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Our Ref: 21637-20201106-GDARD Response

6 November 2020

GAUTENG DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT (GDARD)

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ADDENDUM 2 | RESPONSE TO GDARD'S COMMENTS DATED 26 OCTOBER 2020

1. INTRODUCTION AND BACKGROUND

Steyn City Properties (Pty) Ltd. plans to develop Riverside View Ext 84 on portions 124 and 185 of the farm Diepsloot 388 JR. The proposed zoning of the development will be *Special for: Place of Instructions, Residential buildings and Offices, including ancillary uses such as restaurants and shops* and aims to provide a school, offices and residential buildings. Private Open space will also be incorporated into the development which form parts of the Steyn City Parkland Residence which has been designed to be a modern, mixed land use and mixed income development.

Steyn City Properties (Pty) Ltd has appointed **Prism Environmental Management Services** (Prism EMS) as the independent Environmental Assessment Practitioner (EAP) to undertake the required environmental authorisation processes required by a host of environmental legislation

An Environmental Impact Assessment Report (EIR) was compiled and made available for public review between **11 September 2020 and 12 October 2020**. Comments from the GDARD were provided on **26 October 2020** and are captured in the Comments and Responses Report (Annexure 14.5.5. of the EIR).

This document forms an addendum to the Comments and Responses Report and aims to provide a more detailed response where necessary. A document outline is provided below.

Table 1: Document Outline

Category of Comment	Section of the Addendum
Access, Roads and Wetland Crossing	Section 2
Wetlands/Artificial sources of water	Section 3
Stormwater	Section 4

2. ACCESS, ROADS AND WETLAND CROSSING

In regards to the wetland crossing, GDARD noted:

- *The activity 19 of listing notice was applied to cater for the bridge to access Erf 2 the plan bridge must be environmentally friendly so that the animals within the wetland will be able to migrate*

As per Page 12 of the Stormwater Management Plan (Tekciv, 2020) that was included in the Appendix 14.6.9, "A road-bridge will be constructed which allows for the 1:100 year flow of 8.7 m³/s to pass under the road. The bridge is to be constructed of pre-cast portal culverts and will extend the full width of the flood line. To cater for animal crossings, smaller culverts will be placed above the flood line to allow for migration.

Please refer to **Figure 1** below which indicates the proposed wetland crossing including the smaller culverts which cater for animal crossings outside the floodline.

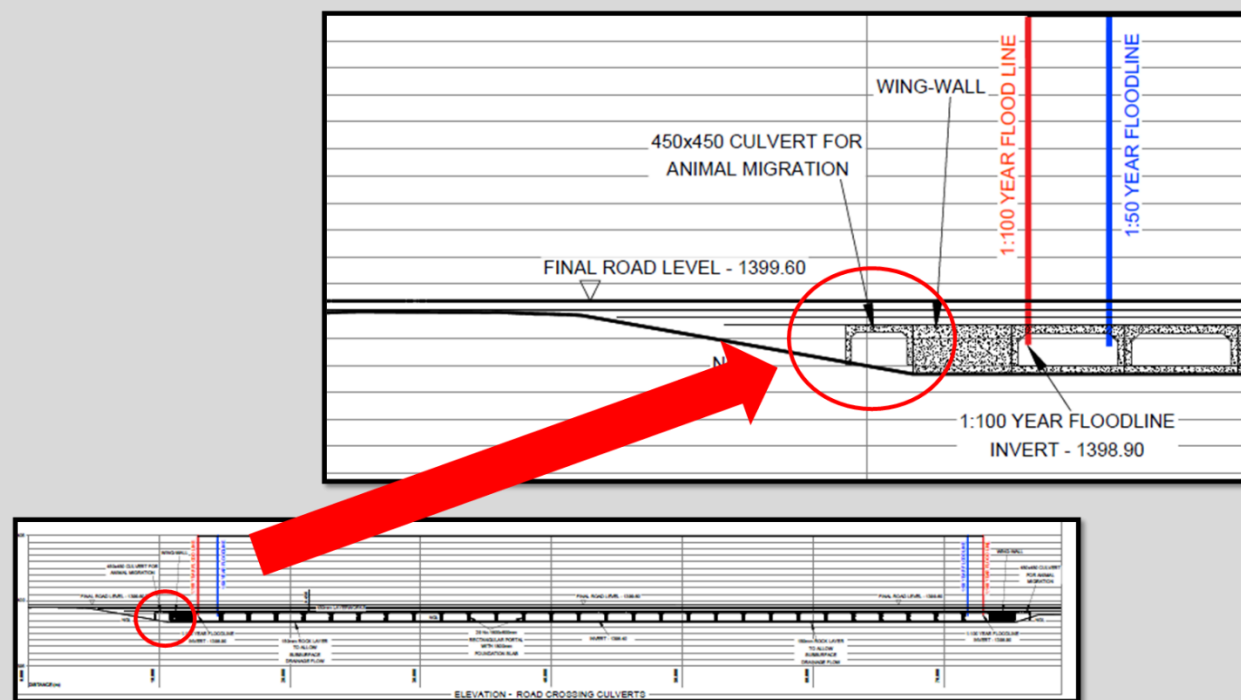


Figure 1: Proposed Wetland Crossing

3. WETLANDS AND ARTIFICIAL SOURCE OF SURFACE WATER

The Department requested clarify regarding the wetland delineation and provided the following comment:

- Page 41 on wetland report indicated as figure 6.4 it display the wetland on site as per the Departmental Information System (GIS) but when its delineated on page 45 as figure 6.8 the other part which is on Erf 1 it's no longer delineated as wetland a clarity must be provided because even on site visit even the reeds were observed on that part.

