

A HUMANITARIAN RESPONSE: THE SOUTH EAST QLD FLOOD DISASTERS

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ABSTRACT

The South East Queensland Rainfall & Flood Event from the 22nd of February to the 7th of March 2022 has had devastating and irreversible effects on SEQ communities. Environmental destruction, property depredation, and lives lost have resulted in traumatic psychological outcomes and largescale financial calamities. This trauma has eroded values and support systems, social values, traditions, and attachment to a location that has ultimately influenced communities prone to facing and responding to natural disasters (Jogia et al., 2014).

These factors were compounded during the event as communication between the government & the community were infrequent and contradictory. Considering this level of destruction, the Insurance Council of Australia have estimated the 2022 QLD and NSW floods to be Australia's costliest ever flood event, wrapping around \$3.35 billion in insured losses across 197,000 claims (Cai, 2022).

As communication links and infrastructure was damaged and disrupted, some economic activities came to a standstill. While there were programs, checklists and educational assets available to the public, connection and offline access were limited. Highlighting that the services have not been utilised to their full extent and/or that the user experience was inadequate. This furthered the disconnect and has led to distrust between the general public and the government (Office of the Queensland Chief Scientist, 2022). Our group was invited to develop solutions to reduce the primary impact and secondary implications of natural disasters. We aimed to explore, understand, and generate a human-focused solution to better support flood-affected communities while addressing community readiness, support and recovery efforts.

OBJECTIVE

Formulate the best solution we can design to aid community members within the low-lying areas of South-East Queensland who deserve to feel safe & prepared for future flood disasters?

INITIAL RESEARCH

The SEQ Flood Disaster survey was conducted from the 10th of June to the 20th of June 2022. Survey data gave us valuable information and insights. Participants answered a series of both open and closed questions, with a total of 33 responses during this 10 day period.

The open-ended questions detailed participants' desire for an increased level of information covering: how to prepare, what to do during & how to

cope with the aftermath. They indicated a preference for one singular place for all essential information and stated they want upgraded warnings on flooded roads with a map highlighting roads that are frequently inundated.

The data reiterated gaps observed in the SWOT and comparison chart and further provided constructive insights to take our next steps in finding a solution for the community with confidence.

79% of participants were flood affected.

45% of the community felt "unprepared" when faced with a potential flood disaster.

9% own a disaster kit for their place of residence.

64% indicated that there is not enough flood information shown in the public eye.

41% of survey participants did not know who to call for help during a flood crisis.

INTERVIEW WITH MAJOR GENERAL ELLWOOD, DSC, AM, CSC



To gain a greater understanding of the resources and assistance created for SEQ communities before, during and after the 2022 Floods, we interviewed Major General Jake Ellwood, DSC, AM, CSC. Major General Ellwood played an integral part in the recovery process after the effects of the 2022 Floods as the State Recovery Coordinator with the Queensland Reconstruction Authority.

He communicated the importance of "preparedness" for residents and communities to "feel safer." Because "if people understand the risk, have a plan, and are connected with their community...they have...the key elements to survive and thrive in these times of uncertainty."

Figure 3. Using small boats to travel through floodwaters. (O'Brien, 2022).

SEQ FLOOD FORUM TAKEAWAY

We attended a Community Forum hosted by the Inspector-General of Emergency Management on the 12th of June at Yeronga Services Club. The forum was attended by members of the Red Cross, coordinators of Community Plus Support Centres and community members from the district covering Chelmer, Rocklea, Fairfield, Yeronga and West End.

Forum discussions commenced with testimonies and compounded in a brainstorming session in the hope of generating experience-based solutions

Figure 2. Ella Beckland and her daughter Myla Hennnessy lost their home and possessions a month ago. (Smith, 2022).



Solutions Identified:

- Essential information available offline.
- Detailed information & impacts of the differences between Minor, Moderate & Major Flood Levels in layman's terms.
- Improving evacuation & alert system.
- Increase the number of evacuation centres & sandbag collection depots and boat access in low-lying areas.
- Ensure every home & business has a flood management & evacuation plan.
- Proactive preparation & pre-disaster coordination efforts.

