**SUBMISSION**

**in regard to**

**STATE GOVERNMENT**

**2016 FLOOD REVIEW**

**Causes:**

1. Excessive rainfall, especially in the catchment area of the Mersey River
2. 3 lows in Bass Strait converging with 4 coming down the East Coast of the Mainland
3. Cloud-seeding by the Hydro in that same area possibly contributing (or why would they use that technology?)
4. About 425 mls of rainfall in the catchment area during the previous 2 days
5. Constant heavy rain in downstream areas as well
6. Flood peak coincided with king-tide in the Mersey at Latrobe.
7. Reasons for lack of preparedness
8. Minor flood warnings all day despite above situation
9. No moderate flood warnings
10. Major flood warning issued at 5.30 pm just on dark
11. Even then water level too high to be able to move livestock to higher ground in some cases
12. Livestock would panic being moved in the dark in the best of circumstances
13. Others moved them to higher ground but it was not high enough.
14. Exacerbating circumstances
15. For community
16. No SES coordination between areas, eg Railton and Sheffield residents told to evacuate to Sports Centre in East Devonport when roads were closed and there was no way to get there
17. No local alternatives suggested by authorities
18. For farmers
19. All of B.
20. Centre-pivot irrigators need to be parked in alignment with the flow of any potential flood water during winter, this would lessen the likelihood of damage, though there are instances where other alignments are more practical
21. For livestock

a) During height of flood, helicopters were used to report on state of farms, but hovered too close to livestock and frightened them into deeper water, in some instances causing them to be washed downstream, in which case most drowned

b) Fences on flood-prone farms need to be aligned where possible with direction of flow and according to terrain to allow livestock to find higher ground more easily

 iv) For farms

1. In one instance in the Mersey Valley, both river shingle and topsoil were removed from a farm over many years, initially in the 1960’s, lowering the height of the farm and endangering land, livestock and people downstream during flood events
2. Authorities encouraged neither the accumulated gravel in the river to be cleaned out, nor levee banks to be built, nor willows growing in the middle of the river to be removed.
3. The Problem of Debris
4. where does it come from?
5. Willows in the river and along the bank
6. Forested areas upstream, including areas burnt in the earlier bushfires
7. Tree plantation areas upstream esp where there has been a massive die-back issue on the flood-plain (upstream from Kimberley)
8. Trees planted by farmers alongside the river for flood protection being washed away
9. Accumulated debris from earlier more minor floods
10. Problems caused by build-up of debris
11. Damage to bridges, in many cases the massive pressure from the damming effect destroying them completely
12. Debris accumulated at bridges causes the water to divert across the farmland affecting livestock and farm infrastructure, as well as roads
13. Build-up of debris in the river has caused the river to try to alter its course through farms
14. Debris along river traps livestock that have been washed downstream causing them to drown
15. Culverts in a flood-prone area are worse than useless, they cause a worse problem because the debris doesn't have a hope of floating through, but builds up and causes the road to wash out (the culverts have been installed only in recent years, prior to that they were bridges)
16. Debris at a railway bridge and adjacent viaduct caused the water to be 2 metres higher upstream of the bridge, the pressure causing the collapse of the infrastructure and the subsequent deluge over farmland causing the drowning of a massive number of livestock directly downstream
17. Hydro-electric dams have created an issue
18. There is no system of communication with land holders when there is a significant release of water. This is important, esp in an event such as this when the amount would be massive
19. The dams have enabled the management of water flow in most scenarios, but in a major event such as this, the whole river system runs out of control. Is it possible for the Hydro authorities to manage a release of water ahead of a predicted event? This is difficult when the storage was so low, releasing water would seem crazy!

