

Submission [REDACTED] local resident [REDACTED].

1. My interest in the Review. How has the flood affected me?

- a. I have been a resident of [REDACTED] for [REDACTED] years.
- b. On the day of the flood my house was not flooded but road access was cut off in three directions, leaving only one point of exit along Langs Road. There was definitely a possibility that I and my neighbours could have been stranded in ways similar to residents in the Queensland floods. There are elderly people and people with disabilities in my neighbourhood who would have found this extremely difficult.
- c. I also participated in the flood recovery and helped out with the clean up with Flood Warriors and the DRA.
- d. There was a lack of warnings and information for residents.
- e. I am concerned about the lack of transparency, independence and impartiality of the Melbourne Water Review.
- f. I am concerned about inaccurate flood warnings on the day of the flood, lack of flood mitigation, poor planning decisions and flood recovery.

2. Terms of Reference, scope and review.

- a. There is considerable confusion over the terms of reference. On one hand the Review documentation says in plain language that the following items are out of scope of any specific policy response; future potential mitigation measures such as additional flood walls, levees or dams; overall emergency responses including warnings and evacuation procedures; and flood recovery. On the other the Victorian Minister for Water and Melbourne Water officials in private at information sessions say these matters are in scope as long as they pertain to issues Melbourne Water can consider. The overall impression is of terms of reference that can be moved to accommodate this week's media problems.
- b. The net effect is confusion and contradictory messaging about what Melbourne Water wants the community to provide in submissions.
- c. All of the information sessions conducted by Melbourne Water have been heavily managed so as to minimize outrage from residents by denying them a collective voice at meetings. This no doubt supports Melbourne Water's public relations objectives but it does not help support community resilience and goes against much of the literature on disaster recovery which emphasizes the importance of collective debriefing and the importance of those affected by disaster being given a voice.¹ It is conceivable that these Information sessions have done more damage rather than help the flood recovery process.
- d. Melbourne Water says that the panel that will undertake the review will be independent. Yet how can the review be 'independent' when the selection process is controlled by Melbourne Water. What guarantee can the community have that the selection of the panel has been selected independently when

¹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4649821/>

Melbourne Water is an interested party in the review with much to lose if there is an adverse finding against it?

- e. At the date of writing this submission, Melbourne Water has still not released the name of the new lead of the Melbourne Water Review. How can the inquiry be 'transparent' if we still do not know this person's name and qualifications? What about other panel members? Who is undertaking the peer review? Who are these faceless individuals? How can this process be transparent?
 - f. Melbourne Water provided data and supported the building of the VRC flood wall. It supported and agreed to the planning permits and LSIO which allowed the Rivervue development to go ahead.
 - g. If [REDACTED] stepped down from lead of the review because he believed it was important to ensure the appearance of independence, why hasn't Melbourne Water who was party to the original agreement to allow the Rivervue estate to go ahead also withdrawn from having oversight over the 'independent' panel? During the information sessions I was told in response to this question that Melbourne Water had done nothing that was against an Act of Parliament. But this is a very low bar if this is the probity standard that is being applied to Melbourne Water's involvement in the oversight role of this review.
- 3. The causes and contributors to the Flood Event in the urban catchment, including any potential impacts of the Flemington Racecourse Flood Wall on the extent and duration of the Flood Event**
- a. It is not disputed in any of the overseas literature that the building of flood walls can cause an increase in the pressure and height of water flow and that this may lead to greater impacts of flooding elsewhere. It is regarded as a more or less fact.
 - b. As *National Geographic* has put it: 'Artificial levees prevent flooding. But they also create a new problem: levees squeeze the flow of the river. All the river's power is flowing through a smaller space. Water levels are higher and water flows faster. This puts more pressure on levees downstream and makes the water more difficult to control.'²
 - c. Or *Scientific America*: by excluding water from one portion of the floodplain, levees export flood risk to neighboring land on the opposite bank, upstream, and, to an extent, downstream as well.³
 - d. Victoria's Department of Energy, Environment and Climate Change notes: 'There are some important aspects of levee location that should be considered when designers are assessing their options. The location must provide an adequate waterway area to accommodate the design flood and not create adverse conditions that would worsen the impact of the flood.'⁴

