



NO DAM in Brownhill Creek!

Other options are available.

www.brownhillcreek.org

No Dam – Call to ACTION

7:30	Opening and Welcome	Professor Wayne Meyer, Chair
7:35	No Dam in Brownhill Creek Action Group: Our Goals	Ron Bellchambers Resident of Brownhill Creek
7.50	No Dam Options Analysis of latest Worley Parsons proposal	Peter Collins Engineer & Independent Consultant
8:10	ACTION Time – What can we do?	Diana Gibbs-Ludbrook
8:25	Letter of Support from Barbara Hardy Resolution form the meeting	Ron Bellchambers
8:40	Close	

No Dam in Brownhill Creek Action Group members will be available after the meeting to discuss any particular issues of concern

Ron Bellchambers

No Dam in Brownhill Creek Action Group

- Goals – what do we want to achieve?



NO DAM IN BROWNHILL CREEK

Goals of our Action Group

Goal #1

- To save the environment and heritage of Brownhill Creek!

Why save Brownhill Creek?


- One of the oldest parks in the world
- A designated heritage site – DENR Park Management Plan
- A natural monument – International Union for the Conservation of Nature
- Environmental value
- Kurna heritage – Wirraparinga
- Colonial heritage
- Recreational value

Goal #2

- To support a No Dam option that provides a similar level of flood protection for down stream residents!

Is an alternative possible?

- The dam is only a *small* part of the overall project and can be replaced
- There *are* viable alternatives to the dam.

MITIGATION COMPONENT	CAPITAL COST (\$ M)
Detention basins in the South Park Lands / Glenside Campus	\$16.4
Modify Mt Osmond Interchange Dam outlet.	Completed in 2008
Develop an inline flood detention system in Ridge Park Reserve and rehabilitate stream	\$0.7
Bypass Culvert at Fisher Street	\$4.3
Keswick Creek to Brown Hill Creek Diversions at Le Hunte Street and Anzac Highway	\$30.0
Flood Control Dam at Brown Hill Creek Recreation Reserve (Site 1)	\$10.3
Minor Channel Works in Mitcham	\$0.8
Channel upgrade between Hampton Rd & Cross Rd	\$2.7
High-Flow Bypass Culvert between Malcolm Street and the Glenelg Tramway	\$11.3
Brown Hill Creek Channel Upgrades between Leah Street and Anzac Highway	\$10.1
Brown Hill Creek Channel Upgrade from Anzac Highway to the Confluence with Keswick Creek	\$46.6
 CAPITAL COST	\$133

Goal #3

- To ensure that a balanced and effective Stormwater Management plan is implemented
- Mitcham council and our group are committed to this!

Some misconceptions

- 2006 Master Plan
- Unnecessary delay
- Costs
- Increased flood risks and works in West Torrens
- Dam design

David Wagner
President, Friends of Brownhill Creek
20 French Street,
Netherby SA 5062

Dear David,

Proposed Dam in Brown Hill Creek Recreation Park

I have only recently been made aware of the proposal contained in the Draft Stormwater Management Plan for Keswick and Brown Hill Creeks to build a dam in the middle of Brown Hill Creek Recreation Park.

When I learnt of the effects building such a structure would have on the ecology and environment of the Park I was appalled. I find it inconceivable that at a time when we are all becoming much more aware of the value, and the need to care for the world we live in, that such an ill-conceived proposal should even be considered.

As far back as 1841 the Brown Hill Creek area was recognised as being of special value when it was protected from development by the then Governor. I applaud the volunteer work of the Friends of Brown Hill Creek, over the years, helping to retain the original character of the Park. It is unthinkable that the benefits of much of this dedicated work should be undermined by construction of an inappropriately placed dam. Brown Hill Creek was 'special' in 1841 and it is still special today.

While I recognise the need to make reasonable provision to protect those at risk from flooding, there are many ways of achieving this that do not detract from, or destroy, areas which should remain unspoiled for future generations.

I fully support the campaign by the Friends of Brown Hill Creek, and their associated 'No Dam Action Group', to persuade the group of Councils to reconsider the proposal to build a dam in the Brown Hill Creek Park. What they should do is develop a stormwater management plan for Brown Hill and Keswick Creeks that offers flood mitigation, without the negative environmental impacts of the currently proposed dam.

