

SUMMARY REPORT 2023

# NSW Flood Recovery Program for Land-based Clean-up Program

A Submission to the EPA



**NSW Flood Recovery Program for Land-based  
Clean-up Program - Final Report**

A Submission to NSW EPA (ABN 43 692 285 758)  
Job No. 211-1012528

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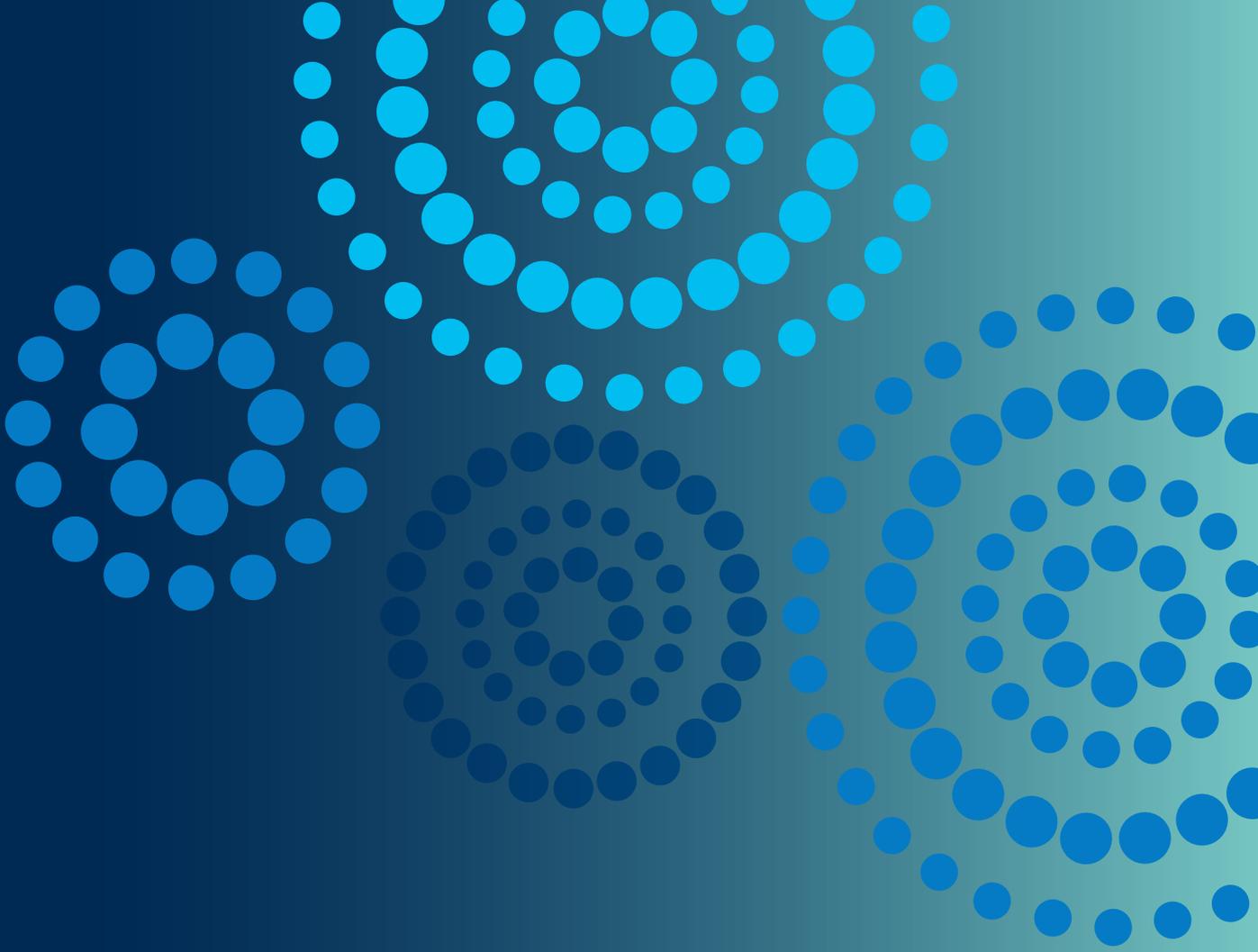
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# Welcome Acknowledgement

In the spirit of reconciliation, MRA Consulting Group acknowledges the Traditional Custodians of Country throughout Australia and their connection to land, sea and community.

We pay our respects to Aboriginal and Torres Strait Islander peoples and to Elders past, present and emerging.



# Contents

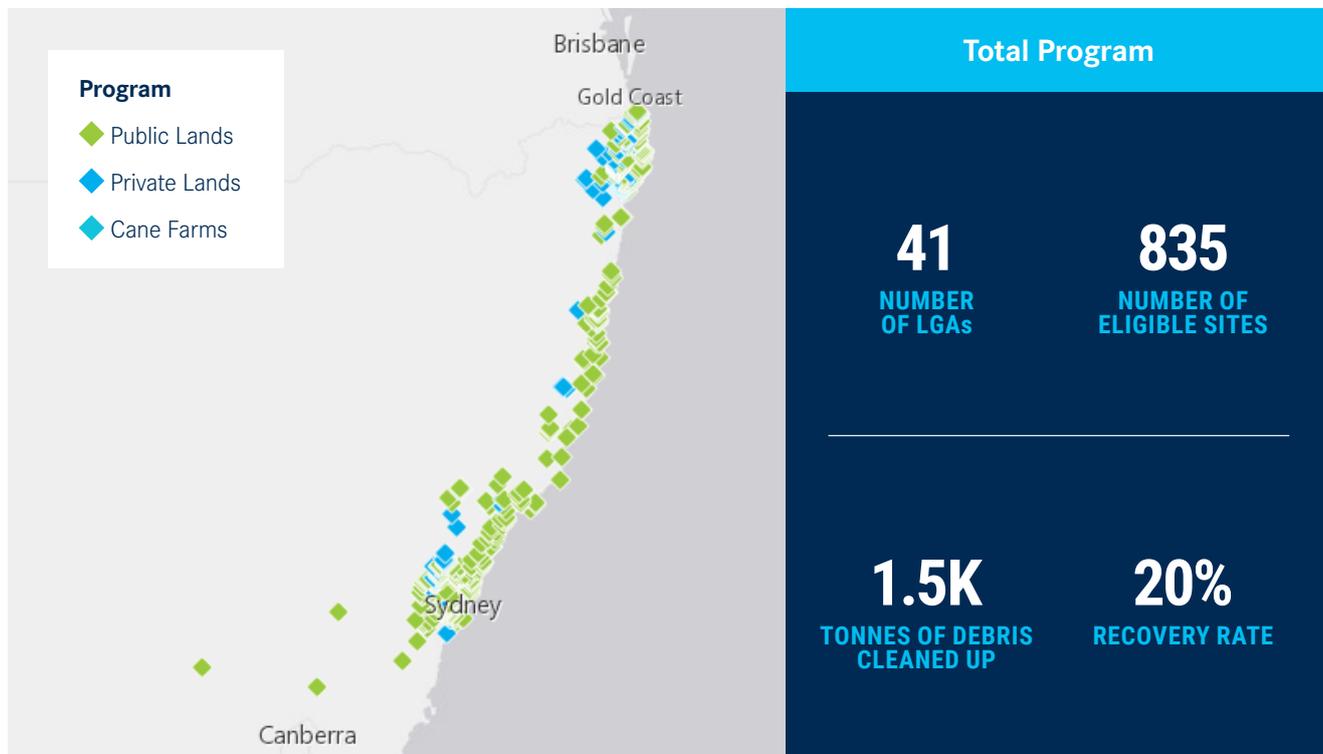
<b>Executive summary</b> .....	<b>5</b>
<b>Introduction</b> .....	<b>6</b>
Background .....	6
Program snapshot .....	6
<b>Program objectives</b> .....	<b>8</b>
<b>Stakeholder engagement</b> .....	<b>9</b>
<b>Program eligibility</b> .....	<b>10</b>
<b>Media</b> .....	<b>12</b>
<b>Land-based Clean-up Program outcomes</b> .....	<b>14</b>
Key data .....	14
<b>Recovery (recycling and reuse) of debris</b> .....	<b>16</b>
<b>Regional snapshot</b> .....	<b>18</b>
<b>Program learnings</b> .....	<b>20</b>
<b>What did people say about the Program?</b> .....	<b>21</b>