Discussions with the Wetland Specialist have been undertaken and confirm that the wetland delineation was informed by a number of factors including desktop delineation, flow accumulation models, reference to existing GIS (such as the Department of Water and Sanitation (DWS) database and the National Wetland Map version 5 (NWM5) (Van Deventer et al, 2019)) as well as a detailed site assessment including auguring and a vegetation assessment. In addition to this, the specialist has been involved with the development for a number of years and therefore has a good understanding and experience with the previous development on site. Information from the Geotechnical Reports were also used to corroborate this understanding.

Google Earth imagery has therefore been utilized to provide a summary of the historic use of the site and how this has affected surface water. The aim of this is to provide a timeline and to explain the current status of the site.

3.1. JULY 2008 TO SEPTEMBER 2010

Google Earth imagery from July 2008, April 2009 and February 2010 indicates the following land uses of the site:

- Portion 124 of the Farm Diepsloot 388 JR
 - The site was developed as a golf driving range with driving tees and sand bunkers as well as a restaurant and club house. Most of the site is cut lawn.
- Portion 185 of the Farm Diepsloot 388 JR
 - The site was developed as a school, panel beating shop, car spray paint business and dimension stone seller. As part of this the southern sections of the wetland were partly developed.
 - In this regard it should be noted that just to the centre of Portion 185, stormwater was released from the school and buildings which affected the vegetation of the site.

Please refer to **Figure 2, 3 and 4** below.

These uses are confirmed by the geotechnical reports by J Louis Van Rooy which were undertaken as follows:

- Portion 124 of the Farm Diepsloot 388 JR
 - March 2011
- Portion 185 of the Farm Diepsloot 388 JR
 - November 2010

In terms of Portion 124, the study noted:

“The holding is presently used as a golf driving range with local changes to topography where driving tees and sand bunkers were constructed. A club house and restaurant occupies the western area with living quarters in the south-western corner. The largest part of the holding is covered with cut grass and lawn.

*The site slopes east and west, towards a central depression formed by a small drainage channel flowing north into the Diepsloot Spruit. A **small earth wall on the southern boundary with Holding 185, road crossings and another earth wall further to the north obstruct the drainage channel.**”*

It is the opinion of the specialist that the impacts to drainage line, in particular, the earth wall would likely affect the natural flow of the wetland system and resulted in what was termed as surface seepage. It should further be noted that the wetland delineation field assessment was undertaken in January 2020 and thus takes into account the current status of the site.

Similarly, Portion 185, the Geotechnical study noted:

*“The general slope of the area is to the north with locally gradients towards the east and west due to a shallow stream channel running from south to north through the eastern part of the holding. **The drainage feature has been modified due to stormwater trenches, runoff from large concrete paved areas and septic tank drainage fields. A stormwater drainage ditch runs through the central part of the holding into an earth dam on the central northern boundary with the golf driving range. The shallow stream and dam areas will be prone to marshy conditions. Locally levelled platforms were created via cut to fill to accommodate the large paved areas and buildings.**”*

The site elevation is between 1400 and 1420m above mean sea level. The site is presently used by a number of different businesses amongst others a panel beating and car spray area and a dimension stone seller.

*The northern parts of the site have been left fairly undisturbed apart from the **shallow dam in this area**. The school on the western part comprises of classrooms, sports fields and open veldt area to the north. The Lulamisa Eskom Substation is situated directly adjacent to the west of the property.”*

