Report

MOSSELBANK CANAL – SUPPLEMENTARY FLOODLINE STUDY

Prepared for:

SLM Developments

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MOSSELBANK CANAL SUPPLEMENTARY FLOODLINE STUDY

1. SCOPE

Stonewood Drive in Kraaifontein has been extended to cross the Mosselbank Canal and intersect with Sarel van Deventer Road at a roundabout adjacent to the canal. This construction was completed at the end of 2023. The locality of the site is shown in Figure 1 before construction and Figure 2 after construction.

Graeme McGill Consulting was appointed on 2025-03-12 to undertake a study of the hydraulic performance of the canal and Stonewood Drive road and bridge. The HEC_RAS 2D model is to be used and the following conditions are to be assessed:

- Conditions prior to the construction of Stonewood Drive and bridge
- Conditions after the construction of Stonewood Drive and bridge
- Assess the effect of assuming that the vibracrete walls around properties upstream of the bridge are permeable or not to floodwaters.
- Assess the impact of the Stonewood Drive road and bridge on flood levels upstream and downstream of the road.

The reason behind this request relates to a report prepared by ASP Tech for I and C Property Investors (PTY) Ltd (ASP Tech 2024). A key finding was “

> *The flood flow patterns were investigated by 2D hydrodynamic model. The recently completed Stonewood Drive and traffic circle at the Mosselbank canal affects the large flood flow patterns negatively and forces the flood flow towards the left bank floodplain and through the Stonewood property causing a hazard to the existing buildings on the Stonewood Estate located along the Mosselbank canal floodplain side.*

The proposed solution was:

> *A low flood wall on the Stonewood property are proposed to ensure the flood flow is conveyed safely back to the Mosselbank canal, without affecting neighbouring properties negatively. The maximum height of the wall/berm is 1.27 m which includes an additional 0.5 m freeboard. At the northern end of the Estate no flood wall is required which allows free drainage of the local runoff from the property to the Mosselbank canal.*

A meeting was held at CSRM on 2025-10-08 to discuss the project and to arrive at concensus. The minutes are attached in Annexure A, together with a letter from ASP TECH in Annexure B.

This revision of the report (Rev 2) incorporates the outcome of this meeting.



FIGURE 1: CONDITIONS PRIOR TO THE EXTENSION OF STONEWOOD DRIVE

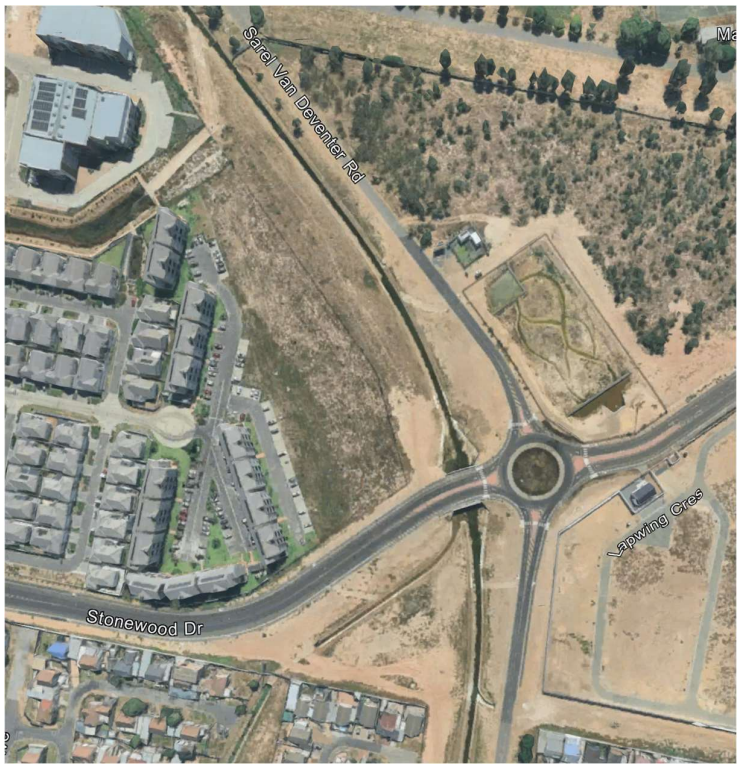


FIGURE 2: EXISTING CONDITIONS WITH STONEWOOD DRIVE EXTENDED

2. EXTENSION OF STONEWOOD DRIVE

Details of the extension of Stonewood Drive to Sarel van Deventer Road, including the culvert over the Mosselbank canal were provided by Ekcon Consulting Engineers in a series of as-built drawings (listed in the references).

The culvert dimensions are listed in Table 1.

TABLE 1: CULVERT DIMENSIONS

No. of barrels	4
Barrel size (mm)	3600 x 2100
Skew	6%
Upstream invert level (RLm)	89.123
Upstream soffit level (RLm)	91.223
Upstream road level (RLm)	92.323
Downstream invert level (RLm)	89.111
Downstream soffit level (RLm)	91.211
Downstream road level (RLm)	92.311

There is a low point on Stonewood Drive at SV261.456 which is 110m west of the culvert centreline. The design level of the low point is RL91.104m but according to a later survey it is at RL90.98m (refer to section 3.2).

3. DATA ACQUISITION

3.1 TOPOGRAPHICAL SURVEY

Pepe Geomatics land surveyors undertook a topographical survey including Lidar data. The survey was provided in digital format with a DTM.

3.2 LIDAR DATA FROM CITY OF CAPE TOWN

Lidar data dated September 2021 was obtained from the City of Cape Town. This was to depict the situation prior to the extension of Stonewood Drive.

Later on it was requested that 2025 LiDAR data from City of Cape Town is to be used for the existing and proposed alternatives scenarios.

3.4 AS-BUILT INFORMATION

The waterway opening at the Stonewood Drive crossing of the Mosselbank Canal has four openings each 3.60m wide and 2.1m high. The culvert details are listed in Table 1, as per the as-built drawing (Ekcon: 2023-12-07).

The inlet and outlet invert levels are RL89.123m and RL89.111m respectively. The lowest elevation on Stonewood Drive is at Ch 261.456m which is west of the canal and where the design elevation of the road centreline is RL91.103m (later confirmed to be RL90.98m).

4. METHODOLOGY

The peak flows used for this study were:

1:50 year 45 m^3/s

1:100 year 52 m^3/s

These flows are from a study done by Africon (2005) and have been used for various projects along this section of the Mosselbank canal, e.g. La Piron Village, La Piron Retirement Centre and Stonewood Estate.

In addition as agreed at the CSRM meeting (Annexures A and B) the design flow was adjusted to 60 m^3/s to allow for a climate change factor.

Although Stonewood Drive is a Class 4 road for which the design flow Q_T is 1:10 year, it was considered appropriate to use the 1:100 year flow because of possible inundation of residential property.

In the ASP Tech study the 1:100 year flow peak was calculated to be 59.4 m^3/s.

For the HEC-RAS 2D analysis the inflow was split in the ratio 85:15 for the main canal and the tributary canal. This is roughly in proportion to the relevant sub-catchment areas.

The Mannings-n values for the existing conditions are listed in Table 2 below.

