

# LESSONS FROM THE ISLAND

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An independent review of the fires that  
burnt across Kangaroo Island during  
December 2019 - February 2020

November 2020



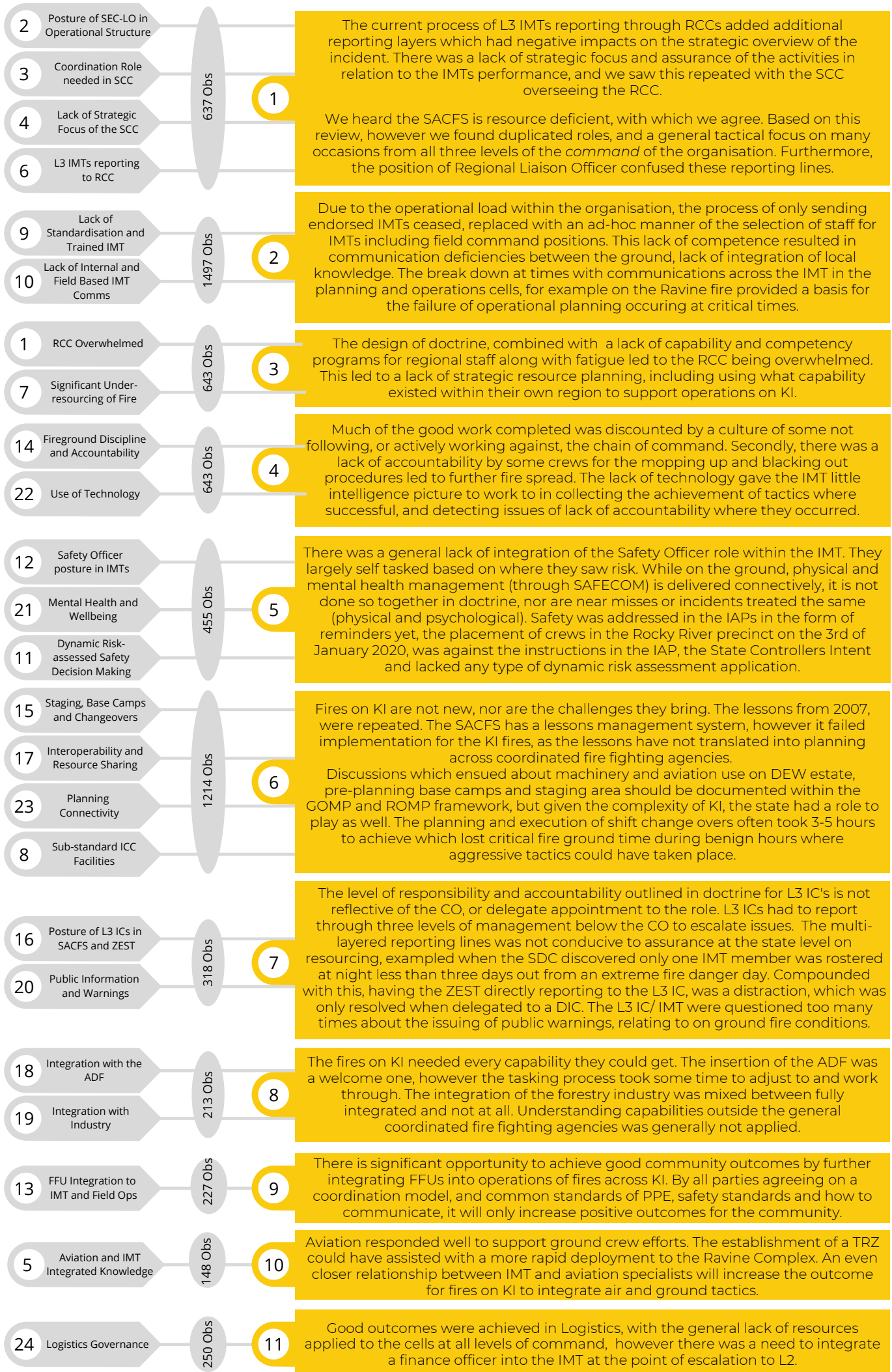
Government of  
South Australia



C3 RESILIENCE

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# RECOMMENDATIONS



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**6359**  
observations

**522**  
surveys (15.1% completed)

**186**  
people spoken to face to face

**63**  
individual & group sessions

**24**  
insights

**11**  
lessons identified

**9**  
recommendations

1

Review the doctrinal environment that governs L3 incidents immediately to:

- Simplify the flow and reduce the repetition to make it less voluminous.
- Consider making it a formal joint operational policy between SACFS and DEW.
- Establishing L3 Incident Controllers as a direct report to either the DSC, DCO or CO.
- Establishing minimum training and competency standards for L3 IC that are achievable, in line with approaches such as the NSW RFS and VIC CFA.
- Establishing the RCC as a resource management centre for L3 Incidents.
- Establishing the SCC as an operational coordination centre for L3 incidents.
- Prescribing the requirement to undertake annual L3, RCC and SCC exercising to maintain competence and currency.
- Delegating financial responsibility and delegation to ICs and L2/3 Logistics Officers
- Reviewing the current audit process undertaken by the SDC, and replace with regular assurance discussions between the L3 IC and an executive member suitably qualified to undertake such an assurance level.
- Prescribing an LO as the link between ZEST and the IC.

2

Influence Government Policy to formally recognise the SACFS as the lead agency for AIIMS, and, working alongside the increased focus at present by the MFS in AIIMS, increase capability and competence in AIIMS training and experience for all agencies involved in coordinated firefighting operations including:

- Increasing the number of L2 and L3 functional area leads (including agencies such as MFS) with a competency based standard assessment.
- Increase the number of L3 ICs from 4 to 8.
- Perform annual exercising of L2/3 IMTs, RCCs and the SCC based on the hazard context forecasted for the next season.
- Increase the number of sector and divisional commanders, including maximising the opportunity for newly trained officers to be mentored.
- Increase the available aviation personnel, and determine the scope to deliver key aviation courses within SACFS.
- Increase human factor training including emotional intelligence for crews to better integrate to communities when deploying to L3 incidents.

3

A general awareness campaign is conducted across SACFS about the importance of blacking out and mopping up, and an increased expectation is provided to those deploying to scrub areas, that this will be key tasks they will be asked to complete.

4

A project is sponsored by the CO to further explore the cultural issues which exist within the KI Group and its broader connection into the organisation, and develops a change management plan which promotes a more cohesive relationship into the future.

5

The SACFS increases its safety footprint by:

- Delivering the Safety Officer training ASAP.
- Requiring a Safety Officer to be deployed to all L2 and 3 incidents.
- Incorporating mental health consistently with physical health.
- Requiring the submission of any medium to high risk plans during times a State Controller Intent is in place, for that plan to be approved by the DSC.
- Performing an analysis on how other rural fire services across Australia are implementing crew resource management, and consider implementing this into basic training when covering safety, LACES and other tools available to fire fighters to undertake dynamic personal risk assessments.

6

SACFS uses the learnings from this review, along with those lessons identified in 2007 to develop a State KI Operations Management Plan, which links the current COMP and ROMP however, takes on a multi-agency approach, is reviewed annually, and signed off by the CO and DEW CE which establishes:

- Pre-Determined decisions on firefighting within protected areas.
- An assurance check on all SACFS, forestry, industry, DEW, SASES and SAPOL agency specific plan changes are reflected in the plan.
- Determines where L2 and 3 incidents will be conducted from, pre-plans staging areas, base camps, divisional command points, and addresses communications issues, and how to overcome them.

7

Non vocational training opportunities are provided to L2/3 IMTs to increase capabilities, competence and relationships by:

- Regions/Groups organising a pre-season annual workshop for FFUs to attend, along with L2 and 3 ICCs to increase relationships and understand each other's needs.

8

ICs, DICs, Operations and Planning Officers should be invited to the annual aviation preparation exercise day to increase their use on how they can work with AOs to develop more connected ground/air strategies. The joint workshop should include sessions on planning LAT and VLAT drops and linking into ground strategies.

9

All L2/3 Logistics Officers are provided training and a statement of expectations annually to meet the *Public Sector (Honesty and Accountability) Act, 1995*, along with the Department of Treasury and Finance procurement requirements.

# INTRODUCTION

C3 Resilience (C3R) was engaged by South Australia Country Fire Service (SACFS) in August 2020 to conduct an independent review into the SACFS response to the bushfires that burned across Kangaroo Island (KI) during the December 2019 - February 2020 period.

This report provides the outcome from the analysis of the data collected. The review captured data from face to face interviews, surveys, written statements, and document analysis. It presents the data methodology, chronology of the fire, and nine focus areas that present the data, analysis of data, and the resulting 24 insights. The annexes show comparisons of the lessons identified from the SACFS Lessons Identified from the 2007 KI Bushfires and the *Independent Review into South Australia's 2019-20 Bushfire Season*.

## ABOUT C3 RESILIENCE

C3R is a boutique consultancy, with decades of experience in health, disaster and emergency planning, incident response, community recovery, exercising and lessons management. C3R works with clients to examine the problem they wish to explore and areas a solution based on the current and predicted resourcing available to implement it. C3R firmly believes in sustainable solutions that are specific, realistic and adaptable. It is better to be proactive than reactive whilst understanding solutions rely on the organisational resourcing model and constraints. We have applied this philosophy in this SACFS Review.



Photo Credit: Kersbrook CFS

The lead consultant allocated to this project was Mark Ryan. Mark has a career spanning 27 years in fire and emergency management across four states and territories. Mark held senior volunteer positions with the New South Wales (NSW) Rural Fire Service before taking on a role of Inspector, Operations for the Australian Capital Territory (ACT) Rural Fire Service in 2003. In 2005, he returned to NSW holding positions of Superintendent and Acting Chief Superintendent across western and northern areas of the state.

Mark has held many operational roles, from Sector Commander to Level 3 Incident Controller (IC), as well as at the state coordination level as Major Incident Coordinator, North located at NSW Rural Fire Service Headquarters. Mark then moved to Queensland where he worked with Queensland Fire and Emergency Services setting up operational assurance programs, then shifting to lead the Brisbane City State Emergency Service (SES); where he led the SES response to the 2014 Brisbane Hail Storm, 2014 G20 Summit in Brisbane and 2018 Brisbane contribution to the 2018 Gold Coast Commonwealth Games. He was awarded the Canberra Fire Medal in 2003 and the National Medal in 2015.

Recently, under Mark's expertise, C3 Resilience performed independent analysis reports for both the 2019 Scenic Rim and Gold Coast fires during the same season which saw the KI fires, and indeed many of the same personnel involved deployed to Queensland to assist.

## THE DEBRIEF APPROACH

The approach to debriefing was conducted in line with *SACFS Standard Operating Procedure (SOP) 12.2*, utilising "Story Telling or Facilitated Learning" as an effective way to share the learning regarding an event. Stories are effective educational tools because listeners become engaged and therefore remember. Listening to a storyteller can create lasting personal connections, promote innovative problem solving, and foster a shared understanding regarding experiences.

Of concern to the review were the number of people who told us that this was the first time someone from SACFS had reached out to discuss their experience during the KI fires.

It appeared to the review team that this impacted the scale of the debrief process, as it was the first opportunity for many participants to speak about their experience and subsequently led to extensive story telling. This has provided a rich level of detail from which to distil key themes. However, it also greatly expanded the amount of data to be processed. Although it has greatly expanded the amount of data to be processed, a positive outcome is the rich content of data that can reference the SACFS when considering the implementation of any given recommendations.



The total outreach of the debrief process was 821 personnel, with total engagement of 319 personnel (39%) in 63 group sessions and interviews (involving 186 personnel), 83 survey responses and 50 written submissions, including 7 days spent on KI.

## CONSIDERATION OF OTHER REPORTS

### SACFS Lessons Identified from the 2007 KI Bushfires

The last large-scale campaign fire on KI prior to this one was during 2007. As a marker of lessons maturity across SACFS, the review looked at the lessons identified during the 2007 campaign in contrast with the lessons identified during this review. A comparison of both are documented at **Annex 1**.

### The Independent Review into South Australia's 2019-20 Bushfire Season ("the Independent Review")

As part of this analysis, the review examined the contents of the *Independent Review into South Australia's (SA) 2019-20 Bushfire Season*, which reviewed the 2019-20 bushfires at a more strategic level, and contrasted similar findings throughout the report. As part of this report, we provide commentary on the recommendations and what this review identified at **Annexe 2**.

## ANALYSIS METHODOLOGY

The analysis of the data collected was in line with *SACFS SOP 12.1*, taking the approach of:

### Collecting Observations

An observation should convey the basic details of the observed issue and contain information sufficient for further analysis. It is constructed as the result of interviewing or examining a source (for example a survey, questionnaire or post operations report), and takes the form of a paragraph that contains an informative comment that can be coded and categorised with other like observations.

During this debrief process observations have been collected through a combination of individual interviews, group sessions, survey responses and written submissions. The focus of the debrief process included; what worked well; what needed improvement and; learnings for the agency from the perspective of the participants.

### Developing Lessons Identified

The *SACFS SOP 12.1 – Lessons Management Framework* defines this as a mature deduction based on the analysis of one or more insights/observations that can either sustain a positive action or address an area for improvement. A 'lesson identified' is distinguishable from a 'lesson learned' in that it only has the potential to add value, and needs to be communicated and implemented for any benefit to be derived from it.

In line with the approach of the *Australian Institute of Disaster Resilience (AIDR) Handbook: Lessons Management (AIDR, 2019)*, C3R provides a step between observations and lessons identified in the form of an **Insight**.

### Developing Insights

We develop insights based on the AIDR definition which is an insight is a deduction drawn from the evidence collected (observations), which needs to be further considered. Insights occur when there are multiple observations (pieces of evidence), which are similarly themed. As a general rule, a minimum of three observations (from multiple sources) should be used as the basis for an insight, although an insight may be developed when a single observation poses a high risk to the organisation. Insights may also identify an opportunity for further analysis. Insights can be positive or negative and can contribute to reinforcing positive behaviour or changing practices. An insight defines the issue, not the solution. It is apparent from the mapping of the outcomes of the report, that a group of insights leads to a lesson identified.





## BACKGROUND

SACFS had already been committed since August 2019 with deployment of crews and Incident Management Team (IMT) personnel to Queensland (QLD) and NSW. SACFS began responding to significant fires of its own from early November 2020, a summary of which are outlined in the *Independent Review*.

The agency faced a catastrophic fire danger day on 20 December 2019. A major weather system started in QLD and tracked to the south of the continent resulting in a number of lightning ignitions in South Australia (SA).

Other than the fires on KI, another fire of note took hold on the mainland, being the Cudlee Creek fire on private land 30km North East of Adelaide.

That afternoon approximately fourteen fires ignited on KI, all of which were all rapidly responded to. Two of these fires took hold and became the Menzies and Duncan Fires. SACFS, the Department of Environment and Water (DEW) and Farm Fire Fighting Units (FFU)s responded over several days to successfully contain these fires.

In the early hours of the morning of 30 December 2020, a number of lightning strikes were recorded on the western end of KI. Two of significance landed to the east and west of Shackle Road in the Ravine des Casoars Wilderness Protection Area (WPA).

There were immediate responses to both fires. However, they broke containment lines on 3 January 2020, and under the influence of a strong northerly wind and very low humidity, ran to the south of the island, before a significant and predicted south-westerly wind change made the fire run to the north-east. This resulted in nearly half the Island's land mass being burnt in a single day, two lives being lost and substantial impacts to the KI social fabric, economy and environment. The fire continued to burn for a number of weeks, with another significant fire run on 9 January 2020 to the east, before being declared safe on 6 February 2020 following significant rain.

On 29 July 2020 the Chief Officer (CO), SACFS commissioned an independent lessons process be undertaken in relation to the KI fires. The scope of the review was set as:

- Deployment of all resources to and demobilisation from KI.
- All fire ground and incident management activities associated with the KI fires.
- the Australian Defence Force (ADF) deployment, fire ground, transition to recovery activities and utilisation associated with the KI fires.
- State and regional command activities associated with the KI fires.
- Communication with community recovery, wellbeing and Stress Prevention and Management (SPAM) activities on KI to ensure awareness of collections process.

The following matters were determined to be out of scope:

- Fire Cause
- Accident Investigation
- Social Media Compliance (however, any matters of concern raised will be recorded and transmitted to the appropriate parties)
- Damage Assessment
- Recovery Management (following standing down of the IMT).



Photo Credit: David Booker



Photo Credit: ADF



Photo Credit: Tim Earl



# THE FIRE CHRONOLOGY

## 20 December 2019

Catastrophic conditions were forecast for KI on 20 December 2019 (with a predicted Forest Fire Danger (FFDI) of 100). Fires were fast-moving and displayed erratic behaviour, particularly in vegetated areas. The review heard that approximately 14 dry lightning ignitions occurred on this day across the Island, from the west end to the Dudley Peninsula, as the lighting band tracked from west to east. Many of these ignitions were not reported and were able to be extinguished straight away or within less than 24 hours, while still small fires, as a result of quick action from patrolling FFUs, SACFS and DEW crews.

The review heard that the KI Group, DEW, forestry and many FFUs had prepared to actively patrol on the 20 December, and had arranged for standby crews, resulting in all available appliances on KI being crewed within 3-4 hours of the initial ignitions.

The *Review of the Ravine Complex Fire Response (December 2019 to February 2020)*, Forest Strategy Pty Ltd 2XH Consulting Pty Ltd ("the KIPT Report") noted in their report, that among these was a fire in the North East River Blue Gum plantation west of the Mount Taylor Road. This fire was controlled by 21 December 2019.

### The Menzies Fire

The Menzies Fire was located in an area centred around Springs Road, east of Rose Cottage Road and north of Gum Creek Road. It was started by lightning on 20 December 2019 in an area of the Island dominated by open pastured country housing livestock, cropping enterprises, rural living blocks, and smaller areas of remnant mallee vegetation. The Menzies fire burnt 792ha. This fire represented risks to farming and rural living properties in the area as well as to the Emu Bay community, which would prioritise the weight of response to this incident. The Menzies fire was declared contained on 23 December and safe on 29 December 2019.

### The Duncan Fire

The Duncan Fire started on 20 December 2019 from a series of lightning strikes (in the hundreds) across Duncan and Gosse. At least four lightning strikes started fires that eventually coalesced into the Duncan fire. The final area burnt was 16,294ha, making it a significant fire in its own right. The fire was contained by 27 December 2019 and was no longer spreading.

The fire was located to the north and west of Parndana township, in an area of KI dominated by large tracts of remnant vegetation (including the Western River WPA and a number of large private Heritage Agreement areas), KI's only reticulated water supply – Middle River Reservoir and nearby treatment plant, interspersed with livestock enterprises, rural living and tourism accommodation, and softwood and hardwood plantations. Much of the native vegetation was in steep, inaccessible terrain with limited access points.

The review heard that significant areas of vegetation were back-burnt to support containment of the Duncan fire and, due to the lack of firefighting resources, the focus was upon containment of the fire perimeter. This caused a degree of conflict with local property owners as there were areas of farmland impacted internally within the fire ground that were not able to be attended to by SACFS crews.

**20 DECEMBER 2019**  
Numerous Lightning Strikes strike across South Australia. **14 fires start on Kangaroo Island, 2 of which take hold** along with Cudlee Creek, west of Adelaide.

**21 DECEMBER 2019**  
Duncan and Menzies Fires upgraded from **Level 1 to Level 2**. L2 IC deployed to KI

**24 DECEMBER 2019**  
Duncan and Menzies Fires upgraded from **Level 2 to Level 3**. L3 IC deployed to KI with two staff form IMT together with the KI Group

## 23 DECEMBER 2019

Menzies Fire Declared  
**Contained**

## 27 DECEMBER 2019

Duncan Fire Declared  
**Contained**

## 29 DECEMBER 2019

Menzies Fire Declared  
**Safe**

The *KIPT Report* noted that there were also concerns regarding illegal back burning, particularly of plantations, and inadequate mopping up of fire edges. However, the overwhelming perspective heard by the review regarding the Duncan fire was that it was well managed in the conditions and that there was excellent cooperation between SACFS and DEW crews. The integration of FFUs was an area requiring improvement, but it was widely agreed that their role was critical in its containment.

The fire was initially managed as a Level 2 (L2) incident, and then escalated to a L3 on 24 December with a 'short' IMT. Operations were managed from the KI Base at Parndana. The review heard that the L2 IC deployed from the mainland on 21 December.

### 30 December 2019

The Ravine fires 1 and 2 (from this point referred to as the Ravine Complex) started in the early hours of the morning of 30 December 2019 after a significant dry thunderstorm passed over KI bringing a band of lightning that struck multiple times in the Ravine des Casoars WPA. The fires were located south of the Playford Highway (known locally in this area as 'Borda Road'), and either side of Shackle Road within the reserve.

The fire response in a wilderness area is guided by the *Wilderness Code of Management (DEH 2004)* developed in accordance with s.12 of the *Wilderness Protection Act 1992 (SA)*. The Code limits the fire response to those activities that will not diminish the wilderness values.

The lightning strikes occurred in two adjacent blocks that together make up nearly half the protected area. The use of heavy machinery for fire suppression is prohibited by the Code except in the following circumstances: (vi) *The use of heavy machinery for fire suppression within a wilderness area will be prohibited except:*

- (a) *where it is considered to be the only way of preventing greater long-term loss of wilderness quality;*
- (b) *where specific machinery use techniques, that do not result in significant disturbance to the landscape or create a new access network, are considered the only feasible method of preventing long-term loss of wilderness quality; or*
- (c) *to mitigate hazard to human life, where alternative measures which do not impact on the wilderness quality of the area are unavailable. (DEH 2004: 5)*

Informal responses to the Ravine complex began from around 04:00 hours, where a functional lead self-deployed to begin on ground incident management of the fire, and a Deputy Incident Controller (DIC) organised a local aircraft (non-SACFS) to fly the fire.

Intelligence from these activities provided back to the IMT was limited, as officers tried to determine the operational picture. The review notes that there were discussions around using machinery to construct containment lines in the park however, how long these discussions took was unable to be determined by the review. We found that there was no delay with permission being sought on the ground by DEW Officers on the IMT, however, some delay with permission being provided from Adelaide (reported by one senior IMT member as close to four hours)

The review estimates that at approx. 1000hrs decisions were made in relation to containment lines to the south of the Ravine Complex on both sides of Shackle Road to tie into the burn scar from 2015 to the east, and across to and into existing tracks to link it back to Cape Borda Road in the north.

### 30 DECEMBER 2019

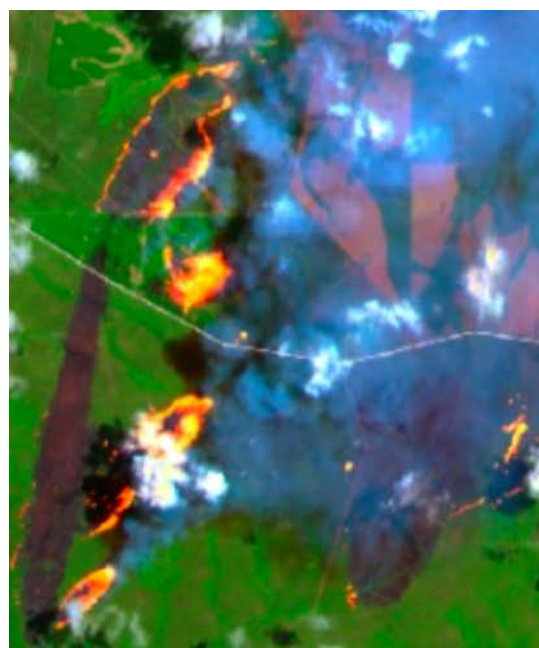
Numerous Lightning Strikes strike across Kangaroo Island, two of note in the Flinders Chase National Park on the eastern side of Shackle Road, which starts the **Ravine 1** fire, and to the west of Shackle Road, which starts the **Ravine 2** fire.

### 31 DECEMBER 2019

Four day forecast from the Bureau of Meteorology forecasts an **extreme FFDI on 3rd January 2020**

### 2 JANUARY 2019

The IMT briefs the community that the fire has **not been able to be contained to the south**, and it is possible that it will travel south in **Flinders Chase National Park, and jump the west end highway and travel to the South East** on the 3rd January 2020.



The fire runs of the Ravine Complex in first 48 hours  
Source: Supplied

As these lines were constructed, the KI Group Officer (KIGO) led local crews in the attack on the fire with a strategy to keep the fire south of Borda Road. Crews were assisted with a Large Air Tanker (LAT) drop between the fire and Cape Borda Road, which slowed the spread by around 3 hours, however due to the conditions, the fire burnt around the LAT line, taking a run, and jumping Cape Borda Road sometime in the late afternoon of 30 December.

At 20:00 hours on 30 December 2019 the Ravine fire had already burnt 1,117ha and was listed by the SACFS as being at a 'Watch and Act' warning level. At the same time, the Duncan and Menzies fires were listed as 'Advice' level.

On 31 December a new L3 IC took over the management of the incident. On the night of the 31st the IMT was staffed by one non-fire agency person, leading the review to question the sense of urgency applied to the fires given that an extreme fire danger day had been predicted at this stage in less than three days' time. Over the next three days, between 31 December 2019 and 2 January 2020, the strategy within the WPA was to contain the southern flank of the fire using heavy machinery to construct containment lines in the WPA, burning out between the containment lines and the fire edge, and some use of retardant to delay the progression western edge of the Ravine Complex. The daily maximum Fire Danger Index (FDI) was High on each day with moderate to fresh winds remaining in the south and switching from the west to the east. The northern boundary of the fires was burning with the wind in steep terrain with a combination of pasture, plantation and remnant native vegetation. The Lycurgus and Gumridge plantations were burnt through in this period.

A significant backburn was undertaken in the north-west corner around Borda Vale at this time, but crews raised concerns that the vegetation on the cliff faces was unburnt and there was the potential for it to continue burning and for coastal winds to lift embers into unburnt vegetation to the south. The review was advised that there was no retardant available at the time to manage this issue. On 2 January 2020 the IC spoke at a community meeting in Parndana and advised the community that the fire was not contained to the south.

Time lapse satellite imagery provided to the review by the Bureau of Meteorology (BoM) clearly shows the initial breakout on the cliffs to the east of Cape Borda travelled rapidly south, back into the wilderness protection area, and was then joined with the two fires internal to the WPA, which also broke containment lines and travelled rapidly south. Fire scientist, Kevin Tolhurst, modelled the Forward Rate of Spread (FRoS) of the fire during this period, noting it accelerated to around 11km/hr. with a spotting distance of 7-13km at around 13:00-14:00 hours on 3 January 2020 (Tolhurst 2020, cited in the *Independent Review* p. 37).

A pyro-cumulus formed around the Rocky River area of Flinders Chase National Park (FCNP) at approximately 13:30 hours, collapsing from at least 4km. By 14:00 hours the fire was leaving the wilderness area on a broad front. A pre-frontal wind change from the north-east occurred at approximately 19:00 hours, and a second pyro-cumulus formed around this time. At this point, the FRoS of the fire accelerated again, lifting to 14km/hr. with spotting up to 24kms. It continued at this speed until approximately midnight (Tolhurst, 2020 cited in the *Independent Review* p. 37).

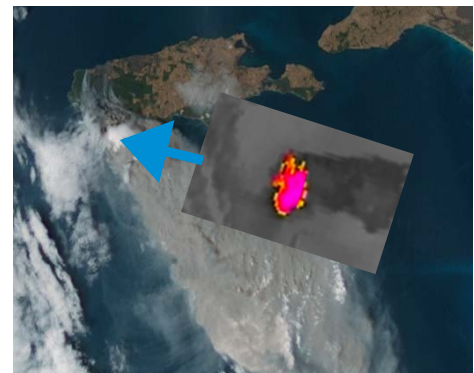
**3 JANUARY 2020**

The Ravine Complex performs as anticipated by the IMT the next day, however after the formation of **several pyro - cumulus clouds, accelerates, travels south through Flinders Chase, then turns and runs east and then north across the island reaching the north coast, before weather conditions start to moderate around midnight.**

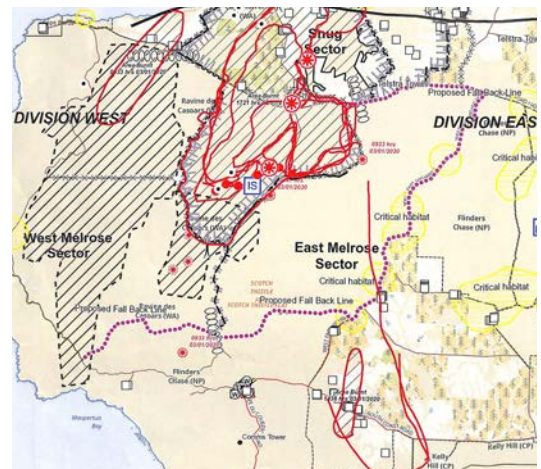
The IMT relocates the ICC from Parndana to Kingscote

**4-8 JANUARY 2020**

Efforts are largely focussed ahead of the next **severe weather forecasted day of the 9th January 2020** to focus on securing the eastern edge of the fire.

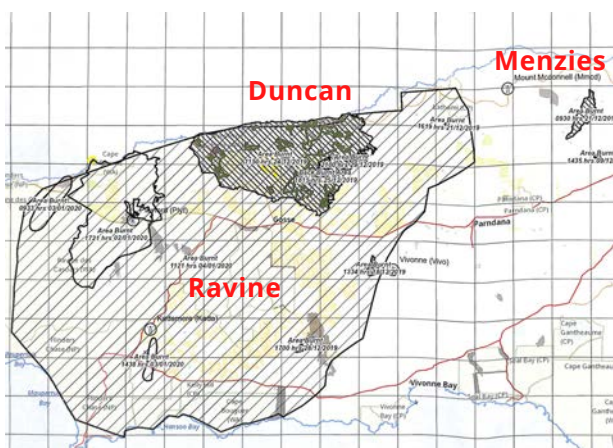


Photos showing the formation of the first pyro-cumulus on 3rd January Source: Bureau of Meteorology



Situation Map - 1600 3rd January produced by the IMT Source: SACFS supplied.





Situation Map - 1130 4th January produced by the IMT  
Source: SACFS supplied.

The review heard that two local operations officers had plotted the FRoS at this stage of the fire as 16km/hr. The south-westerly wind change that occurred around 20:30 hours turned the fire to the north-east and it burnt across the Island, passing to the west of Parndana, burning through Stokes Bay, and re-burning some areas within the Duncan fire ground, including around Middle River. At approximately 20:00 hours the IMT based in Parndana relocated to Kingscote. At that point there was some concern that the fire may impact Parndana, and the township was evacuated in accordance with prepared arrangements. The fire ended up on Bark Hut Road during the morning of 4 January 2020. During this time the BoM recorded the FFDI peaking at 99 and the Grassland Fire Danger Index (GFDI) at 110.

Light rain fell across the fire ground after the cool change and over the day of 4 January 2020. The Parndana gauge recorded 8mm over the two days while the FFDI fell to 4 and GFDI to 8.

The impact of the fire run on 3 January 2020 was substantial, burning approximately 150,000ha, or close to 38% of the Island's total land mass. Two people lost their lives, tens of thousands of livestock and wild animals were killed, nearly the entire plantation estate was destroyed, and 87 homes and other significant built assets (including Southern Ocean Lodge) were lost.

The review heard detail of the experiences of crews who were caught in significant burn-overs and entrapments on the afternoon and evening of 3 January. A significant proportion of the KI local fire ground leaders and crew were personally impacted by the fire and were unable to continue their involvement in the fire fight, however many did, which was a wonderful sign of resilience. The review heard that the local community (on the western end of the island), and the local IMT members were in a state of significant shock for several days after the third, and the focus temporarily shifted away from the firefight and into recovery.

Over the following days, the fire control efforts were regrouped through the L3 IMT in Kingscote and concentrated on determining acceptable containment lines and consolidating the fire edge within these lines. Meanwhile the Parndana Base remained open and was supporting the local community. This however did generate some confusion in the command and control arrangements and fire ground operations which will be addressed throughout this report. By 7 January 2020 the FDI had returned to Very High and this continued through to 8 January 2020.

*The KIPT Report* discusses that during this time, on the Duncan fire there were difficulties with the firefighting effort on the most north-easterly sector, concentrated along Bark Hut Road and in the plantation, however there was a spot fire in native vegetation south of the plantations that was proving difficult to contain with the resources available, especially with the lack of heavy machinery. It goes on to discuss that at the same time, the plantations were subjected to a sequence of alleged arson attacks where a person or persons were lighting up the plantation outside the containment lines each night.



Photo Credit: LT Adventure Photo



**9 January 2020**

9 January 2020 was the second day where the FFDI exceeded 100 (Catastrophic). The fire broke containment lines and ran generally east, largely through roadside vegetation and drainage lines, under the influence of strong north-westerly and then south- westerly winds. These fires threatened Parndana once again and there was concern about the fire would impact the airport.

On the 9th January, there were two escape points from the eastern fire edge, which ultimately joined together to the east of Parndana. One was from a spot fire in native vegetation south of the Bark Hut Road plantations and the other was from the native vegetation in Timber Creek, south of the Playford Highway and west of McHugh’s Road. The review heard that the spot fire south of Bark Hut Road had been identified by multiple commanders and crew and advised to the IMT at least four days prior to the 9th January, but that a limited and uncoordinated plan to address this was delivered by the IMT. The review also heard significant concern that crews fell back and abandoned the fire fight prematurely on the 9th January, when in many areas it was only running in roadside vegetation and not spreading into pasture, providing many suppression opportunities. The third escape point was on the South Coast in the area around Vivonne Bay.

The *KIPT Report* discussed that on the 10 and 11 January 2020 a further 6.8mm of rain fell under the influence of a southerly airstream. The fire spread was contained at this time and more accurate fire mapping resulted in the estimate of the final burnt area to fall slightly to a final estimated area of 211,228 ha. The fire was declared safe on 7 February 2020.

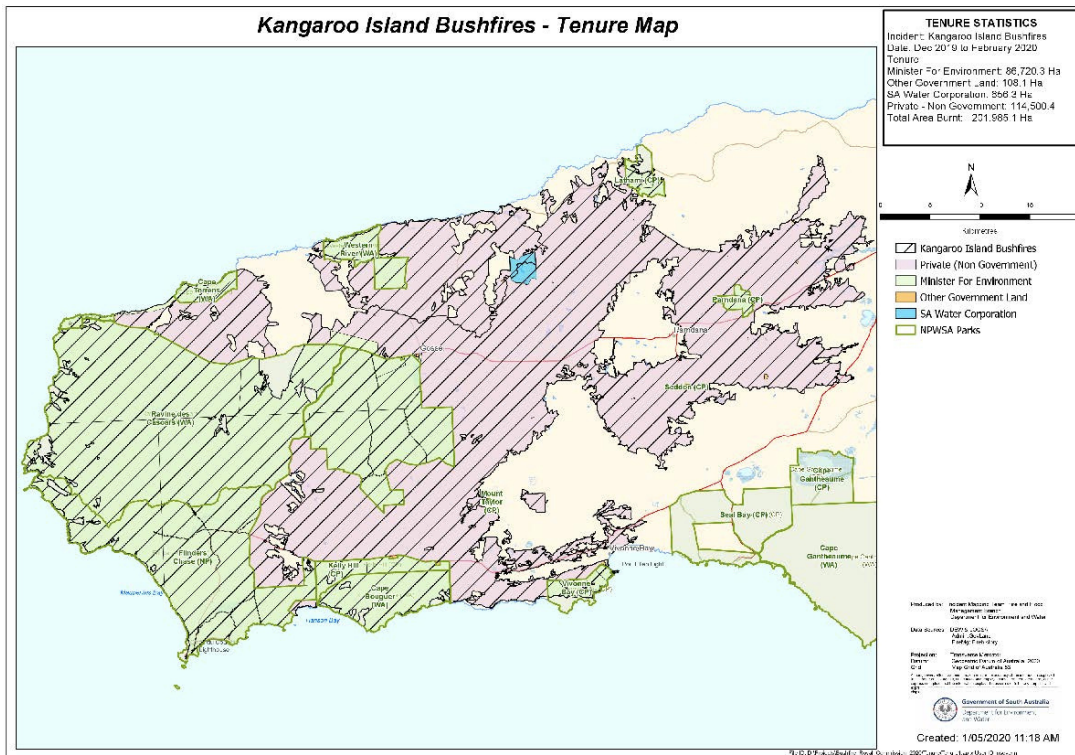
For the purposes of this review, the three fires have been considered holistically and, based on analysis of the data gathered, are addressed by a number of key themes that have emerged during the review.

However, as the outline of the fires presented above indicates, there were significant differences in the management and outcomes of the Duncan/Menzies and Ravine fires. A number of key themes were closely linked as the campaign progressed and frequently lead to the proposed root cause.

**Post 9 January 2020**

Many crews were rotated across KI to ensure the fire remained behind containment lines, patrolled and mopped up. In late January, heavy rain fell across the island which resulted in the relocation of crews from the basecamp to alternate accommodation in Kingscote. Given the impact the rain had on the fire ground, the IMT should be congratulated for halving the resources on the island and returning close to 100 SACFS members back to the mainland within 24 hours.

Planning occurred, and L3 ICs remained in place to manage the remainder of the fire, including demobilisation, with the Ravine Complex declared safe on 7 February 2020.



# FOCUS 1: ESTABLISHMENT OF COMMAND & CONTROL

*SACFS Operational Doctrine SOP 1.2 – Establish, Maintain and Transfer of Control 3.1* establishes that in controlling any incident, there shall be only one Incident Controller (IC) who must be clearly identifiable.

On the afternoon of 20 December 2019, as the fires initially established as fires progressed as Level 1 (L1) incidents, the IC appointed was the KIGO. The fires were managed from KI Base where a small IMT was formed to assist the IC, including staff from DEW.

At this time the Cudlee Creek fire was also burning on the mainland in the Adelaide Hills and had been escalated to a Level 3 incident. This fire ignited within the SACFS Region 2 boundary before quickly spreading into Region 1, to which KI Group is also geographically aligned.

The Regional Command Centre (RCC) is established to provide operational command oversight and decision making to support operations within a Region, as determined by *SACFS Operational Doctrine SOP 1.6 – Regional Command Centres*.

Given this, on the afternoon of 20 December, the Region 1 RCC had oversight of the KI fires, along with the growing threat of the Cudlee Creek fire, which inevitably was going to enter its area of responsibility. The review heard that the KI fire was referred to on a number of occasions at the RCC as a “Level 2.5” fire. This indicated perhaps a L2 escalating to a L3, however, we found that in the first 24-48 hours a significant proportion of the RCC focus was on the Cudlee Creek fire. This is not unreasonable given the risk it posed to life and property, particularly on the afternoon of 20 December.

The review also heard from SACFS State Public Information staff that there was little to no media attention directed toward the fire situation which was unfolding on KI for the first few days, likely due to the proximity of the Cudlee Creek fire to Adelaide.

*Operational Doctrine SOP 1.2 – Establish, Maintain and Transfer of Control 7.10* defines the decision to escalate the incident to a Level 2 is the decision of either the Regional Duty Commander (RDC), or the State Duty Commander (SDC).

In the case of the KI fires, it appeared this decision was made at the state level, where an officer from DEW was appointed as the L2 IC and arrived on KI on 21 December 2019 to transfer control of the Duncan and Menzies fires from the KIGO. This is in line with doctrine, which states that any SACFS member holding rank senior to the rank held by the IC of an SACFS operation may, at any time, request the transfer of control and therefore assume control of any SACFS operation, as per *SACFS Operational Doctrine SOP 1.2 – Establish, Maintain and Transfer of Control 8.6*.

We heard the officer deployed to the IC role at this point was advised by the Deputy Chief Officer (DCO) to relocate the current Incident Control Centre (ICC) from Parndana to Kingscote, which is more connected to support agencies, and has greater resilience in terms of essential services. This is important to note and referred to throughout this report. The IC was concerned about this decision given there are sensitivities around this on KI in relation to the location of the ICC, which also featured in the 2007 lessons collected. Upon arrival, after initial discussions with the KIGO, transfer of control occurred on 21 December under a L2 fire, but the incoming IC assessed that relocation of the ICC was not supportive of resolution of the incident at that time and the ICC remained at KI Base in Parndana.

On 24 December 2019, the fire was upgraded to a Level 3 (L3) incident. *SACFS Operational Doctrine 1.2 – Establish, Maintain and Transfer of Control 8.6* advises that any appointment of an IC may be done verbally but must be subsequently provided in writing within a 12-hour period using the prescribed instrument.

The L3 IC appointed, even after requesting this written appointment from the State Command Centre (SCC), did not receive this appointment for a number of days.

The L3 IC was deployed with a ‘short’ IMT, being one SACFS volunteer (untrained in the Australasian Inter-Agency Incident Management System (AIIMS)), and one Metropolitan Fire Service (MFS) member.

Upon arrival, there was also a DEW staff member from KI to join the team in planning.

*SACFS Operational Doctrine 4.1 – Levels of Incidents 4.3* states that a L3 incident is broadly characterised by the degree of complexity and consequence that may require the establishment of significant resources and structures for the effective management of the incident. These incidents will usually involve delegation of multiple functions of an IMT by the IC and are often protracted in time.

Given the initial L3 IC was deployed with three staff, and integrating with local resources, it is difficult to understand how the function of control was to work, given the structure of a L3 IMT (in *SACFS SOP 4.7*) showing the Incident Controller having AIIMS trained support functions of planning, intelligence, public information, operations, investigation, finance and logistics.

