

EHO's in Emergencies Forum DELWP – What's new Water, Wastewater and dam safety

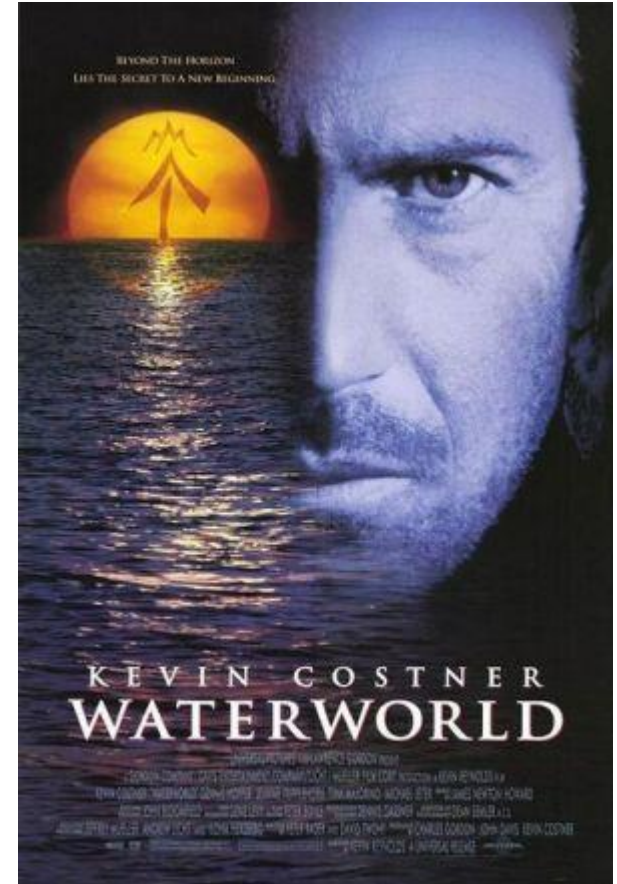
Konrad Gill – Program Manager CIR

25 May 2016



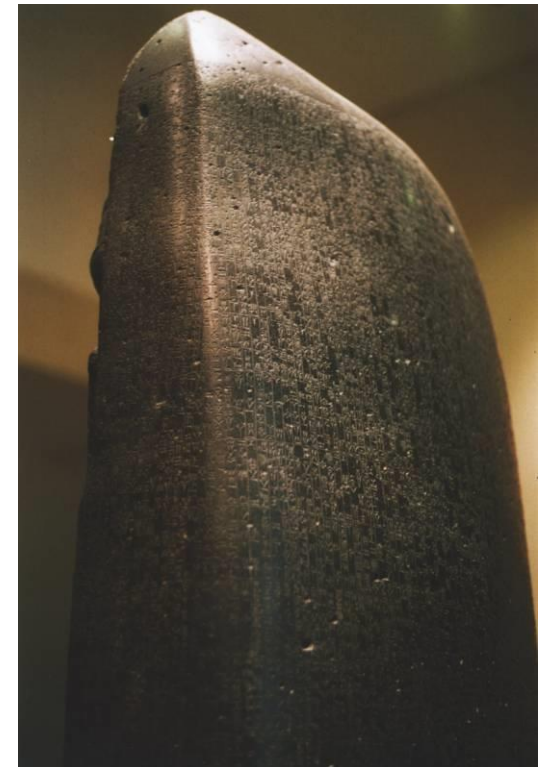
Aim

- Better understanding of institutional water arrangements in Victoria
- Build collaboration between State Government – Water and LGA – EHOs
- Identify Risk opportunities into the future between EHOs and water sector



Themes

- Introduction
- Aim
- Water sector in Victoria
- Legislation and risk
- 4 x Learning outcomes
- Conclusion



Key Victorian Water Legislation / Regulatory Instruments

Water Act 1989

- Framework for the allocation and management of water resources.
- Outlines the functions, rights and obligations of water businesses.
- Establishes dam owner/manager responsibilities for dam safety and accountabilities for damage their dams may cause.
- Provides the Minister for Water with powers to:
 - give directions concerning dams, and
 - carry out works where the dam owner/manager has failed to carry out works necessary to ensure safety of the dam.