TABLE 2: MANNINGS-n VALUES

DESCRIPTION	n
Developments	0.150
Floodplains	0.035-0.050
Gravel Road	0.030
Main Canal	0.020
Paved Road	0.025
Tributary Canal	0.040
Tributary Channels	0.020-0.035

The upstream and downstream boundary conditions were the flows and the normal depth respectively.

It should be noted that tributary canal passes through a residential area known as Bonnie Brae. This culvert has dimensions 2500mmx1250mm with a length of 31m (Figure 3). A vibracrete wall crosses the culvert. For the purposes of this analysis this wall has been removed. This is a conservative assumption w.r.t. the conditions along Stonewood Drive, but not for flooding which may result upstream of the wall.



FIGURE 3: BONNIE BRAE CULVERT ON TRIBUTARY CANAL

5. HEC-RAS 2D MODELLING

5.1 CONDITION PRIOR TO EXTENSION OF STONEWOOD DRIVE

The September 2021 Lidar data set received from the City of Cape Town was used to set up topographical data for simulating the flow conditions prior to the extension of Stonewood Drive.

The HEC-RAS model output image shows the resultant flow and flooded areas for the 1:100 year flow of 60 m^3/s (Figure 4).

This shows areas flooded on the left bank, along the route of the future Stonewood Drive extension and in Bonnie Brae.

The peak water surface elevations, peak water depths and peak flow velocities at 10 points (positions in Figure 11) are listed in Tables 3-5.

5.2 EXISTING CONDITIONS

The existing conditions are illustrated in Figures 5 and 6.

The results of the HEC-RAS 2D analysis for peak flows of 60 m^3/s are shown in Figure 7.

It is noted that Stonewood Drive will be overtopped by approximately 0.11m and 0.14m for 52 and 60 m^3/s respectively.

The peak water surface elevations, peak water depths and peak flow velocities at 11 points (positions in Figure 12) are listed in Tables 3-5.

