal etc. for the development of a wetland area
- [vii] Over the years there have been several occasions when the only access to the south side of Widenham [on the inland side of the R102 Main Road] has been cut off by flooding of the stream that cuts through the proposed development lots. The stream overtops the culvert and floods the area including Widenham Drive and the wetland itself. This will be aggravated by the proposed Cannonbrae development bordering on Widenham and situated at a higher elevation. Where/how has this flooding been taken care of in the studies to date?

Meitro Council. The system will be a closed system, to ensure no detrimental effect on the environment. Furthermore this will be a temporary measure, since Meitro Council has planned to install water born sewer reticulation for the area. Then the sewer effluent of the development will be connected into the newly provided outfall. At present none of the neighbouring stands have a sewer connection.

Addendum C: The wetland can be seen as man made since it is storm water induced. However some disturbances may occur in the wetland, Bokamoso Environmental, the applicant and engineers are of the opinion that through an effective storm water system that will be installed and environmental practices implemented, the whole study area and function of the system will benefit from the development. It is also proposed and planned that the remaining open spaces on the study area will be rehabilitated and conservation of the Pickersgill Reed frog be

accommodated and encouraged through walkways and signage containing information regarding the frog species. Some of the open spaces will be rehabilitated according to the habitat requirements for the frog species' life cycle and requirements to serve as feeding and breeding place for the species.

Bokamoso

Environmental's consultants can only inform the department about the positive and negative impacts relating to the development, the decision to approve the development lies with the Department and neither Bokamoso nor the applicant can influence the department's decision for approval or authorisation of the development.

Addendum D:

Unfortunately due to technical problems the website was not accessible for quite some time. We only realised/encountered the problem after the Addendum was forwarded to the I&APs (via email) and wanting to upload the document on the website. However

		<p>the document containing the Addendum that would have been uploaded on the website was exactly the same as the one that was sent via email.</p>
<p>2 1</p> <p>Susan Weightman MKHOMAZI CONSERVANCY</p>	<p>MKHOMAZI CONSERVANCY COMMENTS ON ADDENDA TO BAR WIDENHAM STAND</p> <p>Mkhomazi Conservancy was re-established on 2<sup>nd</sup> June 2007 and is registered with EKZNW as a Conservancy. The founder members agreed the following to be their Vision for the defined area: To keep safe from harm the environment within the defined area so that it becomes a place of well-being for all its plants animals and people, now and in the future. Accepting that people will use this environment, we undertake the following as part of our mission: We will</p> <ul style="list-style-type: none"> <li>o Take all possible steps to preserve and regenerate the biodiversity within the conservancy.</li> <li>o Identify and prevent activities which threaten the well-being of the environment within the conservancy.</li> <li>o Work with like-minded people to build our abilities to achieve our vision.</li> </ul> <p><u>COMMENTS</u></p> <p><b>ADDENDUM B</b></p> <ul style="list-style-type: none"> <li>o Your letter of 23 April 2012 refers to an 8 block development with 2 storeys and 32 units. However in the report of WSM Leshika, of 6 February 2012, pp1 &amp; 2 it states that application for rezoning from special to general residential has been made for 56 units with a height of 3 storeys. Which is correct? This is a difference of 75% in the number of units.</li> <li>o Whilst tables are produced showing nutrient recycling in the package sewage system, no mention is made of persistent pharmaceutical residues in the outflow. Are any figures available for this? We believe that for the outflow to be used as irrigation exposes wetland species especially amphibians with their permeable skins to possibly adverse effects of pharmaceuticals as the receiving environment is small and the human population relatively large, especially if tie-ins to neighbouring properties are encouraged as is suggested.</li> </ul> <p><b>ADDENDUM A and F:</b></p> <ul style="list-style-type: none"> <li>o We refer to our communication of 16 February 2012 in which we inform you of the new record of Pickersgill's Reed Frog (the accepted common name). The date of the record and sufficient information to contact Dr. AJ Armstrong of EKZNW Planning Division was given. We are baffled why this important information was not subjected to rigorous checking by the wetland specialist. A USA-centric search engine threw out "Did you mean pickerel frog?" when searching for pickersgill's Reed frog which could explain the puzzling inclusion of "pikusgill frog" whose cited scientific name proves it to be the pickerel frog, a North American native. We consider this to be at the least a red herring. It is plain that the information used regarding the range of <i>Hyperolius pickersgillii</i> is out of date. We believe that the</li> </ul>	<p><b>Addendum B:</b> According to the wetland specialist they will need to do a proper detailed assessment of the frogs to see what the impacts will be due to effluent discharged into the wetland.</p> <p>The application is indeed for an 8 block, 2 storey, 32 unit development. This was corrected in the revised Services Report and proposed sewer layout.</p> <p><b>Addendum A and F:</b> The desktop study was undertaken in response to a fax received from the Department of Agriculture, Environmental Affairs &amp; Rural Development of KwaZulu Natal who requested that "a sweep be undertaken to confirm if a Pickusgill frog (<i>Lithobatus palustris</i>) exists on the site". The study was undertaken</p>



wetland specialist, Mr Van Staden, should at a minimum have contacted Dr. Armstrong's group and verified the information. This lack of attention to detail and failure to check facts is unscientific and leads to a breakdown of trust placed in experts. If Mr Van Staden is not himself an expert in the frogs of the KZN South Coast we submit that it remains his responsibility to consult with one who is. In his report for the BAR Appendix D2 section 2.2 he recognises the need for caution when surveying for fauna: "It is important to note that due to the nature and habits of fauna it is unlikely that all species will have been recorded by means of A SINGLE SITE ASSESSMENT". This has now proven to be true. Pickersgill's reed frog is easily overlooked during a daylight search due to its small size and probable silence.

In our original comments on the BAR we allowed ourselves to be guided by an impartial scientist who we now find wanting.

- o This new record of *H. pickersgillii* now means that the Widenham stand is a place of scientific and educational importance and interest, representing perhaps 5% of the total known population of this frog. This will alter the appearance of the radar plot of wetland services. Notwithstanding its degraded appearance, *H. pickersgillii* deems this wetland to be suitable habitat.
- o We note that DWAF has accorded special treatment to this development through relaxation of its usual requirement for a 20m buffer from the seasonal wetland to the structures as this renders the project UNVIABLE. Buffer zones are necessary for foraging and overwintering of wetland species including frogs. We assume that this decision will be reviewed in the light of the presence of *H. pickersgillii*. Islandisation of habitats leads to unsustainable populations. Whilst this could possibly be overlooked when the wetland is merely "The View", and populations are of common species, the discovery of the critically endangered *H. pickersgillii* changes our perspective. This little frog may be able to offer insights into problems besetting amphibians worldwide and hence the wider environment since they are indicator species. Further, this range extension may be linked to climate change.
- o We note that no duty of care is placed upon the proponent to remove invader alien plant species during this public participation process.

Mkhomazi Conservancy states again its belief that any development in wetlands anywhere should not proceed. In addition to the DWAF decision cited above, in this instance, any construction activity will result in direct frog mortality and destruction of its habitat. We believe that conservation of the existing habitat and hence the frog population far outweighs any consideration of an artificially reconstructed wetland and the narrow financial interest of the proponent. Destruction of this frog population cannot be allowed. Therefore we believe that this development should not go ahead.

undertaken to address this concern and brief. Scientific Aquatic Services did however realise that the authorities had most likely made a mistake and therefore did a brief desktop assessment to determine the Probability of Occurrence of *Hyperolius pickersgillii*. The study was undertaken as a desktop sweep study based on the available published literature. It is acknowledged that the status of the species was changed in 2010 from that of 2004 which was an oversight of the report desktop assessment however the assessment relied strongly on published literature on the species of concern. If a full herpetofaunal specialist study was undertaken additional effort to consult with local authorities would have been made and more in depth consideration of the latest IUCN data. In addition if a site visit was undertaken, the study would have a substantially higher level of confidence than a desktop assessment.

