

Hazelwood Mine Fire Inquiry

Implementation of
recommendations
and affirmations

Annual Report 2019



IGEM
Inspector-General
for Emergency
Management

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Preface

In February and March 2014 the Hazelwood mine fire burned for 45 days, becoming the longest burning coal mine fire in Victoria's Latrobe Valley and affecting communities and businesses in many ways. The independent inquiries following the fire triggered a sweeping program of reforms across government, community and industry.

These reforms are now close to completion, and this is the Inspector-General for Emergency Management's (IGEM) final implementation monitoring report prepared for government that is required to be tabled in Parliament.

Of the 246 actions set out in the Victorian Government Implementation Plan, only 16 actions remain ongoing. All 14 recommendations and affirmations directed to health agencies are now complete and only one of the 26 recommendations directed to coal mine operators remains ongoing.

Many of the key improvements made in 2018–19 have again focused on the Latrobe Valley.

The wide range of initiatives under the 'Health in the Latrobe Valley' theme have now been completed – a significant outcome for the Latrobe Valley community. Initiatives completed this year focused on preventative health, chronic disease management and mental health and were supported by the ongoing work of the Latrobe Health Assembly. An opportunity now exists for government and key stakeholders to ensure that these initiatives are sustainable beyond the life of the Hazelwood Mine Fire Inquiry.

An air monitoring network, co-designed with members of the Latrobe Valley community, is nearing completion and provides a significantly expanded network compared to the one in place at the time of the Hazelwood mine fire.

The *Mineral Resources (Sustainable Development) Amendment Act 2019* commenced in September 2019, strengthening the regulatory framework for the Latrobe Valley coal mines and ensuring the adequate rehabilitation of the Latrobe Valley coal mine sites. Mine rehabilitation will need to have regard to the government's Latrobe Valley Regional Rehabilitation Strategy, due in 2020. The strategy is underpinned by a significant volume of research and seeks to set a safe, stable and sustainable landform for the Latrobe Valley coal mine voids and surrounding areas.

Coal mine operators continue to advance their integrated research program and to progressively rehabilitate land within their sites.

At the state level, a sophisticated new smoke intelligence module displays where and when smoke is present and could be affecting Victorian communities.

Work is progressing to support the phased implementation of legislation introduced in 2018 for emergency management planning arrangements at the state, regional and municipal levels. The capability

and capacity of local councils across Victoria to meet their emergency management responsibilities has been evaluated and an approach has been developed to address gaps that were identified.

In 2019 we extended our reporting to include effectiveness monitoring of three completed actions. Effectiveness monitoring provides further assurance that implemented actions have successfully achieved their objectives. IGEM found that overall, the three actions monitored have been implemented effectively.

However, as the Hazelwood reforms near completion, the progress of a small number of actions has slowed. I encourage the responsible organisations to further their efforts to complete these actions.

Although this is the final IGEM report required to be tabled in Parliament, we will continue to monitor the majority of the remaining actions and recommendations.

I appreciate the collaborative and constructive approach taken to the monitoring process by government departments and agencies, coal mine operators and health agencies and commend their work in implementing these reforms.

It has been a privilege to observe the historic scale of reforms introduced in the wake of the 2014 fire. Many of the initiatives have had a significant impact in the Latrobe Valley due to the dedication of the local community. The ongoing engagement from the Latrobe Valley community is a testament to their resilience and commitment to drive positive change.

Through a range of assurance activities, IGEM will continue to work with the emergency management sector to foster continuous improvement, supporting improved outcomes for the state and the Victorian community.

Tony Pearce
Inspector-General for Emergency Management

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Acronyms

BOM Australian Bureau of Meteorology

CBEM Community-based emergency management

CEO Chief Executive Officer

CFA Country Fire Authority

CO Carbon monoxide

CSIRO Commonwealth Scientific and Industrial Research Organisation

DELWP Department of Environment, Land, Water and Planning

DET Department of Education and Training

DHHS Department of Health and Human Services

DJCS Department of Justice and Community Safety

DJPR Department of Jobs, Precincts and Regions (formerly **DEDJTR** – Department of Economic Development, Jobs, Transport and Resources)

