Yarloop Bushfire Recovery – ‘Beyond the Science’

Chris Kennedy (ERC)

ENVIRONMENTAL PRACTITIONERS NETWORK WESTERN AUSTRALIA

SHARING FOR THE FUTURE

Environment Institute of Australia and New Zealand Inc.

Abstract No. E0016

Chris Kennedy BSc (Hons), CenvP, MEIANZ

- Environmental Scientist with 15 years' experience in the contaminated land sector
- Committee Member of ALGA asbestos in soils (SIG-NAL) special Interest group
- Environmental Project Manager for the clean-up and recovery of the town of Yarloop.

Presentation Overview

- Background to Asbestos and Bushfires
- Managing the Yarloop Bushfire Contamination and its Uncertainties
- Stakeholder Engagement

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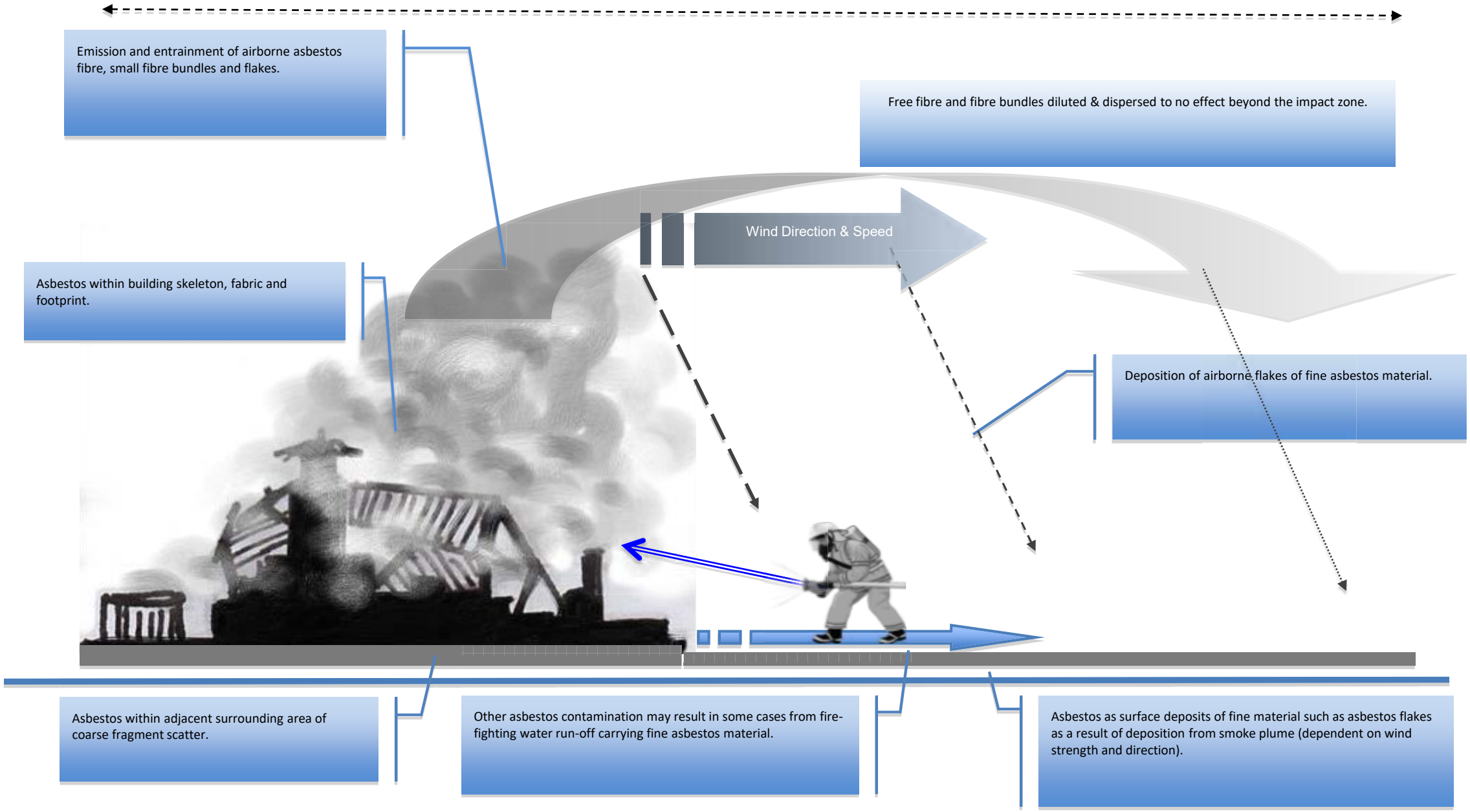
Bush Fires in Australia