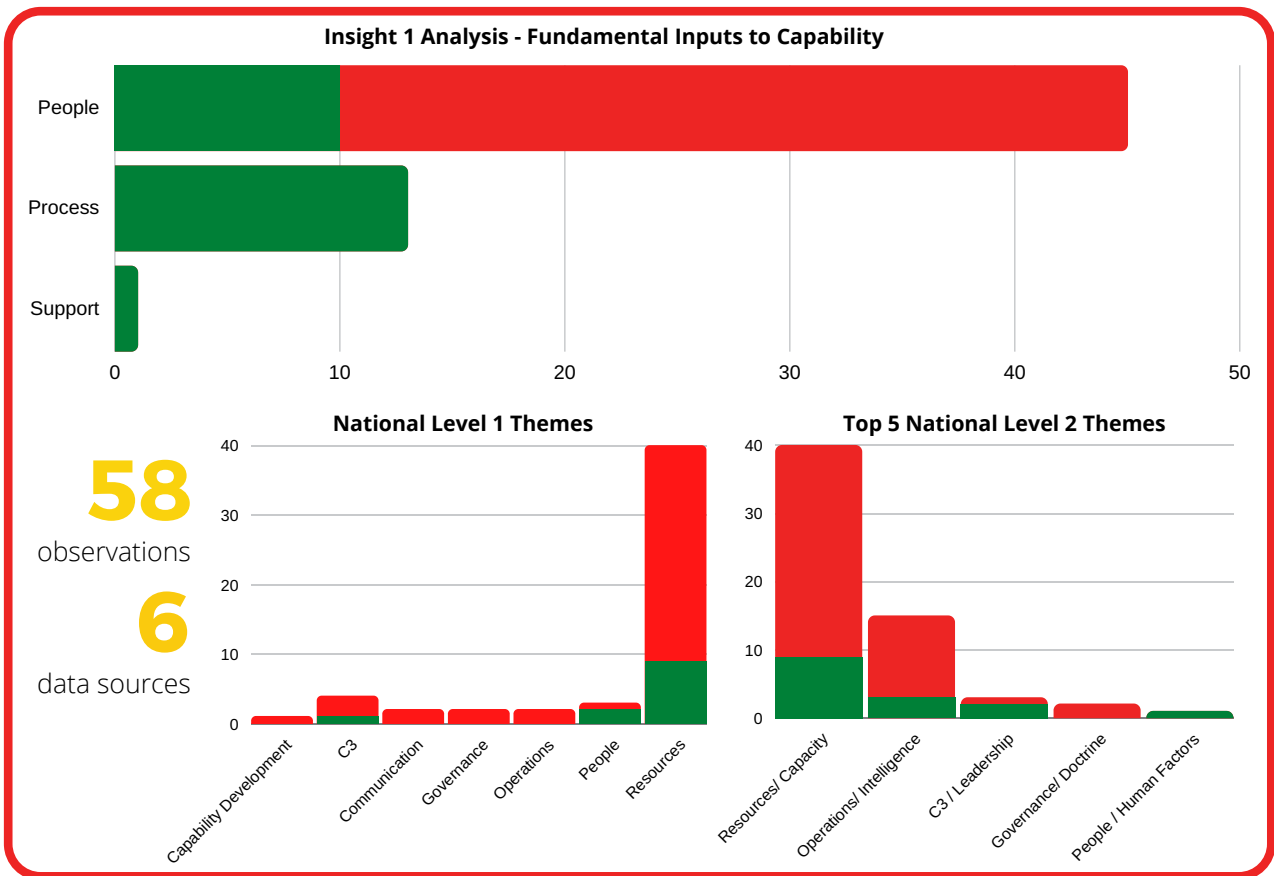
Considering the incident status as L3, the logistics officer functional role, which was being undertaken by a local KI SACFS volunteer accredited at this level, was given little support from the region or state, despite understanding the logistical issues that are inherent with fires on an island separated by a body of water from the mainland. The support they received from locals willing to help was exceptional, and a demonstration of the resilience and relationships on KI.

The review heard that there was also a delay in the arrival of the full IMT intended for changeover on 31 December, resulting in the IMT being staffed by only one person overnight on the 31st, who was not from any of the fire fighting agencies in SA, with very active fire throughout the Ravine fire ground.

The incident remained at a L3 incident until it was declared safe on 7 February 2020, with Level 3 IMTs transitioning in and out every seven days in accordance with the IMT roster for the period until the demobilisation was completed in mid-February.

## ANALYSIS

- *The transfer of control at the Incident Control Centre (ICC) appeared to occur smoothly with each officer handing over to the other.*
- *The planning of handovers at crucial times was not conducive to information transfer. For example, the L3 IC who was being replaced on 31 December specifically requested the SCC to extend him by one day to allow an appropriate handover, considering the issues that were being faced as a result of the new Ravine complex that had ignited in the early hours of 30 December. There were opportunities to ensure that the handover covered the planned fall back lines for the Duncan fire among the potential strategies to manage the Ravine fires. This request for an extended handover was denied, and there was an approximate time of two hours of changeover between the outgoing L3 IC and the incoming L3 IC on the 31st to meet transport deadlines.*
- *Both of the initial L3 deployments to KI were under-resourced and did not meet practical or doctrinal requirements to effectively manage the incident. The doctrinal framework for the operational component of the organisation is voluminous. The review heard it to be around 500,000 words long, and its revision is not yet complete. The establishment and maintenance of control spans more than three functional themes in existing doctrine.*
- *The non-adherence to current doctrine due to systemic resource deficiencies, organisational fatigue, and other factors heard during the review, would be a review in its own right. While well-intentioned, we found the existing agency doctrine could be argued to be unrealistic and aspirational if the organisation aims to run under a contemporary functional operational governance framework.*
- *The reporting relationships that occur during L1, 2 and 3 incidents rarely change between escalation. While there are discrete changes between L1, 2 and 3, the IC is appointed by the SDC, for a pre-endorsed State Incident Management Team (SIMT), or the CO, for a non-pre-defined SIMT member.*
- *Considering the definition above of a L3 incident, it raises questions whether the L3 IC should continue to report to the regional command or state command level. The review heard the almost unanimous view was that there should be reinstatement of the previous approach of L3 ICs answering to the state level, allowing the region to manage other incidents and focus on resourcing the L3 incident from across its resources.*



**INSIGHT 1**

The RCC, by its doctrinal design has no allocated Resource Officer, yet resourcing is the primary role of the RCC. As the IMT formed on KI upon detection of a number of fires, Region 1 was also dealing with the Cudlee Creek fire approaching from Region 2. The RCC struggled with capacity to deal with the emerging situation, and as a result, resourcing for the KI fire started on the back-foot and struggled, even after the Cudlee Creek fire was safe, to catch up with what was going to be a resource-hungry campaign fire.

## FOCUS 2: STATE (STRATEGIC) COMMAND

The review heard of a range of issues relating to the state-level management of the incident that appear to have impacted the effectiveness of the KI operation. While these have more general significance to the agency beyond the scope of this review, their current configuration contributed to the content and management of information and decision-making during the incident, alluding to the 'swiss-cheese' affect that was referred to earlier.

### State Emergency Centre

The State Emergency Centre (SEC) is the South Australian whole-of-government emergency management coordination centre for significant events. SACFS is represented on the SEC by a State Emergency Centre Liaison Officer (SEC-LO), reporting to the Deputy State Coordinator Fire/Hazmat (DSC) and the State Controller (SC), as defined in *SACFS Operational Doctrine 1.4 – Levels of Operational Preparedness 4.14*

The SEC is activated by the control agency, in this case the SACFS. Officers were deployed on a 24-hour, 7 day a week roster to work across Whole of Government issues relating to the Cudlee Creek and KI incidents, through the allocated Centre Manager – typically an Assistant Commissioner of SA Police (SAPol) or higher.





SACFS deploys a SEC-LO during fires, however often a senior SACFS officers such as the DCO, DSC or indeed the CO filled roles in the SEC to provide incident updates and oversight the strategic leadership.

The level and content of briefings by senior officers was not consistent and were largely dependent on the officer presenting at the SEC. They could be quite detailed, or more of an overall strategic picture. The more detailed the briefings, the hungrier the agencies became for additional information at the operational level. This had a direct impact on the workload for the SEC-LO, particularly when a senior SACFS officer was not present or was required to perform duties at the SCC or other location. Often DSCs and the DCO would use supporting visual aids and explain things from a fire management perspective. However in some cases, follow up questions from support agencies to the SEC-LO were difficult to answer, as senior officers were not always communicating what they had provided in their presentation to the person in the SEC-LO role, or the level of understanding by the SEC-LO of the required information was still developing.

Support agencies do not have access to the CRIIMSON (the SACFS operational recording system). In some cases the information contained on CRIIMSON could answer many of their questions as they could review information including maps. Access to this information system access could assist in lowering the burden on the SEC-LO, allowing them to be better able to perform their duties and be more strategic.

Later in the incident, a CO briefing template was used to standardise the briefing format. This approach was successful, and provided the high-level analysis that was needed at the strategic coordination level, and should be considered to be inserted into standard practice of the SEC moving forward.

The issue of rank was raised a number of times in relation to the integration of the SEC-LO. The current doctrine position is that the SEC-LO answers to both the SDC and the DSC. Having this vertical reporting structure does not accurately represent the posture of the position, and the reporting line to the SDC should be one of information sharing, rather than a direct report. The direct reporting line of the SEC-LO should be to the DSC given the role of the SEC, and its critical role to inform government decision-making including ministerial briefings etc. The assignment of staff rank appears to be based on organisational requirements and the role of individuals in their non-operational function, and may not directly relate to a job title, administrative position or remuneration, as defined by *SACFS Operational Doctrine 1.8 – Rank*.

The rank doctrine across the SACFS does not provide a bridging platform for the application of AIIMS particularly at L3 to be able to address the incident management context where rank is replaced by the functional management system. Given the current application of rank is based on operational experience etc., and the wide range of capabilities and disciplines that SACFS has across its portfolio, reference to the AIIMS structure should be applied within the rank doctrine to reflect the movement between the business as usual (BaU) arrangements, and those which are activated for a L2/3 incident.

This general discussion in relation to staffing of the SEC, its position within SACFS staffing is supported by the *Independent Review* concluding:

***"the SEC's decision making was impeded by having less senior staff rostered overnight who were not authorised to make decisions on behalf of their agency"***

(Government of South Australia 2020: Finding 4.5.2)

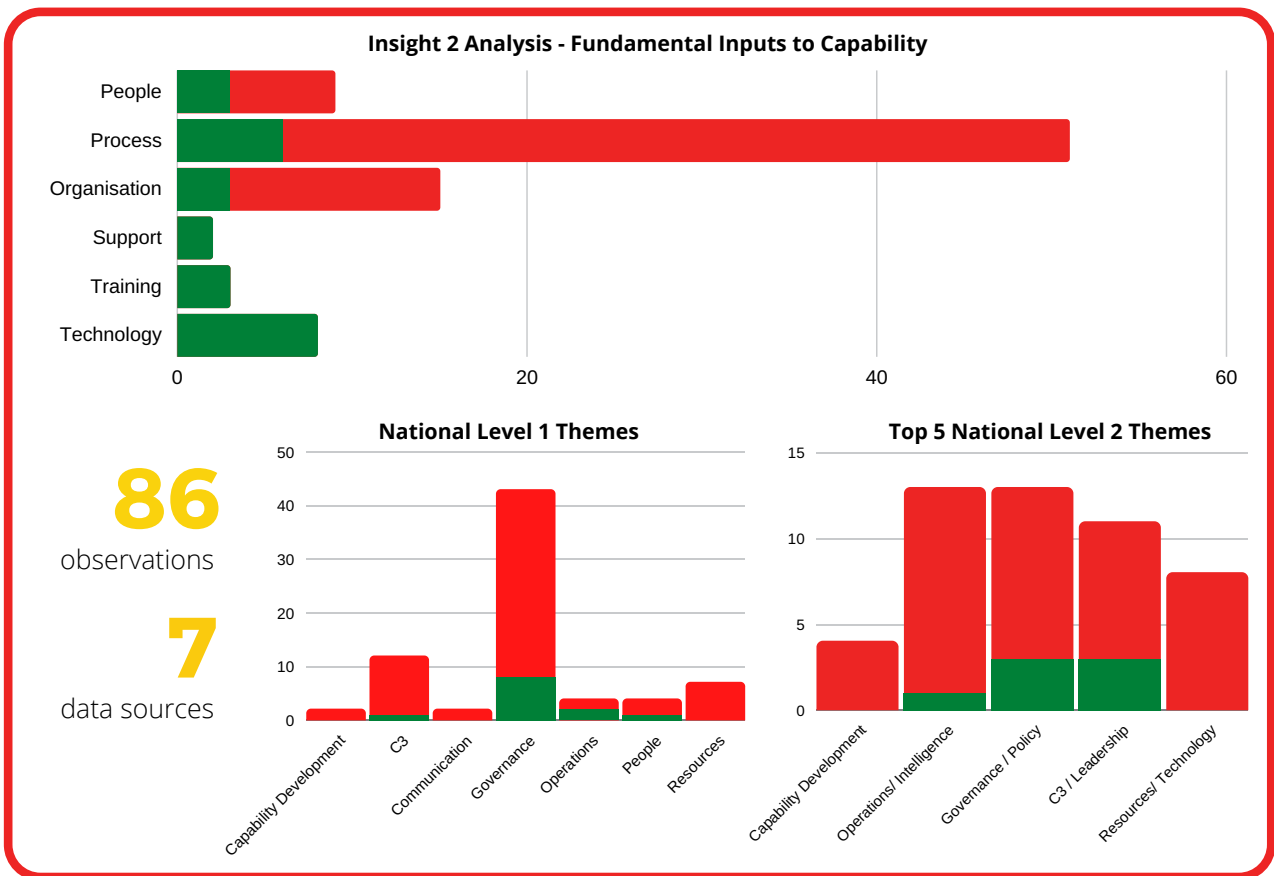
SACFS should reflect the posture and position of the SEC-LO and have it report to the DSC, which would provide the role with an organisational level consistent level of representation at the SEC at all times.



Source: SAPol YouTube - Press Conference from the SEC 21st December 2020

## ANALYSIS

- The levels of briefings from the SACFS varied depending on the officer providing the briefing. The use of a consistent template to support briefings assisted in improving consistency in approach and elevating the process to the appropriate strategic level.
- Visual tools are of great assistance to assist with conveying messages. However, there must be a consistent understanding between the senior officer delivering this information and the SEC-LO, as the latter often fields the questions from the room after the senior officer's briefing.
- The dual reporting line from the SEC-LO to the DSC and the SDC should be redefined to a direct report to the DSC and providing information to the SDC.
- It was also noted that the SEC is a demanding workplace, and one which is not amenity-rich (one toilet, small room, lack of meal or break out rooms etc.).



## INSIGHT 2

All officers in the SEC operated in good faith and had a posture of trying their hardest to inform whole of government decisions. Ensuring briefings are delivered at a strategic level and to a pre-set standard produced positive outcomes, and supported the command, control and coordination arrangements operating at the correct setting. The complexity of layers of command, control and coordination however hampered information flow, along with organisational cultural issues such as the posture of the SEC-LO position linked to organisational doctrine such as rank.

## State Command Centre

*SACFS Operational Doctrine 1.3 – Establish, Maintain and Transfer Command* defines 'command' as the internal direction of personnel and resources in performance of roles and tasks, by agreement and in accordance with the control agencies' request for to the purposes of operational preparedness activities and with the coordination of the agency.

When this definition is applied, one of the key activities of strategic command is having the responsibility for the overall coordination and support to large-scale or multiple incidents and deployments, as outlined in *SACFS Operational Doctrine 1.3 – Establish, Maintain and Transfer Command 8.1.3*.

*Operational Doctrine 1.4 – Levels of Operational Preparedness 4.10* defines of the SCC as the centre coordinating state-wide operations and resources, for both SACFS-controlled incidents and SACFS operations in support of other agencies. The Centre is managed by the SDC and staffed by the State Command Team (SCT) personnel or others as identified by the SDC.

The word 'coordination' is used several times in both of these definitions, which is important. The review found that most of the activities of the SCC are ones that relate to coordination and there is opportunity to further mature this at a multi-agency level. While the review directly recognises the responsibility for coordination in emergency management across SA to be one that is SAPol-led, there must be a recognition that there is a level of coordination at the lead agency level to bring together the capabilities of all agencies operating under the coordinated firefighting arrangements and solve issues in a multi-agency approach.

Of interest to the review that the lessons from 2007 consistently referred to the layer of "coordination" which sat above the L3 IMT, indicating that this was previously the case, however, has now been replaced with the term command.

In general, the review found the SCC to have operated as it is designed to do. However, at times the SCC reached down well below what it is designed to do. The review heard that radios were being monitored to see where the fire was. At times state-level decisions were being made based on tactical, unvalidated fire ground information, and other methods were noted that are not particularly conducive to a strategic postured coordination-focused team at the SCC.



Chief Officer Mark Jones providing SCC update on conditions expected on the 9th January 2020  
Source: ABC

## Use of 10 Functions of a Control Agency Assurance Tool

The 10 Functions of a Control Agency Assurance Tool which the SDC applies to the RDC and IC on a daily basis is used to review the performance of IMTs across the state. The review found the tool to be very quantitative, prescriptive, and sometimes administered by officers who have not performed the role of a L3 IC, so information was not always able to be effectively translated.

The review found that the best performance occurred when meaningful conversations occurred issues, rather than a governance-driven tool being applied in a primarily quantitative manner. It is noted that the issues in relation to the KI incident were complex and qualitative measures were more indicative to better outcomes across the levels.

The review also heard that all L3 ICs received no feedback on their performance, decision making or leadership, which is not conducive to reflective learning and professional development growth, nor maintenance of competency. The concept of taking a more collaborative approach to assurance is also discussed in the interim observations from *the Royal Commission into National Natural Disaster Arrangements* ("*the Royal Commission*") which notes:

***We have seen how governance and accountability arrangements have been improved in recent years within emergency management sectors with the introduction of external review and assurance bodies, such as the Inspectors-General of Emergency Management in Victoria and Queensland – two states that have experienced significant natural disasters. These bodies have supported a culture of continuous improvement and collaboration.***

(Royal Commission into National Natural Disaster Arrangements Interim Observation 47)

While this observation is targeted at post-event analysis, the application of collaborative discussion and continuous improvement are elements which are important to note in this context.

This element adds further weight to the review finding that L3 IMTs are appointed for state-level incidents. As such, the reporting line for L3 ICs should report to the level of the organisation which is responsible for providing the CO assurance, that being the SCC.

### State Duty Commander Role

The SDC is a person of 'Commander' rank or greater delegated by the SACFS CO pursuant to s60 (4) (a) of the *Fire and Emergency Services Act 2005* (SA) to effect command of all SACFS resources, human and physical and responsible for the performance of SACFS actions in support of operations and preparedness activities; ultimately for the delivery of the SACFS strategic mission. This may include the execution of specific objectives detailed by the SC, according to *SACFS Operational Doctrine 1.3 – Establish, Maintain and Transfer Command 4.6*.

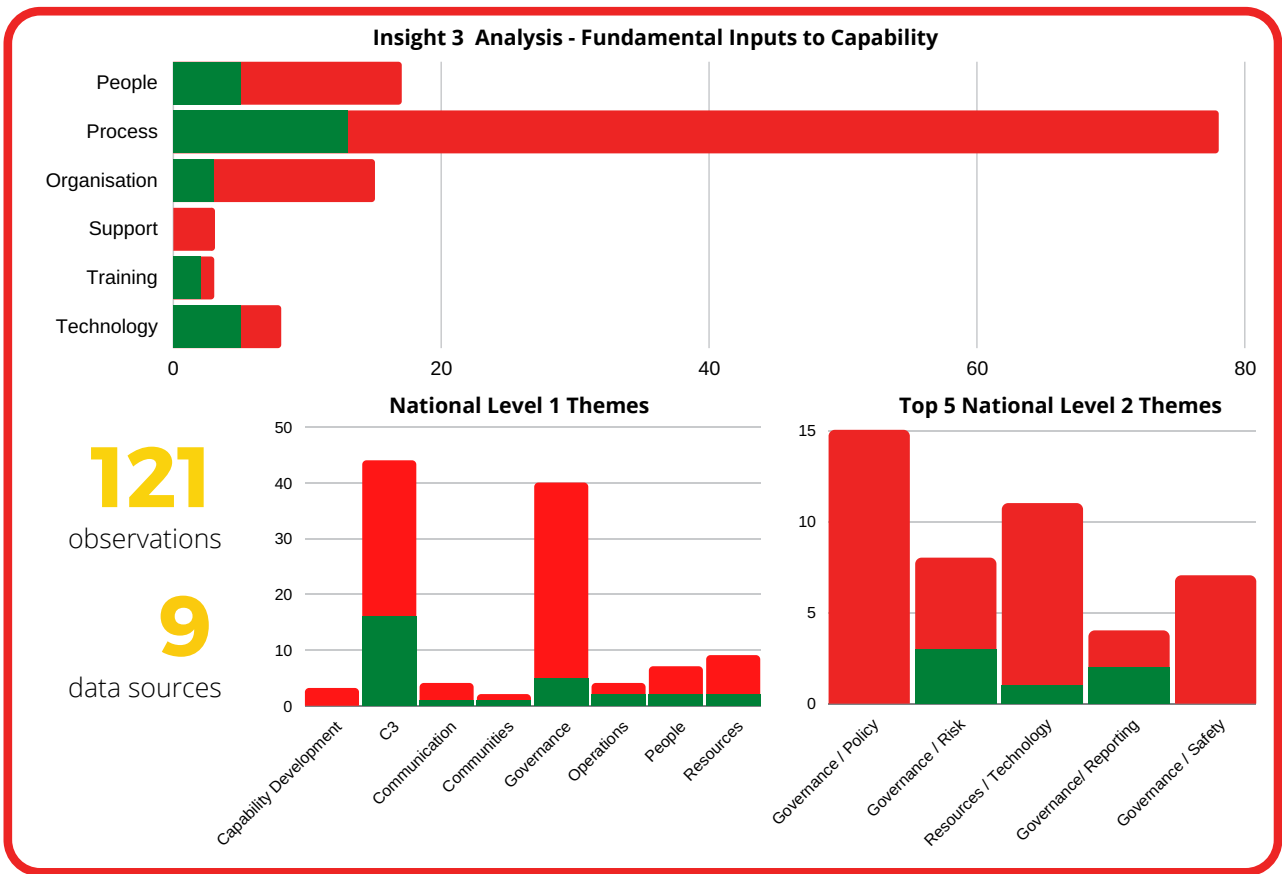
The issue with this rank providing such assurance is that there are no current minimum training and competency levels defined for the role of Commander. There is little or no annual exercising which could have better prepared the officers for the season, and there is no consistent application to the assurance tool by SDCs.

During BaU times, the SDC role serves the organisation well. However in times of L3 incidents, there is likely to be a role for an additional position to overview and coordinate the incident(s) that are declared L3 and allow the SDC to manage the other areas of the state at risk. The review believes that if such a system was set up, the layers of command reporting which the L3 IC currently experiences would be flattened, and risks such as resourcing would be addressed with a state-level focus. This would also free up the Region to focus on resourcing rather trying to be a command layer above control. What underpins this is ensuring the role the L3 IC reports to has the appropriate training, experience and competence level to understand the complex issues and provide assurance to the CO.

## ANALYSIS

- *The SCC in its current form is a small room on L7 of the SACFS headquarters (HQ). The review understands that as part of the design of the new HQ, this will be refreshed.*
- *The SDC provides good state command during BaU times, however L3 incidents should be re-defined as these are not a BaU event, and structures need to be created to support the coordination of firefighting operations at the agency level.*
- *The current assurance tool used is interpreted as a "tick and flick" by those being assessed and is not being used consistently by SDCs. An approach more like the Victorian State Emergency Management Assurance Team (SEMAT) approach seems to be more conducive to qualitative and quantitative assessments being done of the IMT performance and preparedness. We note that SACFS has real time evaluation doctrine but it is not currently being implemented.*
- *Training and development for those working in the role of SDC should be considered, with consideration of existing programs such as the NSW Rural Fire Service Incident Control: Major Incident (ICMI) program, and then an accreditation system based on competency maintenance.*
- *The lack of overall exercising of the SCC leads to inconsistent approaches being provided by officers, along with reduced ability for the multi-agency team to problem solve at the coordination level.*



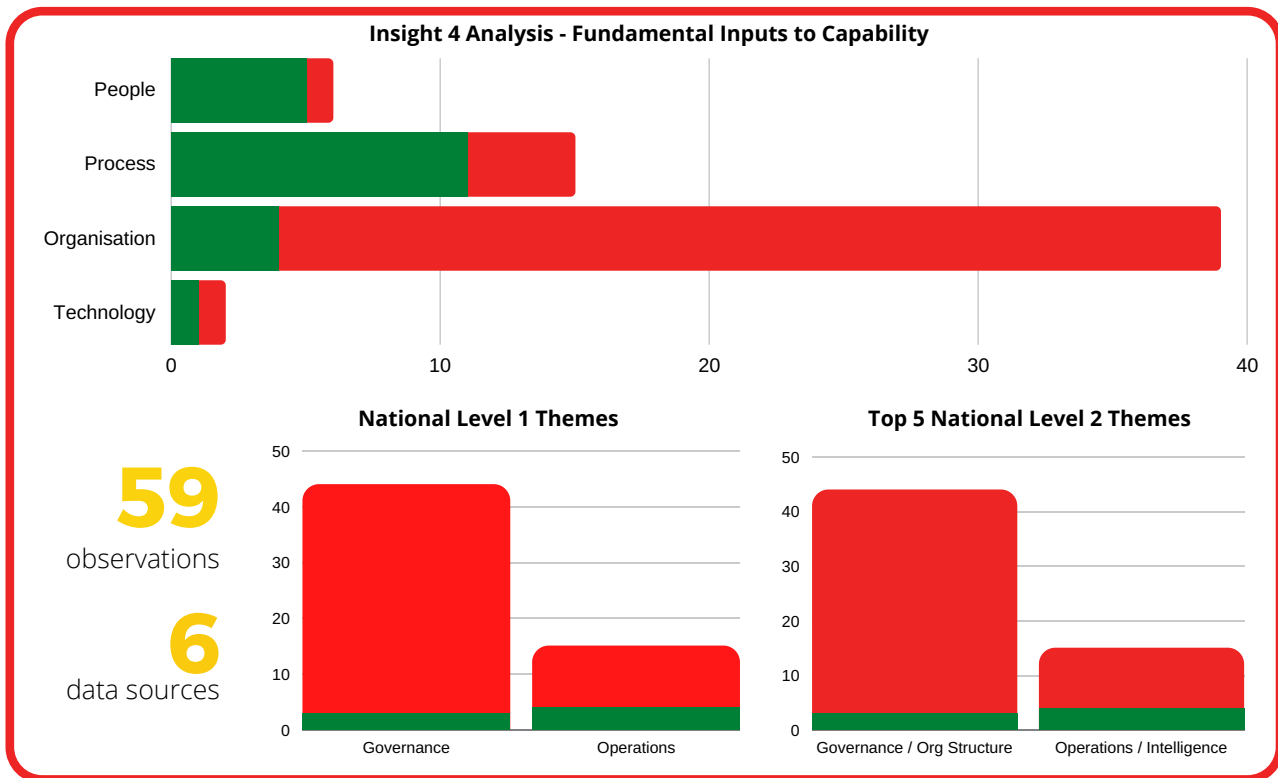


### INSIGHT 3

The SCC operated as a Command Centre as designed during the KI fires. The SCC is required to communicate through the RCC to provide instructions through to L3 ICs, even though they are classed as a state-level incident. This causes delays, and increases the chances of assurance being provided, particularly in the area of resourcing and public information. The 10 Functions of Control Agency tool, whilst approached with good intent, did not lead to conducive relationships being formed between the L3 IC, RCC and RDC due to its audit nature, versus what could be a qualitative discussion about risk, shared experience and improvement.



Current SCC, located at SACFS HQ, Adelaide.



**INSIGHT 4**

The functions performed at the SCC appear not to follow the traditional AIIMS functional management system. This was particularly the case with planning and intelligence who focus largely their efforts in the logistics, rostering and public information areas. A more refined SCC with a focus on coordination of efforts across the state has a better chance of implementing AIIMS and linking together the command, control and coordination functions of the SACFS.

**Aviation**

SACFS Operational Doctrine Section 8 – Chief Officers’ Concept for Operations – Aviation Operations (2018) defines the integration and use of aviation operations based on operational need, identified by specific mission categories, which include, but are not restricted to:

- Fire-bombing (suppressant and long-term retardant delivery)
- Intelligence, Surveillance and Reconnaissance (ISR)
- Supervision and Command
- Crew transport
- Aerial ignition.

The aviation section pre-plans for a number of resources annually on KI based at the Turkey Lane Airstrip. This is a strategic resource from which to deploy Single Engine Air Tankers (SEAT)s and other aircraft, particularly for fires on the western end of the island.

During the Cudlee Creek and KI fire ignitions on 20 December 2019, aerial operations in the first few days were being run from the Cudlee Creek IMT, under the supervision of an Air Operations Manager (AOM), with two aircraft officers (AOF) – one each for Cudlee Creek and KI. The initial attack using all available aircraft in the period 20-22 December cannot be overstated in relation to the success of the outcomes of the Duncan and Menzies fires on KI, and the Cudlee Creek fire on the mainland.



Photo Credit: The Islander

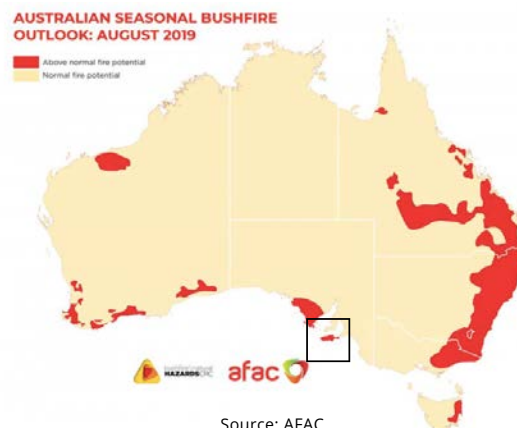
An AOF was deployed to KI on 23 December 2019. The position was rotated through, and was starting to demobilise on 28 December, prior to the Ravine fire beginning two days later, when they ramped up operations once again.

### Response Zones

SACFS establishes geographically defined Response Zones for the integration, management and operation of aviation operations resources in support of the services' rural fire fighting capability, as defined by SACFS Operational Doctrine 8.1 – Aerial Fire Fighting Response Zones. The highest level of these response zones is referred to as a Primary Response Zone (PRZ). KI does not fall within the PRZ, meaning, in general terms, there is not an automatic response of aircraft to fires running on KI at various levels of SACFS readiness.

Given the focus of the Australasian Fire and Emergency Services Authority (AFAC) seasonal outlook with KI being identified as a higher than normal risk, the review found it interesting that Region 1 did not request KI to be included as a Temporary Response Zone (TRZ) specifying the purpose, establishment, location and duration of the TRZ for the season, as allowed under *SACFS Operational Doctrine 8.1 – Aerial Fire Fighting Response Zones 10.1*.

The formation of a TRZ would probably have had little impact on the Duncan and Menzies fires, as Cudlee Creek had higher operational priority for the first 48 hours. A TRZ however could have provided a more aggressive attack on the Ravine Complex fires on 30 December 2019.



### Aviation – Personnel Resourcing

The review heard that there is a resource deficiency across each of the aerial operations disciplines, including Air Attack Supervisors (AAS). This is partly a consequence of the need for SACFS to rely upon courses being offered in NSW and Victoria (VIC) to train people. An example of the resource limitations in this area was an AAS who had just completed their training, and was the individual who was allocated to the initial attack of the Ravine Complex. All parties agreed that a mentor should have been provided in this situation but there were simply not enough people available to provide that support.

The review notes the substantial increase in equipment capacity for aviation over the past 4-5 years, however the Full-Time Equivalent (FTE) and trained casual workforce to build and maintain a high level of capacity and capability has not matched the investment in equipment.

### LAT and VLAT Deployment

During the fires, offers from NSW and VIC to use the LAT and Very Large Air Tanker (VLAT) capability on the KI were accepted by the SA Government. The review heard that the decision to use these capabilities was generally not well received at the operational level. On some occasions this was a consequence of the aircraft being offered at very short notice, so they were not integrated into planning and operations, and therefore caused significant distraction. The review also found that this perception was partly as result of a general lack of understanding of the capability of these aircraft, due to a lack of training.

Regardless, all staff across the aviation discipline need to accept that, with national sharing arrangements increasing, the offer and use of such machines will only increase. There is also a need to provide IMT personnel with appropriate training and support so that they are best able to integrate this resource effectively.

The review heard a number of instances of IMTs being told they had half an hour to decide a strategy for use of a LAT/ VLAT, which in some cases would be expected given the tasking of the machine will often rely on the priorities of the releasing state.



Photo Credit: The Islander

In several cases there was effective cooperation between the State Aviation Response Coordinator (SARC), the AOF and the Operations Officer in the IMT. This supported rapid understanding of the capability of the aircraft and what it could deliver, how it operates and then how it could be best worked into ground-based objectives at the time. These were the best examples of effective use of the LAT/ VLAT. The review unfortunately also heard of a number of examples where planning for the LAT/VLAT utilisation was less optimal. This occurred when the fire ground commanders, IMT and state aerial operations strategy was changed at short notice based on the decisions at the SCC. The review heard this was the case with the DCO having involvement at this level in relation to LAT/VLAT use.

### Aviation Operating Hours

The start time of aerial operations on the fire ground was a significant issue raised with the review. Aerial operations often did not commence on the fire ground until 10:00 hours, and for some periods aircraft had to be removed from KI each night in order to meet accommodation requirements. The review was provided with a number of examples of situations that would have benefited from early aerial reconnaissance and suppression capability. One of these was the breakout on the cliffs off Borda Vale and Cape Torrens WPA in the early morning of 3 January 2020, when aerial attack was the only option to slow the fire spread as the cliffs were hit by northerly winds. This may have provided alternate strategies for the day.

The requirements for accommodation for flight crew is determined by the Civil Aviation Safety Authority (CASA). Flight Crew Members (FCM) are defined under *Civil Aviation Advisory Publication (CAAP) 48-01v3.2 (May 2020)* as a crew member who is a pilot or flight engineer assigned to carry out duties essential to the operation of an aircraft during flight time. The CASA Advisory determines that suitable sleeping accommodation that is fit for purpose for an FCM to obtain sleep, and that includes all of the following:

- a) comfortable room, compartment or facility
- b) a single occupancy, at the discretion of the FCM
- c) access to clean, tidy and hygienic amenities, including a toilet and hand washing basin
- d) a bed that is comfortable, flat and horizontal, allowing the occupant to sleep on their stomach, back, and either side
- e) minimum noise levels, including low occurrence of random noise
- f) the means to control light, temperature and ventilation
- g) access to adequate sustenance.

This advisory applies only to **pilots and flight engineers**. However, it was apparent during the review that the advisory guidelines were being applied to the many more in the aviation section. Additionally, suitable accommodation was being used in Kingscote by the IMT and support agencies, which could have been allocated to flight crew, allowing the aircraft to remain on KI. The IMT and other aviation staff could have been allocated accommodation in an expanded base camp at Kingscote (which still had capacity in reserve) upon request to the SES, and therefore improve the efficiency of the loss of flight time to return to the mainland each evening, allowing for extended air operations during critical times.

The added benefit of operations remaining close to the IMT was demonstrated by comments to the review team that when some members of the IMT, including one IC in particular regularly visited the base camp for meals or to interact with the ground crews, it allowed them to use this information to solve issues the next day (short loop learning), and created better trust and working relationships between the fire ground and IMT. If applied to aerial operations this approach could also work toward improved integration of aviation and ground disciplines as they develop a better understanding of each other's challenges.

### Capability Development

The review heard that aerial operations conduct an annual awareness day prior to the season for aviation personnel, but that L2/3 ICs and Operations Officers are not included in the session. We heard from a number of commanders and functional leads that air operations strategies and ground strategies on KI were not well linked. For example, using retardant lines to try and stop fires, instead of tying in back burns or creating a line to burn from; or bombing areas which had no ground support to back up the efforts, therefore simply not achieving a strategic outcome. It appeared to the review that there is a need to increase the level of understanding of aerial operations among IMT personnel, as it is critical functional leads are able to develop effective strategies for a coordinated ground and aviation response.

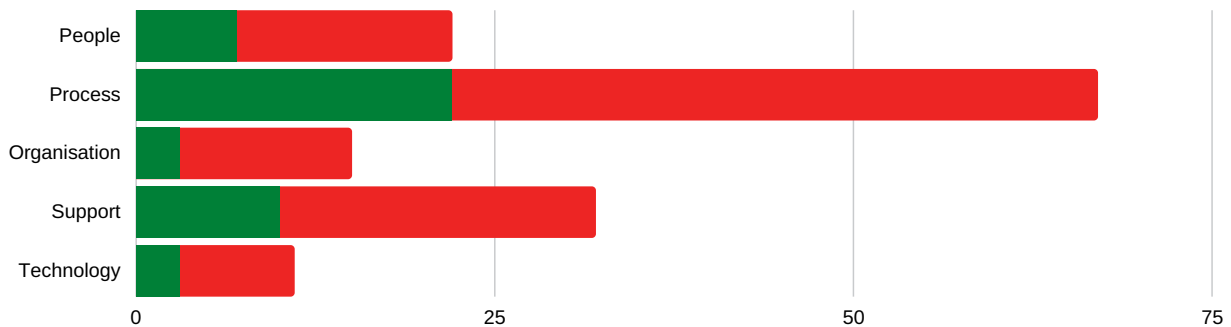
The review also found is that there are no position descriptions in the doctrine sub pack for the air operations roles, and this could give the perception they operate outside the IMT as well. Including these in the doctrine position description sub packs would assist with integrating these positions into the IMTs. Notwithstanding the comments above, overall, the aviation operation was a safe, well planned and executed operation over all three KI fires, and assisted greatly with property protection, crew safety and overall strategies and tactics.



## ANALYSIS

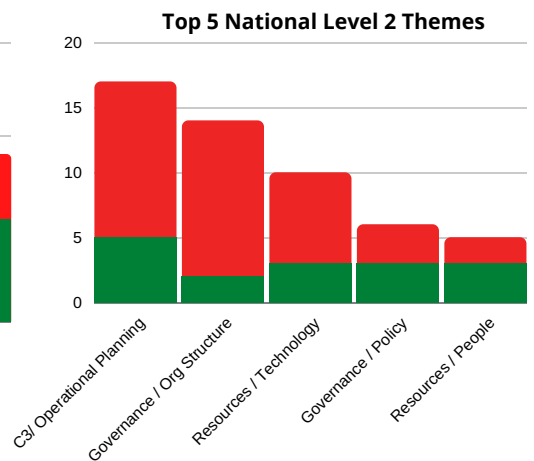
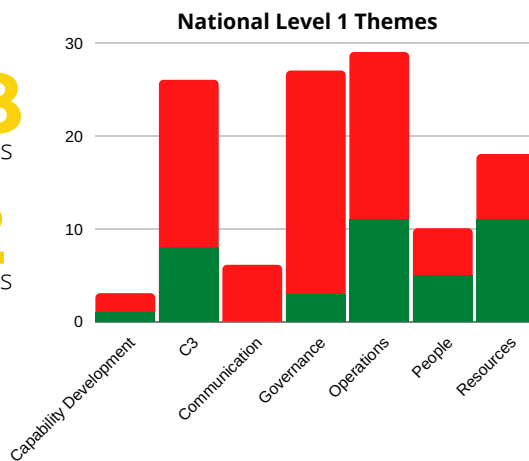
- Aviation processes are well documented, and the state level officers have significant knowledge of the capability and the procedures around aerial operations.
- As part of the pre-season preparedness, there was an opportunity to create a TRZ for KI, which could have led to a more proactive response of aircraft during the initial stages of the Ravine Fire and assisted with rapid attack.
- Aviation training is largely at the whim of other states providing the spots to SACFS. SACFS is seeking to address this by developing their own courses, but are limited by resources. Whether or not it is sustainable to maintain the current approach and level of resourcing is up to the organisation to determine, however it is apparent that there is need to increase capability across the aviation area.
- Developing a closer relationship between aviation personnel and L3 ICs, Operations and Planning Officers pre-season could have led to a better understanding of how the aviation capability can operate to support ground crews, including the use of LATs and VLATs.
- Expectations in relation to the accommodation and welfare requirements for non-FLM members of the aviation section at fires should be reset which, along with IMT members using temporary accommodation solutions, may allow for more accommodation capacity in remote locations to keep aircraft on-site overnight.

Insight 5 Analysis - Fundamental Inputs to Capability



**148**  
observations

**12**  
data sources



## INSIGHT 5

Aviation is well planned across the SACFS however, like many disciplines, is not well resourced and competes for resources with officers undertaking a number of operational roles. By bringing together the disciplines of incident control, operations and aviation, there will be a greater understanding of connecting the aerial and ground strategies moving forward.

The review notes the allocations that the SA Government provides in its response to the bushfire review, and has committed to the following in this area:

- Develop plans for early aerial reconnaissance deployment remote ground deployment heavy plant deployment, when dry lightning is forecast for remote areas.
- Increase accommodation for responders when operating in remote areas.
- Increase accommodation capability for operations in remote areas.
- Review the use of Turkey Lane airstrip.

## FOCUS 3: REGIONAL (OPERATIONAL) COMMAND

### Regional Command Centre Operations

*SACFS Operational Doctrine 1.6 – Regional Command Centres* defines RCCs as intended to provide Operational Command oversight and decision making to support operations within a region.

The RCC are the level of command operating above tactical command across broad geographical areas, primarily concerned with the oversight of operations within their command, resource allocation, and assistance at the tactical Level in the delivery of all functions of control.

