

## **ADDITIONAL INFORMATION FOLLOWING 2015 CONSULTATION ON PART B WORKS**

**JULY 2015**

### **Why did the project consult the community with a preferred option? Is Option D a “pre-determined outcome”?**

Option D has been identified by the project team as the preferred option on the basis of the detailed investigations summarised in the Part B Report. It is not a pre-determined outcome because the five catchment councils have not yet decided their position on the outcomes of the Report.

The consultation process sought to inform the community about all the options, not just Option D. In particular, the consultation sought to understand the level of support for Option D with reasons for and against it compared with other options. This information is needed so that the five catchment councils can make a decision on proposed flood mitigation works for upper Brown Hill Creek (Part B works).

Now that the consultation process has completed, feedback from the community will be reported to the five catchment councils. Each council will then determine its position and based on what councils have decided a recommendation on Part B works will be made to the State Government’s Stormwater Management Authority.

### **Is the updated Bureau of Meteorology data and associated hydrology modelling complete and accurate?**

The updated rainfall data (intensity / frequency / duration (IFD)) released by the Bureau of Meteorology (BoM) in 2013 is part of a suite of information comprising a new edition of the ‘Australian Rainfall and Runoff’ publication (AR&R). The updated IFD data supersedes the data previously published in 1987 as part of the previous edition of AR&R.

As the IFD data is based on previously recorded rainfall events, the greater length of record used to derive the 2013 data gives increased confidence that this data is more reliable.

In Australia many hydrologic studies use the IFD data. Hydrologic modelling for the 2012 Stormwater Management Plan (SMP) study used the 1987 IFD data. Use of the updated data in the Part B process is based on expert hydrology opinion provided through the Department of Planning, Transport and Infrastructure (Principal Stormwater Engineer). The full opinion is included in the Part B Report at Appendix 2.

The expert opinion satisfactorily addresses cautionary notes by the BoM which accompanied the new IFD data. In particular, the expert’s opinion confirms that expected updates by the BoM to other hydrologic data are unlikely to have any significant impact on the current modelling. Up to now no further information of relevance to hydrologic modelling for the Brown Hill Keswick Creek catchment has become available.

When detailed designs for upper Brown Hill Creek flood mitigation works are carried out (probably in the latter half of a 10 year overall catchment program), it is expected that latest modelling systems and hydrological data then available would be applied.

As outlined in the Part B Report, it is understood that the IFD data has not been adjusted for predictions of future trends due to climate change. However, at the one in 100 year standard of design any moderate adjustments in the hydrologic modelling would not significantly alter the preferred flood mitigation solution (Option D).

### **Why did the project write the report itself instead of engaging an independent engineering company?**

The Part B Report is the compilation of expert advice and results of investigations by a number of consultants and service providers operating in their specialist fields (as acknowledged at the front of the report). The strategy approved by the five project councils indicated that the work would involve the coordination of investigations by various consultants, as distinct from the overall work of a single consultant.

Coordination was carried out by the Project Director with the assistance of staff from catchment councils and technical advisors from State Government agencies. The report was endorsed by the project steering group comprising Chief Executives or delegates of the project councils and formally received by all the councils for the purpose of community consultation.

### **How has the Part B Report built upon previous engineering studies?**

Studies of potential flood risk across the catchment of Brown Hill and Keswick Creeks have been carried out since 1971. However, it was not until 2006 that a study was carried out using a modern generation of floodplain modelling software.

In 2003 Hydro Tasmania (now Entura) undertook flood mapping of the catchment for the then Patawalonga Catchment Water Management Board. An investigation of flood mitigation options and community consultation on the recommended options followed, which resulted in production of the Flood Mitigation Master Plan by Hydro Tasmania in 2006.

In respect of upper Brown Hill Creek, key elements of the 2006 Master Plan were:

- Two dams constructed in the rural part of the catchment; and
- Creek upgrade works between Hampton Street and Cross Road, Hawthorn.