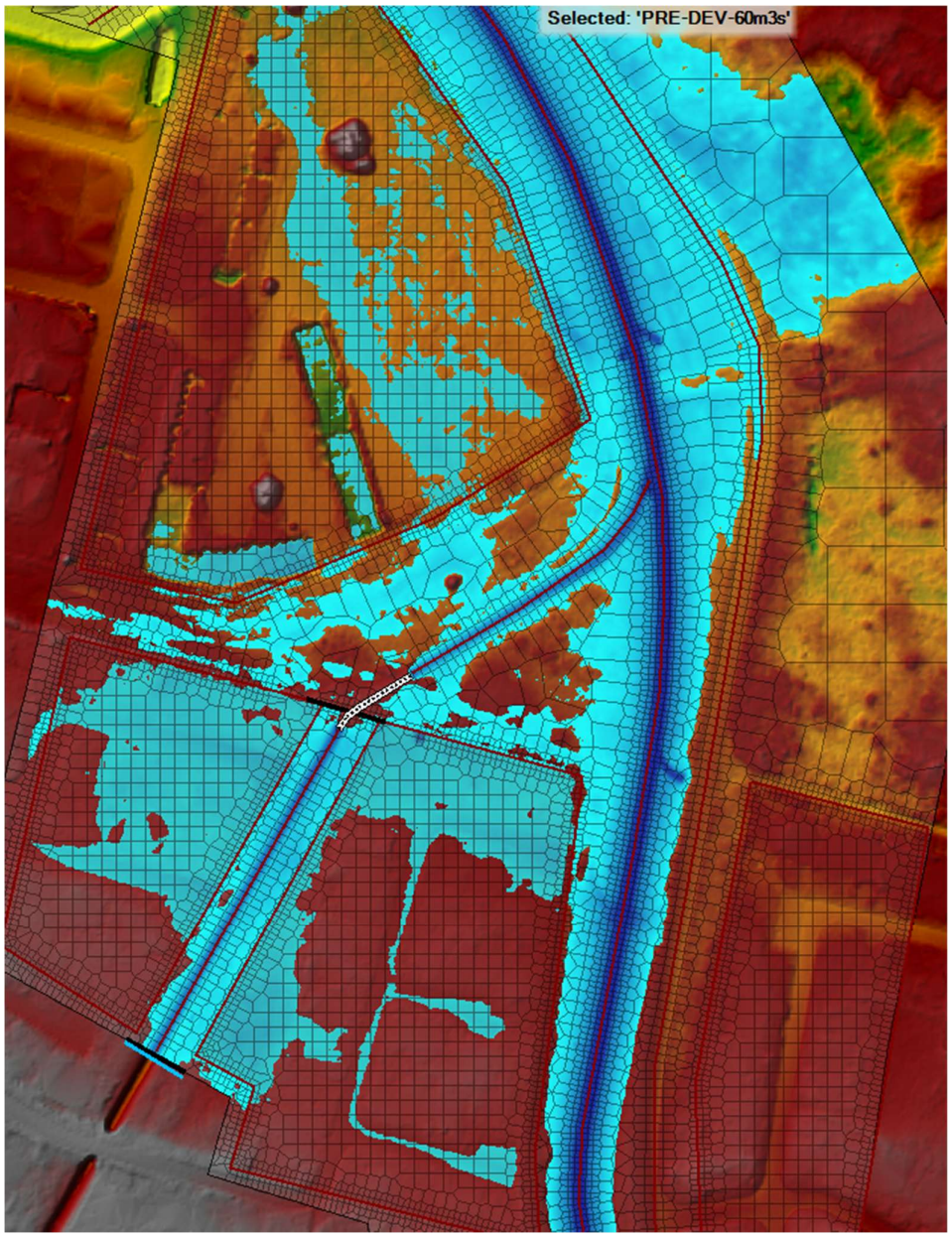


FIGURE 4: CONDITIONS PRIOR TO THE EXTENSION OF STONEWOOD DRIVE WITH FLOW OF 60 m^3/s



FIGURE 5: STONEWOOD DRIVE CULVERT OVER THE MOSSELBANK CANAL: 4No. 3600mm x 2100mm

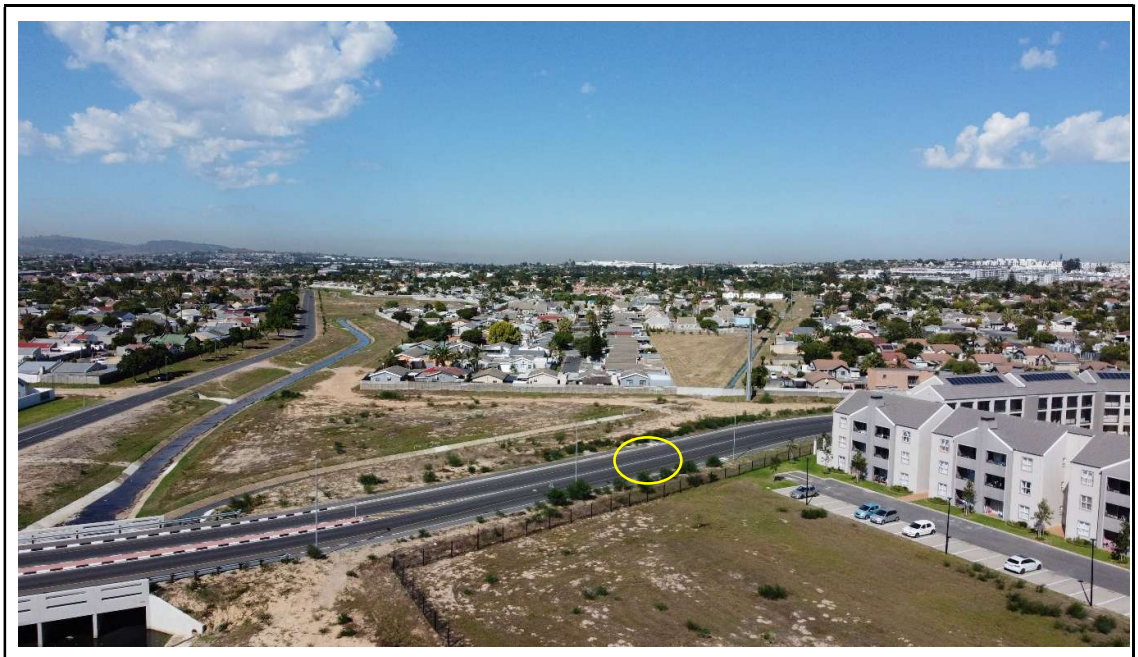


FIGURE 6: LOW AREA ON STONEWOOD DRIVE (YELLOW OUTLINE)

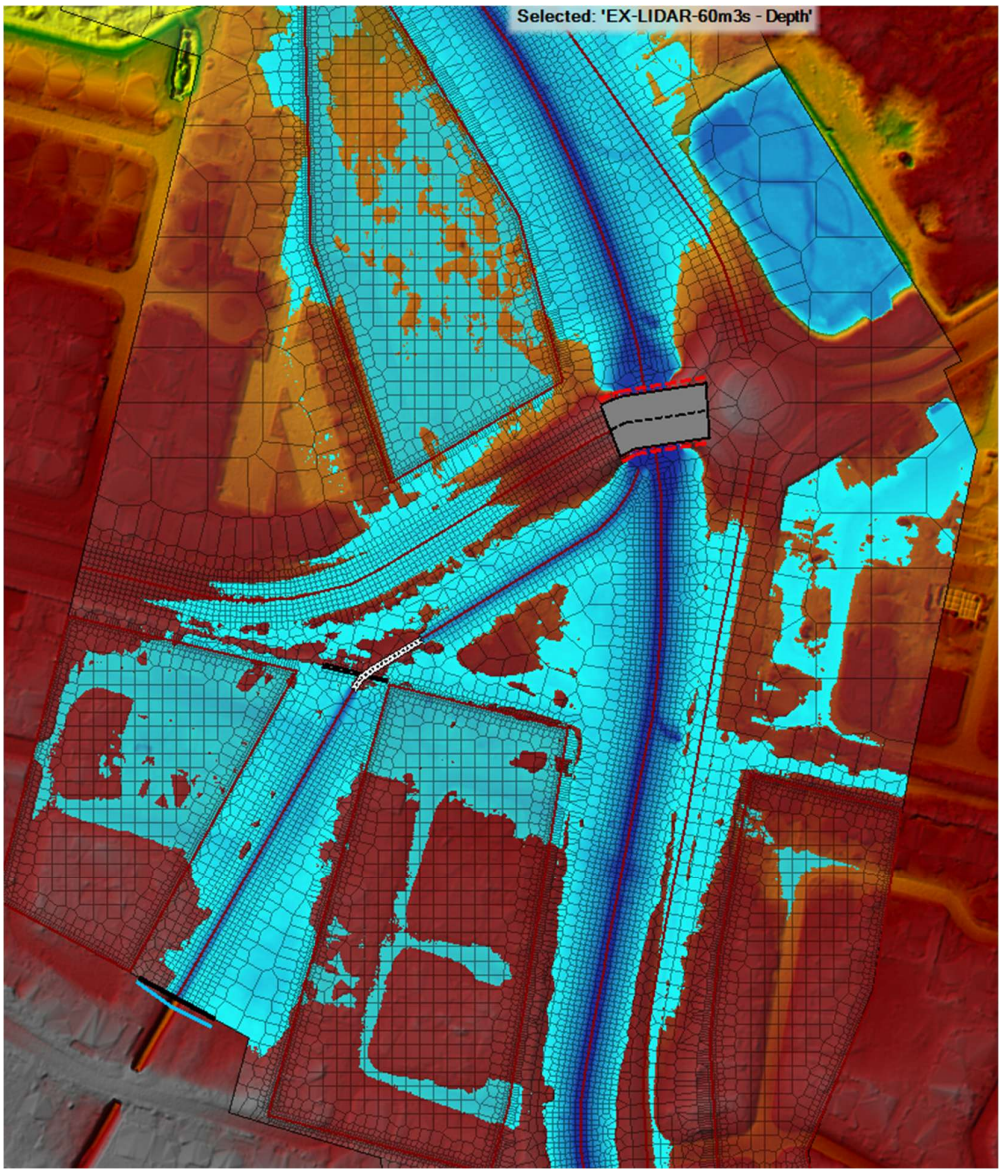


FIGURE 7: EXISTING CONDITIONS WITH FLOW OF 60 m^3/s

5.3 POSSIBLE AMELIORATIVE MEASURES

The analysis of the existing conditions showed that in the event of the 1:100 year flood overtopping of Stonewood Drive and spillage onto Stonewood Estate may be expected.

The measures which have been evaluated to ameliorate these conditions are:

(i) Place a berm along the southern edge of Stonewood Drive sufficient to prevent overtopping of the road. The results are shown in Figure 8 and in the column “BERM” in Tables 3-5. The required berm would have a length of 155m, side slopes of 1:3 v:h and a minimum crest level ranging from RL92.00m to RL91.40m, which includes a 0.3m freeboard. Runoff from the road would be led along the northern edge of the berm and exit to the canal close to the Stonewood Drive culvert.

The berm would have no effect on water levels in Bonnie Brae, and would prevent overtopping of the road and spillage into Stonewood Estate.

An acceptable alternative would be a low wall with the same crest elevations.

(ii) Remove the culvert and surrounding fill on the tributary canal and replace it with an open canal, matching upstream and downstream conditions. The results are shown in Figure 10 and in the column “CHANNEL” in Tables 3-5. The replacement open canal would have a length of 31m.

The removal of the culvert and replacement with an open canal would reduce flood levels in Bonnie Brae and reduce but not eliminate overtopping of Stonewood Drive. Spillage into Stonewood Estate would be slightly reduced.

(iii) Implement a combination of both berm and tributary canal. The results are shown in Figure 9 and in the column “CHANNEL+BERM” in Tables 3-5.

The implementation of a combination of both measures would prevent overtopping of Stonewood Drive and spillage into Stonewood Estate as well as reduce water levels in Bonnie Brae. For this scenario the required berm length would be unchanged.

The peak water surface elevations, peak water depths and peak flow velocities at 10 points (positions in Figure 11) are listed in Tables 3-5.

