

# “Work the Problem”

Blue Mountains Bushfire Conference  
Lew Short  
6<sup>th</sup> September 2023



**Objective:** The objective of this workshop is to develop problem-solving skills and strategies for BPAD practitioners. Participants will learn how to approach problems using a design thinking approach and systematically, break them down into manageable parts to develop effective solutions.

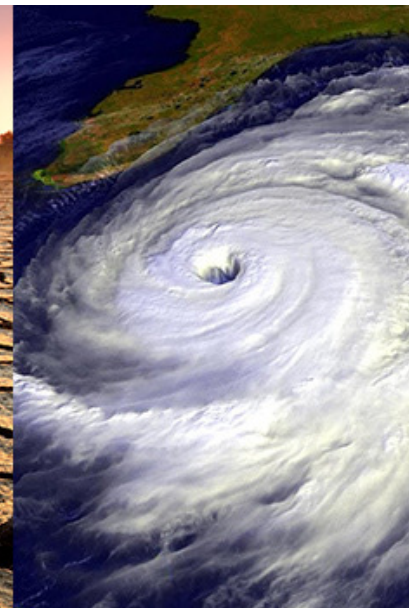
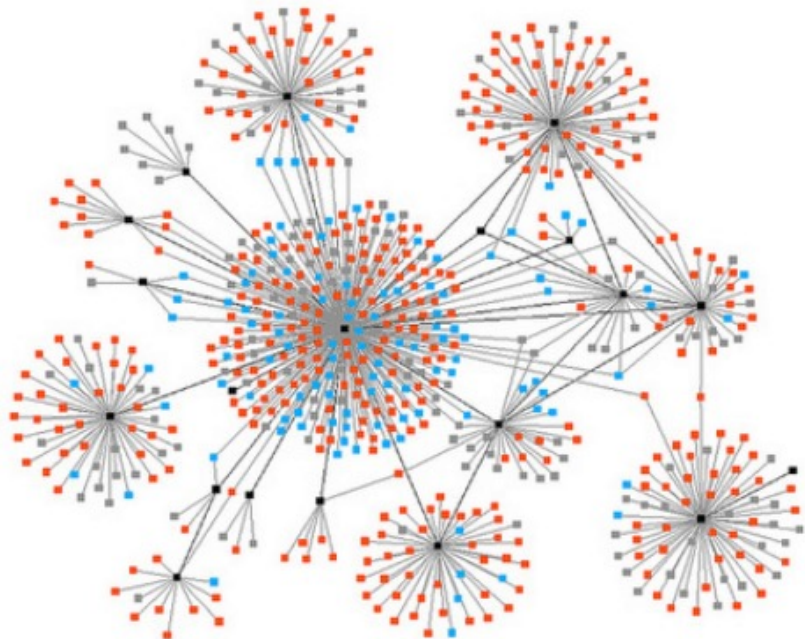
### **Workshop Outline:**

- **Introduction**
- **What problems do we face**
- **Understanding Problem-Solving**
- **The Problem-Solving Process**
- **Problem Analysing the Problem**
- **Generating Solutions**
- **Evaluating and Implementing Solutions**



# Common Problems

- What are some of the common problems we face?



**NSW Housing Package targets 2022**

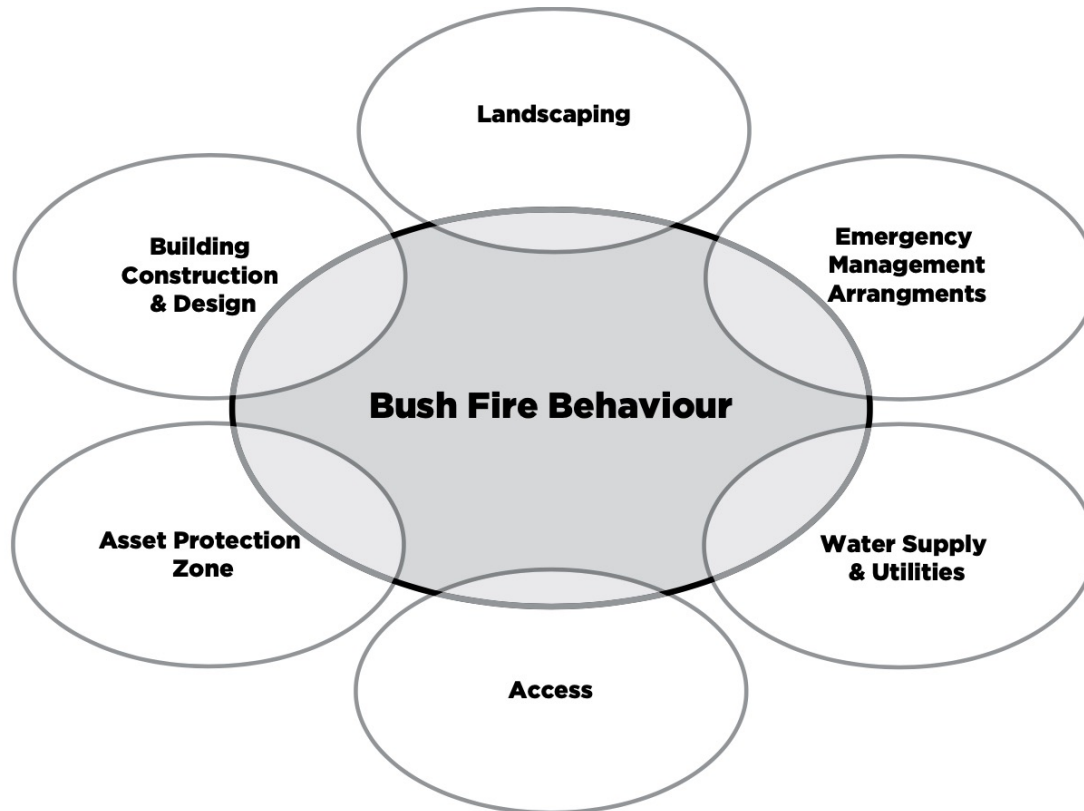
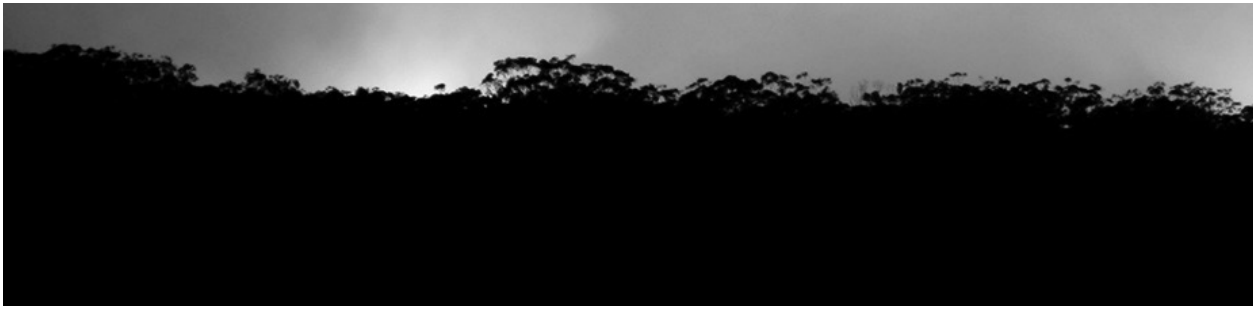
<b>Zoning</b>	100,000 dwellings unlocked by 2023–24 (including 70,000 dwellings from state-led rezoning approvals and 30,000 dwellings from council-led rezoning approvals)	<b>Interim target:</b> 50,000 dwellings by June 2023
<b>Infrastructure servicing</b>	150,000 dwellings supported by housing-focussed infrastructure programs by 2025–26	<b>Interim target:</b> 37,500 dwellings supported by June 2023
<b>Development approval</b>	32,500 dwellings unlocked by 2023–24 (from state-significant and regionally significant development approvals)	<b>Interim target:</b> 16,250 dwellings by June 2023
<b>Housing supply in regional NSW</b>	127,000 dwellings delivered in regional NSW by 2031–32	<b>Interim target:</b> 12,700 dwellings by June 2023