Yours sincerely,



Barbara Hardy AO





Brown Hill and Keswick Creek Flood Mitigation Project

Preliminary Assessment of Flood Mitigation Options

**Peter Collins
John Wilson**

FIGURE 9

DRAFT

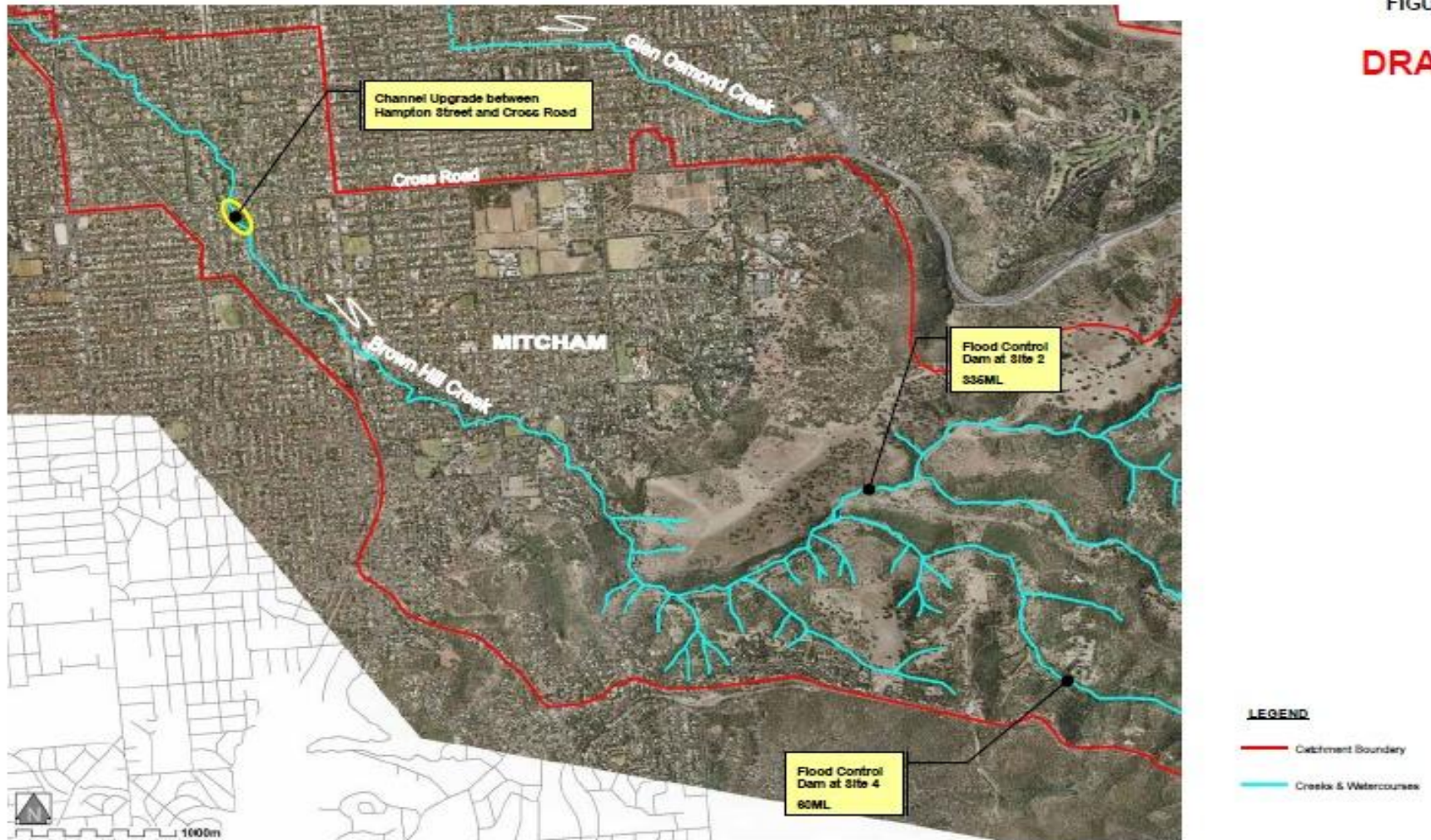


FIGURE 2



Why the change?

We need to go to section 10.8.4 of the WorleyParson's report -

...it is evident that the 90 minute storm in isolation will cause overtopping of Brown Hill Creek between Forestville Reserve and Anzac Highway, and near Regent Street Millswood

...no amount of upstream detention would eliminate the overland flow through parts of Unley and across the Highway into West Torrens.