² <https://education.nationalgeographic.org/resource/levee>

³ https://www.water.vic.gov.au/_data/assets/word_doc/0013/60016/DEP-8419-Levee-design-construction-and-management-guidelines_FA_web-VBrev-150310.docx#_TOC_250063

⁴ <https://www.water.vic.gov.au/managing-floodplains/floodplain-management/levee-management>

- e. The VRC flood wall removed 100 hectares of flood plain; it is inconceivable that the flow and pressure of the water in the Maribyrnong River has not been altered in some way and that this flood was different from previous historical floods
 - f. Though even though this is an important question, perhaps the more important question is what the flood wall represents more broadly as a flood mitigation strategy. The current government approach to flood mitigation on the Maribyrnong flood plain is a user pay approach of using ad hoc flood mitigation measures that are only available to property developers and the VRC. Residents, even if they had the resources, would probably not be allowed to put up their own flood walls.
 - g. Many residents have mentioned at meetings I have attended that the Councils have very tight regulation over what they are permitted to do at their properties and they do not believe they would be allowed to erect their own flood walls, individually as a group, or pay for their own flood mitigation like developers or the VRC.
 - h. This seems unfair, though even if this right to build your own flood wall was extended to residents, the problem remains that the government's approach to flood mitigation is not just unfair but ad hoc and more ad-hocery would just continue to lead to more unplanned chaos.
 - i. A far more rational approach would be to have an approach to flood mitigation of properly designed public works which benefited all residents on the Maribyrnong flood plain rather than just developers and the VRC. I understand that the VRC and developers would also support this approach.
 - j. There is already a substantial body of literature of previous inquiries by Melbourne Water that address this question such as the MMBW, *Maribyrnong Flood Mitigation Study*, 1985 which investigated a range of different types of public works which could be used to mitigate floods. This study could be easily updated, and public works implemented to prevent future floods which could include retarding basins or a mixture of different approaches.
 - k. Infrastructure is expensive but could be undertaken on a staggered or rotational basis along a longer timeline in the same way the government has budgeted for level crossing removals.
 - l. It would be also reasonable given the special benefit that developers and the VRC have already had from having had special permission from the Government of being allowed to build their own flood mitigation that they should have to pay some kind of infrastructure levy towards assisting with the cost of extending flood mitigation to protect residents: for example, a levy on all Spring Carnival racing tickets and on-course betting to pay for the cost of all future works..
4. **Any impact of prior works or activities in the urban catchment on flood levels and extent during the Flood Event.**
- a. Melbourne Water is the Floodplain Manager and Regional Drainage Authority for the Port Phillip and Westernport region. Applications for subdivision and developments in areas covered by the Land Subject to Inundation Overlay (LSIO) and Special Building Overlay (SBO) are referred by Councils to

Melbourne Water, as the authority responsible for the administration of the Planning Scheme, under Section 55 of the Planning and Environment Act (1987). Melbourne Water comments on development applications and, if necessary, places conditions on planning permits to ensure that the drainage system continues to function properly and any new developments are adequately designed to protect people and property from floods and to protect the health of local waterways