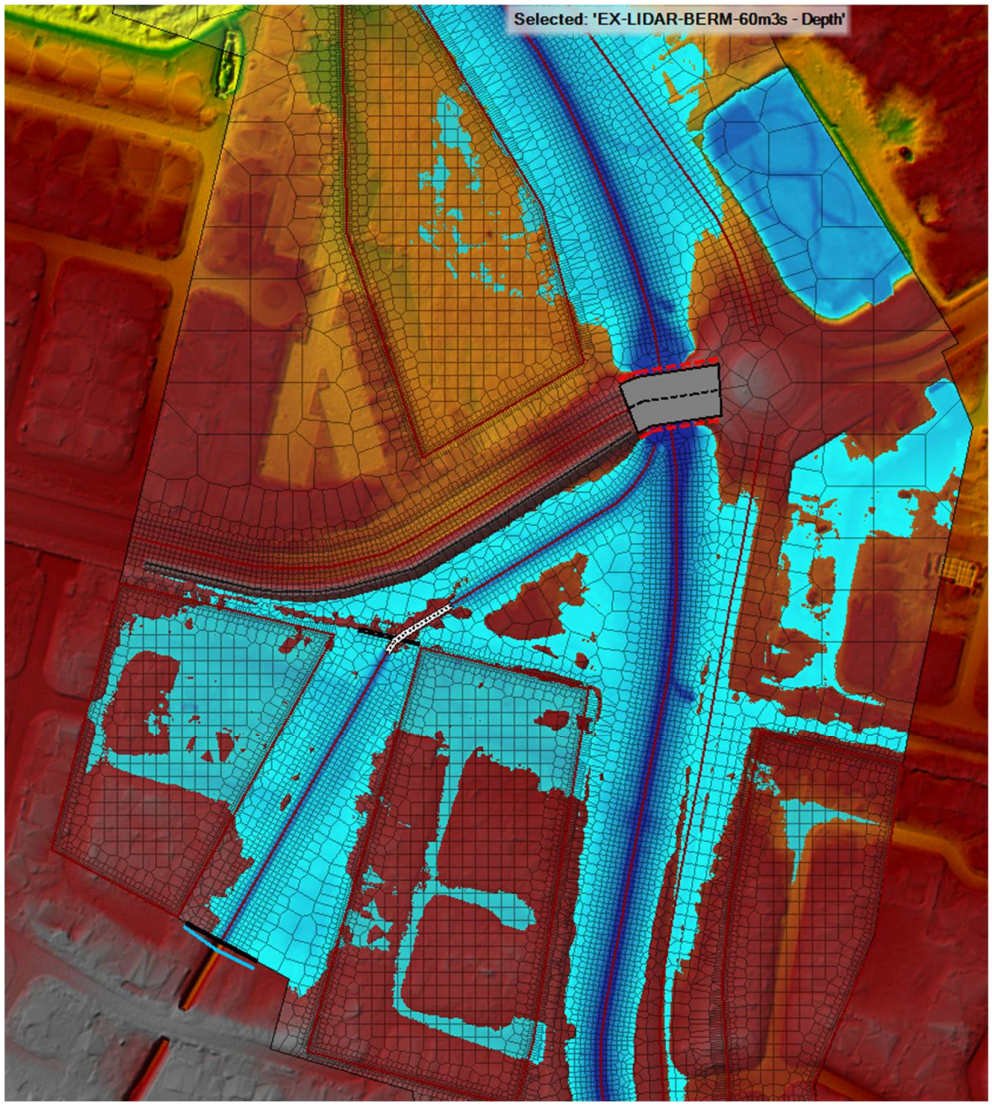


FIGURE 8: EFFECT OF A BERM ALONG THE SOUTHERN EDGE OF STONEWOOD DRIVE FOR A FLOW OF 60 m^3/s

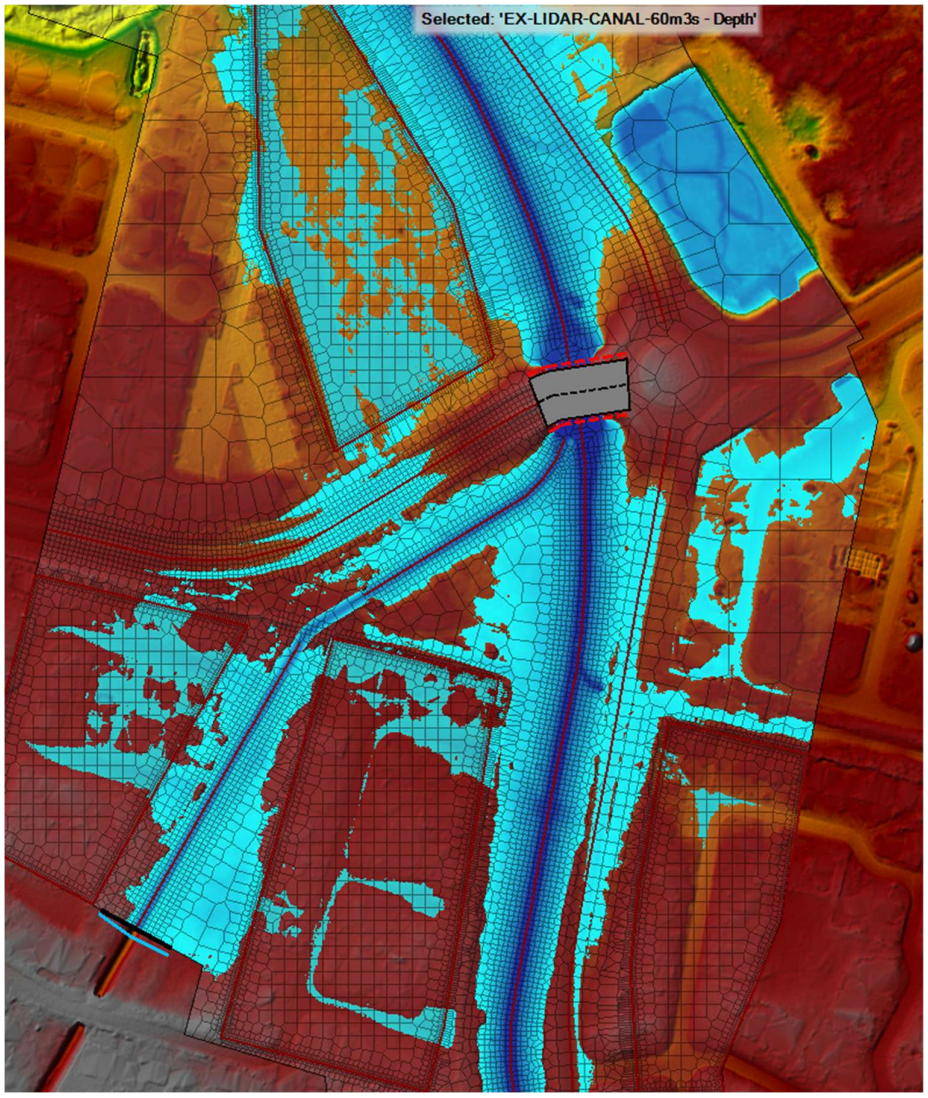


FIGURE 9: EFFECT OF REPLACING THE CULVERT ON THE TRIBUTARY CANAL WITH A CONTINUOUS CANAL FOR A FLOW OF 60 m^3/s

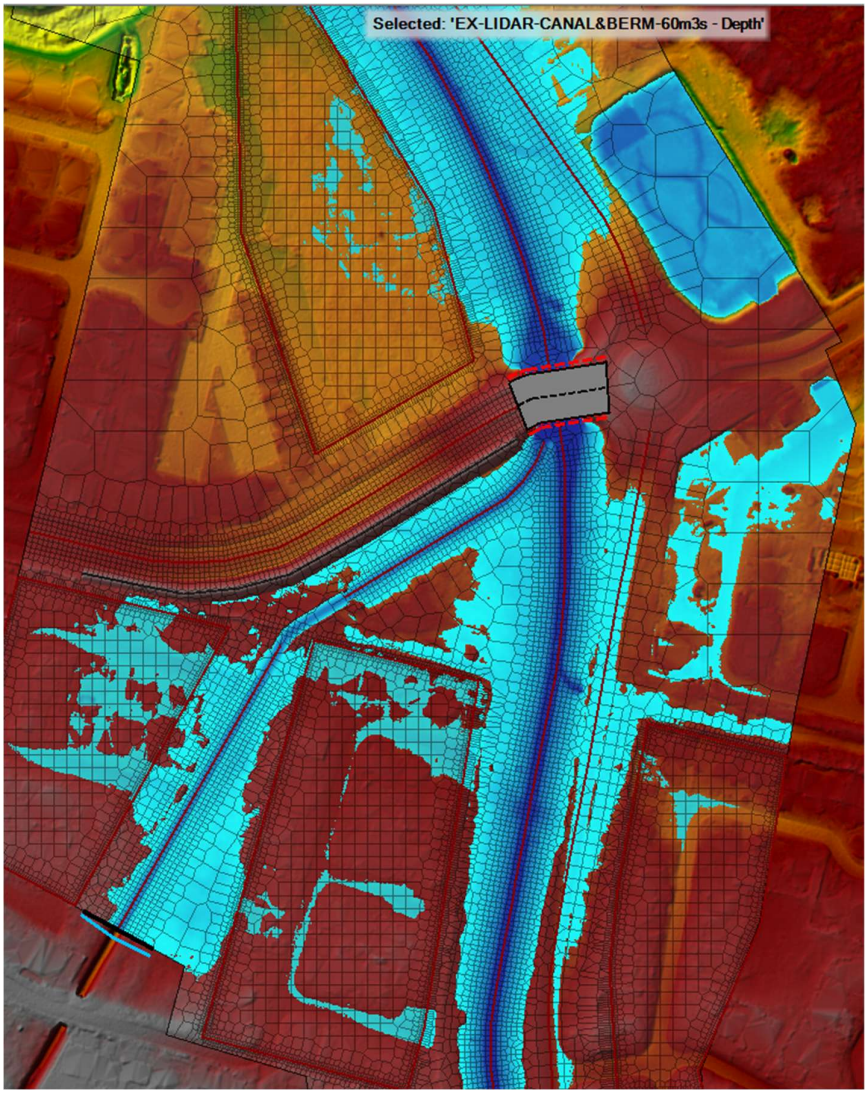


FIGURE 10: EFFECT OF A BERM ALONG THE SOUTHERN EDGE OF STONEWOOD DRIVE IN COMBINATION WITH REPLACING THE CULVERT ON THE TRIBUTARY CANAL WITH A CONTINUOUS CANAL FOR A FLOW OF 60 m^3/s

5.4 SUMMARY OF ANALYSES

Figure 11 below shows 11 points of interest where the maximum water surface elevation, maximum flow depth, and maximum velocities were measured. See Tables 3, 4, and 5 for the respective values.

It was found that the contributing factors resulting in the overtopping of Stonewood Drive are the extension of Stonewood Drive with its culvert set, and the culvert on the tributary canal as it exits the Bonnie Brae area. It was also noted that flooding occurs within the Bonnie Brae area.

