



**CORONERS COURT
NEW SOUTH WALES**

Inquiry:	Fire at 'Flagview South' , Sir Ivan Dougherty Drive, Leadville February 2017
Hearing dates:	24 – 28 June 2019 Mudgee Local Court, 16 – 20 September 2019 Dubbo Local Court, 29-30 October 2019 Mudgee Local Court.
Date of findings:	30 October 2019
Place of findings:	Mudgee Local Court, NSW
Findings of:	Deputy State Coroner C. Forbes
Catchwords:	CORONIAL LAW-General fire inquiry-catastrophic fire-cause and origin of fire-Whether fire management was reasonable in the circumstances-lessons learnt
File number:	2017/00057731
Representation:	Ms D Ward, Counsel Assisting instructed by Mr A Jobe, Department of Communities and Justice, Legal Mr N Newton, instructed by Ms H Allison, NSW Rural Fire Service
Findings:	I find that the origin of the fire was on the property known as 'Flagview South' Sir Ivan Dougherty Drive, Leadville. The cause of the fire was a lightning strike on or near the top of a wooden strainer fence post which caused the post to smoulder for a number of days before igniting the fire on 11 February 2017.
Recommendations:	To the Commissioner of the NSW Rural Fire Service I make the following recommendations: 1) That the NSW Rural Fire Service offer an information and engagement briefing with affected residents in the Dunedoo area (Castlereagh District) and Cassilis area (Liverpool Range District) to discuss the Coroner's findings and the agreed chronology annexed to those findings. This briefing is to be led by RFS personnel at the Assistant Commissioner/Manager Planning and Predictive Services level, and is to include

anticipated changes in bushfire frequency and behaviour in those districts (including fire thunderstorm events), how landholders can access RFS information in advance about predicted conditions for local districts, and adaptive firefighting strategies in response to changes in bushfire frequency and behaviour.

- 2) That the NSW Rural Fire Service consider providing farming communities with access to topographical maps and other relevant information held by the RFS to assist primary producers to prepare for fire preparedness.
- 3) That the NSW Rural Fire Service reviews the Community Field Liaison Team Program to incorporate rural initiatives, information sharing and joint training opportunities targeted to the needs of particular RFS districts.
- 4) That the NSW Rural Fire Service undertake a community engagement campaign (including information specifically targeted at farming communities) to reflect any revision of the Fire Danger Ratings system following the current review by the National Social Research Project. Such a campaign to include notice that in large fire events, the RFS cannot guarantee that every landholder will receive assistance from the RFS and such a campaign to be repeated (even in a modified form) prior to the start of each statutory bush fire danger period.
- 5) That the NSW Rural Fire Service review its Building Impact and Damage Assessment Team process to increase the early detection of asbestos risk in fire damaged buildings and associated protocols to support landowners affected by fire and asbestos.

To the Commissioner of the NSW Rural Fire Service and the NSW Farmers I make the following recommendations:

- 6) That the NSW Rural Fire Service and NSW Farmers consider a joint approach to the Bushfire and Natural Hazards Cooperative Research Centre (or similar organisation) to conduct social research into best developing a “shared responsibility” to hazard reduction, community engagement outside of bushfire season, information sharing around predictions for more extreme fire behaviour, and the delineation of decision making responsibilities on the fire ground when RFS and private vehicles respond to a fire.
- 7) That the NSW Rural Fire Service, in consultation with NSW

	<p>Farmers, extend and expand primary producer engagement strategies to include a focus on how private landholders within farming communities can work with the RFS, including a focus on information sharing outside of bushfire season, fire ground communication during a fire, fire ground management structure and firefighter safety.</p> <p>8) That NSW Rural Fire Service, in consultation with NSW Farmers, promote the use of the Rural Liaison Officer (RLO) within an Incident Management Team including information about the role of the RLO within the IMT, when a RLO is likely to be appointed, the likely experience of someone accredited as an RLO and locating the RLO on the fire ground.</p> <p>9) That the NSW Rural Fire Service and NSW Farmers collaborate to develop an engagement program for current NSW Farmers and future representatives serving on local and state level bush fire risk management committees, to ensure the views of farming communities are represented at regular meetings outside of fire season and during operational bush fire events.</p>
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REASONS FOR DECISION

Introduction

1. This is an Inquiry held pursuant to *s. 30 of the Coroners Act 2009 (NSW)* into a fire which commenced on Saturday, 11 February 2017 on a property known as 'Flagview South', Sir Ivan Dougherty Drive, Leadville. The fire was not controlled until Monday, 13 February 2017 and not listed as being 'out' until Monday, 6 March 2017. The jurisdiction to hold a general inquiry includes an examination of the fire's cause and origin and extends to an examination of the circumstances concerning the fire.
2. The Commissioner of the NSW Rural Fire Service, Mr Shane Fitzsimmons ('the Commissioner'), stated that the fire burnt during the worse fire weather conditions ever recorded in NSW. The fire consumed 55,372 hectares of land, destroyed 35 houses and damaged 11 others.¹ People suffered huge losses; together with the loss of their homes, there was also loss of sheds, farming machinery, fencing and agricultural land. Over 4,700 sheep were lost, 440 cattle, 4 horses, 325 goats, 35 poultry, 4 alpacas and 20 domestic animals. Miraculously, no persons were killed or seriously injured as a result of the fire. The emotional, physical and financial impact on the people who suffered losses and assisted in fighting the fire should not be underestimated.
3. On Saturday, 11 February 2017, when the fire started, the conditions had been declared by the NSW Rural Fire Service ('RFS') as high to very high fire danger. On Sunday, the fire conditions were declared 'catastrophic'. On Saturday, the fire travelled approximately 5 kilometres, and on Sunday, in the catastrophic conditions, the fire travelled more than twice that area in a one hour period. At its peak on Sunday, the fire grew by approximately 6,000 hectares in an hour and by the end of that terrible day, approximately 50,000 hectares of farmland and forest had been burnt. A copy of the RFS Rate of Spread map is annexed and marked '**Annexure A**'.

¹ Exhibit 27



Photo of the Sir Ivan pyro-convective column on 12 February 2019

4. On Sunday, 12 February 2017, a pyro-convective column was generated by the fire. These once rare events are now, unfortunately, becoming more frequent and pose an extraordinary risk to anyone on the fire ground. It is only as this phenomenon is becoming more frequent that scientists are developing a body of evidence. Previous pyro-convective columns have triggered fire-thunderstorm events which have caused devastating loss of life, such as the bushfires in Victoria on 7 February 2009, and the Canberra bushfires in January 2003. A wind change on the afternoon of Sunday, 12 February 2017 fortunately decoupled the thunderstorm from the column, preventing the worst case scenario at the Sir Ivan fire. Had the worst case scenario eventuated, resulting in fire tornados of the kind seen in the Canberra fires, loss of human life was likely, no matter how well defended the structure in which people were seeking refuge.

5. On 3 August 2017, the Commissioner requested the State Coroner for a general inquiry to be held into the fire pursuant to s.32 *Coroners Act 2009 (NSW)*.² He was of the view that there is a need for a broader understanding that in declared catastrophic fire conditions, no home or structure is designed or constructed to withstand such fire conditions. Fires in these rare conditions burn aggressively and simply cannot be controlled.

² Exhibit 26

6. On 29 November 2017, the State Coroner directed that a general inquiry be held.

7. The NSW Farmers' Association, (now known as NSW Farmers) on behalf of affected landholders, also requested a coronial inquiry. NSW Farmers expressed the view that farmers affected by this fire have reported feeling a sense of isolation and disengagement from the RFS and that an inquiry would be an opportunity for them to put their story forward and to have their questions answered in a public forum. A particular area of concern was communication breakdowns between the RFS and landholders, which may have played a part in the initial responses and strategic management of the fire.

8. A large amount of evidence was subsequently collated including witness statements, expert statements, maps, photos and video footage all relating to the fire. The brief of evidence runs to well over 2,000 pages. The scope of the coronial inquiry extends far beyond the people called to give oral evidence. The Court has read and considered statements from 54 people together with additional reports obtained by court appointed experts. The fact that not all witnesses or all experts have been called to give evidence does not diminish the accounts of their experiences set out within each statement. The inquiry heard oral evidence from the following witnesses:
 - a. Detective Senior Constable Darian Hardy, Officer in Charge of the coronial investigation;
 - b. Mr David Seis, Dunedoo resident and Deputy Captain Leadville Brigade;
 - c. Mr Stirling Fergusson, Dunedoo resident;
 - d. Mr David Bowman, Dunedoo resident;
 - e. Mr Max Weis, Cassilis resident;
 - f. Mr Murray Coe, Dunedoo resident and Deputy Captain Leadville RFS Brigade;
 - g. Mr Dusty Rawlinson, Dunedoo resident and member Leadville RFS Brigade;
 - h. Mr Kim Rawlinson, Dunedoo resident and member Leadville RFS Brigade;
 - i. Mr John McDonald, Binnaway resident and RFS Group Captain;
 - j. Mr Anthony Waldron, Bugaldie resident and RFS Group Officer;
 - k. Mr Garry Wilson, Operations Manager Castlereagh District RFS;
 - l. Mr Paul Martin, Cassilis resident;
 - m. Mr Michael Robinson, then District Services Officer Castlereagh District RFS;
 - n. Dr Simon Heemstra, Manager for Planning and Predictive Services RFS;
 - o. Mr Corey Phillip, Superintendent and District Manager Castlereagh District RFS;
 - p. Mr Paul Jones, Superintendent and District Manager RFS, appointed Incident Controller;

- q. Mr Robin Rogers, Executive Director Operations RFS; and
 - r. Mr Geoff Conway, an independent court appointed expert in fire investigation who reviewed the fire.³
9. Assistant Commissioner Heffernan attended this inquiry in person and provided ongoing information and clarification throughout the inquiry as well as participating in discussions with the local landholders who were also in attendance.
10. Due to the volume of the material, I have referred in these findings only to the issues, evidence and submissions that I consider most significant. This inquiry and to some extent the investigation focussed on examining the fire's cause and origin and the circumstances in the first two days of the fire that highlighted the issues of concern raised by both the RFS and the local landholders.
11. A coronial general fire inquiry is intended to be an independent, objective, fair examination of the available evidence that relates to the fire. It is not the function of this inquiry to apportion blame but rather, to make findings as to the origin and cause of the fire, and also to make recommendations that are considered necessary or appropriate as a result of the circumstances surrounding the fire.

Background

12. The RFS operates from headquarters at Homebush, incorporating the State Operations Centre, and four regions comprised of 45 districts across the state.⁴
13. Leadville falls within the Castlereagh District, comprised of the Gilgandra and Warrumbungle Local Government Areas.⁵
14. The Liverpool Range District, comprising Gunnedah, Liverpool Plains and Upper Hunter sits broadly to the east of the Castlereagh District and the Cudgegong District sits to the south. The Sir Ivan fire spread beyond the Castlereagh District into these neighbouring RFS Districts.

³ Exhibit 1 Volume 6, Tab 125

⁴ Exhibit 1 Volume 2, Tab 29, pp 550-5 at [16]

⁵ Exhibit 1 Volume 2, Tab 29 p 10

15. The Castlereagh Bush Fire Risk Management Plan (BFRMP) prepared by the Bush Fire Management Committee notes the following issues likely to impact upon community ability to prepare for bush fire within the District:
- a. Large numbers of absentee landowners in remote areas;*
 - b. Ageing population, particularly in rural areas;*
 - c. An increase in commuting workers; and*
 - d. An increase in rural residential subdivisions in fire prone areas.⁶*
16. Mr Geoff Conway, the court appointed independent expert, was asked to review the Castlereagh BFRMP and concluded that it and the Operations Co-ordination Plan provided adequate guidance to the emergency services on preparedness for bushfire.⁷
17. The Castlereagh District covers an area of 17,888.5 square kilometres, the vast majority of which (84.03%) is privately owned land.⁸ This highlights the need for the RFS to work closely with private land holders.
18. This also highlights the challenge in trying to manage fuel loads in the lead up to bush fire season in the District (generally from October to March although the worst months for large fires are usually mid-November to the end of December).⁹ The RFS provides advice to landholders on managing fuel loads on their properties but this is ultimately a matter for the individuals concerned. Healthy pastures are assets in their own right that land holders might be reluctant to reduce in order to try and mitigate fire risk.
19. Mr John McDonald was the volunteer Group Captain for the RFS division that included a number of the brigades directly involved in the Sir Ivan fire (Leadville, Hannah’s Bridge, Uarbry, Dunedoo).¹⁰ He was also “Ivan Control” (IC), the senior fire ground control leading the RFS response on the fire ground on Saturday 11 February and again on Sunday 12 February. He gave evidence that:

⁶ Exhibit 1 Volume 2, Tab 29 p 155

⁷ Exhibit 1 Volume 6, Tab 125 pp 1454-6 at [49]

⁸ Exhibit 1 Volume 2, Tab 29 p 155

⁹ Exhibit 1 Volume 2, Tab 29 p 155

¹⁰ Exhibit 1 Volume 2, Tab 28 pp 549-2 at [7]

*"In 2016 there were terrific spring rains in the Castlereagh RFS Zone, including the agricultural areas near Sir Ivan Doherty Drive, leading to extensive pasture growth in those agricultural areas. This was then followed by a hot, dry summer which dried out the pastures, however after a prolonged drought; the farmers were enjoying having feed for their stock."*¹¹

20. Mr Murray Coe, Deputy Captain of the Leadville RFS brigade, also gave evidence of unprecedented rain from January to October 2016, leading to unprecedented pasture growth, growth in timbered areas and growth in scrub.¹²

21. Mr Coe was asked whether there was an opportunity to complete hazard reductions after this unprecedented growth and prior to the Sir Ivan fire, and he said:

*"No...too late by that stage....I don't know in what area you would do the hazard reduction, they're mostly all grazing properties around. No one's going to ... burn the feed, burn the grass. But certainly there's an operation that needs to take place in the winter months, not spring or summer"*¹³

22. The fuel load did prove to be more than a theoretical problem in the extraordinary circumstances of the Sir Ivan fire. Having reviewed witness statements, images of affected properties and video material Mr Conway concluded:

*"There was significant variation in the fire prevention and mitigation works undertaken by landholders on those properties impacted or at threat from the fire...some images provided with these statements show areas of fuel reduction around homesteads and farm buildings. These appear to be the exception rather than the rule."*¹⁴

23. On Saturday, 11 February 2017, weather forecasts predicted extreme conditions with an expected maximum of 42 degrees, relative humidity of 10, and wind for most of the day expected from the west, north west at 45kph with gusts up to 70 kph.¹⁵

¹¹ Exhibit 1 Volume 2, Tab 28 p 549-2 at [11]

¹² Mr Murray Coe Transcript 26/06/19 p 43

¹³ Mr Murray Coe Transcript 26/06/19 p 69 at [36]

¹⁴ Exhibit 1 Volume 6, Tab 125 p 1454-3 at [21] and [22]

¹⁵ Exhibit 1 Volume 1, Tab 9, p 208 [7]

24. The main concern was for Sunday, 12 February 2017 when catastrophic conditions were predicted.
25. The categories used to classify fire danger ratings were introduced after the 2009 Victorian Bushfires Royal Commission as part of a national revision of ratings.¹⁶
26. A catastrophic fire danger rating indicates the worst possible fire weather. Fires in catastrophic conditions are uncontrollable, fast moving, erratic, and have large spotting distances.¹⁷ They are not like “typical” fires and strategies used to successfully fight lesser fires are unlikely to succeed in containing fires burning in catastrophic conditions.
27. Of course, catastrophic conditions might not actually eventuate even when predicted and conditions might only reach the catastrophic rating for parts of any given day. But the potential consequences of a fire burning in such conditions are so dire it warrants warning the community of that possibility. One has to balance the probability of the event occurring against the gravity of the risk that arises if it does.¹⁸
28. The Catastrophic Fire Danger Rating carries with it a descriptor that reads:

“These are the worst conditions for a bush or grass fire. Homes are not designed or constructed to withstand fires in these conditions. The safest place to be is away from bush fire prone areas.”¹⁹

29. The risk of catastrophic conditions is increasing as long term weather patterns change. Dr Heemstra gave evidence that:

