Submission – Inquiry into the efficacy of past and current vegetation and land management policy, practice and legislation and their effect on the intensity and frequency of bushfires and subsequent risk to property, life and the environment

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This submission responds to Terms of Reference 1,2,3 and 6.

Learning from the past: Firewise Landscape Adaptation in Australia

Summary

Australia needs to understand and respect how aborigines wisely used cool fire over 50,000 years to shape and maintain a productive and diverse landscape that was relatively safe for their purposes.

That sustainable approach to landscape management has been emulated and reinterpreted in the successful and proven prescribed burning programme in Western Australia since 1961. It was introduced in response to recommendations made by the Dwellingup Bushfire Royal Commission. In the years following 1961 through to 2010, catastrophic bushfires were avoided and there was only a handful of homes destroyed to bushfire.

The scaling back of that prescribed programme around the turn of this century allowed fuel loads to rebuild. Uncontrollable bushfires once again ravaged bushfire prone communities culminating in the disastrous Yarloop bushfire of 2016. The WA government has sensibly responded by reinstating the prescribed burning programme in forests and bushland reserves.

The rest of Australia needs to adopt a similarly effective approach to bushfire fuel management across forests, remnant bushland Reserves and semi-rural tenures. This will complement implemented bushfire planning and building regulations that already provide greater protection for new housing developments.

What has been virtually ignored to date by governments, planners, bushfire authorities and property owners is the threat posed by unmanaged bushland, native revegetation and native gardens close to hundreds of thousands of long-established Australian homes, townsites, transport routes and critical infrastructure. It is these long-established homes and other assets that typically bear the brunt of damage in bushfire disasters.

To address this glaring anomaly, Firewise landscape adaptation within and adjoining established communities in bushfire prone areas across Australia should include:

- the implementation of mandatory, minimum 100 + metre wide Strategic Bushfire Buffers, including plantings of proven ‘Firewise’ species to break fuel continuity at the rural/urban interface. “Parkland clearing” of native vegetation could be balanced by offset planting away from areas at risk.
- the cessation and removal of fire fuelling native revegetation within the Hazard Separation Zones of established homes, business and infrastructure

- removal of highly flammable species of trees and shrubs from around houses on a tenure blind basis to achieve defendable BAL's
- shade and amenity tree replacement, where appropriate, with strategically located and arranged 'Firewise' species. Particular attention should be paid to 'Firewise' shade and street tree planting
- integration of 'Firewise' Landscape Adaptation (FLA) strategies with the strategic, policy and statutory frameworks of State & Local Governments to eliminate the ongoing adoption of conflicting landscape and environmental measures.

Australians understand that changes to land and vegetation management of this magnitude are unavoidable, irrespective of our ability to influence or moderate climate change over the years ahead.

Background

We have lived in the Perth hills for over 40 years. Alarmingly, over the last 30 years, we have witnessed a steadily accumulating bushfire hazard in the surrounding, urban zoned landscape and beyond. An almost contiguous thicket of unmanaged and highly flammable native trees, shrubs and associated ground fuel has replaced a more open and accessible landscape.

In effect, this imposed, fire prone landscape has created a contiguous wick or bushfire conduit between suburban homes and previously segregated bushland. It defies common sense and is unsustainable.

For many thousands of years prior to European occupation, the productive margins of the Canning River valley where we live were occupied and wisely managed by the local Noongar people. They used regular, cool fire to keep the landscape relatively open and to limit the risk and impact of uncontrollable bushfires. A mosaic of cool burning was carried out at 2 to 4-year intervals to create and maintain what we now describe as "parkland clearing".

Since European occupation most Australians have foolishly treated fire as the enemy and failed to understand the interventionist role played by our aboriginal predecessors in shaping and managing the Australian landscape with the Firestick.

Bill Gammage in his highly acclaimed book *The Biggest Estate on Earth – How Aborigines Made Australia* (2011) has demonstrated through fastidious historical research that the bushland across much of southern Australia is denser and more prone to catastrophic bushfire than it was prior to European settlement because we have removed the moderating effect of regular, cool fire.

In the broader landscape Western Australia has bucked the trend with a proven and well documented record of managing fuel loads in forests and major bush reserves with prescribed burning over much of the south west of the State.