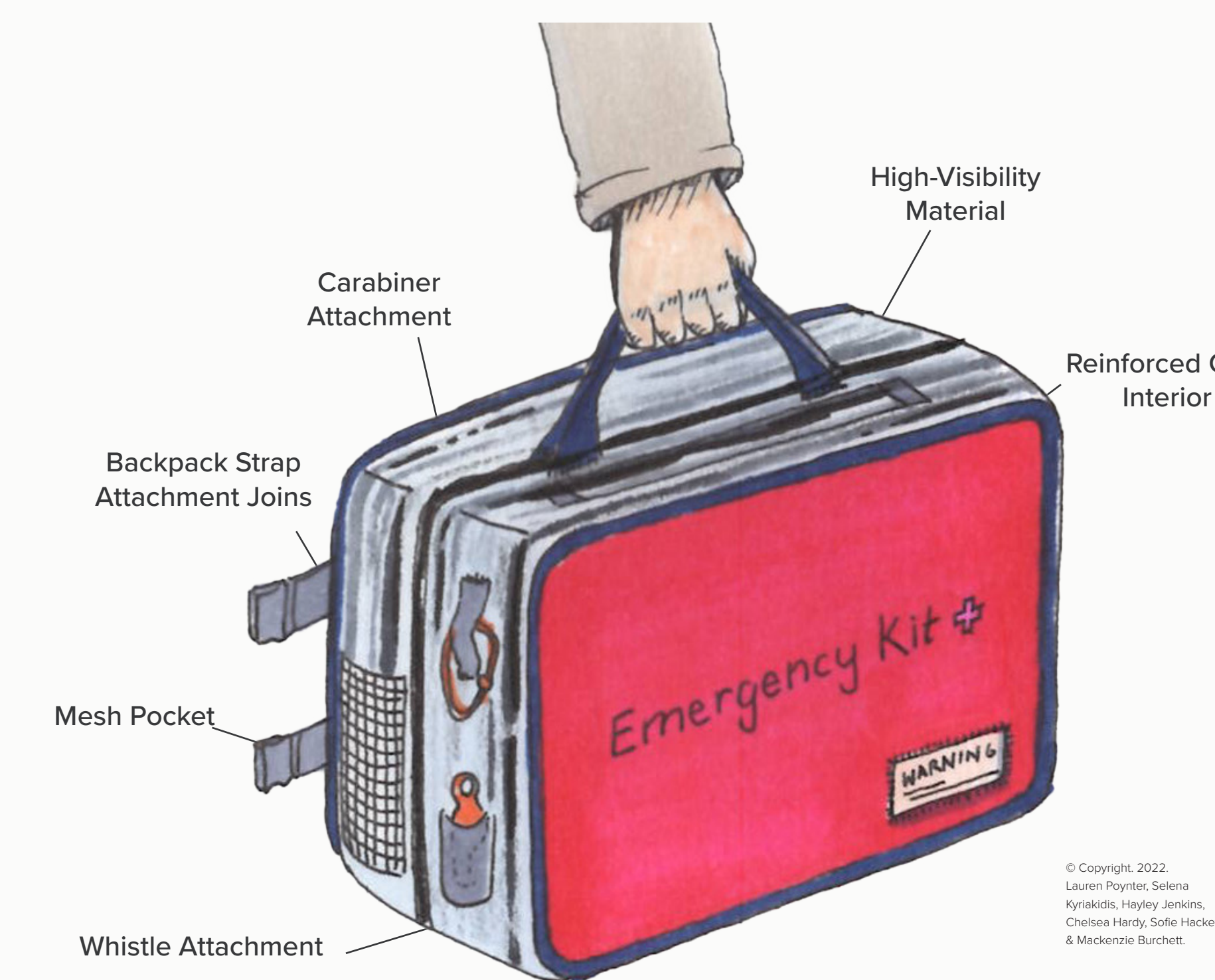
SOLUTION DEVELOPMENT

Our team chose to design and explore a Flood Disaster Kit. Operating as an all-in-one resource pack. This waterproof, lightweight kit combines first aid equipment, communication tools and crucial resources to increase the safety and preparedness of community members facing a natural disaster.

Key elements, such as the fitted weather emergency radio create early awareness of at-risk weather events and areas. Hand-held utilities tools include a seat-belt cutter/glass breaker, whistle, and CPR mask allow individuals to protect themselves, help other community members and seek assistance faster.

The kit provides users with waterproof storage space for essential personal belongings, such as medicine, scripts, food, and hand-held devices.