# Glossary

AGRN	Australian Government Reference Number
CGA	Cane Growers Association
CRM	Customer Relationship Management
EPA	NSW Environment Protection Authority
FRNSW	Fire and Rescue NSW
LALC	Local Aboriginal Land Council
LGA	Local Government Area
MRA	MRA Consulting Group
NSW	New South Wales
site	Land or property for which an application for clean-up was received
t	Tonnes

# Executive summary

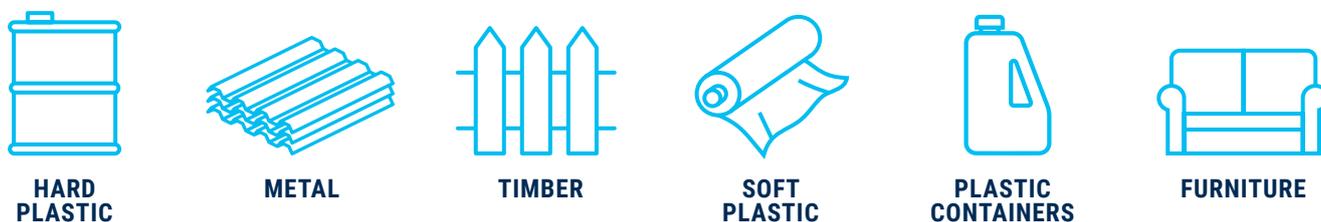
## Key data for eligible sites cleaned up



## Key data for assessed and eligible sites under each Program element

Program element	Public Lands Program	Private Lands Program	Cane Farm Program
No. of sites assessed	2,429	460	78
LGA coverage (assessed)	52	54	5
No. of eligible sites /sites cleaned up	664	139	32
LGA coverage (eligible)	38	21	4
Tonnes cleaned up	1,047	278	162
Recovery rate	13%	30%	48%
Total cost to clean up (% of Program)	73%	22%	5%
Most common debris type(s)	Hard plastic, timber, metal	Metal, timber, hard plastic	Hard plastic, metal/metal drums, timber, tyres, furniture

## The top six most common debris categories cleaned up



# Introduction



## Background

The severe storm and flooding events in March 2021, February–March 2022 and June–July 2022 caused significant damage to properties and the environment along the NSW coast.

The storm events and associated flooding generated a substantial amount of debris on public and private land that presents a risk to the environment and human health.

In response, the NSW EPA executed a Land-based Clean-up Program (the Program), engaging a specialist flood debris clean-up consultant, MRA Consulting Group (MRA), as Project Manager to assess flood-impacted sites, engage with Program applicants (including landowners, local councils) and other stakeholders, and coordinate clean-up contractors to remove flood debris from public and private land, including cane farms, across affected Local Government Areas (LGAs) throughout NSW.

The Program covered all Local Government Areas (LGAs) affected by flooding and identified through the disaster declaration for the:

- NSW Storms and Floods 10 March 2021 onwards (AGRN 960)
- NSW Severe Weather and Flooding from 22 February 2022 onwards (AGRN 1012)
- NSW Severe Weather and Flooding from 27 June 2022 onwards (AGRN 1025).