DOT Department of Transport

DPC Department of Premier and Cabinet

DTF Department of Treasury and Finance

EMC Emergency Management Commissioner

EMV Emergency Management Victoria

EPA Environment Protection Authority Victoria

ERR Earth Resources Regulation

Gippsland PHN Gippsland Primary Health Network

GP General practitioner

IDC Inter-departmental Committee

IGEM Inspector-General for Emergency Management

IMRG Integrated Mines Research Group

LCC Latrobe City Council

LCHS Latrobe Community Health Service

LGV Local Government Victoria

LRH Latrobe Regional Hospital

LVMRC Latrobe Valley Mine Rehabilitation Commissioner

LVRRS Latrobe Valley Regional Rehabilitation Strategy

MFB Metropolitan Fire and Emergency Services Board

MOU Memorandum of Understanding

MR(SD) Act *Mineral Resources (Sustainable Development) Act 1990*

OHS Occupational Health and Safety

PDSA Plan-Do-Study-Act

POLAR Population Level Analysis and Reporting tool

RACGP Royal Australian College of General Practitioners

RSPCA Royal Society for the Prevention of Cruelty to Animals

SMOG Smoke observation gadget

TAG Technical Advisory Group

TRB Technical Review Board

VAGO Victorian Auditor-General's Office

VICSES Victoria State Emergency Service

Executive summary

This is the fourth annual report by the Inspector-General for Emergency Management (IGEM) on the progress of the implementation of recommendations and affirmations from the 2014 and 2015–16 Hazelwood mine fire inquiries. This is also IGEM's final Hazelwood report required to be tabled in Parliament as per the *Hazelwood Mine Fire Inquiry: Victorian Government Implementation Plan* (Victorian Government Implementation Plan).

Hazelwood mine fire inquiries

A fire burned in the Hazelwood coal mine for 45 days between February and March 2014. It became the largest and longest burning mine fire to occur in Victoria's Latrobe Valley.

In March 2014 an independent Inquiry into the circumstances of the Hazelwood mine fire was established. In May 2015 the government re-opened the Inquiry to investigate concerns about the health of the community following the 2014 fire and to consider rehabilitation at Latrobe Valley's coal mines.

In June 2016 the Victorian Government Implementation Plan was released, setting out 246 actions across eight themes to implement the recommendations and affirmations of the 2014 and 2015–16 Inquiry reports.

The Inquiry reports also directed 40 recommendations and affirmations to health agencies and coal mine operators.

Role of the Inspector-General for Emergency Management

IGEM is responsible for monitoring and reporting on the progress of the implementation of all recommendations and affirmations from the 2014 and 2015–16 Inquiry reports.

Implementation monitoring provides assurance to community members and the Victorian Government that the lessons identified from emergencies are acted on in a timely and sustainable manner.

Progress summary

Since the commencement of the reform program, significant progress has been achieved to improve emergency planning and coordination, health outcomes and mine regulation and rehabilitation in the Latrobe Valley. Appendix A provides a summary of the status of all recommendations, affirmations and actions arising from the Inquiry reports.

In summary:

- 230 of the 246 actions set out in the Victorian Government Implementation Plan are now either closed or complete.
- All 14 recommendations and affirmations directed to health agencies are now complete.
- 25 of the 26 recommendations and affirmations directed to coal mine operators are now complete.

Considering the scale and complexity of the reforms, IGEM commends the timeliness of implementation overall. Of the 240 government actions due by August 2019 as set out in the Victorian Government Implementation Plan, 229 are now complete.

However, across 2018–19 some actions have experienced further delays and, despite being very near completion, the progress of some other actions has stalled. Agencies have been transparent in reporting challenges and revised timeframes to IGEM. This year, two actions have had their timeframes revised to allow for the extensive engagement required with local councils.

This report monitors progress of the 35 government actions and 10 non-government recommendations and affirmations that were reported as ongoing in the IGEM *Hazelwood Mine Fire Inquiry: Implementation of recommendations and affirmations Annual Report 2018* (2018 IGEM Hazelwood report).

Of the 35 government actions:

- 19 are now complete
- 3 are progressing, including one with revised timeframes
- 3 have progressed but are overdue
- 4 have experienced delays, including one that is overdue
- 5 are in the early stages of development
- 1 is contingent upon the completion of another action.

Of the 10 non-government recommendations and affirmations:

- 9 are now complete
- 1 is progressing.

Refer to Appendix B for a full list of findings for the 35 government actions and 10 non-government recommendations and affirmations assessed in this report. Refer to Table 1 for a full list of actions that remain ongoing at the completion of the 2019 IGEM Hazelwood report and future assurance arrangements.

The following are highlights of progress on the Hazelwood Mine Fire Inquiry actions, recommendations and affirmations monitored by IGEM in 2018–19.