- Usually at least 1-2 annually across Australia
- WA has had 4 asbestos-related bushfires in 6 years, e.g. Yarloop
- If they affect towns and properties they commonly involve asbestos, sometimes 100s of buildings
- Devastation and asbestos contamination can be extensive
- Response and recovery is challenging
- Limited comprehensive guidance has been available

Features of Asbestos Fires (asbestos cement)

- Breaking, shattering & spalling
  - Spalling i.e. delamination/flaking from explosive steam release, fibre bundles mainly parallel to sheet surface
- Potential for scatter & dispersion, by fire effects, wind action, fight fighting and rain
- Probability of matrix compromise → brittle/friable
- Possibility of asbestos denaturing → less toxic

Likely Extent of Impact Zone



Areas of Uncertainty

- Did structures have asbestos or other hazardous materials?
- What was the extent and nature of migrating contamination?
- Is there a need for immediate or interim management?
- Who are the relevant regulators?
- Who has the industry expertise?
- How can any contamination be assessed?
- How can any contamination be managed?

Confounders

- Political pressure
- Media interest
- Traumatized and demanding affected community
- Inexperienced and under-resourced local government
- Magnitude of the task
- Contending agencies
- Juggling remediation with reoccupation

Impact Management

- In 2014 DOH published Guidance Note on incident, immediate actions, assessment, remediation, validation & lessons which:
  - Integrates OHS & environmental guidance, WA Asbestos Guidelines
  - Draws on research, ERC work & DOH experience
  - Covers urban fires as well as bushfires
  - Has usability tools i.e. flow diagrams, checklists
  - Has public brochure & supporting advisory service
  - Been used extensively since then

Government of Western Australia
Department of Health

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Managing the Yarloop Fire Contamination

- 7 January 2016
- Three towns affected
- 2 deaths from the fire
- 1 death recovery (Western Power)
- 180 premises destroyed damaged
- 160 premises potentially affected
- About 500 people displaced
- Community areas potentially contaminated

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What Buildings had Asbestos?

- Historical towns with many older buildings
- All assumed to have asbestos or other hazardous materials e.g. CCA treated timber unless strong evidence otherwise
- Presumption it was primarily asbestos cement sheeting
- Conservative approach facilitated by WA Government disaster funding

Stage 1: Response

(Jan – Feb)

constant data collection

- Extent & Presence
- Risk Assessment & Mitigation
  - Exclusion Areas & Road Closures
  - Key access clearance
  - Surface Treatment – PVA Glue/water mix
  - Signage where relevant
  - Town Closure
  - Air Monitoring – asbestos, dust, Cu, Cr, As
- Education & Advice
- Regulators – contamination & community

Stage 2: Recovery

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March - Ongoing

- Plan, Design & Consult
- Scope & Assess Every Property
- Regular Community Meetings
- Demolition & Remediation
  - Monitor & Supervise
  - Air, Visual, Controls, Administration
- Validation
- Clearance Certificate
- Final Report

