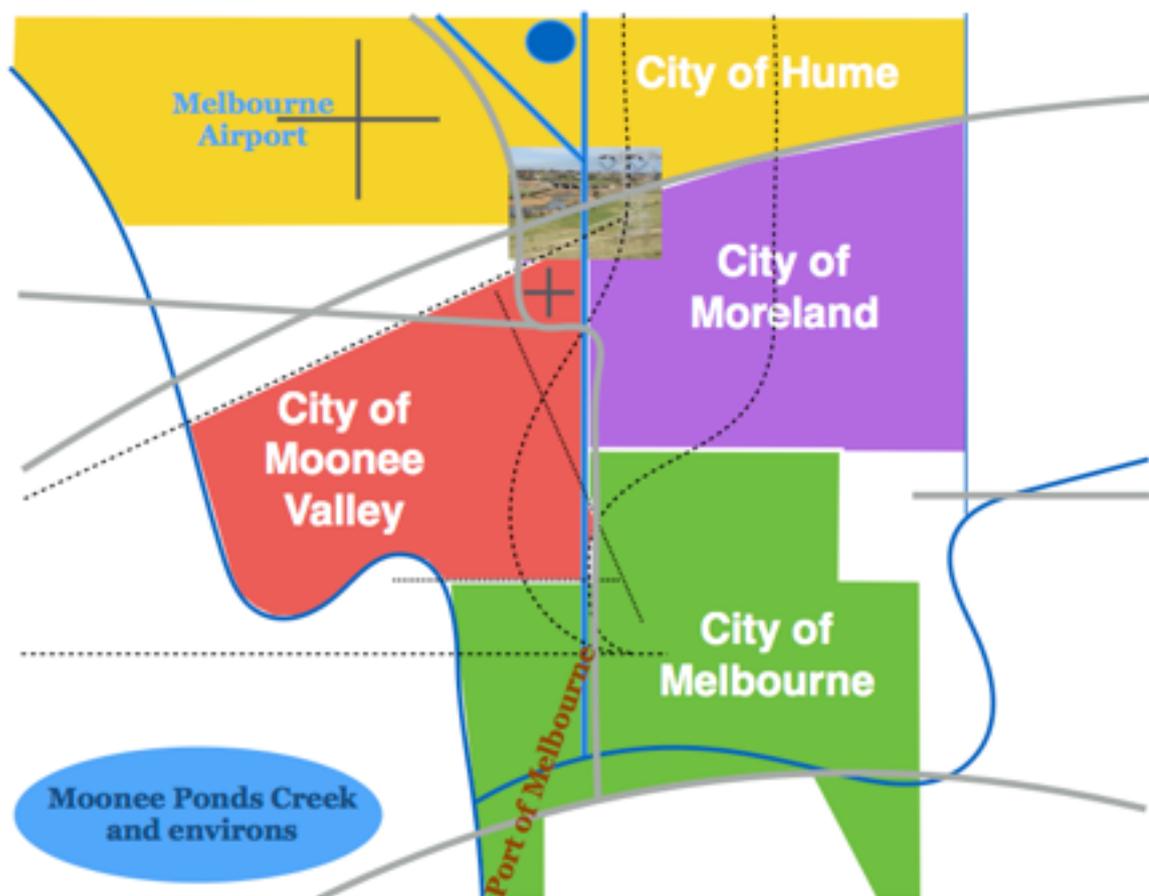


This submission from Friends of Moonee Ponds Creek is primarily about Waterway and Catchment Health, but with an introductory discussion about resolution of potential synergies and conflicts with other proposed objectives plus our discomfort with allowing a proposed state-wide conception of priority waterways to obscure the civic importance of modified urban waterways. We note that this submission is written with full consideration to the dramatic change to storm water flows and flooding potential due to reduced permeability of urban and suburban developments.