When considering this layered definition of command, an industry study published by the AIDR discussed advice provided to Fire and Rescue Service personnel in the UK in relation to incident management, and while their scalability is different in many ways to other models, they make one very point clear: “There is no advantage in over structuring an incident with additional tiers (of management) if they are not needed” (2008, p 33) *HM Department of Communities and Local Government, 2008, Fire and Rescue Manual Vol. 2 Fire Service Operations – Incident Command, The Stationery Office, Norwich, AIDR doctrine: Have we got the fundamentals right? (2012)*

The review found that while the definition and design of the command structure applied was within doctrine, by its design the officers were not able to reach the strategic and operational planning at the regional and state level.

It appeared to the review that this point was pertinent to the role of the RCC during the KI fires, and the current agency doctrinal position of (incident) control reporting to (regional) command hampered this. Again we note the consistent reference in 2007 as the RCC being a coordination level, not command.

Staff in the Region 1 RCC were already fatigued heading into December. They had been managing deployments to QLD and NSW, and therefore had been in an operational posture in some form since August 2019. When confronted on 20 December 2019 with fires starting on KI, and a major fire transferred from Region 2 (Cudlee Creek), the RCC began to be overwhelmed.

Staff in the Region were trying to manage resource requests from KI and Cudlee Creek, while asking for resources to support itself to manage such requests (specifically, the ongoing request made by the Region for a Resources Officer). Support came to the RCC from other SACFS Regions, but it still struggled to keep up with the operational tempo at times.

Region 1 determined to deploy a Regional Liaison Officer (RLO) to KI, which is not a position defined in doctrine. The role of this officer was described to the review as being to feed information into the Region from the IMT. However, this raises questions about the integrity of the current L3 reporting regime. The review heard on the ground that on the whole the RLO was a surplus role which added little value to operational outcomes and would have been better embedded back in Region 1 on the roster for the RCC.

We note that there is no role defined for a regional resources officer within doctrine. However, from what the review has heard, this is the most critical role the RCC plays. The lack of this position may well have been a contributing factor to the resourcing issues experienced throughout the KI fires.

The review heard that there was a difficult and problematic relationship between the RCC and the Region 1 Groups in relation to resourcing.

The Groups were planning and seeking availability of their volunteers, to offer assistance, and trying to match this with an operational forecast from the RCC which could not be furnished. They were regularly communicating to the Region that they could supply more crew however there was little information being provided back to the Groups by the RCC, nor a plan to work from. When information was received it required crews in very short turnaround times. On other occasions, a general call for crew would be made and then only a small number of those offered would be utilised without any feedback regarding whether the others who had offered might be needed in subsequent shifts. Group Officers noted that this caused frustration amongst brigade members, who felt they were putting their hands up and being left hanging with no concrete, timely information.

Group Officers (GO) were also concerned that when they phoned the allocated phone number for the RDC for resource information, reporting instances where a volunteer would answer the phone, rather than a senior staff member who could make high-level decisions for which they are responsible.

The review also heard on multiple occasions the concern that the State and Region appeared to be holding resources back, rather than 'dealing with the fire we've got'.

## ANALYSIS

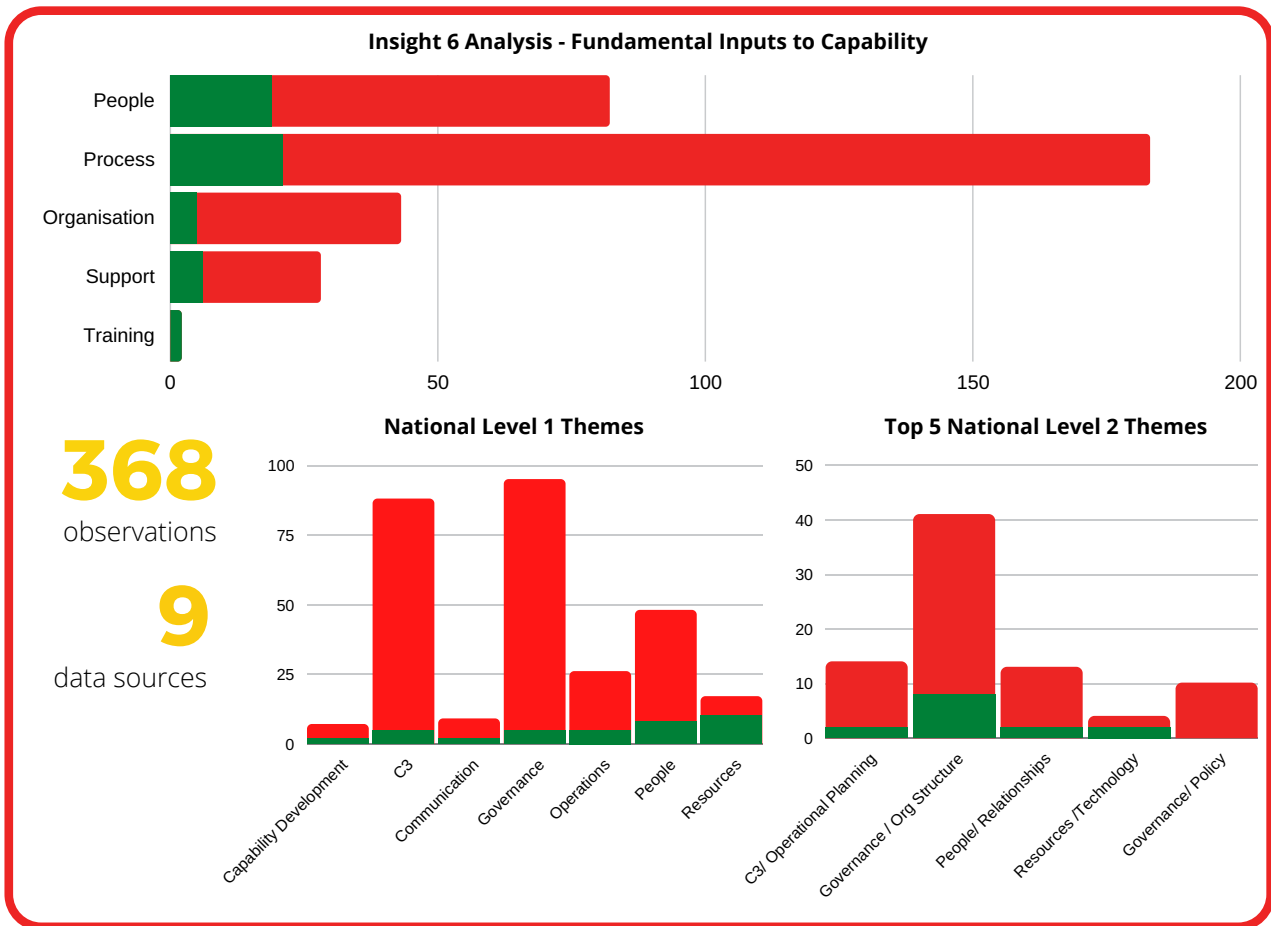
- *The regional staff were fatigued given its ongoing operational work since August. The addition of two concurrent L3 incidents subsequently overwhelmed the RCC.*
- *There was no warnings officer on KI, therefore the regional warnings officer was getting multiple directions from multiple areas, which compounded workload and was not conducive to an operational rhythm being achieved within the RCC (later discussed in the report)*
- *The Region 1 staff worked cohesively, however the deployment of a RLO to KI confused reporting lines. It appeared to the review that this person would have been better located in Region 1, unless it was intended to be on the KI to deal with the accountability issues dealt with later in this report.*
- *By design, the RCC is a command centre, with control answering to it, which is confusing. If L3 ICs were reporting into the state, the regional resources could be re-designed to work towards meeting resource requests, which were not being met.*
- *There are opportunities in general for Region 1 to build stronger relationships with their Groups so there is a higher level of trust when operational incidents occur.*



Photo Credit: Brett Sanders



Photo Credit: Steve Schueler



### INSIGHT 6

Linked indirectly to Insight 1 and 4, the doctrinal design of the RCC did not suit managing one L3 IMT, let alone managing two concurrently. By its design, it has a large focus on warnings and intelligence for a state-level incident, which it performed reasonably well, however a lack of focus on resourcing, and the associated logistics which surround them, added to the resourcing issues for the KI fires. An RCC more exclusively focused on resourcing, and dealing with new and emerging incidents across the region, would have improved operational outcomes.

#### Resourcing Levels of each Fire

Resourcing of the entire incident (all three fires) is a major focus as it is the third largest theme which emerged from the data.

Resourcing for the Menzies fire was primarily by local SACFS brigades, FFUs and other agencies. It was under the control of the IMT at Parndana, and the command of a local KI Deputy Group Officer (KI DGO) was appointed as the Divisional Commander (DIVCOM). Local brigades, particularly Wisanger (as the fire was in their area), and FFUs patrolled the fire until it was determined to be safe.

Resourcing for the Duncan Fire was somewhat different. Response to this fire was by local SACFS brigades, DEW resources, KIPT and many FFUs. Given the inaccessible terrain and extensive native vegetation in the area, it was clear that this fire had significant potential to spread and destroy property, livestock, and plantations, and be a threat to the KI water supply due to the risk to Middle River Reservoir and Treatment Plant.

These, and other potential risks were identified early, and resource requests were attempted to be made from the first day of the fire. The IMT had difficulties contacting the RCC on 20 December 2019, to discuss requirements, due to the RCC focus on the Cudlee Creek fire. A request was put to the RCC on or around 24 December through the RLO sent by Region 1 to the island, but a breakdown occurred and the request seemed to have stalled in a generic mailbox. The request remained largely unfilled.



The review heard that when a teleconference between the SDC, RDC and IC occurred, to undertake checks on the 10 Functions of a Control Agency (referred to earlier in the report), resource deficiencies were identified as part of that audit. The IMT were frustrated to see however that the completed tool uploaded to CRIIMSON later that day showed that resourcing deficiencies which were raised were not accurately recorded, instead the record in the tool gave the impression there were no issues.

Resources were supplied from Coober Pedy, Roxby Downs and Port Lincoln to support the Duncan fire. Despite this, resources were still stretched, particularly at night, and there were examples of over 50km of fire line being be patrolled by a single crew. This level of resourcing did not allow for proactive work to be undertaken, only reactive suppression while patrolling.

The review heard that the DCO visited KI on 27 December 2019 and drove the fire line, and felt the fire looked quite safe, with the exception of the north-eastern corner, which still required work.

The L3 IC discussed his concerns in relation to both IMT and field resourcing deficiencies with the DCO when he visited the ICC on the afternoon of 27 December.

The work of the IMT, KI Group, plant operators, KIPT, DEW, FFUs and all other agencies in identifying control lines and containing the fire with an extremely low resource base during the Duncan fire was exceptional. The work on this fire showed determination, courage and sound leadership across all levels.

Resourcing for the Ravine Fire was deficient at most levels. The potential for these fires was made clear some six hours after the start of the incident on 31 December when the DIC sent a strategic resource request appreciating the fire to the Regional Commander (RC), Region 1, SDC mailbox, the state planning, logistics and intel mailboxes, Region 1 HQ, the outgoing and incoming L3 IC, the SES SDC and SES Basecamp Manager. The following is an extract from this resource request:

***The Kangaroo Island Complex of fires provides an ongoing operational and logistical challenge, with Duncan, Menzies and Mount Taylor fires currently listed as contained but still requiring resourcing at varying levels, and the Ravine Complex likely to burn uncontrolled for a number of days, with a reasonable projection that this will exceed 100,000ha of area burn in the Ravine Wilderness Protection Area and Flinders Chase National Park. This is based on the current 4-day weather forecast which has current SW winds switching to the East on Thursday, likely to push the fire towards the western coast, before turning Northerly on Friday which will push the fire south. Inaccessible terrain and limited resources mean the containment and fallback options currently being implemented or considered do not have a high likelihood of success.***

***It is noted that a fire of this magnitude, should it eventuate, will have a significant impact on the Wilderness Protection Area and FCNP, much of which has not fully recovered from the 2007 fires. It is likely that if large areas burn again, we will be looking at significant habitat loss and potential species extinction.***

***KI SACFS Group are rapidly reaching the limits of their capacity, both in terms of personnel and resources.***

***They have been running operationally for most of December, with a significant fire only being wrapped up days prior to the KI complex starting. As a result, fatigue management and capacity to continue to supply firefighters, command personnel (sector and divisional commanders) and IMT personnel (functional roles and support) is diminishing, however it is critical that this is managed so an ongoing local presence and integration into both the IMT and on the fire ground can be maintained.***

(Strategic Resource Request from Deputy Incident Controller, 30th December 2019)



Photo Courtesy of Lucas Hobbs

Given this appraisal of the situation, it is difficult to understand how it was possible that that the following evening, on 31 December, the IMT had only one staff member in the overnight IMT. The staff member, despite having fire experience, was not from the control agency, but from the SES (noting the employee is an ex SACFS employee with fire management knowledge).

With this level of resourcing from the early stages of the Ravine fire, it would have been almost impossible for the L3 IMT to perform sound planning and develop contingencies for what was effectively a count down towards the predicted extreme fire danger conditions occurring.

What makes this more notable is that the appreciation of the situation cited above, and the doctrinal resource requirements for L3 IMTs, was provided to and known at all levels of the agency on 31 December.



Photo Credit: Rob Hartill

It is important to note that, just after midnight on 31 December 2019, the SDC became aware of the presence of only one person staffing the KI IMT, as a result of being unable to obtain a situation report (SITREP) on the incident. The SDC then contacted the L3 IC by phone to address it. To have a situation where a L3 IMT of nearly 20 personnel through the day went to one person at night raised significant concerns through the review.

Amongst other matters, it questions the veracity of the assurance tool which is used to determine the performance of the 10 functions of a control agency and its practical application to provide assurance to the CO.

It is difficult to understand the resource requests that went into Region versus what was supplied due to the manner in which these requests were managed.

The SACFS has a resource management system named IRIS, which in the past, linked personal and training information (from another system – TAS) to facilitate allocation of personnel to an incident. It is noted that due to the decommissioning of TAS and its replacement with a new system (Emerald), the training information element of the functionality of IRIS was limited in the 2019-20 season. We know that IRIS was initially used at Region 1 at the commencement of the incident. However, use of IRIS was abandoned within 12 hours, and replaced with a range of shared spreadsheets across the Microsoft Teams environment.

The Microsoft (MS) Teams solution had served the SACFS well in managing resource allocation and management through the QLD and NSW deployments, and it was the intention to continue this approach for management of resources in local incidents. The decision to move to MS Teams was made by the SDC early in the fires (along with Cudlee Creek). Unfortunately, this decision established a resource management tracking system which was plagued with issues. Innovation was often provided by officers improving products on the MS Teams platform. However, this frequently resulted in deletion of others' work, as it was open for anyone and everyone to share with no version control. The information lacked validation, and therefore was often cause for incorrect resourcing.



Photo Credit: Danielle Debenham

The review heard many examples of resources arriving on KI, of which the IMT was not aware, and of resource requests established by the IMT that were simply not filled. All functional leads and many fire ground commanders commented extensively to the review on the inability to obtain resource information, let alone accurate resource information, and the enormous amount of operational and planning time invested in attempting to obtain accurate resource information.

The overall inadequacy of the resourcing levels relative to the scale and seriousness of the incident, until after the major fire run on 3 January 2020, was also a significant focus of comment, as was the limited capability of many crews, and the extent of 'just in time' training for fire ground commanders, many of whom were untrained, inexperienced and lacked the competence in these roles. This trend was increasingly notable as the fire progressed throughout January.

Among the evidence further supporting the finding of a chaotic approach to resource management was demonstrated by:

- the 24-hour strike team arriving on KI at 11am on 3 January 2020, as the FDI was rapidly climbing and the fire already running to the south. This strike team was deployed straight from the ferry in Penneshaw into the path of the fire front in the south-west corner of the Island. This deployment was specifically procured for 24 hours, pre-advised that they would not sleep, and return to the ferry at the end of their shift. This strike team, along with several local KI appliances and a command vehicle, was caught in the burn-over incident at Church Road; and
- A state instigated strike team of personnel was organised around 16:00 hours on 3 January 2020 as the fire was running east along the south coast of the Island. They arrived at 19:00 hours (72 members), and were not able to be deployed until 01:00 hours on 4 January. They were then sent to an area (Stokes Bay) which was not under threat by that time. The team was back on a plane at 05:00 on the 4th and returned to Adelaide.

The general theme around resourcing appeared to be that it was reactive, often after major fire runs, rather than planned and prepared in advance. The preparation for the second forecast fire run day on 9 January 2020 (predicted with the FFDI to be severe) appeared to be better planned, than that of the 3rd, with additional resources sent to KI in advance.

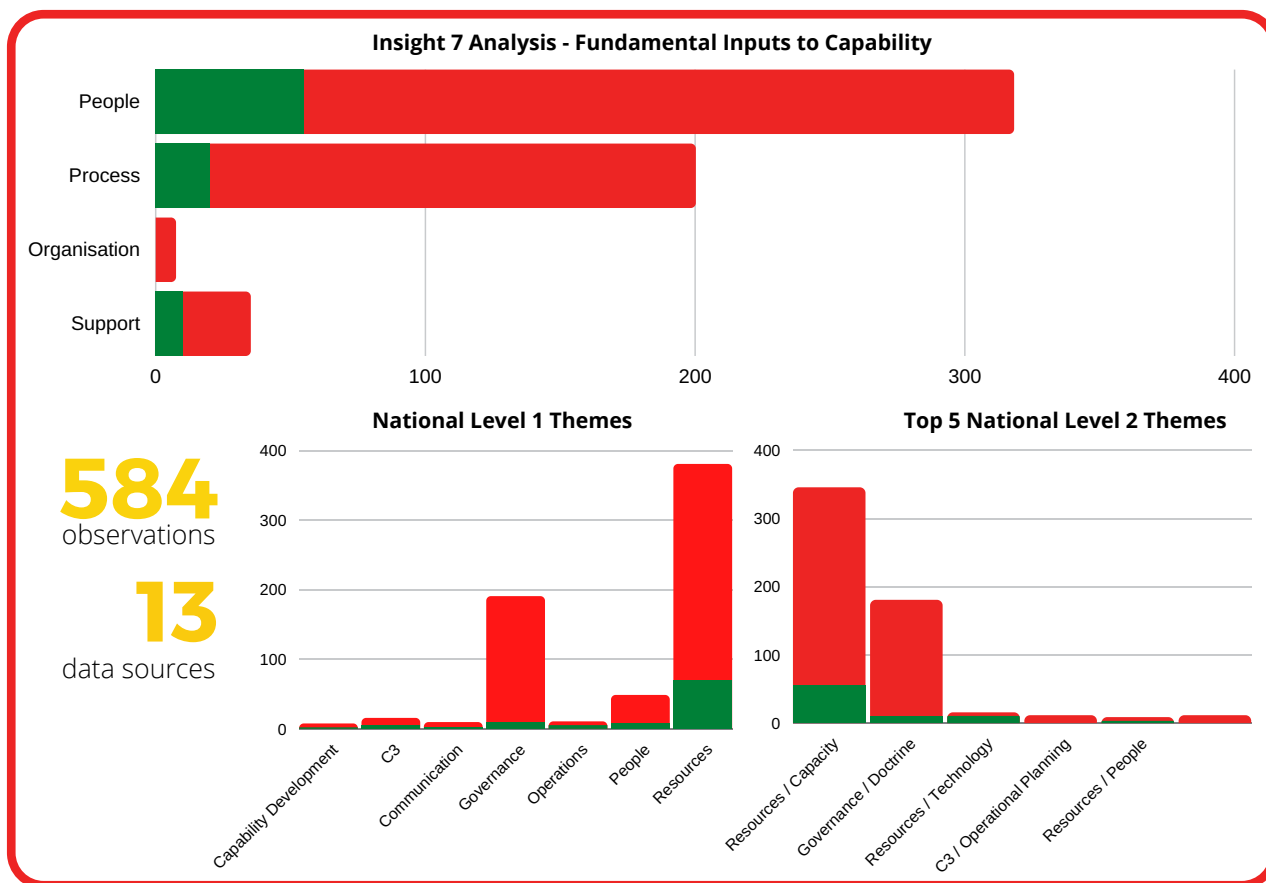
The review heard conflicting stories in relation to resourcing for KI. On one hand the review heard that the IMT was being told by the Region that there were no resources available, and also that the Region conducted an analysis of what was provided to KI and advised the IMT that they had all they had requested. The review heard that on two occasions the IMT was told by the SCC that their resource requests would not be met, with no reasons cited on each occasion.

On the other hand the review heard from some IMT members and KI Group members that they were being contacted directly by Region 1 GO's offering assistance, when at the same time they were being told by the Region and State that there were no resources available.

This information was corroborated by Region 1 GO's, who indicated to the review that they had advised the RCC that they had plenty of personnel and appliances available and the ability to send many more to KI. However, they simply could not get decisions from the RCC regarding resource requirements, often during peak planning periods, including 1-2 January, they received no requests for resources.

## ANALYSIS

- *Everyone tried the best they could with what they had. Innovation and hard work, long hours and a positive attitude was heard throughout the review, however, the failings in resource management throughout the incident generated angry comments from volunteers in particular, who felt 'mucked around' by the process and their treatment.*
- *The decision to not use IRIS had a negative outcome on resource management throughout the KI fires. The dispatch and receipt of resources through this system would have assisted greatly. The use of IRIS is prescribed in doctrine and was not followed. This observation was also made in the Independent Review.*
- *The use of MS Teams seemed to have worked successfully for the interstate deployments, however it appears that this was likely due to pre-planned and structured crews being recorded with defined timeframes. By contrast, the deployments to KI were conducted under significant time pressure, and there was a lack of governance around what was a well-intentioned idea.*
- *It is of concern that GOs were being called by the RCC to find out who was on KI from their Groups, as the RCC had lost track of who and what had been sent on occasion.*
- *The review found there was second-guessing in relation to resourcing requested by the IMT. Many of the requests that were sent by the IMT could have been filled within Region 1. However, it appears they did not make it through the system to the supply chain (i.e., from Region to Groups to Brigades).*
- *The assurance tool the state uses in relation to the 10 Functions of a Control Agency could not have been operating correctly to only have one non-SACFS member in the IMT, less than 72 hours out from a predicted extreme fire danger day.*
- *Everyone in the supply chain acted in good faith, but again the reporting relationship between L3 IC and regions comes into question in this area. If it is a state-level incident, resource management should be considered in the frame, at the state level, and the 'home' region become a resource feeder along with other regions.*



### INSIGHT 7

Resourcing for the KI fires was underdone, with decision making impacted by a business as usual reporting relationships between L3 ICs, the RCC and the state, along with the general lack of resource forecasting at the RCC (despite requesting a Resources Officer). The lack of trust which perhaps existed at the levels of the commands compounded this issue. The lack of assurance being provided between the RCC and the SCC about resources, even though it was consistently being raised in requests and briefing lends itself to a belief the current major incident structure did not work during the event.

## FOCUS 4: INCIDENT (TACTICAL) COMMAND AND CONTROL

### Establishment and Maintenance of the Incident Control Centre (ICC)

As previously discussed, the initial ICC was established at KI Base (also Parndana SACFS Station) when responding to the fires on 20 December 2019, including the Menzies and Duncan fires, and was maintained as the Ravine fire operations commenced on 30 December.

Historically, this location has been the preferred base for the KI Group to run operations from, not least due to the fact that the majority of significant incidents on KI occur in the central and western areas. Additional facilities were installed at the Base following the 2007 fires to improve its functionality as an ICC. It has a radio room and small operations room, a training/meeting room, amenities (including a small kitchen and toilets), and an appliance bay (x2). In major incidents the appliance bay and training/meeting room are converted for use as an ICC, together with the radio and operations rooms.



L2 and 3 ICCs are prescribed in *SACFS Operational Doctrine SOP 4.4 – Incident Control Points and Centres*. Facilities that are made available to SACFS as Level 2 and 3 ICCs are required to be annually inspected under:

- SACFS Operational Doctrine 4.4 – Incident Control Points and Centres 11.8 - by the Regional Commander, by October each year.
- SACFS Operational Doctrine 4.4 – Incident Control Points and Centres 12.9 - the state (Incident Management Coordination Unit (IMCU)) who prepare a L3 ICC summary on prescribed templates.

In reality, the review found that both L2 and 3 ICC audits are conducted together by the Region and IMCU annually, which is appropriate and a good joined up approach. The last ICC audit on the KI Base was conducted on 22 August 2018. Based on consideration of that audit by the review, it may be appropriate for a L2 incident.



Photo Credit: DEW

The other audit which is appropriate for consideration is the SACFS Kingscote Brigade ICC audit, which was also last conducted on 22 August 2018. Based on consideration of that audit by the review, it would be fair to say that it is appropriate for a L2 incident.

The ICC review tool is appropriate. It could probably be simplified and become an annexe to the Regional Operations Management Plan (ROMP) to ensure that both are connected and referenced together. The other improvement in the tool could be to include an introductory summary regarding its endorsement or otherwise under Operational Doctrine as a L2 or L3 ICC, based on the detail contained in the audit.

*SACFS Operational Doctrine 4.4 – Incident Control Points and Centres 11.3* states that L2 facilities that do not meet the prescribed criteria may at times be used as an improvised L2 ICC.

*SACFS Operational Doctrine 4.4 – Incident Control Points and Centres 12.3, 12.4* states that L3 facilities, by virtue of the complexities of L3 incidents, including their requirement to support the operations of a multi-agency IMT for the management of larger, more complex incidents, including facilities for support agencies (and the Zone Emergency Support Team (ZEST)).

The initial selection of Parndana as the ICC for the fire was sound. The Duncan fire was within close proximity to Parndana, and it served the initial response well. When the Ravine complex started, given the lessons from 2007, it would have been appropriate to realise the potential of the fires, and move the ICC to a more connected and resilient location on KI.

The ICC remained at KI Base until it was evacuated on the evening of 3 January 2020 when the fire was running in the direction of the township. From late in the evening of 3 January, following brief consideration of the use of the Kingscote SACFS Station, the ICC was established at the DEW Offices in Kingscote, located at 9 Osmond Street. The DEW Offices in Kingscote were not listed as a L3 ICC in pre-planning. However, the office was later assessed post fire in a report commissioned by the Region 1 Commander as follows:

***"it managed [but] there was [sic] some issues around the size and flexibility of the building. The other challenges faced by the IMT when they established themselves was [sic] the lack of furniture and IT infrastructure that delayed the establishment of the team. If SACFS is to use this facility moving forward a permanent lease needs to be established allowing the building to be set up and ready to go all year round. There will also need to be an upgrade to the IT and communications systems available to improve the functionality of the space."***

Kangaroo Island Group Membership, Equipment, Facilities and Resources Report v3.0 01/07/2020

The DEW Office located in Osmond Street was probably the best option available at the time for the L3 ICC given the short amount of time the IMT had to select a new location as a result of the evacuation.

It should be noted however, that the movement of the ICC was suggested by the DCO to the L2 IC on 21 December, but this did not occur at the time as it was assessed as not being supportive of the resolution of the incident at that point. We note, there was no specific location in Kingscote discussed, so it is undetermined where in Kingscote the relocation was to occur to under the instruction of the DCO.

The overwhelming evidence heard by the review regarding the location of the ICC was the belief of the local KI Group that fires should be run from Parndana, and included the Group's experience of running the 2007 incident (also a L3) from that location. It is also important to note that SACFS invested in improvements to KI Base following the 2007 fires, reinforcing its acceptance as the primary ICC for KI.

While the KI Group supported the decision to evacuate Parndana on 3 January, there was a consistent belief that it should have returned to KI Base the next day.

With the requirements of a complex operation, including the requirement to control down and inform up and across Government, the review is of the view that Kingscote is the preferred location for a L3 ICC to be established. The Kingscote location provides access to other support agencies based there, has greater resilience in essential services, and facilities to support accommodation, catering and other requirements as needed.

There are also a range of staging options in and around the Kingscote area. The KI Base at Parndana however, is a critical link in the control process, and is ideal for a divisional command point, particularly for fires in the central and western areas of the Island. Given its location near the centre of KI, it could be argued that it is the ideal location to locate all DIVCOMs throughout the centre, considering its communications links and facilities. There is sufficient room in the building to run up to four DIVCOMs. The location is also ideal for staging and basecamps (which was used) and will be discussed later in the report.

The decision to move the ICC to Kingscote was appropriate. The move itself however, led to an extreme breakdown in the command and control arrangements. Of themselves, these were not due to the centre itself and as such will be addressed later in this report.

In relation to the following analysis and insight, the review notes the allocations that the SA Government provides in its response to the bushfire review has committed to the following in this area:

- Review current facilities for Incident Management coordination and establish a State ICC Facilities Plan and budget requirements.
- Implement a pre-deployment plan integrated with ROMPs and Group Operations Management Plans (GOMP)s to utilise the asset management system.



Photo Credit: DEW

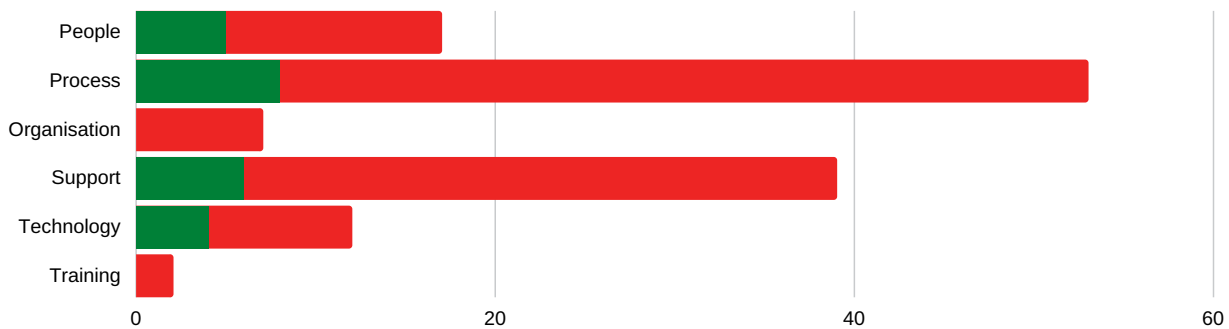


Photo Credit: Stephen Brewster

## ANALYSIS

- The last audit on the two identified ICC sites was in 2018 (which is outside of the doctrinal requirements, again indicating the doctrine perhaps is aspirational and does not match the capacity and capability of the agency). Both do not explicitly confirm Kingscote or Parndana Stations to be suitable L2 or L3 ICCs. There is no current L3 ICC identified on KI, yet the region has been the subject of major fires over time, and historically has generated (along with the Riverland) the most frequent campaign fires in the state.
- The Kingscote DEW Office was established as an ICC under Operational Doctrine SOP 4.4 - 13 - Improvised Incident Control Centre, where the establishment of any improvised ICC is to be approved by the SDC. It is believed that this did not occur due to the urgency of the movement of the ICC. The decision to move the ICC to Kingscote should have been considered at the declaration of the incident as Level 3 on 24 December 2019, and been done in conjunction with careful local input to establish Parndana as a DIVCOM Point.
- The Kingscote DEW Office was not fit for purpose as an ICC. It isolated operations and lacked appropriate equipment and facilities. The SACFS radio was located in the hallway connecting logistics and planning, and the IMT initially had to work around a BaU office presence of DEW staff. Operations were isolated in a separate room and this was not conducive to information flow. However, in the absence of any other site, it was probably as functional as it could be. Post-fire, the Region 1 KI Report has identified alternate ICC sites as Kingscote Football Club and Kingscote SES Compound.
- Despite the efforts of local KI DGOs, the relocation of the ICC to Kingscote caused the operational linkage between KI Base and the ICC in Kingscote to completely break down, and virtually led to two IMTs running on the island. This is discussed further later in the report and is not linked to the performance of the ICC facility.
- It is noted that Region 1 is planning a new Group Headquarters in Kingscote, however at this stage the site will not be suitable for a L3 ICC.

**Insight 8 Analysis - Fundamental Inputs to Capability**



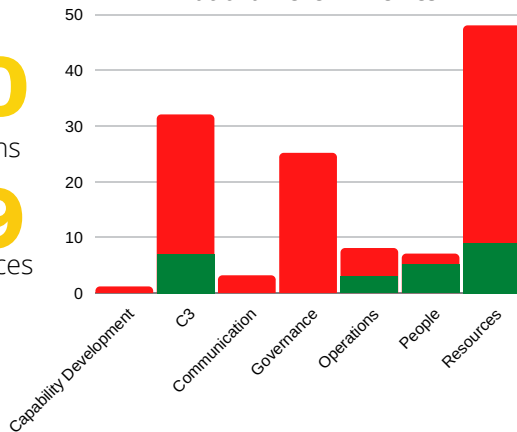
120

observations

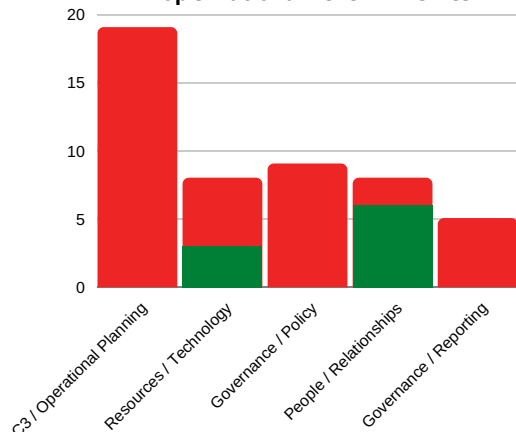
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data sources

**National Level 1 Themes**



**Top 5 National Level 2 Themes**



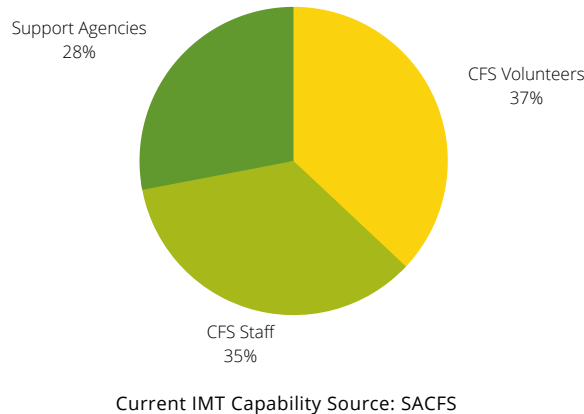
## INSIGHT 8

The planning framework for ICCs in KI is not connected. The ICC audit is not connected to the ROMP, the GOMP has not been updated in 5 years, and the GOMP and ROMP are not publicly available for planning use. There is no current facility on KI that has been identified to meet the doctrinal requirement to establish a L3 ICC.



### Incident Management

As outlined earlier in the report, there was a level of response fatigue across the organisation, with IMT activation starting in late August with deployments to QLD and then continuous IMT and crew deployments to NSW from September onwards. The initial response of only three people to form a Level 3 IMT on the Duncan fire in late December was due to the existing L3 IMT deployment to manage the Cudlee Creek fire. It is also indicative of the pressure that existed on the IMT pool. During the three fires, all four of the SIMT ICs were deployed to the fire, with a number of them on multiple deployments. The IMCU, which activates in an operational posture in the SCC, is responsible for filling of roles on IMTs and consistently failed to fill roles due to personnel simply being unavailable to fill them. Systemically, this is caused by the Level 3 IMTs being staffed by 37% volunteers, 28% support agencies, and the balance (35%) from SACFS staff as shown above. Recognising that most full time SACFS staff have two, three or four rostered roles to fill, and with the organisation facing two concurrent L3 fires, there was simply not the capacity to fill roles.



The unfortunate result of this lack of capacity was untrained staff and volunteers lacking the required competencies were deployed as part of the L3 IMTs. Of concern was that some did not know what AIIMS was, let alone understand the functional roles they were being asked to perform, or have knowledge of the functional management system which is established across SACFS.

There was a general trend not to staff the IMT, and only provide basic resources, at night. This was consistent throughout the Duncan, Menzies and Ravine fires. This was raised in the *Independent Review* of which this review supports.

***"overnight conditions did not provide the usual respite, in fact, firefighters and decision-makers faced some of their worst conditions at night"***  
 (Government of South Australia 2020: Finding 4.1.2)

These nighttime conditions exacerbated IMT performance issues, with inexperienced officers having to undertake just in time training and mentoring, as well as trying to fulfil their roles and responsibilities in a fast moving and complex fire operation. This observation was also made in the *Independent Review*.

The IMT during the Menzies and Duncan Fires was largely filled by a mix of local DEW staff, SACFS members, and a small supplement of staff from both these agencies and the MFS sourced from the mainland. They operated in a cohesive manner and were able to integrate local SACFS crews with FFUs, out of area crews from Port Lincoln and Coober Pedy, along with DEW and KIPT resources to combat the fire, determine incident priorities, produce Incident Action Plans (IAPs) and feed information to the region.

A number of strategic planning options were developed and discussed with region and state levels of command. The review did hear however that there was hesitation to load these options into CRIIMSON due to the open level of access to the system, and without the appropriate context, they could be misinterpreted or understood.

A matter brought to the attention of the review was that on 29 December a functional lead was tasked by the IC (upon request from the state) to prepare a report on an 'unplanned retardant line drop' on vegetation adjacent to the Parndana township that occurred on that day due to concerns raised about the potential impact of the drop on bandicoots. This species had been identified through the discussions about natural values in the IMT as potentially existing in the area. Given the concerns raised by DEW to the IC during the planning process for the retardant line, where he was advised the area was of national significance, and the actual drop exceeded the planned line and retardant was dropped on the habitat, the IC felt it prudent to document the event in the form of a report.

The preparation of this report was a significant distraction for the functional lead on the afternoon of the 29th and overnight into the 30th, as the Ravine fires were being ignited by lighting. The functional lead was the only person in that cell overnight, and noted that the report 'took away from doing real planning stuff' as the Ravine incident commenced. Work on the report commenced around 16:30 hours on the 29th, and was submitted at 04:00 hours on 30 December.



When the Ravine Complex ignited, the discipline in the IMT began to shift. On the morning of 30 December the review heard some examples of this included:

- the KI GO, organised a local flight for intelligence and then went out in the field for the day, which was a pre-arranged Group response; and
- a DEW staff member who held a functional IMT role self-deployed onto the fire ground and commenced operations.

The review heard that there were times the Operations Room at the KI Base had the door shut to the remainder of the IMT, and there was little information flowing between operations, situation and planning to bring information together into a Common Operating Picture (COP).

The review heard that, in general, everyone had good intentions, but there was tension between local KI SACFS members and some of those from the mainland, and perhaps not the level of respect being offered from either side with a view to achieving the incident objectives and outcomes.

In relation to strategies and tactics regarding the management of the Ravine Complex, the review heard that one member of the IMT had raised the option of indirect attack involving burning out the reserve on the day the Ravine Complex commenced, but that there was strong resistance to this approach. There had been other planning occurring canvassing a range of options, including indirect attack involving burning out sections of the reserve, within the IMT prior to the L3 IC handover on 31 December 2019.

We heard that on 29 December, the day before the Ravine Complex ignited, ahead of predicted conditions, DEW had tasked a local D7 dozer contractor and a council dozer to open up the East Melrose Track, they were connected together as a strategic break, that could have been used to burn off. This option continued to show as a fallback option in the IAP, not a primary firefighting option.

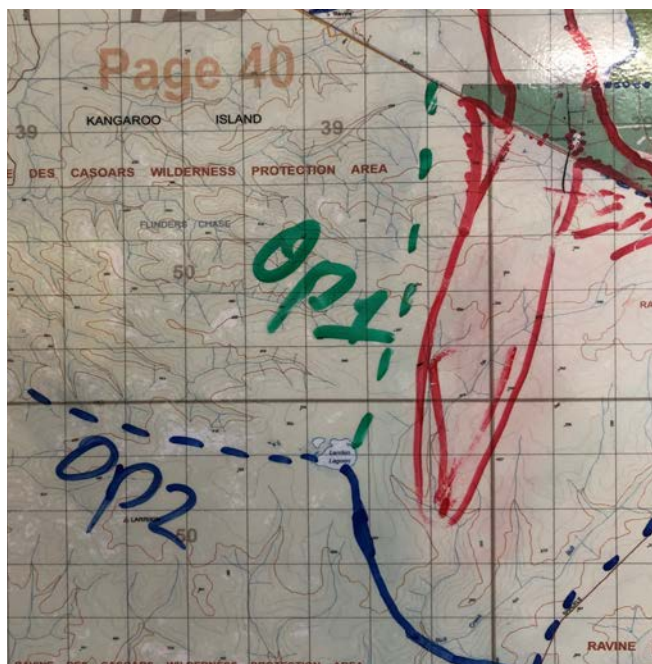


Photo Credit: Stefan Kirkmoe

### 30 December 2019 – 3 January 2020

The incident management activities from 30 December to 4 January are of particular interest to the review as they provide great insight into lessons identified which can be worked on to improve future operations.

The Incident Action Plan (IAP) on 31 December identified the potential for the fire stating:

***“The Flinders Chase and Ravine Des Casoars Wilderness area will be significantly impacted if the heel of the fire is not contained and controlled before the arrival of the northerly influenced winds expected from Wednesday 1st January onwards”. The mission was set “to control the fire within the Ravine Des Casoars Wilderness Area and the areas north of the Playford Highway known as Gosse, Borda and De Mole in order to minimise the impact of fire on life, property and the environment by the 6th January”***

SACFS Incident Action Plan, 31 December 2020

The IAP focused on containing the Ravine Complex fires to the south by constructing mineral earth lines close to the active fire edge and burning off between the line and the edge. The review heard from a number of commanders and plant operators that the understanding of progression of control lines in the IMT versus what was actually happening on the ground was not synchronised. This appeared to have led the IMT to believe that control lines had been completed and finished, when in fact they had not, due to access issues or coordination of plant.

The map from the IAP on 2 January identifies the West End Highway as the fallback line at that stage for operations. Other strategies to the north and west included the construction of containment lines to the west of Cape Borda and use of local roads off Flinders Way for containment to the east.