It is agreed that if this wetland does indeed support the *H. pickersgillii*

2 2	Mrs D van Rensburg DEVELOPMENT PLANNING, ENVIRONMENT & MANAGEMENT UNIT DEVELOPMENT PLANNING DEPT., LAND USE MANAGEMENT BRANCH, ETHEKWINI MUNICIPALITY	Tel: 031 311 7136	<p>ADDENDUM TO THE DRAFT BASIC ASSESSMENT REPORT FOR THE PROPOSED WIDENHAM STAND DEVELOPMENT</p> <p>With reference to the abovementioned Addendum to the Draft Basic Assessment Report, please be advised that various Municipal Departments have had sight of the proposal and the following comments are submitted for your attention:</p> <ol style="list-style-type: none"> <li>1. eThekweni Electricity Department The Electricity Department has no objection, however please note: The applicant must consult eThekweni Electricity's mains records (held in the drawing office at eThekweni Electricity Headquarters, 1 Jelf Taylor Crescent, for the presence of underground electrical services. In addition should any overhead line and/or servitude be affected, the specific permission of the Head: Electricity must be sought regarding the development. The relocation of MV/LV electrical services, if required in order to accommodate the development, will be carried out at the expense of the applicant.</li> <li>2. Framework Planning Branch This Branch submits the following comments. The addendum consist of Addendum A - Wetland, Addendum B - Treatment Works, Addendum C - Department of Water Affairs, Addendum D - WSM Consulting Engineers, Addendum E - I&amp;AP comments and Addendum F - Scientific Aquatic Services on the probability of Pickusgill frog. It has been noted that in Appendix B "Proposed Sewer Reticulation Layout does not correspond to the proposed site development plan. This Branch cannot support the proposal at this stage subject to: This Branch's previous comment regarding the proposed densities which must be addressed in the Final Basic Assessment Report.</li> </ol>	<p>the Ecological Importance and sensitivity of the wetland would be increased. It is agreed that if this wetland does indeed support the H. Pickersgillii the Ecological Importance and sensitivity of the wetland would be increased and measures to ensure that the frog population is not impacted upon would need to be sound. Our reports do specify that alien vegetation removal needs to take place.</p>
<p>1. Framework Planning Branch: The "Low volume treatment works" (sewer) report is replaced by the revised</p>				

3. Land Use Management Branch

This Branch needs an indication of the proposed densities/number of units that would be developed on his property.

4. Environmental Planning and Climate Protection Department

This Department maintains that the proposed development of 32 units on this site is not acceptable from a biodiversity perspective. This Department previously commented and raised three main concerns about the proposed development. This Department's biodiversity concerns for this site have not been addressed by the addendums to the Basic Assessment Report.

Addendum F consists of a report prepared by Scientific Aquatic Services detailing the probability of Pikusgill frog (*Lithobates Palustris*) that is native to North America. Furthermore; the report makes mention of the distribution range of the Pickersgill Reed Frog (*Hyporhynchus pickersgilli*) whose conservation status is critically endangered according to the 2011 IUCN Red list. The report concludes by stating that although the Pickersgill Reed Frog is endemic to KZN, the subject site is located outside of its distribution range of the Pickersgill Reed Frog.

The details on the proposed treatment works are included as Addendum B of the report. The impacts of the proposed Calcamite Treatment System to the wetland where not assessed as this Department had requested in the previous comment on the Draft Basic Assessment Report. Moreover, the sewer reticulation layout is of a sit in Mookgapong and not of the site in question.

This Department has raised valid concerns about the proposed development numerous times and they are yet to be addressed. Notwithstanding our concerns, the Department of Agriculture, Environmental and Rural Affairs, must make the final call regarding the feasibility of this development.

5. Environmental Health Department

In principle this Department raises no objection in approving the development provided that the following issues are taken into account, due to the characteristic of the property.

**Bio-mite or Calcamite System:**

The property concerned is a wetland wherein the basic characteristic is a high water table and water logged soil. The estimated volume of effluent that will be generated is 44.8kl/day. This volume will impact on the waterlogged surrounding area including the stream which generally has a low volume of water flowing.

Clarity is sought as to the efficiency of the system when the volume of effluent generated is 44.8kl/day and the maximum capacity of the treatment system is 5 400 k/litres.

In an area of this nature the use of a septic tank in conjunction with the bio-mite or calcamite system is not recommended as the water from the system will be dispersed by irrigation on the ground which is not practical. Unless however it can be demonstrated that the final effluent is harmless to human health, the flora and fauna of the area including aquatic life. It is also recommended that, in order to ascertain whether the proposed system should be accommodated on a property of this nature, a percolation test report be obtained from a competent authority or person which may reveal some interesting findings. In view of the sensitive issue, it may be appropriate for the developer to consider a contingency plan that could be implemented in the event it becomes necessary. The proposals therefore could also be

(Revision 2) Services Report for the study area. The proposed sewer layout has been corrected and included as Annexure B of the Services Report. A sewer effluent system will be planned and designed in accordance to the standards and specifications of Department of Water Affairs and eThekweni Metro Council. It will be a system already approved and accepted by the Metro Council. The system will be a closed system, to ensure no detrimental effect on the environment. Furthermore this will be a temporary measure, since Metro Council has planned to install water born sewer reticulation for the area. Then the sewer effluent of the development will be connected into the newly provided outfall. At present none of the neighbouring stands have a sewer connection. The application is indeed for an 8 block, 2 storey, 32 unit development. This was corrected in the revised Services Report and proposed sewer layout.

submitted for consideration.

**Solid waste removal:**

It is recommended that: In addition to the provision of a suitable covered area for the storage of solid refuse as indicated in the report, arrangement must also be made with the Durban Solid Waste Department for removal of the refuse. A management Plan is drawn up for consideration with regards to the collection, storage and removal of refuse from the site. The removal of refuse by private contractors should be restricted to those that are registered in terms of the schedule trade bylaws. Confirmation of their registration with this Department prior to engagement will be highly appreciated. Applicant ensures that the waste manifest system is adhered to by all contractors and sub-contractors dealing with waste disposal.

**Noise and Dust Control:**

Appropriate measures must be in place to ensure that excessive noise and dust is prevented during the development stage. With regards to the surrounding area, maintaining a buffer zone on the outskirts may assist in suppressing any noise and dust that could affect the community in the vicinity. With regards to the workmen on site appropriate protective gear is highly recommended.

**Ablution Facilities and Water Supply:**

It is incumbent upon the developer to ensure that adequate toilets, showers and water supply are provided and located within reasonable distances from the work site for the employees during development. It is recommended that wherever possible a temporary municipal sewer connection should be arranged for connecting up the workers toilets and waste water discharge points during the development process. Where the Municipal sewer mains are not available for this purpose, the services of a registered contractor for providing and servicing portable toilets should be considered. In this regard the contractor should be in possession of a Schedule Trade Permit issued by this Department. Legal proof of final disposal should be made available to this Department.

**6. Geotechnical Engineering Branch**

The title of this document states 32 residential units but the waste treatment report in Addendum B calculates for 56 units, nearly double. How many units are planned? The whole waste water report seems to be a cut and paste of at least 2 other reports (Bundu Lodge, Limpopo and Garfontein Farm, Gauteng) so the 56 calculation may be for a different site and then one wonders how many other recommendations are relevant to this site.

This Calcarimite tank system should not be designed for short term use ("temporary solution"). While the regional treatment works may have been approved, it is not yet a fait accompli. Whatever on-site system is approved must be feasible for the foreseeable future and must function to the benefit of the residents and environment until such time as it is replace, whenever that may be. Fig 3.5 shows the treated, chlorinated water discharging into an evapotranspiration area or requiring further treatment in an artificial wetland or oxidation pond. There is no capacity on this site for evapotranspiration areas for 33, never mind 56, units so where will the further treatment be accommodated within the site layout?

The site Development Plan in Addendum B is schematic and does not place structures relative to existing ground level and stream course. The Proposed Sewer Reticulation Layout plan provided is for a bush lodge development in Limpopo province, about 1 000km away. Nonetheless, it would appear that the

**2. Land Use Management Branch:**  
The application is for an 8 block, 2 storey, 32 unit development. This was corrected in the revised Services Report and proposed sewer layout.

