

HAPPY VALLEY OUTFALL CHANNEL UPGRADE PROJECT

COMMUNITY REFERENCE GROUP

Tuesday 30 July, 2013

1. WELCOME

SA Water Project Team:

Steve Dangerfield	Manager, Stakeholder Engagement (Facilitator)
Simon Bower	Project Manager
Alyssa Freeman	Stakeholder Engagement Officer

Reference Group Members:

Allan Macdonald	Ted Van Dijk (apology)
Peter Rankine (apology)	Greg Stephenson
Alan Foran (apology)	Rob Fox (apology)
James Taylor	Ron Flack
Michael Bignell	Trevor Browne

Steve Dangerfield welcomed participants to the second community reference group.

2. AGENDA

Steve Dangerfield introduced the meeting agenda and sought agreement from participants before proceeding.

3. PROJECT UPDATE

Steve provided an overview of the work SA Water has undertaken since the group last convened.

SKM were engaged to undertake an assessment of the Happy Valley Dam Outfall Channel in its current condition. SKM undertook the following investigations:

- Hydrological model
- Identified catch drain capacity
- Community site walk April 2013
- Hydraulic modelling of extreme flood conditions
- Geotechnical review
- Field survey commissioned (approx 4.2km length of the catch drain)
 - Survey of catch drain
 - Photogrammetric field survey of dam crest, reservoir gauge boards, spillway area and culvert structures
 - Field survey of outlet channel easement (tress)
 - Three dimensional laser scan of outlet channel

SKM delivered their first report to SA Water in June 2013. SA Water requested additional information; a second report (containing several remediation options) was presented to SA Water in July 2013.

4. STAGING AND LOCATIONS FOR REMEDIATION

Steve detailed the areas of the channel that SKM determined were priority for remedial work. Steve reiterated SA Water will be staging works according to their level of priority.

Chainage 180 (near temporary fencing) was identified as the priority area. Chainage 380-440 (near council wetlands) were also identified as requiring remediation.

The group gave support to the priority locations outlined in the SKM report. The group suggested additional investigations be undertaken at chainage 60 (just downstream from the existing rock gabions).

5. FLOOD MITIGATION

SKM were commissioned to undertake a study in order to:

- Understand the existing flood capacity of the reservoir and outfall channel;
- Assess the likely impacts on the flood capacity of the dam and outlet channel if the channel were to be blocked by debris, such as might result from undermining of the outlet channel banks and collapse of one or more trees into the channel;
- Assess the increase flood risk to the adjacent residential area from blockage of the channel;
- Assess the increase in likelihood of dam overtopping as a result of blockage of the channel;
- Prepare a concept design and cost estimate for upgrade and stabilisation of the outlet channel.

A sensitivity analysis was conducted on three blockage scenarios. These blockages were assumed to form at three locations identified as vulnerable due to the presence of large trees, significant undercutting or relatively low channel banks. The three locations were chainage 185, 300 and 480

The blockages were modelled by including a weir structure in the model at these locations, with three different weir heights at 25%, 50% and 75% of the channel blocked by depth.

Model was run for 1 in 100, 1 in 1,000 and 1 in 10,000 year flood events; results demonstrate that the location most vulnerable to flooding as a consequence of blockage is near the downstream end of the channel (Chainage 185). A greater than 50% blockage in the downstream end during a 1 in 100 flood event could result in some overtopping (Tandana Court).

Further upstream, would require a combination of a greater than 1 in 1,000 event and a 50% blockage in order for overtopping to occur (the probability of such an event is at least as rare as the flood causing it).

A maintenance program to monitor tree/bank condition and strategic tree removal was recommended by SKM.

Strategic tree removal may occur under the following circumstances:

- Remove vegetation in areas where congestion and erosion is evident
- Remove vegetation that is in the lower reaches of the bank
- Leave trees in the upper reaches of the bank if integrity of the bank is stable and does not need to be laid back

6. REMEDIATION PRINCIPLES AND APPLICATIONS

Steve Dangerfield read the Community Design Brief that was ratified by the group during the December 2012 meeting.

Issues regarding remediation in the priority areas were discussed.

- Accessibility
- Safety
- Landscape
- Integration with 'non remediated sections'
- Tree removal
- Channel encroachment

Steve then outlined the remediation principles that would drive the final recommendation.

- Selective tree removal
- Lay back of channel banks in priority areas
- Channel integrity – use of gabion structures, concrete channel lining, rock chute
- Landscaping channel surrounds and top of banks
- Bank integration to create meandering alignment
- Temporary ramp for access

The Group sought commitment from SA Water to identify trees prior to removal. A site walk will be organised to identify which trees are to be removed prior to their removal.

The group were shown various images of remediation solutions including:

- Rock gabion
- Rock chute
- Shotcrete
- Concrete

The Group supported the use of concrete in high priority areas (concrete base, rock surrounds and minimal lay back). Grading will be supported on the basis that the majority of trees remain. Concrete should be used aesthetically.

The group expressed their support for budget to concentrate on remedial work as opposed to landscaping on the basis that every effort is made to retain the trees.

SA Water will letter box residents along the channel to inform of tree removal.

7. SECURITY

Steve sought to reach agreement on fencing options. A fence will be required to create a barrier between the channel and pedestrians.

The Group expressed their preference for similar fencing to be retained (stock fencing). A similar height fence using natural materials or timber and wire (stock fencing) that integrates with the natural landscape should be considered.

8. NEXT STEPS

SA Water will hold internal discussions regarding the options identified by SKM.

SA Water will engage the services of digital illustrators to create artist impressions of proposed remedial work in chainage 180 (highest priority area). Where possible the remediation principles discussed above will be applied.

Group will reconvene in 5-6 weeks.