3-4–22

FLOODS

Why AustralianSuper cannot build on Kingswood

Kevin Poulter President
Save Kingswood Group inc

They took paradise and made it a FLOOD ZONE
AustralianSuper is about to physically destroy Dingley Village, as both they and Melbourne Water GROSSLY under-calculated the current floods and Kingswood's ability to handle them.

Over 100 Million litres underestimation for just one 25mm precipitation of 1 to 7 days.

- Multiply that by multiple downpours a year of smaller or **larger** volumes. SEE PAGES 4, 12 and 13

Kingswood stated they laid HUNDREDS of KILOMETRES of drains

Save Kingswood comment: Which will be removed!

Below: A media release from Kingston Council December 7, 2021

La Niña warnings to prompt flood preparedness across Kingston

Following the Bureau of Meteorology's recent announcement to expect La Niña weather patterns over the coming months, Kingston Council is contacting local community groups, sports clubs and schools to remind them to be prepared.

Mayor Steve Staikos said that whilst no official flood warnings have been issued, it is a good time to remember that many parts of our municipality are low lying and face a greater risk of flooding in high rainfall events.

"While localised flooding can happen any time, historically most flooding events have occurred between December and February – so this is a timely reminder to be prepared." said Cr Staikos. "Preparation can reduce the damage caused by flooding and limit recovery costs."

Stormy Water Solutions used the input data in Fig 1 (below), which is **immensely** inadequate, especially if the dams are not empty prior to a deluge

Fig 1

Fig. 2

⚠ The following huge capacity was overlooked and will be demolished if development takes place …

- Lackenheath dam 26 million Litres
- Lee Andy Dam 3 Million Litres
- Aquifer 70 Million Litres ▲ x6 times a year = 420ML
- Sprinklers onto the greens when rain coming 10 ML
- 10 ML 40ha ❖ Direct precipitation
- Water Tank 720,000 Litres

Left: Total Aquifer system capacity at any one time … 119.72 MILLION Litres – ignored by the proponent's "expert"!

Even with the facilities on the left, Kingswood and Dingley Village still flooded!

▲ "Only" 70 ML is included in the above total, as the x6 is through the year.

❖ See next page for calculation for precipitation.

Melbourne water calculated that 1-inch (25mm) of rain in Clayton filled the retarding basin to capacity

Unlike the proponent's guesstimation, many of the existing holdings can be drained and not at 1ML flow discharge as incorrectly stated, but 10ML

❖ Calculation of precipitation when 25mm of rain falls directly onto 40Ha of the Kingswood course. 40Ha area is nominated, as that will be covered with dwellings, footpaths, roads and more.

Rainfall Milimetres per Hectare

Millimetre per Hectare	25	mm/ha
Decimal Rounding	2	#
Calculate Reset		
Results:		
Cubic Inches	15255850.00	in³
Cubic Feet	8828.62	ft³
Cubic Metres	250.00	m³
Litres	249998.59	L

➡ 249,998.59 L - rounded to 250,000 Litres

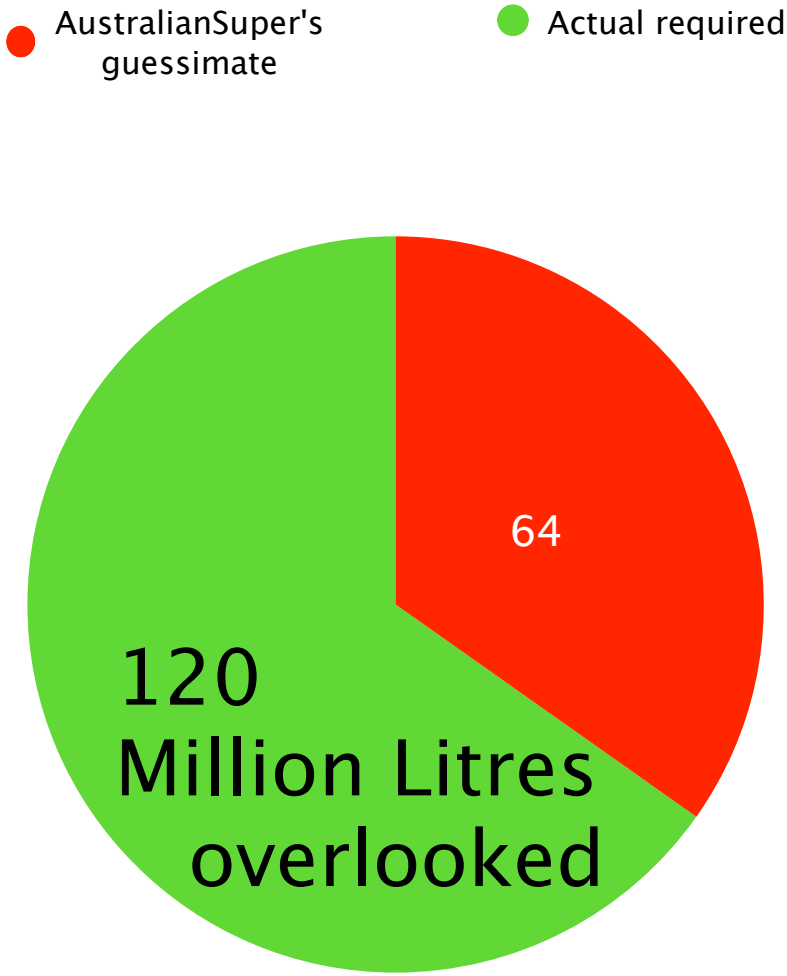
Therefore 25mm rainfall results in 250,000 litres per ha x 40ha = 10 million Litres

Calculated with https://www.spikevm.com/calculators/irrigation/rainfall-mm-hectare.php

The rainfall that fell onto the Kingswood Golf course mainly soaked into the ground.