**3. Environmental Planning and Climate Protection- and Environmental Health Department:** The application is for an 8 block, 2 storey, 32 unit development. This was corrected in the revised Services Report and proposed sewer layout. The desktop study was undertaken in response to a fax received from the Department of Agriculture, Environmental Affairs & Rural development of KwaZulu Natal who requested that "a sweep be undertaken to confirm if a Pikusgill frog (*Lithobatus palustris*) exists on the site". The study was undertaken to address this concern. Scientific aquatic Services did however realise that the authorities had most likely made a

northern structures (especially Blocks 7 and 8) are very close to in not over, the existing stream course. Is the stream being canalised further south, in which case, what becomes of the existing wetland? In the wetland report Addendum A, it is stated that the existing wetland should be maintained and ideally rehabilitated as it has important ecological functions such as flood attenuation, erosion control and assimilation of nutrients. Can a realistic drawing be provided that shows proposed positions of structures, proposed earthworks, proposed sewer reticulation layout, the exiting stream channel and existing wetland delineation? Only then can the whole picture be assessed in real terms.

The conclusion of the Addendum B reports states that "each single stand to be provided with a level 4 Calcamite sytem", is this a carryover from the cut and paste since it will be one consolidated stand? Is each block of units to be on a standalone system, hence 8 sets of tanks and aerators and backup generators for the aerators, or will the whole development be on one larger, custom designed system? Figure 3.5 of the report suggests that a level 4 system is suitable for a "single housing unit". The site specific Sewer Reticulation Plan may go some way to cleaning this up.

What field work has been conducted to ascertain whether those Calcamite tanks can realistically be buried down slope of the structures? With the northern structures so close to the stream bed, there is a good probability the tanks will be sitting in shallow ground water and could be a challenge if there are wet sands at shallow depth, these will collapse into an excavation.

7. eThekweni Transport Authority

The Traffic Impact Assessment submitted as part of the Draft Basic Assessment Report is not supported in its current form. The applicant needs to revise the same to include the impacts of the full development proposal. Furthermore, the access point to the development must meet the minimum geometric standards. In this regard it is suggested that the applicant liaise with the ETA's Traffic Engineering Branch.

8. eThekweni Water and Sanitation Department

Please note this Department has so far rejected the proposed sewage disposal system from the site and has repeatedly requested that the application be submitted in terms of this Department's guide lines.

9. Coastal, Storm water and Catchment Management Department

The sewer layout provided is for the wrong development. This Department would need to see the revised Storm water Management Plan.

10. Fire Safety

This Department has no objections to the above proposal subject to a formal plan submission for scrutiny.

mistake and therefore did a brief desktop assessment to determine the Probability of Occurrence of *Hyperolius pickersgillii*. The study was undertaken as a desktop sweep study based on the available published literature. If a full herpetofaunal specialist study was undertaken additional effort to consult with local authorities would have been made. In addition if a site visit was undertaken, the study would have a substantially higher level of confidence than a desktop assessment. It is agreed that if this wetland does indeed support the *H. pickersgillii* the Ecological Importance and sensitivity of the wetland would be increased. It is agreed that if this wetland does indeed support the *H. pickersgillii* the Ecological Importance and Sensitivity of the wetland would be increased and measures to ensure that the frog population is not

impacted upon would need to be sound. Our reports do specify that alien vegetation removal needs to take place.

4. Geotechnical Engineering Branch: The "Low volume treatment works" (sewer) report is replaced by the revised (Revision 2) Services Report for the study area. The proposed sewer layout has been corrected and included as Annexure B of the Services Report. A sewer effluent system will be planned and designed in accordance to the standards and specifications of Department of Water Affairs and eThekweni Metro Council. It will be a system already approved and accepted by the Metro Council. The system will be a closed system, to ensure no detrimental effect on the environment. Furthermore this will be a temporary measure, since Metro Council has planned to install water born sewer reticulation for the

area. Then the sewer effluent of the development will be connected into the newly provided outfall. At present none of the neighbouring stands have a sewer connection.

5. Coastal, Storm water and Catchment Management Department: Addendum B, the "Low volume works" (sewer) report is replaced by the revised (Revision 2) Services Report for the study area. The proposed sewer layout has been corrected and included as Annexure B of the Services Report. There is no formal storm water plan, but the storm water concept has been addressed as: The internal roads and parking areas to be utilized as storm water channels to channel storm water away from the proposed development. Storm water channels will be utilized to divert all storm water to the main storm water

				<p>drainage system across the site, which would act as storm water attenuation structures and water features on the site. Reference is made to the Hydrology Report (Annexure D1 of the Final Basic Assessment Report) for design flow calculations and flood line determination.</p> <p>6. 32 units are planned (current proposal)</p>
2 3	Dr Rena Howlett	rena@vzag.com	<p>1. Please could you be advised that I am the new owner of 24 Camborne Road, Widenham and will require copies of all previous correspondence. I am informed that there have in fact been confirmed sightings of the Pickersgill frog earlier this year in January?</p> <p>2.</p>	
2 4	Mr Shawn Janneker DEPARTME NT OF AGRICULT URE, ENVIRONM ENTAL AFFAIRS & RURAL DEVELOPM ENT KWAZULU- NATAL	Tel: 031 302 2861 Fax: 031 302 2824	<p>1. Messrs CCCT Family Trust proposes constructing an 08 block development with 02 storeys to accommodate a total number of 32 residential units, together with parking bays. Bokamoso Landscape Architects and Environmental Consultants have been appointed to undertake the Environmental Impact Assessment (EIA) process for the assessment of the listed activities, for the construction of the proposed residential development.</p> <p>2. Bokamoso Landscape Architects and Environmental Consultants submitted a BAR on behalf of the applicant for review and consideration. The BAR was received by the Department on 31/10/2011 and was reviewed and considered by the Department. The Department issued a decision on 18/1/2012 and rejected the BAR. The Department made further correspondence on 15/2/2012 requesting that the presence of the Pickersgill Reed Frog species be determined, as it was brought to the Department's attention that these indigenous species are present on site. The Department at this stage was made aware of the abovementioned species and therefore requested (16/2/2012) that the Environmental Assessment Practitioner (EAP) together with the applicant establishes whether or not this species is present on the site identified for development.</p> <p>3. An amended BAR was received by the Department on 23/4/2012. The amended BAR was acknowledged by the Department on the same day and also confirmed that the Comments and Response Document, which is a prerequisite to a BAR prior to acceptance and reaching a decision, was still outstanding. To date, the Department still awaits the Comments and Response Document for the</p>	



amended BAR received by the Department on 23/4/2012.

4. The Department has reviewed the amended BAR and has the following concerns:

4.1 Scientific Aquatic Services (SAS) was commissioned to compile a "Present Ecological State" (PES) and "Ecological Management Class" (EMC) report dated 17/2/2012 of the wetland identified onsite, which was in response to the Department's rejection letter dated 18/1/2012. The report has identified that the wetland system on site has ecological functions, good service provision and receives very high levels of nutrients from upstream, however due to the significant impact from the surrounding residential activities in the catchment area, the system is regarded as being limited in terms of biodiversity and is an isolated system. The recommendations presented suggest that the wetland feature must be carefully protected and managed throughout the life of the proposed residential development. The recommendations do not explicitly state the amount of units that is permitted on site; however it recommends that the development can commence.

4.2 In response to the above, the PES and EMC assessment undertaken for the wetland identified on the site for the proposed residential development still does not address the concern raised by the Department, wherein the Department requests for the wetland boundary on site to be delineated. The assessment also fails to look at functionality of the wetland post-development and is viewed as a "status quo" functional assessment, whilst the assessment addresses the functionality of the temporary and permanent wetland zones. To reiterate, the Department requires that a suitably qualified wetland specialist be appointed to delineate the boundary of the wetland and compile a Wetland Delineation Report. The purpose of the Wetland Delineation Report is to confirm the extent of the wetland in terms of the various zones, provide an understanding/comparison of the functionality and health of the wetland pre-development and post-development, confirm whether development is feasible on site and if feasible, recommend appropriate buffers and provide alternative layout options that would have the least impact on the wetland and associated buffers. The wetland zones must be identified in terms of the Department of Water Affairs' (DWA) guidelines.