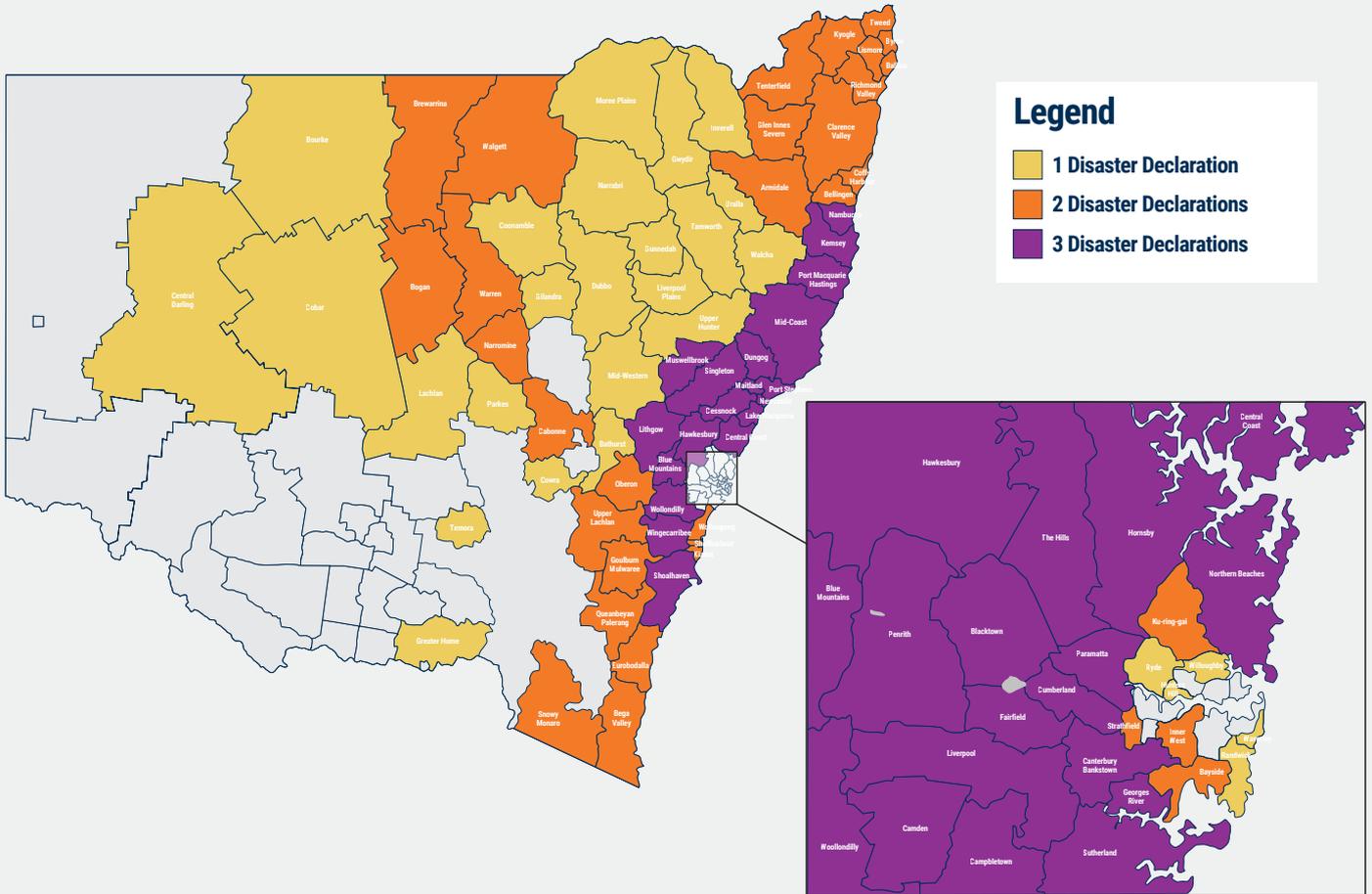
## Program snapshot

The Public Lands Program was launched by the NSW EPA in July 2021 with MRA engaged as Project Manager.

The Program was trialed with Port Macquarie Hastings Council in December 2021. Additional councils became involved in the Program in late 2021 and early in 2022 and following successive flood events in February and June that year. After the initial focus on public land, the Program was expanded in July 2022 to include a Private Lands Program (including a Cane Farm Program stream) across all disaster-declared areas.

The Public and Private Lands Programs (including the Cane Farm Program) were officially closed to applications in December 2022. Flood debris clean-ups for Public and Private Lands Programs were completed by July 2023 (the Cane Farm Program concluded in May 2023).

## Extent of flood impacted areas in NSW



## Project roll-out timeline



# Program objectives



**Protect human health  
and the environment**



**Satisfy work health and safety  
and environmental legislation**



**Target identified flood  
debris as per the Land-Based  
Clean-Up Program**



**Remove flood debris from  
declared local government  
disaster areas of March 2021,  
February and June 2022**



**Responsibly manage the  
removal of flood debris in  
accordance with the relevant  
waste policies and guidelines**



**Work collaboratively  
and communicate effectively  
with all relevant stakeholders**

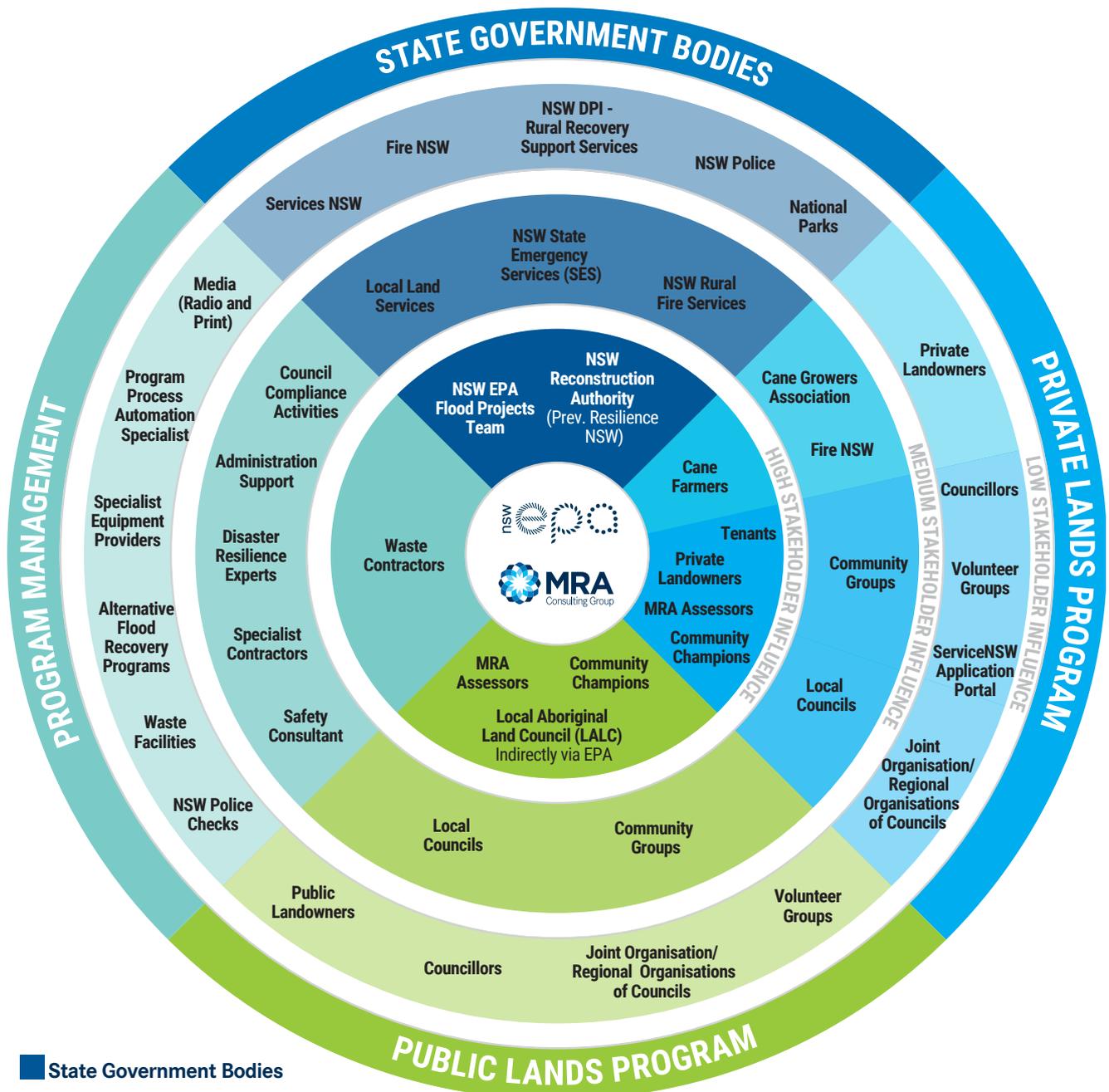
# Stakeholder engagement

The program required extensive facilitation and differing levels of engagement with local land managers including local councils and Local Aboriginal Land Councils (LALC), private landowners including cane farmers, MRA Site Assessors, contractors, industry associations, community champions and community groups, regional organisations, and State Government bodies and agencies.