But that understanding of the purpose of "Firestick" management has not translated into effective hazard reduction at the rural/urban interface (the RUI). Over recent decades, the three tiers of government, bureaucracies and a raft of community organisations have been working to exclude fire and to naively re-instate a confected and contiguous bush landscape within the critical RUI and back into established housing areas and townsites.

It may be well-intentioned, emotively badged as 'urban biodiversity enhancement' and roundly applauded in the media, schools and academic planning circles, but it is a fundamentally flawed concept because it completely undermines the essence of hazard reduction and hazard separation in land use risk management.

To make matters worse, the cordon of local hazard reduction burning across smaller bushland Reserves and private properties at the rural/urban interface (RUI) that once made this area relatively safe was all but abandoned about 30 years ago. It is now difficult to see individual homes and infrastructure amid a dangerously bushfire prone bush landscape. There is little or no effective hazard separation and no one in authority seems to care.

With this combination of apathy, ignorance and official landscape mismanagement, we knew that under the right conditions, bushfires would run unimpeded from bushland and semi-rural properties straight into vulnerable suburban housing.

Inevitably that happened in February 2011 and our residential property was in the path of the Roleystone/Kelmscott Hills bushfire that destroyed 72 homes and damaged many more. Our house was shielded from destruction during the passage of the fire by a cordon of Firewise, deciduous trees and subsequently through the active defence of our property by a capable neighbour and his son. They used available garden hoses to put out spot fires before they took hold and in so doing, they saved at least 6 homes from destruction.

Ironically, a much larger and more powerful bushfire in 2005 threatened the Mundaring, Pickering Brook, Karragullen, Araluen, Roleystone and Darlington communities. That fire covered 27,000 hectares of jarrah and wandoo forest. It was controlled after it ran into 10 forest blocks that had been subject to prescribed, hazard reduction burning three years earlier. Modelling at the time predicted that the fire had the potential to destroy thousands of homes to the west, including ours.

Just as with the instructive Canberra bushfire in 2003, many of the homes that were lost in our immediate surroundings in 2011 were built from inherently robust materials, but they were susceptible to spot fires and ember attack because:

- fuel loads in the forests and bush beyond had not been adequately managed
- homes were surrounded by unmanaged, volatile native vegetation and accumulated ground fuels with no Asset Protection Zones and no Hazard Separation
- they had no boundary walls or incombustible barrier fencing, so ground fire travelled unimpeded
- homes had not been hardened to deal with spot fires and ember attack and
- they were not actively defended.

This pattern of mismanagement can be found across southern Australia in long established communities, whether they be in the Perth or Adelaide hills, the outskirts of Sydney and Brisbane, the Yarra Ranges in Victoria or numerous coastal villages and holiday destinations.

Bushfires routinely obliterate communities, essential infrastructure and irreplaceable heritage across Australia because we, as a society, do not want to: acknowledge and act on the lessons of pre-European landscape management; accept the shared responsibility for managing fuel levels in an inherently fire prone landscape; and break fuel continuity at the peri-urban interface.

Lessons Learned from Previous Bushfire Emergencies

In 2019/20 cyclical drought and a warming climate have exposed decades of neglect and a negligent disregard for the hard-won lessons of bushfire risk management in an inherently bushfire prone Australia.