The maximum flow velocity, apart from in the canals, is at point P9, which is immediately downstream of Stonewood Drive. The peak velocity is 0.19 m/s but the depth is shallow 0.04m.

Ameliorative measures to prevent the overtopping of Stonewood Drive and spillage into Stonewood Village were evaluated.

The provision of a berm along the southern edge was found to be effective and did not increase water levels in Bonnie Brae.

The removal of the culvert in the tributary canal and replacement with an open canal was found to have little effect on the overtopping of Stonewood Drive but would reduce flooding in Bonnie Brae.

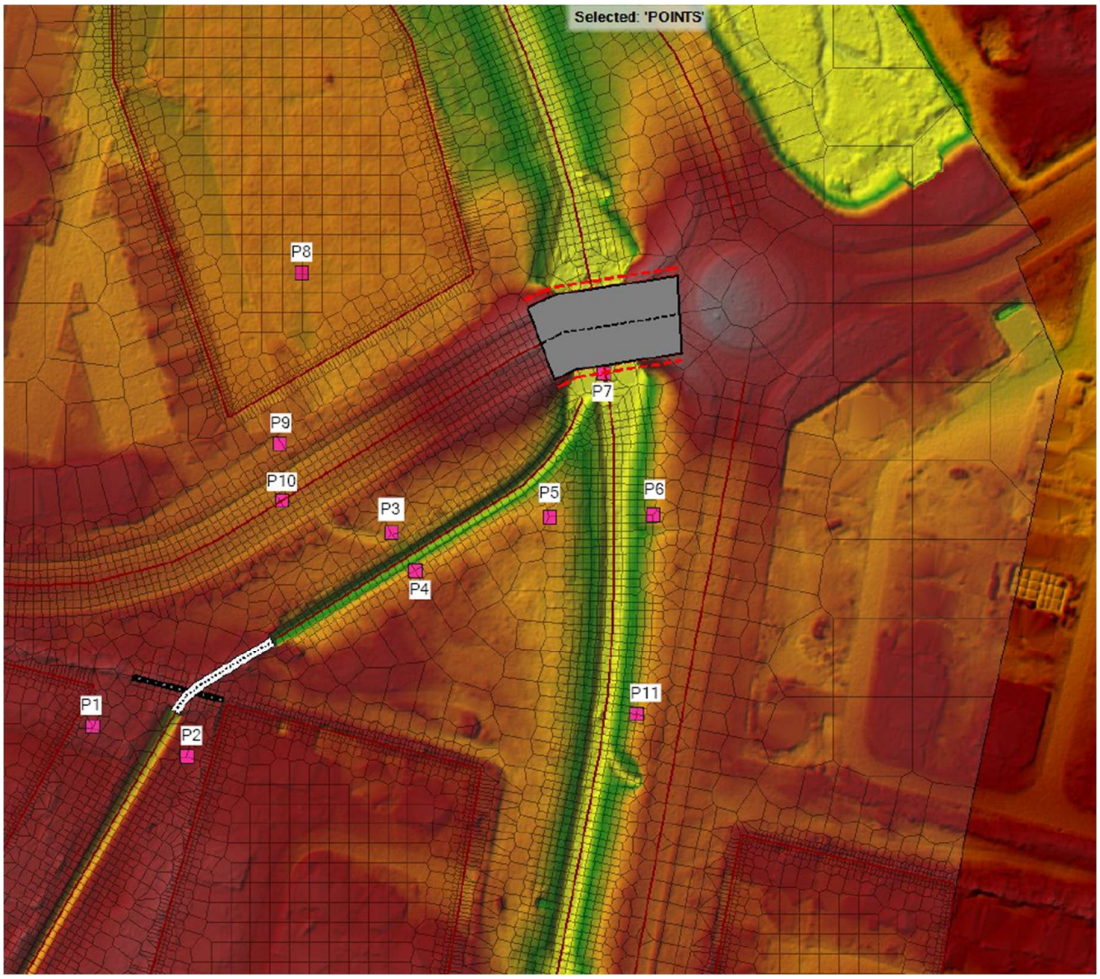


FIGURE 11: POINTS OF INTEREST, REFER TO TABLES 3, 4 AND 5

TABLE 3: MAXIMUM WATER SURFACE ELEVATION (RLm)