Water Industry Act 1994

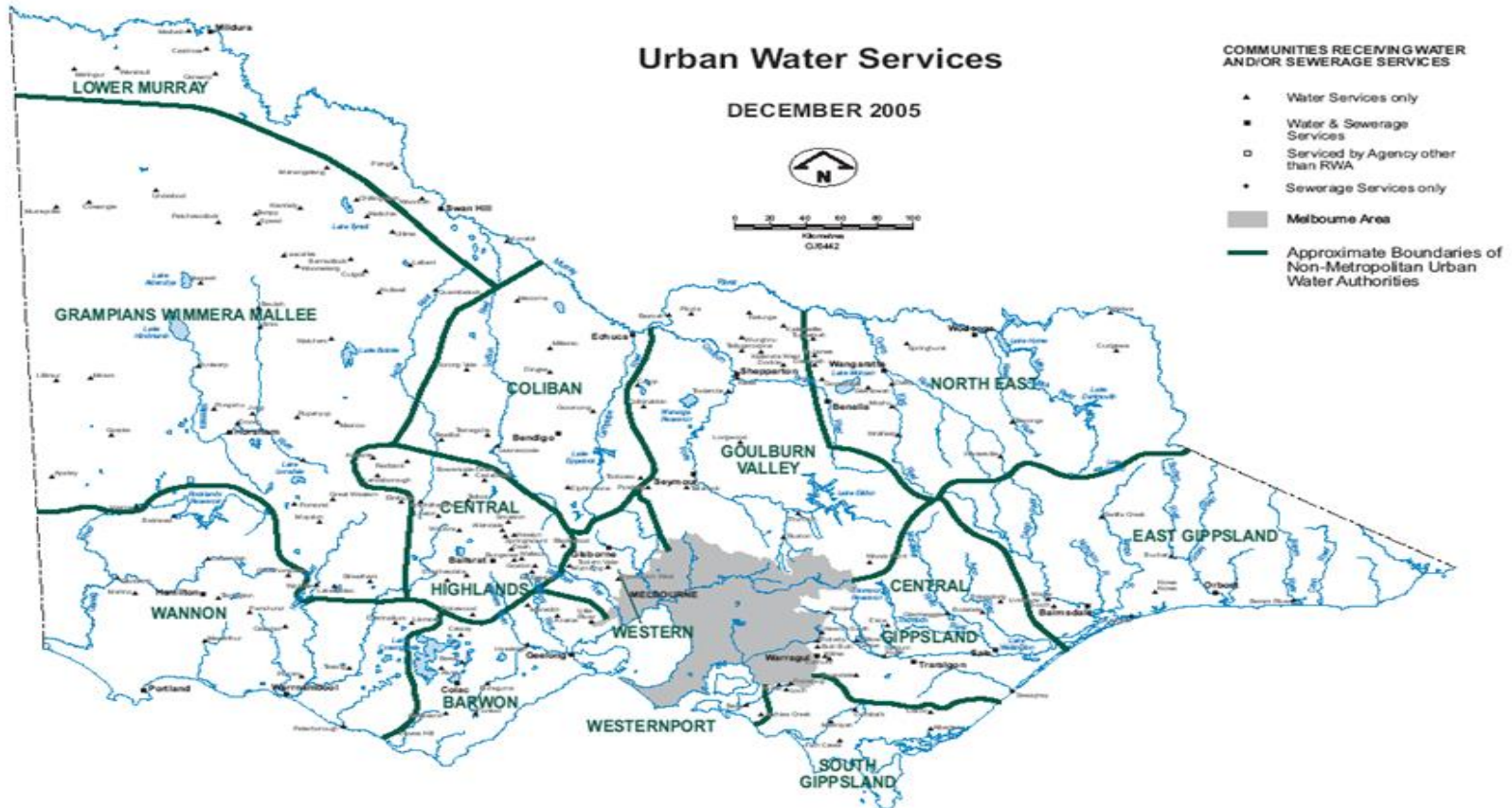
- Framework for regulating water process and service standards.
- Establishes the ESC as the water sector price regulator.

Statement of Obligations

- Specifies obligations for the performance of water corporation functions and exercises of powers.
- Sets dam safety and emergency management obligations for water corporations.

Water Sector in Victoria

VICTORIA'S WATER AUTHORITIES



- Owned by State Government of Victoria
- Water corporation assets in excess of \$50 B

- 19 water corporations
 - 15 urban
 - 4 metropolitan

Emergency Management Act 2013

Emergency Management Commissioner
coordinates response activities and ensures
control arrangements are in place

Classes of Emergencies

| Major Emergencies | |
|--|-----------------------------|
| Class 1 | Class 2 |
| Major fires or major emergencies controlled by CFA, MFB or SES | All other major emergencies |



Major dam safety,
water or wastewater
emergencies

Sector Resilience Plan - Water

Requirement under Part 7A of the *Emergency Management Act 2013*

Provides a level of assurance from the Secretary of DELWP to the Emergency Management Commissioner.