“The climate is changing and we are getting more extreme fire behaviour as a result as the atmosphere is hotter and more unstable. The 2018 State of the Climate Report prepared by the [Bureau of Meteorology] showed that NSW is the state with the greatest deviation from median temperature in the country. The hotter atmosphere also extends the fire season.”²⁰

¹⁶ Exhibit 1 Volume 2, Tab 29, page 550-9 at [40]

¹⁷ Exhibit 1 Volume 3, Tab 30, page 551-3 at [11]

¹⁸ Dr Heemstra transcript 17/09/19 p 7

¹⁹ Exhibit 1 Volume 2, Tab 29 p 132

²⁰ Exhibit 1 Volume 3 Tab 32A p 553-18 at [32]

30. The Commissioner made a s.44 *Rural Fires Act* declaration to take effect from 0800 on Saturday, 11 February 2017 for the Castlereagh District. This is a declaration under the *Rural Fires Act*, giving the RFS Commissioner the authority to take such measures as he considers necessary to control or suppress any bushfire in any part of the State. These declarations are made in circumstances where a fire is likely to “*exceed the capacity of local resources to effectively contain the fire.*”²¹
31. It wasn’t just the Castlereagh District that was dry and at increased risk of fire. According to Mr Robin Rogers, Executive Director Operations of the RFS:
- “January and February 2017 saw some of the worst bush fire conditions ever forecast for the State, fuelled by record breaking heat, one of the hottest summers on record and low humidity. Early February saw temperatures consistently rising about 40 degrees across many parts of the State and crews dealt with a large number of bush and grass fires over this period.”*²²
32. A state-wide total fire ban was declared for that weekend.²³ The RFS were understandably concerned with preparations throughout NSW, including but extending far beyond the Dunedoo area and the wider Castlereagh District.
33. This inquiry is conducted with the benefit of hindsight. Those involved in making preparations in advance of 11 February 2017 had no way of knowing if, let alone where, fires might eventuate under the difficult conditions. Indeed there was an earlier fire within the Castlereagh District that started on Saturday morning before the Sir Ivan fire. This was near New Merrigal, west of Gilgandra and crews were deployed. This fire was successfully contained but was at ‘patrol’ status at the time the Sir Ivan fire commenced.²⁴
34. A number of incidents eventuated across the state. Between 10 and 19 February 2017, RFS crews in NSW attended 697 bush/grass fires, including 223 incidents across the weekend of 11-12 February 2017. Over 1,800 fire fighters (the vast majority of them volunteers) were deployed per day between 10 and 19 February, including an estimated 2,500 fire fighters deployed on 12 February 2017.²⁵

²¹ Exhibit 1 Volume 2 Tab 29 p 550-11

²² Exhibit 1 Volume 2, Tab 29 p 550-11

²³ Exhibit 1 Volume 3, Tab 31 p 552-5

²⁴ Exhibit 1 Volume 3, Tab 31 p 552-6

²⁵ Exhibit 1 Volume 2, Tab 29 p 550-11

35. Large areas of northern NSW including the Greater Hunter, Central Ranges and North Western areas were also predicted to reach catastrophic fire danger rating levels on 12 February 2017.²⁶
36. When the Commissioner makes a s.44 declaration, he appoints an Incident Controller ('IC') to act as his delegate. For the Castlereagh District on Saturday, 11 February 2017, Mr Paul Jones was appointed. The IC manages the Incident Management Team ('IMT') and issues operational orders via Situation Reports, Incident Action Plans ('IAP') or direct radio or telephone communications.²⁷
37. Pre-emptive arrangements within the Castlereagh District included:
- a. Messages to all RFS brigades and Group Officers putting them on notice of the expected conditions and likelihood of call outs.²⁸
 - b. RFS support brigades (volunteer communication officers who provide support within the RFS Fire Control Centre in Coonabarabran) asked to confirm availability.²⁹
 - c. RFS aerial resources activated to be on standby out of Coonabarabran, with aerial monitoring across the whole Coonabarabran area to commence Saturday morning.³⁰
 - d. Volunteers then came into the Coonabarabran Fire Control Centre on Saturday morning, prior to the Sir Ivan fire commencing.
 - e. Once the fire commenced and the scale of the fire became apparent, the IMT increased in size. It ultimately included a local emergency operations controller from NSW Police and a local emergency management officer from the Warrumbungle Shire Council.

²⁶ Exhibit 1 Volume 2, Tab 29 p 550-11

²⁷ Exhibit 1 Volume 2, Tab 29, pp 550-18

²⁸ Exhibit 1 Volume 3, Tab 31, pp 552-6

²⁹ Exhibit 1 Volume 3, Tab 31, pp 552-9

³⁰ Exhibit 1 Volume 3, Tab 31, pp 552-6

The Sir Ivan Fire

38. Saturday, 11 February 2017 was Dunedoo show day. Many of the people in the district had already taken precautions around their properties in light of the bushfire risk. They had moved stock, cleared vegetation and checked that pumps were working. This was a community who had lived with the threat of bushfires over generations. Many residents had extensive experience in fire-fighting, whether in a private or volunteer RFS capacity.
39. Sometime close to midday on 11 February 2017, residents in the vicinity of 'Flagview South' noticed smoke from a grass fire on that property. 'Flagview South' is a 1,600 acre mixed-farming property, which is predominantly used for sheep grazing with some winter cropping, and is uninhabited. Various locals including Mr Keith Ghent, Mr Peter Quera, Ms Sara Fergusson, Mr George Simmons, Mr Jamie Bauer, Mr Will Gaden, Mr Murray Coe and many others either noticed the smoke or heard about the fire and travelled out to the vicinity of 'Flagview South' to help the owners, Mr David and Ms Tori Seis with the fire on their property. The RFS also responded; the Leadville, Dunedoo and Hannah's Bridge Brigades were contacted, a firefighting aircraft was deployed and messages were sent to relevant RFS volunteers.
40. Later that evening, the grass fire was finally extinguished once the wind died down. However, nearby scrub was already well alight. The fire burnt predominantly east under a westerly wind towards the village of Uarbry. The terrain varied from grassland to undulating rocky hills and thick wooded scrub that is largely inaccessible to vehicles.
41. The prevailing winds also pushed the fire from 'Flagview South' out to the north east. Initial efforts to fight the blaze included attempts to get in front of the fire through a property owned by Mr Coe and mount a direct attack on the fire edge.
42. The Hannah's Bridge brigade, Dunedoo 7, Birriwa 1 and a group of local fire fighters had some early success along Bald Ridge Road and Warden's Road. But it became apparent to those on the fire ground that direct attack would not be effective in the long run or possible along the entire fire perimeter.
43. Different strategies were used at different times and in different locales. According to the IC, as the fire moved from grassland to inaccessible bush, up steep and rugged hills, the strategy changed to parallel and indirect attack. During this initial phase from first alarm until 1900 hours,

crews on the southern flank were tasked to direct attack as the fire came out onto open grassland, crews on the northern flank were tasked to conduct a parallel attack with existing and new trails, and indirect attack was used on the head of the fire (the eastern edge) using plant to construct containment lines.

44. But intense and erratic fire behaviour continued to test the control lines constructed parallel to the fire line. Regular shifts in wind direction caused spot overs, which firefighters (both private and RFS) were able to suppress on occasion. Changes in fuel load and fuel type as the fire progressed across the landscape generated varying degrees of spotting. The fire was burning quickly into scrub, down gullies and eventually along ridges that were inaccessible.
45. The fire did not proceed in a uniform way along the entire fire line. Differing situations confronted firefighters in different locales. People on the ground were understandably focused on what was in front of them but conditions varied from place to place and fire response to suppression techniques likewise varied from place to place.
46. A detailed chronology of the fire has been agreed by the parties involved in this inquiry. I attach a copy to these findings for the interest of persons who could not attend this inquiry.
47. Mr Conway, the independent expert, gave evidence that even though the strategies applied in the initial period from detection to about 1900 hours were appropriate, they were not successful. The combination of terrain, vegetation and weather made it unlikely that any strategy would have been successful in containing the fire until weather conditions moderated.
48. The Liverpool Range and Cudgegong Districts were also subject to pre-emptive s.44 declarations and separately had an IC and IMT responding to anticipated demands within each District. Once a fire commenced in Leadville, Mr Paul Jones would assume the overarching IC role in the event that the fire spread into other Districts. This was because the fire had started in the Castlereagh District.
49. Mr Jones said prior to the fire actually entering the other Districts, he had discussions with the IC for the Liverpool Range District and the Cudgegong District. Discussions with the Liverpool Range District included reference to Cassilis because it was within that District, and discussions with the Cudgegong District included reference to an underground mine within that District. There were no

specific discussions about resources available in either of those Districts and Mr Jones recalls basic discussions as to where each of those Districts might be looking to place fall back lines.³¹

50. Mr Conway agreed that the strategy adopted on 12 February 2017 was appropriate even though there was a real prospect that it would not be successful because of the terrible conditions.³²

51. Witness accounts set out in the attached chronology describe the situation when conditions did actually deteriorate as predicted on 12 February 2017. A few references will be included here.

52. Mr Coe described being present to put out spot fires but,

“it was impossible...blowing the water was actually spreading the flames...it was burning that hot and that ferocious that the water wasn’t actually putting the fire out.”³³ He said once the weather change came through at 1030 hours or thereabouts “nothing would have controlled it...it literally jumped from...hill to hill...it was horrific.”³⁴

53. Mr James Sweeney from the Leadville RFS Brigade described spot fires carrying embers up to 500 meters ahead of the fire front, meaning that fire-fighting was very difficult. When his tanker ran out of water, the crew had to wait until it was safe to drive across paddocks to refill and then had to fight back the fire whilst they were refilling.³⁵

54. Mr Warren Hogden described being at ‘Flagview South’ when at around 1000 hours, he could hear the wind and the fire front coming. The wind was howling and the fire front came roaring past, roaring through trees and crowning from tree to tree. The smoke was too thick for them to drive to Mr Fergusson’s house so they drove onto burnt ground and waited until it was safe enough for them to drive down to the house.³⁶

³¹ Mr Paul Jones transcript 18/09/19

³² Mr Geoff Conway transcript 19/09/19 p 60

³³ Mr Murray Coe transcript 26/06/19 p 64.27

³⁴ Mr Murray Coe transcript 26/06/19 p 81.20

³⁵ Exhibit 1 Volume 1 Tab 12, pp 233-235

³⁶ Exhibit 1 Volume 1 Tab 11, pp 225-227

55. Mr McDonald resumed day shift as IC on 12 February 2017 and recalled RFS Fire Control, issuing a red message. He then individually contacted each truck to make sure they got the message.³⁷ A red message is a high priority message indicating imminent danger.³⁸

56. Mr Jones said he did not give an instruction for RFS crews to withdraw, but understands Mr McDonald issued the message to ensure fire fighter safety.³⁹

57. Either way, Mr Jones said the message was reasonable in the circumstances:

*“as the fire had breached the containment line near the Golden Highway and was running fast. At this time crews were working ahead of the fire on dozer trails. These crews needed to move to safer ground once the fire had breached as we did not want people stuck on dozer trails under extreme fire behaviour conditions.”*⁴⁰

58. The fire breached containment lines on two occasions before 1120 hours as a result of increased fire intensity, and the fire crowned over the back burn.⁴¹

59. At about 1120 hours, the fire breached for a third time and immediately ran hard towards the Golden Highway.⁴²

60. As a result, at 1141 hours, an emergency alert was issued to everyone east of Dunedoo up to and including Uarbry, advising the recipient “to leave now if the path is clear and head to Cassilis”.⁴³

61. This message was sent by voicemail and SMS, but phone reception across this area is patchy even at the best of times. In some respects, the community relied upon the ‘bush telegraph’ to pass on messages when technology failed.

62. It is beyond the scope of this coronial inquiry to make recommendations on funding telecommunication infrastructure, but it should be acknowledged that there is a potentially

³⁷ Mr John McDonald transcript 27/06/19, p 48.36

³⁸ Exhibit 1 Volume 3, Tab 30, p 551-12 at [48]

³⁹ Exhibit 1 Volume 3, Tab 30, p 551-12 at [50]

⁴⁰ Exhibit 1 Volume 3, Tab 30, p 551-12 at [50]

⁴¹ Exhibit 1 Volume 3, Tab 30, p 551-7 at [27]

⁴² Exhibit 1 Volume 3, Tab 30, p 551-7 at [28]

⁴³ Exhibit 1 Volume 3, Tab 30, p 551-11 at [46]

dangerous disparity between basic services routinely available in the city but not in the Dunedoo/Leadville area and surrounds.

63. By 1209 hours, the Golden Highway was closed. There were power lines dropping and sparking, and staging areas were being overrun by fire. Mr McDonald, volunteer Group Captain, recalled driving up to Uarbry township through fire on both sides of the road. Police had already evacuated the village with many homes there later lost in the fire. Mr McDonald then had to send all units bar one to defend Leadville village which was threatened. As the fire progressed it took out a Telstra tower, so that people lost whatever mobile coverage they might have had and the RFS lost tactical radio.⁴⁴
64. As it transpired, conditions did reach catastrophic fire danger levels on 12 February 2017 and not just in the Leadville area. Observed maximum forecast fire danger ratings in the vicinity of the Sir Ivan fire were recorded at Dubbo at 1330 hours, Mudgee at 1430 hours, Scone at 1530 hours and Murrurundi Gap at 1630 hours.⁴⁵ Whilst the Mudgee reading might be the nearest reading for Leadville, Dr Heemstra said in oral evidence that it is safe to assume that conditions on the fire ground would have been even more extreme than those predicted, and measured in Mudgee, because the fire was itself adding to the conditions at Leadville.⁴⁶
65. The Court cannot know how long catastrophic conditions lasted, but Dr Heemstra in oral evidence said that it was an unusually long time for catastrophic conditions to persist.⁴⁷
66. The Court sought further information from the RFS about the frequency with which catastrophic conditions occur in New South Wales. This was particularly in response to some lay witnesses who believed that catastrophic conditions were being predicted too readily and unnecessarily.⁴⁸
67. In response, the RFS said that since the catastrophic rating was introduced in 2009 (following the Black Saturday fires in Victoria and a subsequent Royal Commission), there have only been two occasions on which the Bureau of Meteorology have issued forecasts for catastrophic ratings in

⁴⁴ Exhibit 1 Volume 1, Tab 19, pp 282-284

⁴⁵ Exhibit 1 Volume 3, Tab 32A, annexure 2, p 74

⁴⁶ Dr Heemstra transcript 17/09/19 p30

⁴⁷ Dr Meemstra transcript 17/09/19 p 30

⁴⁸ Mr Max Weis transcript 26/06/19 p 4.11

New South Wales. One occurred on 8 January 2013 and the other was on this day, 12 February 2017.

