



Neighbourhood strengths and vulnerabilities mapping exercise

In this activity, participants use everyday objects to visualise neighbourhood risks, vulnerabilities and strengths on a map. These may include physical features of the area, historical event impacts, escape routes and social networks. The Climate Wise Communities program commonly uses Lego® and pipe cleaners to represent each feature, but other artefacts such as toy animals, buttons, beads and/or coloured matchsticks may just as easily be used. When placed in a specific context, the artefacts take on the meanings placed on them by the participants. The use of these objects also makes the activity accessible children.

Developed by researchers at RMIT, the use of playful, tactile, everyday objects invites relaxed participation in knowledge sharing. The approach is specifically designed to address issues of disempowerment and complacency that tend to result from constant ‘top-down’ messaging. Instead, the community-centred process facilitates a conversation that allows participants to better understand and respond to the risks posed by extreme weather events, and reveals the realities of their own situations and the benefits of social networks.

While a key objective of this activity is to encourage community collaboration in preparation and response to disasters, the activity is enhanced when run in partnership with local emergency service agents, whose local knowledge and expertise are greatly valued and respected by participants. This can move people from demanding someone take responsibility for their situation to understanding the practicality of shared responsibility.

Hazards addressed

- | | |
|---|---|
| <input checked="" type="checkbox"/> Bush fire | <input checked="" type="checkbox"/> Sea level rise – erosion and inundation |
| <input type="checkbox"/> Drought | <input checked="" type="checkbox"/> Storms |
| <input type="checkbox"/> Extreme heat | <input checked="" type="checkbox"/> Tsunami |
| <input checked="" type="checkbox"/> Flooding | <input type="checkbox"/> Other _____ |

Resources required

- Printed maps of area (approximately A0; scale should allow recognition of individual homes, or at least street)
- Lego® or other objects such as small toys, or coloured beads, counters, buttons or matchsticks
- Pipe cleaners (chenille sticks) or coloured wool pieces
- Description or knowledge of historical extreme weather events and likely trajectories for future events
- ‘What if...’ scenario cards (optional – adds to understanding planning contingencies)



Process

1. Divide participants into small groups of around six to eight people per table, each with its own map of their local area. If possible, group people according to where they come from.
2. Ask participants to look at the map presented and to locate their home, which they can identify by placing a Lego® minifigure on the location.
3. Consider the **topography, vegetation and event history** of the area. Ask participating emergency services agents to provide background and expert local advice for this component.
 - What extreme events are potential threats to the area (e.g. fire, storm, flood, excessive pollution, tsunami)?
 - Where have such events had impact in the past?
 - From which direction is a fire/flood/storm most likely to come?
 - Where are the areas of greatest risk? Which areas are hot spots to avoid, especially in an evacuation?
 - If you can't remain in your home, where are the safest locations in the area?
4. Think about your **personal and family circumstances**. Use Lego® and other objects to locate things that are important to you on the map.
 - Where would you or your family be on a given day?
 - Places of work and local services (shops, etc) – orange brick
 - If you have children, identify where the schools are – red brick or label
 - If you are a carer or have an elderly relative close by, identify their location – grey brick
 - If you have a pet at home, mark this on your home – add a flag
5. Use Lego® and other objects to map **physical strengths and vulnerabilities** of the area:
 - Mark out a primary evacuation route – long pipe cleaners or wool and a secondary evacuation route – pipe cleaners or wool of another colour
 - Where is your place of last resort if your evacuation route is blocked?
 - Neighbourhood Safer Place – green brick or label – Emergency services can help to identify these places and provide more information on what they are.
 - Static Water Sources – blue brick or SWS label
 - Local Community Fire Unit – red flag
 - Can you identify any hazards or vulnerabilities in the area? e.g. substations, water supply, phone reception issues, potential traffic hazards, evacuation pinch points
6. Map your **social strengths and vulnerabilities**:
 - Who else do you know locally? Mark on the map the location of people who:
 - might need assistance – yellow brick
 - might be able to assist you (locally) – white brick
 - you may be able to call on (outside area) – white brick
 - Discuss how will you get in contact with these people?