Communications and community engagement

Progress has been made on communications and community engagement actions. One action remains ongoing, while one action has been closed in 2018–19.

The Environment Protection Authority Victoria (EPA) has almost completed reconfiguration of the community co-design air monitoring network in the Latrobe Valley. Air monitoring data is now displayed on EPA's AirWatch website. However, during equipment trials and investigations, EPA identified that low-cost gas sensor technology did not meet the intent of the co-designed network and decided not to include it in the network at this time. EPA advised it will continue to work with suppliers on improvements to gas sensors. IGEM will continue to monitor this action.

Emergency Management Victoria (EMV) experienced challenges in progressing the final stages of the Latrobe Valley Community Engagement and Planning Project to ensure it met the needs of the Morwell community. As a result, EMV is no longer proceeding with the Community Based Emergency Management (CBEM) approach for Morwell. Existing Municipal Emergency Management Planning arrangements will be in place for the upcoming summer season and EMV will consider the needs of the Morwell community through the emergency management planning reforms going forward.

Health in the Latrobe Valley

Significant progress has been made on health in the Latrobe Valley with all seven remaining actions completed in 2018–19 by the Department of Health and Human Services (DHHS) in partnership with local and statewide health providers, agencies and the community. This is the second theme in the Victorian Government Implementation Plan to be reported as complete.

Commencing in 2018 DHHS commissioned a consulting firm to conduct a developmental evaluation of the Latrobe Health Innovation Zone, the Latrobe Health Assembly (the Health Assembly) and the Latrobe Health Advocate. This work has now transitioned to business as usual. An interim report and three presentations were delivered across 2018–19 with the final report, due in early 2020, completing the independent consultant's monitoring of the impact of these innovations. In addition, DHHS is also working with Federation University Australia to develop local capacity to continue monitoring the impact of health innovations in the Latrobe Valley.

DHHS also partnered with a range of organisations in the Latrobe Valley to support preventative health initiatives including programs focusing on cancer screening, smoking cessation and mental health.

Building on work completed in 2017–18, DHHS facilitated the establishment of chronic disease and mental health forums for the Latrobe Valley community.

DHHS engaged Gippsland Primary Health Network (Gippsland PHN) to establish the Chronic Disease Forum Advisory Group, which identified the need to hold separate forums for community members and health care professionals to obtain relevant information for each area of the community. Both forums commenced in May 2019.

DHHS worked with the Health Assembly to establish the Latrobe Community Mental Health Forum, which comprises both local and statewide providers and experts as members. The forum commenced in April 2019, and its meetings consist of themed discussions to encourage direct conversations.

Incident air quality and wellbeing

Actions under the air quality and wellbeing theme have continued to experience delays. One action was completed in 2018–19 while two actions remain ongoing.

The Department of Environment, Land, Water and Planning (DELWP) has completed development of the smoke intelligence module AQVx, which incorporates data from satellite imagery, field sensors and social media to display in near real-time where and when smoke is present and could be affecting Victorian communities.

EPA continues to work with the Country Fire Authority (CFA) and Metropolitan Fire and Emergency Services Board (MFB) to finalise a memorandum of understanding (MOU) to provide formal data sharing arrangements for the integrated air monitoring and information system. IGEM considers that this action will be complete when the document is signed.

The public release of EPA's report on information and knowledge generated from the Hazelwood mine fire meta-analysis continues to be delayed pending the completion of current legal proceedings.

IGEM will continue to monitor the ongoing actions under this theme and report to the Minister for Police and Emergency Services.

Latrobe Valley coal mine regulation

Good progress has been made by the Department of Jobs, Precincts and Regions (DJPR),¹ the lead agency responsible for implementing the two remaining actions in this theme. However, both actions require further time to implement and remain ongoing.

DJPR has continued to work with coal mine operators to ensure their proposed work plan variations meet regulatory requirements. DJPR approved EnergyAustralia Yallourn's work plan variation in March 2019. A work plan variation featuring progressive rehabilitation milestones has yet to be approved for AGL Loy Yang.

DJPR expects implementation of the legislative, policy and administrative reforms to the Latrobe Valley coal mines' regulatory framework to be completed in 2020. In June 2019 DJPR reintroduced the Mineral Resources (Sustainable Development) Amendment Bill to Parliament, which provides for establishment of a Mine Land Rehabilitation Authority from 1 July 2020 to monitor, maintain and manage registered declared mine land – the three Latrobe Valley coal mines are currently the only declared mines. The Bill also provides the foundation for subsequent policy and administrative reforms.²

During 2018–19 DJPR also streamlined and modernised Victoria's existing mining regulations and started to develop new regulations specific to declared mines.