- Technical problems have easy fixes
  - There can be different solutions to the same problem that give the right outcome
  - Expertise, approach, complexity
  - Release of control by regulator
- Strategic problems are far more complicated
  - Ambiguity
  - Uncertainty
  - Innovation
  - Conflict
  - Legal issues
  - Reduced efficiency
  - Risk management
    - Lowest common denominator



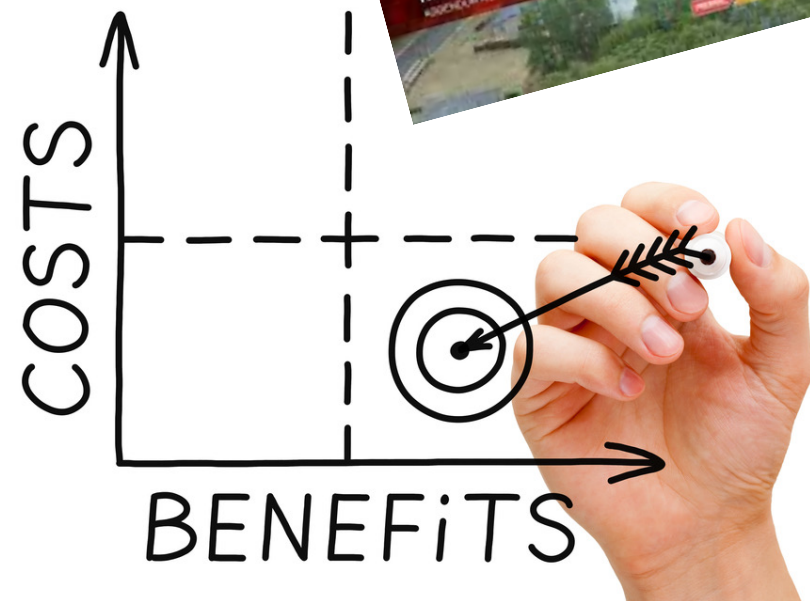
# Common Problems

Assessing development applications in areas prone to bushfires (wildfires) comes with its own set of challenges and considerations due to the heightened fire risk. Here are six common problems in development application assessment in relation to bushfires:

- Bushfire Hazard Assessment:
  - Determining the level of bushfire hazard and risk for a proposed development site can be complex. Assessors must consider factors such as historical fire data, topography, fuel load, and prevailing weather conditions to assess the potential threat.
- Balancing Development with Bushfire Risk:
  - Striking a balance between allowing development and mitigating bushfire risk is a key challenge. Assessors must decide whether a proposed development can be made safe through design and construction measures or if it should be restricted or prohibited entirely.
- Adequate Bushfire Buffer Zones:
  - Establishing appropriate buffer zones and setbacks from bushland or other fire-prone areas is crucial to reduce the risk of fire spreading to and from the development. Determining the necessary buffer size can be contentious.
- Access and Evacuation Routes:
  - Ensuring that there are safe and efficient access and evacuation routes for residents in the event of a bushfire is a significant concern. Assessors must consider road design, capacity, and emergency planning.
- Building and Construction Standards:
  - Assessors need to evaluate whether proposed buildings and infrastructure meet strict bushfire-resistant construction standards, including materials, design, and features like ember screens and fire-resistant landscaping.
- Cost kill
- Risk
  - Perception V reality

What are reasonable costs?

- Project
- Environment
- Biodiversity
- Human
- Stress
- Project not proceeding





# Gloves off: NSW planning boss to ‘take risks, loosen the screws’ to boost housing



Michael Koziol

August 26, 2023 – 5.00am

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96

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Outdated integrity measures in the planning system must be removed to speed up more housing, the new head of the NSW Planning Department says, even if it means some wrongdoers try to take advantage of simplified procedures.

Secretary Kiersten Fishburn, who was confirmed in the department’s top job last month, told the *Herald* it was time to “take risks” and “prise the barnacles” off the NSW planning system, which is the slowest in Australia.

That could involve reducing the Byzantine system of concurrence and referrals relating to traffic impacts, bushfire risk, building design and safety, pollution controls and infrastructure capacity.

“A lot of the ‘dodgy’ has come out of the system,” Fishburn said. “We had a few bad decades in the planning system in terms of integrity, so you tighten all the screws down really hard, [but] they’re tied too hard at the moment.





**How the Customer explained it**



**What the Project Manager understood**



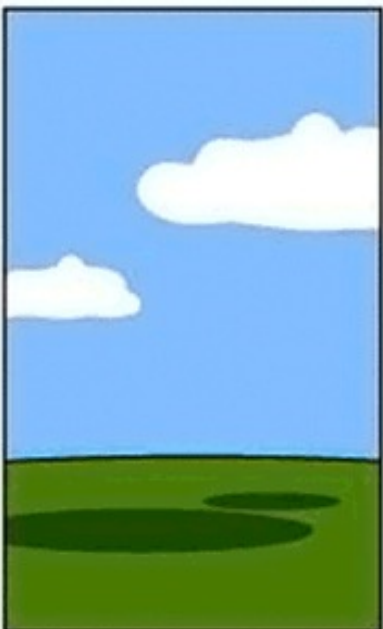
**How the Analyst designed it**



**What the Programmer wrote**



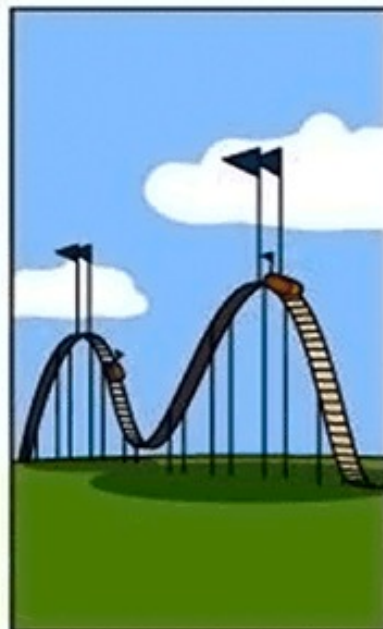
**What the Business Consultant presented**