Kingswood cannot be built on, because

The site is a Flood Plain



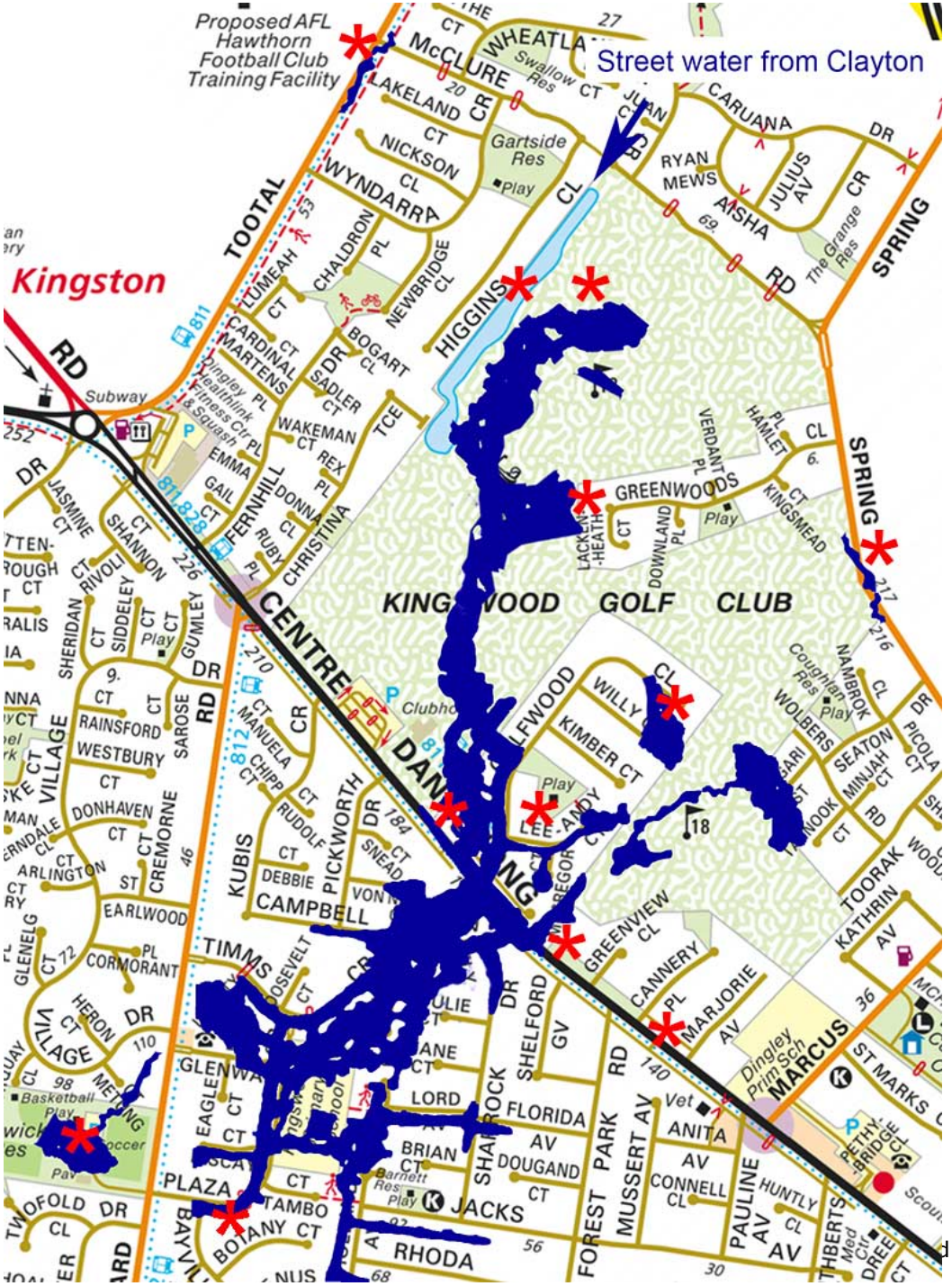
Far beyond Melbourne Water's wildest nightmares.

Proponent and Melbourne Water data should be disregarded, as it's grossly inadequate, due to many floods not reported.

"Totally ignoring the aquifer and Greens soak"

However many floods are photographed and shown here. Plus maps and data are in this document.

This graph is to be viewed in conjunction with the diagrams on pages 9 and 10



Flood events in recent years – some are in the last few months

Key:

flood-prone areas. Substantially based on Melbourne Water's 1 in 100 years map, which is now revised to regular, due to actual events.

Actual events, including in the last months i.e. During 2021

All the water inundation comes from Kingswood, Upstream from the north and from Clayton.

Further upstream the street water from Clayton is fed into the Retardation Basin.

When it rains 1-inch (25mm) in Clayton, that fills the Retardation dam.

💧 The Retarding Basin regularly floods

Why? Its role is to accept water from roads and gutters upstream in **Clayton and to buffer Dingley Village and beyond from floods**.

Problem is, the system already floods Dingley Village.

If the aquifer system is not in use now, that would explain why we continue to have floods.

The proponent and Melbourne Water have not taken the Aquifer dispersal facility into account and the greens soak!

Aquifer introduction

The Kingswood Aquifer is largely an **enclosed-loop** water management system, capable of retaining most water on site.
The primary intent is to drought-proof Kingswood greens, to maintain up time for golf.

"The huge side-benefit is floods were reduced for the greens and therefore Dingley Village"

With a pass-through (PT) system only proposed by AustralianSuper, there is zero flood control once the 64 megalitre retarding dams are full.

The capacity of the Aquifer system AustralianSuper wants to demolish is infinitely greater than 64 megalitres.

To compare the two systems, a short timeline is required, as the past and proposed systems work differently. Also floods take time to disperse.

Proposed 64 ML system
The static storage only system proposed by AustralianSuper is 64 megalitres, **end of story, full stop**.
LESS water already lying in the system.
Melbourne Water estimated that one inch of rain (25mm) in Clayton totally fills the existing Retardation basin.

The proponent claims to have a further 39ML capacity, less the volume already in captivity. That is patently incorrect, as the Retardation basin and their other storage will be nearly at capacity at all times, or they would not have wetlands and lakes.

So there is very low buffering.