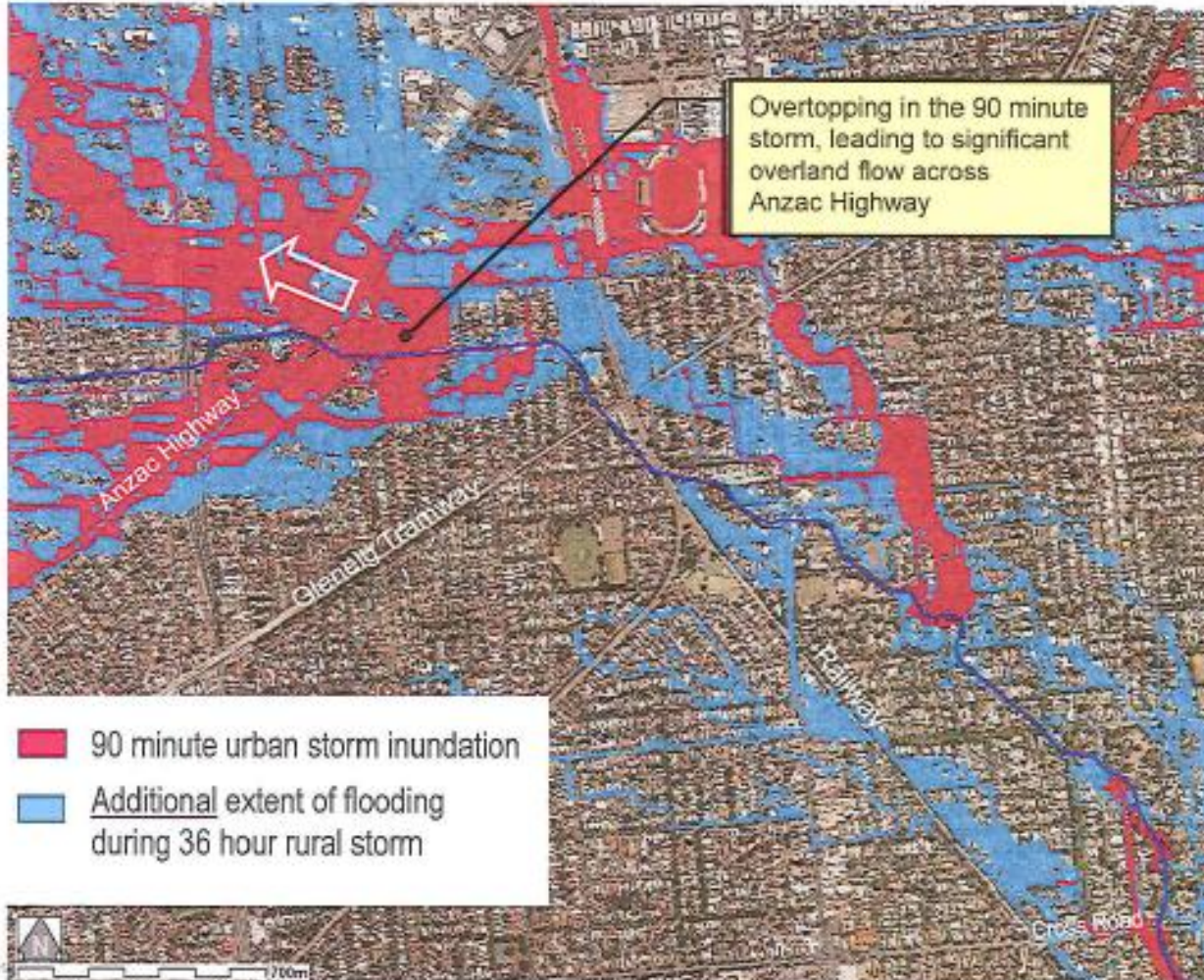
Channel works are essential for an effective mitigation scheme.



WorleyParsons

resources & energy

90 MINUTE STORM FLOOD MAPPING (100 year ARI Base Case, No Detention)



The Draft Plan opens opportunities

To control flooding in a 90 minute storm, WP have proposed channel works (upgrades and bypasses) that have sufficient capacity to carry the 100 year ARI 90 minute storm flows.

The 36 hour 100 year ARI flow rate is greater than the 90 minute storm flow rate at some locations. To deal with this, WP propose a 12 m high dam in Brown Hill Creek Park (much smaller than the two 2006 Master Plan dams) which would restrict the 36 hour 100 year ARI flow rate to the same as the 90 minute storm.

But

If with 'essential' channel works a small(er) dam is required to control flooding, would bigger channel works mean that the dam could be eliminated?

Mitcham Council asked WP to examine what 'bigger' channel works might achieve.

WP that looked at five 'alternatives':

Options 1,2,3 – Eliminating the need for the dam

Option 4 – Smaller dam 10m high

Option 5 – Smaller dam 8m high

The Draft Report also considered a 'no dam' option of upgrading all the channel from Old Belair Road to Anzac Highway. This gave the highest flood mitigation of all cases but was rejected because of its impact on private property and low community acceptance.