68. On four other occasions, a catastrophic rating has been observed by weather stations (but had not been predicted).⁴⁹
69. A fire spread prediction report that was issued on 11 February 2017 and which was based upon a consideration of the synoptic chart, atmospheric soundings and model soundings, predicted that *“Tomorrow afternoon pyro convection is likely if free burning as [sic] is impacted by front.”*⁵⁰
70. This was an accurate prediction.
71. This was something in the mind of Mr Jones, who had witnessed the Canberra fires and who said the most terrifying part in trying to lead the fire ground in the event of a pyro-convection collapse is the thought of having to attend funerals in the aftermath.
72. According to the oral evidence of Dr Simon Heemstra, those on the fire ground were unlikely to have been able to see that the fire had gone pyro-convective, even if they had known what they were looking for. Their view of the cloud would have been largely obscured by smoke.⁵¹
73. Dr Heemstra said:

*“Fire-thunderstorm events occur when the fire’s pyro-convective column triggers the formation of a thunderstorm. For this to occur, the atmosphere must be unstable so that air above the fire can rise freely and condense to form the thunderstorm cloud (known as a pyro-cumulonimbus cloud). The presence of inversions in the atmosphere can prevent (or delay) this from happening. Inversions are stable layers of the atmosphere in which temperatures increase with height. Inversions make it very difficult for air to keep rising past the inversion level, preventing a thunderstorm from forming. If a sufficiently strong lifting mechanism is present or the inversion weakens (or a combination of both), a fire-thunderstorm can develop over an active fire ground.”*⁵²

⁴⁹ Exhibit 1 Volume 2, Tab 29, p 550-10

⁵⁰ Exhibit 1 Volume 3, Tab 32A, annexure 2, p 107

⁵¹ Dr Heemstra 17/09/19 p 16

⁵² Exhibit 1 Volume 3, Tab 32A, p 553-15

74. Here, a fire thunderstorm was predicted and the *“(f)ormation of a fire-thunderstorm (pyro-cumulonimbus or Pyro-Cb) was observed by radar and satellite imagery.”*⁵³
75. The formation of the inversion layer is illustrated in the photos at Exhibit 19 where, according to Dr Heemstra, the inversion is operating as a “cap” on the smoke. The first photo shows the smoke on an angle and the wind pushing the fire to the east. The second photo is taken around the time of the change in the inversion layer. The darker brown layer represents *“smoke and soot but also the water vapour is in its liquid phase and then further up into the atmosphere you can see where it’s reached freezing point and become ice.”*⁵⁴ The third photo shows the full development of a towering pyro-convective column.⁵⁵
76. The size of the Sir Ivan fire put pressure on the inversion but did not produce a fire-thunderstorm before a wind change on Sunday afternoon crossed the fire ground. According to Dr Heemstra, whilst the wind change *“was likely part of the mechanism which allowed the column to push through the inversion,”*⁵⁶ the wind change also had the effect of decoupling the thunderstorm and pushing it towards the coast.⁵⁷
77. Thus, lightning strikes resulting from the Sir Ivan fire-thunderstorm were recorded in the Merriwa region, approximately 80 to 100km downwind.⁵⁸
78. It was the risk of the pyro-cumulonimbus cloud giving rise to a fire thunderstorm over the fire-ground that prompted a red message from the RFS at about 1705 hours.⁵⁹
79. Mr Jones directed the message to all fire fighters working on the fire ground, including those now reporting to the Liverpool Range and Cudgegong Fire Control Centres. In doing so, he was *“instructing fire fighters to ensure they had safe refuge, to expect erratic fire behaviour and to work from a safe refuge.”*⁶⁰

⁵³ Exhibit 1 Volume 3, Tab 32A annexure 2, p 75

⁵⁴ Dr Heemstra transcript 17/09/19 p 21

⁵⁵ Dr Heemstra transcript 17/09/19 p 22

⁵⁶ Exhibit 1 Volume 3, Tab 32A, p 553-15

⁵⁷ Dr Heemstra transcript 17/09/19 p21

⁵⁸ Exhibit 1 Volume 3, Tab 32A annexure 2, p 75

⁵⁹ Mr John McDonald, transcript 27/06/19 p 49.26

⁶⁰ Exhibit 1 Volume 3, Tab 30, p 551-12

80. This is the only red message he has had to send in his 25 year career.
81. Some RFS personnel then communicated the message to local landholders on the fire ground, with mixed results. Some locals thought that the advice to seek safe refuge was ridiculous in circumstances where they were fighting to preserve their homes and livelihood.
82. In these circumstances, individual landholders were entitled to assume their own risk and disregard the warnings if they chose. Many with no experience of a fire of this magnitude made decisions based upon their previous experience in smaller fires and thought that the RFS was overreacting.
83. The RFS warnings were however necessary and appropriate, and the RFS would be subject to criticism if they had issued warnings to their members which were not then passed onto other people on the fire ground.
84. The Court had the benefit of a video clip from the January 2003 Canberra bushfires to illustrate what is in effect a fire tornado pushing down in unpredictable and incredibly powerful winds.⁶¹
85. Had such a fire tornado hit the ground, according to the oral evidence of Dr Heemstra, it would have blown out winds at over 100 kilometres per hour in any number of directions (regardless of prevailing winds immediately prior to contact). As one could not know where the downdraft would land, it could have caused the flanks of the fire to blow out with massive energy. It would have led to mass spotting events with whole landscapes on fire, plus lightning causing further fire. Roofs would have been ripped off houses. (Dr Heemstra said that in the 2009 Victorian Bushfires, roofs were carried hundreds of metres away).
86. Dr Heemstra predicted that if the storm had remained attached to the Sir Ivan fire, the fire could have been two to three times bigger than it actually was.
87. Given the possibility for this extraordinary event occurring, Mr Conway observed that the implementation of the IAP was

⁶¹ Exhibit 22

“...as effective as the circumstances allowed given the resources available. Protection of life was identified as a priority...the protection of property in the fire conditions that were present on the Sunday was always going to be challenging. The efforts of firefighters in these circumstances only plays a small part in the success of asset protection tactics. The ability for firefighters to access properties, fuel loads and fuel conditions around the assets, and any fire protection measures taken by residents prior to the arrival of the fire front contribute significantly to the fire suppression effort.”⁶²

Cause and origin of the fire

88. It is not in dispute that the fire originated on the property known as ‘Flagview South.’ A number of witnesses identified a gully on the property where smoke was first observed.
89. Various lay opinions were given as to the cause of the fire including, smouldering campfire remains left by hunters who had camped on the property, and a faulty electric fence.
90. On 14 February 2017, Mr Mathieson, the coordinator of fire investigation for RFS and Senior Constable Simcock, Crime Scene Officer Forensic Services Group, commenced a scene examination of the general area of the gully where the fire was observed to have started by a number of witnesses. Mr Mathieson’s methodology and examination of the site is set out in his statement.⁶³
91. Mr Mathieson gave evidence that when a fire is first lit, it generally will travel in the same manner in all directions from a distance of about 10 to 20 metres, forming a circle of flanking and backing indicators, and the fire is then advanced into a run or advancing fire driven by the wind and topography. The 10 to 20 metres area is known as the suspect specific area of origin. He further explained that fire investigators or police forensic examiners examine the specific area of origin until they locate the point of origin, which is the point where heat source was first introduced to the fuel, combined with oxygen causing combustion and subsequently the fire.
92. Upon inspection of the gully where the smoke was first seen, fire indicators of grass stem fall, cupping, staining, sooting angle of char and protection were examined. A pattern continued tracking an advance of fire coming from the west to the east until a specific area of origin was

⁶² Exhibit 1 Volume 6, Tab 125, p 1454-17

⁶³ Exhibit 1 Volume 1 Tab 9

identified.⁶⁴ In this area, a wooden strainer post was observed which had been burnt in its centre.⁶⁵ The strainer post did not have the appearance of being burnt as a result of impact from the outside by fire. In fact, it had been burnt more on the inside than on the outside. Comparing it to the other strainer posts along the same fence line this post was more severely damaged than the other posts particularly in the centre. Mr Mathieson formed the opinion that this indicated that the strainer post had been struck by lightning and was smouldering on the inside for a period of time.

93. On 15 February 2017, Mr Mathieson examined lightning strike data⁶⁶ for the general area of Leadville. He found that there had been lightning strikes in the general area in the days preceding 11 February 2017. This consolidated his opinion that the most probable cause of the fire was as a result of a lightning strike on the strainer post. The lightning strike could have occurred within two weeks prior to 11 February 2017, causing the fence strainer to smoulder internally until the burning within the strainer post and the weather conditions on 11 February 2017 were conducive to a fire starting in the grass surrounding the strainer post.
94. Senior Constable Simcock also gave evidence that the fire indicators, including sooting on rocks, cupping of grass stems and direction of fall of grass stems, indicated that the origin of the fire was in the vicinity of the burnt strainer post and that a lightning strike to the post was a likely cause of the fire⁶⁷.
95. The strainer post was examined by Mr Blackburn from the School of Electrical Engineering, University of New South Wales. In his report he explained that lightning strikes to trees and unprotected wooden structures are a common cause of bushfire and wildfire fire ignition.⁶⁸ He formed the opinion that the fire damage on the strainer post was consistent with ignition having been at a much earlier stage, perhaps some days, prior to the general bushfire. He examined the lightning strike data relevant to the dates in question and concluded that there had been considerable lightning activity in the general area of the strainer post five and eight days prior the bushfire. The records of the lightning tracking system stated that the closest ground flash site to the post was recorded as being 600 metres away from the post. He states that research on the uncertainty of location determinations of ground strikes gives uncertainty as being up to 750 metres. He also explained that whether a lightning flash struck the post directly or whether it

⁶⁴ Exhibit 1 Volume 1 Tab 8

⁶⁵ Exhibit 1 Volume 1 Tab 8

⁶⁶ Exhibit 1 Volume 8 Tab 152

⁶⁷ Exhibit 1 Volume 1 Tab 7

⁶⁸ Exhibit 1 Volume 6 Tab 122

struck a fence wire strand some distance away from the post would give the same general result. He formed the opinion that lightning some days prior to the fire interacted with the strainer post and caused smouldering ignition that could have developed into the fire.

96. The strainer post was also examined by Emeritus Professor, The School of Materials Science and Engineering, Mr David Young. He concluded that the severe damage to the top of the post, coupled with the slight damage to the post sides caused by the grass fire, is consistent with a lightning strike on or near the top of the post.⁶⁹
97. The undisputed evidence is that the gate to 'Flagview South' was locked prior to the fire. The owner of the property stated that no hunters or campers had been on his property since December 2016, when a group of hunters had camped on the property. This was confirmed by the company that manages the bookings of the property. The hunters who stayed in December gave evidence that they did not light a fire because the weather had been too hot.⁷⁰ Some old campfire remains were found on the property by the investigators but they were not in the burnt ground or in the area of origin of the fire. This evidence does not support the hypothesis that the fire was commenced by a smouldering camp fire left by hunters.
98. An electric fence was located some distance south of the point of origin of the fire. The components of the electric fence were collected and examined and found to have no faults.
99. In my opinion, there is sufficient evidence to eliminate that the fire was caused by a smouldering campfire or a faulty electric fence. I am satisfied that a finding can be made on the balance of probabilities that the likely cause of the fire was a lightning strike on or near the top of a wooden strainer fence post which caused the post to smoulder for a number of days before igniting the fire on 11 February 2017.

Issues

100. Various local landholders expressed concerns by way of written statements and oral evidence that the RFS is disengaged with the local community. The primary concerns raised were; that when the RFS took control of the fire to Coonabarabran that control was too removed from what was happening on the fire ground and too removed to receive input from local landholders who were also involved in fighting the fire and who had important local knowledge and experience. A

⁶⁹ Exhibit 1 Volume 6 Tab 124

⁷⁰ Exhibit 1 Volume 4 Tab 43

particular area of concern was communication breakdowns between the RFS and landholders that may have played a part in the initial responses and strategic management of the fire.

Should Coonabarabran Fire Control Centre taken control of the fire ground?

101. Mr Conway observed:

“Fire ground management in an escalating fire event is...one of the more complex tasks in emergency management. By necessity, fire ground managers have a limited perspective of the incident and are reliant on many sources of information to build an operating picture to inform decision making. Each of these sources have their own perspective of the incident based on where they are at the time. Due to the dynamic nature of fire in a landscape that changes due to topography and fire fuels, information gathered is often many minutes and hundreds of meters behind the fire front. It takes time to develop a coherent picture of what is happening. Any attempt to assess the immediate and medium-term consequences of fire spread is founded as much on assumption and experience as first-hand information.”⁷¹

102. I am satisfied that once the Sir Ivan fire had escaped into scrub in difficult terrain on the afternoon of 11 February 2017, no one on the fire ground had a clear view of the circumference of the fire. It was too big to see from a single vantage point. Decision makers needed to communicate with each other to try and appreciate what was happening at different parts of the fire ground.

103. The Fire Control Centre needed to be big enough to provide (amongst other things) a number of fixed phone lines, a backup exchange in the event of power loss, radios, computer terminals and internet access, display boards for maps, electronic display facilities (including as at the time of hearing, footage showing a birds eye view over the fire ground), room for representatives from Police and Local Government, and room for volunteer members organising food and facilities for RFS crews (including out of area crews).⁷²

104. A fire of this size, where crews were operating out of line of sight from other crews, where there were considerable communication difficulties across the fire ground because of a ridge that effectively separated the area into a northern and southern division on 11 to 12 February 2017, where there were out of area crews fighting in unfamiliar territory, where there were unknown numbers of local private crews working on the fire ground, and where conditions were predicted to become much worse on 12 February 2017, the people on the ground were not necessarily the best informed to make decisions about anything other than the fire immediately in front of them.

⁷¹Exhibit 1 Volume 6, Tab 125 p 1454-11 at [80-81]

⁷² Mr Corey Phillip transcript 17/09/19

There needed to be a hub that could collate information coming in from different parts of the fire ground and step back to look at the bigger picture including resources and predicted weather.

Did the Coonabarabran Fire Control Centre receive input from local landholders?

105. A number of local landholders who attended 'Flagview South' independently of RFS appliances were also members of the local RFS.
106. The initial fire ground manager on scene was Deputy Captain Murray Coe, and later Captain Stephen Yeo of the Leadville Brigade. These men were locals.
107. Mr McDonald, who was asked to respond as IC, was Group Captain for the Eastern Division of the RFS Castlereagh District. This was a volunteer position and he had experience with local Brigades as their Captain. He left his own property to travel to Leadville.
108. Mr Waldron, who was IC on the evening of 11 February 2017 was the volunteer Group Captain for the RFS division that included brigades from Leadville, Hannah's Bridge and Uarbry.
109. Neither Mr McDonald nor Mr Tny Waldron were "local" in the sense of living in the immediate vicinity of Leadville, but they were local to the Castlereagh District and had pre-existing involvement with local brigades within the zone.
110. This fire was bigger than could be managed solely by local Leadville resources.
111. There were times when the IC, the senior decision maker on the fire ground, did disagree with the decisions being made by the IC at the Fire Control Centre in Coonabarabran. There were other times when the IC was able to report back from the fire ground and plans changed as a result of that discussion. So for instance, Mr Waldron said "*when I got to fire control they'd already come up with a plan, which is quite normal, but that doesn't mean the plan can't change when we get on the fire ground and I get to see what's happening and say 'well that's not quite going to work'.*"⁷³
112. Mr McDonald gave evidence about working with local knowledge at a fire. He said:

"local knowledge is good but...the trouble at the time let's say in the initial fire start up they're there and they're trying to fix up their own properties and get running and trying to get local knowledge to come with you is a bit hard. Later on when it's sort of quietened down...the trouble is the local knowledge at the time wants to be protecting their own stuff...but we have local

⁷³ Mr Anthony Waldron transcript 28/06/19 p 23.35

knowledge in the brigades and the infrastructure in the local brigades. So there is the local knowledge there.”⁷⁴

113. This is demonstrated by the evidence of Mr Fergusson, where he said that at the time when he was asking for a back burn to be lit on his property he was unaware, for instance, of the location of fire crews on the ground. Mr Fergusson said *“I was doing my own little patch. I wasn’t in charge of the fire. I didn’t want to know what everyone else was doing.”⁷⁵*
114. When asked whether, in making a decision about introducing a back burn, it would be important to understand where the crews were Mr Fergusson said *“not from my perspective.”⁷⁶*
115. This illustrates the importance of having someone other than local landholders making decisions about when to introduce a back burn on a fire of this scale. That decision maker needs to be impartial to the extent he or she makes decisions without looking to minimise, for example, loss of country belonging to family or friends. That person needs to have situational awareness across the fire in terms of where crews are located and how terrain might hamper or assist efforts. That person needs information about predicted weather and feedback from the fire ground as to actual conditions.
116. The local landholders say that the decision maker should be present on the fire ground. The RFS say that in a fire of this size, that person should be in the Fire Control Centre.
117. Mr Conway explained the way in which fire-fighting strategies and tactics would, ideally, be determined by those in decision making roles both on and remote to the fire ground:
 - a. *“The strategy chosen by the IMT [Incident Management Team] for suppression of any bushfire will invariably be a combination of all available strategies applied across the fire ground and over the evolution of the firefight. For small fires and those parts of the fire edge of larger fires where fire intensity is low and access is possible, direct attack will be used. When fire intensity is higher or access more difficult, parallel attack will be used. In larger fires, where fire behaviour is extreme and firefighter safety would be compromised through the application of other strategies, indirect attack is used. On larger fires all three strategies may be used concurrently at different points on the fire line.*

⁷⁴Mr John MacDonald transcript 7/06/19 p 51.33

⁷⁵ Mr Stirling Fergusson transcript 25/06/19 page 36.26

⁷⁶ Mr Stirling Fergusson transcript 25/06/19 page 37.7

- b. *The decision of which strategies are to be applied is made by the Operations Officer in close consultation with those managing the fire ground along with the Planning Officer and the Incident Controller. The Incident Controller provides the final endorsement of the Incident Action Plan which provides the objective, the strategies to achieve the objective and how the plan is to be executed.*
- c. *The choice of tactics to implement is the responsibility of the office directly managing the fire ground including Division and Sector Commanders.”⁷⁷*