There is no consideration in the IAP, given the four-day forecast, of the level of difficulty that would exist in holding a fire in the predicted conditions, and the consequent need to contemplate a more indirect strategy of indirect attack on the fire by burning off sections of the reserve (for example, one was provided to the review as using Shackle Road to burn out the eastern block from the west to the east (out to West End Highway), and down to the East Melrose Track (or the Entrance Road) and then working off the West Bay Road (or West Melrose Track). The reserve was the centre of gravity for the incident, and it was clear from the forecast that the areas around the southern and south-western corner of the reserve would be the pressure points come the predicted extreme fire danger day on 3 January.

On 1 January 2020, the operational strategy surrounded finishing the construction of mineral earth lines and burning off them in an attempt to contain the fire within the control lines. The review heard that the IMT continued to ask for additional firefighting resources during this period to combat fatigue that was setting in, and to prepare for the forecast worsening weather conditions. However, in many cases these resource requests were not met. There was questioning between command levels about the need for additional resources and push back for the IMT to resolve accommodation issues, when they were already under stress with limited resources.



Photo Credit: Stefan Kirkmoe

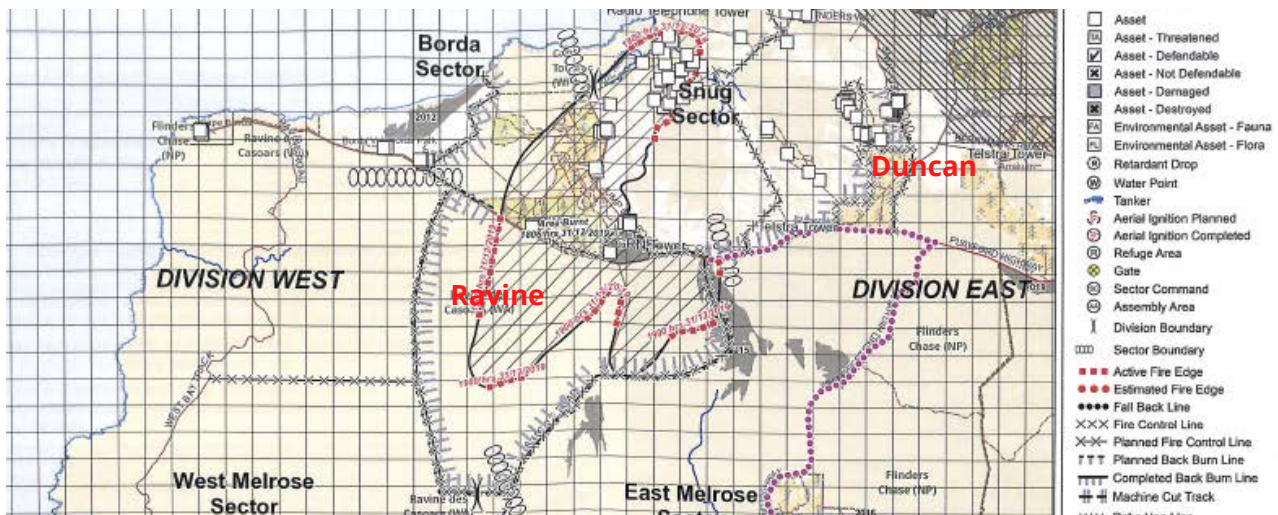
Additional logistics support was on the way, however integration with the local logistics was found to be difficult with the tension apparent once again between deployed and local logistics personnel. The highest FFDI on the day was predicted as 21 with generally stable westerly winds, 24% humidity and a temperature of 26°C, as referenced in the SACFS Incident Action Plan, 1 January 2020.

The key risks identified for 1 January were listed in the IAP as:

- The entire FCNP (including species impacted and not yet recovered in full since the 2007 fire)
- KIPT Plantations (\$20M of assets of pine and blue gum)
- Private properties to the north of the WPA (and north of Borda Road) in and around Investigator Way and Snug Cove, if containment strategies were not successful.

The incident map at 12:30 hours on 1 January shows the western edge of the Ravine Complex fire edge burning to the west of Shackle Road across to the western containment line approximately two thirds of the way south of the reserve off the Playford Highway (Borda Road).

It shows the eastern side of the complex meeting a 2017 prescribed burn scar and meeting the southern containment line, along with active fire north of the Playford Highway in and around the Jump Off Road area, as shown in the SACFS Incident Action Plan Map 07:15, 1 January 2020.



Supplied: SACFS



The review watched footage of the community meeting, held in the afternoon of the 2 January 2020 in Parndana. The key messages to the community during that meeting as summarised by this review, were:

***The IC spoke about winds prevailing from the south, and that the wind direction would change the next day, and the fire to the south of the initial Ravine fire (a spot over) which was causing concerns based on the weather the next day.***

***The weather situation was explained well by the IC and it was made clear that the fire was uncontained and would travel to the south through the park.***

***The elevated risk was explained to the community based on the Ravine fire running to south, however it was highlighted that this could be exacerbated with any other break out.***

***That the strategy for the IMT was to hold the fire to the west of the West End Highway in the reserve during the next day, 3 January 2020, including back-burning from the Highway edge if needed.***

***The IC talked about the vegetation and dryness of the island and noted that the best efforts could fail, and the fire could cross the west end highway, perhaps later in the day.***

***The IMT has requested further resources for the next day.***

***The IC used the words "bleak outlook", and other terms to convey to the community an understanding of the situation they were facing.***

***That "we don't want to lose life the next day, and if you are on the edge of the park and not prepared, don't be there if you are not prepared."***

***SACFS shared key messages about safety, notably: don't evacuate at the last minute, stick to warnings, follow your bushfire survival plan.***

***A number of members of the audience operating tourism businesses on the south coast asked whether they should evacuate their guests either later on 2 January or early on the 3rd.***

***There was a question in relation to why the park was not burnt out from the start, and the comment made that any attempt to back-burn on 3 January would result in the fire going straight over the head of the ignition crew. The Incident Controller advised he did not want to introduce new fire at this stage and have that active for the next day.***

***There was general discussion about recovery activities for the fires which had already occurred to that point, as opposed to a targeted focus on getting through tomorrow***

***It was advised that Flinders Chase National Park was closed but Kelly Hill Conservation Park remained open.***

The Islander Facebook Site – KI Community Meeting 2nd January 2020

The review believes that this meeting had the potential to have saved significant injuries and/or deaths by advising the community of the risk that was present and emerging.

From the interviews conducted during the review, it was apparent that a good deal of the planning work undertaken on 2 January 2020 by the IMT was focused on the protection of Rocky River Precinct, including the Visitor Centre, in FCNP.

Under a request from a Liaison Officer (an advisory not a decision-making role), a member of the Planning Unit, while uncomfortable doing so, prepared an asset protection plan for the precinct and provided it to the functional lead. This process resulted in a plan for protection of the assets in the precinct which the review was informed was intended to include a range of triggers and safety caveats that were to be applied in order for it to be a viable plan.

There was a significant amount of work done on the protection of this government asset, including planning for a LAT drop to protect it. However, there appeared to be very little effort applied in relation to the planning of the protection of private assets along the South Coast Road, despite the ICs advice that it was possible for the fire to cross the West End Highway on 3 January. The execution of the operation to protect the Rocky River precinct in FCNP is discussed in length in the Safety section of this report.

The review heard that on the afternoon of 3 January 2020 the KI GO organised some plant to construct additional containment lines to the east of the fires constructing mineral earth breaks through pasture and other vegetation. It is unknown how connected this was to the broader IMT strategies, as we cannot see them reflected on the operational maps produced over the period. Interviews revealed the IC was however was aware the work had been conducted.

The IAP for the night of 2 January 2020 focused on identifying key risks, and the mission remained the same. The general strategies were around patrol and mopping up of the sectors. For the IMT, tasks existed around liaison, strategic planning for risk, sub-plans for traffic management and demobilisation for transition to recovery. Finally, public information and awareness was to be maintained. The 21:45 hours Incident Map on 2 January shows active fire on Ravine 2 on the control line established at 13:00 hours, active fire to the east of Gumridge plantation with spot fires throughout the day.

The spot weather forecast issued at 06:10 hours on 3 January predicted FFDIs reaching Severe (59) by 1100hrs, and Extreme (77) by 15:00 hours. Winds were forecast to reach 40kph, gusting to 60kph by mid-morning and sustain at the level until early afternoon when they were forecast to very gradually reduce. The Mixing Height (MSL) was predicted at 3100m at 15:00 hours. Relative humidity was forecast to reduce to 9%, with the temperature reaching 39°C

A State Controller (SC) Intent was issued by the SC / CO from 20:00 hours on 2 January 2020 until 08:00 hours on 4 January based on the conditions predicted across most of South Australia.

The IAP brought to the attention of crews that given the extreme fire danger rating forecast for KI on 3 January, the priority was the safety of fire fighters and support agency personnel, followed by the protection of life and property. The plan stipulated that firefighters should always work from an anchor point and have clearly defined safety zones and escape routes. One of each was articulated in the plan, with no triggers.

Fire Progression was stated as having the potential to run significant distances to the south and then to the east and north-east after the wind change. The prediction was for Extreme fire danger.

The areas of concern for the day were listed as:

- Southern area of the fire and the risk of the fire running south into FCNP and major assets including the Visitors Centre
- Hotspots in Borda Sector which could impact Cape Borda
- Hotspots east of Shackle Road.

**3 January 2020**

**Little change was made to the Key Risks and Exposures nor the mission**, in the IAP for 3 January 2020. The execution of the plan was around applying on ground safety assessments (LACES (the most basic level of safety taught in BF1 to all personnel for safety)), undertaking asset protection where direct attack did not pose an option to protect life and property, issuing of timely and accurate public information, local SACFS and MFS integrating to respond to local 000 calls, air resources supporting the ground, and minimising impact of fire and undertaking suppression activities in the WPA.

The review notes the priorities from the night before, when the IAP was considering matters such as demobilisation, changed within 12 hours. This is evidence that supported many which spoke with the review that there was an ongoing practice of the night and day shift IMTs changing each other's IAPs based on differing views regarding risk and the priorities for planning.

On the Resource List for 3 January, the Strike Team that was specially intended to protect the FCNP was listed as arriving on the Island (at Penneshaw) at 10:50hrs, and being present at staging by 12:30 hours. It was known that the fire had well broken containment lines by that stage of the day, with a public information map issued at 11:30hrs, showing the prediction of the fire running to the south, leaving FCNP and crossing the West End Highway before then start moving to the east-north east.



IDS20319  
Australian Government Bureau of Meteorology  
South Australia

**Incident Weather Forecast for Ravine [ 1348383]**

Issued at 6:10 am CDT on Friday 3 January 2020.

|   |                           |
|---|---------------------------|
| Incident Type: Wildfire                 | Website Form No: 009      |
| Forecast Location: 17.5 km WSW of Gosse | Request No: 9             |
| Latitude/Longitude: -35.8293 136.7935   | Fax Number:               |
| Elevation (metres ASL): 200             | Contact Ph: 0427 749 312  |
| Fuel Type: Scrub                        | Contact Name: Ben Birbeck |
|   | Email:                    |

**Significant wind changes during the forecast period, including uncertainties**

Northeasterly winds 20-30 km/h turning northerly 35-45 km/h by late morning then west to northwesterly 25-35 km/h in the late afternoon ahead of a southwesterly change 25-35 km/h between 7-8pm. Winds will be gusty at times during the morning and may also be stronger for a period and gusty with the southwesterly change. Timing of the wind change could be +/- 1hr.

**Forecast thunderstorm potential, precipitation and cloud, including uncertainties**

Areas of reduced visibility in smoke. Some high cloud increasing during the day with a slight chance of a high based shower or thunderstorm, with little rainfall, developing in the evening then continuing into early Saturday morning. Precip more likely after midnight though only expected to be around 1-3 mm through until the end of the forecast period. Showers are forecast to continue through Saturday.

**Spatial variation of conditions and other important information**

Winds likely to vary about the complex topography. RH lowering to 5-15% in the afternoon. Maximum temp around 39C.

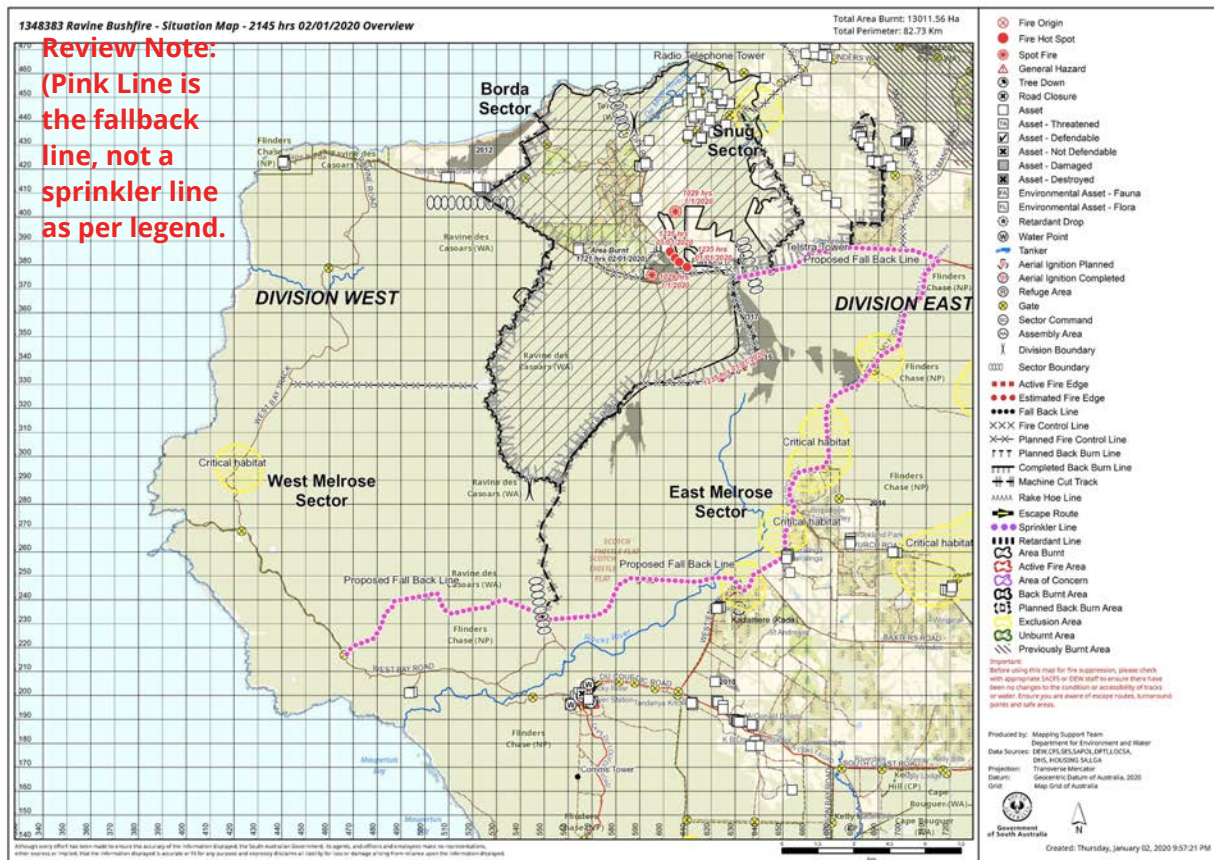
| 18 Hour Forecast commencing 0800 hours Friday 3 January 2020 |          |           |        |                       |       |      |                       |                       |      |      |         |                    |     |
|--|----------|-----------|--------|-----------------------|-------|------|-----------------------|-----------------------|------|------|---------|--------------------|-----|
| Drought factor: 10   |          |           |        | Curing value (%): 100 |       |      |                       | Fuel Load (t/ha): 4.5 |      |      |         |                    |     |
| Local Time   | Temp (C) | Dewpt (C) | RH (%) | 10m Wind (km/h)       |       |      | 1000m AGL Wind (km/h) |                       | FFDI | GFDI | cHaines | Mix Height (m) MSL | TAL |
|  |          |           |        | Dir                   | Speed | Gust | Dir                   | Speed                 |      |      |         |                    |     |
| 0800   | 25       | 8         | 34     | NE                    | 30    | 45   | NNW                   | 65                    | 18   | 19   | 10      | 200                | 0   |
| 0900   | 29       | 6         | 23     | NNE                   | 35    | 50   | NNW                   | 65                    | 34   | 35   | 10      | 700                | 0   |
| 1000   | 32       | 6         | 20     | NNE                   | 35    | 50   | NNW                   | 65                    | 42   | 41   | 10      | 1100               | 0   |
| 1100   | 35       | 5         | 16     | N                     | 40    | 60   | NNW                   | 65                    | 59   | 65   | 10      | 1600               | 0   |
| 1200   | 36       | 5         | 15     | N                     | 40    | 60   | NNW                   | 60                    | 64   | 68   | 11      | 1900               | 0   |
| 1300   | 38       | 5         | 13     | N                     | 40    | 60   | NNW                   | 55                    | 73   | 77   | 11      | 2400               | 0   |
| 1400   | 39       | 3         | 11     | NNE                   | 35    | 55   | NW                    | 55                    | 72   | 65   | 11      | 3000               | 0   |
| 1500   | 39       | 1         | 9      | N                     | 35    | 55   | NW                    | 55                    | 77   | 69   | 11      | 3100               | 0   |
| 1600   | 37       | 1         | 10     | N                     | 35    | 50   | NW                    | 50                    | 69   | 63   | 11      | 2600               | 0   |
| 1700   | 34       | 2         | 13     | NW                    | 30    | 50   | NW                    | 50                    | 50   | 40   | 10      | 1400               | 0   |
| 1800   | 29       | 6         | 23     | WNW                   | 30    | 45   | NW                    | 50                    | 30   | 27   | 10      | 600                | 0   |
| 1900   | 25       | 11        | 41     | WSW                   | 30    | 45   | WNW                   | 45                    | 14   | 17   | 9       | 400                | 0   |
| 2000   | 21       | 14        | 64     | WSW                   | 30    | 45   | W                     | 45                    | 6    | 11   | 8       | 400                | 0   |

Supplied: SACFS





Given the level of planning and advice to the community on 2 January, and the potential for the direction and travel of the fire on 3 January, the review was surprised to find that at that point there was no consideration of movement of the IMT to Kingscote, in order for the IMT to operate at a safe and strategic level to manage the incident, while retaining and converting KI Base into a DIVCOM point.



Supplied: SACFS

The review is aware, from data supplied by the BoM and contributions from participants in interviews during the review, that the fire began to crown to the east of Cape Borda and was burning along the nearby cliffs soon after dawn on 3 January.

This area was inaccessible to ground crews as the cliff face is almost vertical in nature, and the fire could only be fought from the air. It then progressed to the south, through the Ravine des Casoars WPA and into Flinders Chase National Park. At 13:35 hours on 3 January, discussions were still occurring in relation whether to burn off the West End Highway, and at 13:46 hours there was a direction that no burns were to go ahead.

The initial fire front reached the Rocky River precinct at approximately 13:50 hours impacting the visitor centre, heritage accommodation, Flinders Baudin Research Centre, Ranger houses, camping area, and works depot, where a significant burn over and subsequent entrapment occurred of the entire Strike Team that had been allocated into the area, including a freelancing tree removal crew.

The review heard that the area was impacted by two successive crowning fire fronts, the first from the north-west and the second from the north-east. No further commentary on the outcome of the subsequent actions of the Strike Team or of what occurred will be covered in this report, as accident investigation is out of scope. However, the safety section of this report will address the planning and decision making associated with this incident.

The BoM, Meteorological Report on the Ravine, Kangaroo Island Bushfire, 3 January 2020 (the *BoM Report*) confirms that a pyro-cumulus cloud was visible on satellite imagery from around 13:30 hours (The *BoM Report: 24*).

The BoM report identifies in their post fire analysis of the conditions on the day that the aerological (data) were “not favourable for pyro-cumulus cloud formation due to lack of moisture.” The Bureau analysis continues:

***The presence of pyro-cumulus cloud above the Ravine fire suggests contribution from an additional moisture source. This moisture is most likely sourced from the maritime environment surrounding the island. Large amounts of heat and moisture released by the fire would also contribute to the convective process. Pyro-cumulus increased in extent mid-late afternoon coincident with observed Ravine fire activity. The smoke plume became obscured by high level cloud after 4.30pm.***

***Pyro-cumulus formation is consistent with strong updrafts in the smoke plume which can enhance low level inflow. Low-level winds in the vicinity of the fire may have been modified in speed and direction from the environmental flow in response to the energy released by the fire. Strong vertical motion in the smoke plume and pyro-cumulus can also support ember transport and increase potential spotting distances.***

***The pre-frontal trough and cold front moved across the island between 5 and 7.30pm. Hot and dry northerly winds decreased to 20-25 km/h during the late afternoon and evening ahead of the wind change. Temperature dropped by 2-5°C with a small increase in humidity and wind speed (to 20-30 km/h) as the wind change moved across. This pre-frontal northwest to westerly wind change moved over Cape Borda just after 5pm then SACFS E just before 6pm, Parndana between 6.30 and 7pm and Kingscote Airport at around 7pm.***

***Arrival of the second wind change behind the cold front produced stronger southwest to southerly winds. This change arrived at Cape Borda by 6.30pm, SACFS E just before 7pm and Parndana and Kingscote Airport around 7.30pm. Temperatures rapidly dropped while relative humidity steadily increased behind this change. Wind speed increased to 30-45 km/h with 50-65 km/h gusts shortly after the change then surged to 40-55 km/h at Parndana with 75 km/h gusts.***

***Wind observations for 3 permanent (Automated Weather System (AWS)) near the Ravine fire are shown in Figure 21. Strong northerly winds persisted until around 6pm. Wind speeds surged and lulled over land AWS sites with the trough passage and second wind change between 6.30 and 7.30pm. Strongest winds occurred behind the front in the south to southwest winds during the evening.***

The BoM Report, 2020

The analysis of the weather conditions on 3 January outlined in the *Independent Review* noted:

***“complex fire and atmospheric interactions feature in major fires on Kangaroo Island”***

(Government of South Australia 2020: 37)

The *Independent Review* also cites modelling, undertaken by fire scientist Associate Professor Kevin Tolhurst, which indicates the significant impact that the pyro-convective activity had on the fire behaviour on 3 January in terms of its extraordinary Forward Rate of Spread, extreme degree of spotting activity and highly erratic nature. There were also multiple reports (and photographic records) of fire generated vortices in the afternoon and evening of 3 January.



Photo Credit: AJ Daniel



Photo Credit: Lucas Hobbs



The key focus in the conditions that ensued on the evening of 3 January was crew protection, with crews throughout the fire ground doing the best they could facing burn overs (*as defined by AIDR/AFAC*) and entrapments, finding safe places to refuge, and undertaking rescues – including personnel from the Southern Ocean Lodge.

The fire was simply too fast-moving, erratic and dangerous to attack, and the only option for crews was to seek protection and wait for conditions to ease. For a substantial number of crew trapped on the western end of the Island who were initially directed to camp on the West End Highway for the night, the primary task was to find a safe passage to return to Kingscote. This group included the personnel rescued from the Southern Ocean Lodge, the review heard this party included a pregnant woman. This convoy eventually made it through to Parndana and Kingscote in the early hours of 4 January, passing the two deceased persons, hundreds of dead livestock, and burnt out homes and buildings along the Playford Highway in the process.

As mentioned earlier, a 72-person strike team landed at Kingscote on the evening of 3 January to relieve local crews. At the same time, the IMT was evacuating to Kingscote, and many crews were seeking safe refuges or undertaking property protection. There was no planning for what appliances this strike team would utilise, and it was not until 01:00 hours on 4 January that they mobilised, when vehicles started being returned to Parndana and Kingscote. This Strike Team was then required back at Kingscote 4 hours later to return to Adelaide.

As noted, there was a strong view among locals that the IMT should have returned to Parndana on the 4 January.

The IMT did not relocate back to Parndana, and in the opinion of this review, that was appropriate. However, what ensued was the setting up of a complete disconnect between the IMT at Kingscote and those activities that were being run out of Parndana.

Plant, local brigade resources and FFUs were being tasked outside of the IAP from KI Base, and only very limited intelligence via specific individuals was shared between the two centres. The lack of the integration led to planning delays, not utilising the resource pool to the best ability of the IMT, and a disconnection between the western end of the fire to the eastern edge.

It is acknowledged that there was a community need to have the KI Base remain open. This was a significant need. The review heard that the community around the central and western end of the Island was reliant upon KI Base for information and support in the immediate aftermath of the events of 3 January.

Local residents dropped into and called the base continuously on 4 January, and in the days following. The majority of volunteers residing in the western and central areas of the Island were personally impacted by the fire, in a state of shock, and seeking mutual support and assistance. While outside of the scope of this review, it appeared that KI Base needed to have been established as a relief and recovery centre at this time.



Photo Credit: Brett Wittwer



Photo Credit: Australian Defence Force



Photo Credit: Joshua Branson



Photo Credit: Josh Hann



Photo Credit: Brett Sanders



Photo Credit: Josh Hann

However unsatisfactory the relocation of the IMT to Kingscote was from a local perspective, this did not justify running a separate operation that was not integrated into the overall management of the incident under a single IC. As noted earlier, there were options to integrate the use of KI Base into the operation, while retaining its role within the community.

The review acknowledges that there are historical views regarding where incidents are run from KI, and the relationship between the KI Group and Region 1 staff is not optimal. The review found that many of these issues are well ingrained and stem from conflict over long term issues which have not been resolved. With the addition of emotion, trauma and fatigue, it would be reasonable to assume that this conflict magnified.

As this event occurred the L3 IC was a DEW employee. He was aware of the conflict and local issues that existed, but was also trying to re-establish an IMT, connect it with the ZEST, deal with national and international media, and it would be reasonable to accept he had little desire nor capacity to deal with these issues, which largely stem back to a SACFS issue.

The lessons from the 2007 event also reinforce this finding. The SACFS RC, Region 1 was on the island, however there appeared to be little intervention in this breakdown of command, and upon reflection it may have been appropriate to have had a senior officer (with the rank of at least Assistant Chief Officer) deployed to the Island to manage the SACFS accountability issues resulting from the disconnect between the IMT and the KI Group. This is further discussed in an ensuing section of the report under Accountability.

#### 4-9 January 2020

Staff and volunteers deployed to KI in the following days to assist in the IMT ranged from those with no training or acceptable in AIIMS to being fully qualified and competent.

There were good examples where staff and volunteers worked extremely hard to integrate with the local arrangements, and many examples where human factors led to conflict between the local KI members and personnel deployed from the mainland. Where it worked, it worked well – the mainland crews and IMT worked within the local arrangements and listened to local knowledge, and the locals respected the capability, capacity and training the officers brought in with them.

Sector Commanders and DIVCOMs were often selected from crews arriving, rather than from those who should have been qualified in terms of the position descriptions and held the relevant competency under Doctrine. The IMT were not able to check skills and capabilities, nor basic things such as driving or crew leading capability, as IRIS was not being used, and that interrogation could not readily occur.

The IMT activities from 4-9 January primarily revolved around tying in the eastern edge, as there were worsening conditions predicted to arrive on 9 January.

The review heard that on 9 January, which was not forecast to be as bad as 3 January (FFDI: Severe), people were second-guessing themselves, and that a generally risk-averse attitude was being taken. This behaviour allowed the fire to progress further east, through native vegetation corridors.

A significant number of observations noted that there was a lack of fire ground discipline on 9 January, that crews were tasked to undertake direct attack and only fallback to the airport if conditions were unsafe, in order to defend the airport as critical infrastructure. Many crews were reported to have undertaken no attack on the fire, fell back almost straight away to the airport, and then evacuated from the airport back into Kingscote. However, local commanders commented that the conditions were largely manageable and there were multiple opportunities for suppression.

Their observation was that, in many cases, there were inexperienced crews being led by inexperienced commanders who lacked the confidence to attack the fire. The review's own ground observation of the aftermath of the fire run on 9 January was that the behaviour in roadside vegetation in many areas was not extreme, and that in most locations the fire did not extend into pasture, rather remaining in the roadsides and drainage lines.



In the latter part of the fire, during January and early February, the review heard of positive leadership examples. As identified earlier in the review, one IC in particular visited the basecamp periodically to listen to concerns and experience of the crews. Attempts were made to boost crew morale in what would be a long mopping-up and patrol operation.

The concern of roles and responsibility of the control agency became an issue for ICs to manage with the transition to recovery, notably what the SACFS is, and is not, responsible for. The IC, as the link into ZEST, was being drawn into water replenishment, track rehabilitation and work that could be better defined with recovery agencies across South Australia.

By this time the issue of financial management had become significant for the IMT, and the review heard that there were many unpaid invoices, resulting in some local businesses running close to the wire.

Finance Officers were requested several times throughout the incident however, it was not until late in January that they were deployed. This meant that significant amounts of money were expended and, in many cases, invoices outstanding. The end result of this was that Region 1 had to deploy two staff members for six months to resolve the financial issues created from the fire. The review heard that there are still claims being processed and worked through, nine months after the incident was declared safe.

### Post 9 January 2020

The fires progressed over the month, of which were dealt with by rotating strike teams to supplement the local response. Most of this period appeared to operate well, and began to de-escalate from the 2nd week of January 2020. The demobilisation of the incident was well planned and managed. A fleet officer was deployed to manage the fleet, and Region 1 deployed an officer to work with local brigades to do a stock take on where each group was operationally, facilities, equipment etc. which then resulted in this being documented in a report to the RC, Region 1.



Photo Credit: Steve Schueler

In regard to the following analysis and insight, the review notes the allocations that the SA Government provides in its response to the bushfire review, and has committed to the following in this area:

- Develop IMT and fire ground:
  - succession planning
  - recruitment strategy
  - additional training and development for leaders
  - training for key roles.



Photo Credit: SA CFS Media

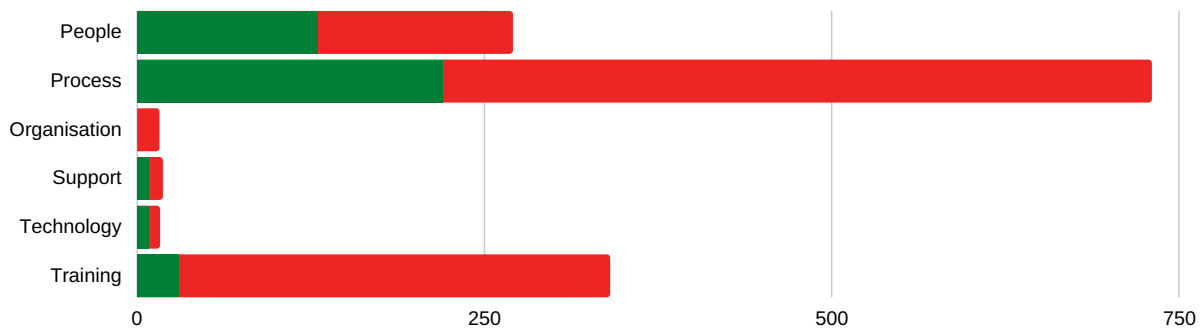


Photo Credit: Rob Hartill

## ANALYSIS

- Everyone on the IMT acted in good faith and tried to assist, however many were limited to their own capability and competence as they were not appropriately trained and accredited in the roles they held.
- In many cases IMTs were not operating as a team, operations were not feeding intelligence and therefore planning was not operating with the full picture, IAPs were being changed each shift, and resource lists were being changed based on opinion rather than evidence.
- The break down in the control function between Kingscote and Parndana was not acceptable, and lead to sub-optimal outcomes. Many told the review that this has been an issue for many years, and stems from unresolved conflicts, which is also evidenced in the 2007 lessons.
- The opportunity to embrace local knowledge and integrate with AIIMS trained personnel worked well in some cases, but in many it did not, and the review believes this to be the result of unmanaged human factors driven from both sides.
- The IAPs are not signed at a time, only a date. This doesn't allow complete post-event analysis due to the lack of understanding provided regarding the time of approval. Many of the IAPs supplied to the review were drafts, so it was not possible to determine if a final had been approved.
- Two of the four L3 ICs from the SIMT are from DEW. While understanding that DEW is a SACFS brigade, and they therefore come under the control of the SACFS CO when operating, they are still employed by DEW. Consideration to IMT joint policy and SOPs could be given in order to reflect and further formalise these coordinated firefighting arrangements.
- It is the opinion of the review that a disproportionate level of attention was given in both planning and operations to the protection of the FCNP Visitor Centre and Rocky River Precinct versus private assets to the east of the West End Highway. This was in spite of the IC outlining, at the Community Meeting at Parndana on 2 January, that the fire was likely to run through that area.
- It is the opinion of the review that should there have been better connection of information across the IMT in the days leading up to the 3 January and on the day, better resource management could have occurred (for example, the crews that sat on the West End Highway waiting for burn approval had nearly 90 minutes before being re-directed to the east to set up for what the review believes would have been defensible property protection in a number of cases).

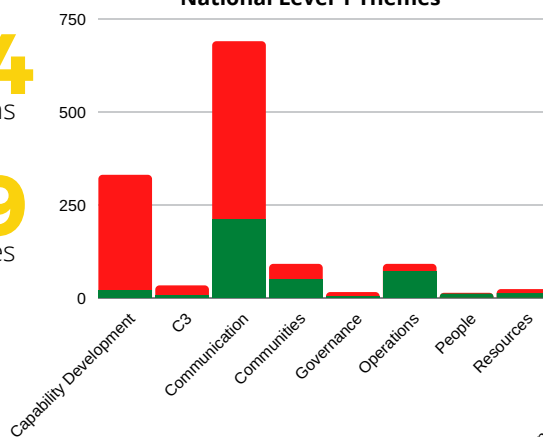
**Insight 9 Analysis - Fundamental Inputs to Capability**



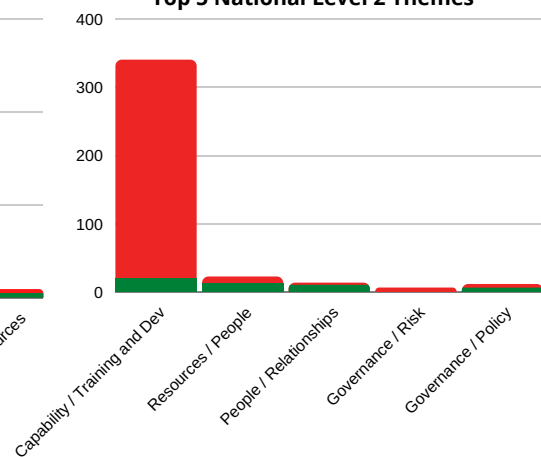
**1394**  
observations

**19**  
data sources

**National Level 1 Themes**



**Top 5 National Level 2 Themes**



## INSIGHT 9

The IMT performance was mixed during the nine weeks of operations.

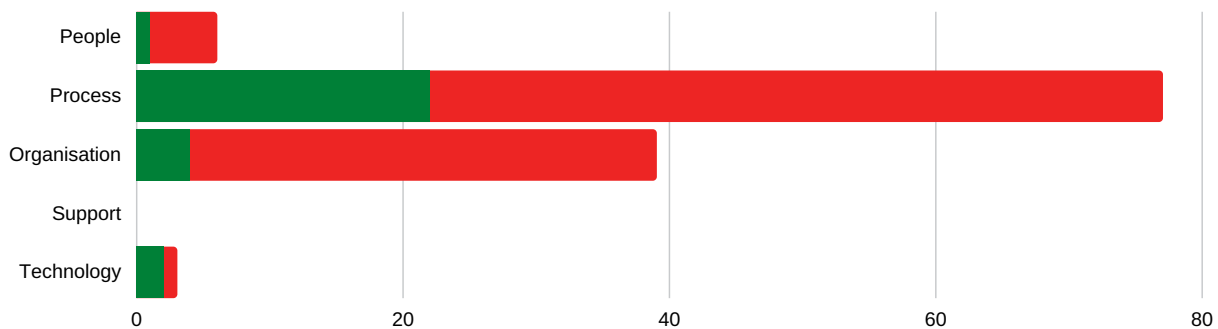
Where it worked well, we found there were:

- Trained and competent personnel in both AIIMS and fire at L3.
- People with human factors awareness including emotional intelligence and the ability to work across agencies and with the community.
- Respect for the local knowledge available to them.
- Respect for a multi-agency response.
- There was a finance officer in place, and financial delegation was clear.

Where it did not work well was when:

- People were untrained, or lacked experience and competence in AIIMS or L3 incidents
- Agendas of employed agencies were put ahead of the multi-agency strategies
- Out of area officers dismissed local knowledge, and local crews dismissed the capabilities that mainland crews and IMT brought with them.
- The ratio of day to night IMT dropped from 20 through the day to 1 at night ahead of predicted extreme conditions
- People did not respect the coordinated firefighting arrangements and/or overruled others in the IMT based on opinion not fact.

Insight 10 Analysis - Fundamental Inputs to Capability



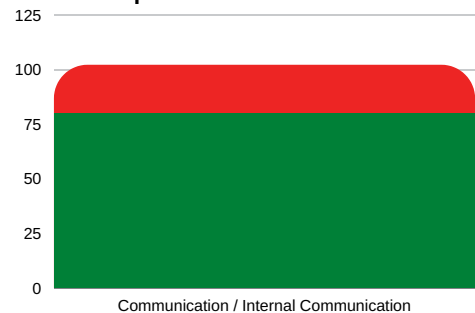
103 observations

6 data sources

National Level 1 Themes



Top 5 National Level 2 Themes



## INSIGHT 10

Communications within the IMT (including between Divisional and Sector Commanders) were difficult. While sometimes this was due to technical issues such as Very High Frequency (VHF), Government Radio Network (GRN) or mobile phone service across the island, the delivery of briefings lacked detail, adherence to doctrine, (such as use of the SMEACs format) or use of technology to remotely brief, given the size of the island. At times, this general lower quality briefing left crews with lack of direction on what was to be achieved. The review heard, that when it worked well, the strategies and objectives for the day were achieved.

## Safety

- There is no doubt that safety is important to SACFS. In fact, SACFS Doctrine has an entire functional theme (Number 2) dedicated to Safety, Personnel and Welfare. The *SACFS Operational Doctrine 2 – Chief Officers' Concept for Operations (2017)* directs the core principle of safety in the SACFS is "Safety First – Come Home Safe" The mantra is that: "Safety First" must be at the forefront of all activities and applied during every operation, as no property or environmental asset is worth the life of one of our own.
- The role of Safety Officer in L3 incident management is generally performed by staff from the South Australian Fire and Emergency Services Commission (SAFECOM). Historically these staff were treated as SACFS members and issued a SACFS uniform. However, it was reported that a decision by a senior SACFS officer recently changed this position, and the SAFECOM Safety Officers are no longer issued the SACFS uniform.
- *SACFS SOP 4.7 – Control Functional Section – Safety Officer* position descriptions define the training required for Safety Officers to be AAIMS training and Provide Strategic Safety Advice at an Incident. Advice was provided to the review that the training module "PUAOPE026A -Provide Strategic Safety Advice" at an Incident" had been intended to be delivered during 2020. It is further understood that this has now been adjusted, is in the final stages of design, and will be delivered during 2021.



Photo Credit: The Islander

We heard that Safety Officers from SAFECOM often take it upon themselves to undertake other training such as BF1. The review supports this approach as Safety Officers should also understand basic fire training in order for them to be able to provide advice into the IMT within a fire context, and this could be extended as a pre-requisite to fulfil this role. The review heard SAFECOM Safety Officers have developed a tool to measure safety and this was used at the KI basecamp. It is a useful tool and should be considered further for implementation into the safety officer process before the training is delivered.

There were positive examples of how operations were safely conducted at times. We note that no major physical injuries were sustained, however, there were a range of issues raised with the review that detract from this assessment:

- There were significant concerns regarding capability of many truck and appliance drivers in the fires. There were multiple occasions when drivers were put onto trucks and appliances they had never driven before, and many drivers had minimal or no experience driving in operational conditions, let alone in extreme operational conditions. This was considered unsafe and also resulted in significant vehicle damage.
- There were concerns that there was no forward medical support available on the fire ground, and with the closest hospital being Kingscote, this was a major concern. While the KI Base was operational, South Australian Ambulance Service (SAAS) were based there and providing first aid medical assistance.
- The failures in resource management meant that information regarding which crews were on what appliances and where they were located was lacking. This has significant safety implications in the event of accidents and medical emergencies, as well as crew welfare management (catering, accommodation, fatigue management etc.).
- There were a significant number of reports of burn over and entrapment events, particularly on 3 January and the review heard the detail of the crew experiences in a number of these situations from some very experienced firefighters. From these renditions it is clear that these experiences were traumatic and the fire behaviour and conditions encountered have had a significant impact on the mental health and wellbeing of the individuals involved. The comment was made to the review, on multiple occasions, that there was amazement that many more people had not been killed on 3 January, and that this was good fortune not good management.



On the positive side, IAPs that were viewed by the review emphasised the importance of the LACES safety messages, and on the days such as 3 and 9 January emphasised key safety messages to crews in the forecast conditions.

*SACFS Operational Doctrine 2.13 – Red Flag Warnings 1.1* defines that Red Flag warnings ensure that all emergency service personnel receive timely and accurate critical safety messages and information relevant to their personnel safety across all hazards. The review saw many examples of how these were passed to ensure that crews had an understanding of the situation, despite the apparent lack of communication between operations and planning in the IMT, with information between these important IMT functions having to be force fed through a closed door, while the IMT was at Parndana. However, it is noted that there was no Red Flag Warning issued regarding the formation of the pyro-cumulus cloud on the afternoon of the 3 January.

The review is of the view that SACFS should include pyro-cumulus and pyro-cumulonimbus among the matters to be subject to such warnings in *SACFS SOP 2.13*, considering that these systems are known to present significant dangers to ground crews, and integrate how this advice flows **directly in the first instance from the BoM** upon detection to the L3 IMT.