Option 1: Bypass West of Brown Hill Creek

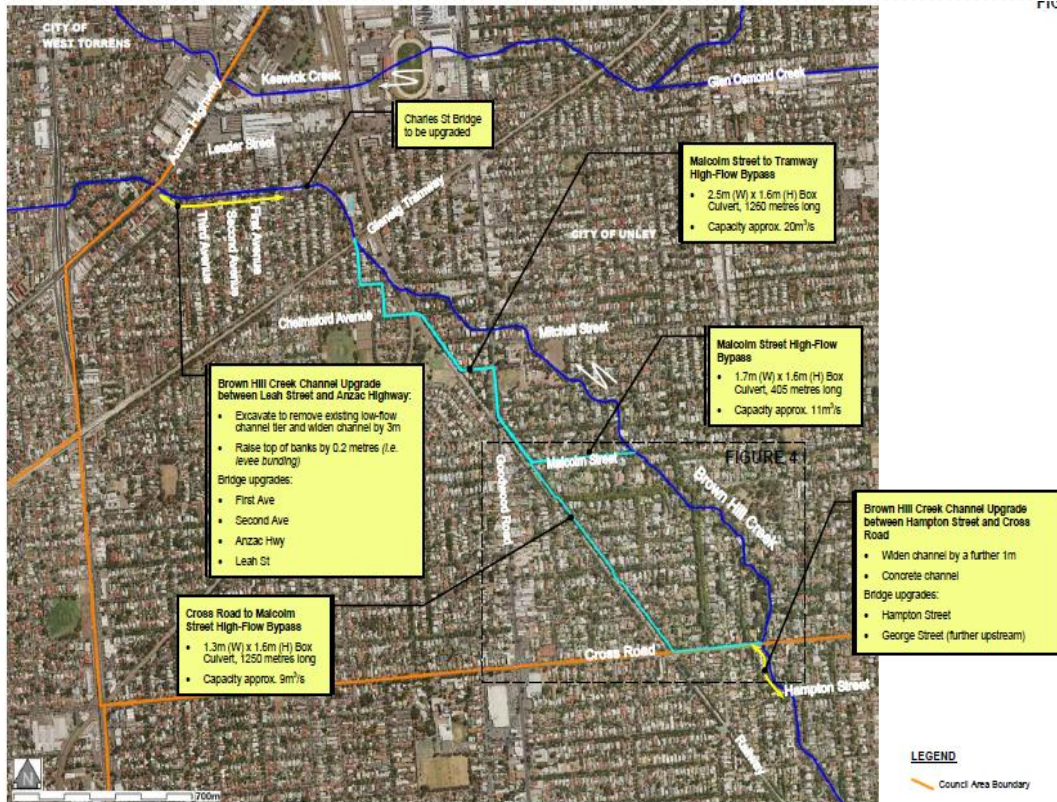
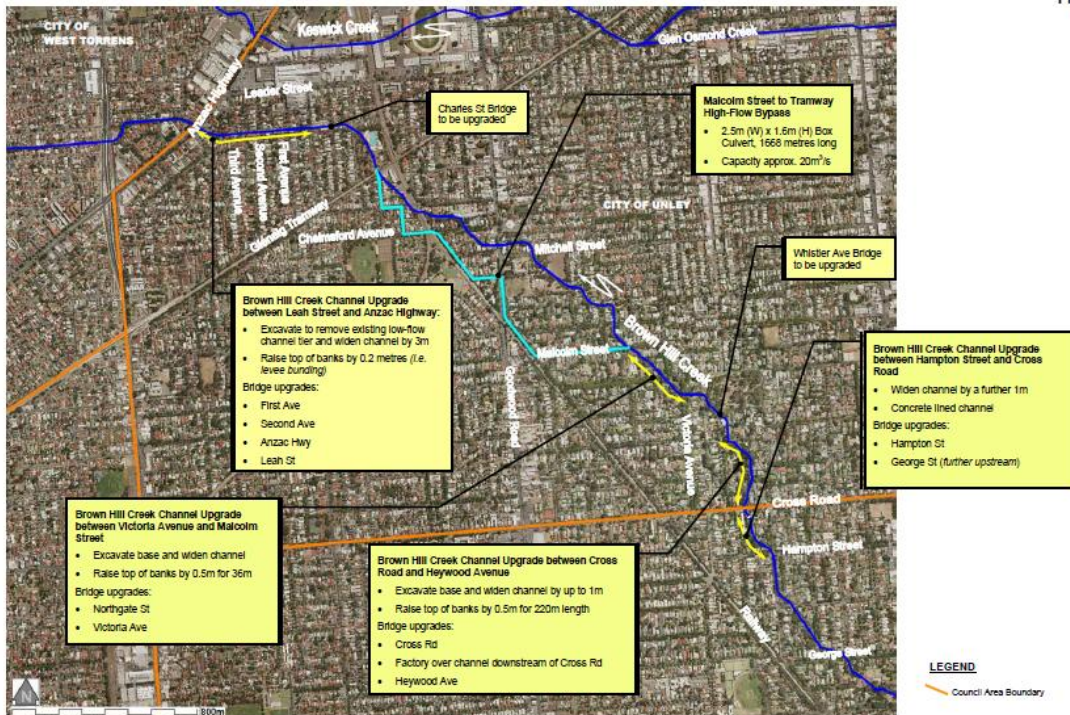


FIGURE 4

- **Cost \$43.7m**
- **Conflict with future grade separation between railway and road.**
- **Disruption to residents**
- **Possible conflict with services**

Option 2: Channel Upgrade Cross Road to Malcolm Street



- **Cost \$47.7m**
- **Significant property acquisition is required between Cross Road and Malcolm Street**
- **Possible conflict with services**

Option 3: New Bypass East of Brown Hill Creek



- **Cost \$40.9m**
- **No upgrade at Hampton Street required**
- **Disruption to residents**
- **Possible conflict with services**

Option 4 – 10m high dam

- **Cost \$36m**
- **Increased Hampton Street channel upgrade**
- **Increased size of Malcolm St to Tramway culvert**
- **Increased flood damage in Mitcham and Cross Road to Malcolm St**
- **Brown Hill Creek Park still adversely affected**

Option 5 – 8m high dam

- **Cost \$40.4m**
- **Increased Hampton Street channel upgrade**
- **Increased size of Malcolm St to Tramway culvert**
- **Increased flood damage in Mitcham and Cross Road to Malcolm St**
- **Brown Hill Creek Park still adversely affected**

TABLE 8 SUMMARY OF FINDINGS FOR ALTERNATIVE OPTIONS

OPTION <i>(Key Feature)</i>	ADDITIONAL DAMAGES IN 100 YEAR ARI FLOOD*	COST OF WORKS ON UPPER BROWN HILL CREEK	COST VARIANCE FROM DRAFT PLAN	BENEFIT-COST RATIO
Draft Plan <i>(12 m high dam)</i>	-----	\$35.8M	-----	0.65
Option 1 <i>(additional bypass culvert)</i>	\$0.8M	\$42.3M	+\$6.5M	0.62
Option 2 <i>(additional channel upgrades)</i>	\$0.8M	\$46.4M	+\$10.6M	0.61
Option 3 <i>(additional bypass culvert)</i>	\$0.8M	\$39.6M	+\$3.8M	0.62
Option 4 <i>(10 m high dam)</i>	\$0.5M	\$35.8M	-----	0.64
Option 5 <i>(8 m high dam)</i>	\$0.8M	\$39.4M	+\$3.6M	0.63

* Compared to Draft Plan flood damages

Dam costs realistic?