- Completed in consultation with 19 water corps
- Provides a summary of key emergency risks facing the water sector
- Outlines resilience indicatives that are undertaken through the Water Sector Resilience Network (Water – SRN)



Roles and Responsibilities (EMMV)

**DELWP as
Control Agency**



Dam safety
Water and wastewater service disruption

DELWP as
Key Support Agency



Flood (floodplain management)
Drinking water contamination

DELWP
Other
Functions



Coordination of blue-green algae response

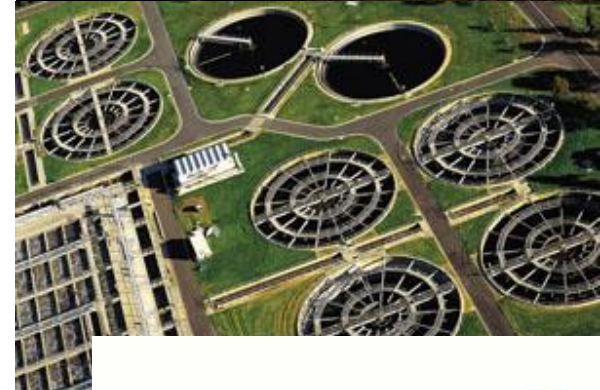
Key support agencies
for DELWP in these
emergencies



Water corporations
Catchment Management Authorities (CMAs)
Victorian State Emergency Service (SES)
Local government
Parks Victoria

Types of Assets

- Dams and DESAL
- Service reservoirs
- Pump stations - water and sewerage
- Water treatment plants
- Sewerage treatment plants
- Transfer mains - water, sewerage, irrigation, drainage
- Irrigation channels
- Retarding basins



Risks – assessments

- Fire
- Severe weather
- Power supply disruption
- Terrorism, active shooter, threat and extortion
- Significant Water contamination
- Liquid fuels
- Dam safety
- Cyber attack
- Hazardous material event
- Loss of telecommunications
- Protracted Heatwave
- Ongoing Drought



Water Recovery Activities

- For Provision of immediate temporary drinking water supplies and restoration of reticulated water supplies to impacted communities.
- Restoration of reticulated wastewater systems
- Rainwater tank cleaning
- Rainwater tanking filling 5000lts
- Removal of Residual Flood water
- Essential water replacement post fire event



Interface points - Water Sector & EHOs

| Water Corporation | LGA |
|---|-------------------------|
| Reticulated, piped treated drinking water systems | Rainwater tanks |
| Reticulated piped wastewater treatment systems | Septic tanks |
| State owned reservoirs | Municipal owned dams |
| Residual Flood water – post flood event | LGA storm water systems |

Event Case studies

Incident
Management

Consequence Management

| | |
|------------------------|--|
| Fire Flood Storm | BGA event 2016 Wye River fire 2015 Victoria Floods 2011 / 2012 Heat wave 2009 Black Saturday 2009 |
|------------------------|--|



Time line

Learning outcome 1 - Wye River Collaboration

- Christmas Day Bushfire – impacts to Separation Creek and Wye River. Rain water tanks and Septic tank systems. 300 properties impacted.

What did does this mean

- Temporary drinking water supplies > via community tanks > via Barwon Water. Risk opportunity for agencies.
- Septic Tank inspection and categorisation
- Settlement wide assessment for rebuilding
- Complex resettlement considerations – standards or the day , cost recovery, legacy systems



Learning outcome 2 – Communication

Murray River BGA event

- 100 + day campaign event Blue Green Algae Event in Murray River.
- 900km of river, 41 towns, 6 Water Corporations, three states
- No operational response to mitigate the hazard

What does this mean

- Communication with all stakeholders to keep informed.
- Evidence based decision making on the levels of BGA.
- Informing the public of the hazard and risk based decision making.
- Understand the Economic impacts to tourism and local industries.
- Documented process for future use.
- Understand the De-escalation of events and triggers to return to normal operations.

Blooms: are they the new normal?

A LEADING biogeochemist believes it is possible this year's algal bloom was linked to climate change.

Wodonga-based CSIRO scientist Darren Baldwin said the outbreak occurred when Lake Hume contained a higher water level than previous events.

"We thought we had a really good understanding of what drives these blooms but we didn't expect to see a bloom this year," he said.

"We keep coming back to the idea that it may be linked to climate specifically."

Previous blooms occurred when Lake Hume water levels were about 10 per cent but this year levels were at 30 per cent when the bloom was first detected.

Dr Baldwin said. "We know there was a blue-green algae bloom in 1980, straight after monitoring, and then we didn't see another algal bloom until 2003.

"In that last 16 years we've had five blooms: 2003, 2007, 2009, 2010 and 2016."

But the blooms between 2007-10 were during the millennium drought when Lake Hume was low.

According to Dr Baldwin, with higher water levels in 2016, the cause could have been weather.