### Rocky River Precinct Defence

The terms of reference for this review were not to conduct accident investigation, so matters such as minor physical injuries that were heard through the review were not pursued. The activities of the incident management team are within scope, and one incident the review discovered was of great concern. Namely the planning and execution of the attempt to protect the FCNP Visitors Centre and surrounding precinct at Rocky River. In 2009, the then Department for Environment and Heritage (now DEW) produced a Flinders Chase Fire Management Plan (FMP) incorporating Flinders Chase National Park, Ravine des Casoars WPA, Cape Bouguer WPA and Kelly Hill Conservation Park (DEH 2009).

Very few people interviewed during the review referenced the use of this plan (publicly available on the DEW website) when undertaking their roles on the Incident Management Team. The Plan includes commentary on extreme fire conditions and their likely result when occurring during an incident in the Ravine and Flinders Chase.

***It is broadly understood that strong winds, combined with high temperatures and lowered humidity increases the likelihood of extreme fire intensity and behaviour. Under such conditions, suppression activities are unlikely to be effective in areas supporting Very High and above overall fuel hazard levels (DEH, 2006) and suppression activities will be confined to the protection of life and property.***

***Within Flinders Chase NP and Ravine des Casoars WPA recently burnt vegetation can burn under extreme conditions. On the western end of Kangaroo Island there is a dramatic increase in the likelihood of major bushfire events when the following conditions are experienced: very High to Extreme overall fuel hazard levels; low humidity, decreased soil and fuel moisture, particularly during drought years; strong winds shifting direction during the course of a fire; lightning strikes on the lateritic plateau as a result of increased thunderstorm activity between October and December; and steep terrain.***

***The large complex of fires in December 2007 is an example of a fire that occurred during a period of extended drought. On the 6th December, lightning ignited a series of fires that burnt over 72 000 hectares of DEH land on Kangaroo Island under predominantly Moderate conditions. The largest fire burnt approximately 60 000 hectares of Flinders Chase NP and Ravine des Casoars WPA. Rugged terrain, dense native vegetation and erratic weather conditions made the fire difficult to contain. Over 1 200 volunteer firefighters and support crews worked for over 10 days to bring the fires under control. It is therefore imperative that the development and implementation of objectives, strategies and on-ground actions reflect the conditions possible and resultant risk. The potential of bushfires must be recognised along with the likely impacts on both DEH and private land.***

***The effect of climate change on fire frequency and intensity is the subject of much speculation, however modelling indicates that the incidence of extreme bushfires may increase 25% by the year 2050 (Lucas, et al., 2007). The potential impact of increased fire frequency and intensity as a result of climate change may require more active measures to be adopted to limit the impact of fire on the community (Lucas, et al., 2007).***

Flinders Chase Fire Management Plan Incorporating Flinders Chase National Park, Ravine des Casoars Wilderness Protection Area, Cape Bouguer Wilderness Protection Area and Kelly Hill Conservation Park (DEH 2009).

The Flinders Chase FMP also noted that “during the risk assessment process it was identified that there is a high risk to residents living at Rocky River if a fire threatens.”

One of the Objectives of the Flinders Chase FMP was to improve the defendability of significant built assets within the reserves including the Rocky River Visitor Centre precinct.

The Risk Mitigation in the FMP to defend the centre included:

- B-zone (350 to 1000 m) to buffer the Rocky River Precinct predominantly through prescribed burning, using the existing track network & low fuel areas as control lines. Note that the area immediately south of the park residences is to be maintained mechanically. It is understood this latter work was undertaken.
- Fire protection system to be installed on park residences. **It is understood this had not been implemented.**

This is important to note when considering the decision to defend the property.

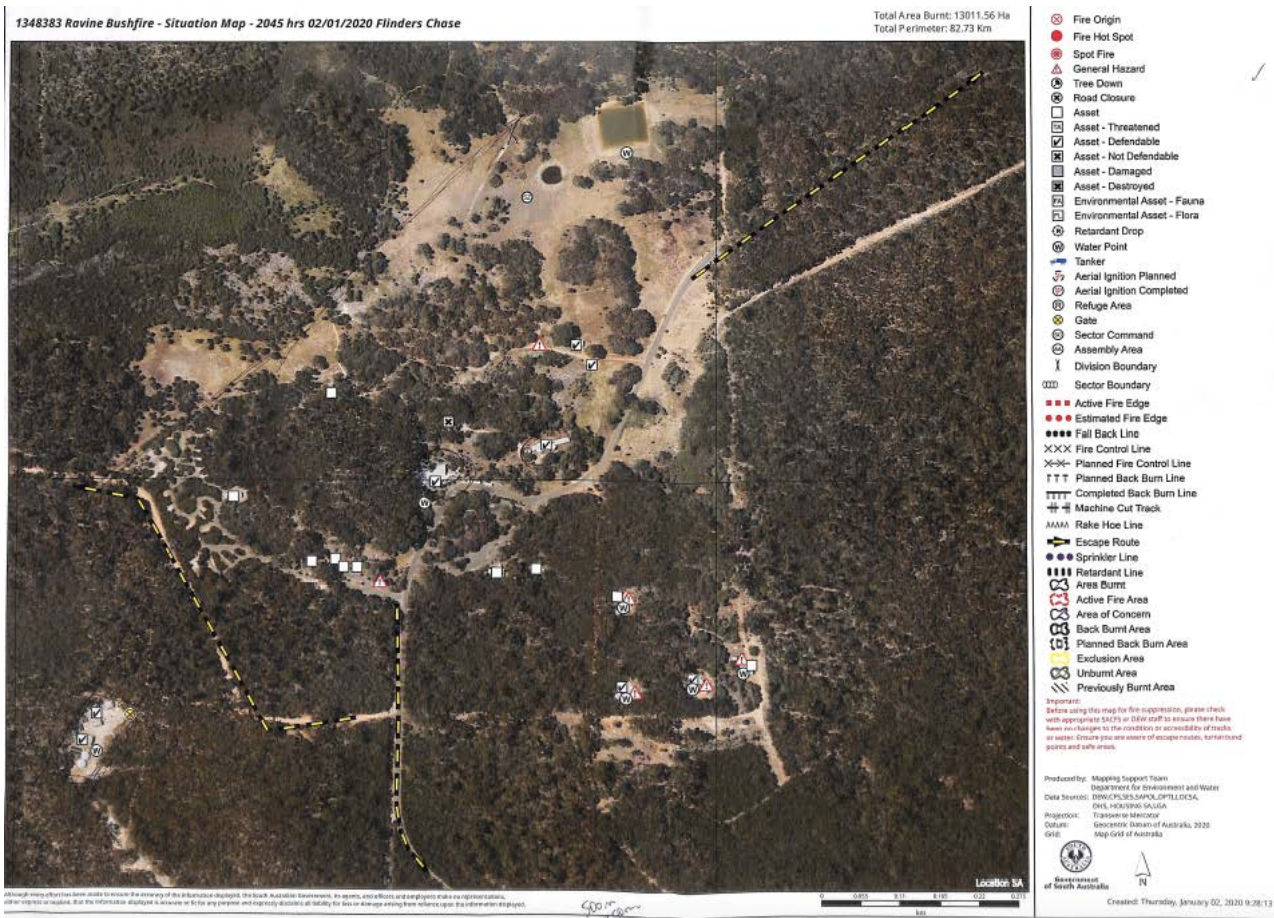
A member of the IMT was tasked on 2 January to develop an asset protection plan for the precinct, which was done using a risk assessment for the area completed by DEW officers.

Both DEW officers worked at Flinders Chase, and one lived on site in a Ranger House in the Rocky River Precinct. Concerns were raised at the time by the IMT member to a functional lead regarding the plan and the forecast conditions, but it was prepared and handed in draft form to operations and planning staff.

There is anecdotal evidence from the IMT members, heard by the review, that on 2 January the cost of the Visitor Centre and its significance to DEW was a consistent theme of discussion, and that it was almost a 'save at all costs' mindset.

We heard that there had been discussion at state-level regarding the use of MFS crews to defend the Visitor Centre but this was not countenanced by the L3 IC. The Sector Commander selected to execute the asset protection task at the precinct on 3 January had a high level of understanding of the area, given he lived within the precinct as part of his employment contract with DEW.

During the review, we heard from a senior officer of the IMT comment that the briefing for protection of the precinct assets was to "let them know they were going down for a burn-over", in order to manage crew expectations regarding the nature of the task.



Source: SA CFS Supplied

The review has examined the "Asset Protection" Briefing for the precinct (dated 3 January 2020 07:57 hours - refer p.39), which included the 06:10 hours BoM forecast for 3 January forecasting an FFDI of 77 (Extreme). The release time of the briefing is important as discussed below. Furthermore, is also noted that this was the only specific asset protection plan prepared for the areas in and surrounding FCNP for 3 January and, in spite of the SC/CO Intent, this plan was not for the protection of critical infrastructure or properties housing vulnerable persons.

The asset protection plan identifies a pre-determined Strike Team of five (heavy) tankers (the 24-hour Strike Team previously referenced) to be positioned at Flinders Chase Visitor Centre for asset protection. It then provides a description of the vegetation types which surround the centre, but no overall fuel hazard assessment. The mission was "To defend assets at Flinders Chase, ahead of the main fire, in order to protect significant value assets". The execution was the priority of assets to defend (with Grid References supplied):

- The visitor centre
- Workshop
- [Flinders Baudin] Research Centre [owned by The University of Adelaide]
- Rangers Houses
- May's Homestead and the Postman's Cottage (heritage accommodation).

Risks were identified as a range of Liquefied Petroleum Gas (LPG) bullets and bottles, fuels and bowsers, all which had detailed descriptions included.

The command and communications allocated was to the Sector Commander, and that the Strike Team Leader was to maintain a high level of situational awareness. The plan indicated that the crew would need to determine where and when to back burn (where required) as well as tasking crews to asset protection. Using a NPWS ignition officer was recommended.

The safety messages were:

- to have a high level of situational awareness to be maintained. Trained and prepared crews to be allocated to this task.
- "Lookouts" to be appointed to watch for ember attack, smoke and fire front. Immediate identification of safety zones, to include radiant heat protection (e.g. buildings in a cleared area) before commencing work.
- The escape route is to the South on Cape de Couedic Road (but did not note that the forecast wind conditions were northerly, 40kph gusting to 60kph).
- Safety Zones: Consider safety zones at the Visitors Centre, Workshop. Shelter at Admirals Arch as a last resort (but did not note that the Arch is 14km south of the area down Cape du Coeudic Road, and that this would result in remote entrapment).

**BRIEFING FOR FLINDERS CHASE ASSET PROTECTION  
FRIDAY 3<sup>rd</sup> JANUARY 2020**

|                 |  |                      |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
|-----------------|--|----------------------|-----------------|-------------|--|--------------------------------------|--|--|---------------------------|--|---|----------|-------------|--|----------------------------|--|---|-----------------|-------------|---|----------------|----------------------|---|--------------------------------|-------------|
| SITUATION       | For Friday 3 <sup>rd</sup> January. A pre-determined Strike Team of 5 (heavy) tankers (the 1-day S/Team) is positioned at Flinders Chase Visitors Centre for asset protection. Centre sits amongst stringy barks, sugar gums, pink gums, cup gums and Yackas in and away from the nearby river edge and Melrose Road. Vegetation heights 3-5m for mid storey vegetation and up to 15m for the sugar gums<br><b>Refer BoM Incident Weather Forecast issued 06:10hrs 3JAN2020.</b>   |                      |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
| MISSION         | To defend assets at Flinders Chase, ahead of the main fire, in order to protect significant value assets.  |                      |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
| EXECUTION       | Priority of assets to defend:<br><table border="0"> <tr> <td>1</td> <td>Visitors Centre</td> <td>GR: 565 200</td> </tr> <tr> <td></td> <td>Designated fire-water tank (80,000L)</td> <td></td> </tr> <tr> <td></td> <td>Standpipe in bus car park</td> <td></td> </tr> <tr> <td>2</td> <td>Workshop</td> <td>GR: 561 196</td> </tr> <tr> <td></td> <td>Standpipe on southern side</td> <td></td> </tr> <tr> <td>3</td> <td>Research Centre</td> <td>GR: 567 200</td> </tr> <tr> <td>4</td> <td>Rangers Houses</td> <td>GR: 568 196, 569 197</td> </tr> <tr> <td>5</td> <td>May's Homestead &amp; The Postmans</td> <td>GR: 568 201</td> </tr> </table> <p>A number of risks have been identified at the site:</p> <ul style="list-style-type: none"> <li>• 750L LPG bullet at Northern end (GR: 567 201). Cleared around bullet 02-Jan and bullet turned off. Be aware of radiant heat risk and potential venting. Evacuate area if bullet vents.</li> <li>• 2,200L LPG bullet in the South. Cleared around bullet 02-Jan and bullet turned off. Be aware of radiant heat risk and potential venting. Evacuate area if bullet vents.</li> <li>• 180L LPG bottles on Cape du Couedic cottages (GR: 568 201) Turn them off if possible. Avoid that side of cottage if radiant heat impacts bottles.</li> <li>• 180L LPG bottles on Rangers Houses. Area around these has been cleared. Turn them off if possible. Avoid that side of houses if radiant heat impacts bottles.</li> <li>• Workshop (GR: 561 196) Fuel tanks &amp; bowsers, chemical sheds (all banded). Sugar gums nearby, so watch canopy. One open-ended sheds.</li> </ul> | 1                    | Visitors Centre | GR: 565 200 |  | Designated fire-water tank (80,000L) |  |  | Standpipe in bus car park |  | 2 | Workshop | GR: 561 196 |  | Standpipe on southern side |  | 3 | Research Centre | GR: 567 200 | 4 | Rangers Houses | GR: 568 196, 569 197 | 5 | May's Homestead & The Postmans | GR: 568 201 |
| 1               | Visitors Centre  | GR: 565 200          |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
|                 | Designated fire-water tank (80,000L)   |                      |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
|                 | Standpipe in bus car park  |                      |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
| 2               | Workshop   | GR: 561 196          |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
|                 | Standpipe on southern side   |                      |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
| 3               | Research Centre  | GR: 567 200          |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
| 4               | Rangers Houses   | GR: 568 196, 569 197 |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
| 5               | May's Homestead & The Postmans   | GR: 568 201          |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
| ADMIM           | Water can be accessed from the fire water tank at the Visitors Centre. Crews should be prepared to stay in the area, or further south, for the remainder of the day, as return North may be inaccessible. Water tanks at Cape du Couedic cottages. Standpipe located at the workshop and near bus carpark by visitor centre  |                      |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
| COMMAND / COMMS | <b>Flinders Chase Visitor Centre Sector Commander</b><br><b>Mike Penhall 0407 366 901</b><br>Strike Team Leader to maintain high level of situational awareness. They will need to determine where and when to backburn (where required), as well as tasking crews to asset protection. Using NPWS ignition officer is recommended.  |                      |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |
| SAFETY          | High level of situational awareness to be maintained. Trained and prepared crews to be allocated to this task.<br>Lookouts to be appointed to watch for ember attack, smoke and fire front. Immediate identification of safety zones, to include radiant heat protection (eg buildings in a cleared area) before commencing work.<br><br><b>Escape route is to the South on Cape de Couedic Rd.</b><br><br><b>Safety Zones:</b> Consider safety zones at Visitors Centre, Workshop. Shelter at Admirals Arch as a last resort.   |                      |                 |             |  |                                      |  |  |                           |  |   |          |             |  |                            |  |   |                 |             |   |                |                      |   |                                |             |


Source: SA CFS Supplied



As discussed in the report, this operational period was covered by a SC/CO Intent.

The review's analysis of this plan is as follows:

- There were no clear triggers for withdrawal, indicating a desire to move ahead with this operation regardless.
- The IAP for 3 January 2020 issued instructions for fire fighters to:
  - Work from an anchor point [The National Park Service, USDA Forest Service Fire Terminology defines an anchor point as: An advantageous location, usually a barrier to fire spread, from which to start building a fire line. An anchor point is used to reduce the chance of firefighters being flanked by fire.] **The IAP does not identify the location of the anchor point.**
  - have clearly defined safety zones and escape routes. **The plan included one of each and these were identified.**
- By the time the briefing was finalised (07:57), the IMT **knew the fire had been crowning in the north**, just to the east of Cape Borda, since approximately 06:00 hours. Considering the forecast attached to the plan which forecast **north easterly winds by 08:00 hours at 30kph gusting to 45kph**, and then switching to northerly at 11:00 hours at 40kph gusting 60kph, the plan was effectively to deploy this Strike Team directly in the path of the fire front, which even at 11:00 hours was forecast to be burning in an FFDI of 64 (Severe), **rapidly escalating to FFDI 77 (Extreme)** by 13:00 hours, in order to protect these assets.



South Australian Country Fire Service  
Operational Theme 1 – Command, Control, Coordination and Emergency Management  
SOP 1.7 – State Controller Fire/HazMat  
Attachment 3 – State Controller Fire/HazMat Intent Template

**STATE CONTROLLER FIRE/HAZMAT INTENT**

VALID FROM: 2000 Hours Thursday 02 January 2020  
VALID TO: 0800 Hours Saturday 04 January 2020

**APPLICATION:** This State Controller Fire/HazMat Intent applies to all SACFS members and all CFS operations. The Intent is to be noted by all Regional staff, Group Officers, Level 2 and Level 3 Incident Controllers and key personnel from partner and support agencies

**IN ORDER TO PLACE THE HIGHEST PRIORITY ON PROTECTING THE MAXIMUM NUMBER OF LIVES FROM IMPACT BY BUSHFIRE, CONSIDERATION MUST BE GIVEN TO:**

- DUE TO THE FORECAST TEMPERATURES SPECIFIC AWARENESS IS REQUIRED TO MAINTAIN FIREFIGHTER WELFARE, ALL PERSONNEL TO MAINTAIN HYDRATION AND BE AWARE OF HEAT HEALTH ISSUES.
- MAINTAINING SITUATIONAL AWARENESS SO THAT RED FLAG WARNINGS CAN BE ISSUED, IN ORDER THAT THE SAFETY OF FIREFIGHTERS AND EMERGENCY SERVICES PERSONNEL IS ASSURED.
  - This includes awareness about the potential for dehydration, the risks associated with using appliances on the fireground, and the 'WATCHOUT' situations
- PROVIDING CRITICAL (LIFE SAFETY) INFORMATION QUICKLY, IN ORDER THAT APPROPRIATE AND TIMELY WARNINGS CAN BE ISSUED TO THE PUBLIC AND TO OTHER AGENCIES.
  - This includes information about new fires or other emergencies and critical changes in an incident.
- PROTECTING PLACES WHERE VULNERABLE PEOPLE MAY BE LOCATED OR MAY BE SHELTERING.
  - This includes occupied schools, hospitals and residential care facilities.
- PROTECTING CRITICAL INFRASTRUCTURE, IN ORDER THAT COMMUNICATIONS AND WATER SUPPLIES ESSENTIAL TO FIRE AND OTHER EMERGENCY OPERATIONS CAN BE MAINTAINED.
- LIMIT COLLATERAL AND SUBSEQUENT DAMAGE TO INFRASTRUCTURE.
  - Where safe to do following structural triage, crews may be deployed to limit the spread of fire from building to building.
- FOCUS ON DIRECT OR INDIRECT ACTIVITIES ONCE CONDITIONS MODERATE
  - Once conditions moderate efforts can then be directed to controlling the incident.

*M. Jones*

MARK JONES QFSM  
CHIEF OFFICER/STATE CONTROLLER

UNCONTROLLED WHEN PRINTED  
South Australian Country Fire Service – Operational Doctrine  
published 17/12/2019 version 1.00 page 1 of 1

Source: SA CFS Supplied




Photo Credit: Josh Hann

At the time of the plan release at 07:57 hours, the IMT knew there had been some form of miscommunication and the 24-hour strike team that was planned to undertake the asset protection would not be departing Cape Jervis until 10:00 hours, arriving on the island sometime around 11:00 hours, which then given the travel time to the area (at least 90 minutes), they would unlikely reach the site on time.

At some stage someone, (it was not possible from the information supplied to the review to determine how this decision was made or by whom), then allocated a range of KI reserve appliances and other resources on KI, without a Strike Team Leader to undertake the task.



Amongst the vehicles was one of the aged single cab 34s – KI B34 – which the review heard had been tagged out, but the tags were removed in order for the appliance to be used for this tasking. The vehicles also included a DEW vehicle being used as a command car that had no form of burn-over protection and only one radio, and a Quick Response Vehicle (QRV) that had no burn-over protection curtains.

The allocated Sector Commander remained in place, but in the absence of the requested Strike Team, the review heard that crew were assembled at the last minute, with a number of inexperienced members. The review heard that en-route to the tasking the Strike Team reallocated a number of inexperienced crew and more experienced members assumed leadership roles. However, the safety mitigation element identified in the asset protection plan that the Strike Team be composed of highly trained and prepared crews was ignored. The requested inbound strike teams were coming with appliances with tanker protection systems and vehicles, and were not fatigued from what was already a fortnight of firefighting. This was a complete failure of one of the most significant mitigation strategies put into place for this strategy to be safely conducted.

The IMT knew at 12:06 hours, via GRN broadcasts, that the fire was spotting to the south of the main fire front and travelling rapidly to the south towards the precinct. Regardless, the decision was made to deploy fire fighters of mixed training and experience in inadequate vehicles that were not fit for purpose to undertake asset protection in the precinct, with no trigger to withdraw.

At 13:18 hours, discussions on GRN Radio indicated that the conditions were not going to be conducive to burning off the West End Highway, where a range of resources were waiting to light up. We understand that no consideration was given, as the fire moved rapidly south through the park, to abandon the plan to protect the FCNP Visitor Centre and surrounding precinct, withdraw the crews and deploy the resources to asset protection of neighbouring private properties to the Park, in spite of the protection of these private assets being a key strategy identified in the 2009 DEH FMP.

In the end, the fire fighters in the Flinders Chase Strike Team, by then split between the works depot, the Visitor Centre and an open area known as the Padang, just north of the Visitor Centre, were impacted by fire, as the fire front hit the vicinity on or about 13:50 hours on 3 January 2020. As noted earlier, the area was impacted by two successive crowning fire fronts, the first from the north-west and the second from the north east, and the review heard the two fronts met just behind the Padang.

Once the conditions subsided and the team regrouped, one of the senior crew utilised the parks loader to clear trees fallen across the Entrance Road to the park so the Strike Team, including SACFS and DEW appliances and two private contract arborists who arrived at the precinct unannounced earlier in the day, could exit the area to safer ground.



Rocky River Precinct (not including campground and works depot),  
4 January 2020. Photo courtesy Glen Willson

The issue of the tankers which were sent to the precinct, and the ongoing need for safety systems in SACFS appliances to be functional for worst case scenarios is supported by the *Independent Review* finding:

***“there is an urgent need to review the age and appropriateness of the bushfire vehicle fleet in SACFS, MFS, SES and DEW, ensuring all vehicles are fitted with Burnover Protection Systems (BOPS).”***

(Government of South Australia 2020: Finding 6.8.1)

Again, respecting that accident investigation is out of scope of this review, the review finds the decision and focus on saving the Rocky River Precinct to be a failing on the part of the IMT to align to the safety values of the organisation as referenced above – *“that no property or environmental asset is worth the life of one of our own”*. As noted above, it also failed to align with the State Controller’s Intent, referenced earlier, as this precinct did not constitute critical infrastructure or property housing vulnerable persons. The review believes that an investigation completely independent of the SA emergency management sector should be conducted into this dangerous incident, including any potential psychological injuries which could exist resulting from continuing with such strategies.

The review also heard about a significant burn over event at Church Road, also on the afternoon of 3 January. This involved the inbound mainland Strike Team who had been requested for the Rocky River defence on a 24hr deployment.

This Strike Team was deployed along the South Coast Road, departing Penneshaw late morning, and met a KI DGO around the Church Road area in the early afternoon. The Strike Team also included two local KI appliances and crews. This group were collectively attempting to provide protection to defendable private assets in the south west corner of the Island adjacent to the South Coast Road and vicinity.

The IMT received advice from a 000 call in the late afternoon and attempted to travel up Church Road towards the property that was the source of the call. However, the fire front hit the area where they were headed and they had to retreat hastily and shelter at a small gravel scrape on Church Road.

It was fortunate that the DGO was with the group as his local knowledge of the area identified this as the only relatively safe area in this heavily vegetated locality. This Strike Team made subsequent attempts to continue firefighting activities, but determined by late afternoon that the conditions were too erratic and unsafe, and the crews were too shaken up by their experience, so they returned to Kingscote in the evening, departing KI next morning.

The other significant safety incidents we heard involved a private contractor and a local government employee. The first, involving the private contractor, occurred in the Gumridge plantation adjacent to Borda Road. The contractor was undertaking grading work for forestry in the plantation on his own when the fire jumped out of the park and into the plantation. He was just out of range of the fire in the plantation at the time and had no immediate supporting fire cover. The same contractor was at Flinders Chase Farm on the afternoon of 3 January and was caught in a burn-over in the open with a number of other personnel. His grader was destroyed during this incident.

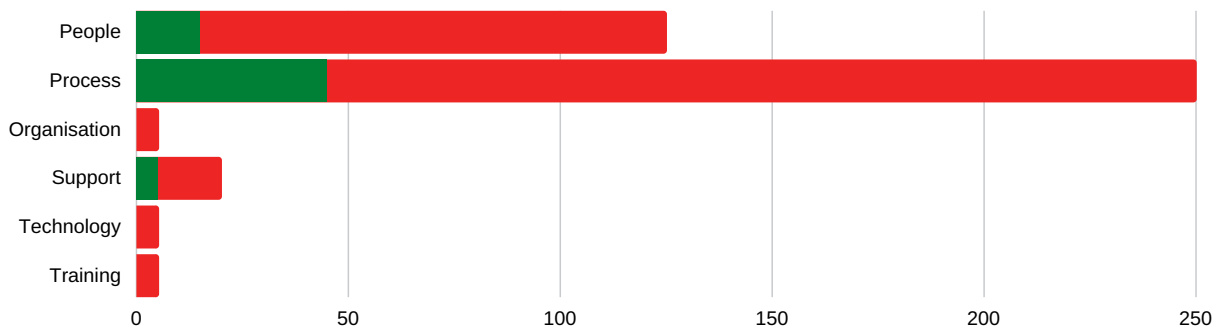
The second was a situation where the SA Local Government Association (LGA) implemented their system of council to council assistance through the Local Government Functional Support Group, and a grader operator from a mainland urban council area was operating in an area which was subsequently impacted by fire while he was there. The operator was used to working in urban environments, had never been near a fire before, nor seen such significant fire behaviour, and was not supported by any fire protection on the machine. There were two SACFS appliances and another contractor present. The review’s understanding is that the operator refused to return to the fire ground after this event as he was traumatised by the experience.

The final point we discovered in relation to the safety was around fatigue management. The review heard many stories of 24-hour shifts occurring, regular 16 to 18-hour shifts being conducted and an absence of prescribed breaks between shifts and rosters due to resourcing requirements and a lack of available resources. As mentioned earlier, the level of fatigue was exacerbated by the extensive interstate deployments in the lead up to the South Australian season. The KI fires campaign also extended for the better part of two months in its own right, fatiguing the members present.

## ANALYSIS

- Safety is promoted well within the SACFS, across doctrine and within training. This culture was well promoted in IAPs across the incident.
- Given the level of activity, the fire behaviour and the resources used, the focus on safety is attestable to the focus on safety at all levels of the organisation with no major physical injuries sustained to fire fighters. With no forward medical support, resource management, fatigue management, burn over management, it is hard to determine whether this outcome was due to planning or luck.
- Fatigue Management was a major risk for the organisation with travel times, 24-hour strike teams and other non-conventional methods used to resolve the incident.
- There was a decision by the IMT to continue with the defence of the Rocky River and FCNP precinct, without a number of the mitigation strategies in place that had been set within its own asset protection plan, IAP, and considering the State Controllers Intent in place over that period. Given these facts, legal advice should be sought regarding whether the incident is considered a notifiable incident under s.37 of the Work Health and Safety Act 2012 (SA), as a dangerous incident.
- We heard the overwhelming view of those who were involved in the fire on or around 3 January was that the operation to protect the FCNP visitors centre precinct should not have been executed, and should have been withdrawn as the actual weather on the day was realised.
- Further integration of Safety Officers, who are generally supplied by SAFECOM, within the mainstream IMT (including automatic activation) should be considered, and these officers should be included in all briefings as a direct report to the IC.
- In relation to the delivery of the training module 'Provide strategic safety advice at an incident', the review notes that this is proposed to be facilitated at state level and would bring the current WHS personnel used within IMTs up to a standard to assist in IMTs rather than being focused on fire ground safety (noting fire ground safety it taught in BF1 and every course thereafter). It is further noted that SACFS seek to develop the Safety Officer Rural and Urban courses to provide a position for safety officers on the ground at incidents during the 2021 season and beyond.

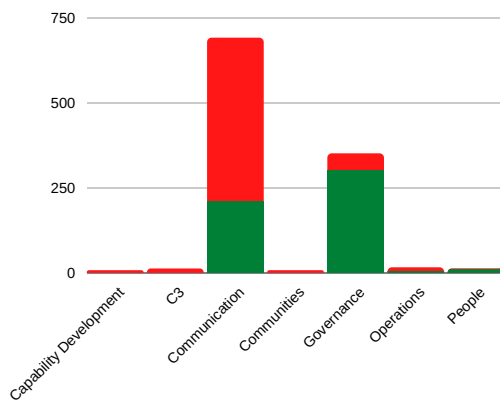
Insight 11 Analysis - Fundamental Inputs to Capability



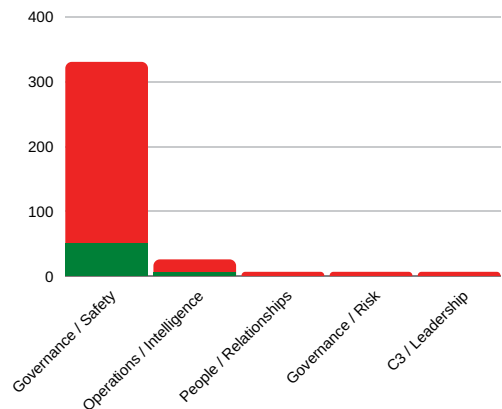
**389**  
observations

**11**  
data sources

National Level 1 Themes



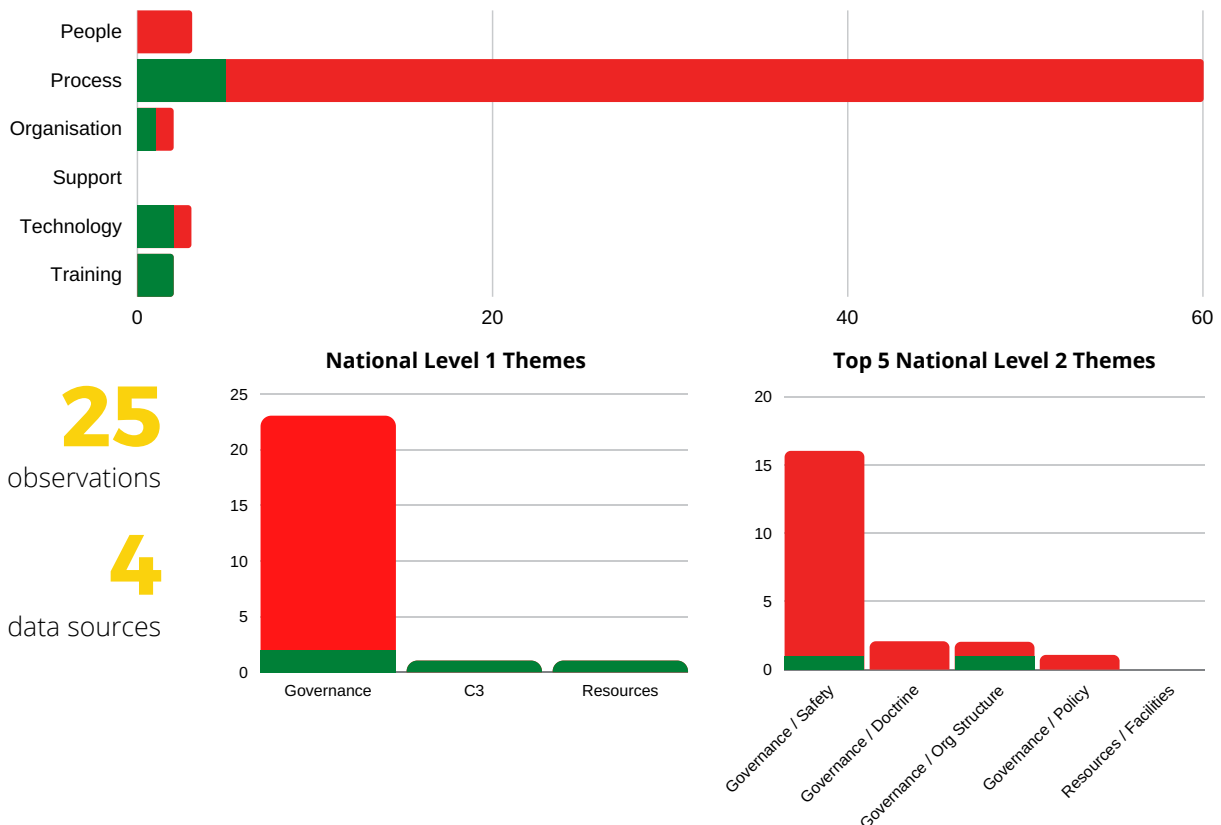
Top 5 National Level 2 Themes



### INSIGHT 11

Fireground safety is the responsibility of everyone. For days with extreme fire danger, any high-risk strategy should have the dynamic risk assessment checked at every level of supervision. The review believes that if this was the case in the protection of FCNP, that the process outlined in SOP 2.1 – Dynamic Risk Assessment to apply a continuous assessment and control of risk in rapidly changing circumstances would have resulted in the FCNP protection plan being abandoned and re-deployment of resources to safer assets along the South Coast Road.

Insight 12 Analysis - Fundamental Inputs to Capability



### INSIGHT 12

The culture of Safety Officers (predominately allocated from SAFECOM) being present in the IMT was not as strong as it could have been. Instead of being prescribed as part of the L3 IMT doctrine, the Safety Officer is an option for the IC to deploy. While the training did not exist to bring Safety Officers up to the level prescribed by doctrine on the KI fires, this role should have been filled by experienced officers from the start, and be fully integrated into IMT briefings and activities, including consultation on high-risk plans, such as that described in Insight 11.

The review notes the allocations that the SA Government provides in its response to the bushfire review, and has committed to the following in this area:

- Commence implementation of Automatic Vehicle Location (AVL) capability of the vehicle fleet.
- Develop IMT and fire ground:
  - succession planning
  - recruitment strategy
  - additional training and development for leaders
  - training for key roles.



- Fire Truck Safety Retrofit System, SACFS vehicles – 49 trucks fitted before this fire season, and accelerated replacement of SACFS Heavy Fire trucks – 25 new trucks before this fire season.
- Identify if any operational enhancements are required in terms of standardisation of MFS and SACFS radios and radio frequencies, Personal Protective Equipment (PPE), masks, trucks, maps, training, helmets, hose couplings, and breathing apparatus.
- Review burn over incidents and implement approved recommendations to reduce likelihood.
- Review principles for deploying fire and rescue services into peri-urban areas.

### Integration of FFUs

SACFS has a long and formative history of the integration of FFUs into firefighting operations. They are a resource rich with local knowledge, often have significant fire knowledge and capability, have the ability to rapidly respond, and can often access areas which larger SACFS tankers cannot. The offset to this however is they are an independent resource on a SACFS controlled fire ground and are often not part of the planning of strategies and tactics, safety regime, or connected via communications to the divisional and sector commanders, which was the case during the KI fires.

There were FFUs deployed across KI, and there was also an FFU Strike Team from Region 2 deployed to KI as part of the state coordinated fire response.

We have no doubt, based on interviews and examination of images that many of the successes and saving of assets, pasture and other farm infrastructure were due to the work that was conducted by FFUs. The review heard from a number of current and former SACFS members who opted to contribute to the firefighting operation as FFUs, as opposed to being on SACFS appliances, due to their dissatisfaction on how the incident was being managed by SACFS. Contributing in this way allowed them more freedom to undertake activities.

The Strike Team that came out of Region 2 was an arrangement negotiated with the SACFS CO. Given the resource blockages that were occurring as discussed in this report, it seemed a reasonable attempt to add additional capacity to the firefighting efforts. The execution and communication on how they would work (they were self-sufficient with the exception of fuel) had the potential for improvement. Initially they were told they would integrate into the field command structure, and then this changed with a direct report to the IMT. Issues were raised with them at staging about their requirement to wear PPE, which was found to be in plastic under the seats of their vehicles.

Overall, once again, human factors played out in the integration of FFUs into the general firefighting efforts. The review heard stories where DIVCOMs had FFUs successfully integrated into operations and they were part of the overall strategy for the day, and had access to the Divisional Commander to provide local knowledge. Unfortunately the opposite end of the scale was also raised, where the FFUs were ignored or the FFUs ignored the command structure and operations were not well coordinated.

The *Independent Review* also discusses this area, saying that:

***“FFUs are a valuable resource but those who operate them are at as much risk of being seriously injured or killed as other emergency responders and their assistance to the community could be better managed using AIIMS.”***

(Government of South Australia 2020: 86)



Photo Credit: Josh Hann

The review heard some thoughtful suggestions from a number of FFUs and local KI Commanders and GOs regarding improved arrangements for integrating FFUs in fire ground operations. A preferred approach raised with the review was to pre-arrange a number of potential FFU coordinators in local areas, who could then perform that role in incidents. The Coordinator would report to the DIVCOM on the fire ground, ideally through use of a VHF radio issued to the Coordinator by SACFS. Again, the Independent Review also discussed this:

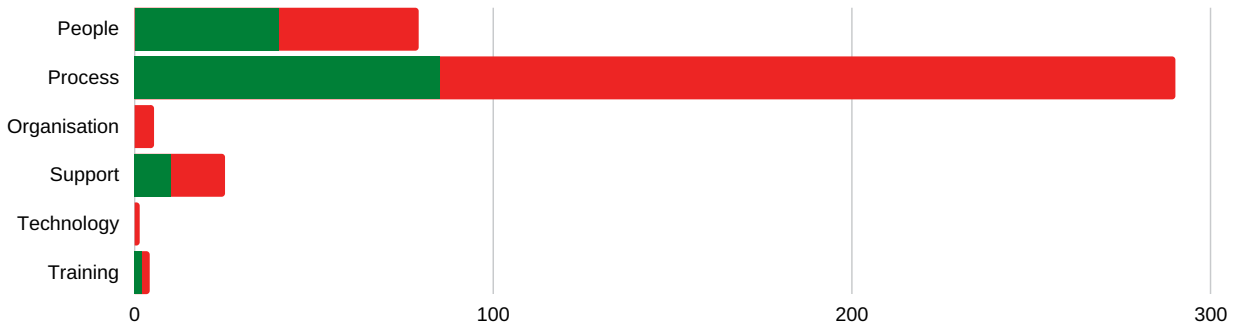
***“a significant investment should be made in portable VHF’s (rather than retrofitting UHF’s) to support private operators (FIBs, FFUs, and private contractors) in fire ground contractors”***  
 (Government of South Australia 2020: 82)

The logistics functional area of the IMT should be congratulated over the course of the entire incident in their support of FFUs. The work they did early on in the Menzies and Duncan fires to try to determine the quantity of FFUs to cater for their meals and welfare was excellent, using strategic drop off points such as bulk water carriers for the FFUs to receive their food packs. After the Ravine Complex started, logistics became more of a centralised operation and wasn't always so successful through the lens of FFUs, however this is also linked back to the lack of coordination between Parndana and Kingscote (for example, catering for FFUs could have been coordinated through the basecamp/ staging area at Kingscote).

## ANALYSIS

- *FFUs provide a rapid attack on fires due to their, often near, neighbourhood location, and are a rich asset of local knowledge.*
- *FFUs should be embraced, however they also must understand the need for some basic communications, command, and safety requirements to operate on a SACFS fire ground.*
- *FFUs would be best coordinated through a DIVCOM to a local FFU Coordinator who can then bridge this coordination gap. It would be preferable for the FFU Coordinator to be issued with a VHF to facilitate tactical communications with the Divisional Commander, and for FFUs to communicate amongst themselves on Ultra High Frequency (UHF).*
- *Both SACFS members and FFU members need to be tolerant of the differences in the way they see fire management and come together for the common good of the operation.*

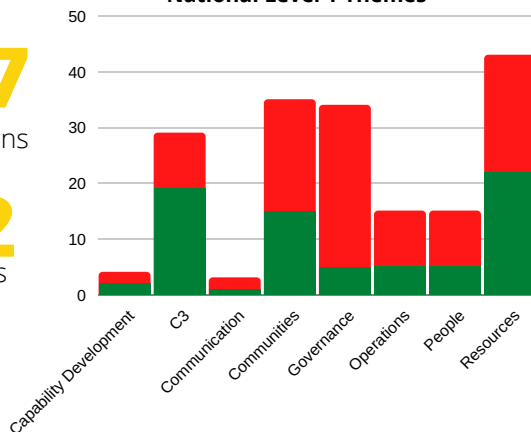
**Insight 13 Analysis - Fundamental Inputs to Capability**



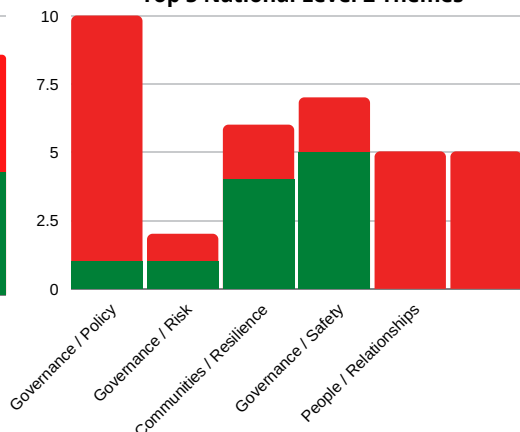
**National Level 1 Themes**

**227**  
observations

**12**  
data sources



**Top 5 National Level 2 Themes**



## INSIGHT 13

On a remote location such as KI, FFUs are always going to have a significant role in firefighting operations. The challenge ahead is how to integrate this resource into the overall IMT resource management planning in a safe and coordinated manner. The solution would rely on both parties reaching an agreement about levels of safety, integration on IMT, and the ability for the FFUs to coordinate through the Divisional and Sector Command, executing tasks and influencing decision making through local knowledge.