POINT	PRE-STONEWOOD DRIVE	EXISTING	BERM	CHANNEL	CHANNEL + BERM
FLOW (m^3/s)	60	60	60	60	60
P1	91.76	91.83	91.83	N.A.	N.A.
P2	91.73	91.80	91.81	91.57	91.57
P3	90.90	91.09	91.10	91.11	91.11
P4	90.90	91.09	91.10	91.11	91.11
P5	90.88	91.08	91.09	91.09	91.09
P6	90.88	91.09	91.09	91.09	91.09
P7	90.81	91.05	91.06	91.05	91.06
P8	90.74	90.85	N.A.	90.82	N.A.
P9	90.91	91.12	N.A.	91.09	N.A.
P10	90.91	91.13	N.A.	91.10	N.A.
P11	90.99	91.18	91.18	91.17	91.17

TABLE 4: MAXIMUM WATER DEPTH (m)

POINT	PRE-STONEWOOD DRIVE	EXISTING	BERM	CHANNEL	CHANNEL + BERM
FLOW (m^3/s)	60	60	60	60	60
P1	0.12	0.07	0.07	N.A.	N.A.
P2	0.33	0.38	0.39	0.15	0.15
P3	0.24	0.18	0.19	0.20	0.20
P4	0.08	0.28	0.29	0.30	0.30
P5	0.17	0.31	0.32	0.32	0.32
P6	0.35	0.43	0.43	0.43	0.43
P7	1.78	1.98	1.99	1.98	1.99
P8	0.10	0.12	N.A.	0.09	N.A.
P9	0.06	0.09	N.A.	0.06	N.A.
P10	0.16	0.14	N.A.	0.11	N.A.
P11	0.54	0.52	0.52	0.51	0.51

TABLE 5: MAXIMUM FLOW VELOCITY (m/s)

POINT	PRE-STONEWOOD DRIVE	EXISTING	BERM	CHANNEL	CHANNEL + BERM
FLOW (m^3/s)	60	60	60	60	60
P1	0.06	0.06	0.06	0.00	0.00
P2	0.44	0.51	0.51	0.51	0.51
P3	0.25	0.28	0.20	0.23	0.25
P4	0.59	0.30	0.33	0.35	0.40
P5	0.40	0.52	0.52	0.50	0.50
P6	0.59	0.62	0.62	0.59	0.62
P7	2.85	2.56	2.56	2.57	2.58
P8	0.09	0.10	0.00	0.08	0.00
P9	0.07	0.31	0.00	0.24	0.00
P10	0.13	0.27	0.00	0.24	0.00
P11	0.74	0.74	0.74	0.73	0.73

TABLE 6: ELEVATIONS ALONG STONEWOOD DRIVE

ROAD SV (m)	E.G. ELEV (RLm)	ROAD CL (RLm)	ADJACENT GL (RLm)	BERM CREST (RLm)
300	91.09	91.49	91.10	
295	91.10	91.40	91.10	91.40
280	91.10	91.19	91.15	91.40
260	91.13	91.10	91.20	91.43
240	91.31	91.18	91.20	91.61
220	91.44	91.28	91.20	91.74
200	91.55	91.38	91.20	91.85
180	91.71	91.48	91.62	92.00
160	91.82	91.57	91.80	92.00
140		91.68	92.00	92.00

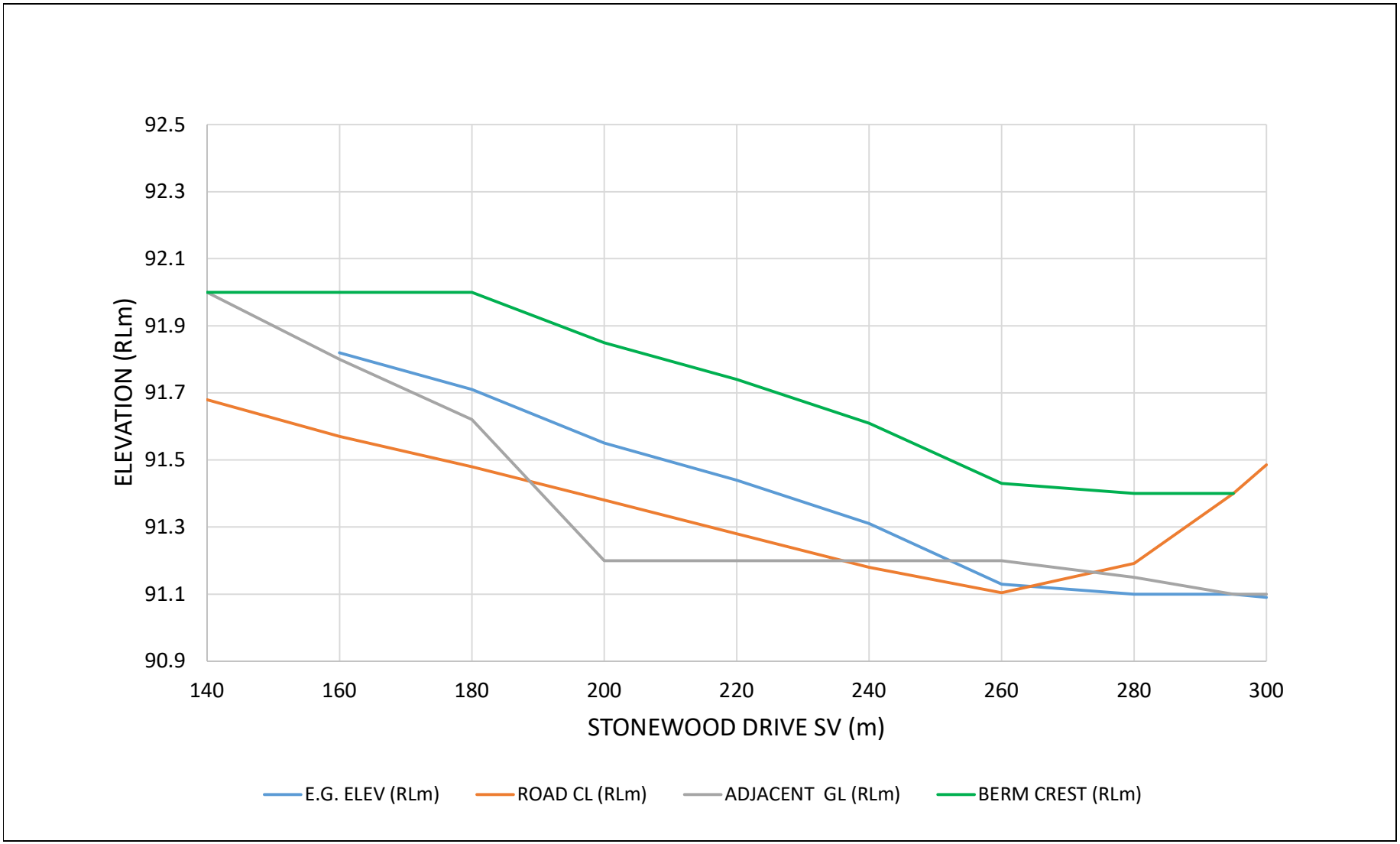


FIGURE 12: RECOMMENDED EXTENT AND CREST ELEVATION OF BERM OR ALTERNATIVELY WALL

6. RECOMMENDATIONS

It is recommended that as a minimum measure to prevent overtopping of Stonewood Drive and spillage into Stonewood Village, a 155m long berm be constructed along the southern edge of Stonewood Drive.