Bureau of Meteorology data revealed Border temperatures in February this year were 1.5 degrees above the long-term average, while March was 3 degrees warmer and April 2.5 degrees hotter.

"What we do know globally and locally, is that February to April's air temperatures were all significantly above average - not just the maximum temperatures but the minimum temperatures," he said.

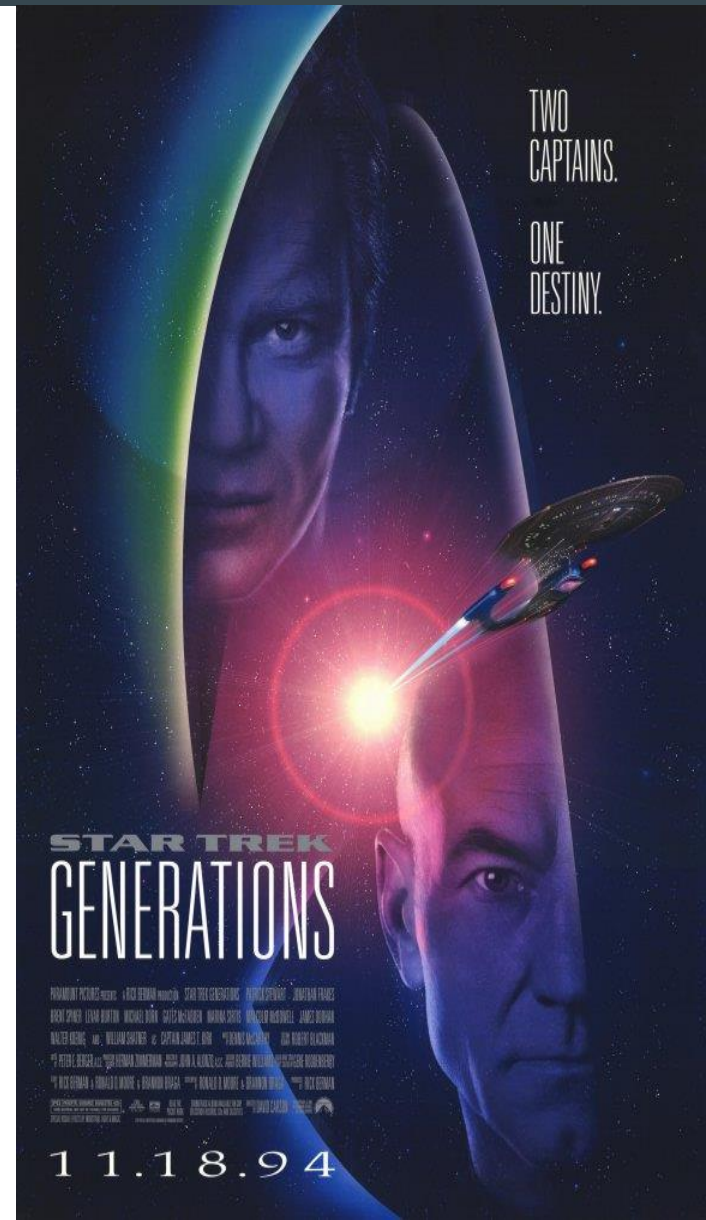
"What we think is happening - without proving it - is that this algal bloom is as much to do with climate as it is with normal factors that influence bloom formation.

"I'm trying to get some conversation about the potential that this may become the new normal."