Response and Recovery:

1. Recovery of stock washed downstream
2. Livestock found downstream was handled by Ebony Bannister of Roberts Ltd (and others seconded by her) who is to be congratulated for her incredible effort and energy and compassion for both the animals and their owners. Thanks also goes to Roberts Ltd who put aside their normal business activities to help in a huge way in the recovery process
3. Dead stock found downstream was initially identified by Ebony Bannister’s team but also by the owner if they were able to be identified.
4. The biggest problem was with the disposal of the carcasses of dead livestock. Nothing was even started until 3 weeks later when an attempt was made by DPIWE to burn the carcasses in many different localities on farms but conditions were so wet that it was difficult to retrieve them from the river and cart them to the site (getting bogged etc) let alone keeping the fire burning long enough to do the job effectively. Many carcasses remained in the river (many still there), farmers were also given a lecture how to bury them (so many refused). A better idea would have been to cart them to a communal burial site where disposal could have been better monitored; the Dulverton tip site would be one suggestion where they could have been composted.
5. Erection and repair of fences

1. Blazaid are to be congratulated for a fantastic job! Both boundary and internal fences were replaced or repaired allowing the farmers to concentrate on other pressing jobs.
2. Restoration of pasture
3. Some farms have a huge amount of silt washed down from farms upstream, spoiling pasture
4. The farms from which the silt has been lost have been ruined, some of them is where the river threatened to divert through them
5. Many farms have huge swathes of gravel on them (those mentioned in ii) above are among these), making either grazing or cultivation impossible and affecting the value of the property (it should be possible for the landholder to sell the gravel to offset some of the removal costs)
6. The fact that the flood happened at the beginning of winter meant that the ground has remained far too wet to do any effective restoration work until quite recently, complicated by the continual rise and fall of the river over the following 2 to 3 months due to continued rainfall and the already saturated soil
7. Delay or in some cases cancellation of crops planned and/or contracted to be sown
8. Restoration of access
9. Many farms initially were completely isolated, one farmer first inspecting his stock, buildings and livestock by JetSki
10. Local Councils were quick to restore public access
11. The farm driveways took longer to be restored, the task made easier by kind offers of machinery and drivers from private firms but the gravel suitable for the road surface had to be purchased at considerable expense
12. Where part of the property was across the river, it was a problem accessing the feed for the stock so supplementary food was sourced at great expense

C. Restoration of stock health

i) Stock in some cases were standing in metre-deep water for 1 ½ days

ii) in many cases it was towards the end of the lactation season for dairy cattle, in which case they were not milked again until they calved, so there was a loss of income until the end of the usual lactation period

iii) many sheep drowned because of the water-laden fleece

iv) stock are still thin and not producing up to their normal standard, it is yet to be seen if there is a problem with the breeding programme this season

v) young stock in some cases are not in a good condition because of having to be housed for longer than usual, with no fences left for calf paddocks or pasture suitable for them to graze

vi) many of the stores of silage and hay either washed away or spoiled and no surplus in the state available after the disastrously dry summer, necessitating the expense of purchasing these from the Mainland if it was deemed necessary for livestock health

1. Restoration of Mersey River
2. Landholders have done much of this work at their own expense with their own machinery or that kindly lent to them
3. The 2 offers of $10,000 from the State Government is just a drop in the ocean
4. Little could be done while the river continued to be high or while there's a risk of more substantial rain events
5. The same waiting game goes for the burning of debris which at this stage is still too green to burn effectively. In the meantime each branch of willow is sprouting new leaves

Mitigation measures:

I am restricting myself to comments and suggestions regarding the Mersey River because that is the area we know, but they could well apply to other river systems as well.