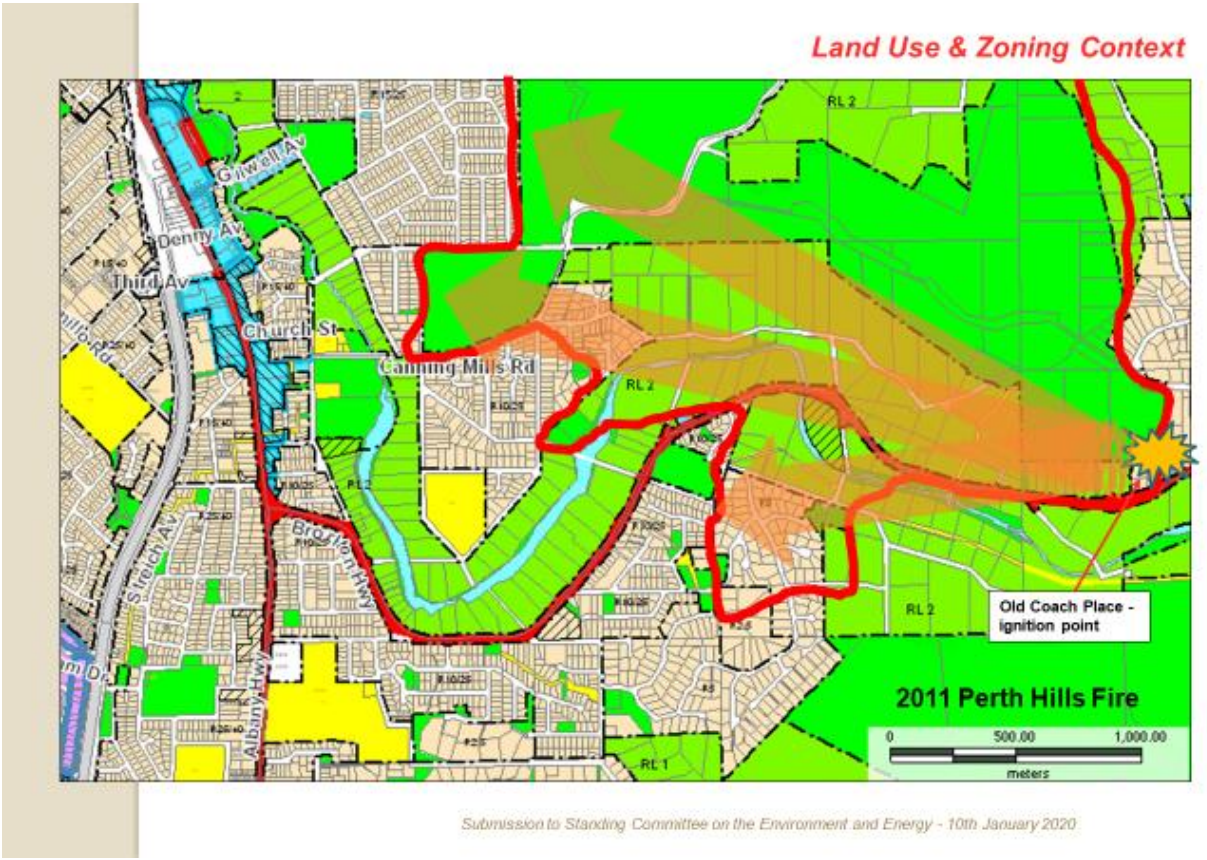
In October 2003, following the disastrous Canberra bushfires, the Parliament of the Commonwealth of Australia released a House of Representatives Select Committee report, *"A Nation Charred: Report on the inquiry into bushfires".*

Stating the obvious, the recommendations of that report emphasised the need to manage hazardous fuel loads in the landscape through effective prescribed burning and other means of hazard reduction. It typically called for other measures and further research, but nothing in that report could excuse the antipathy and systemic opposition to common sense land and vegetation management that has prevailed across much of Australia since 2003.

The same, familiar pattern of official obfuscation, academic undermining, backsliding and neglect followed the release of the findings and recommendations of the 2010 Victorian Bushfires Royal Commission. Land management experts with decades of bushfire experience had warned of the likelihood of the 2009 Victorian bushfires and they were ignored.

Since 2009 the same land management experts have repeatedly warned of the inevitability of the bushfire crisis that has engulfed large parts of New South Wales, Queensland, South Australia and Victoria this year. Once again, the public warnings of experts, such as ex-CSIRO bushfire scientist David Packham, were largely ignored as a plethora of academic naysayers persuaded government decision makers to leave the bush to manage itself – with disastrous consequences.

In his Review of the 2011 Perth Hills bushfire, Mick Keelty correctly identified the fundamental need to systematically manage fuels and the proximity of housing to those fuels throughout the peri-urban landscape. He also exposed the avoidable consequences of leaving homes undefended.



To its credit, the WA State Government has reinstated and funded a proven strategy of prescribed burning through State Forests and larger public Reserves - but it will take time to catch up on several decades of neglect.

Since 2015, a new State-wide bushfire planning policy (WAPC SPP 3.7) has regulated how and where new housing can be built to reduce the risk of new housing developments being exposed to bushfires.

But as laudable as these changes are, they do nothing to address the problem faced by hundreds of thousands of owners and occupiers of established housing in bushfire prone areas in WA and across the Nation.

The high fuel load close to established homes is not getting anywhere near the level of hazard management that is warranted because: it is fragmented into multiple tenures; it is more expensive to treat; and a plethora of lobby groups have used their pervasive influence to stymie and even reverse effective hazard reduction.