4.3 WSM Leshika Consulting (Pty) Ltd was commissioned to compile a report and recommendations with regard to sewage disposal for the proposed residential development. WSM Leshika recommends that a Biomite system package treatment plant be installed to dispose sewage. The Biomite system package treatment plant will clean waste water that will flow from the septic tanks and discharge into the natural watercourse. The proposed treatment plant will also be designed to have a by-pass pipe that can connect to the future Urnikomaas Regional Waste Water Treatment Works.

4.4 In response to the above, the DWA stated in their letter dated 18/4/2011, in response to the Draft BAR (not the Final or amended BAR), they do not support the use of septic tanks and package treatment plants. However, there are specific requirements that must be met prior to installation of the appropriate method of sewage disposal. This Department is of the opinion that alternative means of sewage disposal has not been adequately explored in the amended BAR.

4.5 Scientific Aquatic Services has been commissioned to undertake studies to understand the overall presence of the IUCN Red List of Threatened Species, Pickusgill Reed frog, on the site. The studies

1. The EAP agrees with the contents of item 1, which briefly describes the project and it also supplies details regarding the applicant and the EAP.

2. The applicant and the EAP decided not to dispute the possible occurrence of the frog on the study area. The approach was to rather determine whether the study area could be developed into a save habitat/ haven/ sanctuary for the frog, which will provide in all the needs (i.e. habitat, breeding, feeding) of the frog and which could eventually assist in the co-existence of the frog in the area.

At present the study area is unprotected and it is often flooded and covered with litter, which are released onto the study area at the various storm water discharge points into the site. As mentioned in the BAR, the study area has an indigenous and well developed canopy, but the ground cover is highly invested by weeds and

undertaken found that the frog is not indigenous to the site and surrounding area and the species has originated in North America with distribution range restricted to North America.

4.6 In response to the above, the assessment undertaken for the presence of the Pikusgill Reed frog has revealed that the frog is not indigenous to the site identified for development and surrounding area and the species has originated in North America with distribution range restricted to North America. However it has come to the Department's attention that there is a frog of high ecological importance listed on the IUCN Red List of Threatened Species evident on the site identified for development, known as the *H. pickersgilli*. The population species was recorded in the wetland on site. The Department recommends that a sweep be undertaken to confirm if the abovementioned species exists on site. If the frog is found to be present on site, a specialist must be appointed to assess the impacts on the frog as a result of the proposed residential development.

5. In terms of the abovementioned concerns, the Department is still not satisfied with the amended BAR because the minimum requirements in terms of Regulation 22, GNR 543, 18/6/2010, have not been achieved for the following reasons:

5.1 A written and approved service agreement has not been attached to the amended BAR. A written and approved service agreement must be obtained from the eThekweni Municipality, indicating that there are sufficient services available to accommodate the proposed residential units.

5.2 The amended BAR makes no mention of the impact/volume of storm water that will be released from the recently authorised Canonbrae Residential development upstream of the site. The Department has reasonable grounds to believe that the site under assessment will be prone to flooding as a result of the increase in storm water as a result of development upstream. The storm water engineer must therefore assess the full impact (i.e. considering the peak storm water flow – post development – form the Canonbrae development) on the site and proposed development.

5.3 The amended BAR does not mention of indicate that all registered interested and Affected Parties (I&APs) have been notified and given adequate opportunity to provide comment in terms of Regulation 22 (2) (o) (p) (q). The amended BAR must be submitted to all I&APs for review and comment. The amended BAR must include a Comments and Response Report, listing all the concerns and issues raised and appropriate measures of addressing the concerns and issues raised.

6. Ezemvelo KwaZulu-Natal Wildlife (EKZNW), Endangered Wildlife Trust (EWT) and eThekweni Municipality: Environmental Planning and Climate Protection Department (EP&CPD) requested that the Department to meet on 11/9/2012. The purpose of the meeting was to discuss the issues identified on the site.

7. The abovementioned stakeholders have confidently affirmed the presence of species of high ecological value identified on site ear-marked for development namely the *H. pickersgilli*. This species identified on the site is close to extinction and the International Union for Conservation has listed this species on the Red Data List of critically endangered species. This reed frog is endemic to the KwaZulu-Natal coastline and there are very few habitats left that are conducive to this species. Due to the critical importance of conserving this species and habitat and furthermore that EKZNW are bound by National and International

*Pennisetum clandestinum* lawns, which tend to destroy the natural vegetation in watercourses. Drifters / vagrants were found wandering across the study area on numerous occasions and some evidence of illegal squatting were also detected in the densely vegetated and screened areas. This occurrence does not only increase the safety in security risks of the surrounding area, but it is also regarded as a threat to the remaining indigenous vegetation, the frogs and any other fauna species on the study area. It is also important to note that the study area is currently surrounded by roads and residential developments and apart from a few narrow culverts, the open space is almost an isolated island in between such roads, structures and associated infrastructure. The EAP investigated the matter and had numerous discussions with the Pretoria Zoo

		<p>protocol regarding protecting this species, they are opposed to any development on this site.</p> <p>8. Some key stakeholders and I&amp;APs have not been given adequate opportunity to provide comment on the proposed residential development.</p> <p>9. In terms of the way forward regarding this application subject to environmental authorisation, the Department awaits some form of correspondence with regard to the outstanding information.</p> <p>10. The Department proposes the following options anticipating feedback from the applicant and EAP as soon as possible:</p> <p>Option A: The Department will review and consider the amended Basic Assessment Report (in its current form i.e. information available, without the Comments and Response Document) and respond accordingly.</p> <p>Option B: Based on points 4, 5, 6 and the Basic Assessment process must be upgraded to a full Scoping and Plan of Study for Environmental Impact Assessment. The Department needs to be informed on whether or not the EAP is of the opinion that the process warrants a more detailed assessment.</p> <p>11. Please note, the Department is obligated to issue a 14 day notice to withdraw the application (after six months) in terms of Regulation 67 of Government Notice Regulation No. 543, 18/6/2010, if the minimum requirements to consider an application are not received within six months. The 14 day notice to withdraw the application will follow this correspondence.</p> <p>12. The Department requests you to consult with the applicant and professional team, and consider the options presented in point 10.</p> <p>13. Construction related activities cannot commence prior to an environmental authorisation being obtained. If any construction related activities commence prior to an environmental authorisation, the development will be viewed as unlawful and the Department may take the necessary legal action in terms of NEMA, where the applicant will be liable to a fine or imprisonment.</p>	<p>(the Zoo is currently participation in a protection programme/plan for the frog and also keeps one of the frogs at the zoo for research purposes) regarding the habitat requirements, feeding habits, conservation/protection possibilities and according to the expert at the zoo (Mr. Michael Adams) the creation of a sanctuary on the study area is regarded as the best solution for the frog. The zoo also offered to assist with the compilation of a construction and operational phase management and rehabilitation plan for the site, which will specifically focus on the needs of the frog. This will then be one of only two frog sanctuaries in South Africa (the other frog sanctuary is the bullfrog sanctuary established as part of a Total Filling Station development adjacent to the N14 in Gauteng).</p>
	<p>3. Refer to Annexure A for a copy of the comments and</p>		

response report, which took all the comments and issues listed into consideration.

4.1 Please note that the EAP supplied the wetland specialist with the alternatives that were considered, which included the preferred alternative with 32 units. Refer to Appendix E of the BAR for a copy of the layout of the preferred alternative superimposed over the wetland specialist's wetland delineation.

Also take note that the wetland specialist assisted with the compilation of the storm water management concept for the study area and he agrees with all the proposals as supplied in the BAR. Refer to Annexure B for a letter from the wetland specialist, which confirms that he supports the proposed 32 units and the storm water management concept on the condition that the guidelines as supplied

in the management plans and his report are taken into consideration.

4.2 According to the wetland specialist, the wetland delineation was done in accordance with the DWA guidelines of 2005. The wetland specialist is a well-known wetland specialist and he is registered at (SACNASP) at Dr. SCI.Nat. Refer to Annexure ???