"Flood prevention was engaged 6-7 times a year"

The method was,

- when high levels of rain were predicted, water was pumped from the retarding basin, through the system, into the storages and the Aquifer. Thus leaving the retardation basin much lower tide and therefore much more able to cope.
- Water was not only in golf Course storage, it was pumped into sprinklers on the grounds.
- There was also huge, but **harmless overspill**, as seen in the dramatic photos I suppled which will not occur under the plans. The entire soak will be paved over and built on

The Club also installed (quote) "**hundreds of kilometres** of subterranean drainage"
(which the proponent will dig up)

AQUIFER STORAGE & RECOVERY data

- Investigated and installed ASR in 2009
- Injected 222ML
- Extracted 151 ML
- Most successful ASR in Victoria

Source: Robert Strain, Club captain for four years.

The proponent plans to provide for 64 ML ONLY

In addition, if they follow standard developer's practice, they will dig out the high quality sandy loam and sell it for untold millions,
Replacing it with clay soil that does not readily absorb water, AND building over the massive soak.

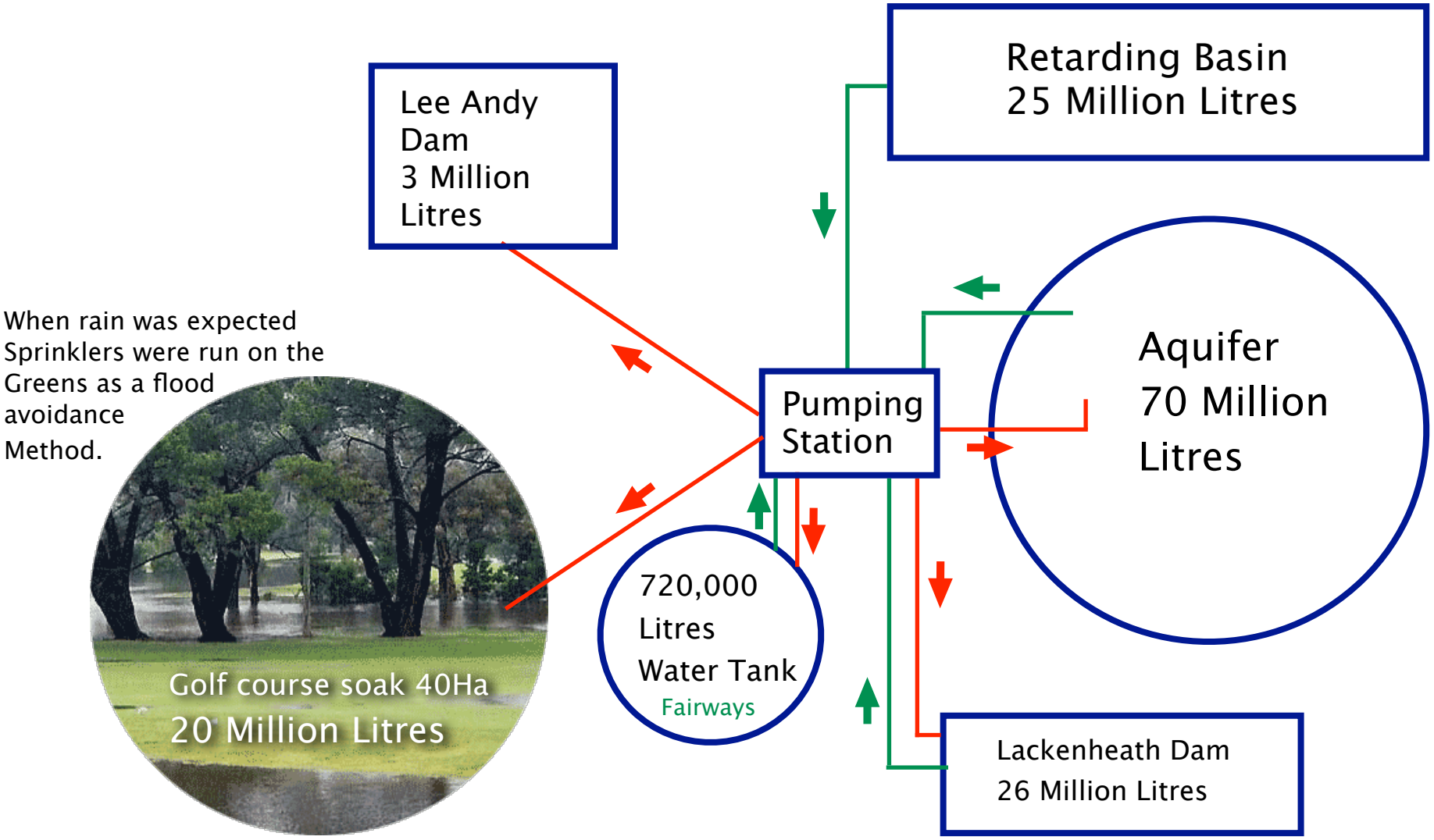
So the 184 Million Litres deficiency is conservative, because the sandy loam soak will be destroyed

"The main drain is grossly inadequate
Recently industrial level cleaning of the pipe twice,
for about a month each time, was followed by floods afterwards.