In a cruel paradox, swathes of fire fuelling native revegetation in peri-urban areas close to long established communities are seriously undermining bushfire hazard separation. Even more bizarrely, it is officially sanctioned and funded by the same governments that mandate hazard separation in new housing developments.

Well-meaning but misguided native revegetation inevitably follows in the wake of major, peri-urban bushfires – re-instating the very areas of fire fuelling bush that compromised hazard separation and carried fire into vulnerable communities in the first place.

Nothing in the new bushfire planning framework limits the scope for ongoing environmental protection and enhancement. To those involved in promoting, funding and implementing urban native revegetation, this translates to 'business as usual' for the urban native revegetation movement – even when it increases the Bushfire Attack Level (the BAL) on established residential properties.

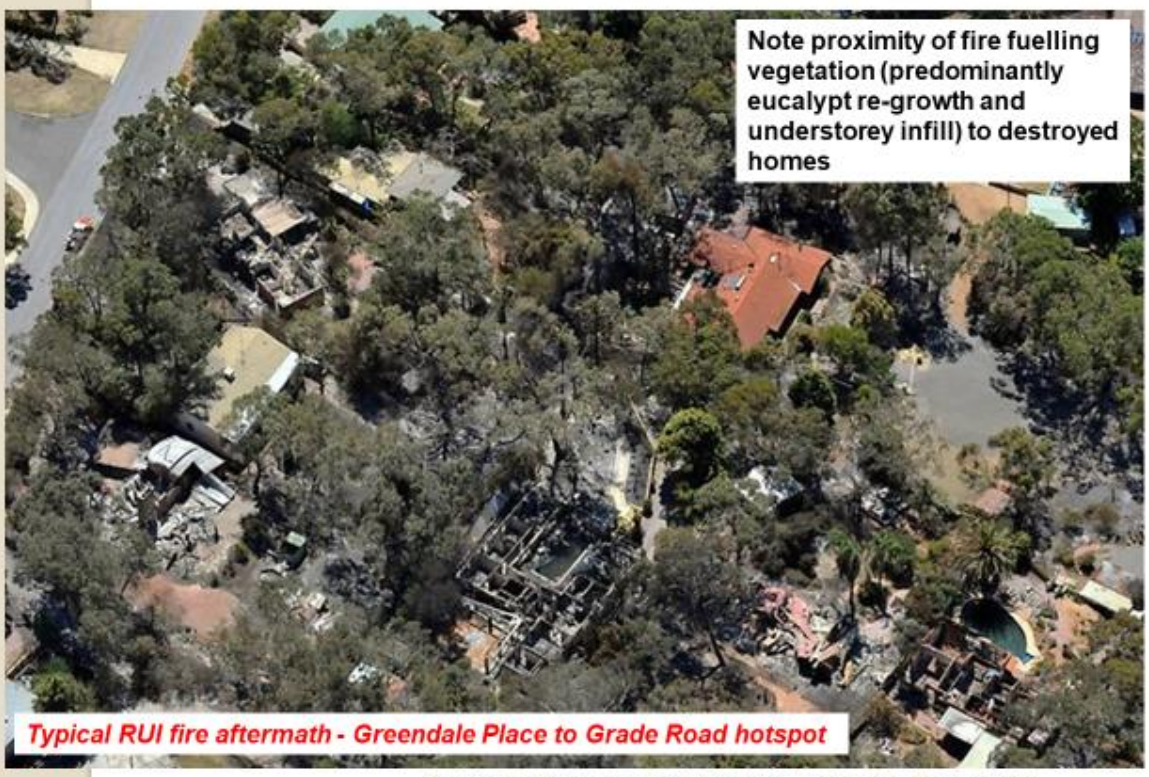
New houses in new subdivisions that have been approved under SPP 3.7 get the legislated benefit of obligatory Asset Protection Zones and Hazard Separation Zones. But hundreds of thousands of established homes miss out on this protection, with the added risk of unfettered, government-sanctioned and funded native revegetation inside the HSZ. This is an absurd outcome that undermines the hazard separation intent of the key recommendations from countless Bushfire Royal Commissions and Official Bushfire Inquiries.

In common with much of NSW where the template originated, the adopted, tenure blind Bushfire Risk Management System (a key recommendation of both the Keelty and subsequent Ferguson Inquiries), has not delivered any measurable reduction in the bushfire hazard within the area covered by the 2011 Perth Hills bushfire. Reams of meaningless "paper mitigation" and planning rules for new development are clearly no substitute for measures that create and maintain effective hazard separation and reduce fuel loads to manageable levels around long-established communities.