Moonee Ponds Creek has a long history of disturbance following the British occupation and a consequentially complicated mix of landholders and managers. While Melbourne Water is responsible for most of the length of the waterway and major tributaries, some also known as main drains; the east and west branches that flow into Woodlands Historic Park rise in privately held green belt farmland between Woodlands and Craigieburn Road West; while downstream from Footscray Road to the Yarra confluence is under the control of the Port of Melbourne. The Creek flows between the cities of Hume, Moreland, Moonee Valley and Melbourne, which have various responsibilities for the open space corridor and feeder drainage networks. Downstream of Flemington Bridge, the creek course is entirely constructed through areas where its once terminal wetlands were subsumed for industrial purposes a century ago. Upstream from Flemington Bridge, much of the course has been straightened and lined with concrete in conjunction with the construction of the Tullamarine Freeway. VicTrack, VicRoads and CityLink have significant assets in and crossing the creek corridor. Eastern and northern flight approaches for both Melbourne and Essendon airports are close to the Creek while the Moonee Ponds Creek Trail provides a well-used shared path from Woodlands to the Yarra.



*Development of the Moonee Ponds Creek Drainage System* (1981) produced by the Melbourne and Metropolitan Board of Works provides a comprehensive, if somewhat defensive, history of “improvements” to that time. The *Moonee Ponds Creek Concept Plan* (1992) and the *Moonee Ponds Creek Strategic Plan* (2011) have guided more recent works along the Creek, along with other documents referenced therein.

We also note with concern that there is no mention in the Discussion Paper of Friends groups like ours who are volunteers in mostly suburban areas doing similar work to Landcare groups in rural areas. This appears symptomatic of a lack of appreciation of the role of even highly modified urban waterways in developing public awareness amongst the wider non-rural population. With recreational facilities, parkland, shared use paths and schools often in close proximity to waterways and increasing emphasis on restoring and protecting indigenous habitat, there are established and future opportunities for community education on environmental issues where Melbourne Water's Healthy Waterways program has been a game changer, though, like too many good news stories, far from as widely recognised as it deserves to be.

There needs to be far-reaching reevaluation of urban drainage and waterway engineering practices that were adopted in prior generations and which appear to persist through organisational culture despite the prioritisation of healthy waterways in other parts of Melbourne Water. Is it time to concede that marginal increase in flood risk from rare events might be adequately mitigated with less cost to the utility of the waterways and the stormwater during the other 364 days a year? Is there any ongoing justification for maintaining low flow in sterile concrete pipes and channels rather than accepting that flow is naturally intermittent on smaller waterways and provides valuable habitat when left in open rocky earthen channels? In the case of Moonee Ponds Creek in particular, might a gradual return to its natural chain of ponds state be facilitated with Kororoit Creek providing a better model? (refer pics near Sunshine West below)



The Discussion Paper's chapters on Resilient and Liveable Cities and on Recognising Recreational Values overlook important benefits of access to waterways in urban areas, benefits from health and fitness to environmental education. How much more might these be improved if the engineering aversion to giving people low flow access to naturalised waters edge was repudiated? Beyond that, can't we aspire to have sufficient inline naturalised storm water treatment that flowing streams can be again seen as safe for skin contact, if not quite for drinking? Splashing around should be seen as healthy wherever it is practical and waters edge access normalised. This is an area where adopting rural and bayside norms should be the target with a monitoring regime and visible warnings whenever there are health risks, which we can accept will not completely go away any time soon, but where a reduction to rare to occasional should be an agreed goal.

Moonee Ponds Creek catchment includes some 21st Century examples of how to do it better alongside inescapable evidence of a preceding century plus of abuse, the last of which may not yet be done if TransUrban continue to be allowed to fill the state's historic planning vacuum. Those success stories are: the Jacana Wetlands up- and downstream from the Western Ring Road crossing (at left, below); the Trin Warren Tam-boore siltation (not shown), treatment and storage ponds (centre) on Royal Park Main Drain which uncharacteristically survives as an open rocky earthen channel within the City of Melbourne; and Moonee Valley Council's recent daylighting of all but the highest flows of an old stormwater drain beneath Napier Park with water capture and delayed rerelease to save protected red gums (at right, 30 months apart). The City of Greater Dandenong is now supporting monitoring of that project by a Monash University team to inform their development of similar projects.