It includes a temporary power source for electronic appliances. Information and resources offer clear visual and written guides on safe practices in preparation for and during and after a disaster. All resource items will offer visual prompts, Braille lettering and a QR code to the website offering the information in internationalised text, video guides and a text-to-speech option.



Our 'Flood Disaster Kit' will enhance individual safety & preparedness within the low-lying areas of South-East Queensland by providing them with the resources & supplies they need when disaster strikes.

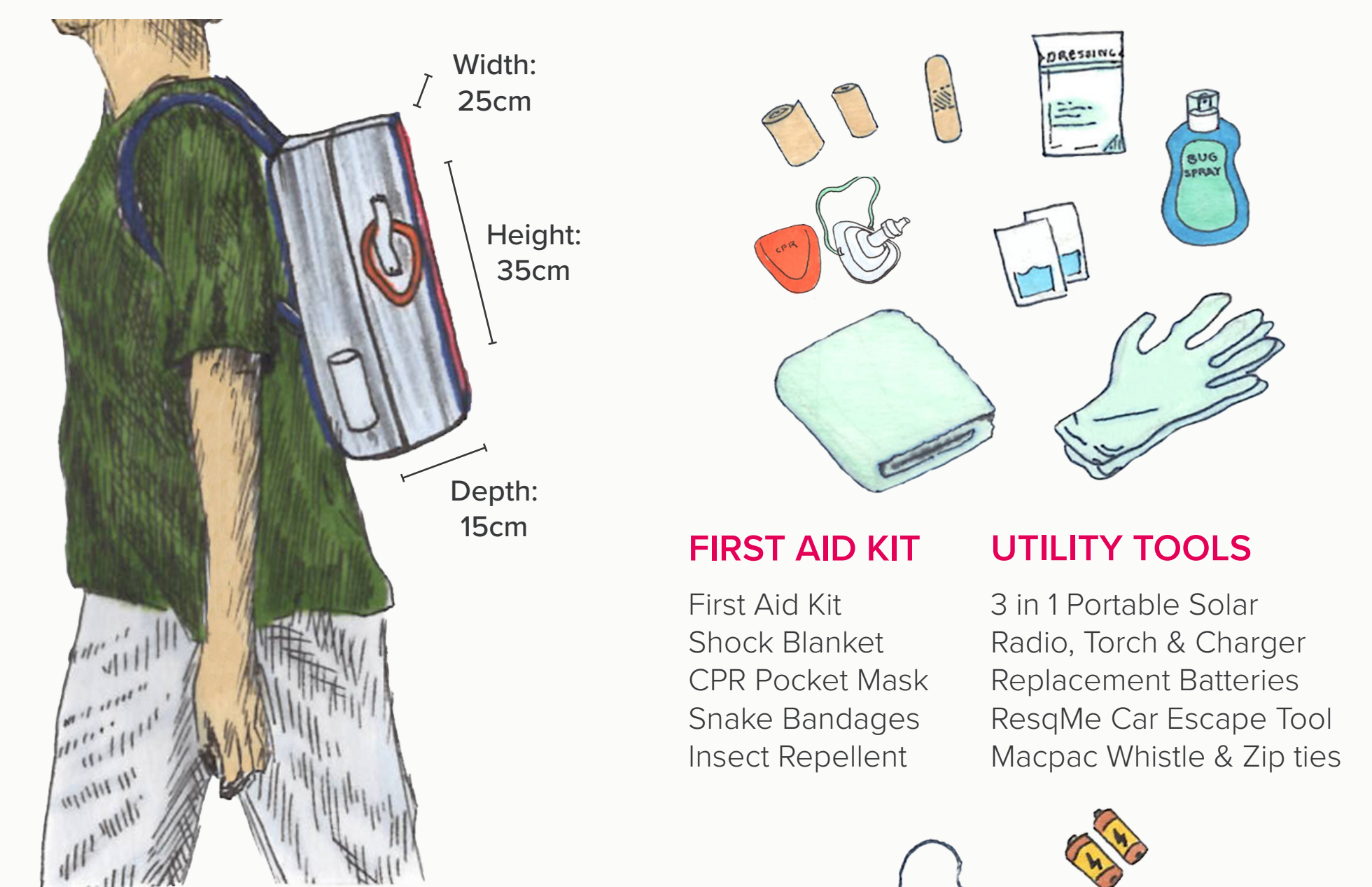
COMPARISON OF FLOOD READINESS PROGRAMS

KEY:
 ● Available
 ○ Unavailable

Company Name	Get Ready: My Flood Resilient House.	"What To Do Before, During & After a Flood" Booklet	3 Steps to Get Ready Booklet	DFES: Prepare For a Flood	Red Cross: Your Emergency RediPlan	Getting Kids Ready for Natural Disasters
Phone App	○	○	○	●	○	○
By Queensland Government	○	○	●	○	○	●
Website	●	●	●	●	●	●
Easily Accessible	○	●	●	●	●	●
For All Ages	○	●	●	●	●	●
For Children in School Only	●	○	○	○	○	○
Advertised on TV	●	○	○	○	○	○
Tactile Versions	○	○	●	○	○	○
Offline Access	○	●	●	○	○	○
Includes Checklists & Evacuation Plan	○	○	●	●	●	○
Free to Access	●	●	●	●	●	●
Up to Date	●	○	●	●	●	●
	(QLD Government, 2019)	(Australian Government Attorney-General's Department, 2005)	(Queensland Government, 2019)	(Department of Fire and Emergency Services, n.d.)	(Australian Red Cross, 2019)	(Queensland Government, 2019)

Next, we dissected the education and current products and service options currently available to the public. We created a comparison chart to understand similarities and differences and identify the gaps within the market. The majority of resources are "easily accessible" and

"free to access" however very few of the resources have been advertised on television or social media and the majority require internet access. We were also able to recognise a limitation of materials created to support individuals school-aged and under.



RESOURCE INCLUSIONS

- Evacuation & Personal Documentation Checklist
- Actions to take prior, during and post flood disaster.
- Emergency Contact Numbers inc. Energex.
- Local Radio Channels & Stations
- Sandbag Collection Depots.
- Evacuation Locations noting Accommodation, First Aid & Disability Access, Internet & Child & Pet-friendly options.