See photos

The Aquifer system

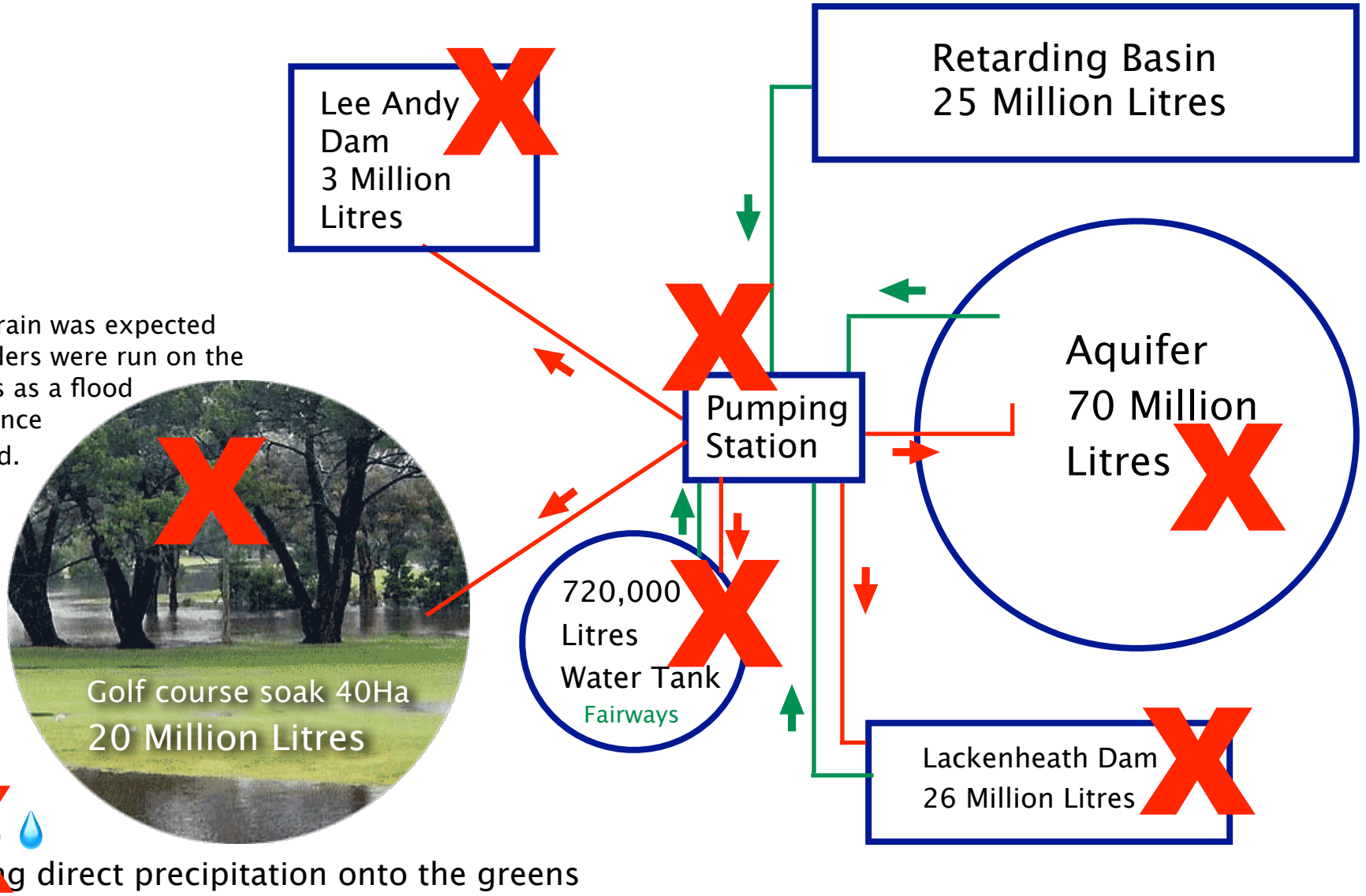
Installed with the assistance
of Government funding



Including direct precipitation onto the greens

The Aquifer and Flood control

The proponent plans to eliminate as shown



The proponent

– offers no Aquifer, only 64ML of static storage LESS residual level, estimated at say, 40ML

So their flood buffer could be 24ML

The Aquifer offers

A total of 120ML total capacity PLUS the greens soak, less the holdings at any one time.

"120 Million Litres of storage and aquifer will be bulldozed
– that alone is a greater loss of flood prevention than the proponent offers

"Remember: the curator ALSO drew down water by running sprinklers on the greens

Purely as flood prevention,

when he knew rains were predicted.

This was employed six or seven times a year."

Cannot Build on a FLOOD PLAIN

Hydrologists are only as good as the input information in their calculations.

Flood protection for Dingley Village was not the first intent, but it was a brilliant bonus. That's how Kingswood tried to stop the flooding problems and guard against droughts. S.E. Water requires the developer to keep all water on the site and only release at a slow (specified) rate.

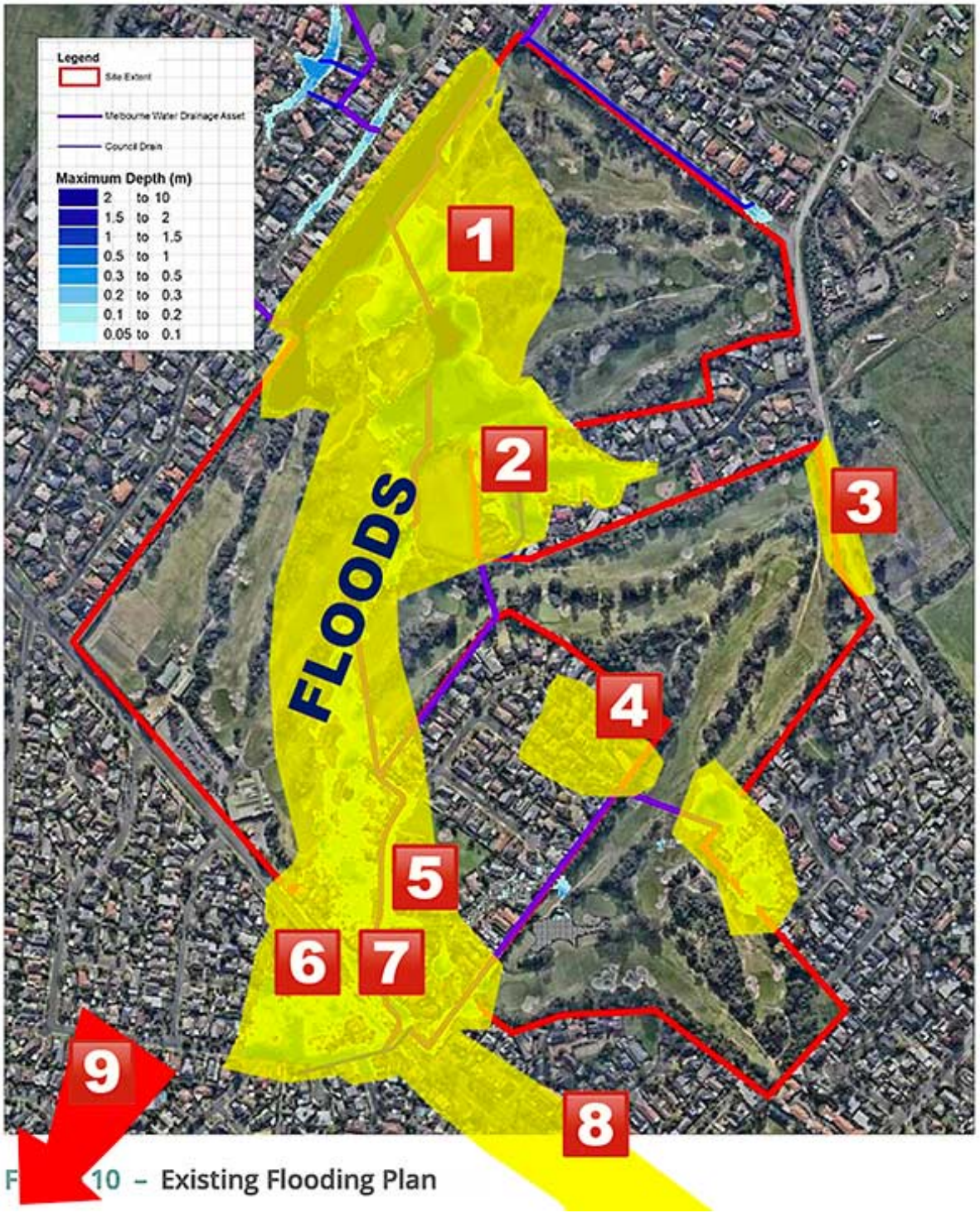
(Sources: Robert Strain, Captain at Kingswood for four years and ISPT)