In 2010 WorleyParsons was engaged by the five catchment councils to review the need for the two dams recommended in the 2006 Master Plan. The WorleyParsons investigations, resulting in the 2012 SMP, were carried out with the advantage of more advanced modelling and showed that improved flood mitigation could be achieved with one of three options involving a combination of:

- A single, smaller dam located in the Brownhill Creek Recreation Park;
- High flow bypass culverts laid under suburban streets in the urban part of the catchment (three alternative routes were identified);
- Creek capacity upgrade works between Hampton Street and Cross Road, Hawthorn; and

- Creek capacity upgrade works between Muggs Hill Road, Torrens Park and Hampton Street.

In the Part B process (2013 – 2014), further improvements in the floodplain modelling were made by WorleyParsons, including the use of updated hydrology. In addition, estimated costs of infrastructure construction were assessed more thoroughly by an independent specialist consultant. Eight alternative options were presented in the Part B Report involving a combination of:

- A dam at one of two sites (Brownhill Creek Recreation Park and Ellison Gully);
- High flow bypass culverts (as described in the 2012 SMP); and
- Creek capacity upgrade works of varying extents depending on whether there would be a dam or not.

In respect of upper Brown Hill Creek, advances that have been made in the investigations since 2006 are documented in the 2012 SMP and the Part B Report.

### **How can Option D provide the necessary flood mitigation for the entire catchment without an upstream detention dam?**

In upper Brown Hill Creek, peak flows and flooding result from either short duration storms which produce the most runoff from the urban area of the catchment, or longer duration storms which produce the most runoff from the rural area.

Under Option D, creek capacity would be increased to accommodate peak flow from the rural part of the catchment (due to longer duration storms) which is greater than the peak flow from the urban part of the catchment (due to shorter duration storms).

All of the eight options investigated in the Part B Report, including Option D, provide approximately the same level of flood protection for the one in 100 year storm.

The options vary in the way in which this level of flood protection is provided. There is no such thing as a 'dam only' option because a flood detention dam will only reduce the impact of runoff from the rural part of the catchment. All options include creek capacity upgrade works to varying extents to mitigate the impact of runoff from the urban part of the catchment, as well as creek rehabilitation works.

In the case of Option D, the flood protection is provided in the form of creek capacity upgrade works on an estimated 66 properties. Floodplain modelling has confirmed that this approach provides the required level of flood protection for the upper Brown Hill Creek catchment, as do Options A1, A2, B1 and B2 which include a detention dam.

Option D has the added advantage of providing additional reserve capacity if urban peak flows in the future are greater than estimated due to redevelopment, climate change or increases in land use density.

### **Why are detailed designs of proposed creek capacity upgrade works not available?**

The project has not yet commissioned site specific detailed designs for creek capacity upgrade works. This is because this level of investigation cannot commence until there is

agreement about a plan for the Part B works. The project needed to first consult the community about the options for Part B works to inform decision making by the five catchment councils. Before the project can proceed to the stage of detailed design a plan of the proposed works endorsed by the five councils has to be approved by the Stormwater Management Authority.

Creek capacity upgrade works would involve many private properties, and any more detailed design would require extensive liaison with individual property owners and potentially design professionals (eg landscape architects) acting on their behalf. This would involve significant financial and other resources and be a wasteful exercise if Option D is not adopted.

Nevertheless, the Part B Report outlines creek upgrade design treatments and reasonably approximate dimensions to indicate the extent of creek widening for the relevant sections along its length. In general, the creek would be widened across its base and not increased at the top width, thereby not reducing usable land area on either side of the creek.

**Do the costings for Option D reflect the true costs of easement compensation and factor in possible litigation by property owners?**

Estimated costs in the Part B Report to create easements in privately owned sections of creek for creek capacity upgrade works have been prepared by an independent expert valuer in accordance with the principles of compensation pursuant to the Land Acquisition Act.