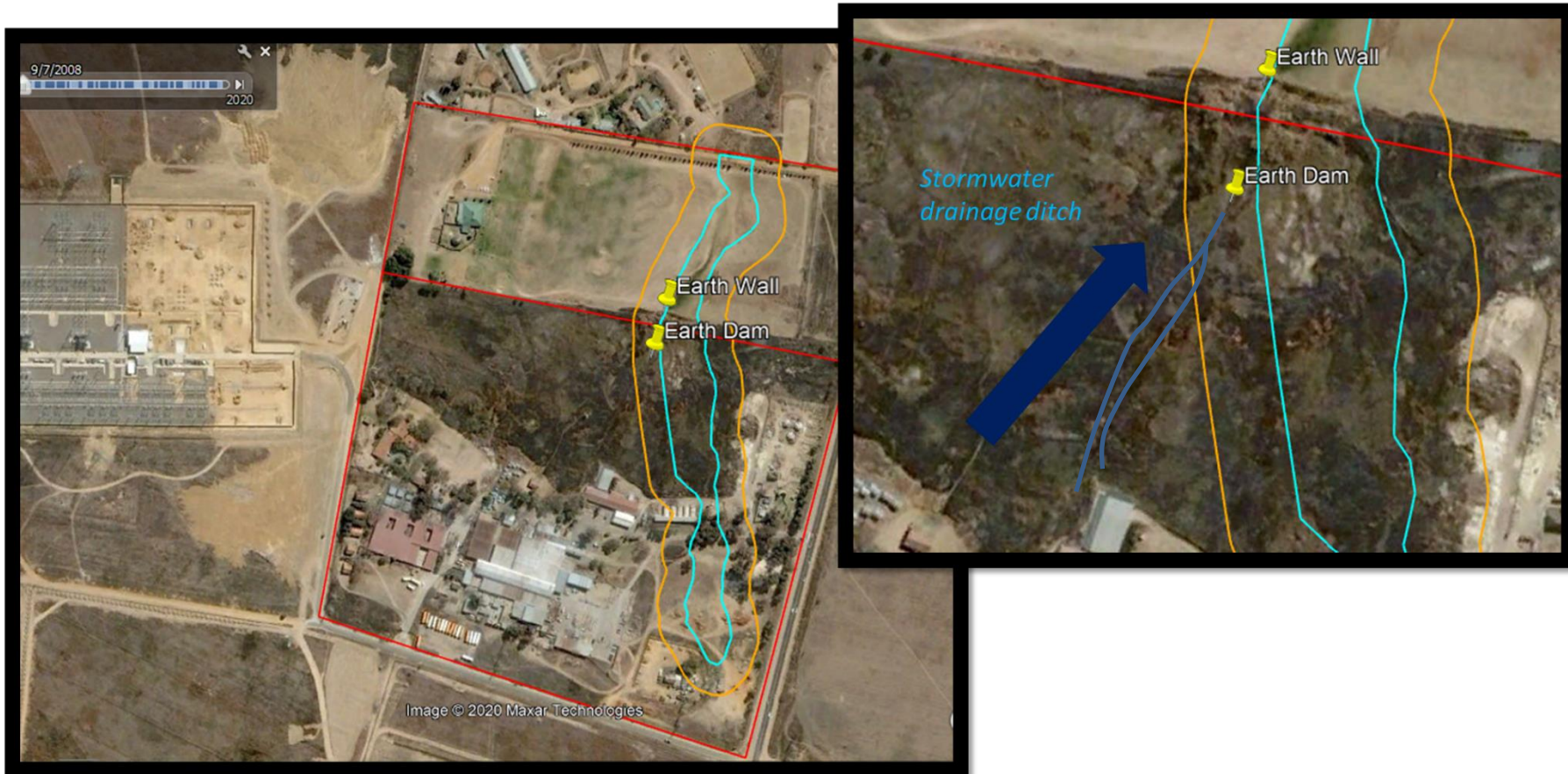


Figure 2: Google Earth Imagery from July 2008

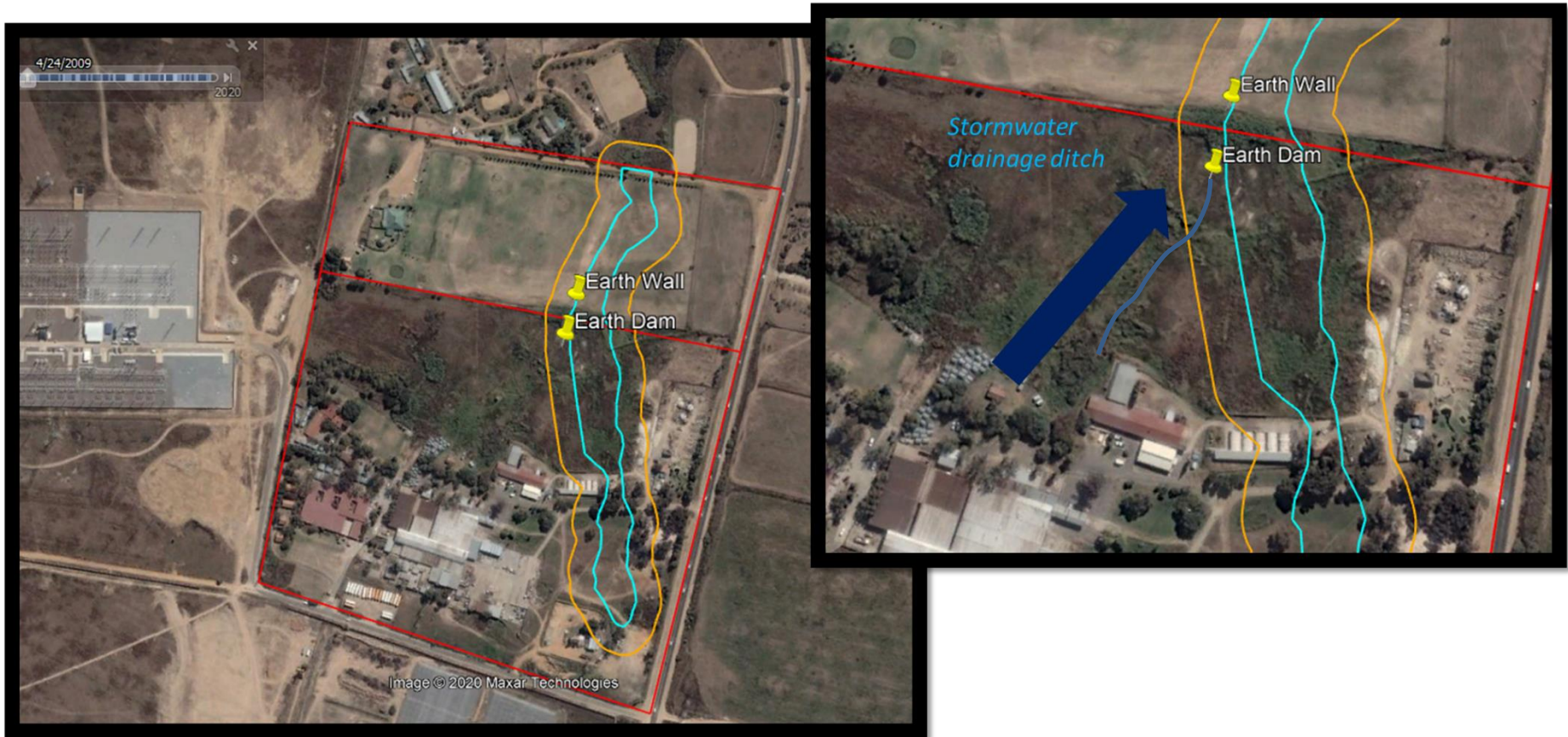


Figure 3: Google Earth Imagery from April 2009

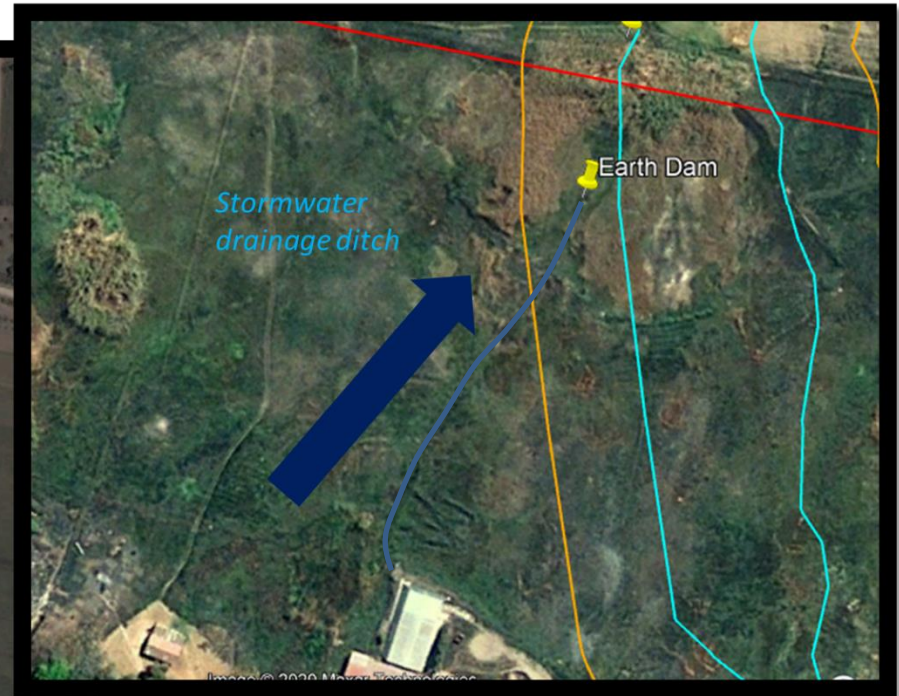


Figure 4: Google Earth Imagery from February 2010

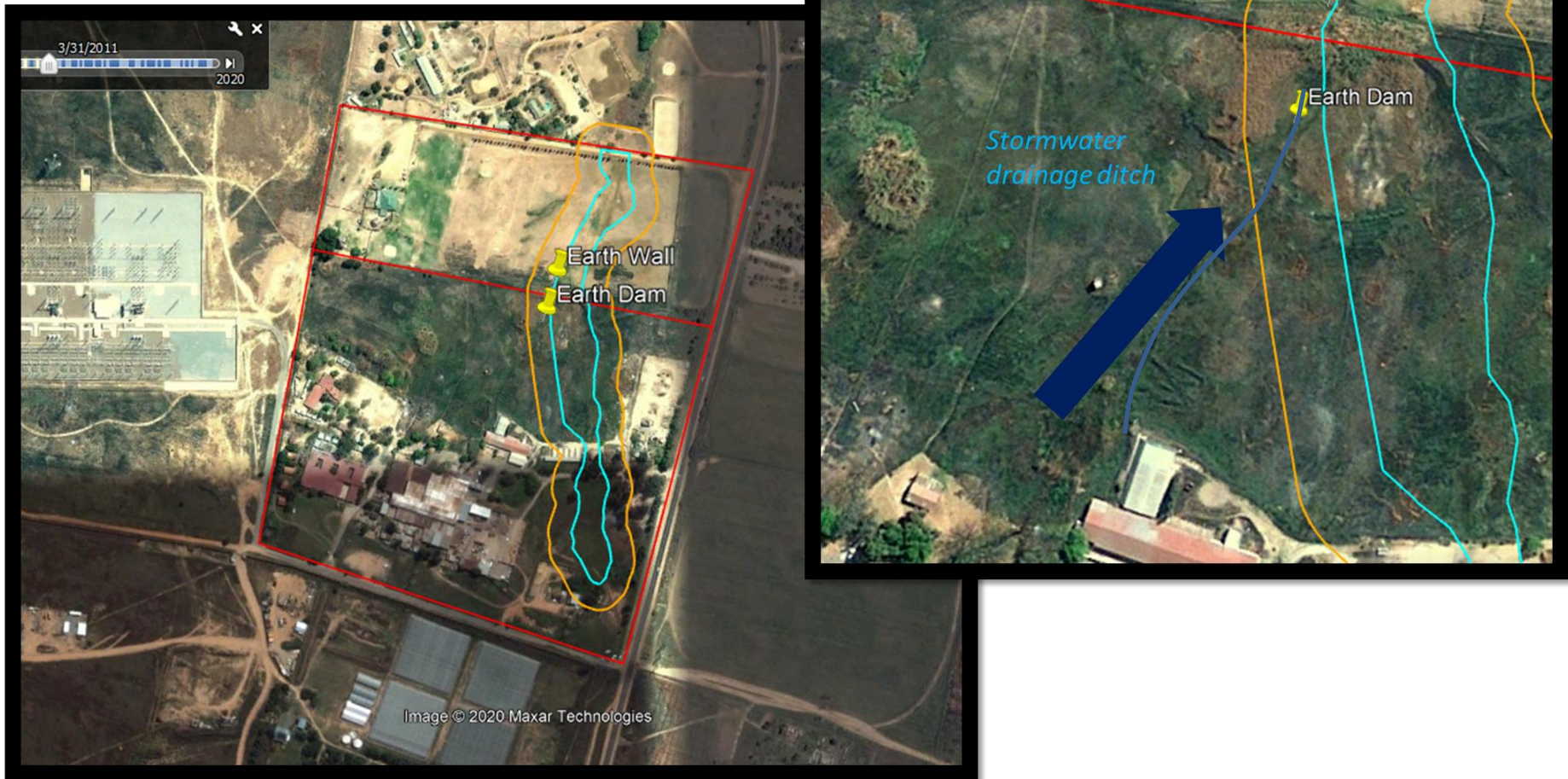


Figure 5: Google Earth Imagery from March 2011

3.2. OCTOBER 2011 TO MAY 2015

From October 2011 to May 2015, a number of changes to the site took place. These occurred after the Geotechnical Reports and thus are not captured within. The exact details of the changes and why they took place is not available. However, evidence from Google Earth as well as the site visits, indicate that that formal drainage channels were put in place in the wetland.

