

## 7. HULVERSTONE DRIVE STOPBANK

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The purpose of this report is to provide the Board with information about the worth of the proposed Hulverstone Drive Stopbank east of Anzac Drive. The proposal is to be considered by the Parks, Gardens and Waterways Committee.

### BACKGROUND

At its 30 June 2003 meeting the Board considered the results of consultation with Avondale residents about the proposed Hulverstone Drive Stopbank. A deputation of residents spoke about two issues: street flooding and the proximity of the stopbank to property boundaries. Two residents from the 2 to 18 Hulverstone Drive area were opposed to the proposed route and questioned the need for a stopbank.

It was then suggested that the Anzac Drive embankment would form a natural divide in the stopbank such that it could be considered as two separate stopbanks. The Board requested more information about this possibility, and in particular about the value of the eastern section.

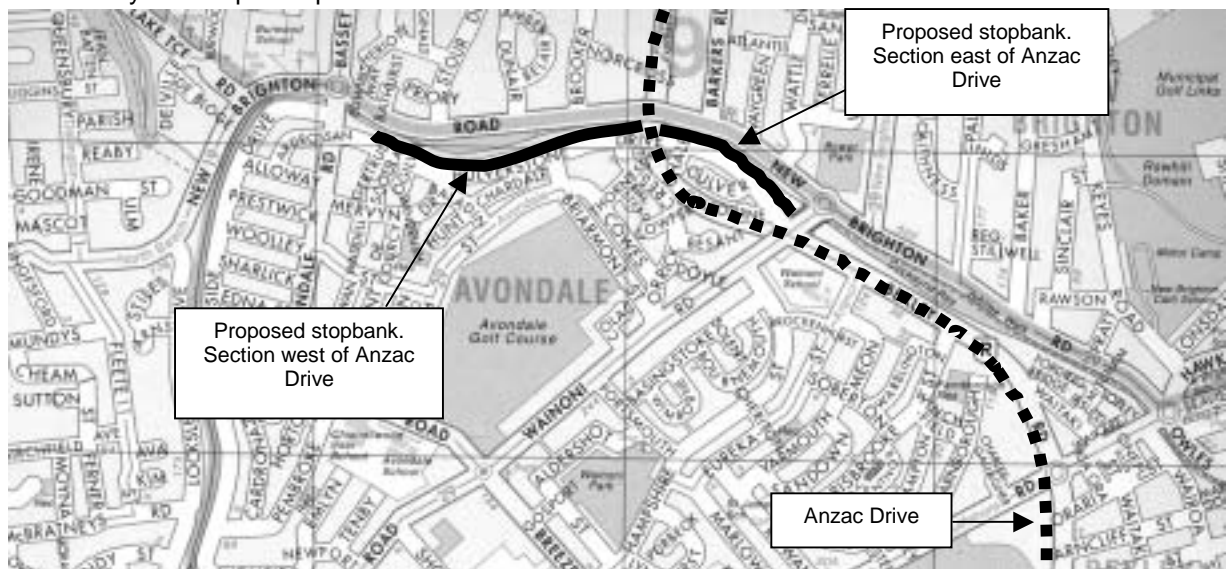
### STOPBANK EAST OF ANZAC DRIVE

About 80 properties in Chale Lane, Calbourne Lane, Culver Place and numbers 2 to 47 Hulverstone Drive are situated north-east of Anzac Drive and west of Wainoni Road. This area would be protected by the eastern arm of the stopbank, and this section of stopbank would cost an estimated \$75,000.

Land in this area varies in level between 11.0 and 11.2 metres (mean sea level is 9.04 metres to CDB datum). Much of it is around 11.2 metres, which is stopbank level. There is no indication of house floors lower than 11.2 metres. Thus the proposed stopbank would provide no protection to houses and little protection to land in this area. The loop of Anzac Drive and Wainoni Road between the two bridges is high enough to stop flood water from invading the lower lying Bexley area.

Responses from this eastern area to the written consultation information (March/April 2003) are summarised on the following page. The written responses indicate a fairly even division of opinion.

Additional comments made at a meeting between residents and staff on 17 April 2003 suggested that a majority of river bank residents were opposed to the proposed stopbank location, although not necessarily to a stopbank per se.