- b. Similarly Councils have a significant role in regulating land use to protect residents against flood and the granting of permits. The Moonee Valley planning scheme makes clear that Council's role is to assist the protection of life, property and community infrastructure from flood hazard, including coastal inundation, riverine and overland and avoid intensifying the impact of flooding through inappropriately located use and development.
- c. Both Melbourne Water and Councils thus have oversight over development to ensure developments are flood resilient. Both are accountable for the decisions they make.
- d. Planning permits need to be examined to ensure that the Rivervue development was sited at levels above the 100 year flood level
- e. In addition Melbourne Water's 100 year flood level for Rivervue appears to be set to low as compared to historic flood levels at this site. Questions must be asked about the application of the LSIO and whether the C151 amendment to change the LSIO has also impacted upon the flooding of Riverview by setting a too low 100 year flood level. Many residences appear to have been flooded at a flood level higher than the 100 year flood level set in the LSIO.
- f. A section of the land that was inundated also appears to be in an area zoned for Public Park and Recreation rather than Residential. How has this also influenced the determination of the 100 year flood level and LSIO?
- g. Has there also been sufficient freeboard allowed for in the building regulations of these units?
- h. The 'Independent Panel' must conduct a full investigation into these issues.
- i. If there has been inadequate oversight over the planning process in terms of the approval of planning permits and application of the LSIO, Melbourne Water and Moonee Valley Council must take responsibility for this serious breakdown in regulation and should as a matter of urgency conduct a full review into their current approval and oversight practices so that recommendations can be made for improvement.
- j. A new planning application (MV/16866/2004/B) at Riverview has been lodged with Moonee Valley Council to build yet more units in close proximity to the river. At the very least these proposed units are likely to increase residential density on this site and increase problems of evacuation on a site which already has significant flood problems. This application should be opposed by Melbourne Water and Moonee Valley Council. Residential density should not be increased on this site until the flood inundation issues have been resolved.

- k. It was clear that prior to the flood there was significant concern from local residents about the location of the Village and the danger it posed to older residents. Avondale Heights residents approached Moonee Valley Council on several occasions and attended a council forum on October 15, 2019 with a number of concerns regarding the development of the Rivervue Retirement Village in Avondale Height. In 2019 in a presentation to that forum one local resident noted : “.. the current plans ... allows the building of homes very close to the Maribyrnong River in an area that is prone to flooding, thus placing the senior citizens who are likely to purchase homes in this area at risk”.⁵
- l. On the day of flood in October 2022, 47 of Rivervue’s homes built closest to the river suffered significant flooding and became uninhabitable. They will have to undergo \$7 million in repairs for flood damage
- m. Melbourne Water, Moonee Valley Council and the Minister now need to provide answers as to why they approved the development at Rivervue which appears to have intensified the impact of flooding through an inappropriately located use and development.

5. Whether any other matters may have significantly contributed to the Flood Event.

- a. Prior to writing this submission I have been in contact with [REDACTED] [REDACTED] Melbourne Water through the Office of the Water and Energy Ombudsman
- b. In summary I have raised concerns about what appears to be an error in the modeling or level to flow conversion (cumecs) that would apply at specific levels/heights at the Darraweit Guim measuring station. The October 2022 figures (cumecs) in the chart below represent actual Melbourne Water figures at the time of the flood but they are completely at odds with historic Melbourne Water figures (Sep 2003) for cumecs by a significant amount.
- c. I have to date not had answers to these questions which have been helpful to me or explanations about why there is such a difference in the data for the 2022 and 2003 flood.
- d. In response to my question [REDACTED] has said “there has been a lot of change in the Deep Creek since 2003, including a lot more vegetation growth” but I’m struggling to understand how in 2003 a level of 6.5 metres equated to a flow of 440 cumecs but by October 2022 this same level was only equivalent to 210 cumecs, a loss in flow carrying capacity of 52%, referred below to in the table.
- e. [REDACTED] has also said “other changes that need consideration are, changing channel conditions causing changes in the measured cross section of the gauge, changing conditions upstream and downstream of the gauge, all contribute to the need for ongoing stream gaugings and updating of the rating table”. But I have managed to obtain a copy of the rating table data Melbourne Water used for

⁵ <https://www.theage.com.au/national/victoria/danger-of-development-in-known-flood-plains-20221016-p5bq4t.html>

Darraweit Guim back in 2003, and there is very little difference in flow values below a level of 5.1 m, maybe +/- 2 or 3 cumecs.

- f. I have requested from [REDACTED] also the 20 revisions of the flood rating tables which he mentions in his email so that I can understand when and how the vastly different flood flow values on the current rating table at Darraweit Guim upwards of 6.0 m occurred.
- g. I have also asked whether he can advise what was the basis of Melbourne Water's peak flow estimate of around 280 cumecs at Darraweit Guim on 13-Oct-2022, and what is the highest flow measurement of any independent experts who have gauged this flow at Darraweit? I also seek to understand when this data was obtained?
- h. [REDACTED] responded to these questions on the day of submitting this submission (17 March 2023) and said: "I'm unable to comment on matters that will be covered by the review".
- i. Further to [REDACTED] response, I therefore seek answers now from the Independent Panel about what appears to be a significant error in the flow measurement of water on the day of the flood which has so far not been answered by Melbourne Water.