The boundaries of the wetland, which is significantly modified and enlarged by human activity (i.e. the local authority storm water pipes that discharge onto the study area, the main road constructed across the original drainage channel, the narrow culverts implemented underneath the two road that traverses the drainage line, the concrete storm water canal constructed on the study area etc.) lies almost on the boundaries of the study area. The wetland specialist

included a wetland delineation map and he also stated that there is no wetland buffer (the surrounding historic developments already encroached into the wetland buffer). He however distinguished between the permanent and seasonal wetland areas and he also regarded the development as an opportunity to increase the ecological value and bio-diversity of the study area. At present the storm water management function is dominant and the proposed environmentally friendly storm water management measures will help to enhance the ecological, social and economical environments, which will eventually contribute to a sustainable development (one of the principles of NEMA).

4.3 According to the local authority it will be possible for the development to link-

up with the planned Umkommas Waste Water Treatment Works and the proposed on-site sewage treatment facility will only be a temporary facility that will be utilised until the municipal sewage connection is available. The internal sewer network for the development will be designed to automatically link-up with the municipal system as soon as it becomes available.

DWA confirmed that they will support the temporary on-site sewer treatment plant, which is an improvement to the existing surrounding sewer practises, which involve septic tank systems.

A Section 21 WUL will be required for the proposed temporary sewage system and the developer will comply with the license approval conditions as set out in the license issued by DWA.

4.5 Even though Mr. Van Staden of Scientific Aquatic Services is a

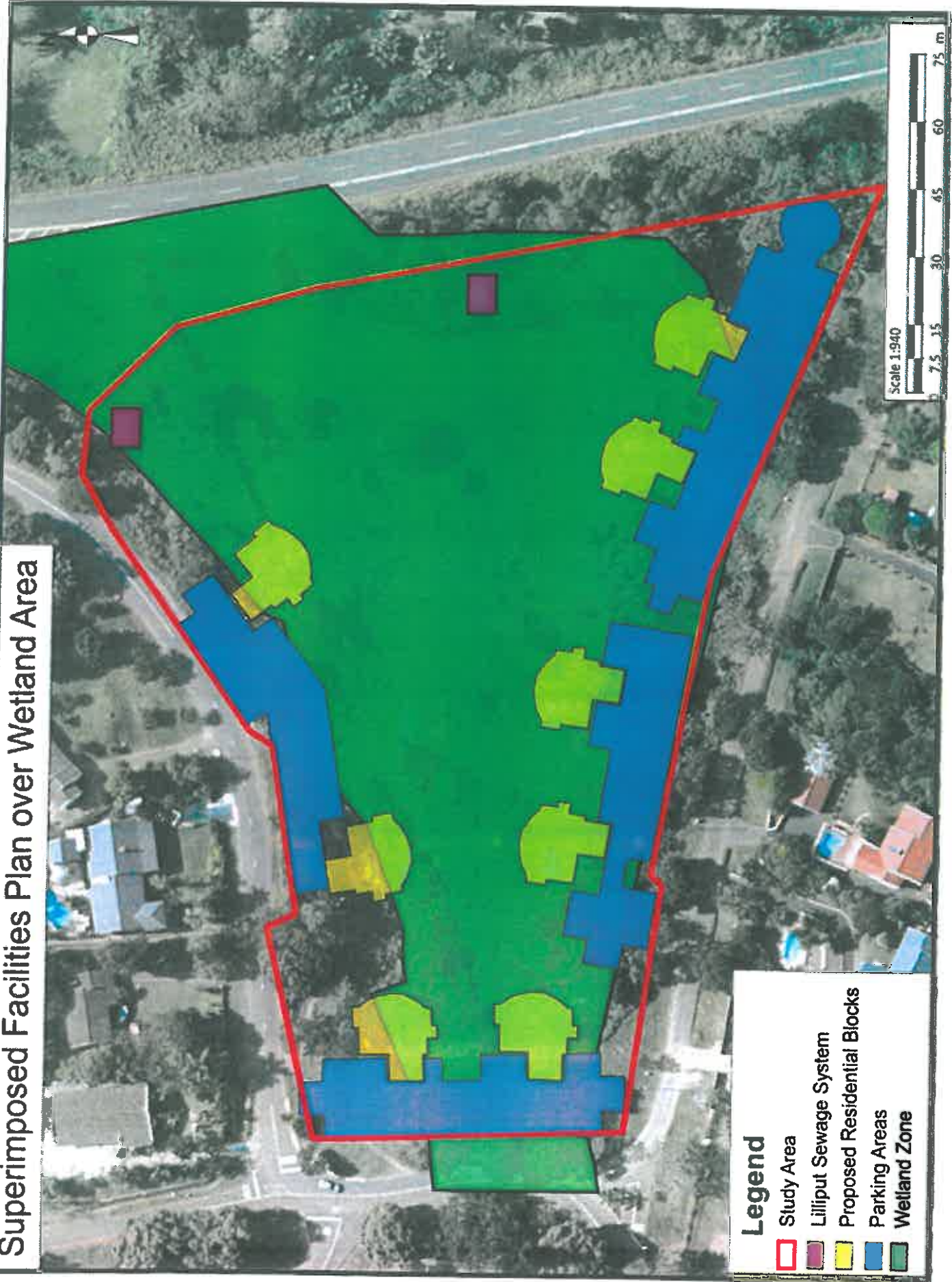
				<p>qualified wetland specialist and ecologist, he is not an amphibian specialist. Bokamoso decided to rather consult with a frog specialist at the Pretoria Zoo, who is currently doing research on the specific frog species</p>
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# Appendix C

# Superimposed Facilities Plan over Wetland Area

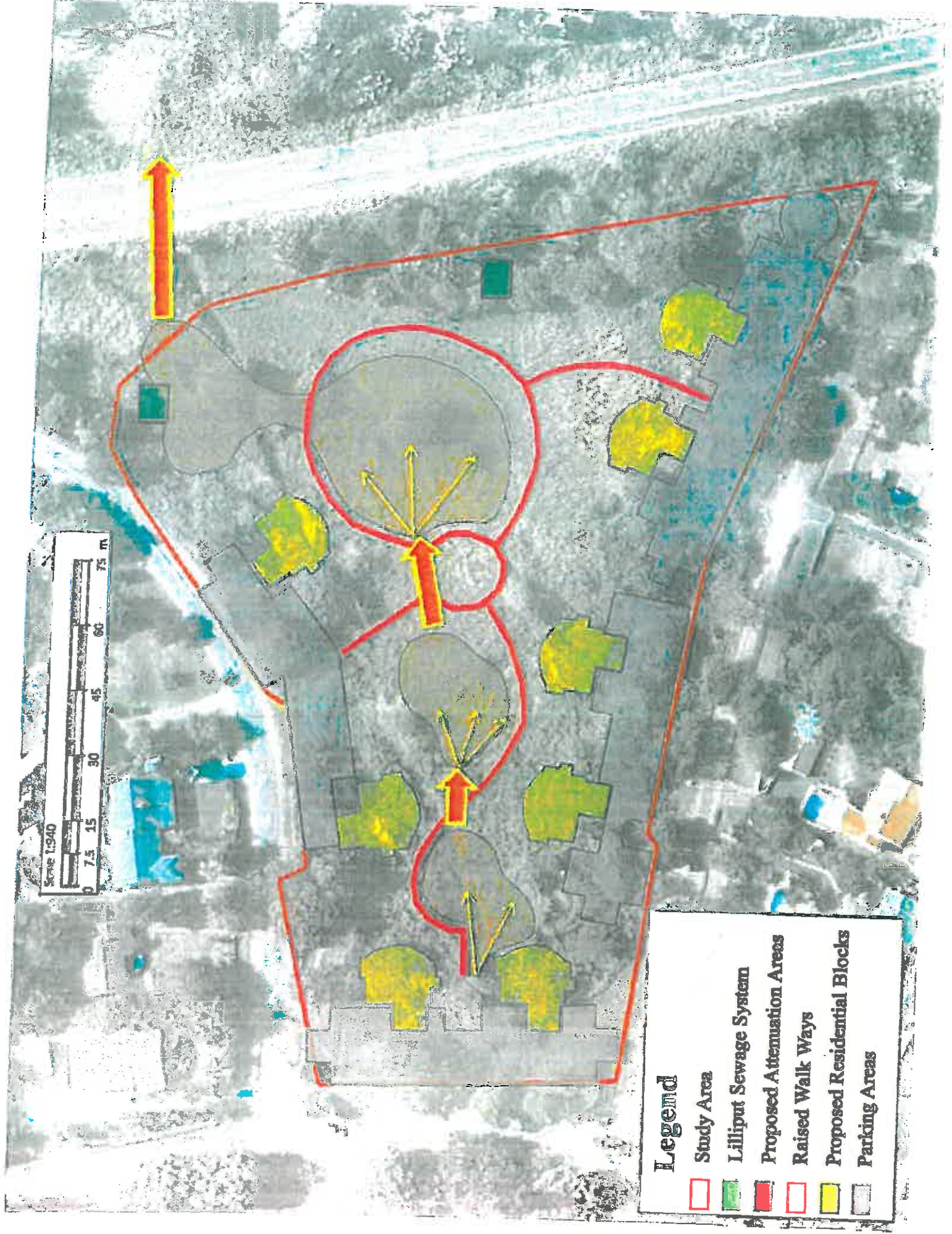


**Legend**

- Study Area
- Lilliput Sewage System
- Proposed Residential Blocks
- Parking Areas
- Wetland Zone