The review notes the allocations that the SA Government provides in its response to the bushfire review has committed to the following in this area:

- SACFS engage with relevant stakeholders to develop minimum standards of PPE and equipment for Farm Firefighting Units. Information on accredited FFUs will be incorporated into the SACFS database.
- Farm Firefighting Unit roles in Incident Management Teams with supporting documentation for operational response.

### Fire Ground Discipline and Accountability

Many fire fighters and agencies from across the state contributed to the positive outcomes of the KI fires. The mix of vegetation and complexity of fighting fires in this terrain requires differing skill sets but the same attitude. Many involved in the firefighting effort at all levels demonstrated a disciplined approach in following mission command and sustaining a containment strategy. This was notably the case with FFUs, DEW staff and local KI SACFS crews who worked tirelessly undertaking the arduous work of aggressively mopping up and patrolling the fires. This was not the case however in many, but not all, of the mainland deployments.

Fireground discipline and accountability came out of the review as a strong theme. There were three predominant factors in relation to this theme:

1. Those who did not want to achieve the strategies, in some cases because they did not support them.
2. Those who did not want to follow the system.
3. Those who lacked the training and/or experience to either lead or implement the tasking requested.

In the opinion of the review, the movement of the IMT from Parndana to Kingscote set a course of actions and elements including the KI GO disconnecting from the overall direction generated by the SACFS IMT. This appeared to be intentional and based on not supporting the move from Parndana to Kingscote, as well as some disagreement regarding operational strategy and tactics.

The review heard that, particularly in the days immediately following the establishment of the Kingscote IMT, this disagreement resulted in:

- Resources being re-deployed that the IMT had planned on using
- A lack of data feed for local resources available for the IMT to use as they were being tasked directly out of Parndana
- The KI Base becoming a satellite operation to the rest of the fire.

The review heard from many people that once a number of the local KI brigades “opted” to come under the Kingscote IMT, where they felt more coordinated and had better welfare management and direction.

There were no doubt attempts made through two KI DGOs who worked out of the Kingscote IMT and sought to connect the operations of Parndana and Kingscote. Despite this, resistance remained, and what ensued then was a break down in local intelligence being fed into the IMT and a general lack of trust. As already discussed in this report, it is believed that this was not specific to this fire, and indeed featured in the 2007 lessons review, showing a more systemic issue that the SACFS faces in relation to the connection of the KI Group to the organisation.

While the review heard a great deal of focus on the actions of the KI Group, we recognise that in any relationship there are at least two parties and most acknowledged that the actions of all involved contributed to the outcomes seen on KI.

There was also a consistent view amongst those interviewed on KI that there is room for improvement in the attitude of both the agency and mainland employees towards KI locals. This concern adds impetus to the approach of the SACFS to local communities noted in a Parliamentary Select Committee reviewing the Bill to amend the *Fire and Emergency Services Act 2005 (SA)* in 2019 which commented that:

**"The Committee was concerned to hear witnesses express a lack of confidence in the CFS administration which suggested that decisions made, or views held, at senior levels of the CFS did not take into account the knowledge and experience of local communities, including CFS volunteers and primary producers."**

(Parliament of South Australia 2019: 33)

The review heard that a possible solution to improving integration within the agency is that KI Group is moved into Region 6, where issues at the management level are more relevant to the Group as it is a substantially rural and remote region that also experiences large scale remote fires, rather than having the peri-urban focus of the remainder of Region 1.

The review heard from a number of KI commanders and Group Officers that as Region 1 becomes more urbanised, the focus of the Region is becoming less and less relevant to the Island. Regardless of any decision in this regard, the review firmly believes there is a need to resolve many issues that exist between the KI Group and the organisation for this situation not to be repeated again in future events.

Issues around mopping up and patrol have been raised in other reports, and we found similar issues. There were numerous examples provided of instances where a lack of effective mopping up and blacking out had resulted in breakouts and some of these were ultimately very significant to the outcomes of the fire in ensuing days and weeks. It was clearly apparent from these outcomes that, while some reflected a lack of resources, many reflected a lack of training, application and discipline in relation to mopping up and blacking out. The level of frustration expressed to the review from IMT members, some mainland commanders, local KI commanders, crews, FFUs and the forestry industry regarding this matter was significant.

The review notes the allocations that the SA Government provides in its response to the bushfire review, and has committed to the following in this area:

- Provide thermal imaging cameras for each of the 55 SACFS Groups.

The review heard that a number of mainland crews appeared to be treating the deployment like it was 'a holiday' rather than a firefighting operation. They were noted to wait for fire to reach pasture to chase it rather than getting into a mopping up and black out phase which would stop such break outs. Many participants reported that teams were driving around taking photos on their phones rather than getting off appliances and embarking on an aggressive blacking out and mopping up, as tasked in the IAP.

Strike Teams were reported leaving the fire ground simultaneously in running fire conditions and travelling to a Bulk Water Carrier (BWC) with an extended turnaround time to refill, rather than staggering their departures and using a quick-fill set up at a nearby dam for the same purpose. There were multiple stories of appliances disappearing out of convoys early in the morning for the entire day or stopping at the first smoker they saw, regardless of their tasking. There was even the extraordinary story of a BWC leaving the fire ground without permission and turning up at the vet clinic in Kingscote with an injured koala, despite ADF and other animal welfare agencies on the island equipped to deal with such an incidence. This is reflected in the *Independent Review*:

**"that intensive training is required for 'mopping up' activities across the agency, supported by ready access to handheld thermal imagery technology."**

(Government of South Australia 2020: 82)

The review believes that the lack of fire ground discipline displayed through the latter examples was another reason for the human factors coming into play during the incident.

The lack of cooperation during the incident occurred at times between (particularly local) FFUs and SACFS tanker-based crews, and also between local KI CFS, DEW and forestry crews and mainland CFS crews not working on a shared mission cooperatively by all crews on the fire ground.

Again, this theme of the lack of trust resulted from a genuine concern about not only a lack of discipline but also a lack of operational capability displayed by some mainland crews.



The review heard overwhelming evidence in relation to the work on the fires by the majority of DEW staff on KI, which was widely regarded as exceptional. They worked long hours, doing arduous and difficult tasks without complaint and integrated well on ground with the local group.

The final issue we detected in relation to the theme of discipline and accountability relates to coordinated firefighting, specifically with DEW. DEW is a defined "SACFS Group" within SACFS with the regions of DEW forming individual brigades within the DEW Group. As stated above, there was significant praise for the work of DEW staff at many levels, including a number of local KI and mainland-based fire ground commanders, crew, ground observers, Fire Behavioural analyst (FBans), AAS and Air Observer's (AOBs).

There were, however, a number of matters of concern regarding the participation of DEW raised with the review. These have been canvassed in the review to this point, but are summarised as:

- Risk assessment in relation to the Wilderness Code of Practice.
- The need for pre-planning regarding response strategies and tactics in protected areas.
- A functional lead who self-deployed outside of their assigned functional role.
- Consideration of the bandicoot matter, which was raised repeatedly with the review and appeared to consume significant time and resources at a critical point in the incident.
- The role of Liaison Officers in the IMT is advisory only.
- The provision of risk assessments regarding built assets within protected areas needs to be undertaken and reviewed by personnel with appropriate independence from the matters being assessed
- The focus on built assets within protected areas contrary to the SC/CO intent.

The review also heard concerns about perceptions of potential bias in ICs from the agency regarding operational priorities where the fire was impacting DEW assets, and of examples where DEW staff were directing, or seeking to direct other DEW staff outside the arrangements of the coordinated firefighting operation. While these matters, together with those listed above, are not considered by the review to constitute systemic issues, they have the potential to become so in the absence of formal improvements in the coordination of arrangements between SACFS and DEW. The consideration of joint SACFS and DEW policy may assist in this area.

The review believes that as such elements having been apparent in the coordinated firefighting arrangements during this incident, they represent a potential risk if left unchecked into the future. It is essential that the control agency remains as such and the operational chain of command is maintained at all times.

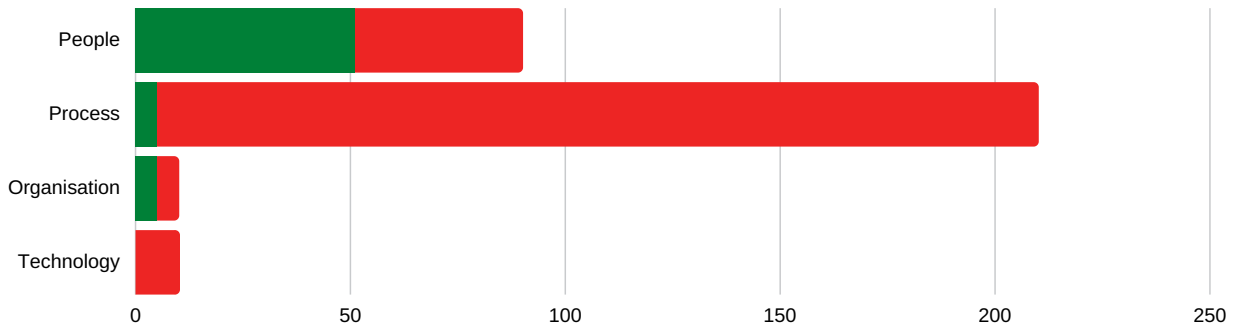


Photo: Supplied

## ANALYSIS

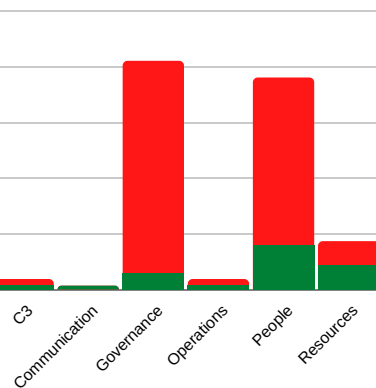
- SACFS members have a culture of wanting to help one another and the community in a structured way.
- By signing up to the SACFS, members agree to abide by the organisational intent, its governance arrangements and culture.
- Organisational change and culture shift do not come easily, but the lessons that are reflected from 2007 and again in this report, indicate there is a need to a more cohesive approach on KI and its connection to the organisation.
- Deployment expectation should be something that is covered in pre-deployment resources requests and initial deployment briefings, to members that are operating outside their normal area. The need to get off trucks and aggressively mop up and patrol, as arduous as it is, is a necessary part of firefighting operations, and this expectation should be set from the start.

Insight 14 Analysis - Fundamental Inputs to Capability

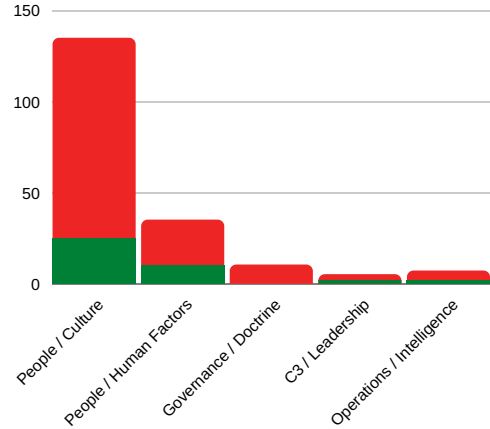


**397**  
observations  
**12**  
data sources

National Level 1 Themes



Top 5 National Level 2 Themes



## INSIGHT 14

Fireground discipline and accountability is a cornerstone of any successful operation. In this way trust is developed between the ground crew and IMT, so that tasks are being carried out to a desired standard and can be planned for. During the fires, there was a lack of discipline shown, often by senior members, following the chain of command (who are also accountable), and ground crews being accountable for tasks they were allocated to. This was particularly noted in regards to mopping up and patrol. These actions both led to poor operational outcomes and may have led to the fire increasing in its size post the fires on 3 January 2020.

### Shift Changes, Staging and Base Camp Management

KI's remote nature and tough terrain present significant challenges in relation to staging area management and shift changes. The staging area moved several times throughout the incident, predominantly from Parndana to Kingscote airport. Most attempts to use hot changeovers were poorly planned, with the adequate levels of preparedness to do this not being in place. The review heard there was often a rush at staging in the mornings to produce or print IAPs while crews sat for 2-3 hours waiting to be deployed. This early time of day (0700-1100) is obviously a critical period of time when strategic work can occur, prior to the Grassland fire danger increasing throughout the afternoon.

The review heard that most crews arriving at 07:00 hours on the worst fire day, 3 January, were not deployed until 10:00-10:30 hours, by which time the fire had already been crowning for 4 hours, containment lines were lost, and the fire was progressing rapidly south through the Ravine des Casoars and into Flinders Chase.

GRN Radio messages heard by the review indicated that the crews who were allocated to the burn off on West End Highway (which was abandoned due to fire weather) were still waiting for local appliances to arrive at 12:40 hours. The review is aware that just over an hour later the fire burnt through the Rocky River area, had jumped the West End Highway and began to travel east.

The review heard repeatedly of critical fire fighting hours being lost with crews holding a line late in a shift, only to be told to leave it and return to staging to undertake a crew change over. Once the new crew arrived back, the fire had been lost, and alternate containment strategies had to be put into place.

The main staging areas were challenging to run. They lacked resources such as white boards, PA systems, dust-free areas for use of computers and printers, and other materials that are conducive to briefing crews. Appliances were not consistently put through a process of checking, rehab and basic maintenance during the early parts of the fires and at one point an apprentice mechanic was provided without a truck driver's licence or tools. There were no spare appliances available to manage the servicing process, and supply of spare parts was slow. This was rectified later with MFS mechanics and contractors being deployed.

Basic resupply issues of branches, consumables such as gloves, goggles and hoses were delayed as these items were simply not being shipped to the island, even though they had been requested (and, in some cases, refused as the requests were viewed as unreasonable). The review heard that there was consistent lack of trust by those in the supply chain to supply these materials. The review also heard that the State Logistics Team have identified many of these issues and are working on a number of caches to support their resolution.

The use of the Region 2 staging trailer to setup some control of the staging area with T-Cards etc. assisted greatly, as did the redesign of the setup by an MFS and an experienced SACFS staging area manager. Having the staging area and base camp co-located was regarded as positive. Given the size and complexity of the operation, future consideration should be given to the establishment of a number of staging areas to address the large scale and remote nature of such incidents.

The review heard that the staging area felt disconnected from the IMT. At some stage, a computer was installed at the staging area to assist with access to CRIIMSON and the Microsoft Teams sheets. The ongoing systemic resource management failures however were not conducive to the appropriate control of the site or the system.

There was a range of safety issues identified with the staging area which the Safety Officers raised. While it took some time to remedy them, the majority were ultimately resolved. The review was made aware that SACFS has received further submissions regarding compliance with WHS requirements at staging areas, but those submissions are not considered in this report.

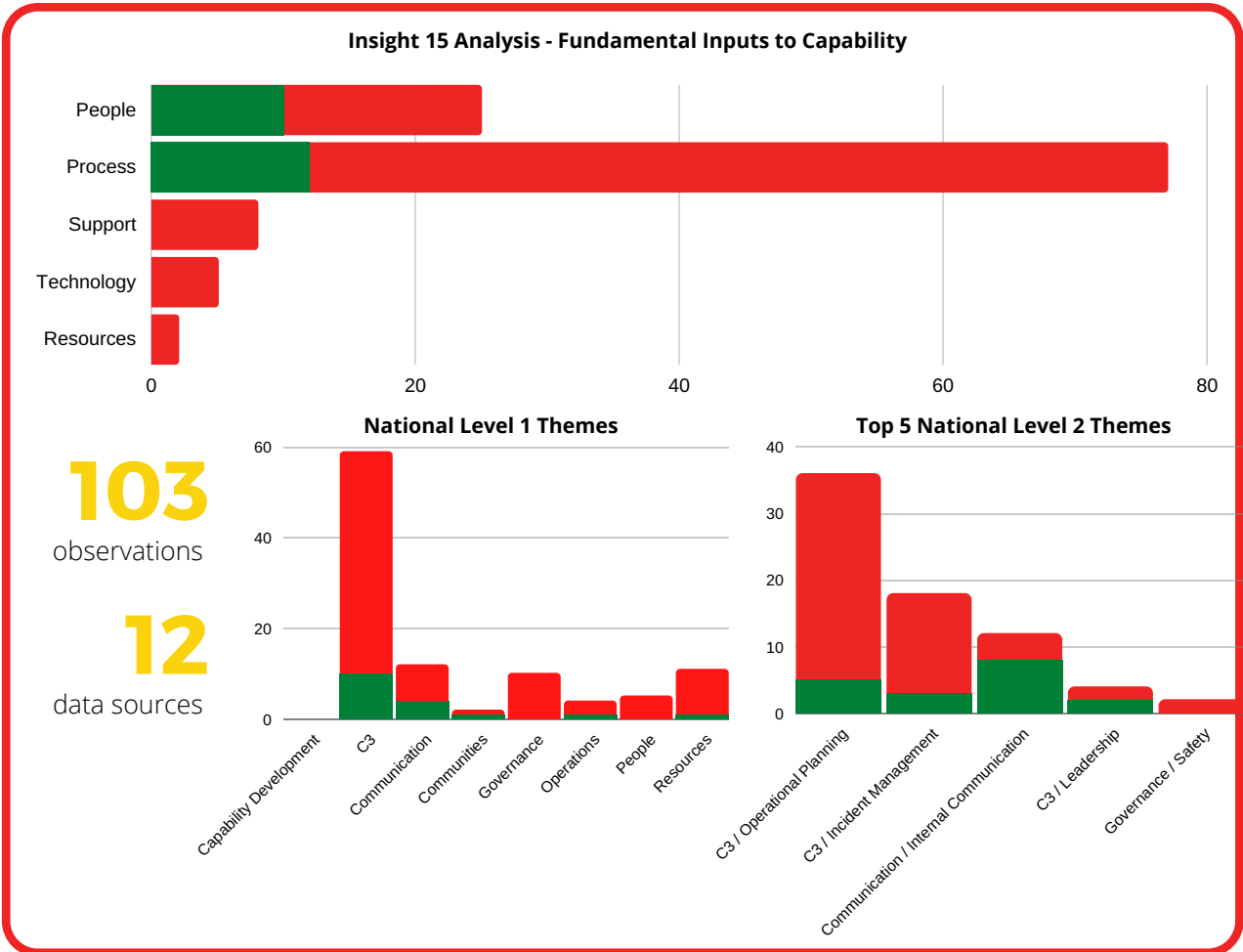
In relation to basecamps, these were generally provided and managed by the SASSES, and operated well.

The basecamps were a mix of humani-huts and tent cities and catering was supported by the Salvation Army and the ADF. The review heard that the collocation of the basecamps with staging worked well, as it was a one-stop shop for the teams to come and go, which assisted with on-ground coordination. At times, there were issues with the connection of Base Camp Managers into the IMT, where they felt they lacked information, or were not included in planning. Should the Base Camp Managers had been further included then expansion of base camp capacity (required to manage the ongoing incident) is something that could have been considered earlier.



## ANALYSIS

- The location of and planning for staging area(s) for KI is always going to be complex given the size, remote nature and road network of the island.
- Only having one staging area, initially at Parndana and then at Kingscote added time to shift changeovers, and consideration should be given to the establishment of several staging areas during large scale operations on KI.
- The staging area management staff were all operating from a platform of trying to manage the resources. However, with the lack of stores to replenish appliances, and mechanics to rehabilitate appliances, and no spare appliances, their job was made very difficult.
- With an appreciation of the logistics for KI, appliances and command vehicles should begin to be deployed ahead of personnel, based on predictions. It is noted that this is now being planned by Region 1, after the unserviceable KI spare fleet which was used has been retired.



## INSIGHT 15

Fires on KI are complex due to their likely size, access and nature. Shift times, travel times for handovers and replenishment of stocks need to be considered in an ideal position of hot changeovers. Vehicles operating in this terrain are often going to need more frequent maintenance and rehabilitation to continue 24-hour operations. The allocation of additional appliances, command vehicles, mechanics and supplies to meet even the operational requirements of the KI fires was lacking. A cache of changeover vehicles and supplies should be kept at the staging area for so they can be rotated through maintenance.

### Zone Emergency Support Team (ZEST)

SACFS Operational Doctrine 1.1 – South Australian Emergency Management Arrangements 9.1 defines that ZESTs are composed of support agencies, functional support groups and other government and non-government agencies. They are stakeholders in a geographical area, supplying a variety of resources and/or expertise relating to emergency management activities and providing support to the control agency.

The Local Service Area (LSA) Police Commander provides coordination of a ZEST to ensure that it is meeting the requirements of support to the Control Agency and achieving its broader role as articulated in the SEMP is prescribed by *Operational Doctrine 1.1 – South Australian Emergency Management Arrangements 9.6*.

The role of the IC to sit on the ZEST was often a significant distraction during the fire. The review heard many times that the IC was being drawn into the ZEST (which was accommodated in separate buildings in both Parndana and Kingscote) during critical times specifically, for example, for many hours on the afternoon of 2 January 2020 when the planning for the extreme fire danger forecast to occur the following day was being undertaken.

This calls into question the reporting line of ZEST to the IC under the current SACFS operational structure. A number of ICs allocated a DIC to the role of working with ZEST, allowing them to focus on their primary role - the control the "incident". It is however important that DICs are fully aware of the emergency management arrangements when undertaking this role.

The emergency management (EM) arrangements in South Australia are perhaps not as mature as in other jurisdictions, where there is a clear delineation of incident management (the control agency) and consequence management (the EM arrangements). The need to mature these arrangements merits review in light of the KI fires.

The review heard the ZEST performed very well in support of the control agency. However, there were consistent requests to the control agency to organise the logistics and accommodation for some agencies – notably the SALGA pressuring an already resource deficient IMT to address accommodation needs for local government staff providing support to the incident.

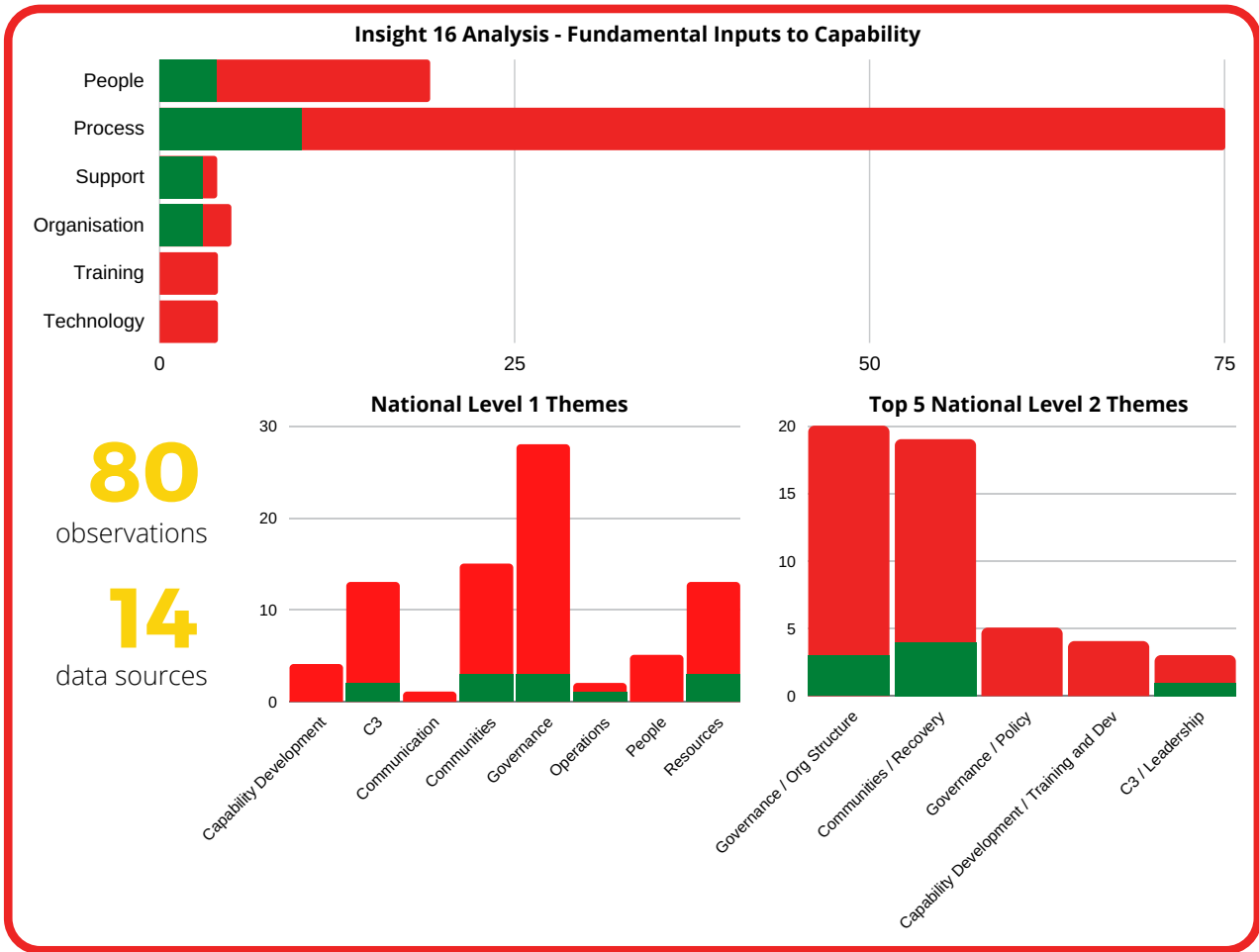
Roles and responsibilities for transition to recovery, and ongoing recovery responsibilities were also unclear, with the IC often being drawn into these strategic discussions. In future, documented roles and responsibilities from the State Emergency Management Plan (SEMP) could be drawn down to provide further guidance in relation to this transition. It was apparent however that there were a range of areas outside of the scope of this debrief that impacted the effectiveness of the transition to recovery. These included the management of Rapid Damage Assessment and the activation of relief and recovery arrangements.

## ANALYSIS

- *The ZEST is an important asset to the SACFS as the control agency and it operated well.*
- *The ZEST can become another burden on the IMT when it requires resources and logistics to support it. Work needs to be done on the self-sufficiency of support agencies including a policy regarding reimbursement of expenses.*
- *The ZEST should not be a direct report to the IC. In current arrangements, the IC manages the incident, the ZEST, and the consequences of the emergency. At times, this reporting arrangement took significant attention away from the IC being able to coordinate the activities of the IMT during the KI fires.*



Photo Credit: The Islander



**INSIGHT 16**

The direct link of reporting of ZEST to the Control Agency IC provided an environment where the IC was consistently distracted from controlling the incident to working with the EM arrangements. There is no doubt there is a link, however the link should be achieved through a ZEST LO, and the ZEST should stand on its own in regards to reporting arrangements. Furthermore, and also linked to earlier insights, the position of IC as determined by doctrine as a tactical commander, does not match the reality or the accountability of the position. The posture of the position should be commensurate to the responsibility they are provided and have a direct reporting line to the state.

The review notes the allocations that the SA Government provides in its response to the bushfire review has committed to the following in this area:

- Commence a review of the State Emergency Management Plan.
- Clarify processes for replenishing water to assist business continuity in the recovery process.
- As part of the SEMP Review, enhance the transition arrangements between response and recovery to ensure it is timely, efficient and responsibilities are clarified.



Photo Credit: The Islander

# FOCUS 5: INTEROPERABILITY AND COOPERATION

## Interoperability

In general terms, level of interoperability, teamwork and spirit of cooperation between the SACFS, SES, MFS and DEW was excellent at all levels. We note there were some individual cases where this was not the case and these are being addressed outside the scope of this review.

This was the first time that the MFS has been deployed on this scale to a SACFS incident. MFS officers integrated, learned from the SACFS and shared their knowledge and experience relevant to the application of bushfire. Some of the notable successes the review heard were:

- an MFS officer who redesigned the staging area at Kingscote airport within the first 24 hours received significant praise.
- MFS appliances were being used to backfill at Kingscote station, allowing the brigade to respond to the rural fire emergency with their appliances.
- IMT resource management – implementing a system which worked through the various Microsoft Teams spreadsheets to develop a single point of truth that outlined what was on the island and where.
- the deployment of MFS field mechanics to assist with servicing of all appliances to turn them around at the staging area.
- deployment of MFS crew in a remote area firefighting team with DEW and SACFS crews around Vivonne Bay, conducting arduous fire line work and mopping up.
- the scale of MFS deployment to the incident in the third week of January, when the IMT had been advised by the RCC and SCC that no resources were available.

Where the review found challenges with MFS integration these were around:

- lack of AIIMS training for MFS staff.
- lack of interoperable radio equipment in MFS appliances, notably the VHF network (also identified in the Independent Review), and the lack of understanding, for example, on how to use the GPS locator function when operating in SACFS appliances.
- lack of understanding of the flexibility needed when managing such a large incident over a complex and distant area of operations.
- certain members having fixed views regarding shift lengths and departing ahead of other functional areas from the IMT.

The review heard that the MFS have now appointed two emergency management officers who are working to build capacity and capability within the organisation to better integrate into SACFS led operations in the future. The review believes that this is a very positive development, as the MFS can provide critical surge capability in large scale campaign incidents such as this.

SES provided internal debrief data, with key themes including:

- SASES crews enjoyed the experience and the inclusion of the Humanihut capability into base camps.
- they found good respect was shared across all agencies.
- they desire more training in base camp management to increase the capability in the future.

An area the review found could be improved at the strategic level is problem solving in the SCC at the multi-agency level. As discussed in the SCC section earlier in the report, often the SCC appeared to be far too far involved in the incident management level. The SCC, by definition, is the Centre coordinating state-wide operations and resources, for both SACFS-controlled incidents and SACFS operations in support of other agencies. The Centre is managed by the SDC and is staffed by the SCC personnel or others as identified by the SDC as determined by *Operational Doctrine 1.4 – Levels of Operational Preparedness 4.10*.

By having officers embedded in the SCC who can identify their own resources to solve issues at a multi-agency response, for example, the option to deploy the MFS forward command vehicles which could have assisted with rapid deployment of additional physical capability and capacity for the IMT, providing space for the operations cell and so on.

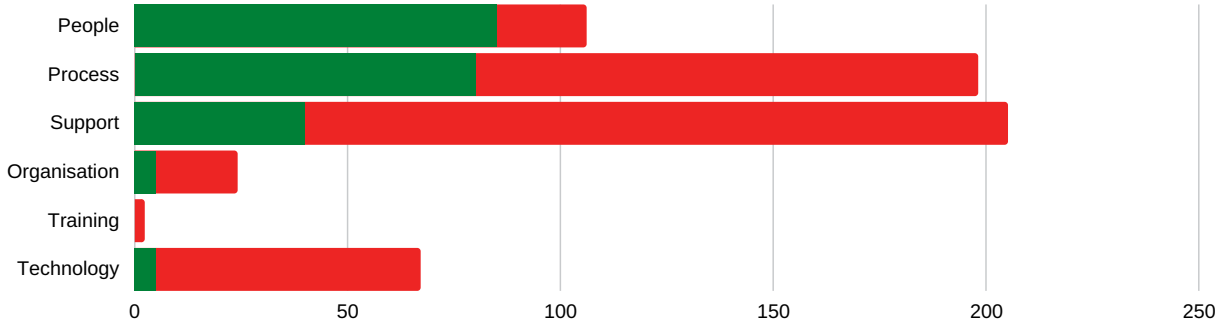
In summary, the level of respect, human factors and sense of community focussed outcomes across all agencies was exceptional and puts SA in an extremely positive posture to mature this in coming years.



## ANALYSIS

- The attitudes of almost all across the emergency management sector in SA during the KI fires was exceptional.
- Despite not having AIIMS training, the MFS officers integrated well into the IMT, and other functional positions and there was mutual respect between MFS and SACFS personnel.
- Further work on interoperability policy across the sector, also incorporating DEW, will ensure that there is a sense of ownership of coordinated firefighting across the agencies, and this, along with the current culture, has a good posture to move forward from.

Insight 17 Analysis - Fundamental Inputs to Capability



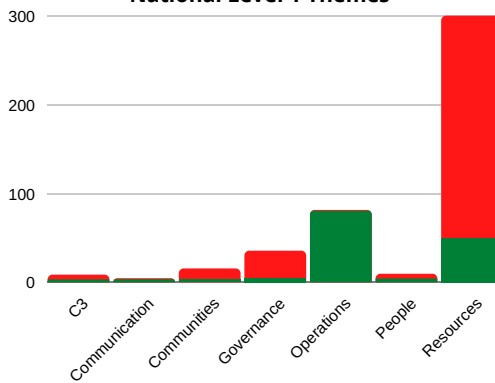
614

observations

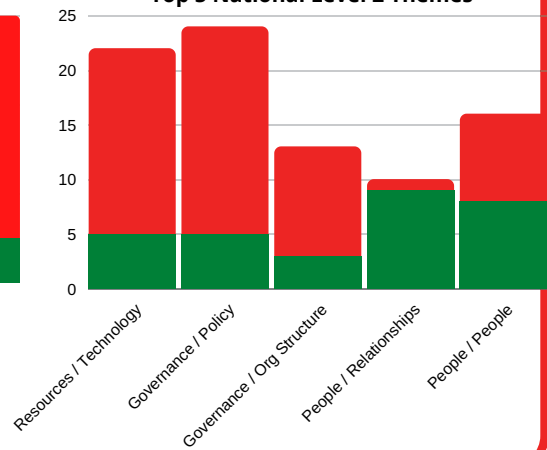
23

data sources

National Level 1 Themes



Top 5 National Level 2 Themes



## INSIGHT 17

Resources for all agencies in the sector are tight, as Governments attempt to resource all functions which they are responsible for. The level of trust and respect that exists within the sector is often the hardest to achieve. Considering that this already appears to exist, processes for resource sharing can now simply flow to mature the understanding of each capability agencies can apply to resolve incidents, on KI and across the state.



Photo Credit: Sarah Yelland

### Australian Defence Force (ADF)

The Australian Government Disaster Response Plan (COMDISPLAN (2017)) describes "a well-directed, coordinated and timely emergency management response acts to minimise the impact of an emergency on the community and support the recovery process. When a natural disaster or other domestic emergency occurs, it is primarily the responsibility of the relevant state or territory government to protect life, property and the environment. State governments draw on a range of emergency services, volunteer organisations and commercial resources when responding to emergencies. State governments may also request Australian Government non-financial assistance to provide additional resources for response and recovery activities, as defined in. Non-financial assistance can include, but is not limited to planning, expertise, provision of mapping services, counselling, advice, management of external resources and physical assistance."

Typically, the request for deployment of ADF is made through the state to the Commonwealth under the COMDISPLAN. Such a request results in a Defence Assistance to Civil Community (DACC) request being considered by Emergency Management Australia (EMA) and recommendations made at the Commonwealth Government level. In the case of the Ravine Complex, this was one of many major fires burning during January across Australia, and the Australian Government made the decision to forward deploy ADF resources to key bushfire affected areas.

This decision is well outside the scope of this review and has been examined by the Royal Commission into National Natural Disaster Arrangements, as referenced by the review.

The ADF, with a range of capabilities, began deploying onto KI from 4-5 January 2020. Liaison was established in the IMT, the SCC and the SEC. The review heard over-whelming positive feedback regarding how well-received the support the ADF brought was. Their ability to get things done, be self-sufficient and work hard to provide positive outcomes was excellent, and their morale-boosting activities and attention to mental health and wellbeing issues were greatly appreciated by a community in a state of significant shock.

The areas of support from the ADF where the review heard successes existed:

- removal of problem and dangerous trees across roads, and near roadways.
- catering support provided working with the Salvation Army (most reflected these were the best meals on the island across all levels of the fire fight).
- logistics planning.
- general assistance such as moving resources.
- assistance with management of contamination to the reticulated water supply from Middle River.

The challenges heard included:

- a cumbersome approval process to get tasking underway – often tasks expired prior to approval being received to undertake the task.
- the understanding of what the "fire ground" was. One of the underpinning principles was that ADF could not work in areas of active fire, due to the lack of capability in this area. However, in practice there appeared to be differing definitions between what the "active" fire ground was.
- The lack of flexibility in the tasking model – for example a request was made for ADF personnel to move SACFS appliances at the staging area, and it took a good deal of time to get that approved, despite the officers having the appropriate licences, because they were not ADF vehicles.

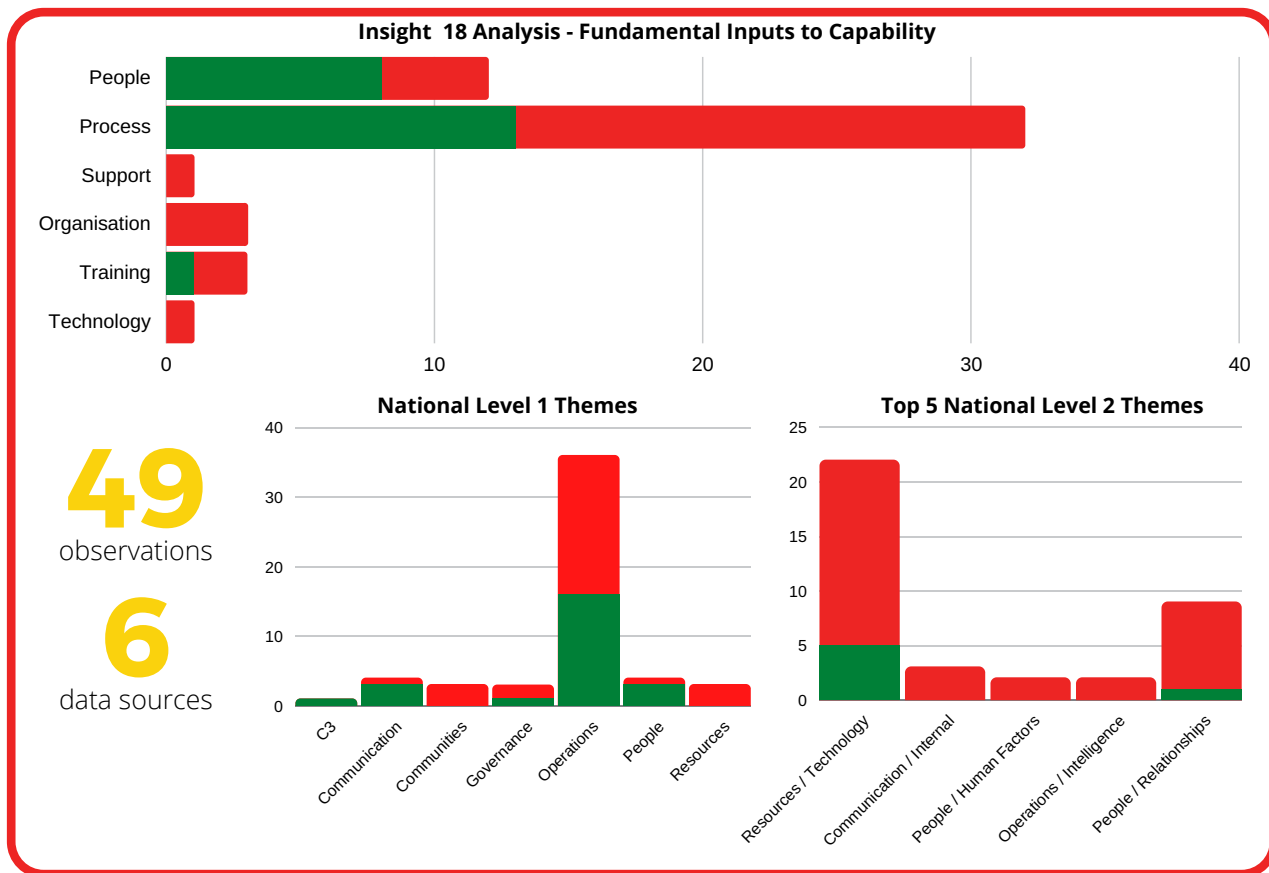
The review heard largely positive stories of the working relationship between the Incident Controllers, IMT and the ADF liaison officer on KI, and the manner in which the ADF navigated the relevant organisational policies and governance to achieve good outcomes for the community.



Photo Credit: Australian Defence Force

## ANALYSIS

- The integration of the ADF into operations, while it did not follow the usual process, worked well and staff from all organisations made it effective.
- Little further analysis is proposed in this area, as the findings of the Royal Commission will lead to states considering how this will be further implemented into the future.



## INSIGHT 18

The ADF was a welcome addition to capability on KI. They provided a structure and planned workforce and set of capabilities which assisted in achieving positive community outcomes. With a more streamlined approval process, and mutual understanding of joint capabilities, would have led to an even more integrated approach to resolving the incident.