As shown below, MRA as the Project Manager managed the clean-up operations in accordance with the EPA's requirements and performed a direct facilitator role for landowners and between State Government and local-led program approaches.

This model of Program delivery resulted in operational efficiencies and reduced duplication of effort across initial site assessments, clean-ups, milestone reporting activities, and across the eligible LGAs in NSW.

## Stakeholder engagement map for the Land-based Clean-up Program

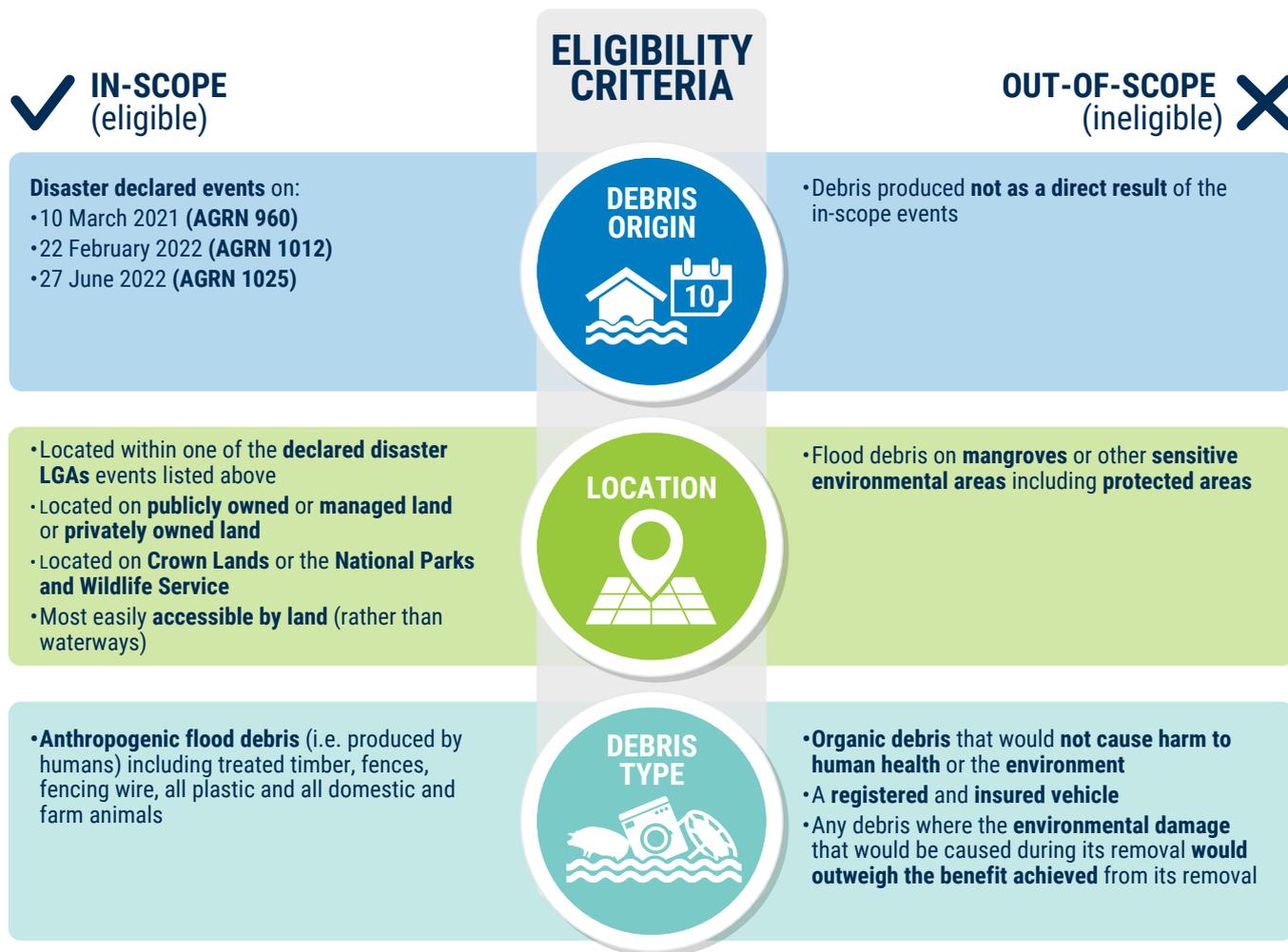


- State Government Bodies
- Private Lands Program
- Cane Farm Program
- Public Lands Program
- Program Management

# Program eligibility

To be eligible for removal under the Program, flood debris was required to possess all of the in-scope characteristics outlined below.

## Eligibility criteria for the Land-based Clean-up Program



## Examples of eligible debris cleaned up

Asbestos



Timber



Plastic



Metal



Mattresses



Silage bales



Tyres



Fuel/Chemicals



# Media

A range of media types were used to announce launch dates, Program news, extensions and updates to the Program.

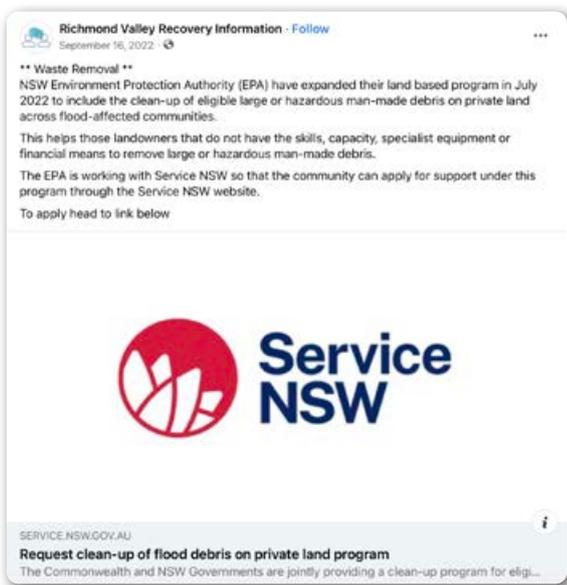
Media releases included:

- Posts to social media and community noticeboards (Facebook, Twitter, LinkedIn)
- Posts to council websites
- Posts and updates to websites including the NSW EPA, Service
- NSW, Resilience NSW (now the NSW Reconstruction Authority)
- Emails and phone calls
- Radio
- Newspaper articles
- Flyers and fact sheets

## Social Media

(Facebook, Twitter, LinkedIn)

### Richmond Valley



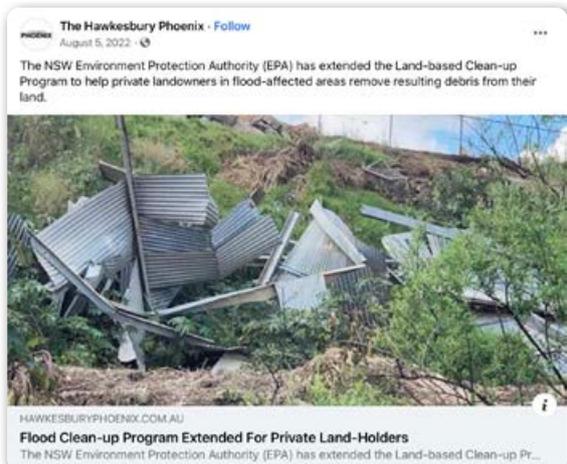
### EPA



### Northern River Times



### The Hawkesbury Phoenix





# Program outcomes

Collectively, and under the approved Natural Disaster Declarations for AGRN 960, 1012, 1025, the Program cleaned up close to 1,500 tonnes of flood debris from 835 sites across 35 LALCs and 41 LGAs.