Two other renaturalisation projects from late last century have had less obvious impact, maybe largely because there has been no systematic monitoring nor reapplication of lessons learnt. Between Flemington Bridge and Macaulay stations, low flow had previously been contained in a straight channel down the middle of a flat earthen floodway, similar to

the profile above the ornamental pond at Melbourne Gateway (below upper left), sans concrete. Small scale channel meanders were introduced but leaving the floodway even less inviting for community monitoring. (lower left) Beyond the end of concrete lining beside Strathmore North Primary School, (upper middle) the Creek is mostly confined to a constructed and straightened earthen V-shaped channel with steep sides intended to handle maximum discharge rates from the Jacana retarding basin. (lower middle, Gowanbrae) From below the high Jacana-Albion rail bridge to beside the northern point of Boeing Reserve a series of "riffs and ripples" were constructed by slightly widening and modifying the otherwise straight channel and profile, (upper right) but these too suffer from relative invisibility and subsequent neglect. (lower right)



Given the century plus it took to degrade urban waterways and finally discover there needed to be other priorities, a state water strategy needs to both set serious near term objectives and frame them in anticipation that rectification will also need to be ongoing through another century with the uncertainties already built in by climate change/sea level rise and a lot more. Without large scale works, tidal water will increasingly penetrate along the creek beyond its current normal limiting barrier beside Macaulay Station (shown below with minor flood flow, left, and tidal back flow, centre) and before long submerge all the land which the creek historically nourished below Flemington Bridge, intermittently at first but ultimately at huge cost to infrastructure and the proposed major redevelopments at Arden-Macaulay and E-Gate which are presumed to rely on the creek corridor for still inadequate green space. (right)



Friends of Moonee Ponds Creek does not recommend a one size fits all approach to the various reaches of our Creek as it flows, at first intermittently, from agricultural land through ongoing suburban development into older settled areas and increasingly stressed inner urban service zones, let alone across the diverse waterways of metropolitan Melbourne. Local knowledge is key to good outcomes. However there also appears to be space for agreement on some ongoing principles which could guide real waterway and catchment improvements through a century of revitalisation. And it all starts with getting the balance right between waterway health and flood control, with increasingly rare but potentially larger flood events not retaining their historic veto over programs to make better use of storm water and waterways year in year out.

We do suggest, as a general principle, developing an inventory of all points of stormwater entry, at least into urban creeks and their significant tributaries, with a view to widespread insertion of stormwater siltation, treatment and storage ponds across however long it takes. While these should often be located on tributaries (below l-r top: Royal Park Main Drain ex Trin Warren Tam-boore, Melville Road Main Drain, Westbreen Creek) and even creeklets close to where they enter larger streams, versions which can be occasionally overflowed should be developed at least for all potentially intermittent streams. There should be a complementary program of daylighting tributaries which have been confined to underground drains, especially where they run beneath public easements, with an objective of minimising the length of significant flow in dark tunnels to encourage natural recolonisation. (bottom: only a fraction of 1930s blue stone channel of Five Mile Creek survives, branches now flow beneath Salmon Reserve, Magdala Avenue Reserve)