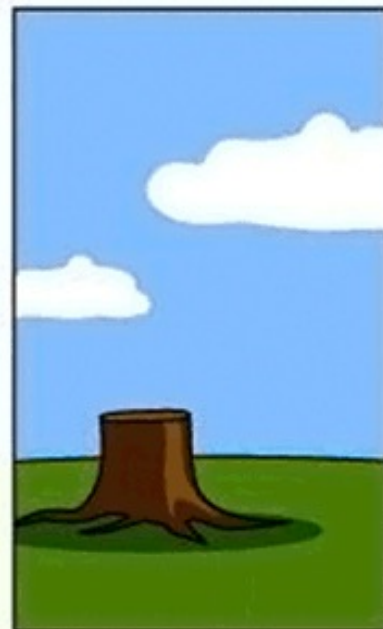
**How the Project was documented**



**What Operations installed**



**How the Customer was billed**



**How the Solution was supported**



**What the Customer really needed**





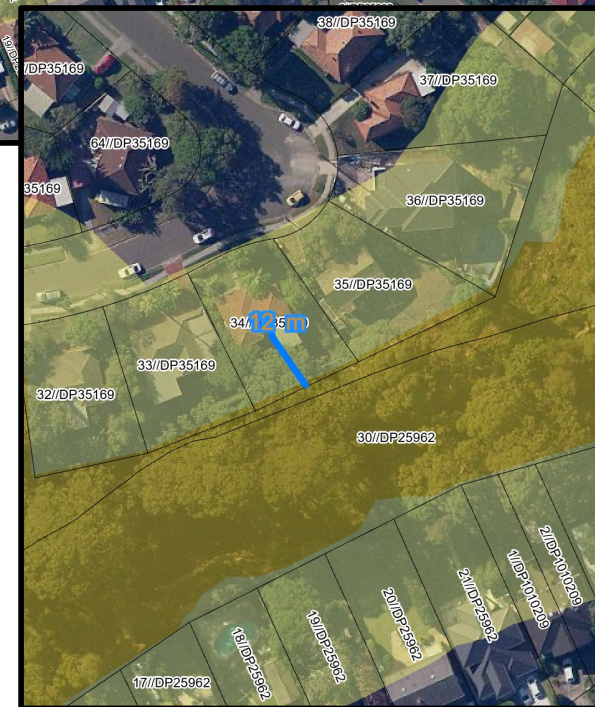
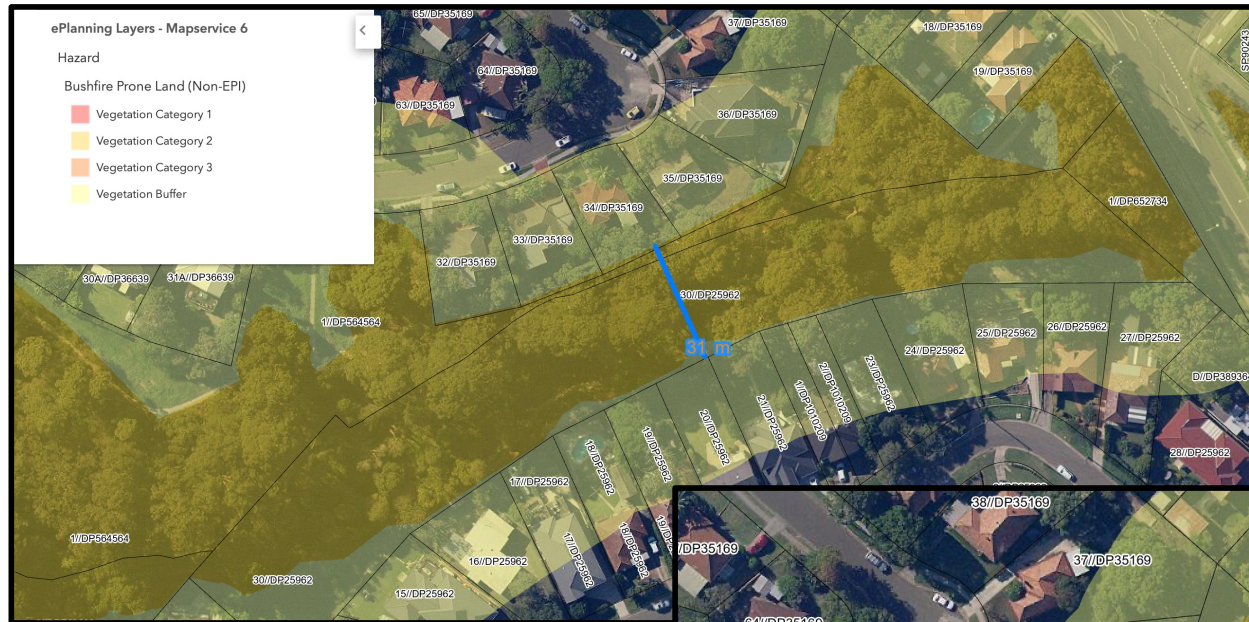
November 10, 2023





## Epping

- Acceptable solution BAL Flame Zone
- What is the problem?



**Table A1.12.5**

Determination of BAL, FFDI 100 – residential developments

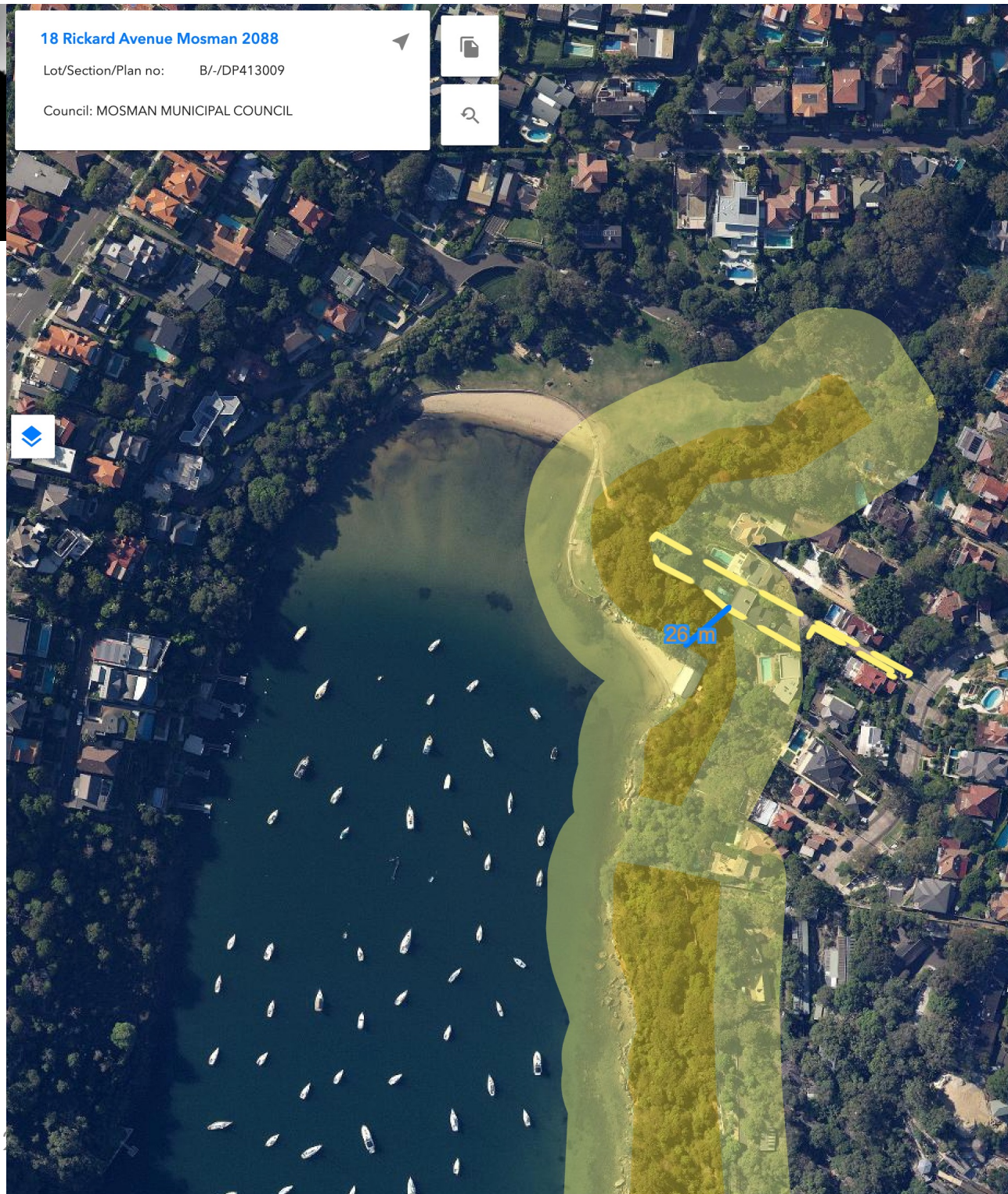
KEITH VEGETATION FORMATION	BUSH FIRE ATTACK LEVEL (BAL)				
	BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
	Distance (m) asset to predominant vegetation class				
> 5 > 10 DEGREES – DOWNSLOPE	< 10	10 -< 12	12 -< 17	17 -< 20	20 -< 100
Rainforest	< 14	14 -< 18	18 -< 26	26 -< 37	37 -< 100
Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	< 28	28 -< 36	36 -< 49	49 -< 65	65 -< 100
Grassy and Semi-Arid Woodland (including Mallee)	< 15	15 -< 20	20 -< 28	28 -< 39	39 -< 100
Forested Wetland (excluding Coastal Swamp Forest)	< 12	12 -< 16	16 -< 23	23 -< 33	33 -< 100
Tall Heath	< 15	15 -< 20	20 -< 29	29 -< 40	40 -< 100
Short Heath	< 9	9 -< 12	12 -< 18	18 -< 25	25 -< 100
Arid-Shrublands (acacia and chenopod)	< 6	6 -< 8	8 -< 12	12 -< 18	18 -< 100
Freshwater Wetlands	< 5	5 -< 6	6 -< 10	10 -< 14	14 -< 100
Grassland	< 10	10 -< 13	13 -< 20	20 -< 28	28 -< 50