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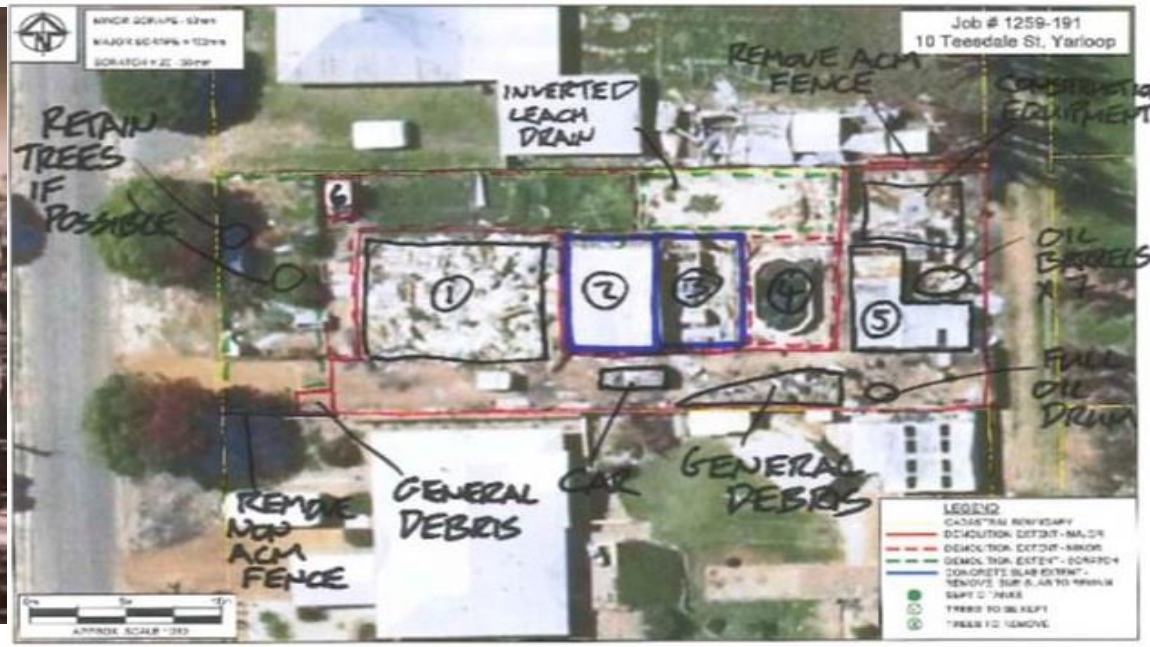
Scope & Assessment of Damage

- Efficiency
- Priority basis
- Community Needs
- Visual only
- Very Conservative Assumptions



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Remediation

Demolition; Excavation; Emu-pick; Decon. Items & Structures (if possible)

Disposal (stream where possible)

- Destroyed Properties
- Roads and Hard Surfaces
- Standing Homes
- Parks & Play Grounds & Open Spaces
- Drains
- Rail Line
- Legacy Contamination

Validation

"community based" rather than "risk based"

1) Air Monitoring Results
2) Emu pick and rake by contractor
3) Site observation & Inspection by ERC
4) Field and laboratory soil sampling & analysis

- *Analytes: Asbestos; Cu, Cr, As; heavy metals; hydrocarbons*
- *Primary Lab: ARL; Secondary Labs: MPL and SGS*
- *Grid and judgemental*
- *Density: x2 to x3*
- *Asbestos Criteria: Non detect*
- *Other: Generally Residential but no Elevated Anomalies tolerated*

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Conclusion

- Focus: community, perception, evidence, team work, respect & empathy
- Uncertainty handled by: guidance, experience, practical conservatism and consultation
- Many new aspects; disaster management generally dealt with them well; moves to develop and formalize the high level process further
- WA Guidance Note is being refined

Yarloop Dawn Service
25 April 2016

Restoring dignity & pride ……

Yarloop Workshops
Est. 1898

Pre-Fire

Post-Fire (April 2016)

April 2016