

Erica Drive – Bio-Retention Ponds and Wetland Offset Specifications as it links with the Stormwater Infrastructure Proposed

Two Bio-Retention Ponds are proposed in the stormwater masterplan for Erica Drive. The purpose of these ponds is to attenuate stormwater and therefore reduce the size of the new pipe system, as well as to promote improvement of current wetland systems. The ponds designed with litter traps and very specific indigenous wetland vegetation (as proposed by a wetland ecologist) has a cleaning purpose which means better quality of water discharged into the Kuils River and wetland flat areas.

A natural (though very disturbed) wetland flat to the west of the R300 within the road reserve have been identified. The construction of Erica Drive will result in a loss of some of the wetland habitat. The two new Bio-Retention Ponds and the construction / rehabilitation of the existing wetland between the R300 and the residential area immediately west of the R300 will contribute to the replacement and rehabilitation of the existing wetlands to the satisfaction of relevant local and regional authorities.

Bio-Retention Pond 1 within the future interchange area west of the R300

The pond has a capacity of 1400m³. The largest part of the catchment area on the western side of the R300 discharges towards this Pond through a pipe system. The pond will mostly be dry although allowance for permanent water has been made.

The Bio-Retention Pond consists of the following:

- 750Ø Inlet
- Sediment Forebay / Litter Trap with a maintenance ramp
- 750Ø Outlet underneath the R300
- 5m wide Armorflex pond overflow structure
- Appropriate obligate and facultative indigenous vegetation as per the Guidelines in The Sustainable Urban Drainage System and Wetland Specialist Report

Expansion of Natural Wetland Flat area south of Erica Drive and west of the R300

With the new Erica Drive encroaching the wetland flat area 0,28ha of the 0.48ha wetland habitat is lost. The existing wetland will be reinstated and expanded to the west and rehabilitated with a new wetland footprint of approximately 0,5ha. The lowpoint kerb inlet (westbound carriageway) and the bridge approach (westbound carriageway) discharges towards the wetland through a pipe system. Furthermore, the bioretention pond to be created west of the R300 will contribute an additional 0.63ha of wetland habitat through the careful planning and design that it functions as a constructed wetland.

The reinstated wetland will consist of the following:

- 375Ø Inlet
- Sediment Forebay / Litter Trap with a maintenance ramp
- 5m wide Armorflex pond overflow structure
- Appropriate obligate and facultative indigenous vegetation as per the Guidelines in The Sustainable Urban Drainage System and Wetland Specialist Report

Bio-Retention Pond 2 north east of Erica Drive / Eland Street intersection; West of the Kuils River

The pond has a capacity of 5000m³. The catchment area west of the Kuils River and a smaller catchment area between the R300 and Eland Street discharge towards this Pond through a pipe system. The pond will mostly be dry although allowance for permanent water has been made.

The Bio-Retention Pond consists of the following:

- 900Ø Inlet
- Sediment Forebay / Litter Trap with a maintenance ramp
- 750Ø Outlet towards Kuils River
- 5m wide Armorflex pond overflow structure
- Appropriate obligate and facultative indigenous vegetation as per the Guidelines in The Sustainable Urban Drainage System and Wetland Specialist Report

Refer to Appendix K3 for stormwater infrastructure designs and layouts as discussed above.