118. This accord with Mr McDonald’s evidence. He says, that in

“the initial stages I’d come up with tactics to do direct attack on the fire and some flanking which is working not directly on the fire but on the edge. The only time that I’d, generally you’d have to seek permission for anything is for a large back burn. Anything smaller we did conduct some on the Saturday.”⁷⁸

Events at Moreton Bay

- 119. Evidence from witness statements and from the Bureau of Meteorology demonstrated that from around 1930 hours on Saturday, 11 February 2017, the winds moderated and many of the residents wanted to take advantage of the conditions to “burn off” fuel in advance of the next day.
- 120. It is not in dispute that it was important to take the opportunity to prepare as much as possible for the following day when catastrophic conditions were predicted.
- 121. Mr Fergusson gave evidence that at around 1900 hours, he spoke with Mr Andrew Young of the RFS, and learnt that dozers and graders were on the way to his property at Moreton Bay to put in a fire break. Mr Fergusson asked whether the RFS would immediately light up a back burn behind the graders and was told that the RFS wanted to establish a fire break of three grader widths wide from Moreton Bay to Gundooee (to the north) before a back burn could be lit. Mr Fergusson thought it unnecessary to establish a break of three grader widths wide and was keen to establish the back burn as quickly as possible during the relatively calm conditions then in place. When he

⁷⁷ Exhibit 1 Volume 6, Tab 125, p 1454-13 at [97-99]

⁷⁸ Mr John McDonald transcript 27/06/19 p 32.16

said he would light the burn himself, he was cautioned that the Police would be called if that happened.⁷⁹

122. Mr Fergusson says the grader and dozer then commenced preparing the fire break around 2000 to 2100 hours, and back burns were not lit until 0500 hours the next morning going north, and 0600 hours going west. He is critical of the delay and was frustrated that they had to wait for that decision to light up to come from the Night Shift Incident Controller in the Coonabarabran Fire Control Centre.⁸⁰

123. Mr Coe, the Deputy Captain Leadville RFS who took crews to Moreton Bay gave evidence that the plan at Moreton Bay was to set a containment line and do an initial back burn but then to black it out, back into the timbered country that was already burning. He said:

“There was that much, that much fuel on the ...ground...to light up any distance of...grass...the fire...would have jumped our containment line. So, the idea of back burning along the containment line was to widen the...containment line until such time as we got it back far enough that we could go in and black it out from there, back into the...fire.”⁸¹

124. Mr Coe gave evidence that a containment line was put in on the western side of Moreton Bay Valley as marked in orange highlighter on Exhibit 11. At around 2000 hours, Mr Coe thought it would be a good time to do an initial back burn,⁸² but had to wait for sign off from RFS control.

125. In his statement from 2017, Mr Coe said it was probably about 0300 or 0400 hours on Sunday, 12 February 2017 before they got permission to conduct the back burn.⁸³

126. The contemporaneous records are reviewed below to try and fix on a timeline for these burns.

127. Mr Waldron was a volunteer Group Captain within the Castlereagh District at the time of the fire and appointed IC on the evening of 11 to 12 February 2017. He was assisted by Mr Andrew Young, then volunteer captain of the Napier Lane Brigade, who had left his family and property in the Coonabarabran area to attend this fire.

⁷⁹ Exhibit 1 Volume 4, Tab 60 p 688-2

⁸⁰ Exhibit 1 Volume 4, Tab 60, pp 688-2

⁸¹ Mr Murray Coe transcript 26/06/19 p 60.35

⁸² Mr Murray Coe transcript 26/06/19 p 60.25

⁸³ Volume 1, Tab 15, page 249

128. Mr Waldron remembers the priority for the night being to *“consolidate the lines...the southern and northern sector and try and get the control line down on the eastern sector.”*⁸⁴ This was consistent with the IAP for the night.
129. Mr Waldron gave evidence that he met Mr Fergusson for the first time sometime around 2100 hours. Mr Fergusson was concerned and very irate, wanting to burn off back to the fire in the Rock Linden Valley.⁸⁵
130. Mr Waldron says he said words to the effect *“Give us half an hour to get control line in,”* although at the time he thought it would take longer than half an hour to do so and his own focus was on establishing a containment line in Moreton Bay Valley to the east.⁸⁶
131. Consistent with Mr Coe’s recollection, Mr Waldron said,
*“I was working the line straight up that Moreton Bay Valley up to Gundooee. We were trying to cut across through the scrub there to cut below Gundooee there but that’s where we come into some pretty inhospitable countryside with cliffs etc.”*⁸⁷
132. Mr Waldron was then called away from the scene at Moreton Bay because of reports that a local landholder (Mr Jim Bowman) was missing. Thankfully this was not the case⁸⁸ and Mr Waldron returned to Moreton Bay.
133. Mr Waldron said that he had another discussion with Mr Fergusson. Mr Tony Waldron was not confident about the timing of this discussion, but says Mr Fergusson continued to be adamant that a back burn needed to be lit. Mr Waldron says *“I had no problems with doing the task. It was just getting everything set up in order to do the task.”*⁸⁹
134. Mr Wilson, Operations Manager of Castlereagh District RFS prepared a log summarising radio and telephone communications recorded during the fire.⁹⁰ This summary of contemporaneous discussions provides the most accurate evidence about the timing of significant events across the evening of 11 February 2017 and into the morning of 12 February 2017.

⁸⁴ Mr Anthony Waldron transcript 28/06/19 p 5.50

⁸⁵ Mr Anthony Waldron transcript 28/06/19 p 8.40

⁸⁶ Mr Anthony Waldron transcript 28/06/19 p 8.5

⁸⁷ Mr Anthony Waldron transcript 28/06/19 p 8.5

⁸⁸ Mr Anthony Waldron transcript 28/06/19 p 10.6

⁸⁹ Mr Anthony Waldron transcript 28/06/19 p 11.2

⁹⁰ Exhibit 1 Volume 2, Tab 27, pp 548-10 to 548-11

135. According to the log, the following significant events occurred (with some additional explanatory references drawn from the transcript):
- a. 2348 hours: from Ivan Control *Southern containment line not able to be done yet due to chasing spot-overs.*
 - b. 0104 hours: report from Ivan Control (Mr Waldron) *back burn has commenced up the eastern trail from GR 459485.* This grid reference is illustrated at Exhibit 13 and seems to mark the point at the bottom of the scrub in between Rock Linden and Moreton Bay valleys with the back burn continuing up the western side of Moreton Bay valley. The timing of this back burn was confirmed by Mr Waldron in his oral evidence.⁹¹ The line scan at 0359 hours on 12 February 2017⁹² shows that a back burn had commenced in Moreton Bay Valley sometime prior to 0359 hours. This was accepted by Mr Coe in his oral evidence.⁹³
 - c. 0150 hours: discussion re *fire progression in vicinity of saddle to the north west of Moreton Bay house and cutting the fire off there. Ivan Control tasked with checking the fire progression – thought that the fire is probably past the saddle. Back burn has progressed to GR466488 in Moreton Sector.*
 - d. 0207 hours: *fire has reached GR456483 west of Moreton Bay house.*
 - e. 0228 hours: *Progress of back burn along eastern side is GR467497.*
 - f. 0310 hours: Ivan Control *stopped back burn in northeast flank and is blacking out.* (In his oral evidence Mr Waldron explained what he meant was, “*Put the containment line in...Remove the fuel...Then black it out so there’s no red glows there so they can’t blow across...and light up the other side where the grass is.*”⁹⁴ This is most likely what was occurring at the time that the Rawlinsons complained that as Dusty Rawlinson was using the drip torch to light the back burn, another RFS unit was coming behind to put it out.)⁹⁵

⁹¹ Mr Anthony Waldron transcript 28/06/19 p 15.23

⁹² Exhibit 13

⁹³ Mr Murray Coe transcript 26/06/19 p 80.3

⁹⁴ Mr Anthony Waldron transcript 28/06/19, p 24.44

⁹⁵ Exhibit 1 Volume 2, Tab 24, p 441.22

- g. 0328 hours: Ivan Control has *pulled up back burn north of Moreton Bay at GR 468506 to prevent burn going past where the planned dozer break is going to go...seeking permission to burn out the north east scrub area. Permission denied.*
- h. 0414 hours: Ivan Control has *spoken to Stirling Fergusson who is unhappy that the burn has not happened. Some discussion on location of fire in relation to proposed burn.*
- i. 0415 hours: From Leadville 2 *a lot of the locals believe the area should already be burned out now and not wait. Mr Wilson makes a note in the log: "Agreed with them however I am trying to put in place containment strategies for south of highway. My concern is noting in place to stop the further south of the highway running though to Ulan mines areas."*
- j. 0444 hours: Ivan Control *seeking permission to commence back burn. Permission denied by Ops until containment line is completed south of Golden Highway. According to Mr Waldron, he was hoping to burn from the Golden Highway up to the Moreton Bay Valley to meet that next lot of fire.*⁹⁶
- k. 0513 hours: Discussion with Ivan Control *regarding weather conditions and preparations for the back burn along east and south side behind Moreton Bay. Also asked for his gut feeling on the timing and his concurrence it needed to be done now. We also discussed the possibility of closing the Golden Hwy Permission was given to commence the back burn. According to Mr Waldron, this was the second back burn starting at the Golden Highway that they took up to meet the first back burn.*⁹⁷
- l. 0600 hours: From Ivan Control *break south of Golden Highway is finished and being widened, burn along Golden Highway and up western side is going in well.*
- m. 0649 hours: From Ivan Control *back burn is completed and looks to have gone in at least 100 meters with only a few spots that will need filling in.*

⁹⁶ Mr Anthony Waldron transcript 28/06/19, p 19.41

⁹⁷ Mr Anthony Waldron transcript 28/06/19, p 20.11

n. 0651 hours: confirming from Ivan Control that *the entire eastern and southern back burn has been completed.*

136. It is evident from this contemporaneous log that the back burn to the east of the fire in the Moreton Bay Valley was authorised and commenced by 0104 hours. This was within the timeframe suggested by Mr Coe. The evidence demonstrates that there had been effective work done overnight to establish containment lines. Unfortunately, nothing was going to be able to contain the fire the next day when catastrophic conditions eventuated.

Why did the Incident Controller in Coonabarabran deny the request from Ivan Control to commence a back burn at 0328 hours and 0444 hours?

137. This is explained in the evidence of Mr Wilson. He says:

“Initially I planned to adopt a close containment strategy, attempting to minimise the burning area, while creating wide solid mineral earth containment lines wherever possible, some distance from the forested country. I wanted to burn off these solid containment lines as quickly as possible so that there was time for the fire to burn the fuels within the fire ground, and for the fire intensity to reduce before the forecast catastrophic winds of the following day. I was conscious that if the fire was burning actively and with heat up the western facing slope, the wind had the potential to carry embers across the top of the mountains and create spot fires far to the east of the main fire. However I considered that it was essential that before any back burning commenced there needed to be put in place containment lines a reasonable distance to the east from any bush, which would enable the grassed areas between the containment lines and the bush to be burnt out and allow a reasonable change that embers would be contained in that area.”⁹⁸

138. One needs to backtrack to earlier events to put this answer into context.

139. Sometime after the 1952 line scan became available on 11 February 2017, Mr Wilson reviewed it to look for areas suitable for containment lines, particularly to the fire’s north-east, east and south. He looked at a valley on the line scan (Rock Linden Valley) and thought it could *“possibly be used to create a containment line although in places it would be necessary to either cut trails through the scrubby country or otherwise create containment lines into the scrub using retardant.”*⁹⁹ He hoped to place the containment line as marked on the map at Exhibit 13.

⁹⁸ Exhibit 1 Volume 2, Tab 25, p 548-3.11

⁹⁹ Exhibit 1 Volume 2, Tab 25, p 548-4 at [16]

140. At 2133 hours, Mr Wilson learnt about the fire destroying an abandoned house (now known to be the old Moreton Bay homestead) and said that this *“reinforced ...the necessity to put in strong containment lines before commencing any back burning, given...reports of active fire and property loss at a time when the fire activity should have been reducing.”*¹⁰⁰
141. At 0104 hours, Mr Wilson authorised the back burn in Moreton Bay Valley. Although a containment line had been established, it had not gone in where Mr Wilson had planned and therefore *“the burn was not as deep as I wanted.”*¹⁰¹
142. At about 0200 hours, Mr Wilson had discussions with those on the fire ground and learnt that the main fire had headed further south than anticipated. According to Mr Wilson, *“This was against the natural fire progression and indicted to me that the fire was behaving erratically as the fire had gone much further south than I would have thought it should under the conditions at the time.”*¹⁰² It was also in an elevated position relative to the Golden Highway.¹⁰³
143. This prompted Mr Wilson to reconsider when it would be safe to light back burns, given erratic fire behaviour and the need to prevent the fire crossing the Golden Highway. Up until this point, the strategy *“did not include any planned burning near the Golden Highway.”*¹⁰⁴
144. The new plan required resources be diverted and Mr Wilson observed that with the benefit of hindsight, he didn’t have enough people on the ground to do what he wanted across the night *“but you work with what you’ve got.”*¹⁰⁵
145. The unexpected rapid southerly spread is indicated in the line scan taken at 0359, Exhibit 13 and was confirmed for Mr Wilson when he had access to that line scan. When compared to the previous line scan taken at 2321 hours on Saturday night,¹⁰⁶ it shows that the fire front was, for the most part, moving slowly in a south easterly direction. The exception to this was in the area to the western side of Rock Linden Valley where the fire had moved much more quickly to the south and had already spread below the point where Mr Wilson had hoped to insert a southerly containment line.¹⁰⁷

¹⁰⁰ Exhibit 1 Volume 2, Tab 27, p 548-5 at [17]

¹⁰¹ Exhibit 1 Volume 2, Tab 27, p 548-6 at [23]

¹⁰² Exhibit 1 Volume 2, Tab 27, p 548-7 at [27]

¹⁰³ Mr Garry Wilson transcript 28/06/19 p 57.47

¹⁰⁴ Exhibit 1 Volume 2, Tab 27, p 548-7 at [27]

¹⁰⁵ Mr Garry Wilson, transcript 28/06/19, p 38.37

¹⁰⁶ Exhibit 12

¹⁰⁷ Mr Garry Wilson, transcript 28/06/19 p 45.49

146. The Court appointed expert was asked to comment on the line scan. He said it showed a spot of more intense fire behaviour than in the surrounding area, and he would have found it a most perplexing development justifying diverting resources back to that area and requiring the RFS to re-organise plans for the period.¹⁰⁸

147. As a result of this unexpected development, Mr Wilson:

*“Ordered that any back burning of the scrubby ridge to the west of “Moreton Bay” homestead not be started until a break could be put in along the southern side of the Golden Highway with a 3 grader blade width.”*¹⁰⁹

148. This also meant that *“we had to introduce fire to that scrub mountain west of Moreton Bay homestead, something I was trying to avoid”*¹¹⁰ (referring to the back burn that ultimately took place at around 0513 hours because he was not prepared to authorise the burn at 0328 hours and 0444 hours).

149. More specifically, in terms of the 0328 hours request (relating to burning out the north-east scrub area), Mr Wilson said at that point, he was waiting on a dozer to complete a line just north-west of where the back burn had finished.¹¹¹ Ultimately, due to a cliff in that area the control line had to be completed by retardant. The proposed containment line to the north of Moreton Bay Valley is marked on Exhibit 14.

150. In terms of the 0444 hours request (relating to back burning closer to the Golden Highway), Mr Waldron was telling Mr Wilson that *“conditions were okay to go ahead at that stage... and again, whilst I did not disagree with him, I still had the, the nagging knowledge that that fire was heading south in a manner that I wouldn’t have anticipated.”*¹¹²

What caused the unexpected southerly spread confined to one part of the fire edge which necessitated a change in RFS strategy?

151. Given the way in which weather conditions varied from place to place and given the heavy wooded terrain involved, it is possible that it was, as Mr Wilson first thought, the result of erratic fire behaviour.