The tendency in both NSW and WA has been to accommodate environmental objections to effective BRMP treatments by opting for evacuation as the preferred method of risk management. That approach undermines the basic intent of protecting not only life but also property, infrastructure, heritage and environmental values in tenure blind risk management. As we have seen over the summer of 2019/20, the all too convenient mass evacuation option has failed miserably when the entire landscape (including homes, infrastructure and the claimed environmental values) have been wiped out in catastrophic bushfires. Thousands of lives are still ruined.

Saturation media coverage of bushfires in New south Wales, Queensland, South Australia and Victoria in 2019/20 unequivocally demonstrates that the extent of the unmanaged bushfire hazard around thousands of long-established homes across the Nation is nothing short of diabolical.

In summary, while new housing developments across bushfire prone Australia are now better protected through the raft of reforms to planning and building standards that followed the 2009 Victorian bushfires, little or nothing of any consequence is being done on the ground at the peri-urban interface to adequately separate established communities from the inherently explosive Australian bush.



What can we do to properly address the problem?

It is obvious to anyone with an open mind and a knowledge of bushfire history that Australia needs to greatly reduce fuel loads across public and private land and adapt the landscape to allow fire fighters and capable property owners to safely protect assets from otherwise damaging bushfires. We need to heavily invest in this approach to reduce the likelihood and impact of mega-fires.

Informed Australians also understand that this needs to occur irrespective of our ability to influence or moderate climate change over the years ahead.

Western Australia provides the proven model for effective prescribed burning over large areas of forest and bushland Reserves. The challenge is to apply and supplement that approach with other forms of vegetation and fuels management, including broadacre landscape adaptation, slashing and grazing etc.

We also need to implement significant reforms to land use planning and vegetation management at the urban/rural interface to better protect established homes and townships from the wick effect.

Distant commentators often say that this could simply be achieved if those who live at the rural/urban interface abandoned their properties on the outskirts and moved back into the urban fold. But one way or another, there will always be an interface that needs to be managed to make human habitation safer and more defendable from bushfires. Furthermore, the aftermath of the devastating Wye River fire in Victoria graphically demonstrated that building or re-building so called bushfire proof houses in an unmanaged, high risk landscape does not prevent homes from burning down. We need to adapt homes and the landscape to sustainably survive bushfires.

In this context, possibly the most compelling and instructive research to emerge from the aftermath of the 2009 Victorian Bushfires was the work done by Risk Frontiers (2010) for the Bushfire CRC titled, "Bushfire Penetration into Urban Areas in Australia: A Spatial Analysis."

It found that 90% of all the homes lost to bushfires in Australia have been situated within 100 metres of bushland. By extension, it should be possible to create a minimum Hazard Separation distance that would greatly protect most established homes and townsites at the interface, irrespective of all other factors.

The goal of a minimum 100 + metre wide Strategic Bushfire Buffer or Hazard Separation Zone (HSZ) at the peri-urban interface would be to bring down the Bushfire Attack Level (the BAL) to BAL 29 or less to make active defence of individual properties feasible. To put this measure into perspective, the much-publicised loss of 2029 homes in the 2009 Victorian bushfires may have been contained to about 200 homes or less through the implementation of a minimum 100 metre Hazard Separation Zone around settlements.

Governments have a long history of using legislated town planning and development powers to facilitate strategic land use reforms, including major inner-city urban renewal and to reserve and/or acquire land parcels and corridors for major infrastructure (including road and rail reserves, trunk powerlines, gas and water pipelines etc). Given the escalating scale and magnitude of the bushfire threat to numerous, long established communities in a warming climate, State Governments have an inescapable obligation to exercise the same or similar powers to achieve adequate bushfire hazard separation.

In WA, Town Planning Schemes are reviewed every 5 years and model Town Planning Schemes should include an obligatory Reservation for Strategic Bushfire Buffers at the edge of high risk, bushfire prone land. Realistically, such Reserves would incorporate a mix of public and private property with restrictions on land use and flammable vegetation cover that match the Hazard Separation Zone standards built into new housing developments. Where the HSZ standard cannot be achieved by a vegetation and hazard control easement or through adaptive urban design, compulsory property acquisition and some vegetation clearing may be necessary to achieve the HSZ objective.