IGEM will continue to monitor the ongoing actions under this theme and report to the Minister for Police and Emergency Services.

¹ On 1 January 2019 the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) transitioned into the Department of Jobs, Precincts and Regions (DJPR) and the Department of Transport (DOT).

² The Mineral Resources (Sustainable Development) Amendment Bill 2019 was subsequently enacted in September 2019, following the reporting period for lead organisations.

Latrobe Valley Regional Rehabilitation Strategy

The Latrobe Valley Regional Rehabilitation Strategy (LVRRS) continues to progress in line with the actions and time lines set out in the Victorian Government Implementation Plan. Twenty-six of the 31 actions are now complete. Eight actions were completed in 2018–19.

The LVRRS will set out how the three Latrobe Valley coal mines transition to safe, stable and sustainable post-mining landforms. During 2018–19, the two lead agencies responsible for delivering the LVRRS – DJPR and DELWP – completed work on stage 3, 'Modelling and analysis'.

Two major LVRRS stage 3 technical reports (the regional geotechnical study and the regional water study) were completed in 2018–19. The studies will be used to inform the preparation of the final LVRRS. Outcomes were reviewed by DJPR and DELWP and validated by an independent peer reviewer. Due to the scope and complexities of the technical studies, a small number of tasks have been carried over from stage 3 of the LVRRS into stage 4.

DJPR and DELWP have also made progress on stage 4 of the LVRRS. In July 2019 DJPR completed a review of the policy, administrative or legislative mechanisms necessary to implement the LVRRS and ensure that the Latrobe Valley coal mine license holders comply. DELWP completed a review of the Latrobe Valley coal mine water entitlements and licenses that may be required to comply with the LVRRS.

Across 2018–19 DJPR continued to attend Batter Stability Project Technical Advisory Group meetings. IGEM considers that this action has transitioned to business as usual and is now complete.

Moving forwards, the Latrobe Valley Mine Rehabilitation Commissioner (LVMRC) will provide a monitoring function over the LVRRS.

Emergency management planning, response and recovery

Progress has been made under this theme, with one action reported as complete in 2018–19. The remaining five actions have all previously required extensions to timeframes originally set out in the Victorian Government Implementation Plan.

EMV and DELWP continue to progress their respective actions under this theme, however, MFB and CFA actions have continued to experience delays.

The Emergency Management Legislation Amendment Bill 2018 passed through Parliament in August 2018, establishing new arrangements for emergency management planning in Victoria. Work to support phased implementation at the state, regional and municipal levels is being progressed by EMV. As part of this, EMV – in consultation with the emergency management sector – is leading the development of a State Emergency Management Plan and accompanying planning guidelines.

There have been further delays in the provision of personal monitoring equipment by MFB to its firefighters, with a preliminary supply of the monitors now due in November 2019. The remaining supply is due to be delivered by June 2020. This action was originally due in June 2016. IGEM considers that this represents an unreasonable delay.

CFA's delivery of face to face brown coal mine firefighter training to career staff has also been delayed due to the need to consult with key stakeholders.

Local Government Victoria (LGV) advanced work on the second phase of a three-phase project to build the capability and capacity of local governments to meet their emergency management responsibilities. In 2018–19 LGV worked with local councils to evaluate their current and target capability and capacity levels with the intention of producing a summary report of the results in late 2019. These results will inform phase three of the project – developing plans to address capability and capacity gaps. Timeframes have been revised to allow for the extensive engagement required with local councils.

IGEM will continue to monitor the ongoing actions under this theme and report to the Minister for Police and Emergency Services.

Health improvement recommendations and affirmations

Significant progress has been made among health organisations to advance health initiatives in the Latrobe Valley. IGEM notes the commitment of the four principal health agencies in the Latrobe Valley, statutory authorities and non-government health agencies to supporting and promoting the Latrobe Health Innovation Zone.

During 2018–19 the remaining two recommendations and six affirmations were completed. Projects included 'This Girl Can – Victoria' – a free event aimed to encourage and build the confidence of women to participate in physical activity, the smoking cessation program 'Smokefree Gippsland', and New Wave Gippsland – a self-advocacy group that conducts peer education sessions aimed at improving bowel, breast and cervical screening for people with disabilities in Gippsland.

