

Eastern Busway Alliance

Response to questions raised by Auckland Council Healthy Waters - 21 December 2023

Question

Flood/Overland flowpath effects

- Figure 33 show the difference in flood depths during a 100 year storm event between design and existing scenarios. Some properties are showing more than 100mm increase which has been not been mentioned in the text of the report as below. Please request to clarify the increase in depth to 500mm within 23-25 Burswood Drive, 24- 26 Dulwich Place which are residential properties and 242, 254, 262 and 320 Ti Rakau Drive commercial properties that will have increased flood depths for more than 500mm at certain locations?
- 22, 24 and 26 Dulwich Place have small areas of increased flooding depth of up to 100 mm
- 25, 27 and 38 Heathridge Place have small areas of increased flooding depth of up to 100 mm
- 18 and 22 Shenton Place have small areas of increased flooding depth of up to 100 mm
- 320 Ti Rākau Drive has overland flow increases along the rear of the property depth of up to 100 mm
- 25 and 27 Burswood Drive have small areas of increased flooding depth of up to 100 mm
- 9a and 9b Midvale Place have small areas of increased flooding depth of up to 100 mm
- 380 Ti Rākau Drive has areas of existing flooding. Flooding will increase in depth by up 100 mm due to the geometric design of the cycleway.



Figure 33. EB3C design case 100-year flood depth difference (pipe blockage)

Response

The flood map referred to in your question (Figure 33, 100-year flood depth (shown above)) is from Section 6 of the Stormwater Assessment which covers the potential Project flooding effects with **no mitigation** in place. Section 7 of the Assessment covers the Project **with the Project flood mitigation measures in place**. Figure 40 in Section 7 (recreated below) is the equivalent 100-year flood depth **with mitigation** in place. There is no flooding of private property in Figure 40. We confirm that the mitigation measures set out in the Stormwater Assessment will be implemented by the Project.



Figure 40. EB3C design case with mitigation 100-year flood depth difference (pipe blockage)

Section 7.1.2 (Mitigation of Flooding Effects) in the Stormwater Assessment reads:

“To address potential flood effects (without pipe blockages applied), several design changes were made in the flood model to achieve appropriate mitigation for the private properties that were identified in Section 6.1.3 as being potentially impacted. The proposed mitigation for EB3C consists of the following:

- *Location (1): impacts have been mitigated by providing two new MetroPits (i.e. catchpits) upstream of the raised table at the busway intersection with Burswood Drive to intercept flow obstructed by the raised table. A 675 mm pipe conveys the intercepted stormwater to the existing stormwater network (see Figure 35)*
- *Location (2): the design surface of the geometric design of the cycleway between the stream in the Burswood Esplanade Reserve and the bus depot site has been lowered to allow flood water to flow across the location of the proposed cycleway to the stream as it would currently (see Figure 36).*