Nature, including Climate Change has other ideas.

Ask the people of LISMORE, Forbes, Brisbane, Gippsland and many other areas.

Looks a lot like the 1966 map used in the previous application.
That's how old Melbourne Water's data is.

Note there is also downstream flooding outside the lower left of this map, in homes and the Chadwick reserve.



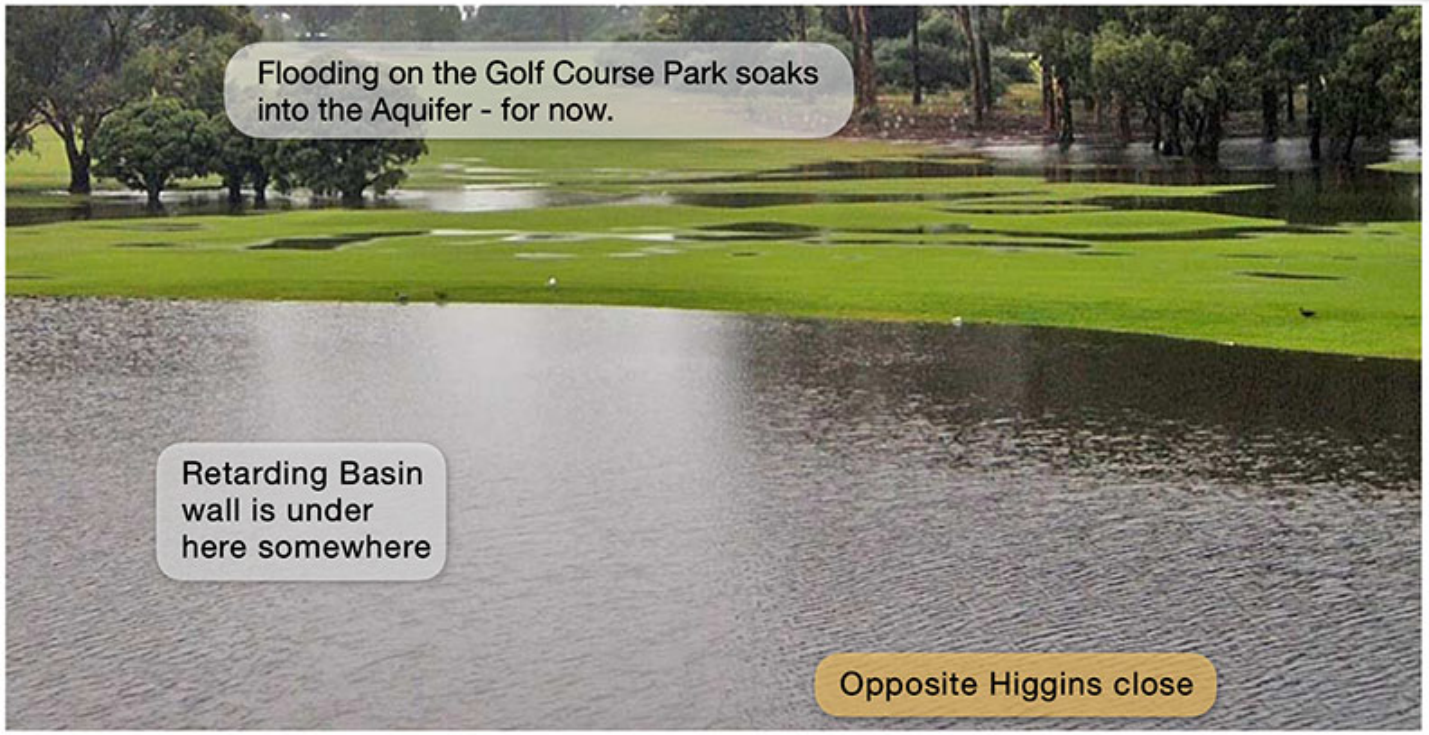
To Chadwick Reserve

F 10 – Existing Flooding Plan

1

Above and Left: looking east from Higgins close

Below: west view.



1 Floods inundate Dingley Village

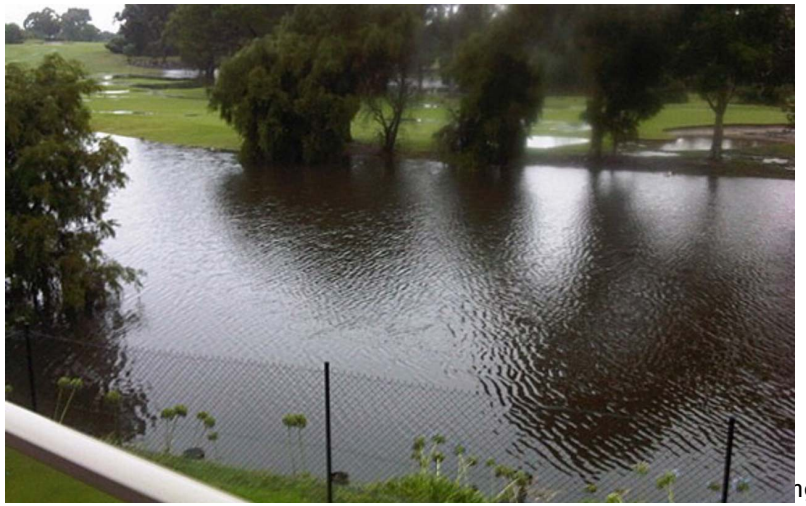
Main Retarding Dam- Higgins close

Opposite Higgins close. Note the table floating off the deck and compare to the low intrusion photograph (left)

In just one year the total stormwater water diverted into the Aquifer was 222 Million Litres!