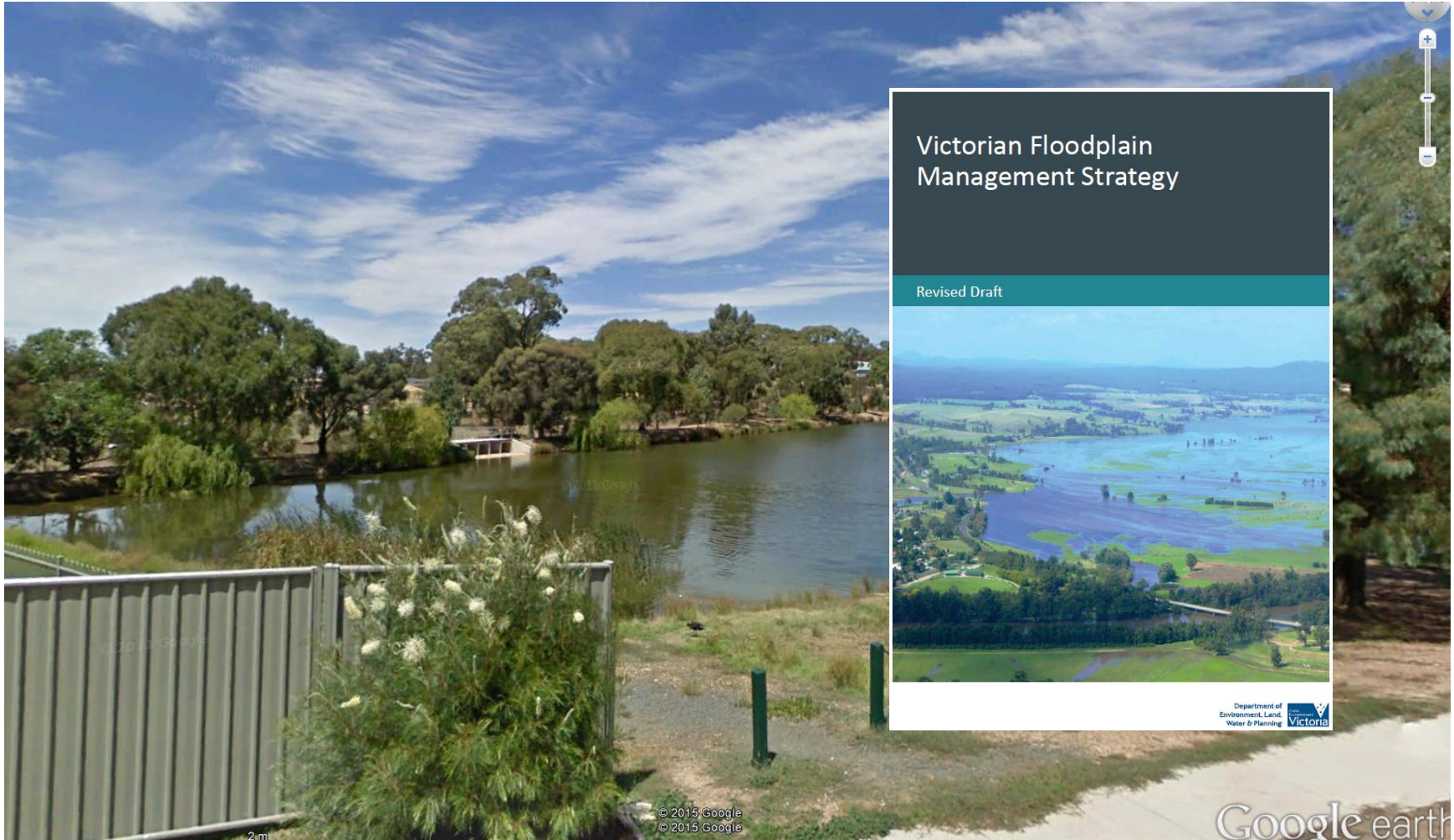


Learning outcome 3 – Human Resource

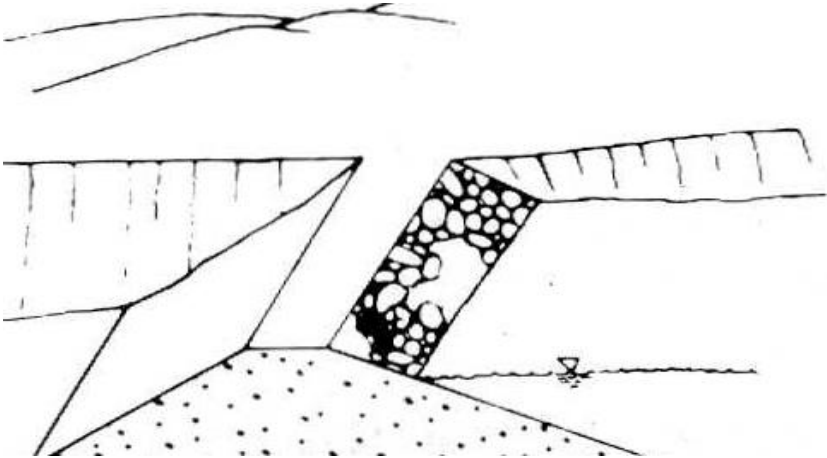
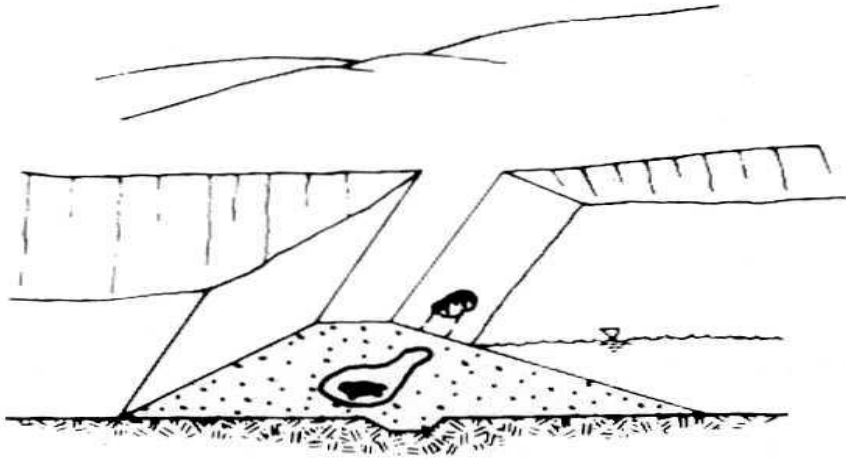
- Strength in Diversity
- Gen X ,Gen Y , Baby boomer.
- Outsiders that can help teams of experts
- Allows for break through innovation
- Zero Gravity thinkers
- Mindfulness