In addition, in April 2012 (prior to the sale of the property to Steyn City), fill material was excavated and was used for construction/upgrades of nearby roads as well as sourcing of material for manufacturing

Furthermore, whilst the school and old buildings on Portion 185 were demolished, the platforms they were built on remain in place and thus still channel stormwater and thus form the artificial source of water. This cannot be classified as a wetland and therefore was excluded from the delineation.

Lastly in 2015, Porcupine Park Road was constructed and crosses the wetland to the north of Portion 124.

Figure 6, 7 and 8 below provide the Google Earth Imagery from this time.

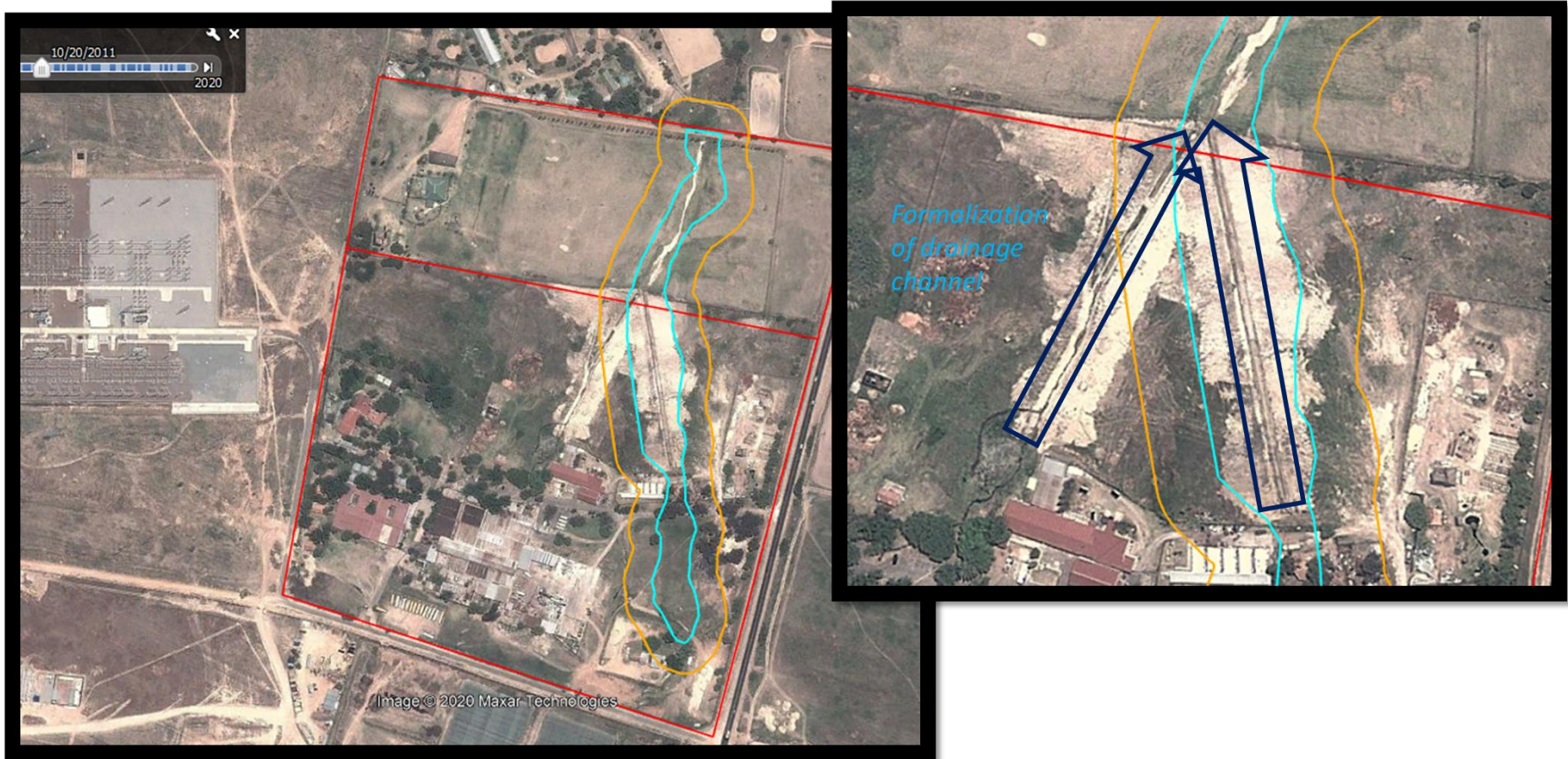


Figure 6: Google Earth Imagery from October 2011

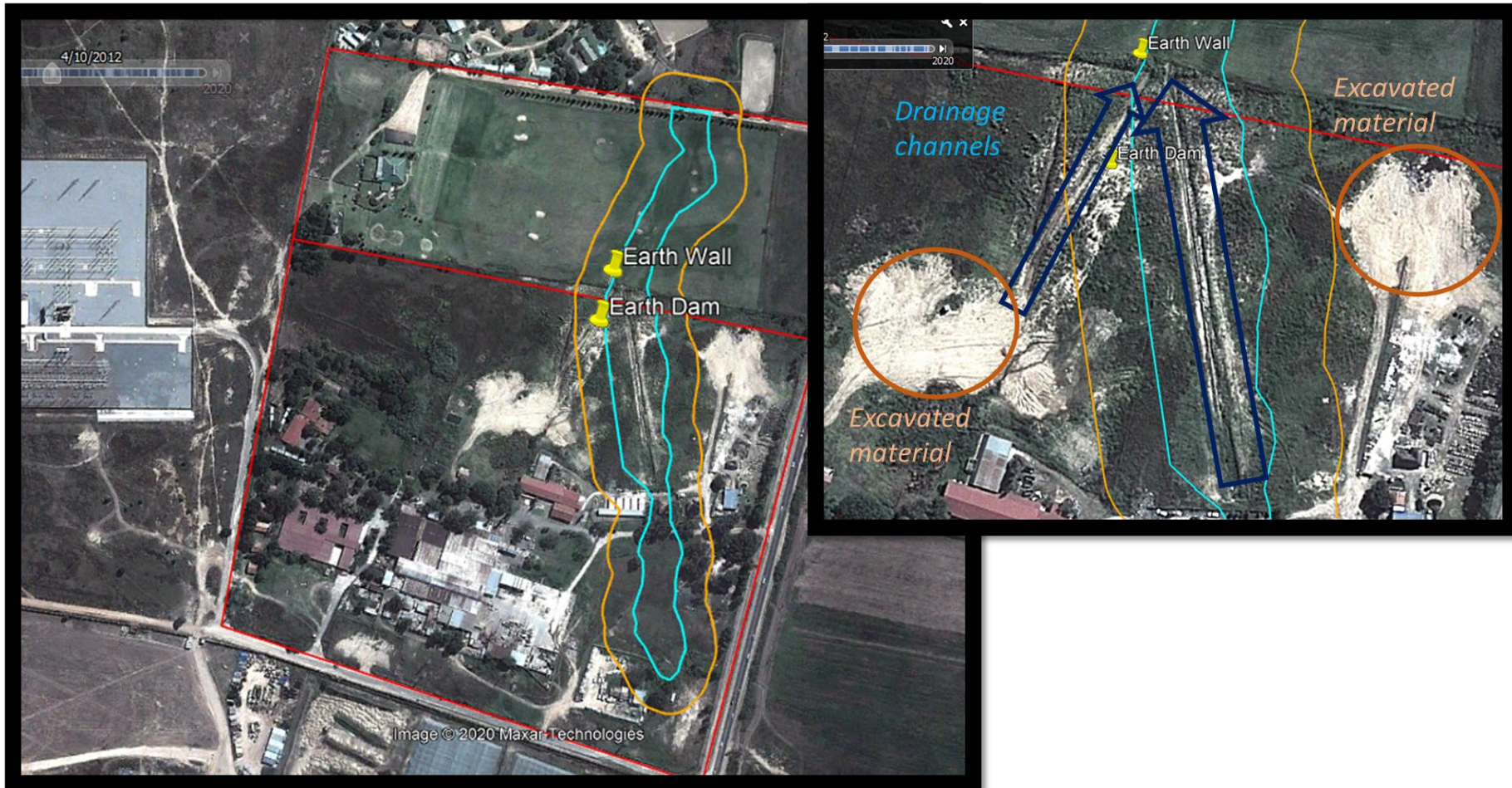


Figure 7: Google Earth Imagery from April 2012

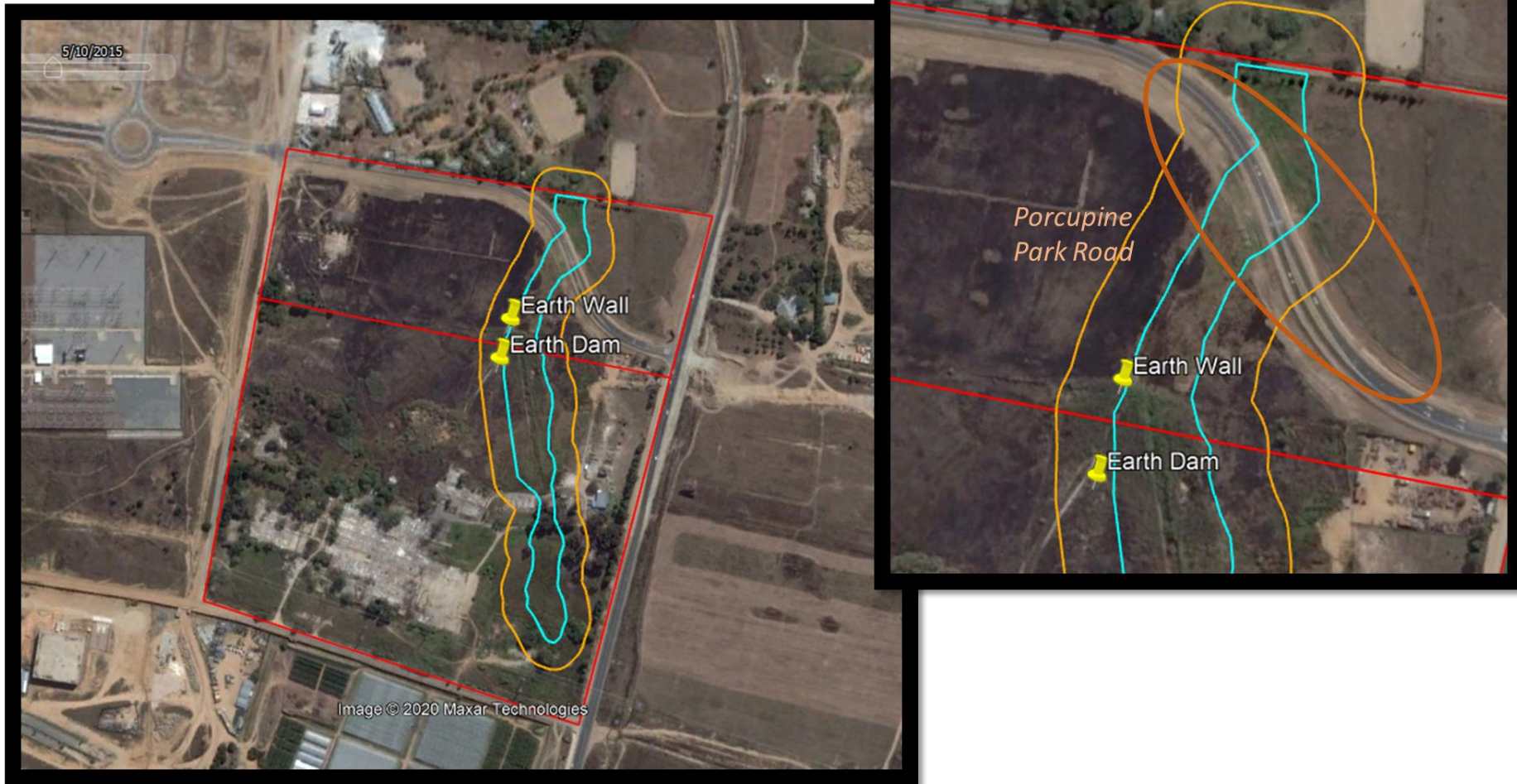


Figure 8: Google Earth Imagery from May 2015

Initial site assessment was undertaken in 2013/2014 and show the degraded state of the site. **Figure 9** below provides the photographs undertaken at this time.



