

Figure 11.9: Difference in Water Surface Levels between Existing Conditions and Option 5

11.3.5 Option 6

Option 6 is constructing an overflow channel to the south east of town directing flow from the Broken Creek into the Deep Creek system. This option is dependant on the Lower Goulburn drainage scheme. This option is illustrated in Figure 11.10 below.

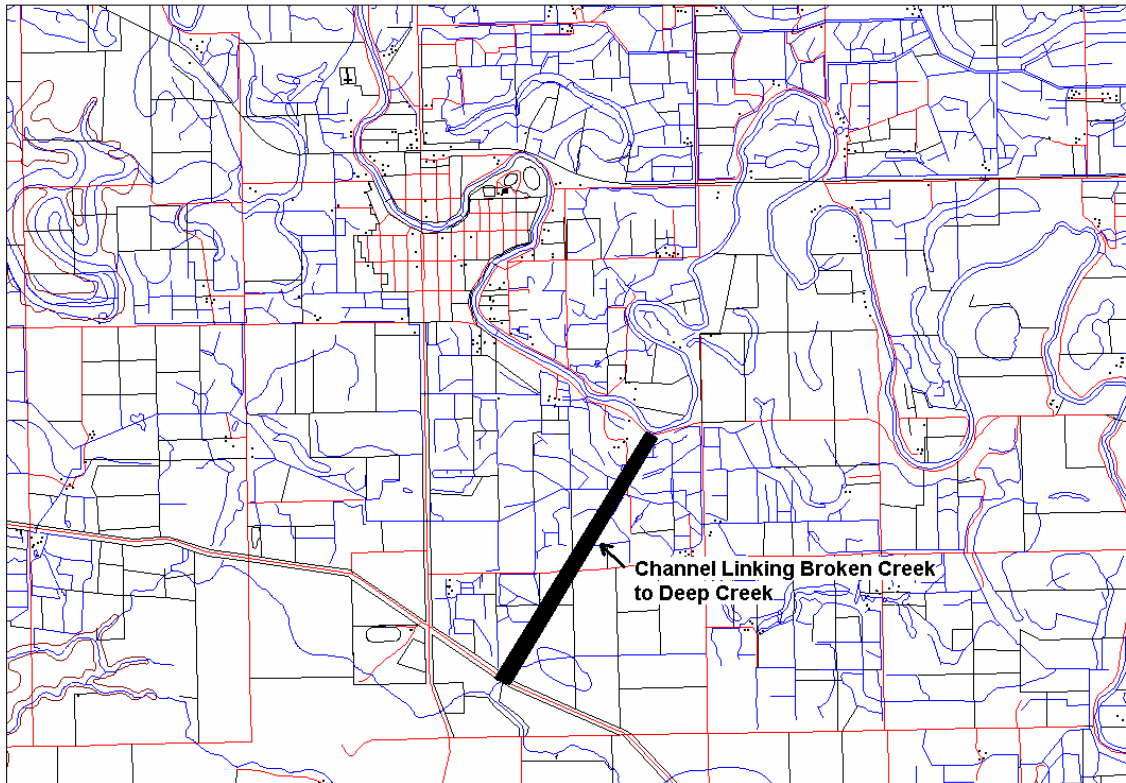


Figure 11.10: Location of Option6

The hydraulic model indicated that for the 100-year ARI the entire town remains flood free. The additional benefit is within the northern floodway where levels are lowered by some 200mm, this means that there would be some freeboard before the levees were overtopped. The freeboard varies as the levee has some low points. Figure 11.11 shows the difference in the 100-year ARI water surface between Option6 and existing conditions.

A preliminary estimate of the cost to construct a 100m wide and approximately 1.5m deep channel was undertaken. The preliminary cost estimate was \$5.8 million, which included excavation and dumping of excess material, siphons and land acquisition.

As discussed in Section 8 the total AAD calculated for the existing Nathalia Township is estimated to be \$508,000 (in round terms). The AAD damages was reassessed with the mitigation option in place. With the channel protecting against a 100-year ARI event the AAD damages was reduced to \$103,000 (in round terms) a reduction of \$405,000. The assumption is that there is no change to the damages for any event greater than the 100-year ARI event and the town is protected for events less than a 50-year ARI event. The other advantage of this option is it would reduce social impacts on the community by reducing stress as there is some freeboard on the levees. While it is difficult to place an exact monetary value on these benefits it could be expected that it would amount to some \$25,000 annually. Thus, the benefit of the recommended floodplain management measure is \$430,000.

It is important to note the reduction in flood damage has not allowed for freeboard on the levees and therefore the reduction in flood damage is overestimated. Additional works on the levees would be required.

This option would require new dwellings, retail and commercial type buildings to be constructed above the 100-year ARI flood level, which is generally 900 to 1,200mm above the ground level. Also, subdivision on land where the flood depth exceeds 500mm would be prohibited under the Victoria Planning Provision, as these areas would be placed within the 'Floodway Overlay'.

In addition, the Broken Creek Management Strategy (SKM, 1998) has documented the principal of cross catchment transfers, which this option would create. This option presents concerns at the final community reference group meeting.

An alternative overflow channel was mooted further upstream commencing near the corner of Prentices and Walsh's Bridge Roads. The route of this overflow channel to the Deep Creek floodplain would be some 2 kilometres longer compared with the overflow channel option closer to Nathalia and would include an additional road crossing. The cost would be at least 70% more amounting to some \$10 million making this option uneconomically unviable.