¹⁰⁸ Mr Geoff Conway transcript 19/09/19

¹⁰⁹ Exhibit 1 Volume 2, Tab 27, p 548-7 at [28]

¹¹⁰ Mr Garry Wilson, transcript 28/06/19 p 46.34

¹¹¹ Mr Garry Wilson transcript 28/06/19 p 48.42

¹¹² Mr Garry Wilson transcript 28/06/19 p 49.33

152. However, this is now thought unlikely because *“it would have to be a specific wind in one spot to behave differently to all the rest of the other fires around it at that time.”*¹¹³
153. Another potential explanation is that the unexpected fire activity was the result of a back burn, but not a back burn undertaken by the RFS.
154. If this was the case (the evidence is suspicious for back burning activity but not definitive), it is not known who lit the fire. The Court cannot make any further findings about the origin of that part of the fire.
155. Mr Fergusson wanted the RFS to *“light it up”*, including lighting up *“the whole scrub ...with an incendiary helicopter at midnight.”*¹¹⁴ This was a view apparently shared by other local landholders with their own personal history in fighting fires on this country.
156. According to Mr Conway *“burning out operations should be commenced as early as possible once control line construction commences and weather conditions are suitable. It should be undertaken slowly and incrementally, keeping the fire well back from the point where control lines might still be under construction.”*¹¹⁵
157. However, Mr Conway did not support the use of incendiaries or *“lighting it up”* because *“introducing more fire into the landscape in these conditions is a strategy that must be very carefully considered, and only undertaken with control lines in place and sufficient resources to deal with any fire that may start outside the control lines due to spotting or failure of those control lines.”*¹¹⁶
158. In his oral evidence, Mr Conway said that what Mr Fergusson was describing was more akin to a large scale fuel reduction burn, rather than a back burn. These burns do occur at times, although not commonly in remote, rugged areas where access is problematic. Mr Conway says this strategy was not appropriate for this fire. He gave evidence that with the predictions of catastrophic conditions it would not have been appropriate to add fire to the fire ground.¹¹⁷
159. Mr Conway agreed that the unexpected southerly spread of the fire would have interrupted the overnight IMT’s planning process. I accept that it necessitated a need to change plans at 0300

¹¹³ Mr Gary Wilson transcript 28/06/19 p 46.12

¹¹⁴ Exhibit 1 Volume 4, Tab 61, pp 697-709

¹¹⁵ Exhibit 1 Volume 6, Tab 125 p 1454-26

¹¹⁶ Exhibit 1 Volume 6, Tab 125 p 1454-24

¹¹⁷ Mr Geoff Conway transcript 19/09/19 p 35.45

hours, which is a time the night shift would usually expect to be quiet, and when most of their planning for the following day would be undertaken.

Events at Cassilis

160. A common theme from the local landholders at the Cassilis end of the fire ground was that there was a lack of any RFS presence at important points.
161. Local landholders alleged that on occasions, RFS crews were present but did not offer adequate assistance or engage with locals to tell them what was planned and the potential ramifications of those plans.
162. One matter of obvious significance to the people at this end of the fire ground was a RFS decision on 12 February 2017 to prioritise protecting the village of Cassilis at the expense of deploying appliances to properties that stood between the approaching fire and the village.
163. Mr Max Weis gave evidence that if not for the efforts of his family and other locals, they would have lost their houses on the afternoon of 12 February 2017.¹¹⁸
164. The evidence of Ms Paula Palmer, who lives on a property in the Cassilis area, is also poignant. She described family and friends rallying on Sunday, 12 February 2017 as the power went out and with little information available to them to understand what was happening. A friend from the town of Cassilis kept ringing to reassure her and tell her about the fire trucks at Cassilis “*but they never turned up.*”
165. The decision to prioritise Cassilis village was made by the IC. The fire spread prediction completed at 1245 hours predicted that Cassilis could be impacted between 1900 hours and 2100 hours, but this prediction was specifically expressed not to take into account the pyro cumulonimbus forming.¹¹⁹
166. The fire spread prediction reports had proved accurate earlier in the fire and could not be ignored.
167. With the benefit of hindsight, the Court knows that the fire did not reach Cassilis, but the rate of fire spread map shows the incredible speed by which the fire travelled on 12 February 2017.

¹¹⁸ Mr. Max Weis, transcript 26/06/19 p 5.13

¹¹⁹ Exhibit 1 Volume 3, Tab 32A Annexure 2, p 95

168. The IC initially sent two, later increasing to four strike teams (a strike team is comprised of between three to six appliances, usually five appliances) to the village for property protection. Unfortunately some of those crews reportedly passed the time playing cricket.
169. This was exceptionally and understandably galling to the people working so hard, and without RFS assistance, to try and protect properties in between the fire front and the village.
170. The decision to deploy the strike teams to Cassilis took into account that:
- a. People had been earlier advised to evacuate to Cassilis. Precise numbers are not known but Mr Jones estimates around 40 people travelled there for that purpose, in addition to any residents.
 - b. There was greater infrastructure to protect there (including a greater number of homes) than on surrounding properties.
 - c. Even if the fire front didn't reach Cassilis, the main concern was that spot over fires could put the village at risk spotting over the fire breaks that landholders had established on their properties in between the fire front and the village.
 - d. Cassilis later lost power which meant that residents lost the ability to monitor fire progress via ABC or other communications. This became more difficult once the Telstra tower was lost. Mr Jones sent a third strike team to the town once told that the power was down.
 - e. A local government representative then advised that loss of electricity would mean that the pumps were out and no reticulated water would be available. Mr Jones sent a fourth strike team to the village in response to this development.
171. With the benefit of hindsight, the Court knows that the pyro-convective column de-coupled from the Sir Ivan fire by a wind change and the worst did not eventuate. But at the time of these decisions, no one was to know that.
172. I accept Mr Conway's opinion that the decision to prioritise Cassilis over individual properties was appropriate based upon what was known at the time.

173. Ms Palmer complained that 13 February 2107 she noticed smoke to the west on the boundary of “Wongalea” and “Culburra”. She attempted to put the fire out. She went for help and found six inactive RFS trucks on the Old Coolah Road and asked for help but they refused.¹²⁰ This was put to the RFS but without further specific identifying information of those trucks, the RFS was not able to identify appliances allegedly involved.¹²¹
174. Hopefully in the future once the RFS roll out AVL technology in accordance with the initiative they have described to the Court (see para 208) they will be able to track appliances and investigate allegations of inactive trucks.
175. Mr Paul Martin complained that on 16 February 2019, he received a phone call from Mrs Sue Weis telling him the fire was back in his country after the RFS made a decision to use incendiaries to relight the fire in the bordering “National Park”. This occurred without notice to Mr Martin who had to return to efforts to suppress the fire with the assistance of family and locals but no RFS.
176. This was put to the RFS who responded: *“RFS crews placed a mineral earth break through the Durrigere Conservation area to reduce the size of unburnt fuel and to use Aerial Incendiary to remove the remaining fuel within the conservation area, thereby reducing the threat of additional fire spread, in worsening weather conditions. As the burn continued, there were multiple re-ignitions on the perimeters of the open pasture land to the north west within containment. Each time these re-ignitions occurred helicopters were dispatched to deal with fire.”*¹²²
177. It is difficult to know whether the same conservation area and properties are being discussed. In any event, the gravamen of Mr Martin’s complaint was focused upon relighting without notice to landholders likely to be impacted if the fire got away. This will form one of the talking points that landholders will raise in their information and engagement briefing as set out in recommendation 1.
178. Local landholders in the Cassilis areas raised concerns around the loss of telecommunications during the fire. This was raised by Mr Weis,¹²³ Mr Martin¹²⁴ and others.
179. In this regard, Cassilis and surrounds, sitting on the Great Dividing Range, had the advantage over Dunedoo and other villages to the west. Mobile phone coverage in Cassilis is generally good.

¹²⁰ Exhibit 1 Volume 4, Tab 51, p 686-3 at [24]

¹²¹ Exhibit 15 Tab 4A, p 2281

¹²² Exhibit 15, Tab 4A p 2282

¹²³ Exhibit 1 Volume 4, Tab 44, p 679-3 at [11]

¹²⁴ Exhibit 1 Volume 4, Tab 52, p 687-3 at [27]

180. The concern expressed in the aftermath of the fire was that once the fire burnt power lines to the telecommunication infrastructure, the battery backup failed because batteries were flat or battery backup lasted for a couple of hours, but then generators failed because they had not been serviced.
181. Telstra were asked to respond to these allegations and accordingly checked their alarm management system records for the Telstra Mobile Site in Cassilis in order to respond to the Coroner.
182. That review of records¹²⁵ revealed:
- a. There was a loss of AC mains power at 1210 hours on 12 February 2017.
 - b. Battery back up is intended to support the site in a mains power outage event until either mains power is restored, or a portable generator arrives at the affected site.
 - c. Battery back up design specifications for the Cassilis Mobile Site require a reserve time of 3.25 hours.
 - d. Battery back up in fact lasted for 10 hours and 23 minutes until 2233 hours.
 - e. Mobile coverage from the Cassilis Mobile site ceased at that time.
 - f. Telstra Global Operations Centre was monitoring the battery reserve time.
 - g. During significant natural events like bushfires, “red zones” may be declared by emergency services, and technicians are prevented from accessing the site.
 - h. Here a “red zone” was declared, preventing a technician travelling to the site with a portable generator prior to the battery supply being exhausted.
 - i. If there had been no “red zone” designation, a Visionstream technician would have been dispatched with a portable power generator whilst the battery back-up was still operational.
183. This does not change the fact that telecommunications failed completely at 2233 hours on Sunday, 12 February 2017, and that left the land owners in and around the Cassilis area feeling more isolated and vulnerable. As Telstra were not a party to this inquiry and I have not heard any evidence about the portable generators, it would be inappropriate for me to make any recommendations in relation to this issue. It may be that the township of Cassilis may wish to approach Telstra.

The aftermath of the fire

¹²⁵ Exhibit 15 Tab 8

184. Fortunately, the fire did not lead to any loss of human life. However, the emotional, physical and financial impact on the people who lost their homes, their livelihoods, their outbuildings and infrastructure, their stock and their pets should not be underestimated.
185. Some properties lost bloodlines that had been developed over generations. Some people lost uninsured homes that they may never be in a position to replace.
186. Merely describing the number of stock lost in the fire does nothing to explain the emotional cost of having to cull animals injured and in great pain. Mr David Bowman spoke with great emotion describing:
- “...we spent the next two days shooting sheep, burying sheep, trying to contain sheep that were still alive and believe you me, it was pretty gory stuff. I’ve never seen it. I’ve never been so upset.”¹²⁶*
187. Another consistent theme to emerge from the evidence given by local landholders was inconsistent and sometimes non-existent information about identifying and remediating premises damaged by fire and which contained asbestos.
188. Much has emerged during the course of this inquiry to illuminate local landholder concerns about the way the fire was fought and RFS rationale for some significant decisions.
189. It is regrettable that it took so long and involved such an intensive process as this inquiry to allow for (some) answers to be given.
190. There had been earlier attempts to share information including through early meetings providing information on disaster recovery and via research commissioned by the RFS. But sometimes, it takes weeks or even months before specific questions emerge and detailed answers can be given. Even at the end of this inquiry, questions remain unanswered. There must be more that can be done by both landholders and the RFS to try and understand the perspective that each brings to these issues.
191. The RFS commissioned the Bushfires and Natural Hazards Cooperative Research Centre to research community preparedness and response to a number of fires in January and February 2017, including the Sir Ivan fire. Relevant key findings were¹²⁷:

¹²⁶ Mr David Bowman transcript 25/06/19 p 60.28

¹²⁷ Exhibit 1 Volume 3, Tab 32, Exhibit AC-1 Tab 10 p 4-7

- a. The “Fires Near Me” app was seen as the most useful information source. Most people expected to receive warnings from multiple sources, but of course this was affected by limited mobile coverage and limited access to SMS warnings.
- b. Most people do not intend to leave before there is a fire on days of Catastrophic Fire Danger. Many believe it is impractical to leave before there is a fire, and many are also committed to defending despite being aware of the increased risk to life.
- c. Many did not anticipate the size or severity of the Sir Ivan fire.
- d. Many properties were significantly under-insured.

192. The research concluded:¹²⁸

- a. There is a need to more clearly communicate risks posed by fires burning under non-Catastrophic Danger conditions.
- b. Additional resources for agricultural landholders could assist to help businesses to more systematically identify assets and values, priorities and plan for their protection.
- c. There is a need to more clearly communicate the limits to RFS response capacity including resource constraints and operational constraints imposed by fire danger conditions and fire behaviour. Local brigades can be effective in communicating these messages, but this may be difficult at a time when RFS members are finding training and time commitments challenging.

193. The January 2013 fire at the Wambelong Camp Ground within the Warrumbungles National Park gave rise to a variety of recommendations from the ensuing Coronial and Parliamentary Inquiries. Evidence of the RFS response to those recommendations is set out at Volume 2 Tab 25 of the brief. Further evidence about the RFS response to those recommendations is given by Dr Heemstra and Mr Rob Rogers.

194. The matters of most significance to this inquiry are:

¹²⁸ Exhibit 1 Volume 3, Tab 32, Exhibit AC-1 Tab 10 p 8-9

- a. Improved fire behaviour prediction, including through the use of weather balloons, portable automatic weather stations, and additional fire behaviour analysts located in each RFS region to work with an IMT when required.¹²⁹ For this fire, Mr Peter Brookhouse fulfilled this role in the IMT.¹³⁰
- b. Introduction of the Rural Liaison Officer ('RLO') within each IMT.¹³¹ According to Mr Rob Rogers *"This role is responsible for establishing relationships during large fire with affected farmers and representing their concerns and suggestions direct to the IC and IMT."*¹³² Further, *"the intention of the RLO role is not to replace the existing local engagement and knowledge processes but rather to provide a safeguard where the complexity of the fire situation warrants additional engagement and interaction with local landholders."*¹³³ The role is further explained in the Operational Management Procedure contained at Tab 29, Annexure 16, page 263. The evidence here suggests that reparative work with the Dunedoo and Cassilis community would assist in encouraging locals to use the RLO. Clearly, local landholders should know what the role involves and how to contact the RLO to express concerns. Landholders need to have confidence that their concerns would be fed back to the IC and given due weight.
- c. The development of an operational protocol covering warnings and public information.¹³⁴
- d. Using the e-GRN as a single shared radio network amongst NSW emergency responders and the "Cell On Wheels" as a multichannel mobile e-GRN site that can be deployed at the request of RFS.
- e. Updating radio terminal hardware.¹³⁵
- f. A trial of Automatic Vehicle Location technology to assist RFS track appliances on the fire ground.¹³⁶ As well as obvious benefits in keeping fire-fighters safe when deciding to set back burns, this is an important initiative given that some of the specific allegations raised

¹²⁹ Exhibit 1 Volume 2, Tab 25, p 444 and following

¹³⁰ Exhibit 1 Volume 3, Tab 32A p 553-19 at [35a]

¹³¹ Exhibit 1 Volume 2, Tab 25, p 448 and following

¹³² Exhibit 1 Volume 2, Tab 29, p 550-21 at [124]

¹³³ Exhibit 1 Volume 2, Tab 29, p 550-21 at [126]

¹³⁴ Exhibit 1 Volume 2, Tab 25, p 449

¹³⁵ Exhibit 5, p 2288-2289

¹³⁶ Exhibit 1 Volume 2, Tab 29, p 550-25 at 150

by local landholders in this inquiry could not be answered because there was insufficient information to identify the appliances allegedly involved.

Conclusion

195. On the weekend of 11 to 12 February 2017, New South Wales experienced some of the worst bush fire conditions ever experienced in the state. A state-wide total fire ban was declared. The RFS attended 223 fires throughout the state. On 12 February alone, the RFS deployed 2,500 firefighters together with large amounts of firefighting equipment. In the Castlereagh District, when this fire broke out incident management personnel were arranged, strike teams and brigades were deployed, and aircraft resources were utilised. The predicted catastrophic conditions and the competing demand for resources in other parts of the state justified the Fire Control Centre in Coonabarabran taking over management of this fire.
196. It goes without saying that the RFS could not guarantee that every landholder would receive assistance from the RFS.
197. Communication and co-ordination between the RFS, the volunteer fighters, and the local landholders proved to be difficult at times. At the conclusion of this inquiry it was agreed between the RFS and the local landholders that improvements could be made. I will make a number of recommendations that the RFS and NSW Farmers agreed upon, given that those two bodies will have primary responsibility for facilitating attempts to improve communication and co-ordination.
198. Since the fire, the RFS acknowledged and addressed some of the technological communication issues that arose on the fire ground by implementing the following commendable initiatives
 - a. The RFS is investigating the use of cellular and satellite technology to increase communication on the fire ground and situational awareness of events on the fire ground, including the use of mobile data terminals in RFS appliances
 - b. the RFS is rolling out AVL technology to allow IMT to track the location of RFS appliances on the fire ground, leading to increased situational awareness and enhanced firefighter safety. I note that this will not only assist in tracking resources as they are deployed during a fire, but also in analysing the fire ground response in any post incident review.