Latrobe Community Health Service (LCHS) also implemented a Guided Model of Care which encourages clients to self-manage their conditions through the creation of specific care plans. The Guided Model of Care is currently being implemented across Chronic Disease Management services and LCHS plans to expand this to other services.

The Latrobe Regional Hospital (LRH) is in the process of completing a redevelopment, with the remodelling of maternity and paediatric services due for completion in October 2019. The development of a more comprehensive health service for the region will be complemented by a new strategic plan being developed by the LRH Board and Executive in consultation with staff and the community.

Coal mine operators

In 2018–19 the Latrobe Valley coal mine operators continued to contribute to the Integrated Mines Research Group (IMRG), meeting every two months.

The first three-year review of the IMRG research plan is due for completion in December 2019. The IMRG steering committee, comprising senior representatives of the three mine operators, is leading the review process considering the scope, time lines, progress and deliverables of each research project and making any changes deemed appropriate.

The LVMRC has been closely involved with the IMRG since his appointment in May 2017 and has continued to attend IMRG meetings and coordinate and promote the IMRG research.

As outlined previously, the mine operators submitted work plan variations to DJPR, which incorporate progressive rehabilitation milestones. DJPR has approved the work plans of EnergyAustralia Yallourn and ENGIE Hazelwood and is currently working with AGL Loy Yang to finalise its work plan variation and ensure regulatory requirements are met. IGEM will continue to monitor this action.

Going forward, the three Latrobe Valley coal mine operators are required to continue to report annually to DJPR on their rehabilitation activities, in accordance with current regulations.

A new Mine Land Rehabilitation Authority, set to be established on 1 July 2020, will provide ongoing assurance to the Victorian community that public sector bodies and coal mine operators are implementing the LVRRS and planning for the rehabilitation and management of declared mine land.

Effectiveness monitoring

IGEM has legislative provisions to consider the effectiveness of implementation when undertaking its monitoring activities and extend its monitoring function to consider the effectiveness of implemented improvements.

As this is IGEM's final Hazelwood report required to be tabled in Parliament, and most of the actions from the Victorian Government Implementation Plan are now complete, IGEM extended its reporting to include effectiveness monitoring of three selected actions:

- Action 24. Complete a community co-design process for a new air monitoring network (including smoke sensor sub-network)
- Action 77. Embed the smoking cessation initiative, in partnership with key providers
- Action 153. Undertake twice-yearly workshops on the MOU between DEDJTR and WorkSafe

IGEM found that overall Actions 24, 77 and 153 had been implemented effectively by EPA, DHHS, and DJPR/WorkSafe respectively. Chapter 7 details IGEM's effectiveness monitoring of these actions.

Concluding remarks

IGEM acknowledges the high level of cooperation and support received from Victorian Government departments and agencies, coal mine operators and other non-government entities in preparing this report.

IGEM appreciates the opportunity to attend committees, working groups, community events and meetings and demonstrations of systems and tools. These observations provide IGEM with context on the complexities and scope of actions, work programs and reforms resulting from the Inquiry reports.

Table 1: Actions that remain ongoing at the completion of the 2019 IGEM Hazelwood report and future assurance arrangements