- QR Code Link to Inundation Maps & BOM Radar Warnings & Mark Yourself Safe Link.
- How to Escape a Flooded Vehicle & RACQ Number.
- Insurance Claim Checklist & Photograph Prompts
- Basic First Aid & CPR
- Recovery & Community Centres.
- Health Crisis Lines.
- Creative Solutions for Survival Situations.
- Charity Donation Depots.

FIRST AID KIT
 First Aid Kit
 Shock Blanket
 CPR Pocket Mask
 Snake Bandages
 Insect Repellent

UTILITY TOOLS
 3 in 1 Portable Solar Radio, Torch & Charger
 Replacement Batteries
 ResqMe Car Escape Tool
 Macpac Whistle & Zip ties

PROVISIONS
 Collapsible Bottle
 Water Purification Tablets & Energy Gels

SANITARY ITEMS
 N95 Pro-shield Mask
 Hand Sanitiser
 Sanitary Products
 Biodegradable Wipes

RESOURCES
 Educational Resources
 Evacuation Checklists
 Universal Waterproof Pouch
 Notebook & Pencil
 Glass Marking Pencils

SOLUTION TESTING

95.7% of participants believe having offline access to the information within the kit would elevate their sense of safety and preparedness when facing a flood crisis.

91.5% of participants believe the knowledge they have access to a Flood Kit would give them an increased sense of safety and preparedness when facing a flood crisis.

The second stage of our prototype refinement process focused on the analysis and evaluation of stakeholder feedback.

At the closing of our survey, we obtained fifty responses, fifteen hundred LinkedIn impressions and four responses from Government Officials.

The feedback received was broadly in support of our solution prototype and value statement.

The majority segment (53.2%) revealed they were willing to contribute between \$30-\$70. 27.7% willing to contribute between \$70-\$90+ and the remaining 19.1% under \$30.

CONCLUSION

Our research has established that access to a Flood Disaster Kit provides SEQ community members with a sense of safety and preparedness when facing a flood disaster. Survey participants appreciated its comprehensive, compact, versatile and inclusive nature. With an invaluable level of respondent feedback, we have tailored a solution

that 97.8% of participants would make a financial contribution to obtain. By committing to designing a human-focused solution, through refinement and solution optimisation, we have accomplished our shared vision to explore, understand and generate a uniquely user-centric solution to better support flood-affected communities in South East Queensland.

DISASTERS DON'T PLAN AHEAD, BUT TOGETHER WE CAN