- c. the RFS is continuing to develop the *Fires Near Me* NSW Smart Phone Application to provide notifications of public warnings and total fire bans.
 - d. The RFS is continuing to ensure that public warnings and safety information on total fire bans are provided to those who do not have access to the internet or smartphone technology through briefings to the Australian Broadcasting Corporation.
199. During the course of fighting the fire, it appears that possibly an unauthorised back burn resulted in the unexpected need to relocate firefighting resources and forced the unintended amendment of the Incident Action Plan. The evidence in this inquiry strongly supports the RFS concerns that unauthorised back burning can significantly impact the effectiveness of firefighting operations, the duration of a fire and safety on the fire ground. The RFS would like to see a legislative review of penalties and offence provisions in this regard. That is a law reform proposal that sits beyond the scope of this inquiry. I do however take this opportunity to stress that back burns cannot be undertaken during a total fire ban without the knowledge and consent of the RFS and any unauthorised back burns cannot be condoned.
200. I note that during the consultations that are to take place between the RFS and local landholders as a result of the recommendations, the topics for discussion will include:
- a. How a landholder can obtain permission to do a back burn from the RFS during a total fire ban;
 - b. Landholder preference, where feasible, for RFS to consult with landholders on the RFS' way in and out of their property;
 - c. Landholder preference for the RFS to inform landholders of any authorised back burning that may affect their land;
 - d. The way Captains and Deputy Captains are to be kept in the loop of decisions being made by IMT, and the way the Captains and Deputy Captains can disperse that information to local landholders;
 - e. Training and consultation out of fire season in relation to firefighting techniques including back burning techniques; and
 - f. Any remaining questions arising from an appraisal of the chronology of the fire and what is known about the response by the RFS.
201. This inquiry heard about many acts of bravery and compassion. Mr Graham Goodman, the Captain of the Uarbry Brigade, lost his house while acting as a volunteer firefighter elsewhere. People

called by to check on elderly neighbours or stopped to door knock homes to let people know of the fire's presence, and many people stood by to fight the fire even when depleted by all they had already done.

202. I send my sincerest best wishes for the future to everyone who suffered loss and hardship in this fire. I thank the landholders, the volunteer RFS and the RFS for their open cooperation in this investigation and inquiry and commend them on their valiant efforts in fighting the fire. I trust and hope that the lessons learnt and subsequent recommendations will improve the task of fighting a similar fire in the future.

203. I now turn to my formal findings and recommendations.

Findings: s.81 *Coroner Act 2009*

204. I find that the origin of the fire was on the property known as 'Flagview South' Sir Ivan Dougherty Drive, Leadville. The cause of the fire was a lightning strike on or near the top of a wooden strainer fence post which caused the post to smoulder for a number of days before igniting the fire on 11 February 2017.

Recommendations: s.82 *Coroner Act 2009*

To the Commissioner of the RFS, I make the following recommendations:

205. That the RFS offer an information and engagement briefing with affected residents in the Dunedoo area (Castlereagh District) and Cassilis area (Liverpool Range District) to discuss the Coroner's findings and the agreed chronology annexed to those findings. This briefing is to be led by RFS personnel at the Assistant Commissioner/Manager Planning and Predictive Services level, and is to include anticipated changes in bushfire frequency and behaviour in those districts (including fire thunderstorm events), how landholders can access RFS information in advance about predicted conditions for local districts, and adaptive firefighting strategies in response to changes in bushfire frequency and behaviour.

206. That the RFS consider providing farming communities with access to topographical maps and other relevant information held by the RFS to assist primary producers to prepare for fire preparedness.

207. That the RFS review the Community Field Liaison Team Program to incorporate rural initiatives, information sharing and joint training opportunities targeted to the needs of particular RFS districts.
208. That the RFS undertake a community engagement campaign (including information specifically targeted at farming communities) to reflect any revision of the Fire Danger Ratings system following the current review by the National Social Research Project. Such a campaign to include notice that in large fire events the RFS cannot guarantee that every landholder will receive assistance from the RFS and such a campaign to be repeated (even in a modified form) prior to the start of each statutory bush fire danger period.
209. That the RFS review its Building Impact and Damage Assessment Team process to increase the early detection of asbestos risk in fire damaged buildings and associated protocols to support landowners affected by fire and asbestos.

To the Commissioner of the RFS and NSW Farmers, I make the following recommendations:

210. That the RFS and NSW Farmers consider a joint approach to the Bushfire and Natural Hazards Cooperative Research Centre (or similar organisation) to conduct social research into best developing a “shared responsibility” to hazard reduction, community engagement outside of bushfire season, information sharing around predictions for more extreme fire behaviour, and the delineation of decision making responsibilities on the fire ground when RFS and private vehicles respond to a fire.
211. That the RFS, in consultation with NSW Farmers, extend and expand primary producer engagement strategies to include a focus on how private landholders within farming communities can work with the RFS, including a focus on information sharing outside of bushfire season, fire ground communication during a fire, fire ground management structure and firefighter safety.
212. That the RFS, in consultation with NSW Farmers, promote the use of the Rural Liaison Officer (RLO) within an Incident Management Team including information about the role of the RLO within the IMT, when a RLO is likely to be appointed, the likely experience of someone accredited as an RLO and locating the RLO on the fire ground.
213. That the RFS and NSW Farmers collaborate to develop an engagement program for current NSW Farmers and future representatives serving on local and state level bush fire risk management committees, to ensure the views of farming communities are represented at regular meetings outside of fire season and during operational bush fire events.

Annexures

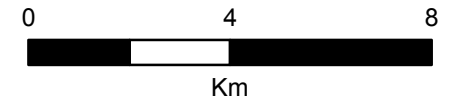
- A Rural Fire Service, rate of spread map
- B Agreed Chronology

ANNEXURE A



Sir Ivan Dougherty Fire Rate of Spread

Scale: 1 : 150,000



LEGEND

- Saturday11_1411
- Saturday11_1500p
- Saturday11_1818p
- Saturday11_2152
- Saturday11_2322
- Sunday12_0343
- Sunday12_1121
- Sunday12_1253
- Sunday12_1309
- Sunday12_1405
- Sunday12_1447
- Sunday12_1730
- Sunday12_2047
- Monday13
- Thursday16_1255
- Monday20

PRODUCTION INFORMATION

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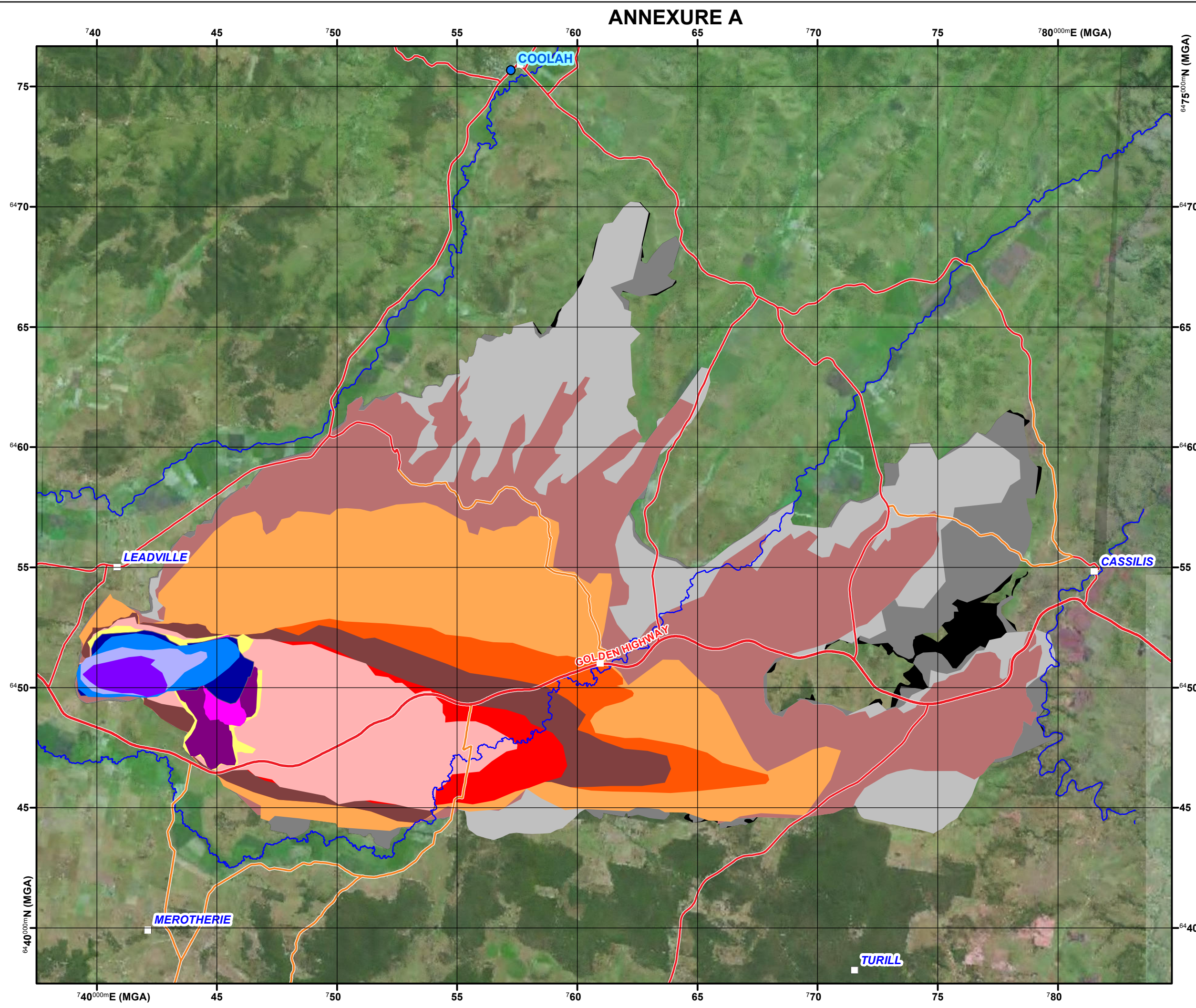
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Produced by: Heike Apps - ESA MAPS

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 - i. in the time between which the data was originally collected and the map produced; and
 - ii. since the map was produced.
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KEY MAP



ANNEXURE B

LEADVILLE FIRE – AGREED CHRONOLOGY

(Chronology contains a representative sample of experiences across the fire ground, time markings are largely estimated times only and entries next to time markings contain descriptions of events at that time and following, according to the context of the entry)

Spring 2016

Spring rains in Castlereagh RFS Zone leading to extensive pasture growth, followed by hot dry summer which dried out pastures [Volume 2, Tab 28, page 549-2]

Rainfall inhibited hazard reduction across the zone as it was not possible to undertake burning during the traditional periods of autumn and spring [Volume 3, Tab 32, page 553-3]

27/12/16- 30/12/16

Flagview South hosting hunting trip organised by Inland Hunting Properties, (final hunting trip before fire) [Volume 8, Tab 158, page 1982]

Due to heat, campers don't light any type of open camp fire, it was just too hot [Volume 4, Tab 43, page 677]

02/17

Early February saw temperatures consistently rising above 40 degrees across many parts of the state with RFS crews dealing with large number of bush and grass fires [Volume 2, Tab 29, page 550-11 at 50]

04/02/17

Lightning strike data shows lightning in vicinity of strainer post on Flagview South (closest recorded stroke to strainer post) [Volume 8, Tab 152]

07/02/17

Lightning strike data shows lightning in vicinity of strainer post on Flagview South [Volume 8, Tab 152]

10/02/17 Friday

Advice to RFS Castlereagh Zone that pre-emptive s.44 declaration would be put in place from 0800 on Saturday 11/02/17 [Volume 3, Tab 31, page 552-4 at 11]

Although weather for Saturday was predicted as extreme, main concern was for Sunday, based on forecasted catastrophic conditions [Volume 3, Tab 31, page 552-5 at 14]

State wide total fire ban declared [Volume 3, Tab 31, page 552-5 at 15]

Corey Phillip, Superintendent and District Manager, Castlereagh Zone sends out pager message to all brigades and an

email to Group Officers and operations group re pre-emptive arrangements [Volume 3, Tab 31, page 552-5 at 15]

Stuart Green activated to be on standby as aircraft specialist for RFS due to forecast extreme weather conditions predicted for weekend [Volume 1, Tab 20, page 289]

Paul Jones appointed Incident Controller Castlereagh Zone, as well as s.44 declaration made over the Warrumbungle and Gilgandra Shires, several other areas including 2 neighbouring local government areas of Liverpool Ranges and Cudgegong were also under s.44 declaration with their own ICs appointed [Volume 3, Tab 30, page 551-2]

NPWS close all national parks in Castlereagh Zone

Dave Seis moves sheep from "Round Camp" property to "Flagview South", arrives late afternoon, moved sheep from the Bottom Long Paddock to South West Hill Paddock...ran pump that pumps water from Well Paddock to tank in the Tank Paddock, left it going until it ran out of fuel, checked energiser for electric fence, no issues, left property about 8pm, locked padlock securing gate as left [Volume 3, Tab 33, page 555 at 8-10]

11/02/17
Saturday

Dunedoo show day

0800 Section 44 declaration takes effect

Incident Controller Paul Jones
Deputy Incident Controller Corey Phillip (Superintendent and District Manager, Castlereagh Zone)
Deputy Incident Controller Garry Wilson (Operations Manager Castlereagh Zone)[1129]

Ivan Control is title given to most senior RFS decision maker on the ground, John McDonald on Saturday and Sunday day shifts, Tony Waldron on Saturday night into Sunday morning

Pre 1217 Fire starts on Flagview South

1217 Sir Ivan fire reported to Castlereagh Incident Management Team via call to 000

RFS page volunteer firefighters, some of whom receive page whilst at the Dunedoo show, others hear about the fire via friends and family

Stephen Yeo, Captain Leadville RFS, received conference call from Coonabarabran Fire Control Centre, was at show so went

home to get Leadville 7, fire heading up through scrub/timber country and requested bulldozer so that fire breaks could be implemented [Volume 1, Tab 14]

Stirling Ferguson heard about fire, had announcement made at showground, got ute and went to the fire ground [Volume 4, Tab 53]

Early responders concerned with getting alert out, checking nearby homes, attempts to suppress the fire on scene,

Those at the fire scene during course of the next 24 hours included (but not limited to):

David Seis (Leadville Brigade, Deputy Captain)
Keith Ghent
Sara Fergusson
Todd Fergusson
Stirling Fergusson
David Bowman
Emma Bowman
Luke Milson
James Stuart
Will Gaden
Jimbo Sweeney
Paul Francis
Clarinda Washbrook
Peter Bennetts
James Stuart
Wes Coe
David Sweeney
Peter Bennetts
Tim Horton
Derek Rhodes
Stephen Yeo (Leadville Brigade Captain, initially "Ivan Control" as most senior RFS on scene)
George Simmons (Leadville Brigade Senior Deputy Captain)
Jayson Abbott (Leadville Brigade Deputy Captain)
Murray Coe (Leadville Brigade Deputy Captain)
Dusty Rawlinson (Leadville Brigade)
Kim Rawlinson (Leadville Brigade)
James Sweeney (Leadville Brigade)
Jamie Bauer (Leadville Brigade)
Graham Goulder (Dunedoo Brigade Captain)
Jack Foran (Dunedoo Brigade)
Ken Beames (Dunedoo Brigade)
Warren Hogden (Dunedoo Brigade)
Ian Stevenson (Hannah's Bridge Brigade, Captain)

Peter Quera (Hannah's Bridge Brigade, Senior Deputy Captain)

Matilda Quera (Hannah's Bridge Brigade)

Morris Cluff (Birriwa Brigade)

John McDonald (Volunteer Group Captain East Division Castlereagh Zone, takes over as "Ivan Control" on 11 February 2017)

Anthony Waldron (Yearinan Brigade, Volunteer Group Officer, "Ivan Control" over evening of 11/02/17-12/02/17)

Andrew Young (Napier Lane Brigade, Volunteer Group Leader appointed as Safety Officer at the scene)

RFS Brigades include: Leadville, Dunedoo, Birriwa, Hannah's Bridge, Gulgong, Merrygoen, Uarbry, Merriwa, Cassilis, Cudgegong

Paul Jones as Incident Controller: initial strategy to try and contain fire by direct attack however strategy changes to parallel and indirect strategies. Crews on southern flank tasked to direct attack as fire came out onto open grassland, crews on northern flank parallel attack with existing and new trails, indirect attack on head of fire (eastern edge) using plant to construct containment lines [Volume 3, Tab 30, page 551-5]

Rapidly escalating fire behaviour in early stages particularly as fire enters bushland about 200-300m east of area of origin [Volume 6, Tab 125, page 1454-13]

Murray Coe, Deputy Captain, Leadville RFS observed lost control of fire when it crossed couple of creeks, crossed into Basin Gully and Rock Linden, fire burnt out to Round Hill and RFS and private vehicles had to respond to the north [Volume 1, Tab 15]

Per David Bowman: early attempts by group of locals to stop fire heading east from Flagview South, as fire burned down eastern side of large hill on property, private crews waiting and able to suppress fire on the flank but terrain prevented similar efforts to north [Volume 3, Tab 34]

Private crews and early RFS crews on scene had some early success with direct attack on Bald Ridge Road and Warden's Road [Volume 1, Tab 15, page 248]

Peter Quera from Hannah's Bridge Brigade went to Dhu Robin, not under threat and wind taking fire away from it, continued east along Wardens Rd until reached police block, police said not letting anyone through because already evacuated area and road single access, number of other units arrived, stopped about half hour, Police wanted someone in command to contact them

but unit couldn't reach Yeo on radio [Volume 1, Tab 17, page 263.11]

John McDonald gets call from Corey Phillip requesting attendance at Leadville to take control of fire [Volume 2, Tab 28, page 549-3].