| NO. | ACTION | LEAD AGENCY | DUE DATE | FUTURE ASSURANCE |
|--------|---|------------------------------------|---|------------------|
| 5 | Publicly release IGEM's annual reports in the Victorian Parliament within a reasonable time of receipt by the Minister for Emergency Services | DJCS | Annually until 2019 | IGEM |
| 26 | Complete the reconfiguration of the current ambient air monitoring network (including the smoke sensor sub-network) | EPA | June 2018 (Revised: December 2018) | IGEM |
| 122 | Deliver a fully functional integrated air quality monitoring and information systems | EPA | June 2017 | IGEM |
| 147 | Release a report on information and knowledge generated from the Hazelwood Mine Fire meta-analysis | EPA | December 2016 (Revised: October 2019) | IGEM |
| 158 | Develop progressive rehabilitation milestones, with support from the TRB or other experts | DJPR | December 2016 | IGEM |
| 162 | Implement policy, administrative and legislative reforms for the Latrobe Valley Coal Mines' regulatory framework | DJPR | June 2018 (Revised: 2020) | IGEM |
| 200 | Release draft assessment of potential impacts at a regional scale for consultation | DJPR (with DELWP support) | December 2019 | LVMRC |
| 201 | Release draft integrated regional scale mine rehabilitation Strategy for consultation | DJPR | December 2019 | LVMRC |
| 202 | Assess potential impacts at a regional scale | DJPR (with DELWP support) | June 2020 | LVMRC |
| 203 | Deliver integrated regional mine rehabilitation strategy | DJPR | June 2020 | LVMRC |
| 204 | Ongoing monitoring and adaptation of the Latrobe Valley Regional Rehabilitation strategy as new information becomes available, including research and in-mine trials by the operators of the Latrobe Valley Coal Mines and progressive rehabilitation | DJPR | Business as usual by June 2020 | LVMRC |
| 225 | Full implementation of the Emergency Management Legislative Amendment (Planning) Bill 2016 | EMV | December 2019 (Revised: December 2020) | IGEM |
| 233 | Provide personal monitoring equipment to MFB firefighters | MFB | June 2016 (Revised: December 2019) | IGEM |
| 238 | Deliver Brown Coal Mine Firefighting Training Package | CFA and MFB | November 2016 (Revised: December 2018) | IGEM |
| 244 | Review the capability and capacity required for local government to fulfil their emergency management roles and responsibilities | DELWP | December 2017 (Revised: November 2019) | IGEM |
| 245 | Develop an action plan to address any local government emergency management capability and capacity gaps | DELWP | December 2018 (Revised: June 2020) | IGEM |
| Rec 19 | Increase the rate of progressive rehabilitation by achieving milestones within the mines' progressive rehabilitation plans, as set by the Mining Regulator under Recommendation 4 | Latrobe Valley Coal Mine Operators | N/A | IGEM |

1. Introduction



In 2016 the Inspector-General for Emergency Management (IGEM) assumed sole responsibility for monitoring the implementation of all recommendations and affirmations from the 2014 and 2015–16 Hazelwood mine fire inquiries.

The 2019 *Hazelwood Mine Fire Inquiry – Implementation of recommendations and affirmations* report is IGEM's fourth and final annual progress report, as sole implementation monitor, that is required to be tabled in Parliament as per the Victorian Government Implementation Plan.

The 2018 IGEM Hazelwood report found that, overall, significant progress had been achieved to improve emergency planning and coordination, health outcomes and mine rehabilitation in the Latrobe Valley following the Hazelwood mine fire.

The 2018 IGEM Hazelwood report found that of the 246 actions committed to by the Victorian Government to address the recommendations and affirmations from the Hazelwood mine fire inquiries, 211 had been completed and 35 were ongoing. Of the 40 recommendations and affirmations directed at health agencies and coal mine operators, 30 had been completed and 10 were ongoing.

In 2019 IGEM monitored the progress of the remaining 35 Victorian Government actions and 10 recommendations and affirmations directed at non-government health agencies and coal mine operators. This report presents the findings of that monitoring.

The Minister for Police and Emergency Services will make IGEM Hazelwood reports publicly available.



Image: Latrobe City Council photograph representing resilience and recovery

Source: Latrobe City Council

2. Background



2.1 Hazelwood mine fire

On 9 February 2014 a fire began in the Hazelwood coal mine as a result of embers spotting from nearby bushfires. The fire burned for 45 days and impacted on local communities within Victoria's Latrobe Valley, particularly in the town of Morwell.

Due to its severity and wide-reaching impacts, the Hazelwood mine fire constituted two emergencies – a major complex fire emergency and a serious public health emergency.

Coal mine fires have unique properties that differentiate them from bushfires. They typically burn slowly over an extended period (normally several weeks) due to the presence of deep seated, compacted fuel, unlike bushfires, which burn quickly and unpredictably. Firefighters are presented with unique challenges as coal can burn beneath the ground and toxic gases can be present in the pit below ground level.

The Hazelwood mine fire required significant resources to bring under control. It became the largest and longest burning mine fire to occur in the Latrobe Valley.

2.2 Hazelwood mine fire inquiries (2014 and 2015–16)

Following the 2014 Hazelwood mine fire, the Victorian Government responded with the announcement of the Hazelwood Mine Fire Inquiry (the 2014 Inquiry) in March 2014. The Board of Inquiry was established to inquire into, report on and make recommendations in relation to the origin and circumstances of the fire, the adequacy and effectiveness of fire management measures, the relevant regulatory regime and the response to the fire and related matters.

In its 2014 report the Board of Inquiry made a total of 18 recommendations – with 12 directed to the Victorian Government and six to the mine operator, owner and licensee, GDF Suez (now ENGIE).