Yet Dingley Village still floods.

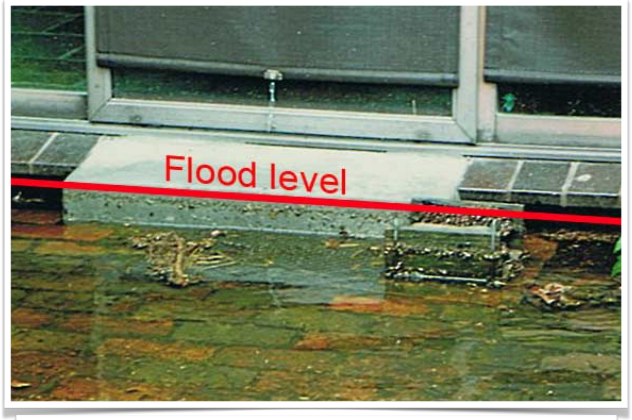
The immense flood swing of millions of litres can be seen in these photographs.



Opposite Higgins close. Note the deck under water

1
Flooding on the Golf Course Park soaks into the Aquifer - for now.
Retarding Basin wall is under here somewhere
Opposite Higgins close

2 Lackenheath court

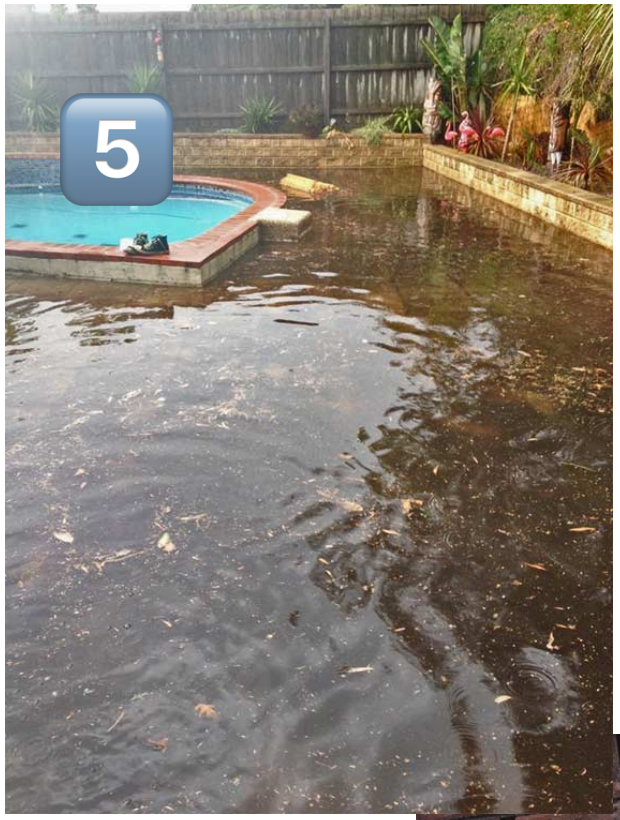


3 Spring Road

Above: November 2021 and regularly

Dingley Village Resident Steve Allan, also reports “the Flooding is a really bad issue. The end of Hobsons Place and Bayville Drive cop it every time there's a heavy rainfall..
This whole proposal is a joke.”

4 Golfwood close and Willy court, knee deep. Photos coming.



Lee Andy court

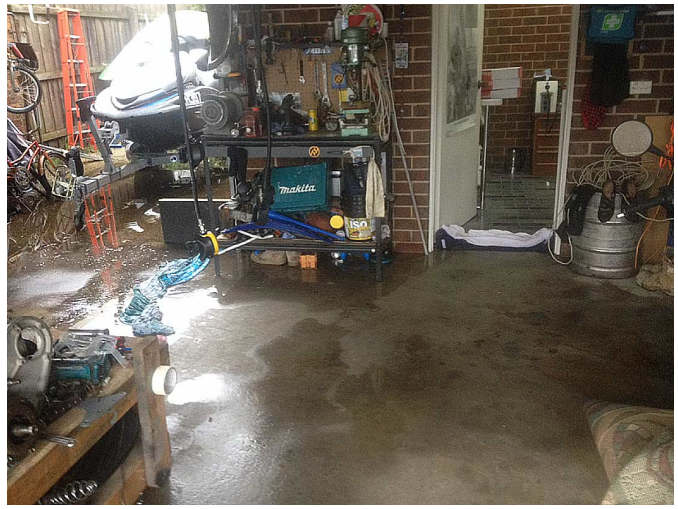
After years of inundation, Melbourne Water has visited multiple times, but not offered a remedy.

Melbourne Water reportedly said "**the developer will have to build a better drain!**"

- But does AustralianSuper even know about that requirement?
- Will AustralianSuper remedy?

Or find some way to shirk their responsibilities?

Regardless, **where will the floodwater go?**



Below: undermining house foundations

6 **Centre Dandenong road**, November 2021, **after the main drain under Kingswood was cleared twice.**
The process took nearly a month.