After 1230 George Simmons (Leadville Brigade) called to fire, meets up with Leadville 2 truck, gets to Flagview South saw fire burning through gully to north east and really going, number of farmer's trucks up near the fire with water tankers on their trucks and trailers, decide even though could have taken truck closer to fire wouldn't achieve much so advised Fire Comms needed aircraft support and then heading to "Ewendale" to try and get in front of line of fire, managed to keep fire out of farm land and in scrub kept moving along fire front and onto neighbouring properties including "Camerons" and "Basin Gully", eventually reached scrub line where couldn't go further, headed back other side Leadville to "Bald Ridge", on northern side Leadville, other brigades there, aerial bombing happening, able to contain fire, went back to southern side of Leadville as satisfied threat at Bald Ridge under control, rest of Saturday concentrate on maintaining fire within area of Rock Linden Valley and Moreton Bay Valley, on duty until 3am Sunday [Volume 1, Tab 13, page 238-240]

App. 1pm McDonald advised by Phillip of a road block on Warden's Road, had been advised by Phillip that police wanted someone to approach and say they were in charge of fire prior to letting vehicles through, McDonald to take control of fire on arrival at road block [Volume 2, Tab 28, page 549-4] one officer says "this will be in the coroner's court", police concerned for safety of people if they go up Warden's Rd, McDonald's view there was no imminent danger and let all local landholders and RFS trucks up Warden's Road, had legitimate reason to be there, Doesn't think police road block materially affected the outcome of the fire but did delay some preparation [Volume 2, Tab 28, page 549-4]

Once McDonald on scene in overall control of the fire but knew there would be communication difficulties across the fire ground because of ridge, contacted FireCom and said needed to separate into north and south divisions, strike team leader from Cudgegong took control of southern side and McDonald on northern side, if not for communication difficulties would not have split the fire ground [Volume 2, Tab 28, page 549-5]

Not possible to do direct attack in the scrub so planned to put breaks in open country and let fire creep down to the breaks and extinguish it [Volume 2, Tab 28, page 549-8]

- 1400 DivCom North McDonald and local farmer with heavy plough start putting a break in app 30m from timbered edge [Volume 1, Tab 19, page 280-282]
- 1419 McDonald sent 2 fire trucks to do property protection up Warden's Road, had requested grader and they were already en route, when graders arrived sent them parallel with Warden's Road to put in second break, bulldozer arrived from Soilcom conservation, didn't deploy them at this time [Volume 1, Tab 19, page 280-282]
- 1438 Call to McDonald from Firebird 230, re shed about to be impacted, contacted DivCom South and they on way to it [Volume 1, Tab 19, page 280-282]
- 1600 Anthony Waldron attends control centre in Coonabarabran for briefing, then travels down to staging area at Moreton Bay, met with Divisional Commander for Mudgee, discussed what was happening then DivCom left, sent couple of trucks along Golden Highway to stop fire progression there, went to Gundooee and met Andrew Young, quick look around, Andrew became plant manager to get dozer put control lines in on southern side of fire [Volume 2, Tab 23, page 435-437]
- 1817 Draft Incident Action Plan Current situation: Catastrophic conditions are forecast. Worst case scenario indicates running fire would threaten areas initially southward, closing the Golden Highway then burning on a massive front to the north-northeast, Predicted situation: minimal overnight moisture recovery, leading the potential for active fire behaviour throughout the evening. Caution is essential during any burning operations due to potential wind conditions, predicted weather, overnight minimum of 30 degrees, max humidity 30%, wind speeds may be 20-30 kph between N – WNW, if inversion does not form...any inversion is expected to suddenly breakdown sometime between 0900-1100 – causing rapid escalation in potential fire behaviour, front expected sometime after 1400 hrs which may cause pyro-convective condition [Volume 3, Tab 30, page 551-32]
- 1900 Stirling Fergusson learnt RFS going to put in a fire break with dozers and graders and wanted them to then light up right away, [Volume 4, Tab 53]
- 1948 Fire spread prediction report "There is a very high chance of the fire breaking containment tonight or tomorrow" [Volume 3, Tab 32A, Annexure, 2 page 105]
- 1950 Paul Jones finishing shift as Incident Controller, due to hand over to Garry Wilson Deputy Incident Controller

night shift, night shift strategy to establish containment as close as possible to the active edges of the fire and to secure the perimeter so that the fire did not run in the predicted catastrophic conditions for the next day [Volume 3, Tab 30, 551-5 at 22]

As Jones finishes shift, crews and dozers putting in containment lines in north and east, crews on southern flank direct attacking the fire as it came out to grassland in an attempt to alleviate the need to close and burn off the Golden Highway [Volume 3, Tab 30, page 551-6]

Garry Wilson commences as Deputy Incident Controller night shift, fire uncontained and estimated cover 1500 hectares, received briefing outgoing IMT and spent half hour familiarising self with crews on ground, current and expected fire behaviour, possible containment strategies,

At this time strategy did not include any planned burning near Golden Highway [TN 28/06/19, page 57.47]

Once 1952 line scan became available, Wilson reviewed it looking for suitable area for containment line particularly on north east, east and south, hoped to place containment in Rock Linden Valley

2133 Per log prepared by Wilson from RFS records: Ivan Control (at this time Tony Waldron was Ivan Control) report abandoned house north west of "Moreton Bay" been destroyed, fire very active and heading east, re-tasked grader to Moreton Bay house, discussed need for eastern containment line and suitable location, [Volume 2, Tab 27, page 548-10]

When Wilson learns fire destroyed old Moreton Bay homestead, concerned about reports of active fire and property loss at time when fire activity should have been reducing [Volume 2, Tab 27, page 548-5]

2146 Per log prepared by Wilson from RFS records: Ivan Control advise work commenced on eastern containment line, in valley north east of the Moreton Bay homestead and runs in northerly direction up to Gundooee house, fire fairly active [Volume 2, Tab 27, page 548-10]

2222 Per log prepared by Wilson from RFS records: Ivan Control report spot over in south eastern area of fire, will burn south easterly direction and be controlled as it reached scrubby ridge on western side of Moreton Bay, Have some concerns about the north east of Moreton Bay and trying to stop the fire getting

into the next scrub area. Has a grader heading to GR453490 to commence the western containment line that runs south from the GR, a grader heading north east from Moreton Bay to meet the grader heading south from Gundooee [Volume 2, Tab 27, page 548-10]

- 2251 Per log prepared by Wilson from RFS records: Safety Officer reports eastern containment line has been completed north-east from Moreton Bay house to Gundooee up to Wardens Road [Volume 2, Tab 27, page 548-10]
- 2302 Per log prepared by Wilson from RFS records: Ivan Control advises has sent 2 appliances back to western flank near Leadville to assist 1 appliance with uncontained fire edge [Volume 2, Tab 27, page 548-10]
- 2318 Per log prepared by Wilson from RFS records: reported western flank contained but fire heading north towards Leadville, no containment line could be constructed by heavy plant because of terrain [Volume 2, Tab 27, page 548-10]
- 2321 Line scan shows first run of fire spotted to south west of main fire, crews stopped it before it got into the scrub or crossed the saddle. Fire running generally in south east direction fire had spread across south-eastern valley that Wilson had initially hoped to use to contain fire (Rock Linden Valley) and had burnt into forested scrub on eastern side of valley, understood valley was where abandoned homestead had been [Exhibit 12, Volume 2, Tab 27, page 548-5 at 19]
- 2348 Per log prepared by Wilson from RFS records: Ivan Control reports spot over previously reported had been contained, Southern containment line from the west has not been put in due to chasing spot overs [Volume 1, Tab 18, page 268-270] [Volume 2, Tab 27, page 548-10]

Initially planned close containment strategy, attempting to minimise the burning area while creating wide solid mineral earth containment lines where possible, some distance from forested country, wanted to burn off solid containment lines so that time for fire to burn fuels within fire ground and intensity to reduce before forecast catastrophic winds following day [Volume 2, Tab 27, page 548-3]

By midnight Wilson strategy developed to include containment line south of fire but north west of Moreton Bay House, wanted to put in east-west containment line through saddle in scrubby ridge to north west of Moreton Bay House, wanted to keep fire out of scrub to south of the saddle [Volume 2, Tab 27, page 548-6] [Exhibit 13]

12/02/17
Sunday

App. 2500 fire fighters deployed across the state in one day. Along with Leadville area, Greater Hunter, Central Ranges and North Western areas also come to experience catastrophic fire danger ratings [Volume 2, Tab 29, page 550-1]

- 0006 Per log prepared by Wilson from RFS records: Request appliance to Moreton Bay homestead for protection, fire is getting close [Volume 2, Tab 27, page 548-10]
- 0016 Per log prepared by Wilson from RFS records: Knocked down spot over at Moreton Bay house [Volume 2, Tab 27, page 548-10]
- 0023 Per log prepared by Wilson from RFS records: Fire has reached GR459484. Approx. 300-400 m north of Moreton Bay house, all heavy plant and appliances pulled back to this location to deal with spot overs and embers [Volume 2, Tab 27, page 548-10]
- 0100 Places in the valley (Moreton Bay Valley) where burn was not as deep as Wilson wanted, had the line gone in where planned would have been at least 100-200 m of burnt ground in case there were spot overs, plan was to then have aircraft put in retardant lines at daylight [Volume 2, Tab 27, page 548-7 to 9]
- 0104 Per log prepared by Wilson from RFS records: From Ivan Control back burn has commenced up the eastern trail from GR459485 [Volume 2, Tab 27, page 548-10]
- 0138 Per log prepared by Wilson from RFS records: Dozer and grader and appliance have completed the containment line through to the Golden Highway south of Moreton Bay House, will continue around the bottom heading west along the highway and then turn north [Volume 2, Tab 27, page 548-10]
- 0142 Per log prepared by Wilson from RFS records: Ivan Control to use D8 dozer that has just arrived to cut off the timber hill behind Gundooee house starting near the pinch point near GR472509 and head in northwest direction [Volume 2, Tab 27, page 548-10]
- 0150 Per log prepared by Wilson from RFS records: Discussion re fire progression in vicinity of the saddle to the north west Moreton Bay and cutting fire off there. Ivan Control tasked with checking the fire progression. Ivan Control thought that the fire is probably past the saddle...Back burn has progressed to GR466488 in Moreton Sector [Volume 2, Tab 27, page 548-10]

- 0200 Wilson discussion with Waldron and Young, main fire had headed further south than thought, against natural fire progression and fire behaving erratically, needed change strategy, needed extra works to south to prevent fire crossing Golden Highway, previous strategy did not include any planned burning near the Golden Highway, concerned about any back burn being to the north of and close to Golden Highway until containment lines in place to the north of highway and also secondary containment lines to the south in event of fire spotting [Volume 2, Tab 27, page 548-7]
- 0207 Per log prepared by Wilson from RFS records: Fire has reached GR456483 west of Moreton Bay house [Volume 2, Tab 27, page 548-10]
- 0228 Per log prepared by Wilson from RFS records: One grader currently working around GR438498 although it is overheating and working slowly. Bottom containment line is close to finished and will be starting to head north west [Volume 2, Tab 27, page 548-10]
- 0246 Per log prepared by Wilson from RFS records: From Ivan Control, during discussion for pushing through north west break, a local says there is a 20f cliff in that scrub area. Ivan Control instructed to find some local knowledge and ensure that our plan can be carried out otherwise it will need to be abandoned [Volume 2, Tab 27, page 548-10]
- 0254 Per log prepared by Wilson from RFS records: Local has confirmed rock ledge, will push as far from this side and then walk around and push north side as far as possible, remaining short uncontained section will need retardant drop [Volume 2, Tab 27, page 548-10]
- 0300 app. Stirling Fergusson lights a back burn near Gavin Copeman's cattle yards [TN25/06/19, page 41.7]
- RFS believe they have managed to stop Stirling Ferguson from lighting up [Volume 2, Tab 27, page 548-10]
- 0310 Per log prepared by Wilson from RFS records: Ivan Control has stopped the back burn of the northwest flank and blacking out. [Volume 2, Tab 27, page 548-10]
- 0328 Per log prepared by Wilson from RFS records: Ivan Control has pulled up the back burn north of Moreton Bay at GR 468506 to prevent the burn going past where the planned dozer break is going to go. Wind is from the north and flame height is low. Ivan Control seeking permission to burn out the north east scrub area. Permission denied. Crews should go to north and black

out in view of S/W winds due in afternoon [Volume 2, Tab 27, page 548-10]

0359 Line scan showing fire activity, confirmed very unusual expanding in narrow southerly direction in grass and scrub to west of Moreton Bay homestead, appeared to be unauthorised back burn, Wilson concluded what originally thought was erratic fire behaviour was unauthorised back burn [Volume 2, Tab 27, page 548-8]

Line scan shows unexpected rapid southerly spread, most parts of fire moving slowly in south easterly direction, exception to this was in area to western side of Rock Linden Valley where fire had moved much more quickly to the south and had already spread below point where Wilson had hoped to insert a southerly containment line [TN 28/06/19 page 45.49]

Prompts Wilson to order back burn of south eastern edge of fire not start until break put in along southern side of Golden Highway, had to divert resources to this job

0414 Per log prepared by Wilson from RFS records: Ivan Control has spoken to Stirling Ferguson who is unhappy the location of the fire in relation to proposed burn [Volume 2, Tab 27, page 48-11]

Per log prepared by Wilson from RFS records: A lot of the locals believe the area should already be burned out now and not wait. Agreed with them however I am trying to put in place containment strategies for south of highway. My concern is nothing in place to stop the fire south of the highway running through to Ulan Mines area. Air support will be needed [Volume 2, Tab 27, page 548-11]

Wilson understands local landholders consider would have been better if back burn west of Moreton Bay homestead started earlier, doesn't necessarily disagree with that, sooner you burn the less potential heat lingering during the more fire prone conditions [Volume 2, Tab 27, page 548-8]

0418 Per log prepared by Wilson from RFS records: Instructed Ivan control to task grader to construct a firebreak south of Golden Highway to catch any spotting from the planned back burn. Break to be constructed between Merotherie and Blue Springs Roads parallel to the Golden Highway [Volume 2, Tab 27, page 548-11]