The Board of Inquiry also identified a number of commitments – or planned improvements to emergency management arrangements for similar future events – made by the government and GDF Suez in their Inquiry submissions. These commitments were later declared by the Board of Inquiry as affirmations – 40 of which were directed to the government and 17 to GDF Suez.

The Victorian Government accepted the recommendations directed to it, responding through its *Hazelwood Mine Fire Inquiry Report: Victorian Government Implementation and Monitoring Plan*.

In 2015 the Victorian Government reopened the Hazelwood Mine Fire Inquiry to focus on human health impacts and mine rehabilitation. The reopened Board of Inquiry produced a report in four volumes, each addressing one of the expanded Terms of Reference:

- minimising fire risks at Anglesea coal mine for the 2015–16 summer season – Volume I – Anglesea Mine
- investigating whether there has been an increase in deaths following the 2014 Hazelwood mine fire – Volume II – Investigations into 2009–2014 Deaths (Death Investigation Inquiry report)

- measures to improve the health of the Latrobe Valley – Volume III – Health Improvement (Health Improvement Inquiry report)
- rehabilitation options for Latrobe Valley coal mines – Volume IV – Mine Rehabilitation (Mine Rehabilitation Inquiry report).

In June 2016 the Victorian Government released an updated implementation plan setting out the 246 actions being undertaken to fulfil its commitment to implement the recommendations and affirmations of the 2014 and 2015–16 Inquiry reports. The 2016 Victorian Government Implementation Plan sets out how the recommendations and affirmations are to be implemented and monitored, and is structured under the following themes:

- governance and accountability
- communications and community engagement
- health in the Latrobe Valley
- incident air quality and wellbeing
- Latrobe Valley coal mine regulation
- Latrobe Valley coal mine rehabilitation bonds
- Latrobe Valley Regional Rehabilitation Strategy (LVRRS)
- emergency management planning, response and recovery.

Under each theme there are a number of government actions, a lead organisation with responsibility for implementation of each action, and a due date for completion. For a full list of lead organisations please refer to section 3.2.

2.3 Role of the Inspector-General for Emergency Management

IGEM is an independent statutory role working in support of Victoria's emergency management sector. IGEM's objectives under the *Emergency Management Act 2013* (the Act) are to:

- provide assurance to government and the community about emergency management arrangements in Victoria
- foster continuous improvement of emergency management in Victoria.

Section 64(1)(ca) of the Act establishes that one of IGEM's functions is to, at the request of the Minister for Police and Emergency Services, monitor and report to the minister on the implementation of recommendations arising from reports that relate to IGEM's functions or in relation to the emergency management sector in whole or in part.

Section 64(4) of the Act enables IGEM to consider the effectiveness of implementation when undertaking its monitoring activities and extend its monitoring function to consider the effectiveness of implemented improvements.

Implementation monitoring seeks to ensure that the lessons identified from emergencies, including recommendations and agreed actions, are implemented in a sustainable manner to make a lasting difference for Victorian communities.

3. Approach



IGEM monitors the implementation of Victorian Government recommendations and affirmations by assessing progress against the implementation actions set out in the Victorian Government Implementation Plan.

Each recommendation or affirmation may give rise to several actions. IGEM assesses the progress of each action. Once all actions are assessed as complete IGEM considers the recommendation or affirmation to be complete.

A comprehensive list of all recommendations, affirmations and their corollary actions is provided in Appendix A.

3.1 Assurance principles

IGEM's assurance activities are guided by the *Assurance Framework for Emergency Management* (the Framework) which seeks to drive a more coordinated, less burdensome and more valuable approach to assurance activities in the sector and generate continuous improvement.

The Framework defines an assurance as:

A statement designed to increase the confidence of government, the sector and the community in the ability of the system to plan for, respond to and recover from emergencies.

The Framework articulates four principles to guide assurance activities performed in relation to the emergency management system in Victoria.

Table 2 provides an overview of the four principles that IGEM applies when monitoring the implementation of the recommendations, affirmations and actions from the Victorian Government Implementation Plan.

Limitations in assurance

Like all assurance providers, the level of assurance that IGEM can provide is limited by the quality and quantity of the available information, and by the scope of the assurance activity.

IGEM provides assurance on progress through assessing updates provided by agencies and collecting and assessing evidence to substantiate those updates. IGEM seeks to reflect progress to the fullest extent possible based on evidence provided or that is publicly available. At times, if evidence is unavailable, IGEM may be limited in its capacity to report on progress. If IGEM is unable to view supporting evidence, then it will report the progress as 'advised' by agencies. This represents a lower level of assurance.