The easement cost estimates for each flood mitigation option are preliminary estimates for project feasibility and planning purposes only, and are considered to be a reasonable approximation based on various assumptions as set out in the easement acquisition report at Appendix 19 of the Part B Report. In terms of compensation, more detailed individual property assessments would be undertaken should creek capacity upgrade works proceed.

Compensation associated with easement creation is based on any potential property related losses, disturbance and reasonable costs, including professional fees, incurred by the property owner.

There is no allowance for litigation in the cost estimates for any option. In respect of Option D it is intended to secure easements for creek capacity upgrade works by negotiation rather than by compulsory acquisition. Property owners may also choose to be responsible for maintaining the constructed works themselves and thus avoid the requirement for an easement. Therefore, the risk of litigation is low.

**How can we guarantee that the old river red gum along Wilberforce Walk, Forestville will not be impacted by creek capacity upgrade works?**

Creek capacity upgrade works and creek rehabilitation require the replacement of unsuitable trees in the creek channel with local native species in order to improve the environment and biodiversity of the creek and its environs. In particular, every effort would be made to retain prominent trees, including those classified as significant, regulated or heritage listed.

The Wilberforce Walk tree is identified in the Part B Report as a significant tree that does not have to be removed as part of any creek capacity upgrade works in the area. The project has also made it clear that other prominent trees will be retained where possible, and that trees which contribute to the amenity and environmental value in public parks traversed by upper Brown Hill Creek are not affected by the preferred flood mitigation option.

The project is aware of an arborist report commissioned by the West Unley Protection of Trees (WUPOT) Community Group regarding the river red gum in Brown Hill Creek alongside Wilberforce Walk at Forestville. In the detailed design of any future works in the area, particularly to ensure that any tree damaging activity is avoided, consideration would be given to expert advice such as that commissioned by WUPOT. A conclusion of the WUPOT arborist's report is that:

It appears to be possible to redevelop Brownhill Creek in the vicinity of the tree without compromising the health, longevity and stability of the tree. If redevelopment of the creek is undertaken appropriately, it has the potential to improve the environmental conditions for the tree, as well as improving the landscape value of the tree.

### **Why did Mitcham Council allow the un-authorized display of “no dam” banners around the Council area?**

Mitcham Council followed its normal process in the matter by identifying and contacting the persons responsible for erecting the banners in order to give them, firstly, verbal advice and then a formal written notice to have the banners removed. Normally, in such cases where unauthorised banners are erected, the council allows a reasonable time for their removal.

### **How will creek rehabilitation improve biodiversity along Brown Hill Creek?**

The intention of creek rehabilitation along upper Brown Hill Creek is to remove invasive and unsuitable vegetation from within the creek channel and replace it with local native species of vegetation on top of the creek banks. This will restore the creek to a more natural environment and improve the creek as a valuable natural biodiversity corridor and habitat for native fauna. Replacement vegetation species would include South Australian Blue Gums, River Red Gums, grasses, sedges and rushes. Selection of plants for individual properties would be decided in consultation with the property owner.

### **How did the consultation process ensure all voices were heard and will be reported fairly?**

The community consultation process endeavoured to ensure that all interested persons, generally within the areas of the five catchment councils but particularly those potentially affected by proposed works, were made aware of the community consultation through:

- Communicating widely about the project, including on the project website, catchment councils' website, advertisements in suburban (Messenger) newspapers and displays in council offices, community centres and libraries
- Preparing summary information materials, including fact sheets and brochures to help people understand the eight options for Part B works
- Conducting four open days

- Writing to the owners and occupiers of private properties where works are proposed under one or more of the options and inviting them initially to attend meetings and later to request individual discussions with project and/or council staff if necessary
- Liaising with or advising identified community special interest groups and other key stakeholders
- Inviting any interested member of the public to request a feedback form and/or provide a written submission.

The consultation report will summarise the information gathered throughout the consultation process and clearly identify:

- Feedback from creek owners and occupiers
- Feedback from community groups, businesses and organisations
- Feedback from the wider community

The consultation report will summarise and present findings to assist decision making.