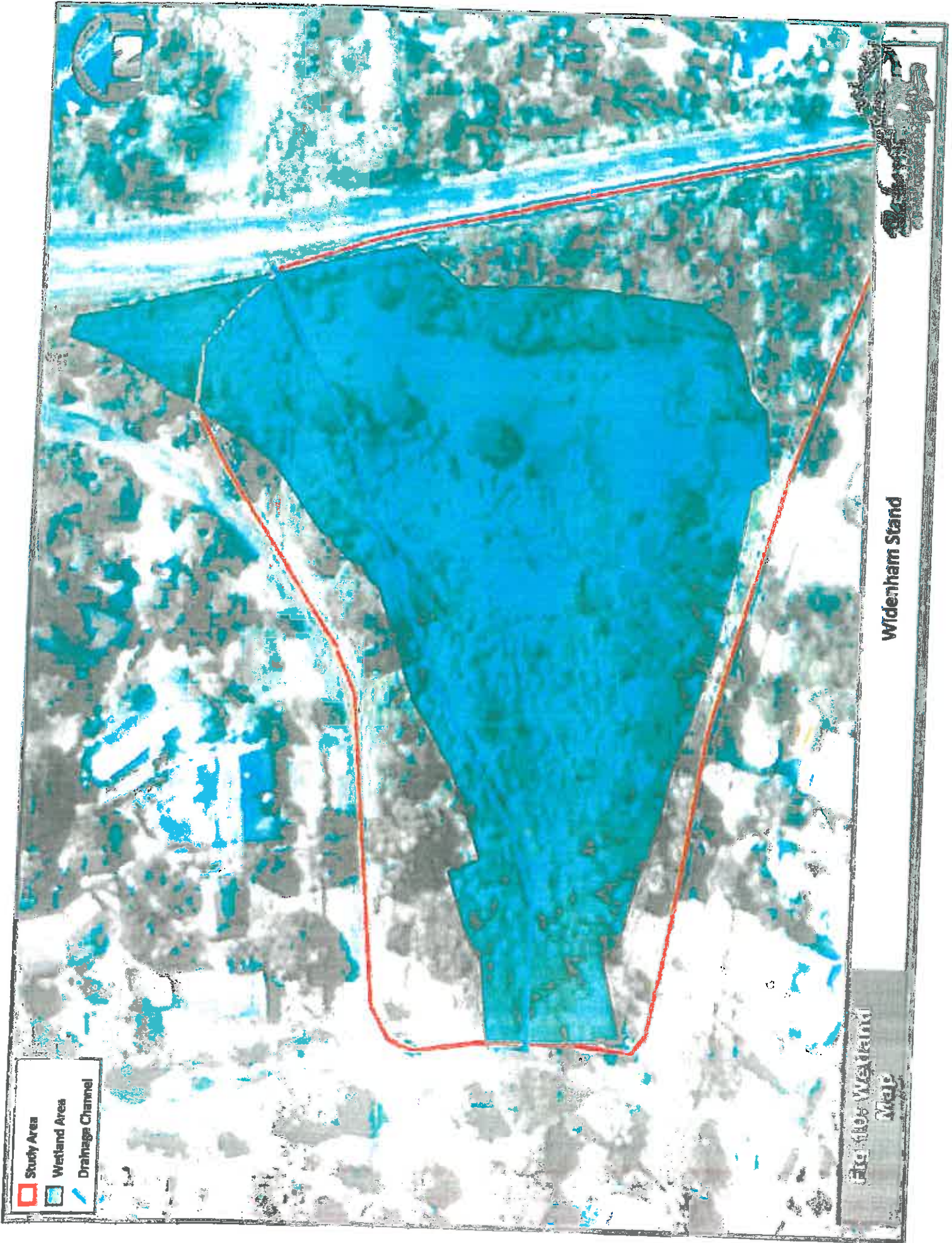
Scale 1:940

7.5 15 30 45 60 75 m



**Legend**

- Study Area
- Lilliput Sewage System
- Proposed Attenuation Areas
- Raised Walk Ways
- Proposed Residential Blocks
- Parking Areas