1. Cleaning out of river during the summer months is urgent
2. Build-up of river gravel in many places along the full length of the river will cause worse floods to occur in the future unless it is cleaned out so that the river course can carry the full winter flow
3. Probably the worst area is near Latrobe where the gravel layer is reportedly about 2 metres deep, presumably where the gravel burden was dumped when it met tidal water, esp at the time of a king tide
4. Gravel out of the river at Merseylea was used during the 1950’s, 60’s and 70’s as road base before the sealing of the Railton Road between Elizabeth Town and Railton; graded stones were also used as aggregate for cement in Devonport for several years. I point these out to show that the river gravel can be utilised to help offset the cost of removing it
5. The gravel also needs to be used to reinstate the river banks which in many cases now are non-existent
6. Debris and willows in the riverbed need to be removed to allow a direct flow of water rather than causing the water to be diverted off-course
7. Debris along the river bank needs to be piled and burnt before they are caught up in a subsequent flood and cause more damage to infrastructure, private and public
8. There needs to be a concerted effort by all 3 tiers of government to carry out this work along the whole length of the river course
9. Farmers cannot be expected to foot the bill themselves for their own patch because it needs to be planned and carried out in a coordinated manner to be at all effective; farmers can contribute but this is far greater than an individual problem
10. There is a specific problem at the bridge commonly known as Hogg’s Bridge along Native Plains Road. Over the years the river has dumped shingle on the western side of the river below the steep bank, then silt, then willows and wattles have grown there. This has pushed the river to one side away from the bank and eroded some farmland on the eastern side to make room for the flow. That landowner has wanted to reinstate the river to its original course so that it flows directly under the bridge but has been refused permission. Now we have the problem of the river undermining the eastern end of the bridge so that in this flood event that end of the bridge and its abutment collapsed. It is no use rebuilding the bridge (as they are doing right now) without carrying out this river work or this wash-out will be repeated. There are probably other areas along the river where there is a similar problem.
11. Stabilising of river banks
12. Gravel from the river is not enough to stabilise banks. Need trees planted (again!)
13. Groynes have been constructed in the past at various points along the river using angular rocks brought in from elsewhere and covered with pig-wire. These have been very effective in protecting the river bank from erosion and are still in situ some 50 or more years later
14. It was noted on a recent visit to New Zealand that shipping containers filled with rock were used to protect roads and houses from earth-quake damage. We make this suggestion in regard to the river banks where the river has washed through and attempted to make a new course. There is an extensive wash-out in Merseylea on Rockliff's farm where the river has tried to go straight ahead following under Long Hill instead of making the bend. Efforts have been made to reinstate the river course but unsuccessfully. A line of 30 or 40 shipping containers full of rocks set on the river bed and with a second layer on top, all welded together, along the river bank to force the river to turn would seem to be a simple solution. There are probably other stretches of the river that could be treated in a similar fashion
15. Reinstatement of bridges
16. Bridges that were first built along the river were generally well and thoughtfully constructed and withstood many floods, they were higher in the centre to allow the extra flood water and debris underneath, and the piles were painstakingly driven deep into the riverbed
17. Bridges need to be higher than the previous ones have been, at least 1 metre, also longer, and with longer spans
18. Please no culverts in flood-prone areas, they are completely inadequate (please note the comment in D ii e)

Final comments:

1. Please listen to locals, they are the ones living with the problem and will have to live with unwise decisions made by authorities for years to come. They know the river better than anyone and all its moods!
2. Please, no tree plantations on flood plains. Many have died en masse and contributed significantly to the problem of debris and eg destruction of bridges.
3. The measures used in the past for river heights in regard to flooding need recalibrating to allow for the changed river conditions (eg build-up of gravel causing the river to flood more easily) until the problems are rectified
4. Please don't treat our rivers like half blocked drains!
5. Need a better system of communication to landholders all the way down the river for flood warnings, either by text messaging or phone calls. In the past there was an effective line of communication between authorities and landholders but not any more. Not all farmers have the technology to access information about the state of Hydro dams and when water is released
6. Most important of all, please don't leave landholders out on a limb on their own. They are still affected by the trauma of the flood and will continue to be for a long time yet. Their monetary and emotional resources are low because the aftermath of the flood has drained them to exhaustion.

Thank you for taking the time to read this.

Ted and Kathryn Lambert