18 Rickard Avenue Mosman 2088

Lot/Section/Plan no: B/-/DP413009

Council: MOSMAN MUNICIPAL COUNCIL





The Cynefin framework is a decision-making and sense-making model developed by Dave Snowden. It provides a way to understand and categorize complex systems and problems based on their inherent nature and the appropriate approaches to address them. The term "Cynefin" is Welsh and translates to "habitat" or "place of belonging."

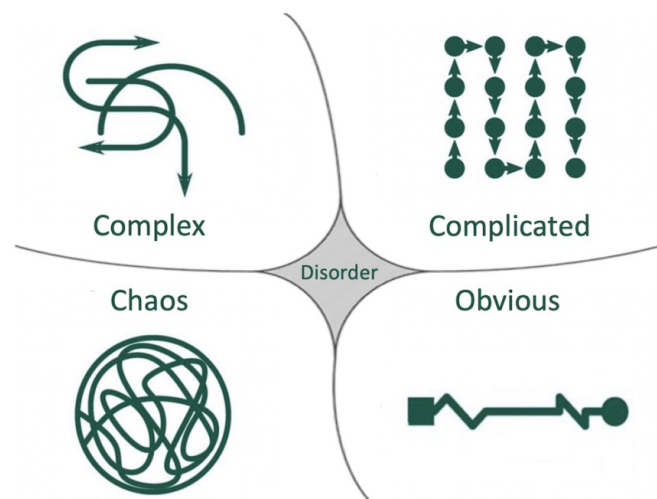
The framework divides problems into five domains:

1. **Simple:** In the simple domain, also known as the "known" domain, problems are well-defined, and there are clear cause-and-effect relationships. Solutions in this domain are straightforward and can be easily replicated. Best practices and standard operating procedures work effectively here.
2. **Complicated:** The complicated domain involves problems that have multiple possible solutions, but they require expertise or analysis to identify the most suitable one. It requires experts or specialists to assess the situation, analyze data, and develop appropriate strategies.
3. **Complex:** The complex domain is characterized by unpredictable and evolving problems where the cause-and-effect relationships are not immediately apparent. It involves a high degree of uncertainty, and the outcomes emerge as a result of interactions and feedback loops. In this domain, experimentation, adaptive approaches, and exploration are necessary to uncover patterns and discover effective solutions.

4. **Chaotic:** The chaotic domain represents situations of extreme turbulence and crisis where there is no clear cause-and-effect relationship. It requires immediate action to bring stability. Rapid decision-making and containment of the situation are critical in this domain.

5. **Disorder:** The disorder domain is not a category itself but rather a state of ambiguity or confusion where it is unclear which domain a problem belongs to. It signifies the need to make sense of the situation and determine the appropriate domain to act upon.

- The Cynefin framework helps individuals and organizations understand the nature of problems they encounter, and it guides decision-making by suggesting appropriate strategies for each domain. It encourages a nuanced approach that recognizes the complexity and uncertainty inherent in different







System framework and process

Cynefin Category	Description	Strategy	Approach	NCC Requirements
Simple	In the simple domain, also known as the "known" domain, problems are well-defined, and there are clear cause-and-effect relationships. Solutions in this domain are straightforward and can be easily replicated. Best practices and standard operating procedures work effectively here.	In the simple domain, where cause-and-effect relationships are clear, following best practices, established procedures, and standard protocols can effectively manage the project.	<ul style="list-style-type: none"> <li>• Acceptable solutions</li> </ul>	<p><b>Deemed-to-Satisfy (DTS):</b> This approach involves complying with the specific requirements and standards outlined in the NCC. If a design or construction element meets the prescribed provisions, it is deemed to satisfy the code requirements without the need for further assessment.</p>
Complicated	The complicated domain involves problems that have multiple possible solutions, but they require expertise or analysis to identify the most suitable one. It requires experts or specialists to assess the situation, analyse data, and develop appropriate strategies	In the complicated domain, where multiple solutions exist, engaging subject matter experts, conducting thorough analysis, and utilizing expert judgment can guide decision-making.	<ul style="list-style-type: none"> <li>• Acceptable solutions</li> <li>• Alternate solutions</li> <li>• Performance</li> <li>• Bushfire Design Brief</li> <li>• Cross discipline teams</li> </ul>	<p><b>Performance Solutions:</b> This approach allows for alternative solutions that may not strictly comply with the prescriptive requirements but achieve an equivalent or better level of performance. A Performance Solution involves a detailed assessment or analysis to demonstrate that the proposed design or construction method meets the performance requirements of the NCC.</p> <p>And</p> <p><b>Verification Methods:</b> provide a systematic and structured process for evaluating compliance with the Performance Requirements of the NCC. The following Assessment Methods are listed in the NCC and each, or any combination, can be used:</p> <ul style="list-style-type: none"> <li>• Evidence of suitability</li> <li>• Comparison with the DTS Provisions</li> <li>• Verification Methods</li> </ul>