Study Area

Wetland Area

Drainage Channel

Fig. 106 Wetland Map

Widenham Stand

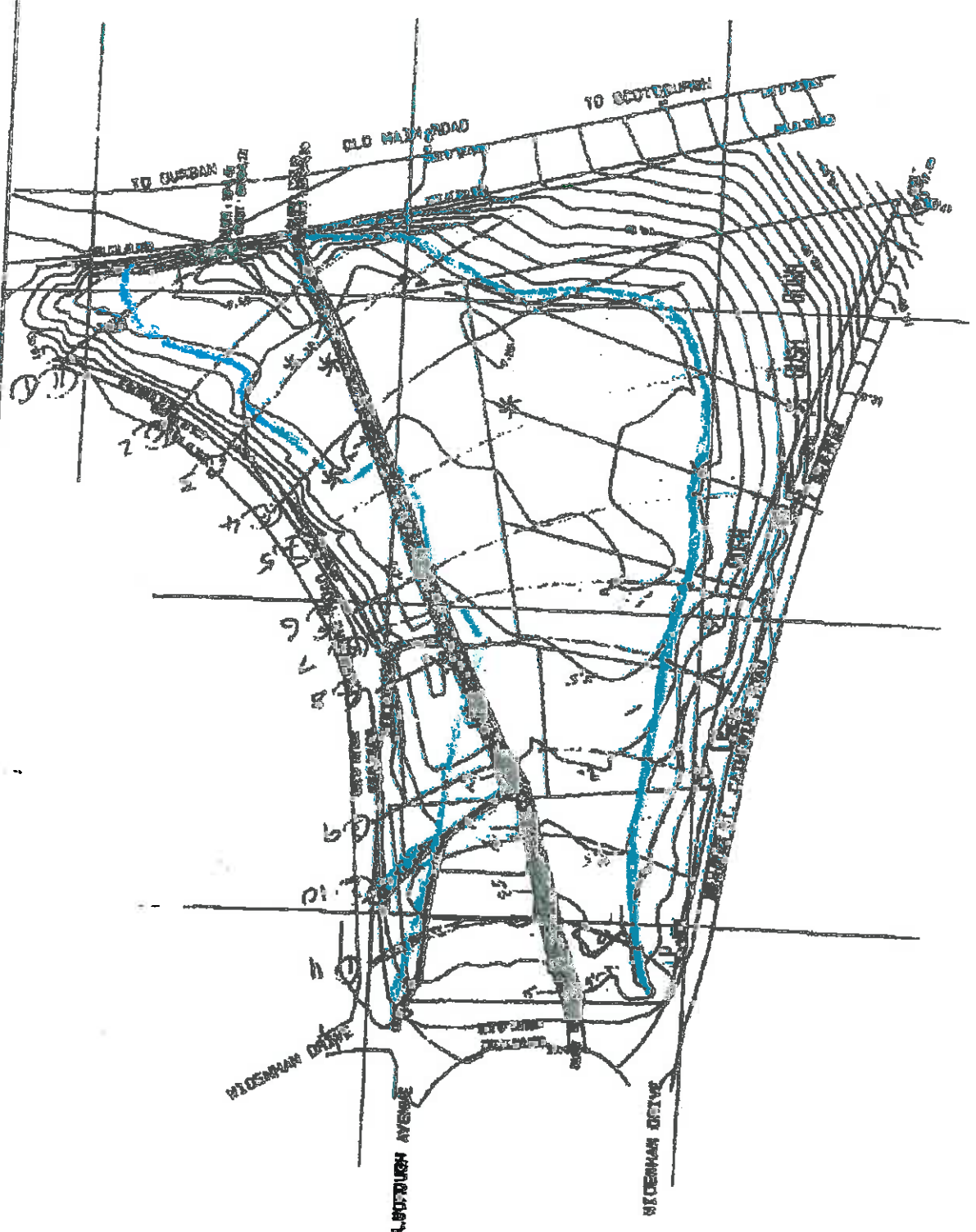
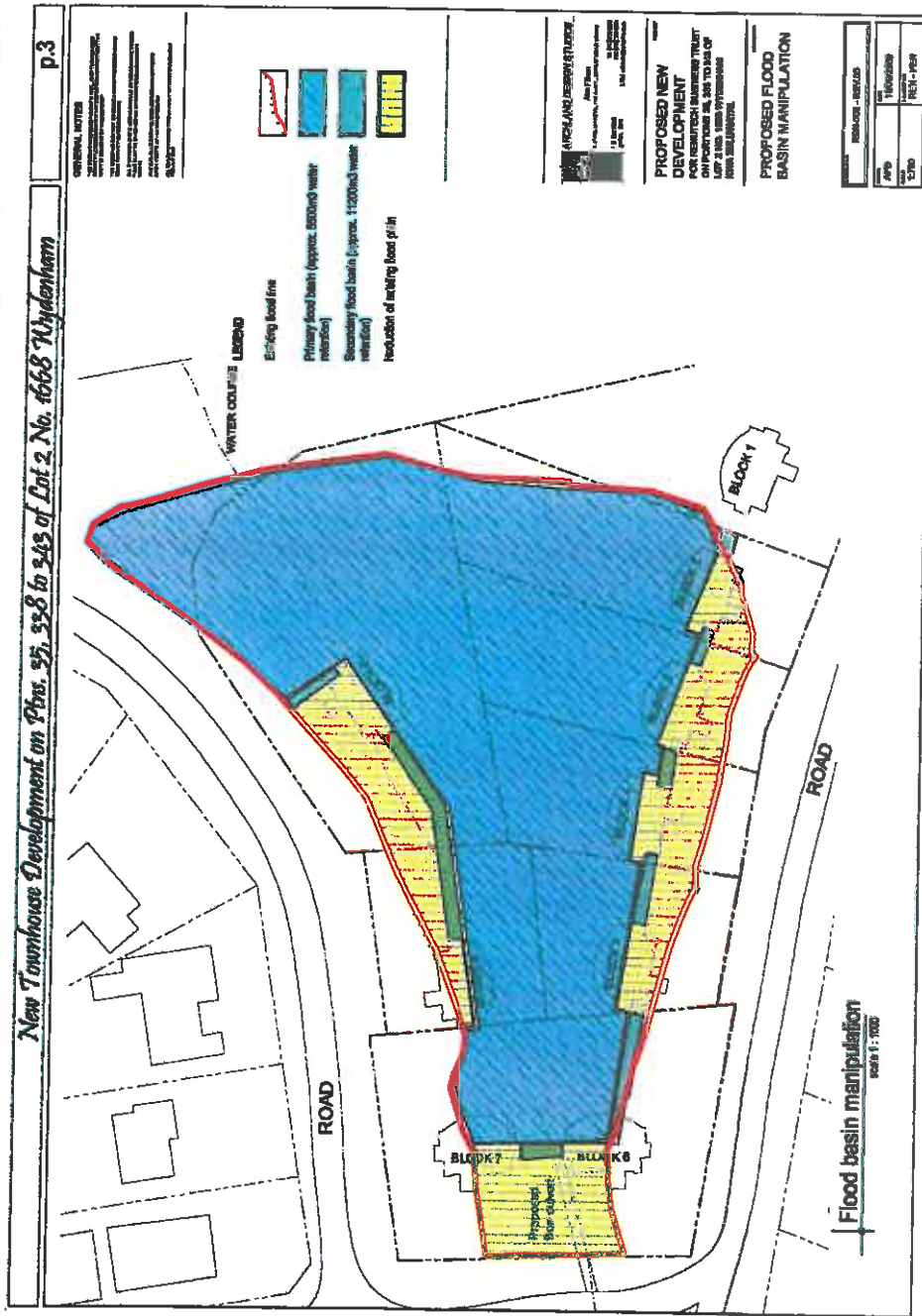
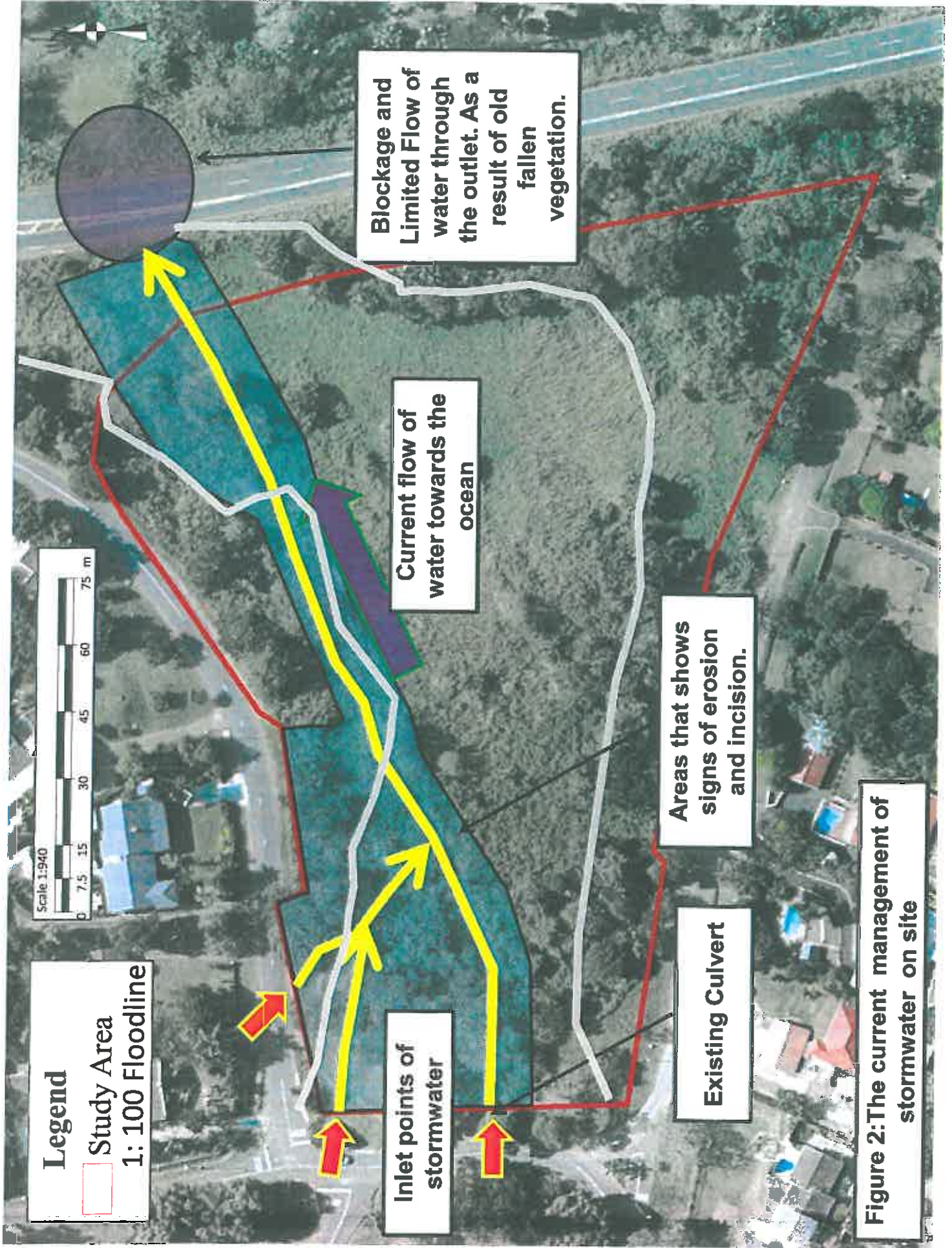