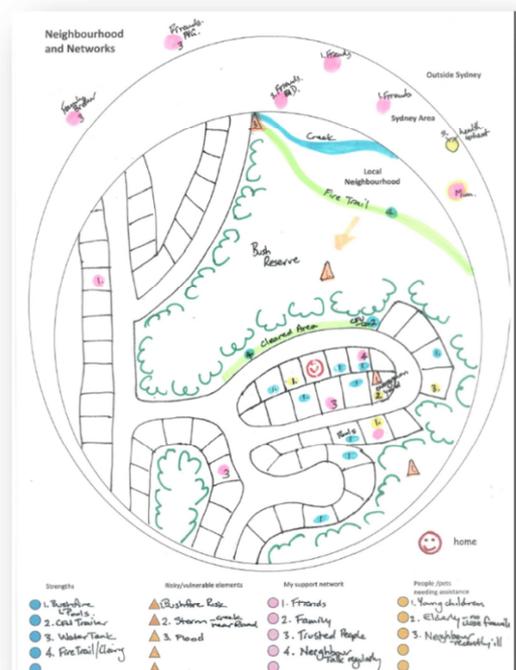
Bush fire preparation workshop: Participants identifying their preferred escape routes

7. In each case, think about how these things might affect your decisions? Will you need to evacuate early? How will you make sure the people you care for are OK? What will you do with your pets before, during and after an emergency?
8. Think about your **personal strengths and vulnerabilities**:
 - Consider health, age, transport availability, need to care for others, pets, any other limitations to what you can do to prepare for or respond to an emergency.
 - If conditions get worse, are you psychologically and physically prepared to defend your home? Or would you leave?
 - If you plan to leave, what will be your trigger to make this decision?

Alternatives

If Lego® or other objects are unavailable, pens and stickers may be used to mark features on maps. While this means that maps can only be used once, it can be useful if a record of what was discussed is required.

In instances where you are unsure of where people are coming from, or if you know they are coming from a broader area than can be represented on printed maps, an alternative is to use the neighbourhood sketching exercise. All of the elements required can be captured through either activity, but in the drawing exercise people become absorbed in the drawing process rather than engaging with others and sharing local knowledge. This can be overcome by asking participants to share what they have identified in their maps.



Example of a drawn social network map



Social networks

The people we rely on in an emergency may not always be those we with whom speak or spend the most time. There is a difference in who we might trust, who we regard as reliable, or who we might seek out for particular information or advice. Recognising who in, or could be in, our networks might be able to respond to a call for help in an emergency, or alternatively that we might assist, is an important aspect of building community resilience.

This activity can be adapted to solely consider these social networks. After dividing people into small groups around a map of their area, begin the exercise at Step 5. Ask participants to consider the people in their network of family, friends and neighbours. Ask:

- Who do you see regularly?
- Who do you speak to?
- Which people would support you if you needed help?
- Who do you see regularly?
- Who do you trust the most?
- Who would you rely on in an emergency?
- What if those people are not available, who else could you go to?
- Who might need your help?

Use a different Lego® piece or token to indicate where these people are on the map, including any outside of the area.

Ask people to think about what their networks look like on a normal day, and how this might compare to an emergency situation. It is also important to emphasise the need to communicate their plans with others, and know where the people they might rely on would be on a given day.



The Climate Wise Communities neighbourhood mapping tool box

Research background and observations in practice

This design-led communication method was developed by researchers at RMIT University in partnership with the Bushfire and Natural Hazards Cooperative Research Centre (BNCRC) (Akama et al, 2012). This research initially set out to investigate issues around communicating risk to communities, and resulted in the design of a process that facilitates co-creation and sharing of local knowledge for communities to better understand and respond to the risk of bush fire (Akama, 2014). The method emphasises the importance of social networks in building community preparation, response and resilience to extreme weather events.



Mapping activities can serve several purposes and have various benefits. Community mapping is a useful way to engage people of all levels of capability, and can be used to help people see and understand their community in different ways, explore specific issues, and to build consensus or identify areas of conflict. The UN-HABITAT Disaster Assessment Portal (2015) lists both risk and hazard mapping as useful techniques for disaster risk assessment that can help to locate major hazards and to identify risks so that a community may find solutions to prepare for disasters.

References

Akama, Y., Chaplin, S., Philips, R. & Toh, K. (2012) 'Design-led strategies for bushfire preparedness', in Cathryn Gertzos (ed.) *Proceedings of the Disaster and Emergency Management Conference*, Brisbane, Australia, 16 - 18th April 2012, pp. 407-424.

Akama, Y. (2014) 'Passing on, handing over, letting go – the passage of embodied design methods for disaster preparedness', in D. Sangiorgi, D. Hands, E. Murphy (ed.) *Proceedings of the Fourth Service Design and Service Innovation Conference*, Sweden, 9-11 April 2014, pp. 173-183.

UN-HABITAT Disaster Assessment Portal (2015) *Techniques Used in Disaster Risk Assessment* (sourced 14 Oct. 2015 from <http://www.disasterassessment.org/section.asp?id=20>)