The berm will have a crest elevation set to the energy level plus a freeboard of at least 0.3m. The minimum crest elevations are shown in Table 6 and Figure 12.

The berm should 1:3 V:H side slopes and have erosion protection in the form of Armorflex 180 or similar.

As an alternative a concrete or brick wall may be provided, with the same crest elevations.

It is not required that the tributary culvert be replaced with an open channel, as the berm will be sufficient to prevent the overtopping of Stonewood Drive.

7. COST ESTIMATE

A high-level cost estimate of the alternatives – a berm or wall along the southern edge of Stonewood Drive has been prepared by Ekcon Consulting Engineers, and is included as Annexure C.

REFERENCES

Africon Engineering International March 2001. *"Mosselbank & Klapmuts Rivers: Determination of Floodlines",* report prepared for Cape Metropolitan Council.

Applied Stream Power Technology Services (ASP Tech): July 2024. *Mosselbank canal: Stonewood Estate, Cape Town – Floodline Study. Flood Hydrology and Hydrodynamic Modelling*. Tech Mem Rev02.

Ekcon: 2023-12-07. Drawing P2222-S-001 Rev Z *Mosselbank Canal Culvert (H25-09C), General Arrangement*

Ekcon: 2023-04-04. Drawing P2222-C-802 Rev 0 *La Piron Estate – Stonewood Drive Extension. Roads Longitudinal Section.* Issued for construction.



GA McGill Pr Eng

Graeme McGill Consulting

ANNEXURE A: MINUTES OF MEETING HELD AT CSRM ON 2025-10-08

Outlook

RE: 20251008_MOSSELBANK CANAL/ STONEWOOD BRIDGE & ROAD_MINUTES_8 OCT 2025

From Willem Burger <Willem.Burger@capetown.gov.za>

Date Wed 2025-10-15 11:52

To John Coetzee <John@slmdev.co.za>; Johann Terblanche <Johann.Terblanche@capetown.gov.za>; Chris Moller <chrissmoller@icloud.com>; Jaco van Zyl <jaco@pspconsult.co.za>; Gerrit Sasson <grbasson@asptech.co.za>; Rikus <rikus@ekcon.co.za>; Graeme McGill <graeme@mcgillconsulting.co.za>

Cc Stefan de Villiers <Stefan.deVilliers@capetown.gov.za>; Willie Liebenberg <WillieF.Liebenberg@capetown.gov.za>; Vincent Harris <VincentRamon.Harris@capetown.gov.za>; Johan Snyman <Johan.Snyman@capetown.gov.za>; Kloey Barn <Kloey.Bam@capetown.gov.za>; Motlatsi Christian Nkhoesa <Motlatsi.Nkhoesa@capetown.gov.za>

Morning Gentleman,

[Revision 1 - updated on 15 October 2025]

As per our meeting on 8 October 2025, this Office compiled the minutes of the meeting:

1. **Attendees: City Of Cape Town (CSRM):**

   1.1. Johann Terblanche (Chair)
   1.2. Willem Burger

2. **Attendees: Consultants & Representatives:**

2.1.	Chris Moller	(Stonewood Developer)
2.2.	Isaac Borochowitz	(Stonewood Developer)
2.3.	Jaco van Zyl	PSP
2.4.	Gerrit Bosson	ASP Tech
2.5.	John Coetzee	(Le Coste Development)(Online)
2.6.	Rikus Steyn	ECKON
2.7.	Graeme McGill	McGill Consulting

3. **Apologies:**

3.1.	Stefan de Villiers	Stefan.de Villiers@ca petown.gov.za;
3.2.	Vincent Harris	VincentRamon.Harris@capetown.g ov.za;
3.3.	Willie Liebenberg	WillieF.Liebenberg@capetown.gov.za;
3.4.	Johan Snyman	Johan.Snyman@capetown.gov.za

4. **Purpose Of Meeting:**

4.1. To review and discuss the two independent floodline assessments for the Mosselbank Canal / Stonewood Bridge and Road project.

4.2. To determine a coordinated approach and reach agreement on a single, unified floodline report.

5. Background:

5.1. Historical floodlines for La Piron (La Coste) and Stonewood Development were initially compiled by Graeme McGill.

5.2. The Stonewood Road/Bridge, constructed by ECKON in 2023, proceeded without an updated floodline assessment.

5.2.1. The CCT RIM Department did not circulate the Stonewood road/bridge construction plans to CSRM branch for comment, therefore there was no request for the updated floodline assessment.

5.3. The Stonewood Developer anticipated that the bridge would improve floodlines, potentially increasing developable land. However, assessments revealed that the bridge adversely impacted floodlines, causing road overtopping and flooding of the development.

5.4. ASP/PSP (2024) reviewed the floodlines and proposed a floodwall on their private property to mitigate risks and unlock developable land for Stonewood.

5.5. ECKON was requested to review their bridge design through an updated floodline study. Consequently, ECKON/McGill (2025) updated the floodline model, proposing to open the tributary canal and construct a flood berm along the southern road perimeter as an alternative to a continuous floodwall on the Stonewood Development private property.

6. **Discussion Summary:**

6.1. Following the review and discussion of the two independent floodline assessments for the mosselbank canal / stonewood bridge and road project, the following outcomes were agreed upon:

6.1.1. Two options were presented and evaluated:

6.1.1.1. Option 1: (ASP/PSP): Proposed a continuous floodwall on private property to contain floodwaters, protect the development, and unlock additional developable space.

6.1.1.2. Option 2: (McGill/ECKON): Proposed opening the tributary canal and constructing a flood berm along the southern edge of Stonewood Drive to improve the river hydraulics.

6.1.2. Consensus was reached among all parties to adopt the McGill/ECKON proposal as the preferred solution.

6.1.3. Two methodologies were proposed for the berm along the road:

6.1.3.1. Option 1: A parapet wall.

6.1.3.2. Option 2: An earth berm with erosion protection.

6.1.3.3. Additional option to address tributary culvert constrains: opening of the culvert of the of the bonnie brae development

6.1.4. It was agreed that a single, coordinated report will proceed for final acceptance by CSRM and RIM.

6.1.5. ASP will provide input to be incorporated into the updated report.

6.1.6.