Figure 2: 1:100 year Floodline

At present the site is vacant and has a non-perennial stream flowing through it. The flow in this stream is augmented by ingress of stormwater by several storm water canals entering the site. With the subject property located near to the coast line and due to the natural topography of the area, there is an extensive floodplain area surrounding the drainage feature. This floodplain currently covers the majority of the subject property. (



*Conceptual Design (Proposed Flood Basin Manipulation)*



**Figure 2: The current management of stormwater on site**



# Appendix C1



**REPORT IN CONSIDERATION OF THE LAYOUT OF  
ERFS ON PORTIONS 35, 36, 338-343 OF LOT 1668  
WYDENHAM IN TERMS OF POTENTIAL IMPACTS ON  
WETLAND AREAS**

**October 2009**

**Prepared For  
Bokamoso Landscape Architects and Environmental Consultants**

**Prepared by: Scientific Aquatic Services  
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## 1. INTRODUCTION

The proponent has proposed that portions 35, 36, 338-343 of lot 1668 Wydenham be upgraded. The proposed development involves the development of residential units on stands located across the property.

At present the site is vacant and has a non-perennial stream flowing through it. The flow in this system is augmented by ingress of storm water by several storm water canals entering the site. These canals have played a role in increasing the wetland size that has formed along the eastern part of the property. In addition to these wet areas, wetland conditions extend up the drainage lines running through the property. With the subject property located near to the coast line and due to the natural topography of the area, there is an extensive floodplain area surrounding the drainage feature. This floodplain currently covers the majority of the subject property.

The property is located immediately to the south of the small town of Umkomaas in the village of Wydenham. The site is bound to the east by the R102, to the north by Camborne Road, to the west by Wydenham Drive and to the south by Catherine Drive. See figure 1. The surrounding area comprises of residential housing, with the area to the east being less densely developed and in close proximity to the Indian Ocean.

As part of the environmental impact assessment process, Scientific Aquatic Services was appointed to compile a brief vegetation and ecological overview of the property which included consideration of the wetland areas on the property. After the initial studies undertaken and after consideration of the natural constraints posed by the site in terms of development potential, a site development/layout plan was developed. With prior knowledge of the conditions on the subject property, Scientific Aquatic Services was requested to make comments on the proposed layout plan and its suitability in terms of ensuring protection of the wetland resources on the subject property.



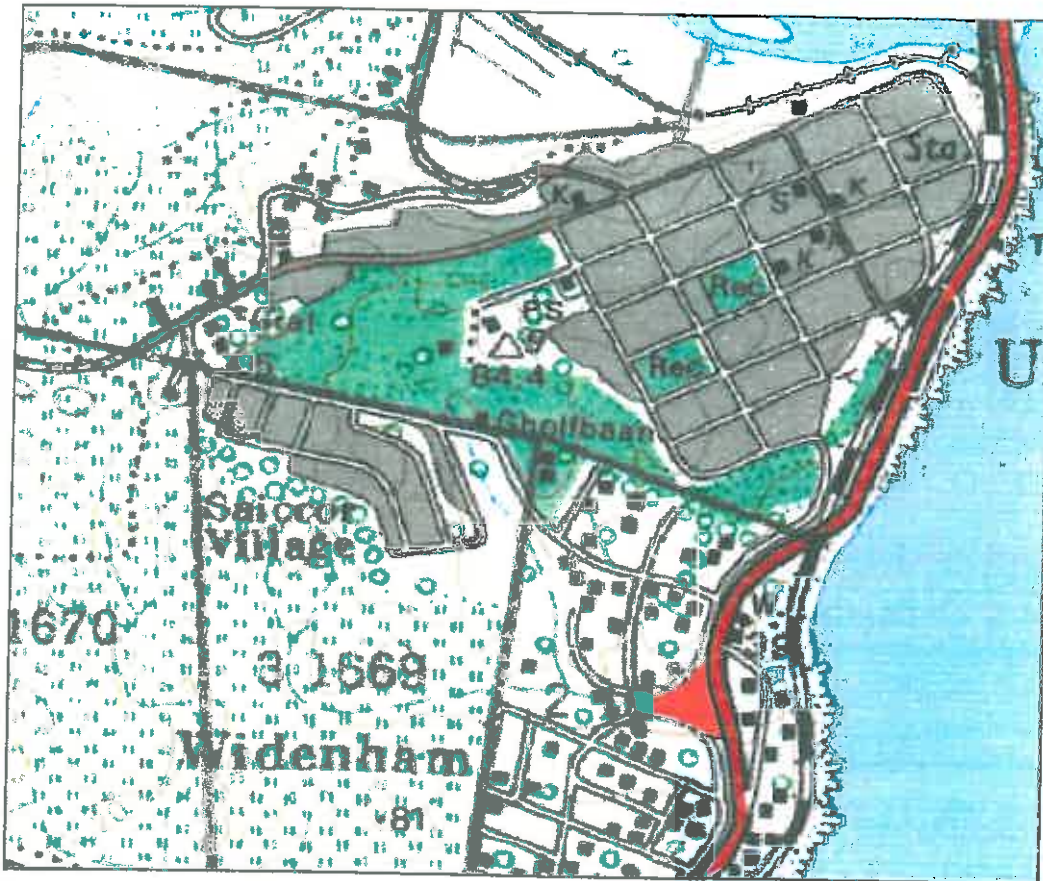


Figure 1: 1: 50 000 3030 BB topographic map depicting the locality of the study area (red) and surrounding larger area

This report, after consideration and description of the ecological integrity and functioning of the subject property as well as the proposed layout plan, must guide the property owner, authorities and potential developers, by means of observations and recommendations, as to viability of the proposed development and the potential impacts of the activity.

## 2. NATURE, FUNCTION AND IMPORTANCE OF THE WETLAND FEATURES

Wetland areas had a distinctive vegetation type associated with the wetter areas. These areas on the subject property were characterised by the dominance of *Phragmites australis reeds*, with tree cover being reduced in relation to the surrounding terrestrial areas. Trees in the wetland areas were dominated by *Strelitzia nicolai*. Other vegetation encountered in the wetter areas included



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*Setaria megaphylla*; *Sorghum halapense*; *Kyllinga alba* and *Cyperus esculentus*. In the drier seasonal and temporary wetland zones, there was a significant invasion by alien vegetation, including species such as *Lantana camara*; *Verbena bonariensis*; *Achyranthes aspera*; *Ipomoea sp.*; *Rumex crispus* and *Rucinus communis*.

The wetland area can be considered to have some importance in terms service provision, under natural conditions, by maintaining biodiversity, stream flow regulation and sediment control. The system also plays a role in maintaining the biodiversity of the area by providing wetland habitats to suitably adapted faunal and floral species.

The proposed development site forms a natural drainage line, being the lowest point in the valley of the surrounding area. In addition to the natural drainage of the site it is evident that the drainage system receives additional runoff from several (at least four) storm water canals in the area. These systems increase the flow in the system significantly and increase the duration during which surface water will persist in the area.

A second factor which has affected the drainage features and wetland areas is the construction of the R102 to the east of the site. The construction of the road has led to localised changes to the topography of the land thereby leading to altered drainage and runoff patterns. These changes have led to the formation of a permanent wet area on the eastern boundary of the property. The formation of this wet area has led to an expansion of the wetland area which is deemed to be increased in size in relation to the natural condition.

Due to the introduction of the storm water runoff to the area, the upper reaches of the drainage feature show signs of incision. This is typical of features affected by urban runoff and reduces the functionality and integrity of the wetland areas which could increase in severity if the proposed development takes place and if adequate control measures are not implemented.