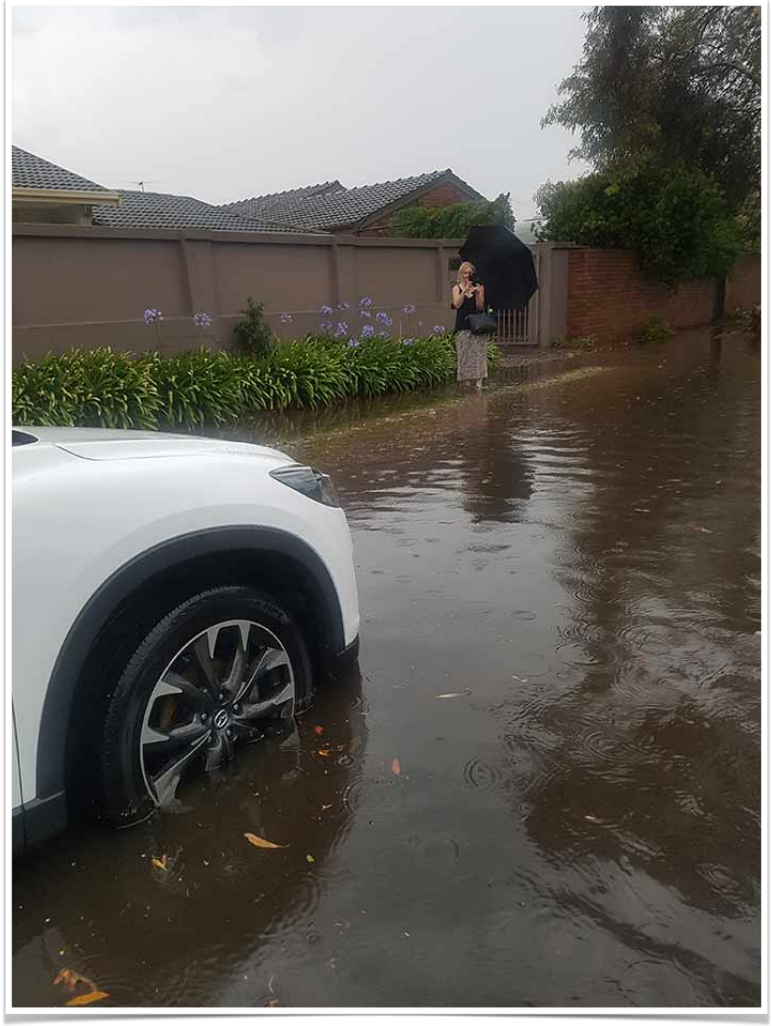
6 Centre Dandenong road, November 2021, **after the main drain under Kingswood was cleared twice.**
The process took about a month.

"The policy states that flood risk must be considered in the preparation of planning schemes and in land use decisions, so as to avoid intensifying the impact of flooding through inappropriately located uses and developments"

7 .photo coming

8 Centre Dandenong road near the school

Centre Dandenong road service road, near Cannery place.
After the water receded. See the arrow for high tide mark.



9 Chadwick Reserve. A long way downstream

Floodways

Floodways are areas that are important for the discharge or storage of water during major floods. They are usually aligned with naturally defined channels and depressions and often carry relatively deep and high velocity flows.

Chadwick Reserve, off Howard rd, downstream

"Filling or even partial blockage of floodways can redistribute flood flows causing increased flood levels and flow velocities & increased flood risk for nearby properties."

A blockage of a floodway can also have adverse environmental impacts, such as isolating wetlands, **destroying natural habitats**, eroding stream channels and increasing siltation.

Other areas .. may be liable to flooding, but are not shown on the planning scheme maps due to lack of information at the present time. All available local knowledge should be documented and a flood mapping investigation should be initiated.

Applying the Flood Provisions in Planning Schemes

Land use planning is recognised as being the best means of avoiding future flooding problems. Through careful planning, flood risks to life, property and community infrastructure can be minimised and the environmental significance of our floodplains protected.

Section 62(e) of the Planning and Environment Act 1987 enables planning schemes to 'regulate or prohibit any use or development in hazardous areas, or areas likely to become hazardous'. As a result, planning schemes contain State planning policy for floodplain management requiring, among other things, that flood risk be considered in the preparation of planning schemes and in land use decisions.

Floodways

The level of planning control in each provision is commensurate with the potential flood risk. For example, the **UFZ is a restrictive provision that prohibits most uses and development. It is designed to be applied to urban environments where there is a high potential flood risk and only low intensity uses and development (such as recreation) are suitable.**

Save Kingswood:

We request UFZ zoning.

Stormwater flooding

During severe storms in urban areas, land can be affected by overland flows. These occur when the rainfall run-off exceeds the capacity of the piped drainage system and no provision has been made for overland flows.

This is called stormwater flooding and often occurs in areas where there is a high density of existing development and a high flood damage potential.

Source: Applying the Flood Provisions in Planning Schemes

Photo: Kevin Poulter

Main drain inadequate already

The main drain under the Golf Course becomes clogged by roots and debris. Recently machines worked intensely for a month to clear it out with a truck-size Drain Auger and multiple water trucks.

> *" The main drain should be replaced with a much larger one by the proponent - regardless of cost - but where will the floodwater go? "*

Urban Floodway Zone

The UFZ applies to mainstream flooding in urban areas where **the primary function of the land is to convey active flood flows.**

It applies to urban floodway areas where the potential flood risk is high due to the presence of existing development or to pressures for new or more intensive development.

The UFZ restricts the use of such land, as **the risk associated with flooding renders it unsuitable for any further intensification of use or development. The land use is therefore restricted to activities such as apiculture, animal husbandry and recreational activities. Most other uses are prohibited**

STOP PRESS! FLOODS CAUSED BY AUSTRALIAN SUPER'S OVERDEVELOPMENT DESTROYS DINGLEY VILLAGE

Kevin Poulter: The FLOOD solution presented is FAIL, FAIL, FAIL. If given the go-ahead, I will be proven right after the proponent has done their damage and bolted.

"Melbourne Water to provide a solution to the existing flooding issues downstream of the Site, flood storage of approximately 62,000m3, is required. If the site was only required to detain for increases in impervious areas as part of its redevelopment, a storage volume 11,800m3 would be required, with the remainder providing flood protection from upstream flows. This storage is provided in three locations:

An extension to the existing Melbourne Water basin at the north-eastern corner of the Site A new large retarding basin at the south-west of the Site

A small basin at the south-east of the Site, dealing primarily with local inflows.

There are also drainage pipe works required to facilitate the safe flow of water between the basins and connecting to the existing Melbourne Water drains."