			BUSHFIRE CONSULTING	<ul style="list-style-type: none"> <li>Expert Judgement.</li> </ul>
<b>Complex</b>	The complex domain is characterized by unpredictable and evolving problems where the cause-and-effect relationships are not immediately apparent. It involves a high degree of uncertainty, and the outcomes emerge as a result of interactions and feedback loops. In this domain, experimentation, adaptive approaches, and exploration are necessary to uncover patterns and discover effective solutions	In the complex domain, where the problems are unpredictable, emergent, and influenced by interactions, adaptive approaches, experimentation, iterative learning, and fostering collaboration among diverse stakeholders can help navigate the complexities	<ul style="list-style-type: none"> <li>Alternate solutions</li> <li>Performance</li> <li>Expert judgement</li> <li>Bushfire Design Brief</li> <li>Multidisciplinary teams</li> <li>Land and Environment Court</li> </ul>	<p><b>Alternative Solutions:</b> Alternative Solutions offer flexibility in meeting the NCC requirements by proposing innovative or unique approaches that may not fit within the prescriptive or performance-based provisions.</p> <p>These solutions need to demonstrate, through assessment and documentation, that they meet the performance requirements specified in the NCC.</p>
<b>Chaotic</b>	The chaotic domain represents situations of extreme turbulence and crisis where there is no clear cause-and-effect relationship. It requires immediate action to bring stability. Rapid decision-making and containment of the situation are critical in this domain.	In the chaotic domain, characterized by extreme turbulence and crisis, decisive actions, containment of the situation, and the restoration of stability become crucial.	<ul style="list-style-type: none"> <li>Scope change</li> <li>Regulator review</li> <li>Administrative review</li> <li>Technical review</li> <li>Escalation</li> <li>Legal</li> <li>Get it back to complex ASAP</li> </ul>	
<b>Disorder</b>	The disorder domain is not a category itself but rather a state of ambiguity or confusion where it is unclear which domain a problem belongs to. It signifies the need to make sense of the situation and determine the appropriate domain to act upon.		<ul style="list-style-type: none"> <li>Scope change</li> <li>Get it back to complex ASAP</li> </ul>	