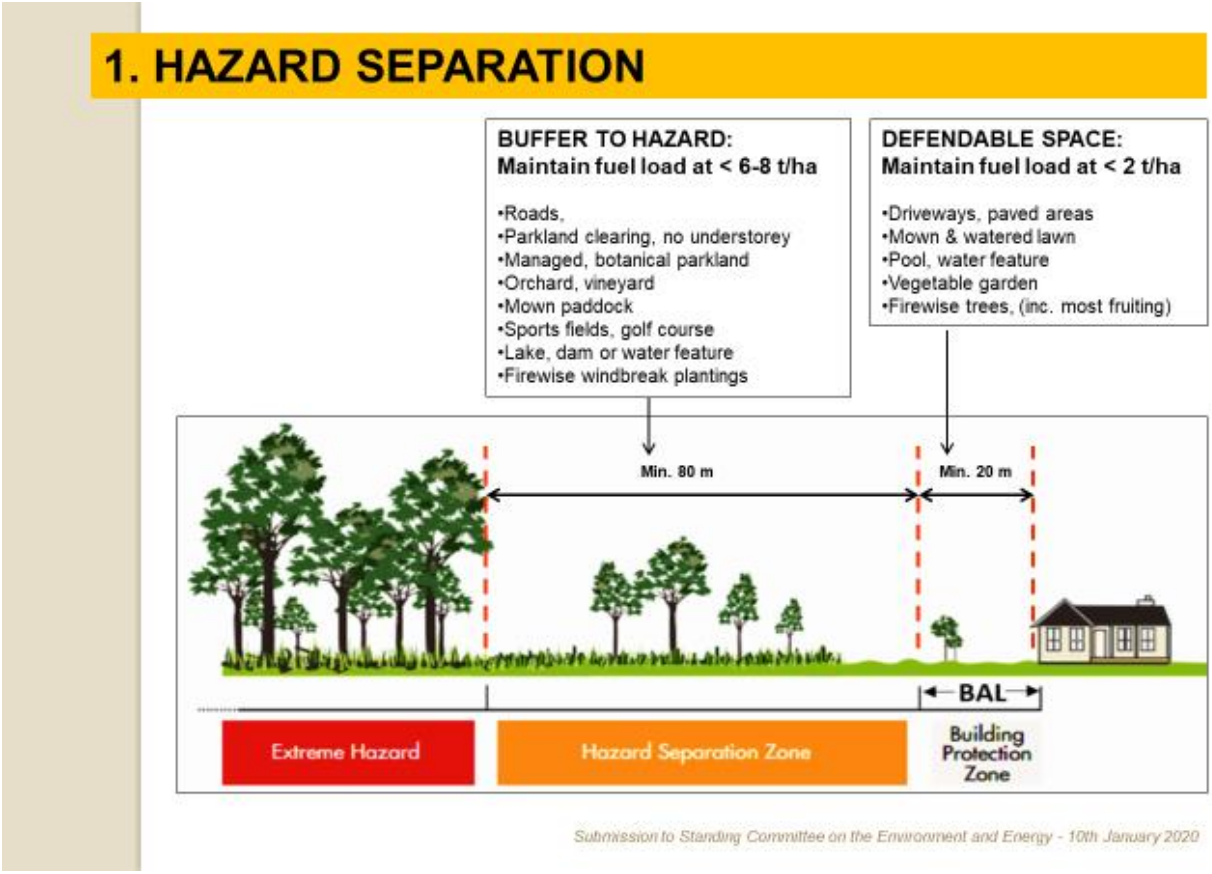
In more closely settled peri-urban areas and historic townsites a retrospective HSZ cannot feasibly be achieved within the limited area of individual residential properties, but it could be implemented around vulnerable townsites, along the edge of established peri-urban communities and around essential infrastructure like bridges and public utilities.

