Brownhill Creek Linear Park Option

This is proposed as an option that was not put forward in the Draft Stormwater Management Plan for Brownhill and Keswick Creeks.

Firstly, buildings on the side of the river channel are in a position which blocks the natural pathway of stormwater discharge during high flows. The location of such houses and businesses, for which planning approval was obtained from Councils, contributes to flooding outside the immediate riparian zone across the 100 year ARI floodplain.

Secondly, all hard surfaces that discharge into the stormwater system contribute directly to increased flood flows in these creeks. Every building development that increases hard surface areas has an incremental effect on the magnitude of floods. Planners should have realised that a stream channel and flood plain that would have been effective in dealing with flood flows from the natural (pre-European settlement catchment) will be inadequate to deal with the same size rainfall events after the catchment is developed.

Hence the combination of channel overflow restrictions and the vast expanse of urban area are a catalyst for the flood problem we now face. Furthermore, with urban consolidation this problem will be exacerbated, and the100yr ARI flood will increase in magnitude.

A flood management strategy that addresses the cause of the problem would be a more robust and resilient solution than one that only addresses the consequences, such as the current draft stormwater management plan.

A four step approach is proposed.

(1) Start by implementing an effective channel clearing and maintenance program in consultation with creekside dwellers and businesses
(2) Concurrently implement an effective FloodSafe program for all floodplain residents, incorporating SMS/call warnings to all floodplain dwellers.
(3) Complete a study of riparian zone options reach by reach, determining flow capacity in relation to that required for flood mitigation, groundwater interactions, environmental flow requirements, stormwater quality, and opportunities for provision of wetlands for water quality improvement and water harvesting, and take account of urban amenity, recreational value and biodiversity in evaluating costs and benefits, and establishing a benchmarking system to allow determination of a fair price for non-compulsory acquisition of creekside properties for creating reaches of linear park; and
(4) Commence channel capacity works starting downstream where required to augment all components of this plan and initiate a non-compulsory long-term land acquisition program, based on costed plans for each reach with periodic flood studies to account for progress of the system and changes in prices. A process for encapsulating incremental costs of flood management should be attached to building approvals and used to create a reserve for non-compulsory purchase of creekside properties.

Some basic planning measures would also be required at an early stage. This could include (1) an immediate moratorium on extensions and voluntary improvements requiring a building approval to all creekside properties; (2) producing and disseminating a booklet "So you want to buy a creekside property" that spells out the obligations of creekside dwellers to keep the channel cleared to an agreed standard and remove obstructions, the rights of councils to inspect and require work to be done, vegetation control and erosion prevention, entitlements and allocations (if any) to surface water and groundwater and potential caveats on preventing building improvements and on sale that the council would be the purchaser at a fair price; (3) establish a transparent system for determining a fair price for a property in the future, based on reliable defensible and fair methodology.

Concerning the costs of creating a linear park, there are some important observations that need to be reported. Firstly the value of land adjacent a linear park increases significantly over a much larger area than the area of land purchased to create the park. Preliminary results of a University of Adelaide PhD student suggest that the cumulative increase in land value of existing housing stock on the aureole surrounding a linear park in the Brownhill Creek urban catchment could be twice the cost of the land to create the park for a strip 30m wide (pers. Com. Ramesh Rajasegaran, University of Adelaide).

There are costs associated with restoring sites, increasing channel capacity including by laying back banks, installing paths and appropriate revegetation to increase amenity and biodiversity without increasing flood heights. There are also management costs which would be more than covered by council rates for the areas where land values have risen.

In 100 years time, Brownhill Creek will still be there although owners of creekside properties will not. Average turnover times are of the order of 10 years so there is a high probability that in 30 or so years linear parks can be established over reaches where the economics are favourable. Every year that this action is delayed will cost the community more to achieve the same outcome. While it would have been much simpler if this was done 100 years ago, it can still be done today with the will required to follow the NRM plan, Greater Adelaide 30 year plan, Our Cities, Our Future and the stormwater Management Strategy.

By way of comparison $133M would cover land acquisition costs for a 30 m width for 4.5 km of channel at $1000/sq.m. Reach by reach assessments can be made to determine which reaches are most cost effective to resume as linear parks. If provision is made for wetlands, then harvesting can take place and water can be recharged at the airport (to blend with recycled water for the Glenelg to Adelaide recycled water pipeline. Water sensitive urban design within the catchment can improve the quality of stormwater and the proportion that can be harvested from wetland systems. The benefits of such a system would include flood mitigation, water harvesting, coastal water quality improvement, improved amenity, biodiversity, habitat, a buffer against the urban heat island effect and improved health through more recreation and improved connectivity of urban areas by foot and bicycle. Hence all benefits and all costs should be taken into account in comparing the current draft Stormwater Plan with options such as the one above which is in better keeping with the objectives of existing plans.

(Views in "Brownhill Creek Linear Park Option" do not necessarily reflect the widely held views of members of No Dam in Brownhill Creek Action Group. However these ideas are recognised as a useful contribution to the debate on the Draft Stormwater Management Plan.)