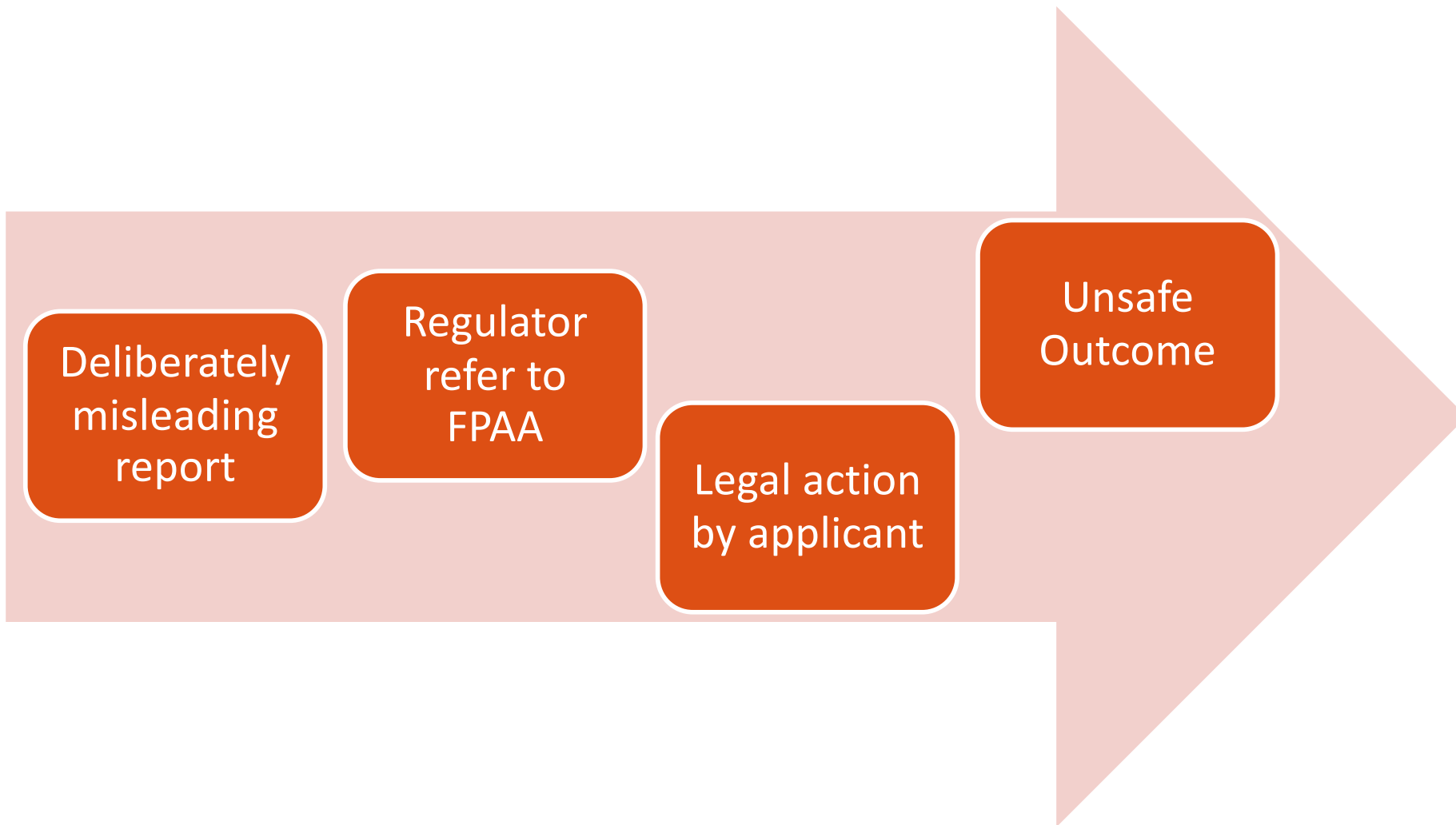


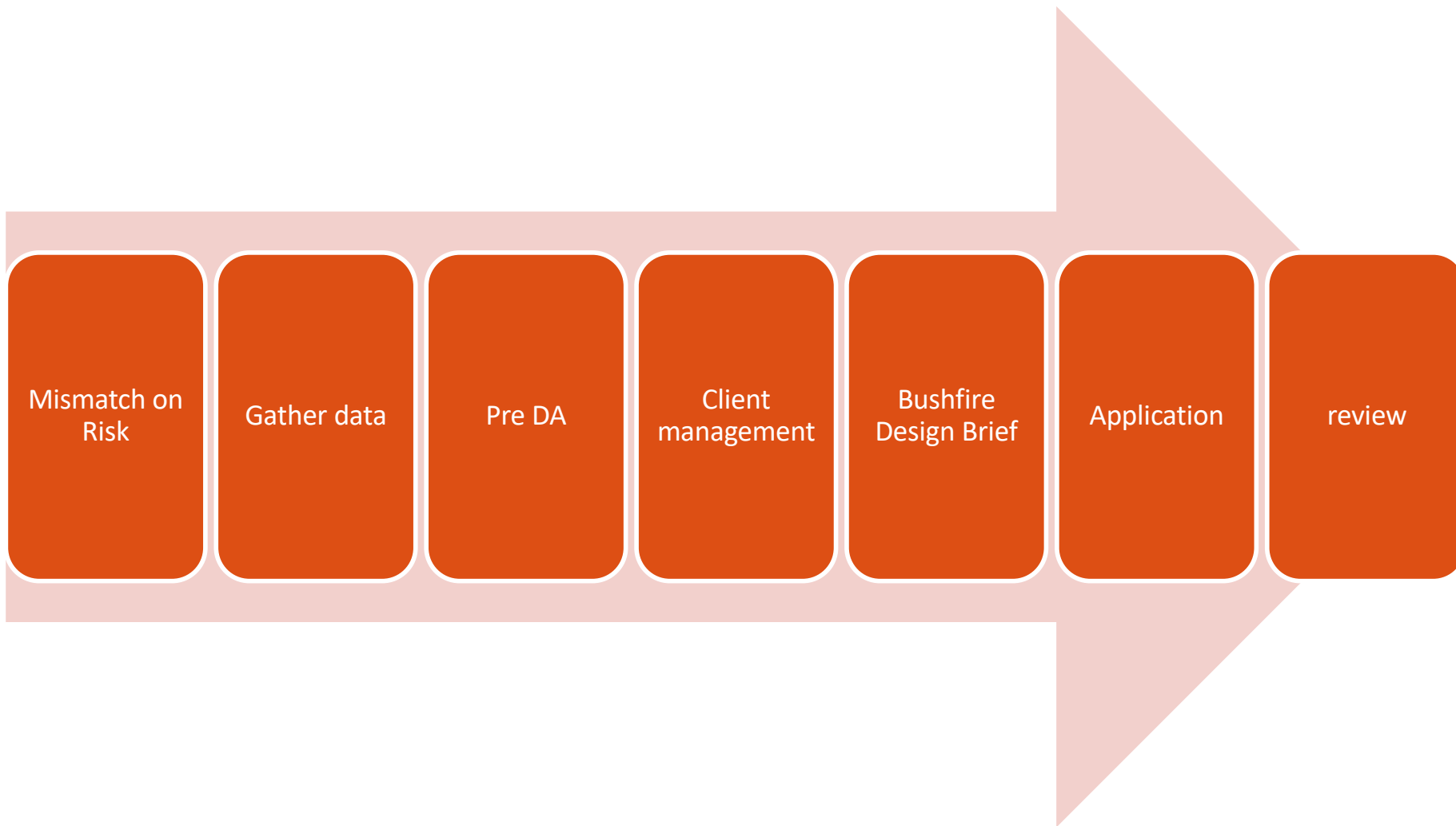


		Cynefin			
Risk	Consequence	Simple	Complicated	Complex	Chaotic
\$	Insignificant	Green	Blue	Yellow	Orange
\$\$	Minor	Blue	Yellow	Orange	Red
\$\$\$	Moderate	Yellow	Orange	Red	Red
\$\$\$\$	High	Orange	Red	Red	Move to lower level or no action
\$\$\$\$\$	Extreme	Red	Red	Red	Move to lower level or no action

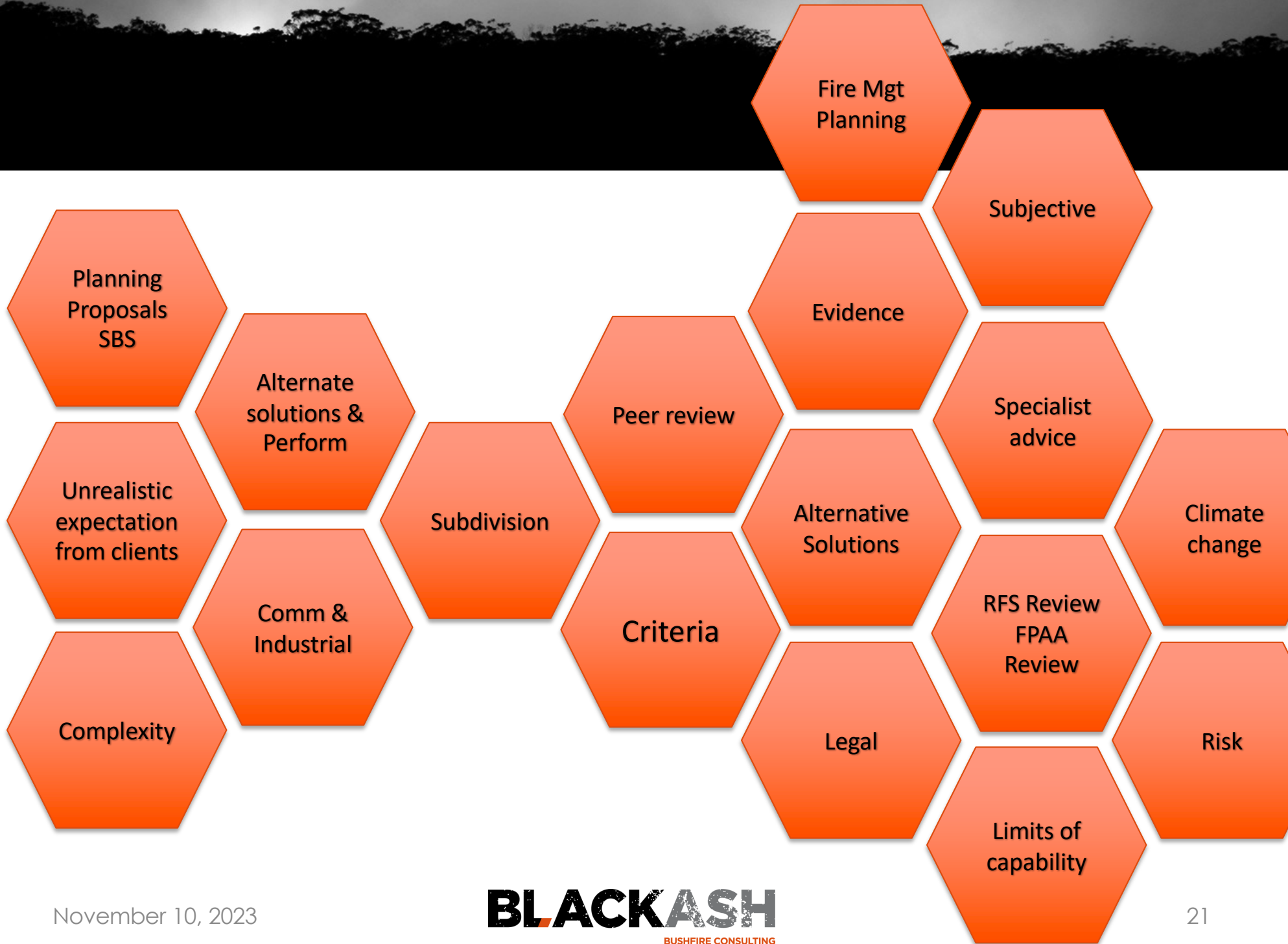


November 10, 2023









# Merit Based Decisions

Merit-based assessment in the context of development refers to evaluating and making decisions about projects, programs, or initiatives based on their quality, effectiveness, and overall merit. It is a systematic and objective approach to assess proposals.

- 1. Objective Criteria:** Merit-based assessment relies on predefined, objective criteria to evaluate the worthiness of a project or program.
  1. PBP and the NCC
- 2. Transparency:** The assessment process should be transparent, meaning that the criteria used and the evaluation process should be clear and open to scrutiny. This helps in maintaining accountability and fairness.
- 3. Fairness:** Merit-based assessment aims to treat all proposals equally. Decisions should be made based on the merits of the proposal, rather than personal bias or political influence.
- 4. Data-Driven:** Assessment should rely on data and evidence to evaluate projects.

# I Believe...

- *I believe...*
- *In my opinion...*
- *It is my experience...*



- If you find yourself using any of these, you need to try harder and find evidence and data
- It is your job to demonstrate your position to the satisfaction of the end user



- The project management triangle is made up of three variables that determine the quality of the project: scope, cost, and time.
- The triangle demonstrates how these three variables are linked—if one of the variables is changed, the other two must be adjusted in order to keep the triangle connected.