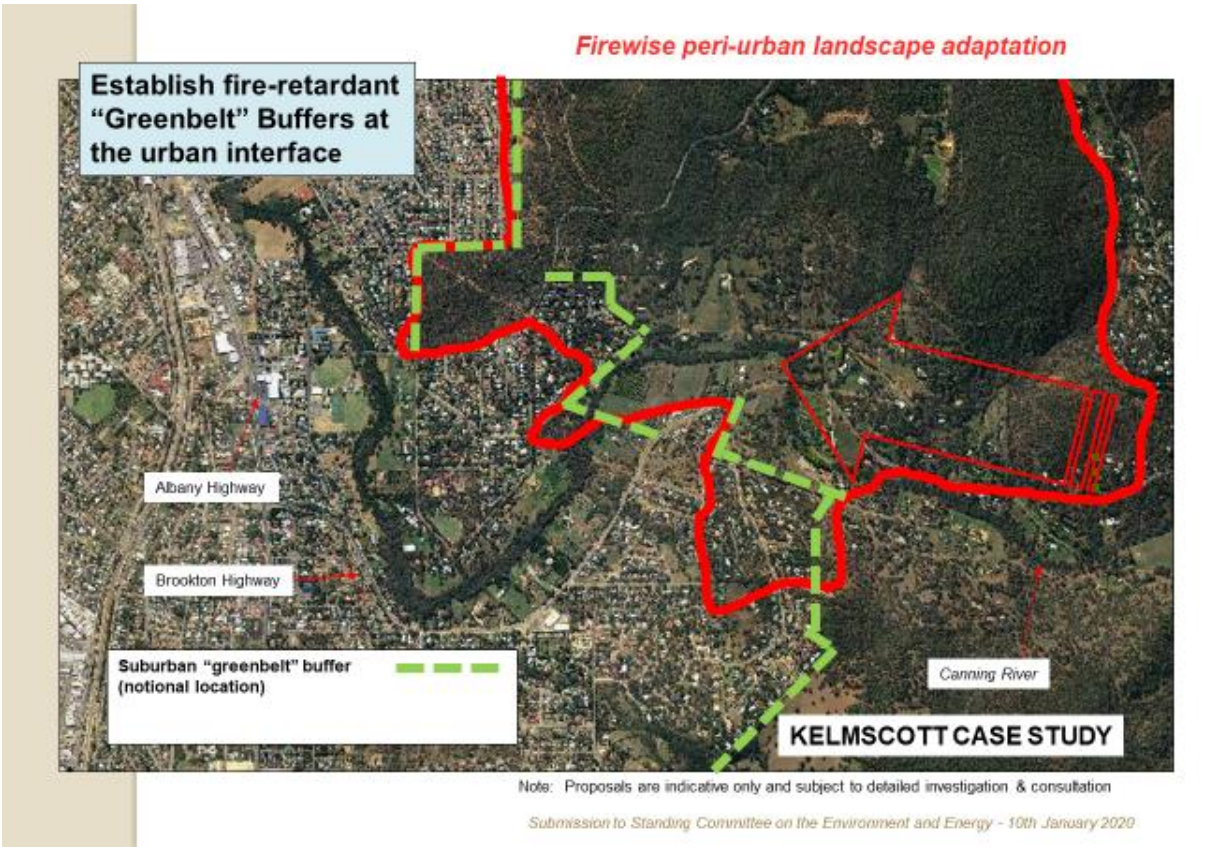
Buffers could comprise an inter-connected chain of reticulated orchards, cleared road reserves, sports fields, golf courses, Firewise arboretums and traditionally cleared fire breaks. According to the findings of the Risk Frontiers research, such Buffers would dramatically reduce the likelihood of ember attack and direct flame contact and would enable active defence of assets by either prepared property owners or authorised fire fighters.