WP estimate \$10.3m for a 12m dam; there are reasons to doubt this figure.

The dam layout used for the estimate bears no resemblance to the design referred to in the report or as shown in the artists' impression.

The allowance for design etc is only 10% whereas all other components of the scheme have a 20% allowance.

There is no allowance for:

- **Restoring and rehabilitating the construction site, the old road, the coffer dam etc – the only allowance is \$1,082 for hydromulching the dam embankment**
- **Relocating water and electricity services**
- **Upgrading and repair of Brown Hill Creek road**
- **Environmental mitigation and monitoring**
- **Water supply for construction purposes.**

A dam estimate based on the design referred to in the report and that takes full account of the work associated with building in the Park is likely to make the 'no dam' options more rather than less attractive.

Conflict with services

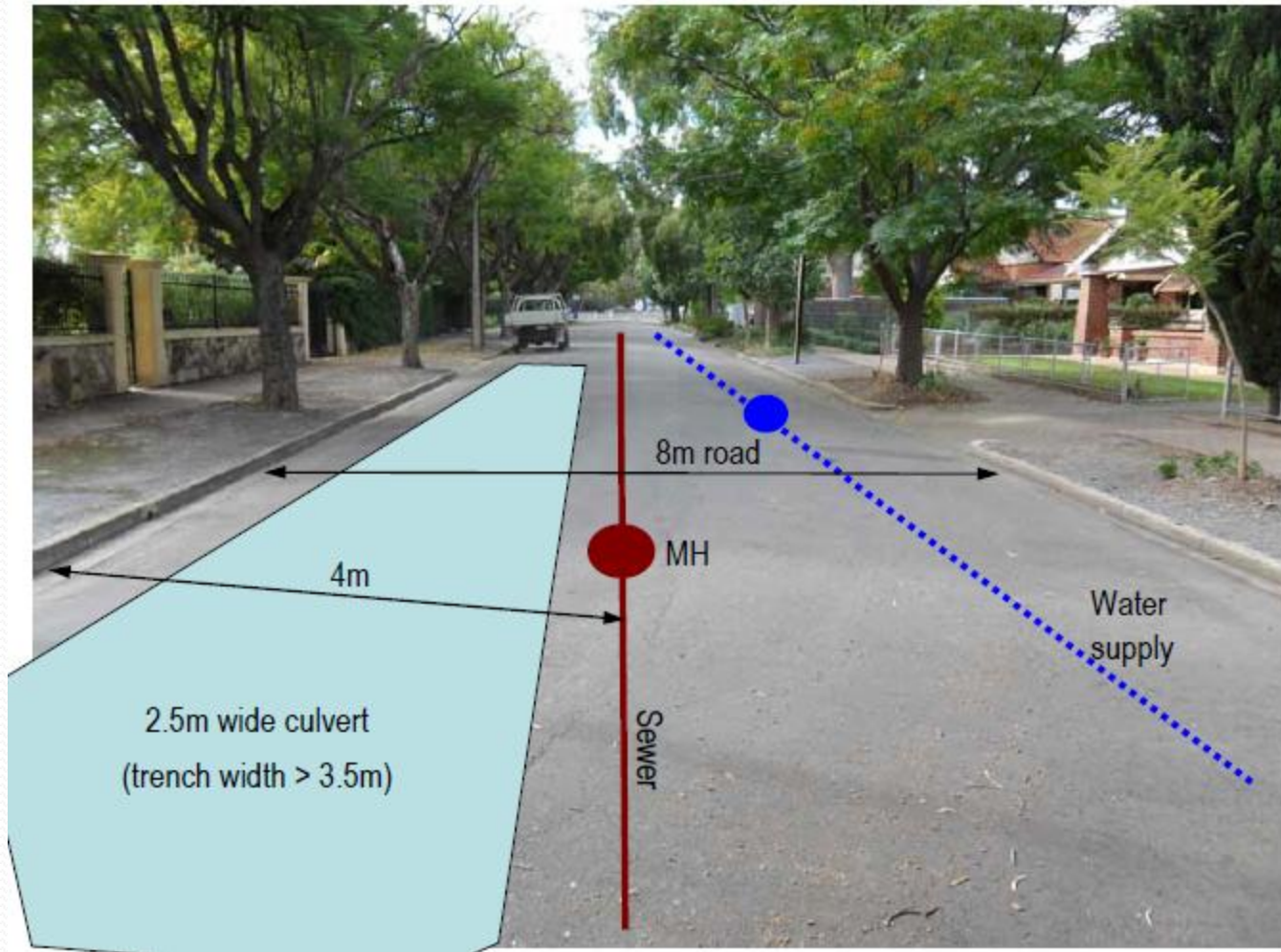
Under a road there can be several public utility services:

- **Water mains and connections**
- **Sewers and laterals**
- **Electricity**
- **Telephone and internet cable**
- **Surface water drainage**
- **Gas mains and connections.**

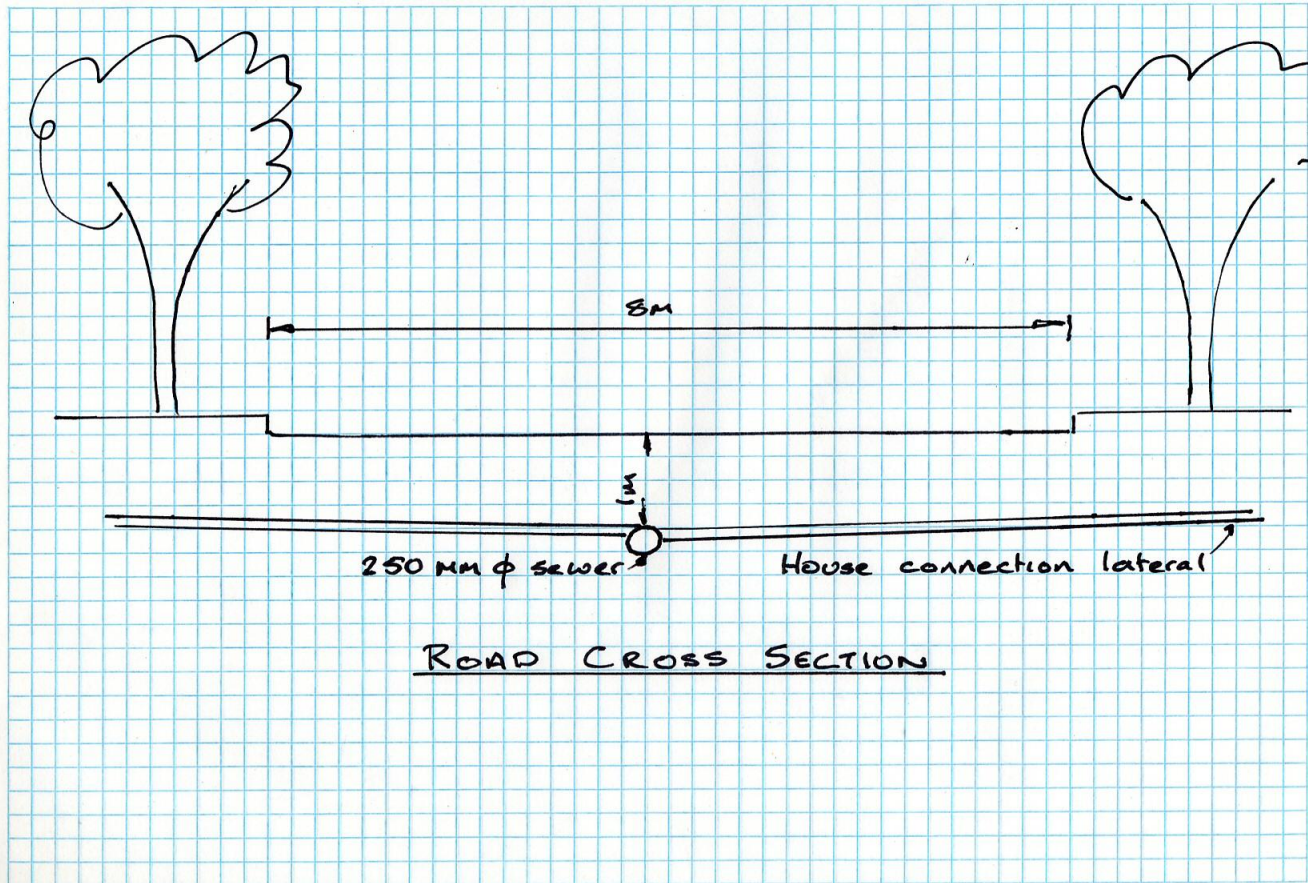
A culvert has to be built to a steady gradient with as few bends as possible; it cannot 'go around' the other services.

Most services are relatively easy to move, the exception is sewers and their laterals. Like culverts they must have steady gradients with as few bends as possible.