Figure 9: Photos from Initial Site Assessment (circa 2014)

Furthermore, it should be noted that the earth dam occurs within the degraded grassland area which was identified by the Biodiversity Baseline and Impact Assessment and shows its artificial nature.

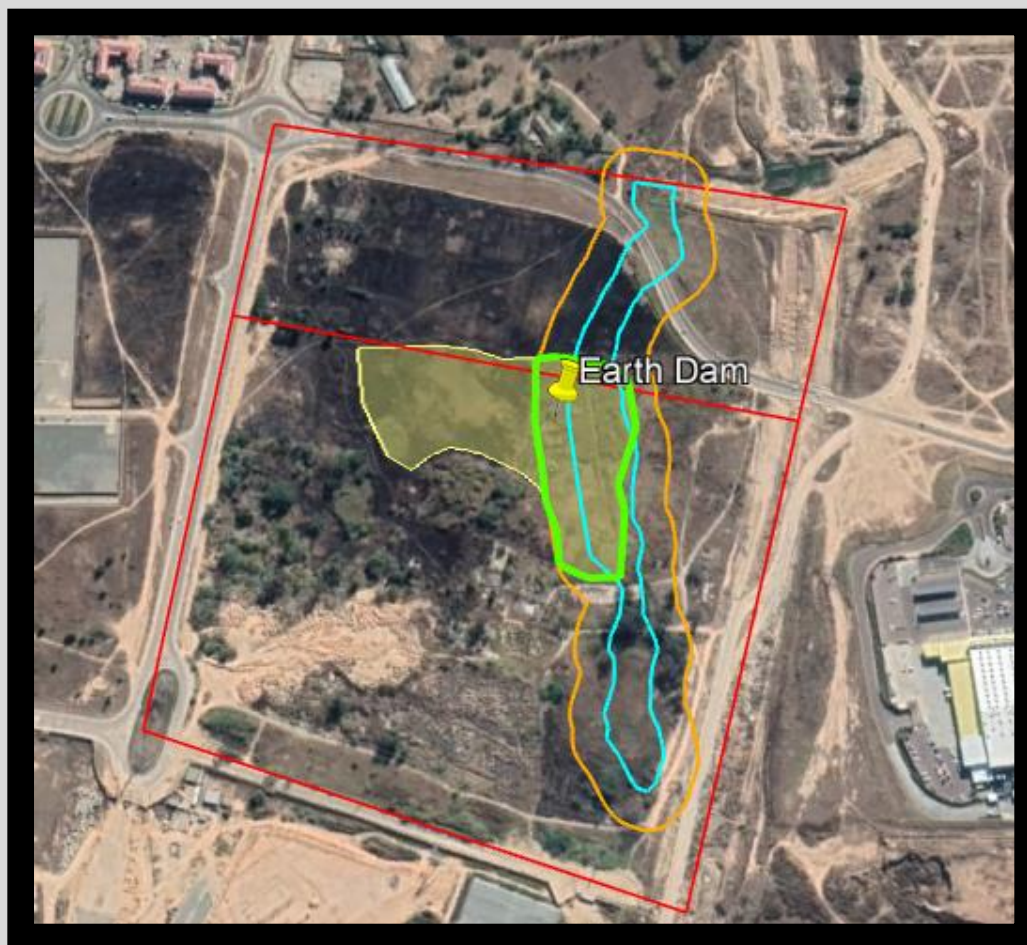


Figure 10: Location of earth dam within degraded grassland

In conclusion, a summary of the responses to the GDARD are as follows:

- An assessment has been done utilizing Google Earth, information from the Geotechnical reports and the Wetland Specialist's experience with the area and found that the artificial source of water mentioned by the Ecologist relates to stormwater which drains from the remaining platforms on site along drainage channels to an earth dam which occurs in the centre of the degraded grassland area (identified by the Biodiversity Baseline and Impact Assessment).
- As indicated in both the Wetland Report (Prism EMS, 2020) and the summary included in Section 9.2. of the EIR, the Wetland Assessment utilized a desktop assessment followed by a field assessment. The field procedure for the wetland delineation was conducted according to the Guidelines for delineating the boundaries of a wetland set out by the Department of Water Affairs and Forestry (DWA 2005/8) and included terrain unit indicators, soil wetness (auguring) and vegetation indicators. The Wetland has 17 years' experience and is a registered Professionally Registered Scientist. More than this, the specialist has been involved with the development for a number of years and has seen firsthand experience with the impact of stormwater on site. He was thus able to delineate the natural watercourse, disregarding the old earth dam which is impacted by stormwater.
- The Geotechnical Studies were undertaken in 2010 and 2011 and thus were influenced by the existing development on site. The study for Portion 185 specifically notes: "The drainage feature has been modified

due to stormwater trenches, runoff from large concrete paved areas and septic tank drainage fields. A stormwater drainage ditch runs through the central part of the holding into an earth dam on the central northern boundary with the golf driving range.” The comments from COJ seem to disregard that the Geotechnical studies specifically indicate that the site is affected by stormwater and sewerage.