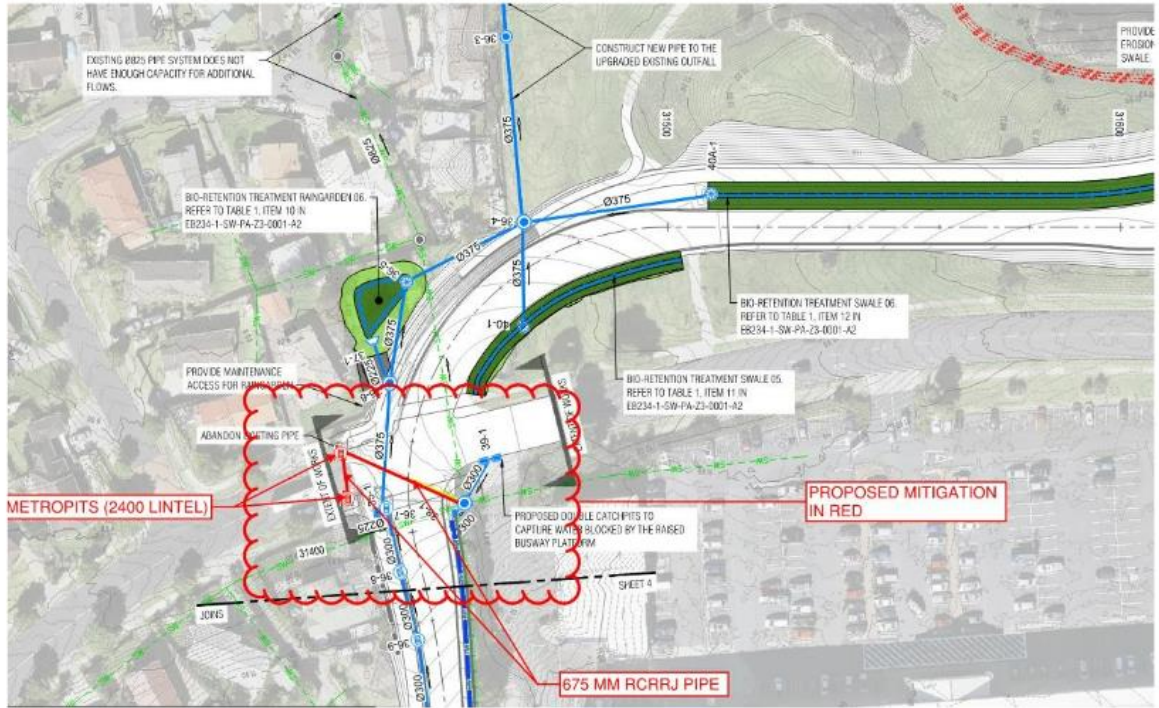


Figure 35. EB3C proposed mitigation for location 1

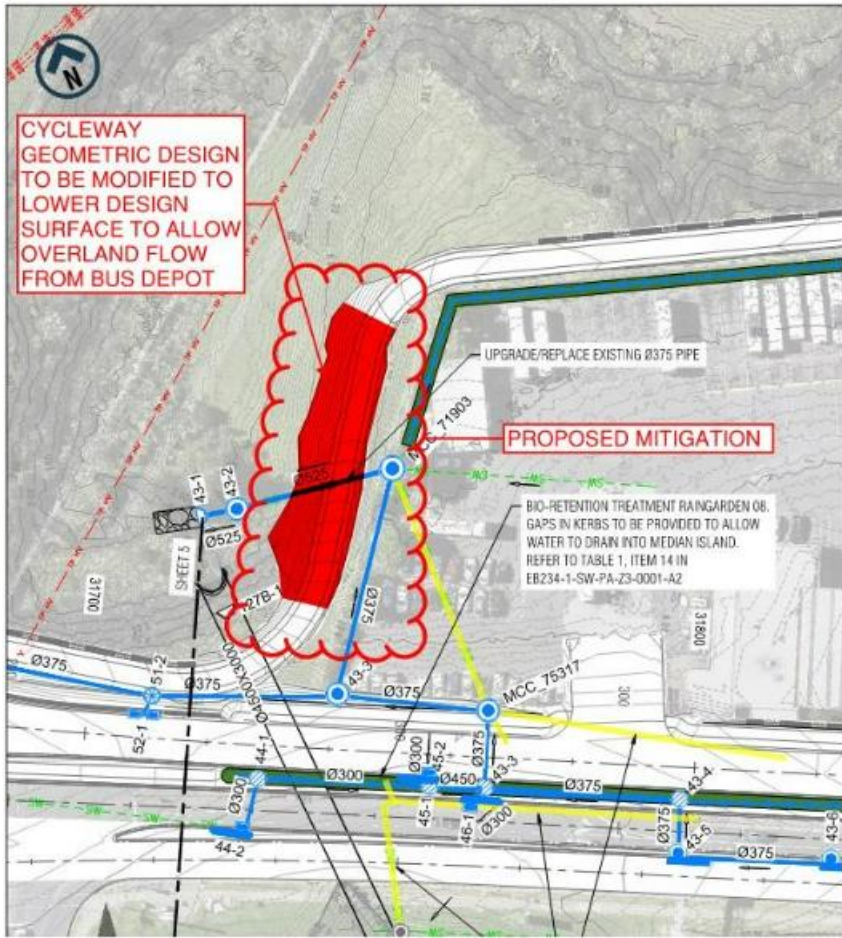


Figure 36. EB3C proposed mitigation for location 2



Figure 37. EB3C design case with mitigation 10-year flood depth difference



Figure 38. EB3C design case with mitigation 100-year flood depth difference

The recommended mitigation removes all the impacts to private property and parks as demonstrated in Figure 37 and Figure 38 (above) for the 10 and 100-year events respectively....”

Question

Water Quality

- Please request to add columns in Table 3 showing existing catchment areas, and additional development areas that will be served (sic) by each outfall. The impervious areas of the proposed development is also required.

Table 2: Summary of proposed EB3C stormwater devices

Outfall	Treatment Category	Treatment Devices	Comment
New Outfall 01A-1	Not Treated	None	Cycleway stormwater from busway bridge.
Existing outfall MCC_108479 (SAP ID 2000029871)	EBA BPO	Bioretention swales and raingardens	Busway stormwater (including busway bridge over Pakuranga Creek and Bridge B around the back of China Town) treated by three green infrastructure devices.
New Outfall 09-1	Not Treated	None	This pipeline only conveys high flows that bypass the network for outfall MCC_108480 to reduce flooding at the low point on Tī Rākau Drive.
Existing Outfall MCC_108480	EBA discretionary for existing network	GPT	A GPT (designed to remove 50% TSS) will be provided for the existing network targeting stormwater from

Response

The philosophy for treatment of stormwater for the Project goes beyond only treating increased areas of impervious surfaces and/or modified pavements. The project is achieving reductions in existing contaminant loads to the environment across the Project and represents a net positive effect. All stormwater from new and modified pavements is at least treated by Gross Pollutant Traps (designed to remove 50% Total Suspended Solids) with the parts of the busway and Ti Rakau Drive (where the busway is adjacent) treated by green infrastructure. In addition, the Project has targeted high use roads with pavements which will not be modified by the Project (i.e. parts of Ti Rakau Drive) and existing catchments (i.e. industrial, commercial and some residential catchments) for treatment via GPT or green infrastructure to achieve an overall reduction in the existing contaminant loads discharge to the environment. Pre and post catchments and which catchment areas are treated are shown in catchment map sketches (attached).

Please do not hesitate to contact me should you have any further questions or queries.

Ngā mihi nui,

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