MELBOURNE WATER FLOOD WARNING MANUAL – Revised

12.2 Darraweit Guim - DG 3

DG 3

Location: Darraweit Guim

Watercourse: Deep Creek

Catchment: Maribyrnong River

Highest Flood:

Date of Highest Flood:

Zero Level of Staff Gauge: 230.83 m AHD

KEY Heights (metres)

Minor: 5.5

Moderate: 6.1

Major: 6.5

**HEIGHT
(m)**

**FLOW
(cumecs)**

REMARKS

5.5

150

123

Minor Flood level
Road through Darraweit Guim cut,
Homes in town centre threatened
5.8 hrs to Konagaderra

6.1

300

172

Moderate Flood Level
4.2 hrs to Konagaderra

6.5

440

210

Major Flood level
2.2 hrs to Konagaderra

7.22

700+

280

**Flood Peak at Darraweit Guim
around 9 pm 13-Oct-2022**



Sep 2003



Oct 2022

- j. The significance of this potential error in the data is that it will need to be corrected if modeling for the Review is to be reliable and valid.

- k. It may also explain why flood warnings on the day of the flood were last minute. In previous flood emergencies residents have told me that they had got warnings much earlier which allowed them to evacuate in a timely manner and place valuable belongings which would be difficult to replace or are not covered by insurance at a higher level to provide protection. This was not the case in the most recent flood.
- l. Accurate upstream data such as that recorded at Darraweit Guim was important on the day in predicting how the flood would affect Maribyrnong township.
- m. If there has been an error in the data, clearly there needs to be a significant review of Melbourne Water's modeling and monitoring system.
- n. The flood warnings by authorities in general on the day were poor. Some areas received warning, others did not. I did not receive any flood warning in the Ascot Vale area. All of the residents I have talked to in my area, including those who were inundated say they received no flood warnings.
- o. In a similar vein, flood level survey data has also just been released by Melbourne Water to some residents but not others just prior to the closure of submissions and after 3 months since the flood event. This leaves residents little time to consider the flood data in their submissions and in the consultation process. I did not receive this data and had to get it from another resident. It was also not released to Ascot Vale residents which means that they have been given no opportunity at all to discuss this data in their submissions. Why not?
- p. Ascot Vale in general has been forgotten by Melbourne Water even though a number of homes were inundated. Not a single flood level or floor level was surveyed for the 20 or more residences flooded in Ascot Vale in addition to the large number of community sporting and recreation facilities flooded.
- q. Not a single flood level or floor level was surveyed on the north side of the Maribyrnong in the Essendon North-Aberfeldie area.
- r. Only one flood level and floor level was surveyed in Kensington.
- s. Only one flood level has been taken on the city side of the Maribyrnong River. How can Melbourne Water begin to make an assessment of any additional impacts of the VRC Flemington Floodwall downstream of the wall where the worst impacts of the wall were always going to be located?

6. Conclusion

- a. In the last six months I have had the opportunity to meet many residents who were affected by the floods. There is extreme tiredness and cumulative frustration built up now over many years. Many residents are rightfully angry that Governments have not, after so many past flood events, implemented proper flood mitigation and good flood warning systems that could have protected residents.
- b. There is also extreme skepticism that Melbourne Water's 'Independent panel' will review this issue impartially and with due diligence or fix any problems.
- c. Most see this Review as a waste of money or as a public relations exercise designed to protect the reputation of a former Labor Government which allowed

the VRC to build a flood wall but not a review which will deal with any of the real problems that concern residents.

- d. It is hard not to agree with these assessments. Yet it remains a truism that it is Melbourne Water's responsibility to protect people and property from floods. If this responsibility is to have any meaning at all and is not just empty rhetoric, Melbourne Water and the 'independent' panel needs to step up and take this role seriously.