The *Royal Commission* discusses the possible direction here as:

***"The Australian Government also has capability and capacity not available to the states and territories. Disasters too great for one state or territory to manage alone may become more common. Existing disaster plans, including the National Catastrophic Natural Disaster Plan (NATCATDISPLAN) and the Australian Government Disaster Response Plan (COMDISPLAN), recognise that the Australian Government can assist when a state or territory government becomes significantly incapacitated or its resources are exhausted. Nonetheless, there is clearly an opportunity to refresh and strengthen national disaster planning."***

(Royal Commission into National Natural Disaster Arrangements interim observation 23)

The review notes the allocations that the SA Government provides in its response to the *Independent Review*, and has committed to the following in this area:

- improve understanding of when and how Australian Defence Force can assist civilian authorities.
- seek a review of COMDISPLAN and DACC arrangements via the Australian and New Zealand Emergency Management Committee.
- ensure practices are in place so that when the ADF personnel are used, it does not automatically displace local tradespeople or contractors.

## KIPT

KIPT provided resources as an industry brigade to the KI fires from the start of the fires on 20 December 2020 and throughout the campaign, with personnel, firefighting capability and liaison in the IMT.

As discussed earlier, the organisation commissioned the *KIPT Report* into the firefighting efforts by consultants qualified in both firefighting and forestry operations. Unlike many other states, forestry in SA is largely owned and operated by private enterprise, and on KI is entirely privately owned.

The experience of KIPT during the fires was generally a negative one. They believed that often the forestry plantation asset, which sustained a loss of over \$120M in the KI fires, was not considered as one which should be protected. It is noted however that the IAPs had the plantations listed as an asset. The experience on the ground was that public roads were used rather than considering using the edge of the plantation as control lines, and hence still controlling the fire, but protecting the forestry asset at the same time. This was notably evident in the review of the Duncan fire.



Photo Credit: Brett Wittwer



Photo Credit: Rod Virgo

The review heard that the forestry industry were locked out of the IMT at Parndana in the days leading up to 3 January 2020, and anecdotal evidence was that comments such as, 'forestry assets are not fondly looked at on KI,' being made by senior members of the IMT were not well received.

KIPT indicated to the review that they believe that much of the decision making around the protection of, firefighting within, and use of the plantations within strategy and tactical decision making stemmed from a lack of capability and training in forest fire management. KIPT has delivered local training with the KI Group in previous years and are keen to formalise their role as a member of the coordinated firefighting arrangements in SA once regulations are in place pursuant to recent amendments to the *Fire and Emergency Services Act 2005* (SA). Key recommendations from the *KIPT Review* relative to this report are:

- ***KIPT investigate the establishment of an appropriate forest owner's association to improve communication and decision making about fire management near and within the plantation estates on Kangaroo Island (B2)***
- ***KIPT work with FOC [Forest Owners Conference] to develop and implement SACFS doctrine that considers firefighting in plantations. The doctrine needs to consider:***
  - ***The fire characteristics of plantation fires;***
  - ***The use of direct attack in plantation fires;***
  - ***The need to locate containment lines close to the fire perimeter;***
  - ***The considerations of when to back burn in plantations;***
  - ***The consideration of when to burn out unburnt plantation fuels within the fire containment lines;***
  - ***The ability to track unburnt fuels within the fire perimeter;***
  - ***The role and identification of the FLO; and***
  - ***The use of foresters to assist field command (sector commanders for example) in plantation details. (D1)***
- ***KIPT should encourage the Kangaroo Island SACFS Group to increase the number of Plantation Firefighting trained personnel on the island. Longer term consider if it is appropriate that KIPT sponsors or delivers the SACFS Plantation Firefighting training, or a refresher of the Plantation Firefighting training package to increase the numbers of plantation accredited firefighters.***
- ***KIPT plan and implement an annual pre-season training and awareness event to reinforce doctrine, build relationships and reinforce the role of the FLO. Consider engagement with Deputy Commander (Region 1) of the SACFS to seek support/attendance as Plantation Firefighting Trainer. (D3)***
- ***KIPT monitor the proposed changes to industry brigade arrangements and seek opportunities to limit any adverse impacts and to take advantage of any positive benefits. (D4)***

(The Review of the Ravine Complex Fire Response (December 2019 to February 2020), Forest Strategy Pty Ltd 2XH Consulting Pty Ltd.)

In relation to recommendation D4 (above), it is understood that KIPT has made submissions to the Chief Officer and Minister for Police, Emergency Services and Correctional Services to increase their involvement in the coordinated firefighting arrangements within SA.

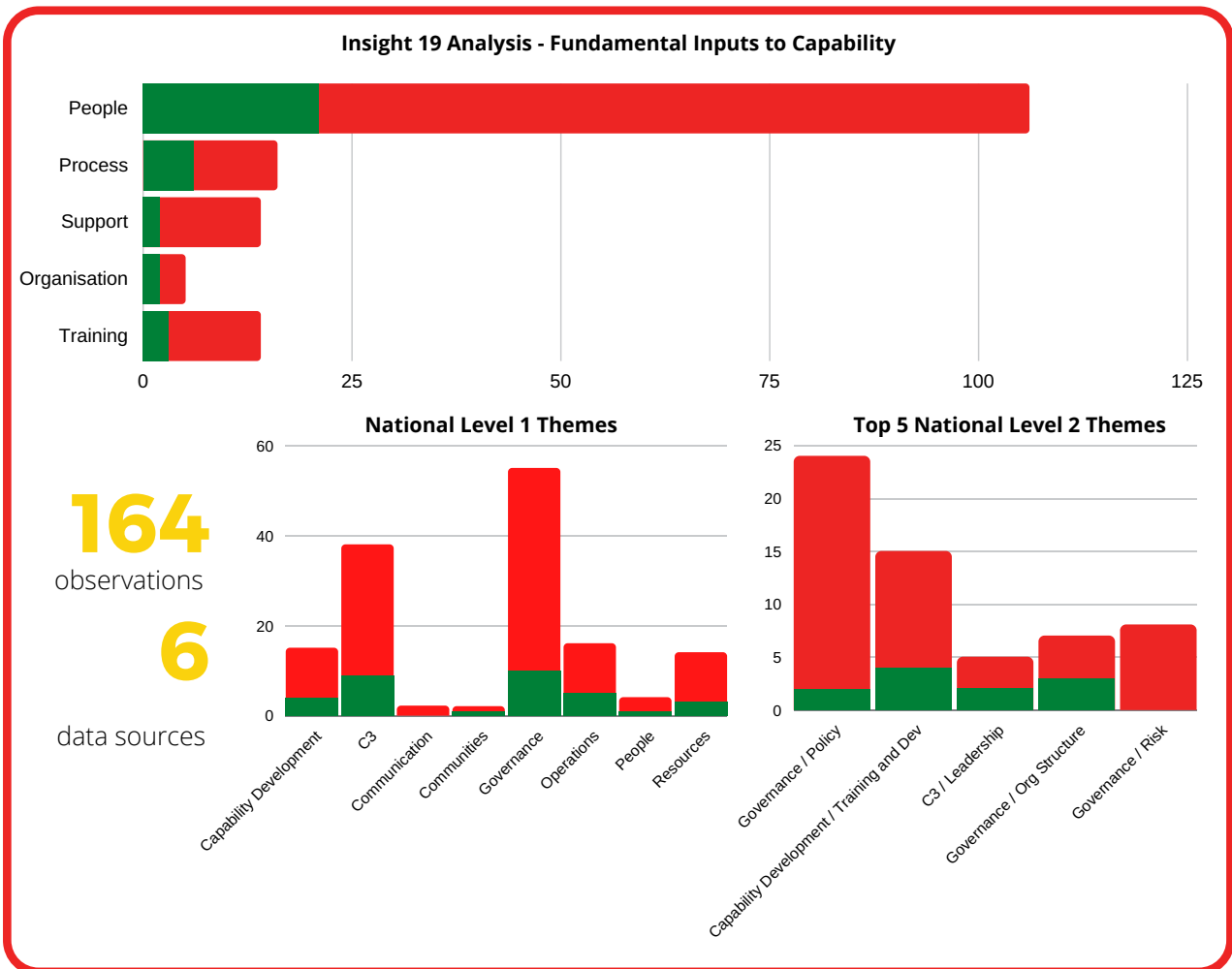


The reviews findings are also consistent with the *Independent Review*, which found:

**"IMTs and fire ground leaders need access to people with local knowledge including suitably trained and qualified forest industry professionals to assist with decision making."**  
 (Government of South Australia 2020: Finding 7.75)

## ANALYSIS

- The IAPs showed the importance of plantations across KI during the event, including their value. However, the importance placed on the defence of these assets during fireground operations varied greatly between members of the IMT.
- There is likely a lack of general understanding and capability in relation to plantations, and how to integrate them into operations, along with their protection which could be a focus for training in the future.
- KIPT have a posture of leaning forward to increase their role in coordinated firefighting in the future within SA, and their submissions in relation to how this can improve in the future is currently are being considered.



## INSIGHT 19

The integration of KIPT into the KI fires was mixed. There was a perception that they bring little on-ground capability, and therefore the attention to their assets should be commensurate. Little training existed for forest fire techniques and management of risk before the fire, and generally only sat within the KI Group. More education and a doctrinal inclusion of industry liaison officers would have led to better outcomes.

The review notes the allocations that the SA Government provides in its response to the bushfire review , and has committed to the following in this area:

- Incorporate Industry Brigades into Incident Management Teams.

# FOCUS 6: PUBLIC INFORMATION AND WARNINGS

The review finds that there is no doubt that the efforts of all involved in relation to the execution of public information, warnings and media prevented the significant injury and/or death of many of the KI community and visitors to KI.

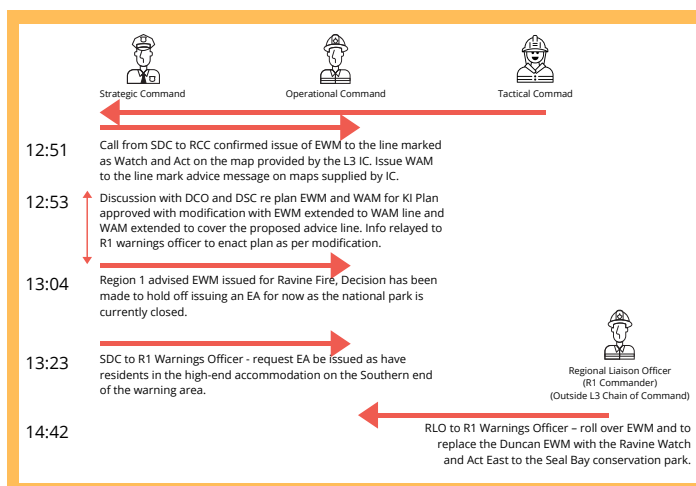
Operational Public Information and warnings to the community is part of a broader, integrated approach spanning prevention, preparedness, response and recovery activities within SACFS. It is recognised that warnings alone will not be able to assist everyone, every time. There are many complex factors that impact every person's situation and decision-making, particularly during times of significant stress, as indicated in *Operational Doctrine 6 – Chief Officers' Concept of Operations – Operational and Public Information (2018)*. The focus on warnings was a high priority in the IAPs, and within the RCC and SCC to ensure they were issued on time, and through the appropriate means. The conviction of those who issued them, despite sometimes seeing blockages, should be congratulated and celebrated.

As discussed earlier in the report, the media team within SACFS were surprised the lack of attention KI was getting from the community in the early stages of the Duncan and Menzies fires, however attested that this was likely due to the focus on fire activity much closer to Adelaide in the Cudlee Creek fire. Media management provided by SACFS Media in Adelaide was well received by the ICs and they felt fully supported when there was local, state, national and international media attention on the fires, particularly through the Ravine Fire.

A Warning Officer is defined by SACFS *Operational Doctrine 6.6 – Advice and Warnings to the Community 4.2* as the individual, at either the ICC, RCC or SCC, responsible for creating and issuing Advice, Watch and Act Messages (WAM), Emergency Warning Messages (EWM) and Emergency Alert (EA) messages under the direction and authority of the Operational Commander or IC, whichever is applicable. As described in the RCC section of the report, the Warning Officer was embedded in the Region 1 RCC and was guided by the information and requests from the ICC in Parndana, and later Kingscote, for decision making. Bushfire Messages should be selected based on the estimated time of impact on a community, determined by the FRoS and the actual FFDI or GFDI. Operational Commanders and L3 ICs are authorised to create, issue and approve any Bushfire "Advice" WAM, EWM or EA. SACFS has adopted a matrix to guide the decision making on this.

During the event, and in particular with one SDC, there was consistent questioning and repeated seeking of their approval to issue warnings, as when the view was taken that the matrix threshold was not met, they did not give approval to issue warnings. The warnings were sent regardless, as is allowed by SACFS *Operational Doctrine 6.6 – Advice and Warnings to the Community 6.2*, as they were based on the IMT's assessment of fire ground conditions.

The level of involvement that occurred in the issuing of Emergency Alerts at multiple levels of the organisation did not reflect the intention of the doctrine and caused confusion in the direction given to the warnings officer at the region. An example of this from 3 January 2020 is a reconstruction of directions on warning messages from CRIIMSON.



The review found no evidence that these actions slowed the issuing of warnings, however it demonstrated that there were many levels in the organisation involved which has the potential to lead to confusion.

The additional layer of audit and compliance for warnings, which is done from the SCC (post message auditing), appeared to work well. This was however another source of information and contact between the SCC and the Regional Warnings Officer in addition to the various requesting officers outlined below. A more streamlined approach to following the intent of the doctrine should be considered for the future.

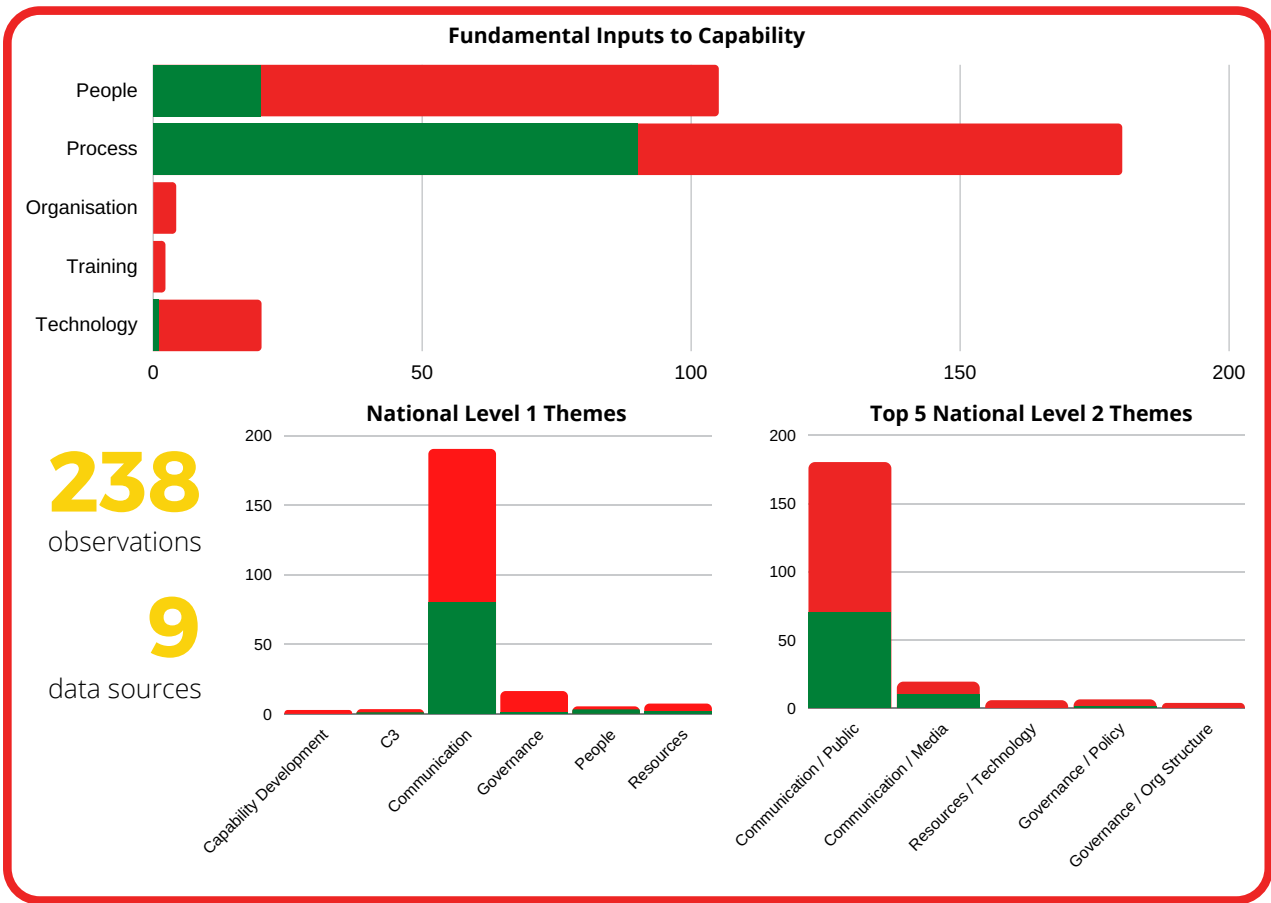
The use of WAM and EW messages was clear however the review heard concerns that as the fire progressed to the east the continued use of the name 'Ravine' fire in the warning messages was confusing. Many on KI relate the name Ravine to be that in the north western part of the park, indeed where the fire began. Visitors to the Island searching 'Ravine' would have the same result. As the fire moved closer to Parndana, Vivonne Bay, Stokes Bay and eventually Kingscote, it would have been appropriate to consider changing the name of the fire to better reflect the location.

As an example, this was the case, for example, in the NSW fires in 2019-20, where the name of the Gospers Mountain fire was split into a more localised name as it progressed into the Blue Mountains. This approach supports a greater chance of the messaging being understood by the community.

The review also heard a concern that there was no EA issued for the central and northern areas of KI as the fire spread rapidly in this direction and then subsequently impacted localities on KI during the afternoon and evening of 3 January 2020.

### ANALYSIS

- The issuing of warnings and information was of a high priority across the KI fires, and staff were committed to them at all levels of the operational structure.
- Warnings featured highly in IAPs in relation to priorities for incident management teams during the Menzies, Duncan and Ravine fires.
- There needs to be clarification of the application of the warnings matrix under doctrine and the removal of second-guessing of IMT requests for warnings to be issued, particularly for EWMs.
- The involvement of some levels of the organisation which then provide different direction to others at very similar times needs to be explored, with a more structured and disciplined approach to ensuring there is single points of decision making with redundancy checking when the single point is not operating as it should, or is disabled for any particular reason.



## INSIGHT 20

Public Information and Warnings was of a high priority through the event. Without a warnings officer embedded in the ICC, this relied on the regional warnings officer taking on the primary role. The officer undertook the role within the current doctrine, however decision-making outside of the prescribed framework caused confusion at times. This could have led to incorrect warnings being released if the quality assurance check did not work.

## FOCUS 7: MENTAL HEALTH AND WELLBEING

Health and Wellbeing services are managed for SACFS, along with the rest of the emergency services (SES and MFS) sector, by a team embedded in SAFECOM. They deploy as part of the logistics (medical) cell and did so in the KI fires to support staff and volunteers. During incidents, SPAM peer support officers offer onsite support. When critical incidents occur the IMT generally activates SPAM to provide Critical Incident Stress Response (CISR) counselling. The *Independent Review* notes that 48 such CISR sessions were provided during the 2019-20 fire season.

The SPAM team also provides follow-up services, including one on one phone calls and referrals to clinical psychologists. The team can arrange group counselling sessions, and have run a number of sessions on KI since the fires for brigade members to come together and discuss their experiences.

It was clear to the review that many people are still struggling with their experiences during the fires. This was evident by the emotion shown in the debriefs held by the review, particularly, but not exclusively, on KI. Many felt neither SACFS or DEW have recognised what happened on KI during the fires, and they made these comments acknowledging the challenges that COVID-19 has presented.

The question of capacity of a team of two personnel providing these services to the organisation comes into question. The SPAM team advised the review that there is no paid (volunteers only) surge capacity available to the team when multiple L3 incidents occur, such as was the case with KI and Cudlee Creek.

We believe that the SPAM team operated as well as they could have given their resourcing. The raw emotion that still exists, as observed by the review, indicates that there is significant ongoing work to be done to manage the mental health and wellbeing of personnel involved in the fires, including the cumulative effect of their experiences, which occurs with consecutive fire seasons.

The review considered a report on the 'Results of National Mental Health and Wellbeing Survey for Emergency Services' conducted by Beyond Blue, and released to all SACFS staff by the previous CO on 21 December 2018. Key issues of concern in the Results of National Mental Health and Wellbeing Survey for emergency services conducted by Beyond Blue, 21 Dec 2018 were:

***"A higher proportion of employees at SA Country Fire Service indicated staff shortages caused them a lot or extreme amounts of stress than was reported across the fire and rescue sector, and three in five employees in SA Country Fire Service felt that people working in SA Country Fire Service would be hesitant to disclose that they were suffering from a mental health-related issue, and two in five felt that most people in SA Country Fire Service would prefer not to have someone with depression or anxiety working on the same team as them."***

Beyond Blue, 2018

This latter finding in particular suggests a level of stigma regarding mental health within SACFS which is of concern when significant traumatic events such as the KI fires occur. This culture is likely to mitigate against an appropriate and effective agency response. The feedback to the review unfortunately provided strong endorsement that the agency has not responded adequately in recognising and supporting staff and volunteers who have suffered, and continue to suffer, mental health and wellbeing concerns as a result of their experiences in the KI fires. Equally strong criticism was levelled against DEW in this regard.

The review also found a lack of focus on mental health safety, mental health first aid or other strategies to deal with this issue in Functional Theme 2 – Safety in the doctrine set.



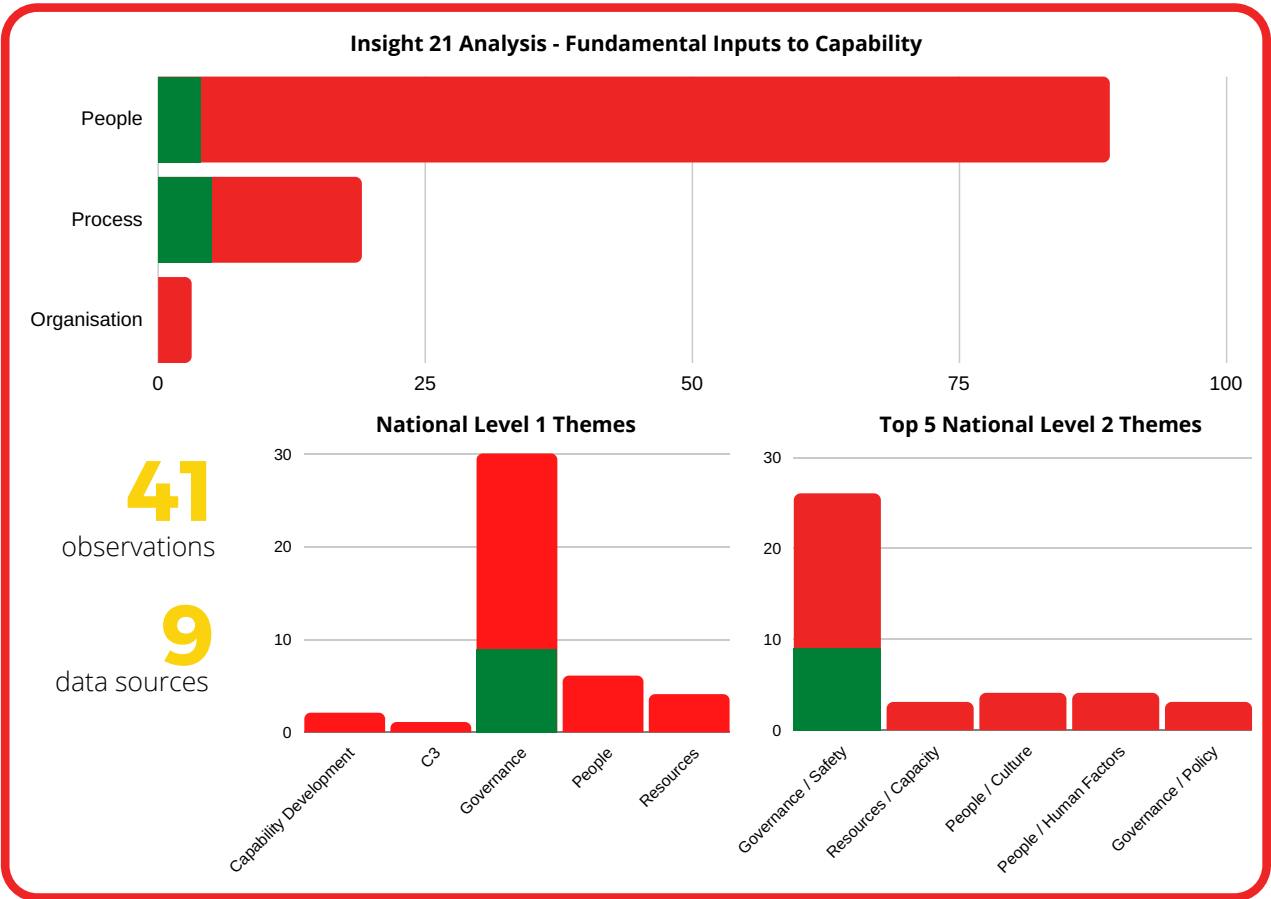
One of the major concerns the review found in relation to the SPAM process is that volunteers, unlike staff, have to go through SPAM to get the mental health assistance from either a counsellor (peer support) or a clinical psychologist. The review identified two primary issues with this approach: It is additional work for SPAM staff in managing enquiries and referrals. A number of volunteers told the review they do not have confidence in the confidentiality of this approach, and that volunteers should have the same access to Employee Assistance Programs (EAP) as staff, which is a direct contact to the provider. Our findings support the discussion in the *Independent Review*, which stated:

***"that requests for access to psychological support services has been recorded at the highest levels since 2005"***  
*(Government of South Australia 2020: 99)*

We feel that across SACFS, this area needs an urgent and resourced approach to sustain the organisation into the future. It is noted that the Government in its response to the Review has allocated one additional FTE to the SPAM team.

### ANALYSIS

- *The SAFECOM SPAM team operated well given the resource constraints it had. Further consideration to provide surge capacity for the team during and after major operations could assist in providing more effective support to personnel impacted.*
- *The review heard that during the incident, SPAM peer support, and indeed the ADF, assisted in the short term in supporting responders to deal with what they had been through.*
- *The review heard from several senior officers that the incident was a 'safe operation', as there were no significant physical injuries. However, it was very apparent to the review that there are significant signs that is not the case in the psychological sense.*
- *The organisation had a detailed report in relation to mental health and wellbeing among staff undertaken in 2018, which could provide guidance to start a reset on mental health awareness and wellbeing in a BaU sense. This would posture well for operational incidents.*



## INSIGHT 21

The raw emotion, stories and previous reports indicate the SACFS is not as equipped or resourced as well as it could be to deal with ongoing mental health issues post fire. A reset on the culture and resources in this area will only result in positive outcomes with volunteer and staff member retention and meeting obligations under Duty of Care.

The review notes the allocations that the SA Government provides in its response to the bushfire review, and has committed to the following in this area:

- Improve access to psychological support services during large bushfire seasons.

## FOCUS 8: PLANNING ALIGNMENT AND INTELLIGENCE

The available technology was largely used to the best of its ability across the organisation, with the exception of for the use of IRIS, which has been discussed at length. In comparison with other jurisdictions however, there is a general lack of access to both hardware and software systems, that are interoperable and connected, to input into the intelligence process to manage the incident, predicted situation and resources.

The review heard:

- Whilst not recognised in doctrine, the critical role that Ground Observers played in the intelligence process and informing the IMT on what was occurring and validating information – yet they were not deployed with any type of technology, not even mobile phones. Many were deployed with a handheld GRN radio from their group and used their own phone or iPad/tablet to provide intelligence back.
- That CRIIMSON is an adequate, if dated, system, but as it is open access and all information is loaded into it from across all command and control sources at all levels of the incident often makes it difficult to find information. The review notes that an upgrade is currently being put in place to assist in dividing information by functional area, and also access being restricted to those who need to know, rather than open source. However, there is no process within CRIIMSON for searching or validating information entered.
- DEW staff were using the system AVENZA for mapping. However there was a lack of understanding regarding how SACFS could receive and incorporate the information quickly to use as intelligence.
- For situation officers it was almost impossible to create a common operating picture, which is one of their key functions, due to the lack of system connectivity and the time it took to collect and collate information from various manual and automatic systems. By the time this process had been achieved the information was already out of date. These observations were also supported by the *Independent Review*:

***"a common operating picture was difficult to obtain and it is not supported by integrated ICT systems across agencies"***

(Government of South Australia 2020: Finding 6.13.4)

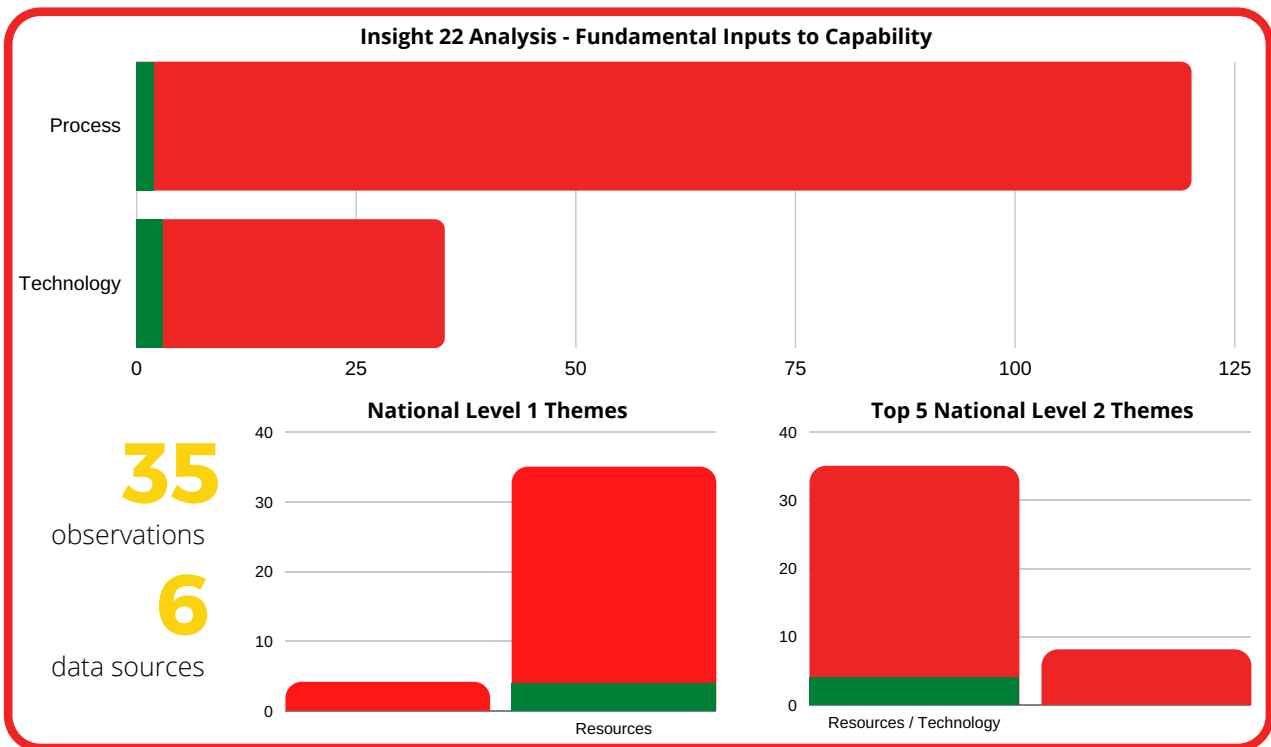
- There was significant demand for line-scans, and decisions were made utilising these when they were successful. However, in many cases their use was by people who did not have the training to interpret the images, or understand how to integrate the scans with other intelligence.
- A Forward Looking Infra-Red (FLIR) fire line scan undertaken by SAPOL on the morning of 4 January 2020 took many hours to transfer from the POC to the SCC, where it was interpreted and then onto the ICC for usage on hot spots, and was, once again, out of date by the time it was received.
- That the IMT are only allowed to see three photos taken from aerial observations on each reconnaissance flight, due to a concern that they could be distracted by having access to too many photos.

There was no connectivity between DEW, SACFS, SES, MFS plans, nor were they generally available to those who were not from the custodial agency of the plan. Many of these issues were also discussed in the Independent Review where it shared similar discussions points:

**"IT and data systems integration to allow information sharing between IMTs and the SEC. The Review heard that records from the CFS's CRIIMSON database had to be manually extracted and uploaded so that SAPOL, SES and other agencies could receive and consider the information. This is a totally unacceptable situation and needs urgent investment and improvement"; and**

**"A single source of truth and other information for community and stakeholders – The ability to know where the fires are and where they are going is difficult to obtain as are rapid damage assessments, which were considered too slow. It is a critical area for improvement because social media will outpace information being processed through bureaucratic procedures and people will make their own decisions before authorities have time to consider the issues. A single endorsed social media platform needs to be implemented as well."**

(Government of South Australia 2020: vi)



## INSIGHT 22

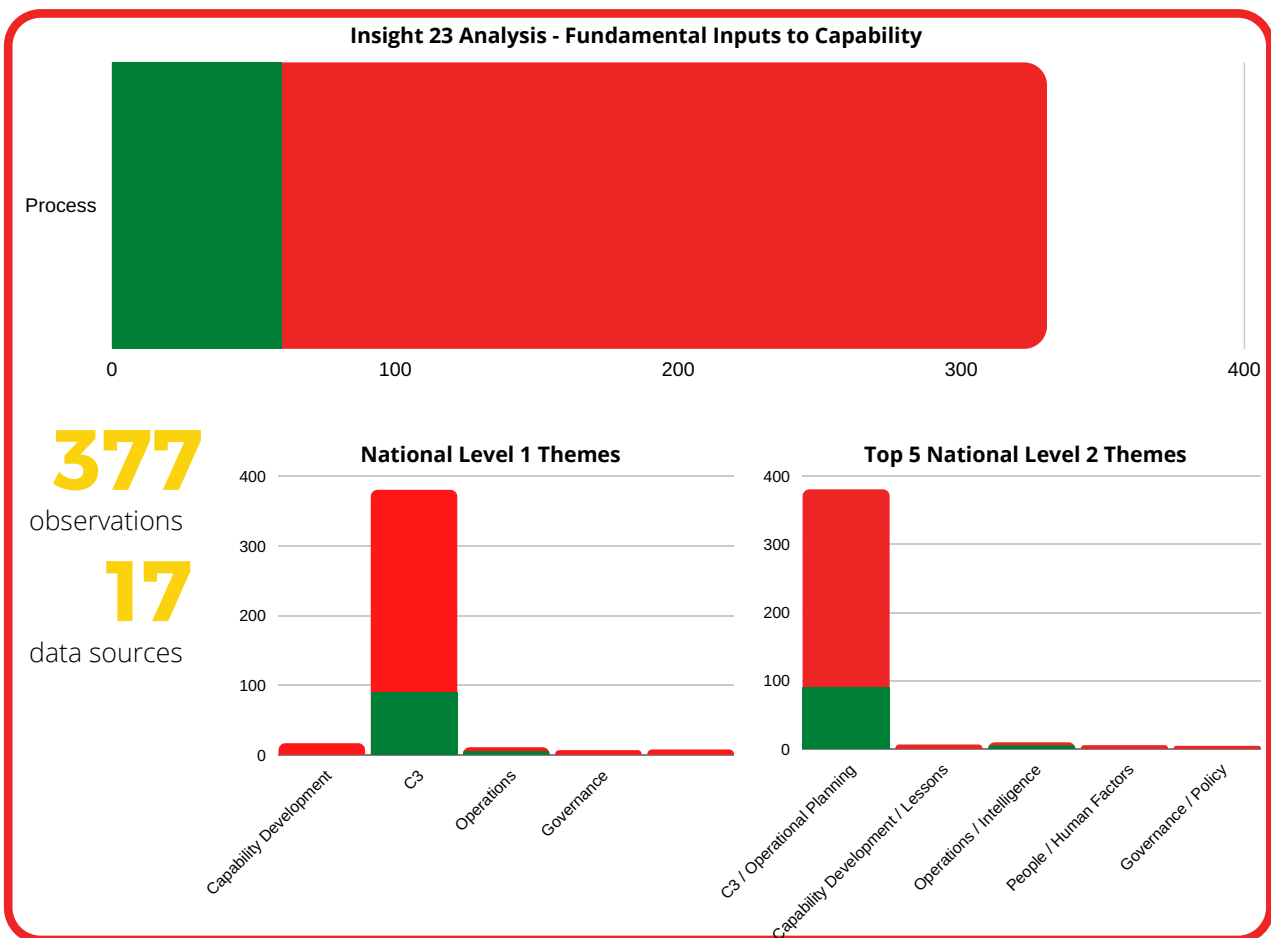
There was little technology available for use during the KI fires. Lack of basic items such as tablets to access CRIIMSON, electronic mapping, GPS and other situational awareness tools led to a lack of situational awareness, shared knowledge between agencies and other issues, such as crews getting lost on the island.



Photo Credit: Stefan Kirkmoe

## ANALYSIS

- *Technology across the coordinated firefighting agencies in SA is generally disconnected, and there is no strategy to bring the information together. This was prevalent in the KI fires with IRIS not being used, Microsoft Teams being used instead of IRIS, and not having the capability of training information feeding in.*
- *The technology, or lack thereof, allocated to key staff members in the field, such as GOBs, and then the linking of data into the ICC was not conducive to have a KI COP developed and maintained.*
- *Systems that other jurisdictions use, such as Tasmania and NSW, allow for a multi-agency common operating picture to be viewed and contributed to, which would have assisted with a better operational and intelligence picture at the local, regional and state level during the KI fires to better plan resourcing, staging areas, and other critical points. In turn, this would have increased operational effectiveness.*
- *At the least, agencies should be able to access one another's operational plans such as the GOMP, ROMP etc. regardless of the agency they come from.*



## INSIGHT 23

The lack of connectivity of the planning arrangements – GOMPs, ROMPs, ICC Audits, DEW Parks Fire Management Plans, SES Doctrine and operational information impaired the IMT, RCC and SCCs ability to produce a common understanding of what the fire was doing, its consequence and a joint understanding of what needed to be done next. When considering the findings in insight 18, the information flow was lacking, cumbersome and not timely to make appropriate decisions upon.



## FOCUS 9: LOGISTICS GOVERNANCE

Logistics Governance was the final major theme that emerged from the review. While the administrative procedures of the SACFS are not within the scope of the review, this issue is broadly addressed as part of the Logistics function within incident management.

Logistics at L 1/2 incidents are generally organised at Group level where SA Government Credit Cards are provided to the Group Officer and other officers, as per doctrine, to make purchases. This seems a reasonable approach that reduces red tape around purchase order books and has sound governance structure in the recording and tracking of invoices through an online financial management system. The review heard that there is the ability for credit card limits to be increased easily by authorised officers during prolonged events.

The issue of financial management is intrinsically linked to the functional area of the finance officer not being embedded in the IMT at an early stage as part of a standard deployment process. As was noted earlier, the lack of an embedded financial officer from the commencement of the incident resulted in two officers from Region 1 relocating to the Island and spending six months resolving invoices after the incident concluded.

Levels of delegations are not applied to members of the IMT by position. Only the IC has the ability to approve purchase orders as required. The remaining financial delegation remains with either business as usual processes (Group Credit Cards) or staff being deployed who use their SACFS non-operational financial delegation (normal business as usual delegation), if they have it, to make purchases.

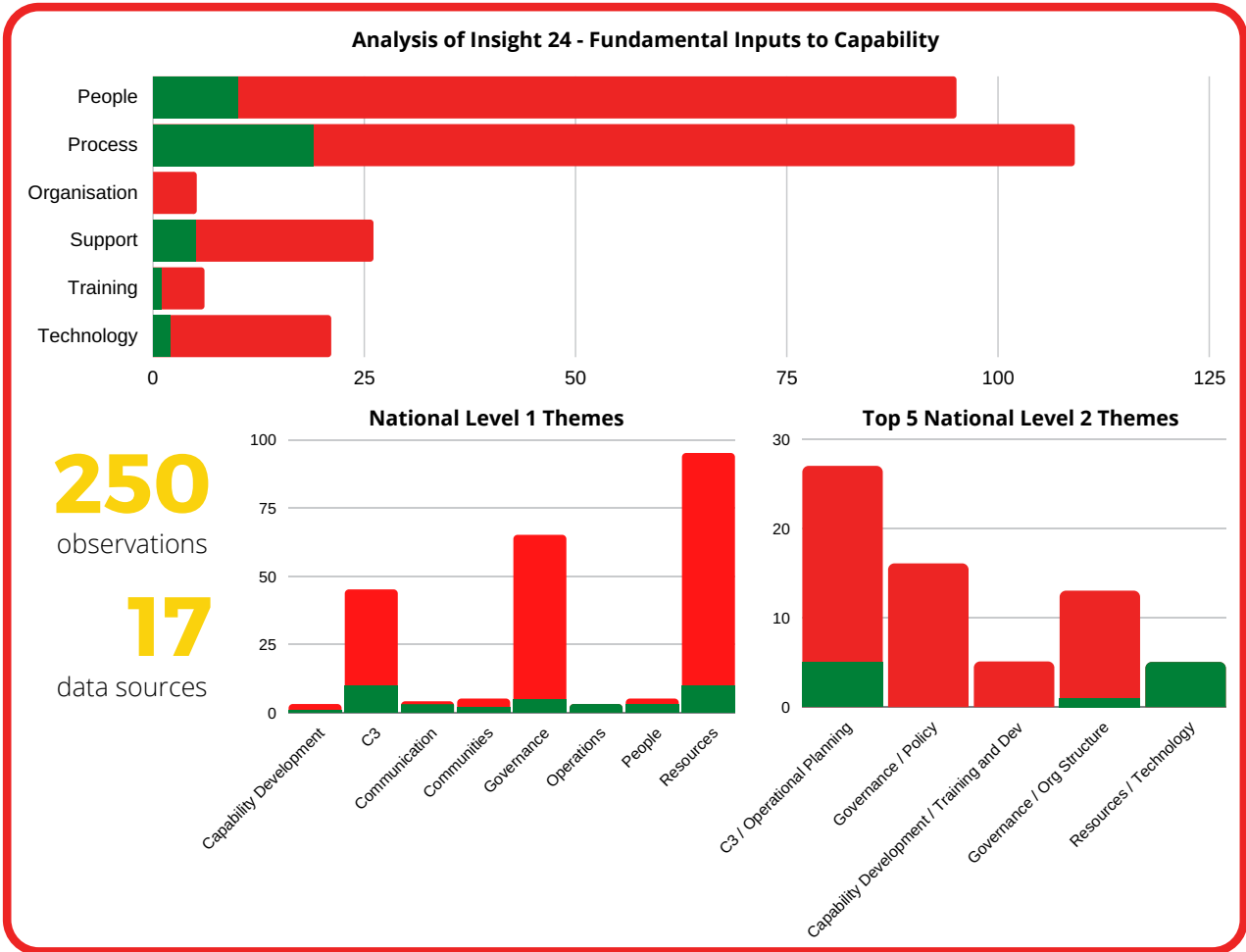
The review heard of preferences towards and consistent use of some suppliers occurring, while competitors were not being used. It was apparent to the review however that some of these concerns may not consider the issue that exists with a small market size where the incident was operating on - being KI. The review also heard of local businesses who were suffering significant cashflow issues based on SACFS purchasing, but not remitting financial acquittal in an appropriate timeframe.