An average recovery rate of 20% was achieved across the three Program streams. The Private Lands Program achieved a higher recovery rate of 30% (and up to 48% for the Cane Farm Program). This was largely due to the type of debris located at these site types. For example, for the Cane Farm Program, flood debris was stockpiled by farmers and included a lot of industrial waste which may it easier for MRA and contractors to identify and sort out recyclables. MRA also had more time to build relationships with waste contractors during the Private Lands Program and so eligible debris criteria was better understood.

Clean up was often a complex operation. Site conditions for clean-ups ranged from debris that had been stockpiled (as for the

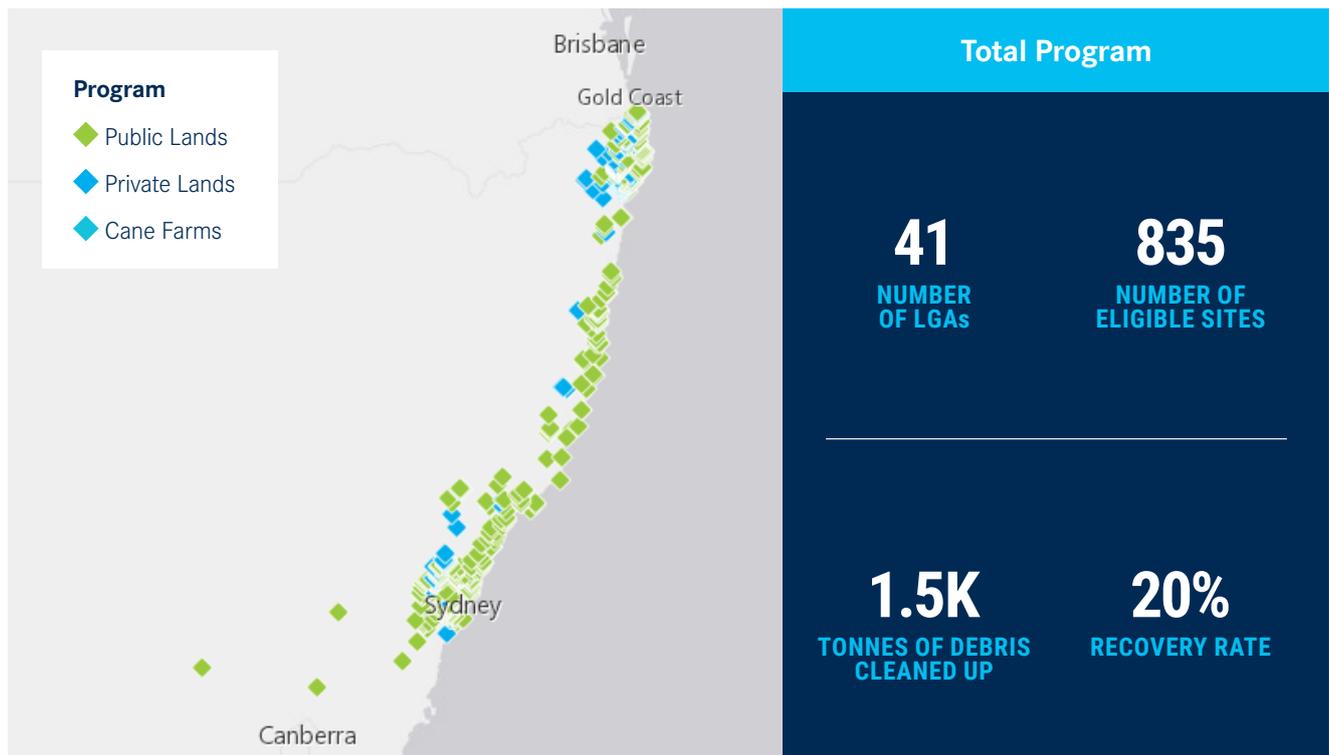
Cane Farm Program) or accumulated nearby roadways, to debris widely distributed across a site with difficult access, to a private property located on an island accessible only by boat.

The top six most common debris categories cleaned up during the Program were hard plastic, metal, timber, soft plastic, plastic containers and furniture. These debris types are more likely to float and be transported by the flood waters.

The largest and most expensive debris item to clean up was shipping containers given their size and the equipment required to remove these. Island sites were also costly to clean up given access requirements (by water) and the difficulty of access to debris at these locations.

## Key data

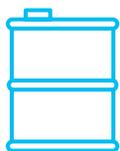
### Key data for eligible sites cleaned up



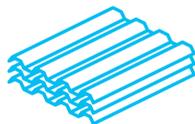
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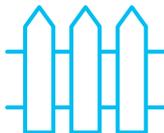
## The top six most common debris categories cleaned up



**HARD PLASTIC**



**METAL**



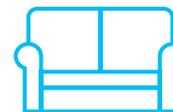
**TIMBER**



**SOFT PLASTIC**

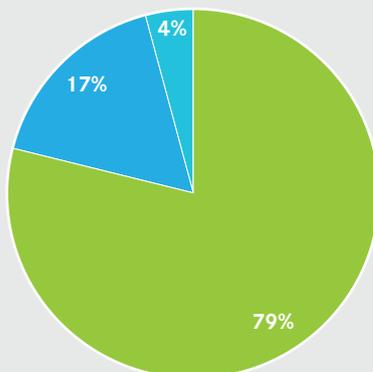


**PLASTIC CONTAINERS**



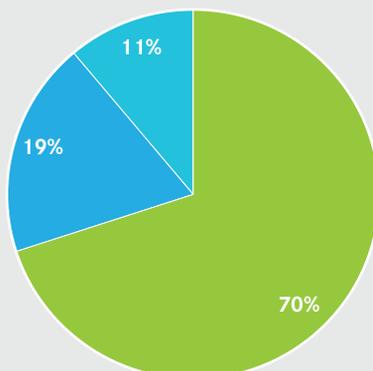
**FURNITURE**

- Public Lands Program
- Private Lands Program
- Cane Farms Program



### Breakdown by Program stream - sites eligible for clean up

The Public Lands Program coordinated close to 80% of all sites assessed and determined eligible for clean up under the Land-based Clean-up Program.