QUESTIONNAIRE RESPONSES		
2 - 18 Hulverstone Drive Residents <sup>1</sup>		
ISSUE	PRO-STOPBANK RESPONDENTS' VIEWS	ANTI-STOPBANK RESPONDENTS' VIEWS
<b>Cost</b>		
<b>Effect on views of river channel</b>		3 think stopbank will adversely affect views of river
<b>Effect on views of river bank</b>		3 think stopbank will affect river bank appearance
<b>Wider stopbank option - appearance</b>		
<b>Wider stopbank option - road safety</b>		
<b>Landscape plantings and appearance</b>		6 have complaints about some aspect of river banks
<b>Questionnaire returns</b>	4	3

#### STOPBANK WEST OF ANZAC DRIVE

Because there is lower land west of Anzac Drive the risk to property occurs predominantly in this area. A stopbank from 53 to 180 Hulverstone Drive would give a measure of protection to Hulverstone Drive and to the somewhat lower lying land to the south.

The proposed stopbank is to protect against the risk of street flooding and rare house flooding. One house has a floor level below a two per cent annual risk ("50 year return period") event. Three houses are subject to flooding in a one per cent annual risk ("100 year return period") event. Street flooding has a four to five per cent annual risk of occurring.

The stopbank would protect against a one per cent annual risk flood. Two stopbank alternatives have been proposed. The first is a low cost option; the second is intended to minimise environmental impact and is more expensive.

#### Stopbank Option 1

A grass bank where space permits and a low concrete wall disguised by ground-cover plants where the river berm is narrower. Option 1 (west of Anzac Drive) would cost an estimated \$145,000.

#### Stopbank Option 2

The second option proposed is to build a wider, predominantly earth bank in order to minimise the use of concrete and maximise the opportunity for tree planting. The greater width of this bank would be accommodated by narrowing Hulverstone Drive by 1.5 metres. Option 2 (west of Anzac Drive) would cost an estimated \$285,000.

The minimum environmental impact option is most relevant in this western area where river bank space is limited. The river berm east of Anzac Drive is generally wider.

Responses from residents west of Anzac Drive to the written consultation information (March/April 2003) are summarised on the following page.

#### COSTS VERSUS BENEFITS

If the eastern section of stopbank were omitted the cost of the western section would still exceed the benefits of flooding reduction. Calculated from the estimated value of saved flood damages these benefits are approximately \$25-35,000.

<sup>1</sup> All responses from the "eastern area" were from numbers 2 to 18 Hulverstone Drive.

	QUESTIONNAIRE RESPONSES Hulverstone Drive Residents 49 – 181 Hulverstone Drive		QUESTIONNAIRE RESPONSES Residents Distant from River	
ISSUE	Pro-Stopbank Respondents	Anti-Stopbank Respondents	Pro-Stopbank Respondents	Anti-Stopbank Respondents
Cost		4 disapprove stopbank cost		8 disapprove stopbank cost
Effect on views of river channel		8 think stopbank will adversely affect views of river		6 think stopbank will adversely affect view of river
Effect on views of river bank		6 think stopbank will affect river bank appearance		6 think stopbank will affect river bank appearance
Wider stopbank option - appearance	9 would like the wider stopbank option  2 do not want wider stopbank option		28 would like the wider stopbank option	
Wider stopbank option - road safety	8 say road narrowing to implement the wider stopbank option will compromise road safety	1 says road narrowing to implement wider stopbank option will compromise road safety	3 say road narrowing to implement the wider stopbank option will compromise road safety	
Landscape plantings and appearance	5 happy about river bank appearance		3 happy about river bank appearance	1 happy and 2 have complaints about river banks
Questionnaire returns in category	24	10	98	9

Total number of information packs sent out 680  
Total number of replies 149 (22% response)

## CONCLUSIONS

The Anzac Drive embankment would form a natural divide in the proposed stopbank so that it can be considered as two separate stopbanks.

About 80 properties in Chale Lane, Calbourne Lane, Culver Place and numbers 2 to 47 Hulverstone Drive could be protected by the eastern arm of the stopbank. However, because land levels are relatively high a stopbank would provide little protection to this area.

The majority of potential for damage is to the west and south of Anzac Drive. A stopbank to protect this area alone would reduce the cost by about a third. However, costs would still exceed the benefits of flooding reduction.

### Staff

**Recommendation:** That the Board recommend to the Parks, Gardens and Waterways Committee that the Hulverstone Drive stopbank construction be deferred until sea level rise, if it occurs, increases the benefit of constructing a stopbank.

### Chairperson's

**Recommendations:**

1. That the abovementioned recommendation be adopted.
2. That a further report be provided on the enhancement of the Hulverstone Drive riverbank environment and the effectiveness of the existing stormwater drainage system.