The terms of reference of this review do not afford the opportunity to explore this matter further, nor should they be, given the primary focus is on the operational performance. However, the review notes that the issue of financial delegation and logistics decision-making is a risk to the organisation and suggest an appropriately qualified person should investigate this matter further and provide clarity to ensure that L3 IMTs are meeting the requirements of the *Public Sector (Honesty and Accountability) Act 1995 (SA)*, as well as Department of Treasury and Finance (DTF) procurement requirements. The issue of delegation, and subsequent training in relation to the obligations under the *Public Sector (Honesty and Accountability) Act 1995* and DTF, with the application also of procurement delegations, need to apply to L3 ICs and Logistics Officers.

Other considerations in relation to logistics governance requiring clarification are the respective roles and responsibilities of the ICC, RCC and SCC in this process. The review heard of many examples of flights, ferries and other materials being booked by a range of officers, and of others saying they would take control of it, only to hand it back after 12 hours. It was indicated to the review that if effective resource management had been undertaken throughout the incident, using IRIS, the travel booking arrangements could have been outsourced to a travel professional.

### ANALYSIS

- *There are currently no emergency delegations in relation to finance for ICs or Logistics Officers, which is a risk to the SACFS meeting legislative requirements.*
- *The finance officer should be an automatic deployment with a L3 IC, and this would have greatly improved outcomes for suppliers, as well as governance and decision making.*
- *All staff and volunteers involved in procurement during events should undertake an annual refresher of training in relation to their obligations under the Public Sector (Honesty and Accountability) Act 1995 and DTF procurement requirements.*



## INSIGHT 24

This incident consumed enormous amounts of resources and, therefore, a high level of consumption of finance. The review found that at times, there was a general risk and lack of governance around purchasing, its oversight, and roles and responsibilities which could lead to the SACFS not complying to the *Public Sector (Honesty and Accountability) Act, 1995*.



Photo Credit: The Islander

# CONCLUSION

The hard work, determination and desire to achieve positive community outcomes cannot be understated in the planning and response to the Kangaroo Island fires. The review would like to acknowledge the work of many people who contributed to the response to the KI Fires. The work was done in difficult conditions, and should be commended and celebrated by the SACFS, while reflecting and considering the outcomes of this report.

C3R approached this review with humility, and treated the time with which people spent with them with the trust and respect it deserves. The review has attempted to reflect the stories told by the participants, with the contrast of an analytical approach to the doctrinal environment under which SACFS operates.

C3R believes that this review, and the ongoing work that continues in the response to the *Independent Review*, provides an opportunity to consider organisational change, and take the learnings from the incident to influence better outcomes for fires on KI in the future, and for broader organisational realignment where appropriate.

The review is in agreement with the notion it was presented by many who contributed to this Review, that is; there is a significant deficiency in full time equivalent resources for the agency. The operating environment finds staff filling many roles, and the design of doctrine for staffing levels finds a high level of competition for the same resource. The review finds that the doctrine tends towards an aspirational position, which is largely unachievable given the agency resource base.

The Parliamentary Inquiry in 2019, the *Independent Review* combined with this review, align a need for a refresh on the agency's approach to engagement with the community, integration of FFUs and how this is approached in doctrine. Capability development at all levels is another area that will see a better outcome for a connected approach within the local community context, and continue to build resilience across the state.

Finally, an enhanced approach to psychological first aid, triaging and mental health support will likely lead to better staff and volunteer attraction and retention.

C3R acknowledges the extremely valuable assistance which Ms. Anthea Howard from the agency provided to us in undertaking this review. Ms. Howard's understanding of SACFS governance, fire behaviour - especially in the KI context, and understanding of the communities on the island made the debriefs and subsequent analysis of the data a far easier task.

C3R would like to thank the SACFS for trusting us with this review, and allowing us to present an independent analysis of the outcomes and findings of the KI Fires.



Photo Credit: The Islander

# ANNEXE 1 – COMPARISON BETWEEN 2007 AND 2020 KI FIRE LESSONS

As part of this review, we have considered the observations and lessons identified from the SACFS Lessons Management System (2007 KI Fires) and performed an analysis against each lesson with the performance from the 2020 event.

| 2007 KI LESSON IDENTIFIED   | LESSON STATUS  | KI LESSONS REVIEW RESPONSE   |
|---|----------------|--|
| <b>THEME: EVACUATION</b>  |                |  |
| The official evacuation process in SA needs to be understood by members of all agencies.  | <b>REPEAT</b>  | This lesson was identified once again during the 2020 event, with a lack of knowledge of the evacuation process, including disagreement on the terms of evacuation and proactive relocation.           |
| SAAS tried to evacuate persons from Parndana when not under any threat.   | <b>N/A</b>     | This lesson did not feature in the 2020 review.  |
| <b>THEME: AVIATION</b>  |                |  |
| Air Operations provided first essential information to IMT during first operational period. Excellent use of skill and knowledge of air ops personnel.  | <b>REVERSE</b> | This lesson from 2007 was not carried forward into 2020. With Cudlee Creek also active, air operations were extremely limited in the first few days.   |
| Air Operations Unit finished early during day. This impacted on planning for following day and providing feedback to personnel.   | <b>REPEAT</b>  | This lesson from 2007 was not carried forward into 2020. Aircraft often returned to the mainland due to accommodation or logistics reasons.  |
| Need capacity for aerial incendiaries. Would increase speed and opportunities.  | <b>N/A</b>     | This lesson did not feature in the 2020 review   |
| <b>THEME: INTEROPERABILITY</b>  |                |  |
| All outside supporting agencies integrated well and worked to SACFS requirements.   | <b>LEARNED</b> | This lesson was sustained during 2020 with good inter agency cooperation and support.  |
| Appointing one Incident Controller for the Incident proved to be of value in terms of knowledge of IMT and Incident Operations. One IC ensured one IAP and continuity of plans were achieved.                         | <b>REVERSE</b> | The coloured rostered arrangements for IMT seem to override a need to have an IC appointed for greater than 7 days (with the exception of one officer, who completed two consecutive 7-day rotations). |
| SA agencies integrated well into IMT and worked extremely hard to produce outcome. Their efforts should be praised and SACFS should use expand L3 personnel to include other agencies.                                | <b>LEARNED</b> | This worked extremely well in 2020 particularly with the inclusion of the MFS officers, which should continue with the thread of provision of L3 training for the future.                              |
| <b>THEME: RESOURCE MANAGEMENT</b>   |                |  |
| Assets disappeared due to a variety of reasons. Assets should be issued to a person recorded and when deployment (person) completed asset returned to stores.   | <b>N/A</b>     | This lesson did not feature in the 2020 review.  |
| SACFS need to develop a roster for level 3 IMT's. The working capabilities are greatly enhanced when working as a team and individuals know each other's abilities. This should only apply to higher level positions. | <b>LEARNED</b> | This lesson has been learned since 2007, with this established however there needs to be flexibility inserted into the system.   |



| 2007 KI LESSON IDENTIFIED   | LESSON STATUS  | KI LESSONS REVIEW RESPONSE  |
|---|----------------|---|
| Command vehicles locked up and not made available to IMT or other crews.  | <b>REPEAT</b>  | This was seen again during this event. There was a shortage of command vehicles available to field commanders. Reports that many were at the Kingscote ICC which were not being used at all.  |
| Continuity of information was gratefully enhanced through the use of longer deployment lengths with a day hand over for major functions.  | <b>REVERSE</b> | This in large did not occur in 2020, with many short shifts, 24-hour deployments and a generally disjointed deployment model.   |
| Deployment plan for KI needs to specifically cater for deployment of 2 strike teams.  | <b>REVERSE</b> | Only one officer during direct interviews referred to the KI deployment plan, and that it was not used or referred to at all according to his recollection.   |
| Facilities and Supply functions in logistics need to record all assets required during incident to facilitate effective recovery operations.  | <b>N/A</b>     | This lesson did not feature in the 2020 review.   |
| Good trained and skilled people replaced 3-5 poorly trained people in IMT. IMT personnel not being trained or understanding their responsibilities or requirements to communicate with other persons in other functional areas.   | <b>REPEAT</b>  | Many examples of this occurred at all levels across field and IMT positions throughout 2020.  |
| Interstate strike teams were not prepared for communications or provided with locals as liaison. Interstate Fire services have other facilities to support personnel e.g. Base Camp. SACFS needs to identify other resources available.   | <b>N/A</b>     | This lesson did not feature in the 2020 review (there was no interstate deployments in 2020).   |
| Lack of long-term planning at ICC, RCC, and State in relation to personnel and logistical requirements. This established unrealised expectations and resourcing on the fire grounds. Short deployments 1 or 2 days cause additional stress and pressures on Ops, Planning and Logs, which is not warranted. Where mixed crews are 2 and 3 days it causes a ripple affect how to fill teams. | <b>REPEAT</b>  | This was one of the most significant issues found in the 2020 review.   |
| Lack of coordination at transport hubs e.g. Ferry and Airports, need to improve coordination of movement of personnel   | <b>REPEAT</b>  | This featured heavily in 2020, with teams arriving that the IMT did not know were coming, teams not met, or received, on arrival back to the mainland.  |
| Poor coordination of Plant and Equipment. Difficult to source during incident. Works supervisor good person to manage plant.  | <b>REPEAT</b>  | Although there was a plant manager put in place from around 4 January, the coordination and management of plan was compromised by constant re-tasking and a lack of recording in relation to the tasking and whereabouts of plant and equipment. There was also a lack of suitable equipment – notably floats and bulldozers – until after 4 January. |

| 2007 KI LESSON IDENTIFIED  | LESSON STATUS | KI LESSONS REVIEW RESPONSE  |
|--|---------------|---|
| Resource section and allocation of resources to appliances often caused delays and confusion. Need to improve processes.   | REPEAT        | This was repeated in 2020 and exacerbated by the staging area issues.   |
| Resources not formed up into strike teams in staging and allocated to fire. Different IMT changed appliances around to different fires. This jeopardised continuity of operations and created unnecessary. Resources seem to be broken into smallest unit rather than keeping as a strike team. This increased workload for resource unit. | REPEAT        | This was again an issue in 2020, however the Strike Team model needs to be flexible once deployed, that single appliances can be tasked to specific areas managed across a sector or sectors under the STL. |
| Tasking requests were lost at ICC RCC and State. There was also poor communication between different levels causing confusion.   | REPEAT        | This was again an issue in 2020, however the Strike Team model needs to be flexible once deployed that single appliances can be tasked to specific areas managed across a sector or sectors under the STL.  |
| The movement of IMT personnel out of ICC created confusion as to where about.  | N/A           | This lesson did not feature in the 2020 review.   |

#### THEME: BASE CAMP AND STAGING AREA MANAGEMENT

|  |         |  |
|--|---------|--|
| Base Camp did not write a plan and communicate it with ICC. There was poor communication with ICC of issues and structure. No operational plan from Base camp or structure or phone directory produced for inclusion in IAP, Poor Base Camp Management, Operations did not manage Staging areas. Staging areas need multiple forms of communications to ensure effective liaison between staging and ICC. Support Ops Officer needs to be in staging | REPEAT  | Lack of Communication between the basecamp both at Parndana and Kingscote back to the IMT once again featured in 2020.   |
| Base Camp needs facilities to be established prior to large contingent arriving.   | LEARNED | This was repeated in 2020, which was good. Need to consider putting all relevant personnel in the basecamp including the IMT to ensure there is appropriate accommodation to remove need to fly aircraft to mainland at night. |
| Need better planning at staging areas for assembly of crews and vehicles. Some could be prearranged by staging without crew intervention.  | REPEAT  | This was a big issue in 2020 with crews swapping trucks they were allocated to; people being told to simply go and find an appliance and go.   |
| Poor Management of Staging Areas . Poor Communications poor processes. e.g. T cards, vehicle management, preparation of vehicles and other resources.  | REPEAT  | This was a big issue in 2020 with untrained personnel trying to manage T Cards and resource tracking not done under any governance arrangement.  |
| Some strike teams sent to Island came as one list, not assembled into skill or role base e.g. Officer and driver.  | REPEAT  | Due to IRIS not being used (which needs to be fed by Emerald), this was often the case in 2020.  |

| 2007 KI LESSON IDENTIFIED | LESSON STATUS | KI LESSONS REVIEW RESPONSE |
|---------------------------|---------------|----------------------------|
|---------------------------|---------------|----------------------------|

Some Crews elected to sleep in. Crews sleeping in, knew or experienced long delays in changeovers or long shift previous shift. This impacted on implementation of plan and created low morale.

**LEARNED**

This was not raised as an issue during the 2020 event, even when the basecamp was evacuated several times.

**THEME: INCIDENT MANAGEMENT**

Briefings. We adopted a best practice and the next shift/personnel weren't happy with it and wanted to change it to suit personnel preferences.

**REPEAT**

In 2020, briefings also were an issue. They were over-attended, took too long to deliver and hampered fireground efficiency with units off the ground.

Changeover of fire ground personnel and IMT simultaneous causes inherent problems with timings for personnel e.g. briefings, ensuring plan is implemented. Changeovers are still an issue long delays. Results of long changeovers include direction of incident management lost, poor morale, inefficiency, safety compromised, loss of performance.

**REPEAT**

This was possibly worse than in 2007. Many hours of critical firefighting time were lost on crew changeovers during this event.

Designated support vehicle required for each plant used at fire with appropriate communications.

**REPEAT**

This again featured as a lesson identified with plant operators telling the review they were often left unattended, and little to no fire coverage.

Divisional and Sector Commanders not wearing vests at staging hampered crews in assembly.

**REPEAT**

This, along with no crew listings, public announcement equipment and other factors led to large loss of time on the fireground at staging.

Established IMT plan for day shift provided clear meeting times and responsibilities.

**REPEAT**

Many observations were made in relation to the day shift reversing decisions from the night shift, who had reversed their decisions as well.

Functional Units rarely meet with their units to plan, establish time frames or discuss issues. Question was independent action occurring. Managers were prompted during incident to communicate between each other. Poor communications between IMT functions Operations not spending time with Planning to determine strategies. This has ripple effect on resourcing and effectiveness of IAP's and the implementation.

**REPEAT**

This again featured, and in some was impeded by the facility used for the ICC. There were clear observations that operations were not communicating or being herd on the CAT day on the 3rd where they had critical fire locality information.

IAP containing information which was not consistent with training or requirements identified in forms.

**LEARNED**

This appeared to be learned in 2020 with the official IAP template being used.

IAP's hard to get complete picture between ops, Logs and Plans. Can't see linkages of where gaps are. Need to build better pictures.

**REVERSE**

IAPs were often out of date and were not linked between planning and operations functions. Time was lost with night and day shift reversing one another's strategies.

| 2007 KI LESSON IDENTIFIED   | LESSON STATUS | KI LESSONS REVIEW RESPONSE   |
|---|---------------|--|
| IAP's for level 3 incidents. Question needs to be asked whether a 24-hour plan (Sit, O objective and strategies) be standard. Only aspect to change is logs content. Lack of understanding the IAP could be broken up into smaller parts for different functions e.g. Divisions did not need to see complete plan.          | <b>REPEAT</b> | The issue of 24-hour IAPs was discussed once again in 2020. The size and complexity of IAPs were discussed by a number in the review, that they were so complex, they were unusable.   |
| Information provided or filed on computers were not necessarily read by next shift. Visual information needs to be displayed IMT reinvented information.  | <b>REPEAT</b> | This was not raised as an issue during the 2020 event, even when the basecamp was evacuated several times.   |
| Lack of back burning skills and understanding of different lighting techniques may have complicated suppression activities and coordination of effort. Poor mopping up procedures may have resulted in fire jumping control line. Crews do not get off appliances and conduct thorough investigation and black out.         | <b>REPEAT</b> | Both issues in relation to a lack of commitment and capability featured once again in 2020.  |
| Maps on appliances lucky to have 1 per 5 appliances. Maps were not available which enabled general navigation around island.  | <b>REPEAT</b> | This occurred once again in 2020, despite a stock of SACFS map book being available on KI.   |
| Need to review IMT vests. Shortage of functions Gopher and identifications of roles. Need to think about identifying minor functions being carried out and how we can ID people low cost and immediate.   | <b>N/A</b>    | This lesson did not feature in the 2020 review.  |
| Night Shift IMT were often working with reduced personnel capacity. This placed extreme pressure on working and outcomes. Resource management conflict between day and night requirements, placement of resources. What was defined in plan did not actually reflect was implemented.                                       | <b>REPEAT</b> | This was a large issue in 2020. An example was found for example on the night of the 31st December, that with less than 48 hours to a CAT day one staff member was the entire IMT and was from SES.  |
| Operations focused on becoming strategic in firefighting working from control lines instead of trying to keep up with fire or direct firefighting. This enabled efficient management of fire operation. Poor ability of Planning unit to identify/establish control lines and fallback lines and develop plan around those. | <b>REPEAT</b> | In 2020, there was no observations collected that supported a broad strategic control of the fire, it went very much into direct firefighting on the Ravine Fires for example. Good evidence however that this worked well on the Duncan fire. |
| Opportunity exists to reduce layers between ICC, RCC and State. Logistics for a major incident could effectively be managed from one location i.e. ICC. Reducing errors, resource requirements, paper.  | <b>REPEAT</b> | This occurred as a repeated theme in 2020. This is discussed in detail in this report.   |
| Opportunity to improve coordination of local farm fighter units   | <b>REPEAT</b> | This is covered in the Independent Review, and in this report.   |



| 2007 KI LESSON IDENTIFIED  | LESSON STATUS | KI LESSONS REVIEW RESPONSE  |
|--|---------------|---|
| Planning does not discuss with ops or logs plan prior to sign off. Planning unit wanted to rewrite IAP on each shift instead of keeping key information the same.  | REPEAT        | This featured once again in 2020, with planning and operations not communicating to a premium level, and IAPs being changed consistently between shifts.  |
| Planning section does not think out to 4 or 5 days their focus seems to be for next operational period. Long term planning catches IMT and resources out.  | REPEAT        | This was a big issue identified in this report. An example of this was that with 48 hours to the catastrophic FDI day of the 3/1/20, only one officer (a SASES officer) was in the IMT overnight to continue and enhance planning for that day. |
| Police commandeering an aircraft without any approval through IMT. Police have little understanding of the meaning of threat. When informing people of threat prior to fire impacting people became confused.                                    | N/A           | This lesson did not feature in the 2020 review.   |
| Production of mapping was slow due to capability of Mapping support unit. This resulted in limited or poor maps being provided to fire appliances.   | REPEAT        | This occurred once again in 2020, with many issues raised in relation to mapping and quality, along with the interoperability issues between DEW and SACFS with bringing together a common operating picture.                                   |
| RAFT team usage during fire not properly assessed. No risk assessment, conflict with Dep I/C. Crews were supposed to be dropped in black were dropped in unburnt area.   | N/A           | This lesson did not feature in the 2020 review. RAFT teams were not use.  |
| Regional Coordination Centre delved into lower operational matters not consistent with ROMP or role of RCC. Reporting relationship between Incident Controller, Region and State needs to be examined in terms of efficiencies and value adding. | REPEAT        | This is discussed within the report in detail, as it featured as a major theme in the 2020 review.  |
| Risk analysis of Vulnerable Communities was a good exercise in demonstrating the need for forced evacuation.   | LEARNED       | This was done well and communicated to communities on the 2nd and 3rd of January 2020.  |
| Safety issues in IAP's Not necessarily identified from field and incorporated into IAP or planning.  | REPEAT        | This was another issue in this event, particularly highlighted in the event of the burn overs with the crews at Rocky River, however a general sense that ground information was taking too long to get to the IMT or ignored in some cases.    |
| Sector Commander and Divisional Commanders responsibility in driving Strategies are poorly understood. This affects changeovers and achievement of objectives. Sector Commanders don't take responsibility.                                      | REPEAT        | Due to a lack of experience and/or training, this lesson was repeated in the 2020 fires in many cases.  |
| Use of Deputies Local as Dept I/C managing fire and Dept liaising with other agencies worked well. Clear roles and broke work load up for I/C.   | LEARNED       | The involvement of a KIDGO in the IMT once moved to Kingscote was a good move and worked well.  |

| 2007 KI LESSON IDENTIFIED   | LESSON STATUS  | KI LESSONS REVIEW RESPONSE  |
|---|----------------|---|
| <b>THEME: PUBLIC INFORMATION AND WARNINGS</b>   |                |   |
| Bushfire warning Messages do not handle fires impacting on more than one area   | <b>REPEAT</b>  | This lesson identified also featured in 2020, with the term "Ravine" not being seen as a priority for the community as it is on the other end of KI, and multiple warnings being issued at once for the island. |
| Community information needs to be distributed to key locations and updated daily. Situations arose where information was 3 days old.  | <b>LEARNED</b> | Information was readily available on SACFS website, there were public meetings held.  |
| Community meetings need to be attended by an operational person. This placed additional stress on IMT in terms of finding an appropriate person to attend community meetings.                                 | <b>LEARNED</b> | ICs attended public meetings during the 2020 fires.   |
| Media Liaison persons within IMT worked well coordinating media interviews and preparation of statements.   | <b>LEARNED</b> | Media Liaison worked well once again in 2020.   |
| <b>THEME: REPORTING AND INTELLIGENCE</b>  |                |   |
| SACFS needs to clarify the relationship between CRIMSON Bushfire Situation Report and IAP. During large incidents reporting relationships and fire activity has potential to change the use of these.         | <b>REPEAT</b>  | The use of CRIIMSON has become complicated to interpret the volume of information going in. IAPs remain on a MS Word Template.  |
| CRIIMSON form Situation has a section titled Objectives and strategies. This can only be completed once the Incident Controller has determined these. Often Regional staff will promulgate this section.      | <b>N/A</b>     | This lesson did not feature in the 2020 review.   |
| Demobilisation focused on getting everything off island due to Xmas holiday period, the result was temporary loss of valuable weather equipment. Increased staff commitment to recovery operations.           | <b>LEARNED</b> | The demobilisation process worked well between the L3 IC and Region during 2020.  |
| During first operational period there exists an inherent lack of information due to a range of factors. There is an expectation that information flow and planning will be achieved during this first period. | <b>REPEAT</b>  | The local group indicated they were trying to communicate with region, who were focussed on the Cudlee Creek fire. There was little aviation intelligence consumed on the KI fires in the initial period.       |
| I/C needs a scribe to record actions and meeting outcomes. Use of scribes to support I/C proved invaluable  | <b>LEARNED</b> | This occurred in 2020 and should be expanded to other critical roles in the IMT.  |
| Met Officer out posted was of great benefit during fire. Able to comment on local conditions and provide forecast as required as well as liaise with IMT in relationship to forecast and affects.             | <b>N/A</b>     | This lesson did not feature in the 2020 review.   |

| 2007 KI LESSON IDENTIFIED   | LESSON STATUS  | KI LESSONS REVIEW RESPONSE   |
|---|----------------|--|
| Poor document management re copying of persons logs. No Cover page or identification recorded. It would appear that there is no process to go through to ensure personal logs are copied, recovered. Poor documentation management at ICC and RCC.    | N/A            | This lesson did not feature in the 2020 review.  |
| <b>THEME: FACILITIES AND ICT</b>  |                |  |
| During Level 3 incidents additional photocopiers are required to cope with production of plans.   | <b>REPEAT</b>  | This, and plotters were an issue once again in 2020.   |
| Food provided to all crews prior to departure from Staging proved to reduce no feeding issues. Need to ensure food is kept within safe limits. Does Esky's suffice?   | <b>LEARNED</b> | Reports were overwhelming that the work of the Salvation Army and the ADF provided excellent catering in 2020.   |
| Good liaison with Council staff. Mayor rang daily, works manager attended ICC. CEO visited ICC.   | <b>LEARNED</b> | This was difficult with roles and responsibilities being blurred, however in general worked well.  |
| IT from SAFECOM attendance was greatly appreciated and they gained a greater understanding of IT requirements for IMT's   | <b>LEARNED</b> | ICT support was well received and provided, however this was found to be a single point of contact, and others did not share the same capability as the primary contact officer. |
| KIICC facility is insufficient in terms of running large IMT's. KI has repeatedly had large campaign fires and IMT has to work in dusty and cramped conditions. Size of level 3 ICC needs to be re-examined i.e. briefing areas, large planning unit. | <b>REPEAT</b>  | Both Parndana and Kingscote DEW Office was found once again to be unsuitable for a L3 ICC.   |
| KI needs 1:50,000 topo map of entire island not just Flinders Chase.  | <b>LEARNED</b> | There was good mapping displayed at both ICCs  |
| Lack of electronic IT for preparation of plans. Majority of IT was DEH or personnel issue. Lack of printers and ability to share and store files on daily basis caused delays.  | <b>REPEAT</b>  | This, and plotters were an issue once again in 2020.   |
| Lack of standard or common data bases which displays resource arrangements all levels. Each level had own version of information that was not immediately visible to all parties or transferred.  | <b>REPEAT</b>  | MS Teams brought agencies together, and everyone operated on CRIIMSON, however there was a disconnect between intelligence and no common operating picture established.          |
| Need to demonstrate fairness with all suppliers including locals. Number of complaints received regarding equity.   | <b>REPEAT</b>  | There was evidence that there were complaints from business, and that IMT were being told for example not to use a supplier based on personal conflict on KI.                    |
| Security of ICC needs to improve. The movement of non IMT persons through ICC created congestion and confusion as to who was working.   | <b>REPEAT</b>  | This remained an issue at Kingscote, with either the IMT completely locked down, or completely open for anyone to walk in and around.  |
| Setup engine bays with permanent IT and communications facilities.  | <b>REPEAT</b>  | This remains an issue at the Parndana SACFS Station with limited connectivity and inability to take on large loads   |

2007 KI LESSON IDENTIFIED

LESSON STATUS

KI LESSONS REVIEW RESPONSE

LOCAL KI GROUP INTERACTION

Lack of understanding or empathy with locals vs. got to get job done despite personnel relations. Local community gathers or perceives management and use of local resources differently. Have different expectations. e.g. change overs, standing down local crews, using local crews in management roles. Local resources should be housed at Base camp to reduce travelling times e.g. Parndana to Penneshaw. Locals calling for information on fire access etc. Conflicted with calls into 000. Need dedicated number in IMT to manage local enquiries. Maintain local resources for response to other fires, rescue on Island. Good use of local knowledge.

REPEAT

This occurred once again and is discussed in length at the report in relation to cultural, accountability and community engagement which occurred during 2020.





# ANNEXE 2 – INDEPENDENT REVIEW ANALYSIS

As part of this review, we have considered the outcomes of the *South Australian Independent Review* into the 2019-20 Fire Season, to comment on common themes. This analysis is provided below:

## SA INDEPENDENT REVIEW RECOMMENDATIONS      KI LESSONS REVIEW RESPONSE

Implement previous review recommendations for bushfire management including those relating to the 2009 amendments to the *Fire and Emergency Services Act 2005*, State Bushfire Coordination Committee operation, State Bushfire Management Plan, as well as urgent completion of Codes of Practice for fuel hazard reduction on all land tenures, and redevelopment of Bushfire Management Area Plans accompanied by effective community engagement to build an understanding of risk.

**Supported** – while the scope of this review was much more confined than the *Independent Review*, the lessons, particularly from the 2007 fire, are considered highly relevant (**Refer Recommendation 6**) from a KI fire management perspective, and should be considered in implementing with the context of this review.



Align risk assessment tools and processes to Risk Management Standard ISO 31000 and the National Emergency Risk Assessment Guidelines (NERAG) and communicate these on public-facing platforms. Make Bushfire Management Area Plans (BMAP) accountable for managing and reporting on region-specific risk and identifying critical infrastructure such as mobile phone towers as key risks.

**Supported** and this be continued in relation to dynamic risk assessments being conducted at the IMT level for planning and operations.

Practical examples of where this would have assisted in the fire was in relation to the decision to, on 3 January, to continue with the protection of the DEW Visitors Centre at Rocky River vs. the mitigation strategies that were put in place, however, were not realised on the day.

In reverse, this could have been used on 9 January to risk assess a more aggressive firefighting operation to reduce the spread to the east. Furthermore, the BMAP needs to be connected deliberately by the SACFS to ROMP and GOMPs to bring together intelligence for IMTs to plan for.



Consider amending the Fire and Emergency Services Act 2005 to align SAFECOM Board operations with accepted governance standards with the Minister appointing an Independent Chair of the SAFECOM Board. The SAFECOM Chief Executive (CE) should report to the Board and maintain SAFECOM's role at the direction of the Board. Alternatively, SAFECOM could be abolished, moving to a model of a Department of Fire and Emergency Services where the departmental head reports to the Minister but the value proposition of any such machinery of government change would need to be thoroughly examined.

**Outside the Terms of Reference of this Review** – however, observations taken throughout interviews during this review support this recommendation. However, a strong theme exists to increase the integration between the SAFECOM Work Health and Safety area into a more integrated approach to the Safety Officers role within the IMT (**Refer Lesson 5, Recommendation 5**).



Invest in upgrading and integrating ICT platforms to eliminate manual data transfers, and ensure IT and radio communication interoperability across the agencies, together with a dedicated focus on the development of a coordinated risk intelligence capability to provide all stakeholders with a common operating picture and rapid damage assessments.

**Supported.** Overwhelming evidence was collected within the KI review in relation to the investment in technology in both resource management, communications and a whole of sector approach (**Refer Lesson 6, Recommendation 6**) What is of importance with this however is the human factor, and a culture of accountability that there is a strong direction in relation to using the systems at all levels across the sector.



## SA INDEPENDENT REVIEW RECOMMENDATIONS

## KI LESSONS REVIEW RESPONSE

Clarity and streamline processes and educate the community about their roles and responsibilities in managing native vegetation to improve hazard reduction on both public and private land. Provide additional resources to manage fuel in a shorter off fire season and develop a risk reduction target linked to prioritised objectives.

**Supported** and increase this through sponsorship of the FFUs, (**Refer Lesson 9, Recommendation 7**) who can provide good insight in relation to the local risks and issues in relation to these issues.

Additional resources to reduce these risks in a coordinated way, incorporating local knowledge will then increase the engagement of communities, which are largely represented in the FFU population and how this can then be used to the most effect on fires across the KI landscape.

Consider removing stamp duty from home insurance to encourage a wider section of the community to take out insurance. South Australian government agencies should share their risk modelling data with the Insurance Council of Australia.

**Out of Scope**

Prepare to 'scale up' capability during major bushfire events with senior representatives (including BoM staff) in the SEC 24/7, ensure adequate facilities for IMTs, base camps (e.g. Humanihuts) and recovery centres. Consider the resource implications of providing firefighters to interstate operations.

**Supported.** Facilities were found to be lacking at both Parndana and Kingscote, along with the SCC. Furthermore, there is opportunities to be explored for the IMT to be located in facilities at the basecamp, allowing for accommodation to the required standard for aviation regulated personnel to be available on Kangaroo Island, to reduce movements to the mainland for firefighting operations. The recommendation in relation to a state operations plan for KI (**Refer Lesson 6, Recommendation 6**) provides further details on this. Recovery facilities were out of scope for this review.

Engage with the Australian Defence Force (ADF) once or twice a year to understand the capabilities that could potentially be deployed. Educate IMTs about how to deploy ADF assistance effectively and develop a streamlined 'call out' procedure.

**Supported,** however that this recommendation be extended to the MFS in relation to integration to fire operations through training, knowledge of capability and interoperability between the SACFS and MFS.

Invest in upgrading and integrating ICT platforms to eliminate manual data transfers, and ensure IT and radio communication interoperability across the agencies, together with a dedicated focus on the development of a coordinated risk intelligence capability to provide all stakeholders with a common operating picture and rapid damage assessments.

**Supported.** Overwhelming evidence was collected within the KI review in relation to the investment in technology in both resource management, communications and a whole of sector approach (**Refer Insight 6, Recommendation 6**) What is of importance with this however is the human factor, and a culture of accountability that there is a strong direction in relation to using the systems at all levels across the sector.

SA INDEPENDENT REVIEW RECOMMENDATIONS

KI LESSONS REVIEW RESPONSE

Develop and practice procedures for the SACFS, DEW and local governments to access and deploy heavy plant and machinery for fuel reduction operations both before and during bushfires.

**Out of Scope for this Review**, however this system could be leveraged from to provide a coordinated plant and machinery response to fires on Kangaroo Island in the response phase as well.



Review the use of aviation assets including facilities to operate them given the increased pressure from extended fire seasons on northern and southern hemisphere resources. Review line scanning capability with a view to providing real time data to the IMTs on where fires are burning using aviation assets as an intelligence tool rather than just a fire suppression capability.

**Supported**, and refer to **(Lesson 10, Recommendation 8 )** to provide rapid capability tools to those operating on IMTs on KI to understand the capability of specialist aircraft such as the LAT and VLAT to ensure that any tasking that is provided is considered as part of the overall strategies with ground crews to provide a maximum effort of the overall firefighting strategy.



Better coordinate public information and warnings including evacuation plans and provide a single source of information about, the location and direction of fires, how and when to use Safer Places, Places of Last Resort, relief and recovery centres and directed evacuations.

**Supported** including the mandatory embedding of a warnings officer in any IMT that is established on KI to ensure that local conditions and fire behaviour that is unique to KI has the ability to issue warnings as required, regardless of the established matrix, where local conditions are dictating so.



Clarify business continuity and restoration of critical infrastructure in the planning and response phases to facilitate water replenishment, fire ground remediation and access to businesses (including farming properties).

**Supported**, however this be extended to a full review of roles and responsibilities of control and support agencies, and that this is embedded through training and exercising to ensure there is a level of understanding at the local, regional and state level to manage expectations.



Collate data and research the impact of bushfires upon communities, firefighters and animals (both native and domestic) to identify appropriate medium and long-term welfare and support requirements.

**Out of Scope for this Review.**



Invest in fireground leadership and incident management training for SACFS, SES and MFS personnel to improve safety on the fireground. Invest in greater technological interoperability such as AVL, Thermal Imagery, Burn over Protection Systems (BOPS), lightning tracking and appropriate vehicle fleets for bushfire conditions including at the peri-urban interface.

**Supported.** The review found many examples where the capabilities of SACFS, SES and MFS can be shared and refined in relation to clear roles and responsibilities and shared capabilities to provide the community a better value proposition from a sector wide perspective, particularly through the lens of a KI (remote) operation where there is a need to maximise the resources vs. outcome model **(Refer Recommendation 2).**



Incorporate FFUs into the Australasian Inter Service AIIMS so that IMTs are aware of their presence on the fireground and their welfare and risks are understood.

**Supported**, and this be continued to develop into a model of C2 (Command and Control) with an FFU Commander that can link directly into the IMT in KI fires and maximise efforts of resource, along with share critical information sharing such as red flag warnings etc. **(Refer Lesson 9, Recommendation 7).**

# ANNEXE 3 – ACRONYMS

| ACRONYM    | TERM  | ACRONYM | TERM  |
|------------|---|---------|---|
| AAS        | Air Attack Supervisor                                     | ICC     | Incident Control Centre                       |
| ACT        | Australian Capital Territory                              | ICMI    | Incident Control: Major Incident (NSW RFS)    |
| ADF        | Australian Defence Force                                  | IMCU    | Incident Management Coordination Unit         |
| AFAC       | Australasian Fire & Emergency Service Authorities Council | IMT     | Incident Management Team                      |
| AIDR       | Australian Institute of Disaster Resilience               | IRIS    | Resource Management System used by SACFS      |
| AIIMS      | Australasian Inter-Agency Incident Management System      | ISR     | Intelligence, Surveillance and Reconnaissance |
| AOB        | Air Observer  | KI      | Kangaroo Island                               |
| AOF        | Aircraft Officer  | KIDGO   | KI Group Deputy Group Officer                 |
| AOM        | Air Operations Manager                                    | KIGO    | KI Group Officer                              |
| AVL        | Automatic Vehicle Locator                                 | KIPT    | Kangaroo Island Plantation Timber             |
| AVENZA     | Mapping Tool used by DEW                                  | L1      | Level 1                                       |
| AWS        | Automatic Weather System                                  | L2      | Level 2                                       |
| BaU        | Business as Usual   | L3      | Level 3                                       |
| BF1        | Bushfire Training Level 1                                 | LACES   | On ground safety assessment used by SACFS     |
| BOM        | Bureau of Meteorology                                     | LAT     | Large Air Tanker                              |
| BOP        | Burnover Protection System                                | LGA     | Local Government Association                  |
| BWC        | Bulk Water Carrier  | LSA     | Local Service Area                            |
| C3R        | C3 Resilience (consultant)                                | MFS     | Metropolitan Fire Service                     |
| CASA       | Civil Operations Safety Authority                         | MS      | Micrsosft                                     |
| CAAP       | Civil Aviation Advisory Publication                       | MSL     | Mean Sea Level                                |
| CO         | Chief Officer   | NSW     | New South Wales                               |
| COP        | Common Operating Picture                                  | PPE     | Personal Protective Equipment                 |
| COMDISPLAN | Australian Government Disaster Response Plan              | PRZ     | Primary Response Zone                         |
| CISR       | Critical Incident Stress Response                         | QLD     | Queensland                                    |
| CRIIMSON   | ICT information collection platform in the SACFS          | QRV     | Quick Response Vehicle                        |
| DACC       | Defence Assistance to Civil Community                     | RC      | Regional Commander                            |
| DCO        | Deputy Chief Officer                                      | RCC     | Regional Command Centre                       |
| DEW        | Department of Environment and Water                       | RDC     | Regional Duty Commander                       |
| DGO        | Deputy Group Officer                                      | RFS     | Rural Fire Service                            |
| DIVCOM     | Divisional Commander                                      | RLO     | Regional Liaison Officer                      |
| DIC        | Deputy Incident Controller                                | ROMP    | Regional Operations Management Plan           |
| DSC        | Deputy State Controller Fire/ Hazmat                      | SA      | South Australia                               |
| DTF        | Department of Treasury and Finance                        | SAAS    | South Australian Ambulance Service            |
| EA         | Emergency Alert   | SACFS   | South Australian Country Fire Service         |
| EAP        | Employee Assistance Program                               | SAFECOM | SA Fire and Emergency Services Commission     |
| EM         | Emergency Management                                      | SARC    | State Aviation Response Coordinator           |
| EMA        | Emergency Management Australia                            | SAPol   | SA Police                                     |
| EWM        | Emergency Warning Message                                 | SC      | State Controller                              |
| FBaN       | Fire Behaviour Analyst                                    | SCC     | State Command Centre                          |
| FCM        | Flight Crew Members                                       | SCT     | State Command Team                            |
| FCNP       | Flinders Chase National Park                              | SDC     | State Duty Commander                          |
| FDI        | Fire Danger Index   | SEAT    | Single Engine Air Tanker                      |
| FFDI       | Forest Fire Danger Index                                  | SEC     | State Emergency Centre                        |
| FFU        | Farm Firefighting Units                                   | SEC-LO  | State Emergency Centre SACFS Liaison Officer  |
| FIB        | Fire Indicator Board                                      | SES     | State Emergency Service                       |
| FLIR       | Forward Looking Infra-Red                                 | SEMAT   | State Emergency Management Assurance Team     |
| FRoS       | Forward Rate of Spread                                    | SEMP    | State Emergency Management Plan               |
| FMP        | Fire Management Plan                                      | SIMT    | State Incident Management Team                |
| FTE        | Full Time Equivalent                                      | SITREP  | Situation Report                              |
| GFDI       | Grassland Fire Danger Index                               | SPAM    | Stress Prevention and Management              |
| GO         | Group Officer   | TAS     | Previous HR Skills IT system                  |
| GOB        | Ground Observer   | TRZ     | Temporary Response Zone                       |
| GRN        | Government Radio Network                                  | VIC     | Victoria                                      |
| GOMP       | Group Operations Management Plan                          | VLAT    | Very Large Air Tanker                         |
| HQ         | Headquarters  | WAM     | Watch and Act Messages                        |
| LPG        | Liquid Petroleum Gas                                      | WPA     | Wilderness Preservation Area                  |
| IAP        | Incident Action Plan                                      | ZEST    | Zone Emergency Support Team                   |
| IC         | Incident Controller                                       |         |   |



## ANNEXE 4 – REFERENCES

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