### Breakdown by Program stream - total tonnes of flood debris cleaned up

The Public Lands Program managed just over 70% of total flood debris cleaned up by the Program, while the Private Lands Program and Cane Farm Program managed close to 19% and 11% of total flood debris respectively. The concentration of flood debris at the cane farms was much higher than that collected on a per site basis as part of the Public Lands and Private Lands Programs.

# Recovery (recycling and reuse) of debris

The rate of recovery of flood debris for the total Program was approximately 20%. Flood debris was often located in difficult to access areas and/or caught in shrubs making identifying debris material for recovery challenging. Recovery rates varied between Programs and across LGAs.

Factors influencing recovery rates included:

- Condition of debris (e.g. flood damaged debris, debris difficult to separate from mess of other debris)
- Debris material type (related to activities undertaken in the area or upstream, and ability of debris to float)
- Presence of larger debris in some LGAs but not others (e.g. shipping containers could be recycled or reused, but were only present in some LGAs)
- Aggregated piles of debris versus widely spread debris (e.g. piles made it easier to identify and segregate recyclables in time efficient way)
- Number and type of local recycling facilities / services.

The extent of the debris generated by the disaster flood events put significant pressure on existing waste and recycling facilities leading to delays and backlogs in processing and/or facilities being unable to accept additional quantities of debris. This was particularly the case for hazardous wastes.



Image location: Mid Coast Region, Bulga

**Asbestos Found - Salt Pan Creek Reserve**



Before



After

**Kelso Beach Reserve, East Hills**



Before



After

**Ashford Reserve, Milperra**



Before

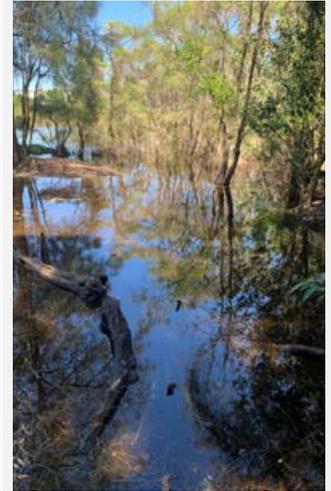


After

**Marton Park, Kurnell**



Before



After

**Endeavour Sports Park, Canley Vale**



Before



After

**Sylvania Hockey Park, Miranda**



Before



After

# Regional snapshot

## North-Upper Coast region

The North-Upper Coast region was significantly affected by each of the AGRN floods, particularly the LGAs of Lismore, Tweed, Richmond Valley and Byron. The Program determined that 221 sites were eligible for clean-up in Lismore, the highest number of sites for any LGA under the Land-based Clean-up Program.

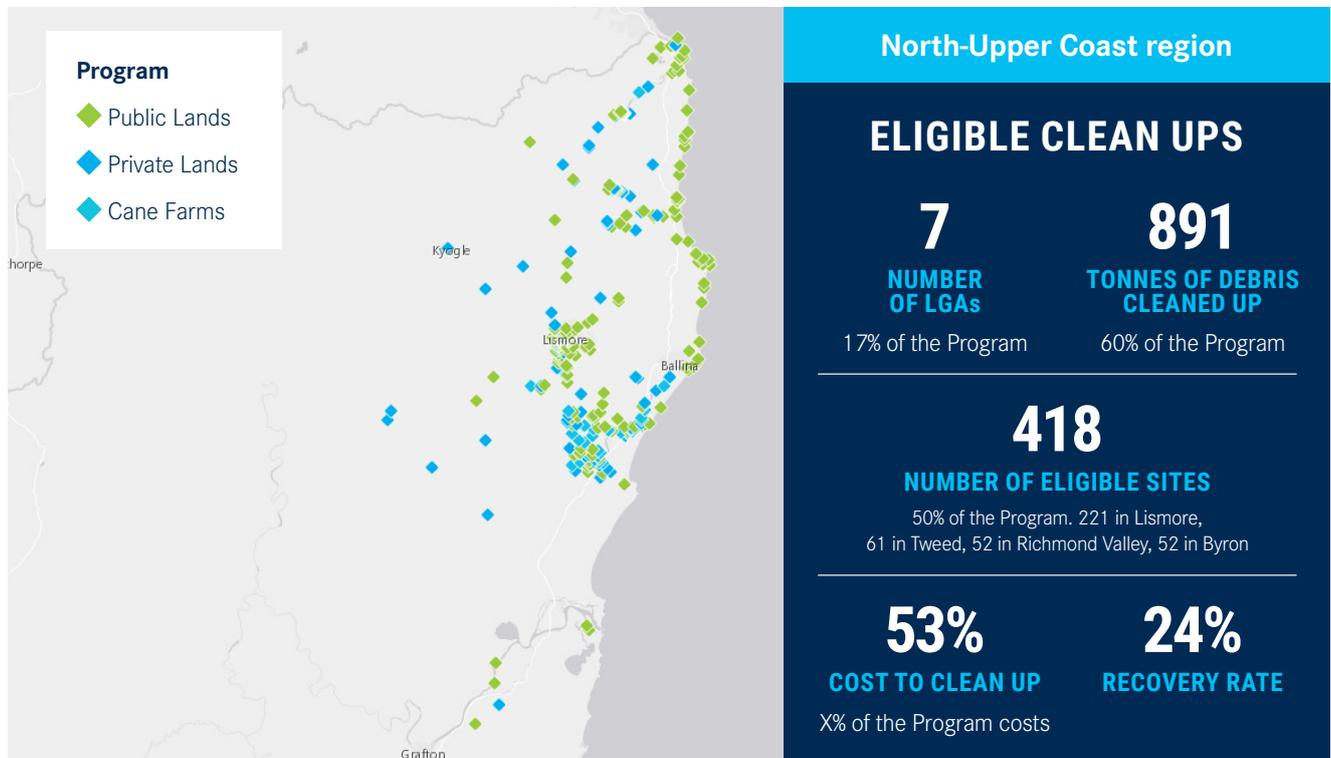


Figure 1 Eligible clean-up sites – North-Upper Coast region

## North-Mid Coast region

Clean-up operations were predominantly undertaken across the Mid-Coast, Kempsey, Port Stephens and Bellingen LGAs.