7. **Way Forward:**

6.2. ASP/PSP to provide a formal letter of acceptance confirming they have reviewed and considered the McGill/ECKON:
  6.2.1. ASP will provide expert comments on the report to be incorporated into the final report, in the abovementioned letter.
  6.2.2. Due Date: 10 October (this was received on 10 Oct - refer to attached)
6.3. McGill to update the floodline report to incorporate ASP/PSP comments and include high- level cost estimates:
  6.3.1. Due Date: 17 October
6.4. Responsible parties Le Coste Developer, Stonewood Developer & CCT to consolidate on financial, implementation, and maintenance responsibilities:
  6.4.1. Meeting date: 27/28 October 2025 or 3 / 4 November 2025
  6.4.2. CSRM to schedule a meeting with RIMs at the Kraaifontein office and will also attend.

I trust that the summary provided accurately reflects the discussions held during our recent meeting regarding the Mosselbank Canal/ Stonewood Bridge and Road floodline assessments.

Please feel free to provide any additional input or request amendments if necessary.

Your feedback would be greatly appreciated to ensure we proceed with a shared understanding. Kind Regards

Willem Burger ***Pr Eng***

Senior Professional Officer: Catchment Planner (Northern Regions)
Catchment, Stormwater and River Management

Bulk Services, Water and Sanitation

3rd Floor, Water and Sanitation Head Office, 8 Voortrekker Road, c/o Voortrekker and Mike Pienaar Blvd, Bellville, Cape Town

Work Contact: 021444 1927 | **Email:** willem.burger @capetown.gov.za cid:image003.jpg@0lD4F5CB.435D9640



ANNEXURE B: LETTER FROM ASP TECH DATED 2025-10-09

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www.asptech.co.za
grbasson@asptech.co.za
Connect on LinkedIn

9 October 2025

Att: Mr Jaco van Zyl
PSP Consult
Wellington, 7655
South Africa

Dear Mr van Zyl

20250303_Stonewood Road and Bridge Flood Study – Review of report by Graeme McGill Consulting (Aug 2025)

We refer to your email dated 7 October 2025 and the meeting at the CoCT of 8 October 2025. We have reviewed the above report dated August 2025 titled: "MOSSELBANK CANAL – SUPPLEMENTARY FLOODLINE STUDY". We have the following minor comments on the report which could be used to update and finalize the report:

a) The 100-year flood of 52 m^3/s does not include the impact of future climate change. It is proposed that the future climate change (cc) is considered in the simulations to design the flood mitigation measure. If the standard CoCT 15% increase in rainfall intensity is adopted, then the Q100cc = 60 m^3/s.
b) For floodlines and the design of the proposed mitigation measures the simulated energy levels should be used.
c) For the design of the crest level of the proposed berm (or similar) the simulated Q100cc energy level + 0.5 m freeboard should be sufficient.
d) As alternative mitigation option to the berm, a parapet concrete wall on the upstream side of the road is proposed (which could be placed on top of sheet piling).
e) In the detailed design phase erosion protection should be designed along the road/berm.

Our flood study report dated July 2024 proposed a flood wall on the Stonewood Estate as a flood mitigation measure which would protect the Stonewood Estate buildings during the Q100cc flood. Our study only focused on possible mitigation measures on the Stonewood Estate. The 2025 flood study report by Graeme McGill with a proposed flood wall upstream of the Stonewood Road, is a mitigation measure which we support since it deals with the flooding issues on the Stonewood Estate, it will solve the flooding of the Stonewood Road, and it will also limit upstream backwater. We therefore recommend that the report by Graeme McGill Consulting is used by the CoCT, after revision considering our proposed changes listed in (a) to (e) above.

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Yours sincerely



Professor Emeritus Gerrit. R. Basson
Managing Director (PhD, PrEng)

ANNEXURE C: COST ESTIMATE OF MITIGATION MEASURES

Client: SLM Developments (Pty) Ltd

Project No: P2222

Mosselbank Canal - Supplementary Floodline Study

Cost Estimate: Option 1 - Stonewood Drive Flood Berm

Accuracy - High Level

Date: 16 October 2025

REF NO	DESCRIPTION		AMOUNT
1	**CONSTRUCTION COSTS**	**R**	**462 132.00**
	Section 1: Preliminary & General	R	82 522.00
	Section 2: Site Clearance	R	5 000.00
	Section 3: Earthworks (construction and shaping of new proposed berm)	R	95 500.00
	Section 4: Roadworks (raising and lowering of sidewalks at overland escape routes)	R	20 610.00
	Section 5: Erosion protection (Amendment of existing escape route and erosion protection for new proposed berm)	R	258 500.00
2	**CONTINGENCIES (10%)**	**R**	**46 213.20**
3	**PROFESSIONAL FEES (ECSA Fee Scales May 2025 -10%)**	**R**	**77 776.82**
SUB-TOTAL (Excl. VAT)		**R**	**586 122.02**
3	**Add 15% VAT**	**R**	**87 918.30**
TOTAL (Incl. VAT)		**R**	**674 040.32**

Client: SLM Developments (Pty) Ltd

Project No: P2222

Mosselbank Canal - Supplementary Floodline Study

Cost Estimate: Option 2.1 - Stonewood Drive Low Brick Wall

Accuracy - High Level

Date: 16 October 2025

REF NO	DESCRIPTION	AMOUNT	
1	**CONSTRUCTION COSTS**	**R**	**620 528.25**
	Section 1: Preliminary & General	R	108 921.38
	Section 2: Site Clearance	R	5 000.00
	Section 3: Low Level Brick Wall	R	368 496.88
	Section 4: Roadworks (raising and lowering of sidewalks at overland escape routes)	R	20 610.00
	Section 5: Erosion protection (Amendment of existing escape route)	R	117 500.00
2	**CONTINGENCIES (10%)**	**R**	**62 052.83**
3	**PROFESSIONAL FEES (ECSA Fee Scales May 2025 -10%)**	**R**	**104 434.90**
SUB-TOTAL (Excl. VAT)		**R**	**787 015.98**
3	**Add 15% VAT**	**R**	**118 052.40**
TOTAL (Incl. VAT)		**R**	**905 068.38**

Client: SLM Developments (Pty) Ltd

Project No: P2222

Mosselbank Canal - Supplementary Floodline Study

Cost Estimate: Option 2.2 - Stonewood Drive Low Concrete Wall

Accuracy - High Level

Date: 16 October 2025

REF NO	DESCRIPTION		AMOUNT
1	**CONSTRUCTION COSTS**	**R**	**911 618.25**
	Section 1: Preliminary & General	R	157 436.38
	Section 2: Site Clearance	R	5 000.00
	Section 3: Low Level Concrete Wall	R	611 071.88
	Section 4: Roadworks (raising and lowering of sidewalks at overland escape routes)	R	20 610.00
	Section 5: Erosion protection (Amendment of existing escape route)	R	117 500.00
2	**CONTINGENCIES (10%)**	**R**	**91 161.83**
3	**PROFESSIONAL FEES (ECSA Fee Scales May 2025 -10%)**	**R**	**153 425.35**
SUB-TOTAL (Excl. VAT)		**R**	**1 156 205.43**
3	**Add 15% VAT**	**R**	**173 430.81**
TOTAL (Incl. VAT)		**R**	**1 329 636.24**