"It is anticipated that Melbourne Water will revisit the appropriateness of the extent of the current Special Building Overlay in the near future following the completion of the proposed redevelopment of the Site.

In the North West corner, adjacent to the Site, is a Melbourne Water reservoir and detention storage basin. In the western portion of the Site, **an existing Melbourne Water 1200mm drain runs in a south east direction through the land, discharging through a vacant lot on Golfwood Close."** **A so-called park is actually a drain!**

"In the eastern portion a 450 mm diameter pipe runs through the Site, providing a point of discharge for properties in the vicinity of Mungari Street." *(Source: AustralianSuper)*

STOP PRESS! FLOODS CAUSED BY AUSTRALIAN SUPER'S OVERDEVELOPMENT DESTROYS DINGLEY VILLAGE

" Expect a class action from Dingley Village Residents when flood management is proven wrong! "

Note to Committee.

When reading AustralianSuper's contractor reports, we implore you to ignore the name and reputation of the consultants, rather look closely at the content and what it is based on.

Be especially wary of comments like "it is estimated" or "approximately".

Deception, estimates and twisting of facts is modus operandi we have encountered with AustralianSuper and their contractors.

If the "experts" are later proven wrong, they will just duck for cover and Dingley Village will suffer the catastrophe and have to deal with the physical angst and financial losses incurred.

At the downstream end of the Site and external to the Site, **significant property flooding** **is experienced along Golfwood Close, Lee Andy Court, Campbell Grove and Timms Crescent.**

In the 1% AEP event a peak flow of 5.43 m3/s is recorded as discharging off the Site with Melbourne Water flood mapping showing that **this** **affects approximately 70 properties downstream of the Site.**

Source: Cardno Victoria Pty Ltd

Their fantasy drawing shows a marsh – which is unlikely to happen, due to considerable rise and fall – plus Apartments that are apparently **below retarding dam level on concrete slabs**. Certainly if this monster overfill did appear …

(1) **There is no way sub-ground level garages can be allowed and**

(2) **There's huge dangers for children.**

Residents throughout Dingley Village are required to have fences around pools, but there is no fence around this much greater danger. Even though at present AustralianSuper put up a temporary fence around the retarding basin, restricting access to wildlife like Straw Necked Ibis, but with nobody on site!

It is also policy to ensure that new development limits the impact of increased storm water run-off on drainage systems.

Not insurable

As the flood conditions are widely known, and the apartments would be built on low-lying concrete slabs, most of the development will be uninsurable by residents.

No basements or piling foundations are currently proposed as part of the redevelopment.

No ongoing monitoring or remedial works of the upper Brighton Group aquifer are considered necessary provided that it is not used extractive use purposes (i.e. potable drinking water, on-site irrigation or filling of swimming pools) and basements or piling foundations are not proposed as part of the future development.

Hydrology

The Site is currently partially inundated from overflow from an existing Melbourne Water detention basin in storm events.

At the downstream end of the Site and external to the site, significant property flooding is experienced along Golfwood Close, Lee Andy Court, Campbell Grove and Timms Crescent.

Also further south in Centre Dandenong road and Chadwick Reserve. Many homes in the south of Kingswood have a flood overlay.

Melbourne Water flood mapping showing that this affects approximately 70 properties downstream of the Site.

Source Tract: Kingswood Dingley Village Development plan

KGC then applied to SRW for a long term operating permit to inject up to 70ML per year.

On 17th June 2011, SRW approved two documents under Section 76 of the Water Act 1989:5

- Approval to Dispose of Matter Underground
- Licence to Operate Works

Both approvals have an expiry date of 30 June 2026

The net capital cost of the water project is about $306,000 as detailed below.

ASR project.

Preliminary study and new bore	$75,000
Completion	$175,000
Less Smart Water Fund contribution	$114,000
Sub-total ASR project	$136,000
Tank project	$170,000
Total water project	$306,000

(Smart Water Fund was a Government contribution)

Kingswood managed aquifer recharge

CASE STUDY

The Kingswood Golf Club in Dingley Village needed an extra 30 ML each year to supply summer peak demand and maintain the quality of presentation of the golf course.

Managed aquifer recharge – the process of injecting water into an aquifer for later extraction – was adopted as it is suited to circumstances where there is limited space for above ground storage.

Generally, bores are drilled into sand and gravel aquifers, but in this case, there were additional challenges involved in drilling into fractured rock and determining whether the fractured rock aquifer would provide adequate capacity. An innovative approach which involved identifying linear features in the topography – from stereographic aerial photographs – was used to best position the trial bore.

A new bore was successfully drilled on the golf course to 114 metres. Aquifer extracted stormwater is now pumped into an existing storage dam to supply the golf course irrigation scheme. If the salinity level of extracted groundwater exceeds the limit for irrigating greens, the water is diverted to a new above ground storage tank reserved for irrigating fairway turf only.

This project was assisted by South East Water and the Smart Water Fund and won a Waterwise award from Southern Rural Water in 2010 for demonstrating innovation in water.

Photo courtesy of Kingswood Golf Course.

AQUIFER STORAGE & RECOVERY

- Investigated and installed ASR in 2009
- **Injected 222ML**
- Extracted 151 ML
- Most successful ASR in Victoria

  From Robert Strain, Club Captain for four years.

WHAT DOES IT TAKE TO GIVE RESIDENTS A SAY IN THEIR FUTURE?

Thousands have objected and hundreds attended our meetings. The folly has been on the covers of newspapers and on A Current Affair twice.

In a Democracy, how many residents need to object, before they are heard?

The previous application, which is not unlike this one, resulted in 8,000 responses. Of those, **98 percent were against the development**.

Of the 2% in favour, they were almost entirely in the Peninsula Golf Club whose members are desperately wanting the **$25 million bonus**, and those looking for profiteering at Dingley Village's expense.

Yet still AustralianSuper would not engage in talks.

Still we are obliged to object.

Save Kingswood Group incorporated

No Net benefit for Dingley Village

Our consulting Architect said …

"Dingley Village Residents should not have to suffer, due to an inappropriate purchase by AustralianSuper"

Prepared for the Save Kingswood Group inc
By Kevin Poulter and the team, November 30th, 2021

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