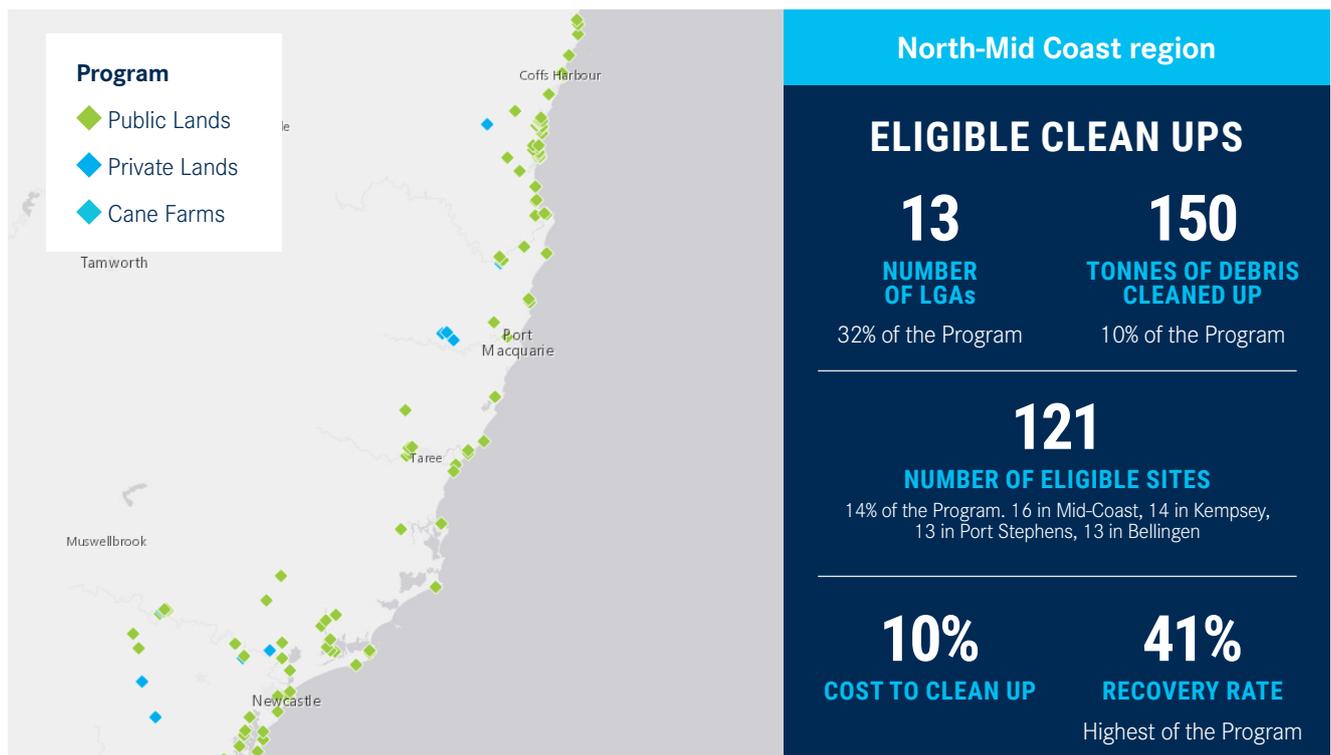


Figure2 Eligible clean-up sites – North-Mid Coast region



Image: North bank of Hawkesbury River, Greater Sydney region

## Greater Sydney region

Clean-up operations were predominantly undertaken across the LGAs of Hawkesbury, Hornsby and Central Coast.

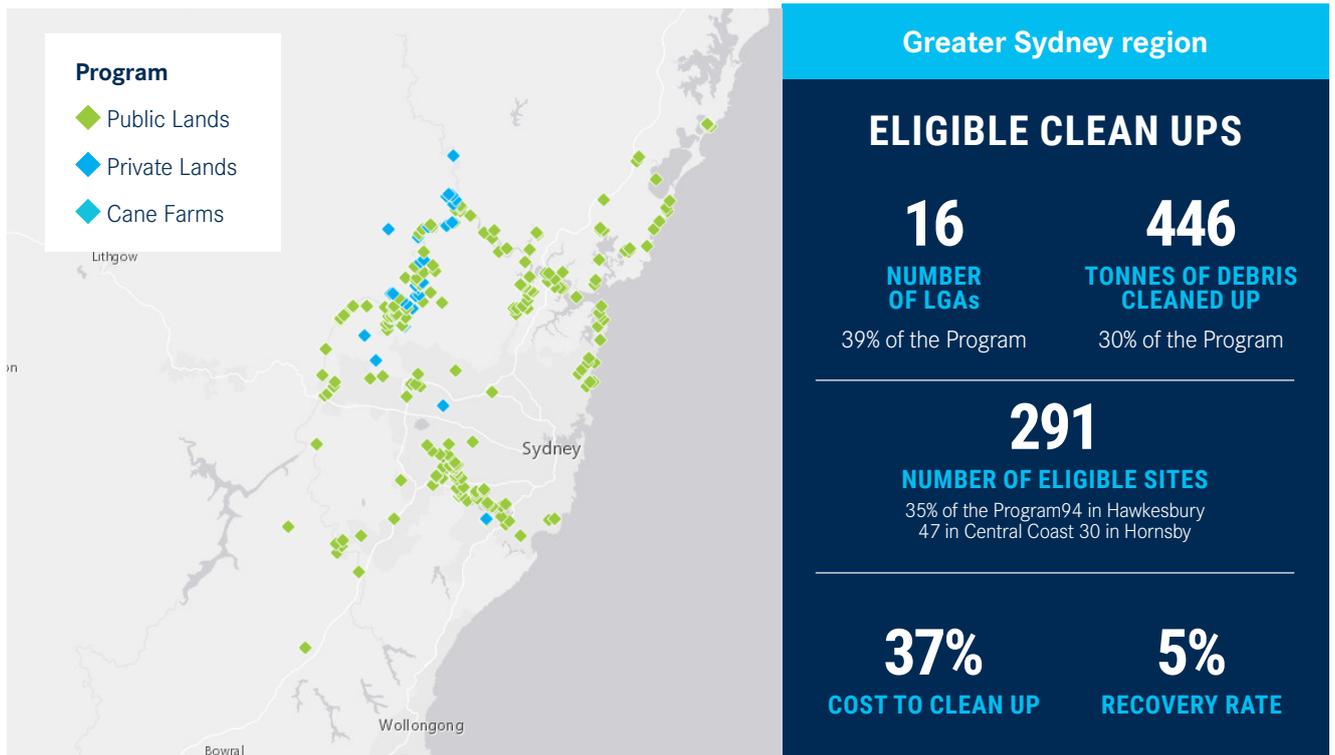


Figure 3 Eligible clean-up sites – Greater Sydney region

# Program learnings



## Improve accessibility and ease of use in lodging an application

- 
- Accessibility of information and ease of use in lodging applications and providing site access approvals is an important consideration for any disaster recovery program. This was found to be particularly relevant for the elderly, for those with a disability, and for those living in areas that had reduced or no internet access as a direct result of the floods. Disaster-fatigued landowners were also faced with finding and sorting through the available support program options, each with their differing eligibility criteria and associated paperwork.



## Greater upfront engagement with LALC

- 
- Local Aboriginal Land Councils engaged with earlier will help to ensure:
    - the protection of sensitive Aboriginal sites (particularly those MRA or the NSW EPA are not aware of given the remote or off-path locations entered into)
    - the appropriate respect is given to the connection to Country and land management knowledge that our First Nations possess; and
    - greater access to local land knowledge for more effective coordination of clean-up works (including pinpointing better site access points for specialised clean-up equipment).