Learning outcome 4 – Victorian floods dam safety



Piping Failure





Overtopping

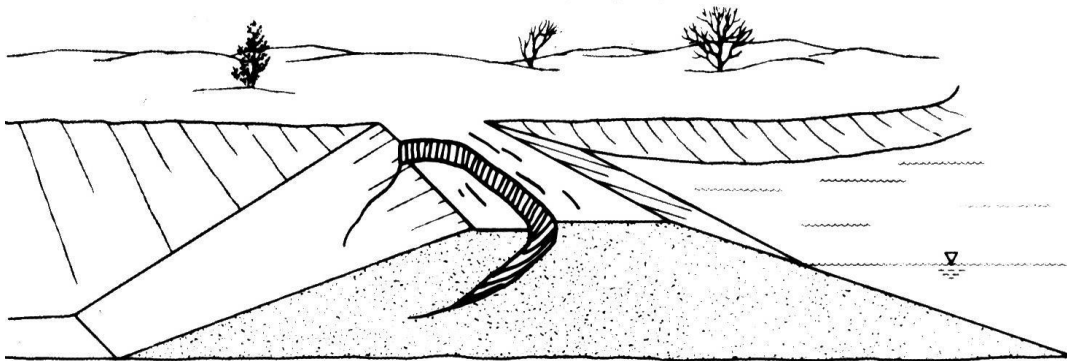
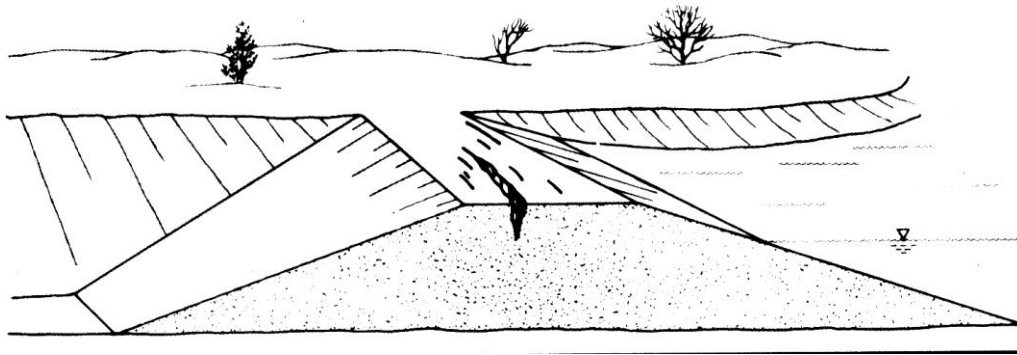


Railway Weir – Barwon Water (Jan 2011)