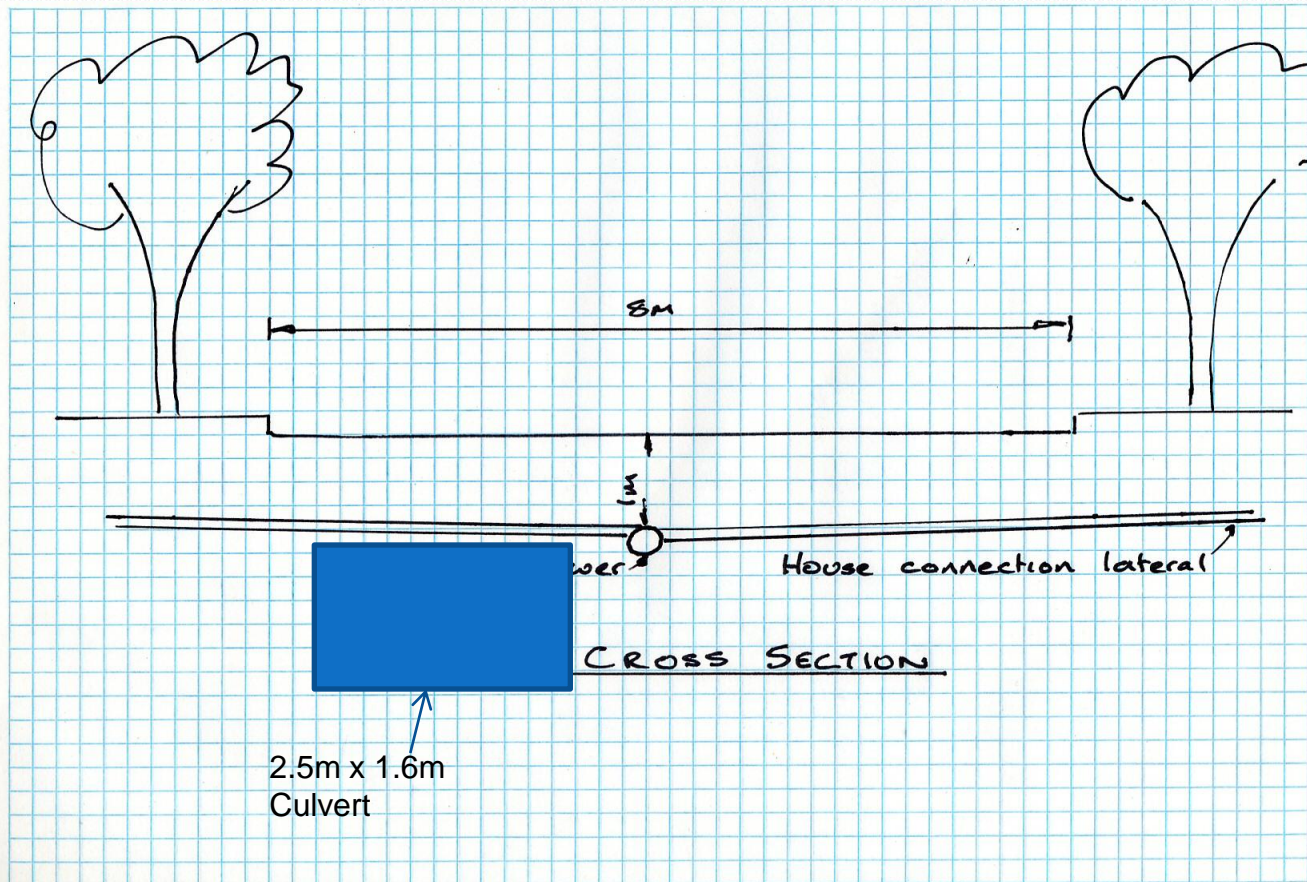
Installing a culvert can damage tree roots.



Fitting in a large culvert is a tight squeeze.