Uncertainty / patterns / insights

Clarity / Focus



Reporting/  
Outcomes

Research

Concept

Design



Define the problem



Solutions and outcomes



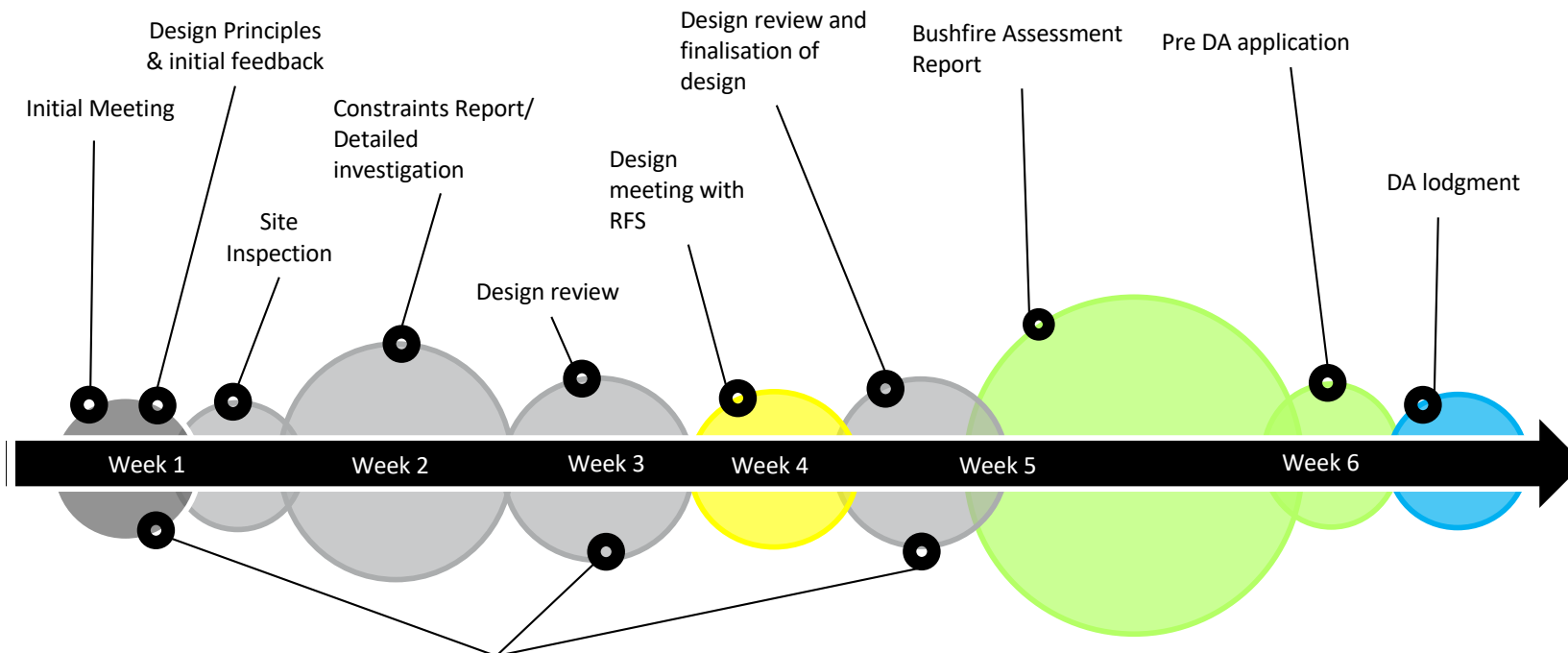
Work the problem

**BLACKASH**

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Stage



- Evaluate & refine approach
- Match against design threshold criteria
- Reduce uncertainty

**Complex proposals**

Design thinking approach to identify goals, understand the desired outcome, site constraints & opportunities, design process

- Complex sites, Infill, Alternate Solutions, strategic proposals - masterplans
- Bushfire Engineering Brief
- Generate solutions and test design principles
- Collaboration

**Known approach**

# APPENDIX 2

## SUBMISSION REQUIREMENTS, PERFORMANCE BASED SOLUTIONS AND BUSH FIRE DESIGN BRIEFS

This appendix details the information requirements for the range of DAs on BFPL and the submission requirements where a performance based solution is proposed.

### A2.1 Submission requirements for a BFSA

The detailed information to be contained within a Bush Fire Assessment Report submitted to the NSW RFS as outlined in RF Reg cl.44 is:

- (a) a description (including the address) of the property on which the development the subject of the application is proposed to be carried out;
- (b) a classification of the vegetation on and surrounding the property (out to a distance of 140 metres from the boundaries of the property) in accordance with the system for classification of vegetation contained in Planning for Bush Fire Protection;
- (c) an assessment of the slope of the land on and surrounding the property (out to a distance of 100 metres from the boundaries of the property);
- (d) identification of any significant environmental features on the property;
- (e) the details of any threatened species, population or ecological community identified under the *Threatened Species Conservation Act 1995* that is known to the applicant to exist on the property;
- (f) the details and location of any Aboriginal object (within the meaning of the *National Parks and Wildlife Act 1974*) or Aboriginal place (within the meaning of that Act) that is known to the applicant to be situated on the property;
- (g) a bush fire assessment for the proposed development (including the methodology used in the assessment) that addresses the following matters:
  - (i) the extent to which the development is to provide for setbacks, including Asset Protection Zones;
  - (ii) the siting and adequacy of water supplies for fire fighting;
  - (iii) the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency;
  - (iv) whether or not public roads in the vicinity that link with the fire trail network have two-way access;
  - (v) the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response;
  - (vi) the adequacy of bush fire maintenance plans and fire emergency procedures for the development site;
  - (vii) the construction standards to be used for building elements in the development;
  - (viii) the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development;
  - (h) an assessment of the extent to which the proposed development conforms with or deviates from the standards, specific objectives, performance criteria and acceptable solutions set out in Chapters 5-8 of PBP; and
  - (i) identify any fire trails that exist on the property that are on the Register of Certified Fire Trails under RF Act s.62O.



## Part 3.10.5 Construction in bushfire prone areas

### Appropriate Performance Requirements

#### Appropriate Performance Requirements

Where an alternate bushfire protection design is proposed as a Performance Solution to that described in Part 3.10.5, that proposal must comply with—

- a. Performance Requirement P2.7.5; and
- b. The relevant Performance Requirements determined in accordance with A2.2(3) and A2.4(3) as applicable.

### F2.7.4 Bushfire areas

A Class 1 building or a Class 10a building or deck associated with a Class 1 building constructed in a designated bushfire prone area is to provide resistance to bushfires in order to reduce the danger to life and reduce the risk of the loss of the building.

## 2. Carry out analysis

Given that each Performance Solution is unique, each proposal will require a specific analysis relevant to its complexity. In order to assure compliance with the NCC, a Performance Solution must be evaluated according to one or more of the Assessment Methods outlined in the NCC.