## Appropriate systems set up for easy and consistent data collection, management and analysis

- 
- As the Program evolved, and more applications were received, CRM software and automated processes were improved and mapping and visualisation tools became more essential for tracking, ongoing reporting, engagement and the vetting of Program data.
  - Data recorded on debris items commonly observed will be useful for disaster preparedness and for education of the public and targeted sectors on how to better prepare for floods in the future.



## Better communication of the eligibility criteria to avoid misinterpretation

- 
- Greater clarity across eligibility criteria for the different flood recovery assistance programs on offer to the community.
  - Better communication of what “large and hazardous debris” can include.



## Use a balance of human-focussed approaches

- 
- To be effective in assisting landowners in their recovery, and for increased efficiencies across assessments and clean-up of sites, a balance of human-focussed approaches was needed.
  - It was necessary to provide paperwork and forms both electronically and as hard copies, with communications provided by email, over the phone and face-to-face, determined on a case-by-case basis and depending on the specific needs of the applicant.

# What did people say about the Program?

66% of survey respondents rated their level of satisfaction with the Public Lands Program as either “good” or “excellent”.

Respondents were largely not satisfied with the timeliness of the Public Lands Program roll out. Councils didn’t know when the Program was active and found it too slow at the start.

57% of council respondents had a nominated flood recovery officer or community engagement officer prior to the Public Lands Program roll out.

100% of council respondents discovered the Public Lands Program through either the EPA website or ‘Word of Mouth’ communications.

66% of council respondents rated MRA’s level of communication as “Good” throughout the Public Lands Program.

80% of council respondents believed the Public Lands Program supported their recovery from flooding events within their LGA.

80% of survey respondents rated their level of satisfaction with the Private Lands Program as either “good” or “excellent”.

80% of respondents were satisfied with the works completed by the local waste contractors via the Private Lands Program.

The main feedback received from respondents was to improve timeliness between an application made ‘successful’ and sites cleaned up.

About 72% of cane farmers (or 56 of a total of 78 cane farmers) were interested in receiving support via the Program, with the majority of these having already participated in the FRNSW drone survey.

More than half of cane farmers registering interest in Program assistance (or 32 of a total of 56 cane farmers) submitted applications, of which all 32 were eligible for clean-up under the program.

The majority of applications were received from Richmond River and Clare Valley CGA areas. Only one application was received from Tweed.

Survey respondents rated their level of satisfaction with the Cane Farm Program as either “good” or “excellent”.

## Continual Improvement

- The Plan Do Act Check framework was utilised to apply continual improvement within the Program.
- A Customer Journey Map was created to capture the barriers faced by Program applicants and the improvement opportunities for future programs.
- The Australian Institute for Disaster Resilience’s National Principles for Disaster Recovery were used to reflect on Program effectiveness.

## CASE STUDY: CAUSE FOR COMMUNITY CHAMPIONS



### **A representative of the Main Arm Disaster Recovery (MADR)'s Upper Main Arm Recovery Committee (Wendy) approached MRA for support in engaging the Main Arm Community after they were heavily affected by the 2022 floods.**

Main Arm is in an area north-west of Mullumbimby in Northern Rivers NSW. It is situated in a valley that funnels from Mount Jerusalem National Park to Mullumbimby and is heavily vegetated and scattered with multiple occupancy dwellings that run parallel to the Brunswick River.

Wendy and MRA were in contact from early September 2022 where a high density of potential private land applicants within the Main Arm area was first identified.

Wendy advocated for a specific engagement focus to be placed on the Main Arm community noting that Main Arm residents were experiencing disaster fatigue and having difficulty sorting through the different support options available and the lengthy processes involved before clean-up works could begin.

The MRA Project Manager and Private Lands Program Coordinator visited Main Arm in October 2022 to engage with existing and potential private land applicants. During this trip, the additional presence of Wendy working with MRA Site Assessors provided an element of trust for the

applicants which had not been witnessed in other aspects of the Program to date and helped with Program uptake. Wendy offered extensive on-ground support throughout the assessment process during and after the trip. If an applicant was successful under the Private Lands Program but was having trouble accessing, signing or sorting through the online site access document, MRA was able to contact Wendy to assist those applicants in person to speed up the process.

Wendy received phone calls from potential applicants asking about the Program after hearing about the Program on the radio. No calls were made to MRA from members of the public prior to release of this radio release which indicates radio was an affective method of promoting the Program.

*“Wendy provided her services voluntarily as a community representative to link the works between the community and MRA, the EPA and Byron Shire Council... This task we believe was an essential service that resulted in the successful clean up.”*

(Community President, MADR)

## CASE STUDY: TWEED SHIPPING CONTAINER



### **MRA was engaged to conduct the removal of a 20 ft shipping container located in Clarrie Hall Dam within the Northern Rivers Region.**

Clarrie Hall Dam is located on Doon Doon Creek, 15 kilometres south-west of Murwillumbah. The dam has a catchment area of 60 square kilometres and holds 15,000 megalitres. The dam helps to keep the Tweed River flowing when water levels are low. The Tweed River is Tweed's main water supply.

MRA evaluated the ongoing economic, social and environmental factors associated with the removal of the shipping container given the costs and logistics involved. The assessed top priority for its removal was to open waterway flow and decrease negative effects to the surrounding environment.

Several methodologies for its removal were provided by contractors quoting on the job, including removal by helicopter or removal using an excavator. The more economical method causing minimal damage to the shipping container was selected.

Removal activities were carried out on the 20 December 2022, in the presence of a member of the Tweed Shire Council. The shipping container was able to be reused within the community.

## CASE STUDY: CANE GROWERS ASSOCIATION COMMUNITY CHAMPION



The Richmond River, Clarence Valley and Tweed CGAs acted as the intermediary organisational bodies between MRA and the cane farmers throughout the Cane Farm Program. Engaging with this governing body and its established network of communications with potential applicants for the Program proved to be invaluable to the clean-up works. The CGAs aided MRA Program Coordinators wherever possible to maintain program efficiencies and provide site identification.

As well as providing a contact list to MRA as the basis for finding potential applicants in the beginning of the Program, the CGA's also referred cane farmers that later came forward with eligible waste who were not included in the original drone survey. CGAs involvement in the Program offered an element of trust for cane farmers which translated to confidence in applying for assistance and stronger communications with MRA.

*“After the two devastating floods in February and March of 2022 the cane growers on the Richmond River were severely impacted in numerous ways. The cane was completely submerged up to four or five meters in some areas. One of the unforeseen issues was the amount of debris that had lodged in the cane fields as the waters receded. This debris was labelled 'Orphan Waste' because it certainly wasn't the responsibility of the farmer but it did become their problem.”*

*During this extremely difficult time for our growers, who had lost their homes, machinery and equipment, they were so appreciative of the services provided by MRA Consulting Group to have these piles of debris removed in a timely and efficient manner. The coordination between MRA Consulting and the Cane Grower Associations on the Richmond and Clarence Rivers contributed to the success of the project.”*

(Secretary Manager, Richmond River Cane)