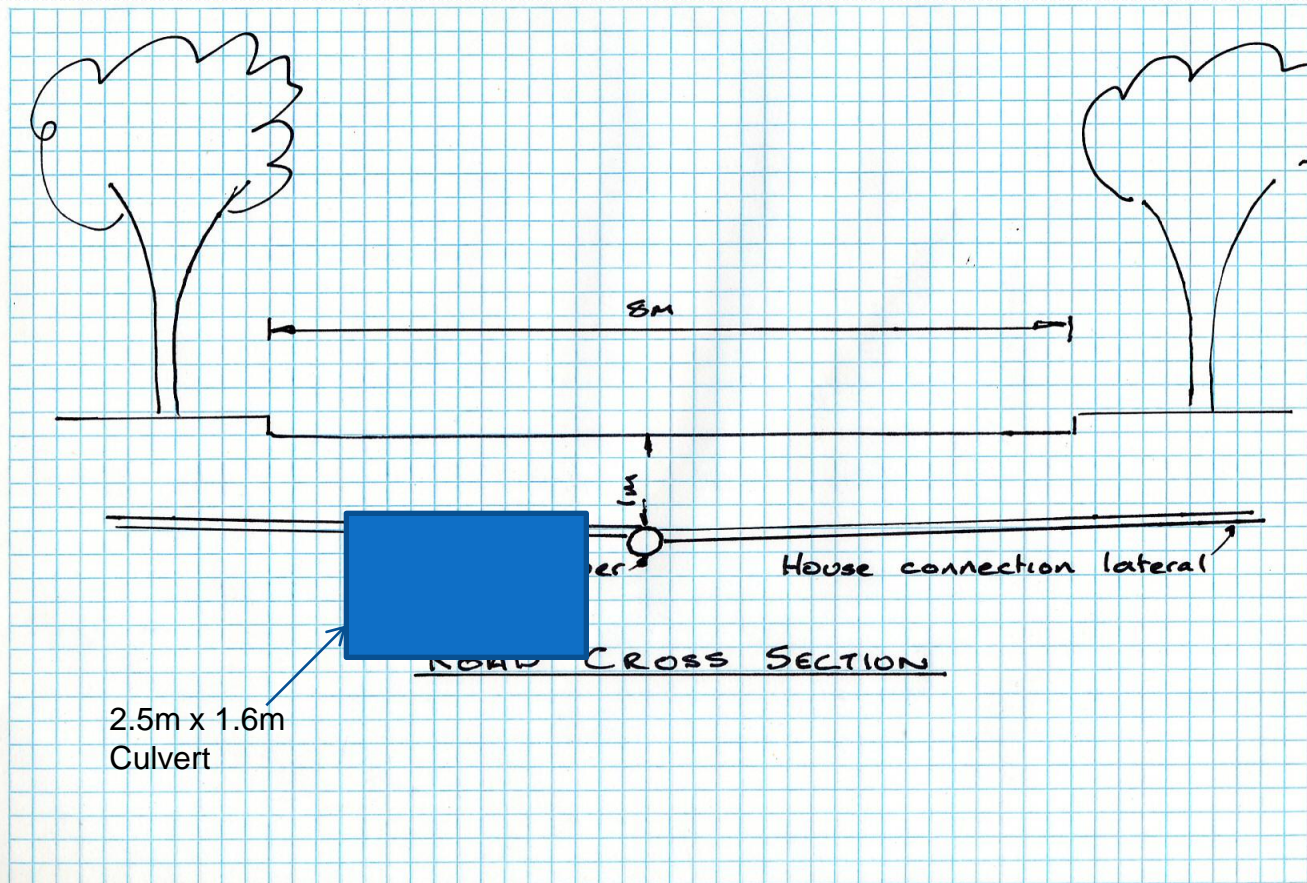


Culvert below the sewer and lateral level



Difficult but achievable without modification to the sewer system.

Culvert above sewer and lateral level



Requires modification of the sewer layout.

The Problem with Sewers!

The problems associated with the possible conflict between a culvert and the existing sewer system apply to both the Draft Plan proposals and the 'Options', but more so to the Options.

The larger the culvert the greater the potential problems and the cost of resolving these problems.

We need to know:

- **The location, the depth, and the size of the existing sewers.**
- **Details of the existing channel and whether its capacity can simply be increased by the removal of obstructions and/or choke points. Even a minor increase in channel capacity could allow the size of bypass channels to be reduced.**

Where are we now?

The Project Group have commissioned WP to carry out a detailed investigation of the existing services along the possible culvert routes.

The results of the NRM creek channel survey are expected after the end of the consultation period.

John and I are examining possible refinements to the 'Options', with the aim of making them less disruptive for the Unley community. Of particular interest is the potential offered by alternative routes to the West and along the rail corridor.



Option 1A (Avoiding Cross Road)

Positives

No channel upgrade at Hampton Street required

Limited disruption to traffic along Cross Road

Would not affect future grade separation

Less inconvenience to residents than Options 2 or 3

Negatives

Work delays caused by rail traffic where the culvert enters the railway corridor.

Conflict with services still a possible problem



It would be the height of folly to try and take decisions in the absence of the full facts.

The project should not be driven by arbitrary deadlines nor by the shouts of the “Do something, do anything” school of thought.

Let's get it right this time!

Conclusion

“Stepping away from the engineering considerations, it is anticipated that in choosing between these options, there will be a trade-off between environmental concerns and community opposition to the dam (*Draft Plan or Option 4*) versus community opposition to disruption during construction of the extended bypass culvert (*Option 3*).”

WorleyParsons
Preliminary Assessment of Flood Mitigation Options
November 2011



Diana Gibbs-Ludbrook

ACTION TIME

What can we do?

Links to Plan & feedback form

- Draft Plan consultation page:

www.unley.sa.gov.au/site/page.cfm?u=1743

- Feedback form:

www.unley.sa.gov.au/site/page.cfm?u=1748

- Also - you can access via

[www.mitcham council.sa.gov.au](http://www.mitchamcouncil.sa.gov.au)

Draft Resolutions of the Meeting

The members of this meeting are opposed to the building of any flood mitigation structures in Brownhill Creek Recreation Park and the immediate catchment tributaries.

The meeting calls on the 5 Catchment Councils & Stormwater Management Authority to develop flood mitigation options that do not include mitigation structures within the environmentally sensitive and heritage listed Brownhill Creek Recreation Park.

The meeting calls on 5 Catchment Councils & Stormwater Management Authority to explicitly include environmental impact in any assessment of the proposed works

Draft Resolutions of the Meeting

The meeting calls on the 5 Catchment Councils & Stormwater Management Authority to fund an assessment of an alternative culvert route using the railway corridor.

Brownhill Creek needs your support!

- *Be informed – see www.brownhillcreek.org*
- *Ring, write or email your Local Councillor, newspaper or Member of Parliament.*
- *Fill out the “Feedback Form” – send it in!!*
- *Sign the petition!*
- *Take a copy of the petition form and canvass signatures*
- *Donate to the cause – it costs to fight these short term, reactionary fixes – the NO DAMS ACTION GROUP is grateful for any help.*
- *Attend community events*

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