- Section 9.1.1.3.2. refers to the Biodiversity Baseline and Impact Assessment and not the Wetland Assessment. However, as indicated in this Addendum, an assessment has been done utilizing Google Earth, information from the Geotechnical reports and the Wetland Specialist’s experience with the area and found that the artificial source of water mentioned by the Ecologist relates to stormwater which drains from the remaining platforms on site along drainage channels to an earth dam. The fact that the Ecologist separately and independently came to the same conclusion corroborates the findings of the wetland study.

Further to the comments, it should be noted that the development will involve the rehabilitation of the wetland and associated wetland buffer in line with the Aquatic Resources Rehabilitation Plan. The current state of the wetland was found to be low and the wetland is highly modified. The wetland and buffer, once rehabilitated will be similar to the wetland systems included in the main Steyn City development (Refer to **Figure 11**).



Figure 11: Steyn City Wetland Rehabilitation

4. STORMWATER

In regard to the stormwater, the comments noted the following:

- *The stormwater management must be design in such a way that it will not dispense directly to the watercourse and its buffer zone and it must be submitted to the Johannesburg Roads Agency for consideration*

A stormwater management plan has been compiled by a professional engineer and provides for discharge overland within the wetland buffer. The plan utilized SUDS and all run-off from the site will be routed to the attenuation ponds of each respective catchment. Each catchment area drains into an attenuation pond whereby the run-off from the area is throttled to release into the wetland and buffer zone at the 1:5 year pre-developed flow. Energy dissipating structures will be constructed at each outlet to limit any erosion and encourage sheet flow into the wetland area.

In addition, the stormwater system will include:

- Grass lined attenuation ponds;
- Use of the soccer field to attenuate stormwater and allow for ground water recharge;
- Bio swales with stone filled sumps to allow for run-off retardation, encourage sheet flow and absorption into the underlying soil;
- Throttled outlet structures; and
- Energy dissipation slabs to limit erosion and encourage sheet flow at outlets.

Figure 12 provides an overview of this plan and highlights that there are 6 separate releases along the wetland buffer at separate locations which mimics the natural flows of the wetland and was recommended in consultation with the specialist.

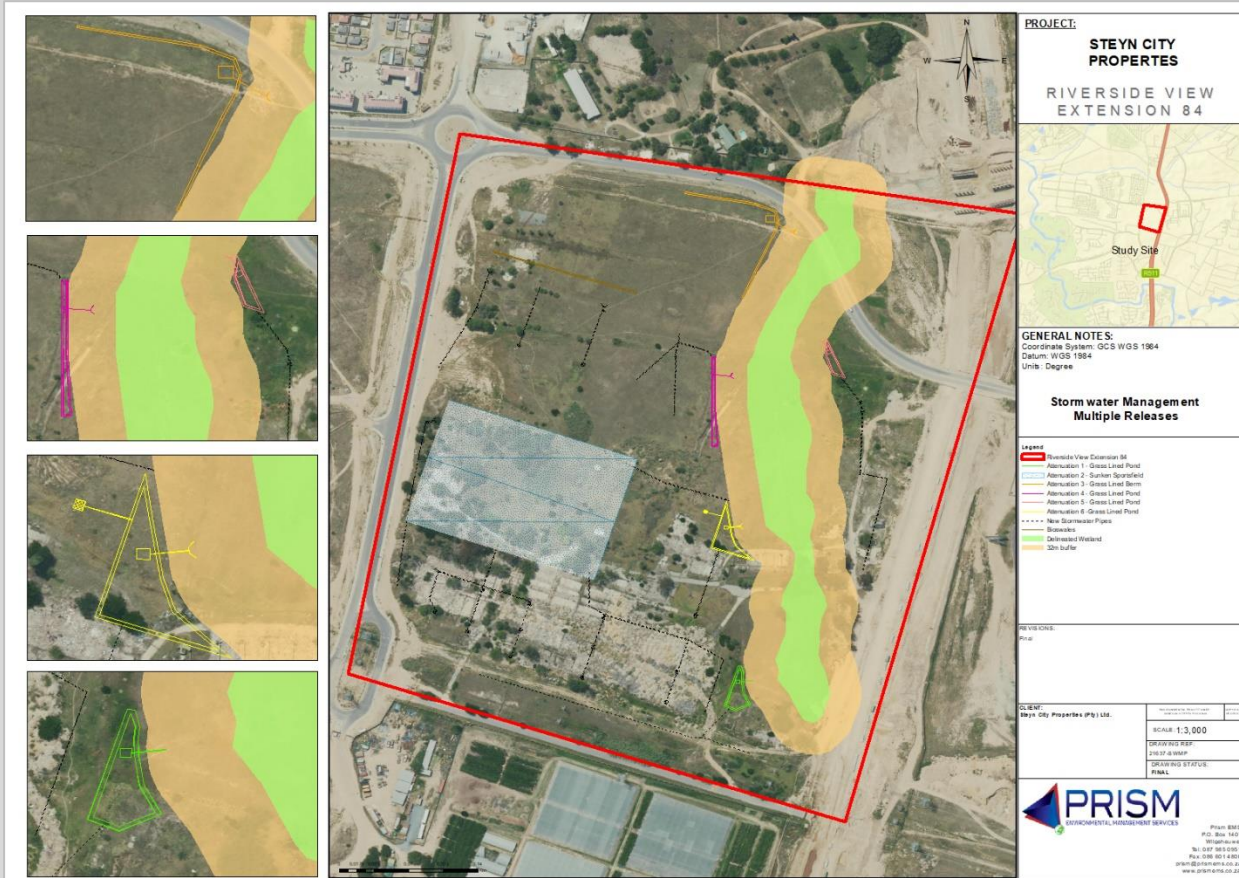


Figure 12: Stormwater Management System showing Multiple Releases

We trust this provides the necessary clarification.

Yours Sincerely,

Stippel

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