0430-0500 Waldron return to Golden Highway and tasked trucks to black out on the southern division, means that anything glowing to be put out and made black, control

line had gone in to Gundooee, got Leadville RFS to commence putting in the back burn from Golden Highway north up towards Gundooee [Volume 2, Tab 23, page 437]

- 0444 Per log prepared by Wilson from RFS records: Ivan Control seeking permission to commence back burn. Permission denied by Ops until containment line is completed south of Golden Highway [Volume 2, Tab 27, page 548-11]
- 0513 Per log prepared by Wilson from RFS records: Discussion with Ivan Control regarding weather conditions and preparations for the back burn along east and south side behind Moreton Bay. Also asked for his gut feeling on the timing and his concurrence it needed to be done now. We also discuss the possibility of closing the Golden Highway. Permission given to commence the back burn [Volume 2, Tab 27, page 548-10]
- 0515 Stirling Fergusson lit up his own country after RFS back burn went in [TN 25/06/19, page 38.13]
- 0600 Per log prepared by Wilson from RFS records: From Ivan Control, break south of Golden Highway is finished and being widened, burn along Golden Highway and up western side is going in well, unable to give a progress GR due to GPS issue [Volume 2, Tab 27, page 548-10]
- 0630 Per log prepared by Wilson from RFS records: Leadville 7 tasked to accompany grader on NW flank and widen containment lines behind Leadville village [Volume 2, Tab 27, page 548-11]
- 0634 Per log prepared by Wilson from RFS records: Gulgong 7 advising they have finished back burn around south and west and have met up with Leadville 2 grader [Volume 2, Tab 27, page 548-11]
- 0649 Per log prepared by Wilson from RFS records: From Ivan Control, back burn is completed and looks to have gone in at least 100 m with only a few spots that will need filling in. Has dozer pushing in the NW trail from the south [Volume 2, Tab 27, page 548-11]
- 0651 Per log prepared by Wilson from RFS records: Confirming with Ivan Control that the entire eastern and southern back burn has been completed [Volume 2, Tab 27, page 548-11]
- 0700 Goulder arrives with Dunedoo Brigade trucks, speaks to Group Captain Tony Waldron (Ivan Control) and tasked to ensure fire remains on north side of grader lines. He, continued as tasked until wind change in afternoon, fire out of control and

jumped containment line, heading toward heavy vehicle trailer with fuel tank on it, managed to save trailer but fire jumped Golden Highway and burnt into Moreton Bay South, fire front about 1 km wide, advised go Moreton Bay attack grass fire, stopped put out fires/move cattle on way, proceeded to house on side of road towards Golden Highway and thought could save it but embers flying everywhere, wind so strong could hardly stand up, branches falling on truck so said too dangerous and headed back to staging area at Moreton Bay, advised to find safe ground and not engage the fire, after staging area returned to Dunedoo shed, Leadville Captain Yeo asked Goulder go out to "Bald Ridge" and went to blacken out, went back to Leadville and released for the day [Volume 1, Tab 16, pages 256-258]

- 0730 John McDonald takes over as Ivan Control from Tony Waldron, kept on with plan of pushing break through from south to north on Wardens Road, problem with Coms [Volume 1, Tab 19, pages 282-284]
- 0730 Jones due to start shift as IC at 0800, comes in early for briefing, line scans show unexplained spread of fire to the south overnight, inconsistent with otherwise easterly spread of the fire, unanticipated southerly spread doubled the work required on the eastern flank of the fire, eastern flank was always going to be the area under the most pressure due to forecast winds [Volume 3, Tab 30, page 551-6.25]
- 0800 Mid morning Stephen Yeo goes to shed, wind getting progressively stronger, got to gale force, spoke to crews about catastrophic conditions going to face, told fire had broken containment lines at Warden's Road which had isolated people at Gundooee and later in the afternoon at "Bald Ridge", had to evacuate Leadville [Volume 1, Tab 14, page 245]
- 0836 Sitrep report, approved by Ian Smith ... resources available, warning level WA1, Fire intensity "uncontrollable, unpredictable and fast moving...likelihood that people in path of fire will die or be injured, 000s of homes and businesses will be destroyed...catastrophic fire danger conditions <2 hours no immediate threat however isolate properties at Bald Ridge & Gundooee on Warden Road [Volume 5, Tab 102, page 1171-1174]
- 1107 Southern break been pushed all way through to Moreton Bay staging area, spot overs to south of Moreton Bay homestead [Volume 1, Tab 19, pages 282-284]

- Pre 1120 According to Paul Jones fire breached containment lines on 2 occasions before 1120, result of increased fire intensity and fire crowned over back burn, nothing could be done to stop from occurring however crews were able to contain the spots with assistance of aircraft.[Volume 3, Tab 30, page 551-7.27]
- 1120 Fire breached for 3rd time and immediately ran hard towards Golden Highway, fire uncontrollable despite resources, strategy changed from containment to property protection, public safety and firefighter safety [Volume 3, Tab 30, page 551-7 at 28]
- Per Paul Jones: trigger point #1 reached following uncontrollable breach of containment, leads to emergency alert at 11.41 to everyone east of Dunedoo up to and including Uarbry, advised recipient should leave now if path clear and head to Cassilis [Volume 3, Tab 30, page 551-11]
- 1141 Emergency alert issues to everyone east of Dunedoo up to and including Uarbry, alert advised recipient that they should leave if path was clear and head to Cassilis [Volume 3, Tab 30, page 551-11 at 46]
- Voice & SMS Address Based “This is an emergency warning from the NSW RFS. There is a bush fire to the East of Dunedoo. The fire is burning in Catastrophic conditions. Leave now if the path is clear. Go to Cassilis. Do not delay. Your life is at risk. In an emergency call Triple Zero”
- 1142 Emergency warning message issued by RFS for all crews to seek safe refuge as required and fire fighter safety was the first priority [Volume 3, Tab 30, page 552-13 at 55]
- According to Paul Jones: message sent by Ivan Control (John McDonald) to ensure fire fighter safety, fire had breached containment line near Golden Highway and running fast, crews were working ahead of fire on dozer trails, needed to move to safer ground [Volume 3, Tab 30, page 551-12]
- 1209 Golden Highway closed [Volume 1, Tab 19, page 282-284]
- 1210 Power to Telstra site at Cassilis lost, back up battery supplies kick in [Exhibit 15, Tab 8]
- ??? Cassilis loses power, communication effected and reticulated water, Jones deploys two further strike teams to guard village [Jones Oral Evidence 18/09/19]

- 1221 Power lines dropping and sparking, McDonald called FireCom and requested electricity be shut off [Volume 1, Tab 19, pages 282-284]
- 1245 Fire spread prediction completed, predicted Cassilis could be impacted 1900-2100 [Volume 3, Tab 32A, Annexure 2, page 95]
- 1300 McDonald heads up to Uarbry township, drove through fire with fire on both sides of road, saw police who had already evacuated village, went down road and fire about 1 km further east on southern side Golden Highway, southern side open grass land and flame height app 3m, helicopters doing water bombing trying save 2 houses, LAT aircraft put in line of gel in front of township Uarbry but fire skipped right over top of it [Volume 1, Tab 19, pages 282-284]
- 1330 Strike force team from Dubbo arrive from west, McDonald head back to staging area, could see fire had passed through, [Volume 1, Tab 19, pages 282-284]
- 1358 Fire starts at Kains Flat, relatively small number of appliances available for Kains Flat fire, fire being managed out of Mudgee Fire Control Centre, early preparations to evacuate the village of Wollar [Volume 8, Tab 161]
- Afternoon Fire spread into neighbouring LGAs of Liverpool Range and Cudgegong, these areas also under s.44 declaration and individual ICs had carriage of response and resourcing within delegated areas, Jones maintained overall control because fire started in his LGA, Jones not have oversight of all resources deployed by other ICs [Volume 3, Tab 30, page 551-7.29]
- 1430 Conditions reach catastrophic levels at Mudgee (would expect conditions at Leadville fire be even more extreme because fire itself contributing to conditions) [Volume 3, Tab 32A, Annexure 2, page 74]
- After 1500 Scales notices wind change, driving along Old Coolah Road to give info back to Divisional Command, called for fire crews to be sent out on Old Coolah Road to prevent fire crossing it, told that all crews were restricted to property protection and multiple strike teams in Cassilis were to stay put [Volume 4, Tab 46, page 681-3.9]
- 1640 McDonald had to move all units bar one to northern flank to protect village of Leadville, fire progressed north taking out Telstra tower and infrastructure and GRN radio so that RFS lost tactical radio [Volume 1, Tab 19, pages 282-284]

- 1650 Jones discusses situation with Simon Heemstra, Fire Behaviour Analysis Team, concerns re fire forming a pyro-convective column, BOM had advised fire gone pyro-convective, concern it could collapse on fire ground, (ultimately southerly wind change came through that separated storm cell so that column did not collapse and storm cell moved off towards Hunter Valley)
[Volume 3, Tab 30, page 551-8.31]
- Fire goes pyro-convective, generating fire thunderstorm event, observed by radar and satellite imagery [Volume 3, Tab 32A]
- 1700 Wind change expected according to Wind Change Charts issued by BOM at 0700, 1215 and 1430, expected that behind the change would be s/sw winds at 40-50 kph with gusts up to 65kph [Volume 3, Tab 30, page 550-10.47]
- 1706 Red message because of risk posed by fire going pyro-convective. Directive from IC in response to cloud formation over fire ground, all units to go to a safe location based on advice from fire behaviour analysis team in Sydney that the cloud would implode over the fire ground, would have pushed the fire in all directions and resulted in highly dangerous fire behaviour [Volume 3, Tab 30, page 552-13.56]
- Per Paul Jones: 1704 directed red message to be sent to RFS radio network to all fire fighters on Sir Ivan fire, ensure safe refuge, expect erratic fire behaviour and work from safe refuge, response to advice from Simon Heemstra that fire had gone pyro-convective and risk cloud would collapse over fire ground and force fire runs in all directions [Volume 3, Tab 30, page 551-12]
- McDonald travel north flank and another red message that pyro-cumulonimbus imminent to collapse and push out fire everywhere, radioed all units telling them to get safe refuge, telling local farm units do same, due to southerly wind change cloud broke contact and headed in easterly direction, after that cloud did not eventuate and drop [Volume 1, Tab 19, pages 282-284]
- 1721 Voice & SMS Address Based “This is an emergency warning from the NSW RFS. There is a bush fire to the East of Dunedoo. It is dangerous and you are at risk. It is too late to leave. Seek shelter as the fire front arrives. Protect yourself from the heat of the fire by sheltering in a solid structure like a home. Do not be in the open. In an emergency call Triple Zero”

- 1836 Voice & SMS Address Based “NSW RFS emergency bush fire warning. There is a bush fire to the East of Dunedoo in the Leadville area. You are in danger. Do not delay. Act now. Conditions may get worse quickly. Leaving now is the safest option. Head west to Dunedoo or Mendooran if the path is clear...”
- ??? After wind change Jones: Cassilis no longer under direct threat and crews re-tasked or stood down [Volume 3, Tab 30, page 551-8.31]
- 2130 Scales returns to Cassilis where there were no longer any RFS trucks or personnel, site had lost power and mobile phone communication [Volume 4, Tab 46, page 681-4.12]
- Strategy overnight was to continue establishing containment lines and bring fire out to hard containment lines (mineral earth trails and established roads) in order to limit available active fire edge for rest of day, keep fire east of Black Stump Way and provide protection to Cassilis [Volume 3, Tab 30, page 551-9]
- 2233 Battery back up exhausted at Cassilis Telstra site [Exhibit 15, Tab 8]
- According to Max Weiss, no mobile phone service in Cassilis until about Wednesday [Volume 4, Tab 44, page 679-3 at 11]
- 13/02/17**
Monday
- Incident controller strategy following Sunday was to maintain and expand containment lines and keep fire as small as possible, pockets of fire internal to the perimeter continued to burn but the fire behaviour was much reduced, hard perimeter substantially established, essential services given access to fire ground to reinstall power lines, clear roads and move stock [Volume 3, Tab 30, page 551-9.35]
- Paul Martin reports from no units on his property on Sunday crews now assisting him to get on the front, Group Captain placed in charge of bulldozer and 5 trucks, consults with Martin and places firebreak along a fence line starting the Golden Highway heading west and then turning north blading to the Coolah Road and using this to back burn from [Volume 4, Tab 52, page 687-1 at 12, Exhibit 16]
- Paula Palmer responds to smoke at “Culburra” [Volume 4, Tab 51, page 686-3.24]
- Goulder sent to Warrumbungle Way and Turee station, blackening out grass around crop, advised by chopper of

fire in nearby ravine, found fire about acre in size, attacked from flank and sent Dunedoo 7 to top of ridge to make sure didn't jump containment lines, then sent to Warrumbungle Way to fight approaching fire front, also private vehicles there, contained that front and on way back to Leadville, saw vehicle parked on western side of Wardens Road being approached by fire which had jumped road, put it out and went home. Worked on other mopping up duties until Thursday 23 Feb [Volume 1, Tab 16, page 258]

**14/02/17
Tuesday**

1220 Sitrep approved Ian Smith, warning level WA7, <2 hours as temps rise and RH falls – potential for breakouts in open grasslands across the entire northern division, this could threaten isolated rural properties, crews are actively monitoring and dealing with breakouts as they start – supported by aircraft and HP [Volume 5, Tab 104, page 1228-1231]

Unknown Paula Palmer spends day putting out spot fires, [Volume 4, Tab 51, page 686-3 at 25]

**15/02/17
Wednesday**

Sitrep approved Ian Smith , warning level A4, <2 hours as temps rise and RH falls – potential for breakouts in open grasslands across the entire northern division, this could threaten isolated rural properties, crews are actively monitoring and dealing with breakouts as they start – supported by aircraft and heavy plant (HP), Winds are forecast to be light ESE for most of the day, northern and western edges of the fire are very quiet at the moment, with hard mineral earth edges around the majority of the perimeter area [Volume 5, Tab 105, page 1232-1234]

Unknown Local landholders still fighting fires on “Kareba” [Volume 4, Tab 51, page 686-3.26]

**16/02/17
Thursday**

1018 Sitrep approved Ian Smith, warning level A4, <2 hours minimal chance of assets being under threat, crews are aggressively mopping up all edges – supported by HP and aircraft [Volume 5, Tab 106, page 1235-1237]

1558 Sitrep approved Mark Williams , warning level A4, <2 hours minimal chance of assets being under threat, crews

are aggressively mopping up all edges – supported by HP and aircraft [Volume 5, Tab 106, page 1238-1240]

Paul Martin advised by Sue Weis that fire back on his country. RFS use incendiaries in the bordering “National Park” (Turin Conservation or State Forest), incendiary use occurs without notice to Martin, fire on his property, had to return to efforts to suppress fire with assistance of family and friends but no RFS [Volume 4, Tab 52, page 687-3 at 19]

Court not in a position to determine cause of fire reigniting on Martin property

17/02/17
Friday

Sitrep approved Jason Booth, warning level A4, <2 hours minimal chance of assets being under threat, crews are aggressively mopping up all edges – supported by HP and aircraft [Volume 5, Tab 107, page 1241-1243]

18/02/17
Saturday

Sitrep approved Jason Booth, warning level A4, <2 hours minimal chance of assets being under threat, crews are aggressively mopping up all edges – supported by HP and aircraft [Volume 5, Tab 108, page 1244-1246]

20/02/17
Monday

Sitrep approved Nils Waite, warning level A7, <2 hours Low, weather conditions favourable and crews are aggressively mopping up the detected hotspots and being supported by aircraft as required [Volume 5, Tab 109, page 1247-1249]

25/02/17
Saturday

Sitrep approved Garry Wilson, warning level A7, <2 hours nil [Volume 6, Tab 110C, page 1250-1252]

03/03/17

Sitrep approved Corey Phillip, warning level A12, Patrol still require with large fire ground over weekend and local brigades will conduct the patrol <2 hours no further property under threat [Volume 6, Tab 110C page 1250-1253]

06/03/17

Final sit rep approved Garry Wilson, fireground has received good general rain over weekend, warning level set to OUT [Volume 6, Tab 114, page 256-1259]