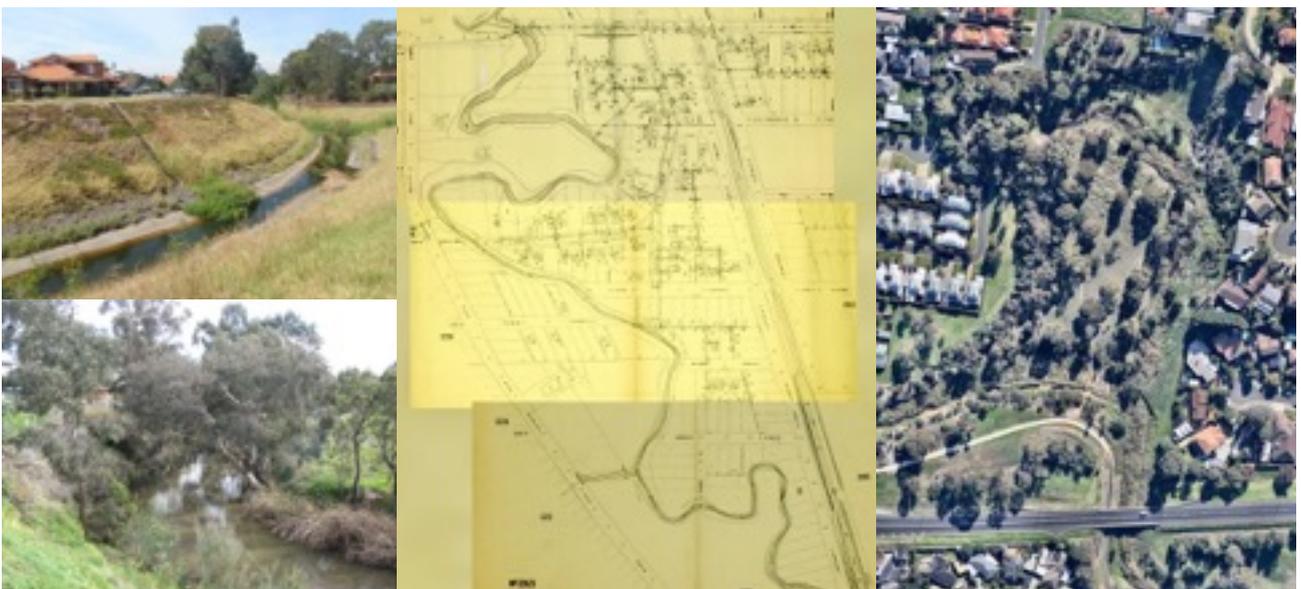


The above-mentioned inventory should make specific detailed reference to all quarries, landfills, etc. for which there is potential for stormwater outflow or leaching. (capped toxic landfill and disused quarries on opposite sides of Creek and of proposed trail connection close to Melbourne Airport terminals, below left) We note that there may not be easily discovered nor comprehensive records of the content of older landfills and see recently

increased exposure of a drain from under the former landfill that is now Johnstone Street Reserve (right) as a site for monitoring and potential further processing before its outflow enters the weir-ponded main creek near the top end of Jacana Wetlands.



It is increasingly well understood that removing meanders was a bad move. While we accept there is no realistic prospect of restoring the rich meanders above Flemington Bridge, nor elsewhere adjacent to infrastructure, there are other places where a partly filled meander is still conspicuous and the diversion channel has potential for reevaluation. (meander at Five Mile Creek confluence was early neck cut, below top-left; healthier creek at Westmeadows shows what is possible, bottom-left; old creek course at Pascoe Vale shows both fates, below centre) And there is a big cutoff meander in Westmeadows dating from 1976 which could easily be reversed as a test case. (right) With respect to “flood channel (...) cut across the neck of the meander loop” the 1981 MMBW report admits: “The combined effects of erosion and deposition have caused the abandonment of the meander loop, even during low flow. The flood channel is now the waterway and the meander loop is almost completely silted up; in fact, the only time that flow now occurs within the loop is during a flood, which is virtually the opposite of what was planned!” (their exclamation mark) Forty years on there appear to be no new impediments to rectification.



In reaches where our creek has been tightly confined by infrastructure and private development, (below left) the relative success of the ornamental ponding at Melbourne Gateway (below middle) is suggestive of what might be achieved by a succession of low weirs that would not impede high flows but would retain water otherwise. Yes, there would be increased surface evaporation and a real prospect that flow between ponds would drop to zero in particularly dry periods, but this has already become the new normal in much larger semi-rural streams and clearly was the way the Moonee Ponds Creek had long been below Flemington Bridge. Given the importance of water surfaces to bird navigation, a chain of ponds is preferable to a low trickle in a narrow channel. Where possible human access to and movement along pond edges is desirable for the 364 days a year the Creek is not in flood, together with more naturalised and indigenous environmental treatment wherever possible. The only circumstances in which impediment to flood flow might actually matter is major events when the effect of such measures is unlikely to be significant provided they are designed so as not to float off into choke points.



The above wider principles and discussion of matters specific to Moonee Ponds Creek leaves aside some other locally identified considerations which also apply more widely:

- there is need for a zoning overlay and public acquisition process for unwinding private holdings which have been allowed too close to both surface and buried waterways
- there needs to be higher expectations for and better supervision of run off from development sites
- there needs to be monitoring and remediation of bank erosion in former agricultural land which was historically the normal state through much of the Moonee Ponds Creek flood plain and is still evident around Woodlands Historic Park (above right)
- there is increasing demand for further improvements to shared user paths with connections to the wider trail network, more crossing points, simplified connection to Melbourne Airport in particular, (as per top left p.6) and maintenance of safe separation from trackside vegetation

In summary, we are concerned that the Discussion Paper fails to recognise the importance of urban waterways and stormwater harvesting to community health and amenity. We have attempted to use our detailed local knowledge to illustrate areas which should significantly enhance what is ultimately included in our state water policy.