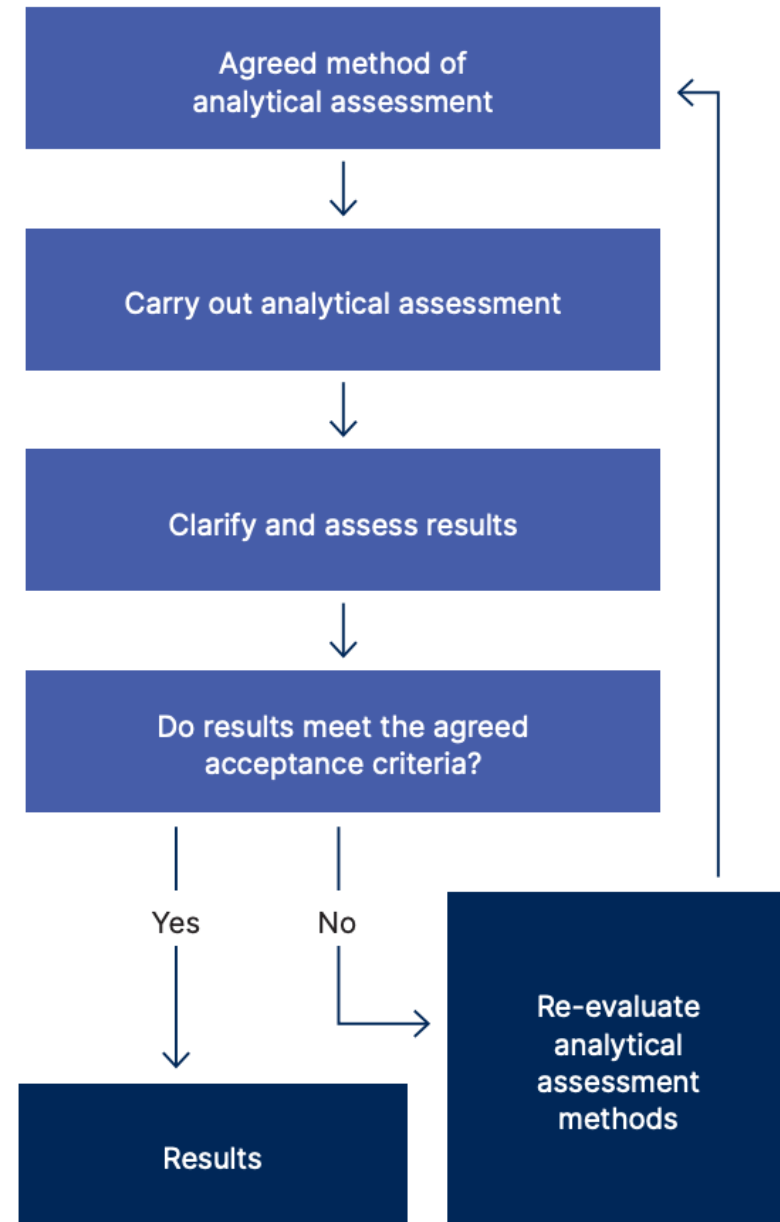
Any analytical assessment should be completed as agreed in the PBDB.

Examples of tools that could be used to evaluate a design proposal include:

- comparative or absolute analysis
- qualitative or quantitative analysis
- calculations
- testing
- modelling

As each process may require specific input and output information, it is essential that potential variables in the agreed method of evaluation are identified during the stakeholder consultation process and documented within the PBDB prior to commencing the activity.

Ultimately, agreed analytical processes may need to be reviewed if initial outcomes do not meet the agreed acceptance criteria.



<https://www.abcb.gov.au/sites/default/files/resources/2022/Performance-solution-process.pdf>



## 4. Prepare a final report

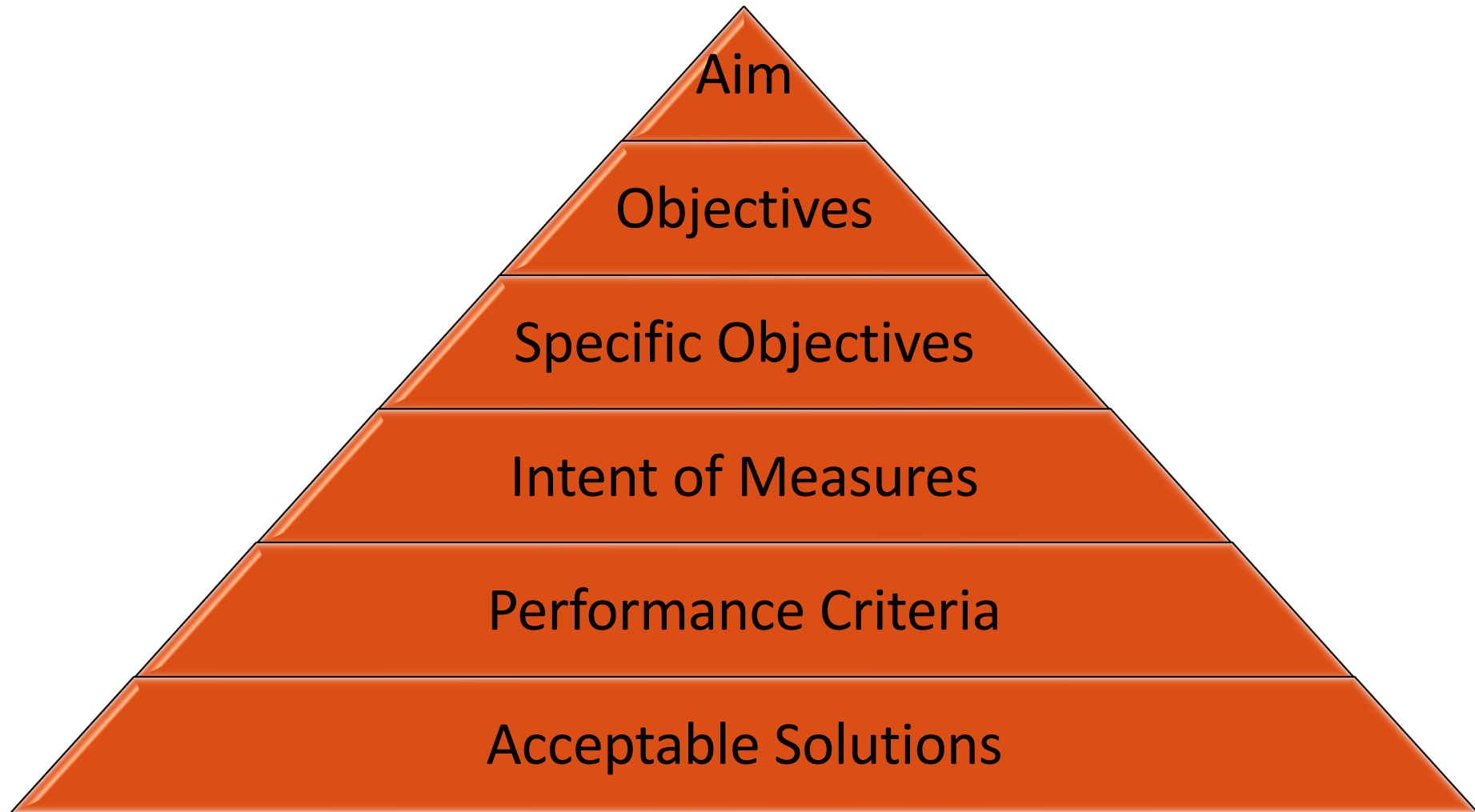
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The final report should clearly demonstrate that compliance with the NCC Performance Requirements agreed in the PBDB has been achieved. The content of a typical final report must comply with A2G2(4)(d) and may include:

- An overview of the PBDB, including:
  - Scope of the project
  - Stakeholders
  - Applicable NCC Performance Requirements and Deemed-to-Satisfy Provisions
  - Assessment Method/s used
  - Approaches and methods of analysis
  - Any assumptions that were made
  - Acceptance criteria and safety factors agreed to by stakeholders
- Overview and outline the analysis, modelling and/or testing carried out
  - Method of analysis used
  - Calculations and outcomes
  - The sensitivities, redundancies and uncertainty studies carried out
  - The results obtained and relevance to the PBDB
- Evaluation of results including:
  - Comparison of results with acceptance criteria
  - Any further sensitivity studies undertaken
  - Any expert judgement applied and its justification
- Conclusion
  - Specifications of the final design that are deemed to be acceptable
  - Confirmation that the NCC Performance Requirement/s were met
  - All limitations to the design and any conditions of use.



# Structure of PBP





November 10, 2023