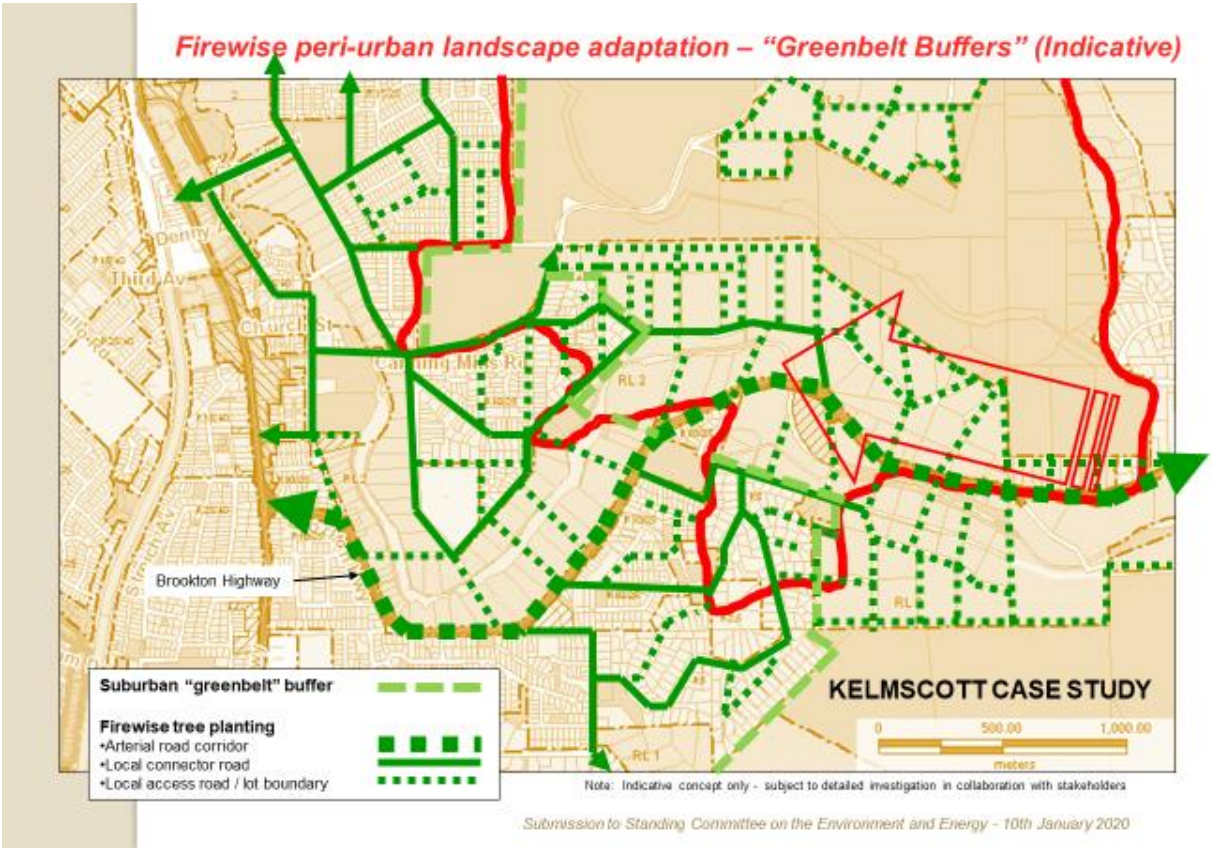
Governments should commit to the necessary statutory and policy reforms to facilitate this Bushfire Buffer Concept without further obfuscation or procrastination. It would save far more (by a factor of at least 4:1) than it costs to mobilise, respond to and reconstruct after uncontainable bushfires every summer and it would have far less net impact on the landscape, the environment and the economy.

The implementation of Strategic Bushfire Buffers would complement ongoing fuel reduction measures on either side of the peri-urban interface.

The Strategic Bushfire Buffer or Hazard Separation Zone concept referred to in this submission should be incorporated into every Town Planning Scheme and every Bushfire Risk Management Plan as a mandatory requirement – similar in effect to the way that we act to provide buffers against other existential threats emanating from major port installations, oil and gas refineries and terminals, Petro-chemical works, explosives manufacturing and warehousing, toxic waste disposal, recycling plants and sewage treatment works.




Firewise peri-urban landscape adaptation
Establish fire-retardant "Greenbelt" Buffers at the urban interface
Albany Highway
Brookton Highway
Canning River
Suburban "greenbelt" buffer (notional location)
KELMSCOTT CASE STUDY
Note: Proposals are indicative only and subject to detailed investigation & consultation
Submission to Standing Committee on the Environment and Energy - 10th January 2020


Firewise peri-urban landscape adaptation – "Greenbelt Buffers" (Indicative)
Brookton Highway
Suburban "greenbelt" buffer
Firewise tree planting
•Arterial road corridor
•Local connector road
•Local access road / lot boundary
KELMSCOTT CASE STUDY
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Note: Indicative concept only - subject to detailed investigation in collaboration with stakeholders
Submission to Standing Committee on the Environment and Energy - 10th January 2020

Like most Australians, we have had enough of the escalating annual drama and resultant devastation of preventable catastrophic bushfires.

We are looking to government at all levels to drive common sense and long overdue bushfire risk reduction through effective management of bushfire fuels, land use reforms and landscape adaptation for bushfires. Effective hazard separation has the capacity to significantly reduce the cost and impact of bushfires on the lives of many thousands of people living in long established homes and communities at the peri-urban interface across Australia.