



For Attention:

Mrs. Kacy Rengasamy
Environmental Officer (Production): Grade B
eThekweni District Office: Environmental Services Directorate
KZN Department of Economic Development, Tourism & Environmental Affairs

Dear Mrs Rengasamy

Thank you for your comments.

With regards to **DM/0029/2017: CA comment on the dBAR - Proposed Amanzimtoti Housing Development Sure Focus Twenty Two CC Wanda Cele /Wade Rds**, I have undertaken an investigation into the requirement of a flood line for the small tributary of the Manzimtoti river, that exists in the middle of the land portion. The following conclusions were made:

1. Given the catchment area of the aforementioned tributary being 0.11 km² and the length of the tributary being 0.25 km, a peak flow of 0.127 m³.s⁻¹ would be generated during a 1:100 year event. This was calculated using the rational method.
2. The area in which this channel is formed is steep and densely vegetated with forest. This means that flows that are generated within the property boundary would be quick but would be attenuated slightly by the vegetation. Infiltration in this area would be increased.



Figure 1 Catchment area (red) of the tributary of the Manzimtoti river

3. The calculation undertaken in point 1 excludes the diversion of flow from stormwater structures along Wade and Wanda Cele rd. This means that although there is an increase

in impervious surfaces, most of this water would enter municipal servitudes and would not flow through the catchment indicated above.

4. The overall conclusion is that, as a small peak flow would be generated for this catchment, it would not be practical or realistic to model this in HEC-RAS or similar flood software. The output would be too small for display purposes. A buffer applied to this tributary would be greater than the flood line due to the deep and steep channel. Therefore, it is recommended that a flood line should not be undertaken for this development but rather a specialist recommended watercourse buffer.

Regards,
Bruce Scott-Shaw



Hydrologist, BSc (Hydro), BSc Hons (Hydro), MSc (Hydro), PhD (Hydro) pending graduation
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The White House, 22 Hilton Avenue
PO Box 949, Hilton, 3245 | Tel: 033 343 1352
Cell: 083 289 4912 | Fax: 086 776 4789
Email: susan@naturestamp.co.za
www.naturestamp.com



NatureStamp