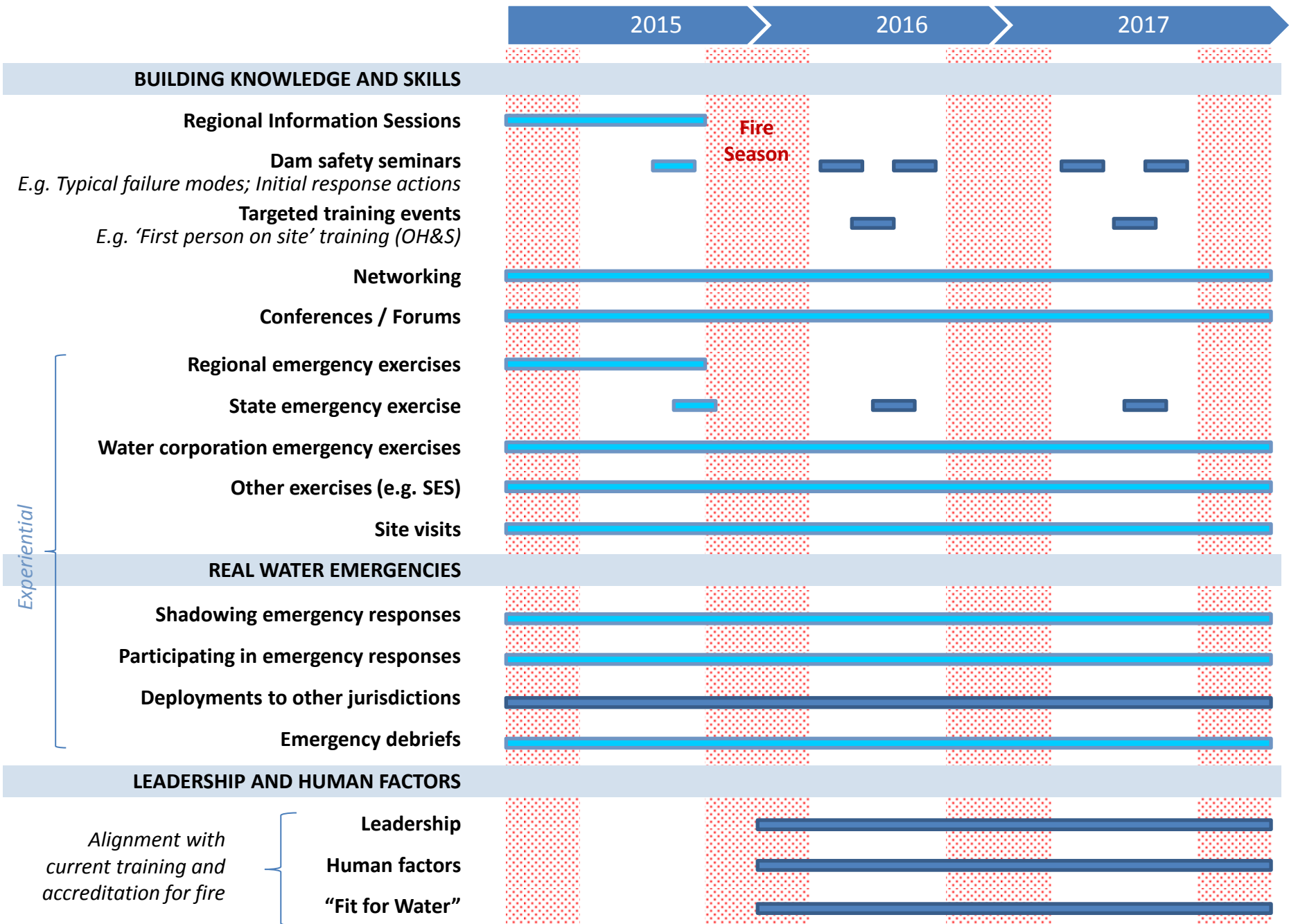
Slope Failures / Landslides



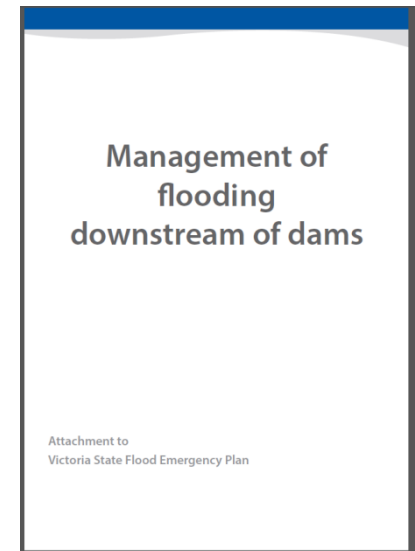
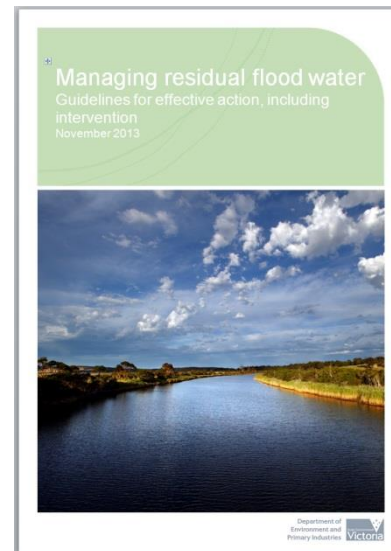
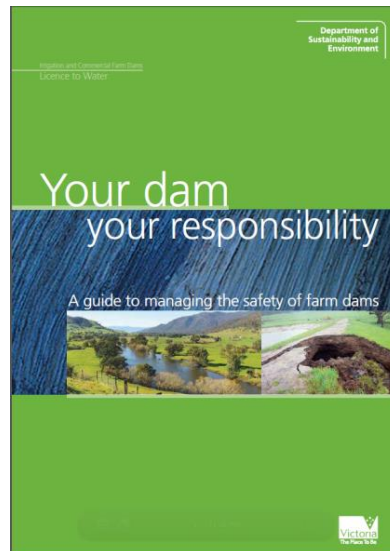
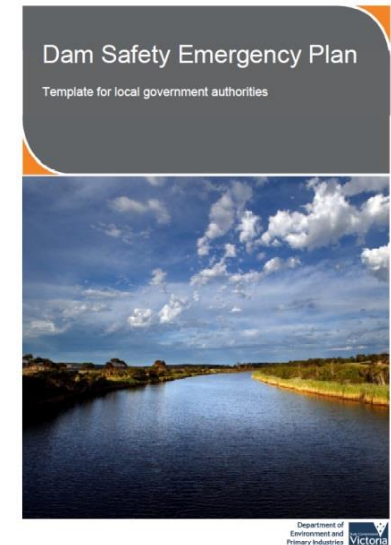
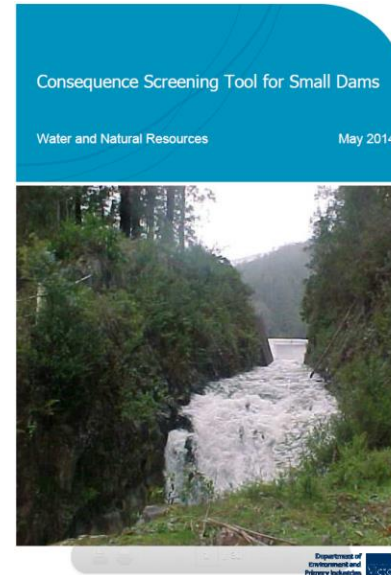
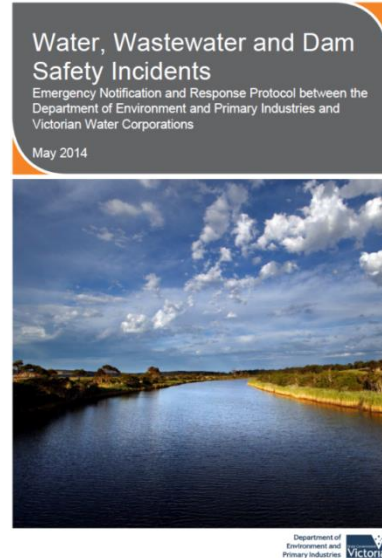
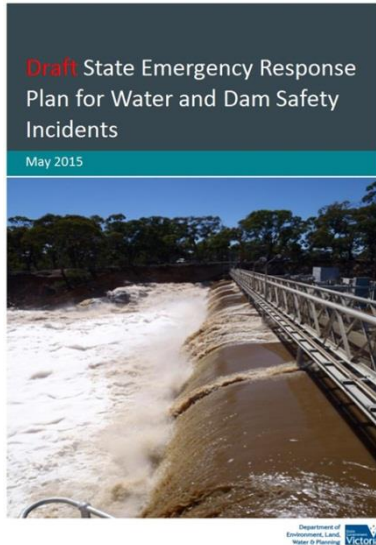


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REGIONAL ENGAGEMENT PROGRAM FOR WATER EMERGENCIES

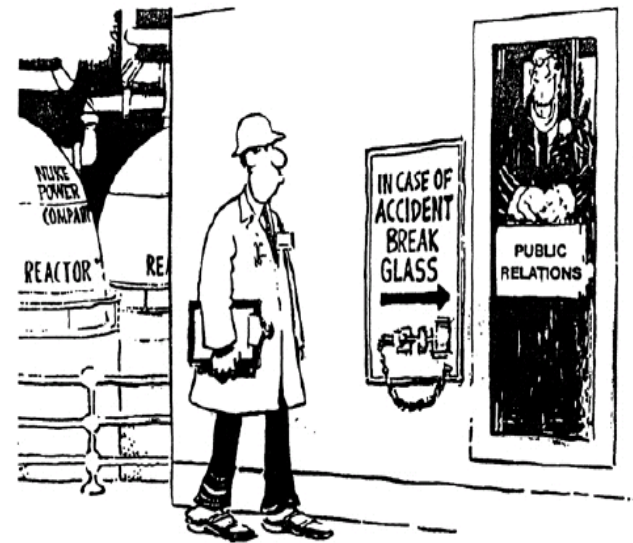


Policy, Plans and Protocols



What We Have to Offer....

- An agreed set of emergency arrangements for response to water related emergency events.
- Key DELWP regional contacts
- Response access to DELWP water specialist / Flood Analyst
- Lists of dams with location and hazard category
- Policy advice, before, during and after emergency events
- Access to location of key water and wastewater assets
- Dam inundation maps
- Arrangements with the State Control Centre



Conclusion

- Increasing number and severity of weather events.
- Raised community expectations
- Ongoing evolution of emergency management in Victoria
- State Control Centre 1300 13 4444
- Konrad Gill – Program Manager
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