Table 2: Assurance Framework for Emergency Management principles

| FRAMEWORK PRINCIPLE | IN THE CONTEXT OF HAZELWOOD IMPLEMENTATION MONITORING |
|---------------------------------------|---|
| Continuous improvement | IGEM applies this principle by: <ul style="list-style-type: none"> • focusing on the performance of processes and systems, rather than individuals • understanding that the sector needs time, resources and opportunities to identify and implement improvements • sharing information on what works well and what can be improved. |
| Collaboration and coordination | IGEM recognises that each sector organisation contributes its expertise towards emergency management in Victoria. Assurance will be practised in a collaborative and coordinated manner so that all stakeholders can make meaningful contributions. |
| Reducing burden | IGEM aims to minimise areas of burden associated with its assurance activities – such as minimising requests for information that is already held by IGEM or publicly available – and create opportunities for stakeholders to make more meaningful contributions. |
| Adding value | IGEM aims to report evidence-based information in a timely and readily understood manner so that decision makers have robust advice at hand to inform decisions on critical issues. |

3.2 Stakeholder engagement

Key stakeholders

Organisations with responsibility for implementing recommendations and affirmations in 2018–19 are:

- Country Fire Authority (CFA)
- Department of Jobs, Precincts and Regions (DJPR)³
- Department of Environment, Land, Water and Planning (DELWP)
- Department of Health and Human Services (DHHS)
- Department of Justice and Community Safety (DJCS)⁴
- Department of Premier and Cabinet (DPC)
- Emergency Management Victoria (EMV)
- Environment Protection Authority Victoria (EPA)
- Metropolitan Fire and Emergency Services Board (MFB)
- Four principal health agencies:
 - Gippsland Primary Health Network (Gippsland PHN)
 - Latrobe City Council (LCC)
 - Latrobe Community Health Service (LCHS)
 - Latrobe Regional Hospital (LRH)
- State-level non-government health agencies⁵
- Latrobe Valley mine operators:
 - AGL Loy Yang
 - EnergyAustralia Yallourn
 - ENGIE Hazelwood.

IGEM places a high priority on engagement with stakeholders. IGEM began engagement with lead organisations early in 2019, writing to those with lead implementation responsibility to outline time lines and confirm communication arrangements. IGEM offered to meet with nominated representatives to explain the implementation reporting process, provide guidance on evidence requirements and seek suggestions on improvements to IGEM's processes. Many organisations accepted this offer, meeting with IGEM across the first half of 2019 to test their reporting approach and share their progress and challenges.

Acknowledgements

IGEM acknowledges the high level of cooperation and support received from Victorian Government departments and agencies, the coal mine operators and other non-government entities in preparing this report. Information was often provided to IGEM earlier than required, and several organisations engaged proactively with IGEM to seek advice on how to improve the quality of their reporting. This commitment to transparency and continuous improvement is commended.

3.3 Information collection

Progress updates by organisations

In July 2019 IGEM formally requested implementation updates supported by documentary evidence of progress – such as policies, procedures, contracts, manuals, reports, guides and meeting minutes.

More than 480 documents were received from 21 organisations. All documents were stored securely and managed in accordance with IGEM's statutory confidentiality requirements under section 72 of the Act.

To reduce documentation requirements, IGEM also attended demonstrations, meetings and community events related to the actions, recommendations and affirmations of the Hazelwood Mine Fire Inquiry.

When necessary, IGEM communicated with nominated representatives of departments and agencies to clarify information or request additional documentation.

Desktop research

Where possible, IGEM reviewed publicly available information such as reports, research papers, ministerial statements and websites, in order to corroborate evidence provided by lead organisations and reduce organisations' reporting requirements.

3.4 Analysis

When assessing the progress of actions IGEM considers:

- timeframes for the action, including revised timeframes, delays and progress on key milestones
- the contribution of the reported activity to the action, recommendation or affirmation it supports
- evidence available to support the reported activity.

IGEM assigns a 'status' and a 'finding' for each action.

Table 3: Implementation status

| STATUS | DESCRIPTION |
|-----------------|---|
| Complete | Action has been completed satisfactorily or implemented |
| Ongoing | Action is still in progress |
| Closed | Action has not been fully implemented |

³ On 1 January 2019 the former Department of Economic Development, Jobs, Transport and Resources (DEDJTR) transitioned into the new Department of Jobs, Precincts and Regions and the new Department of Transport (DOT).

⁴ On 1 January 2019 the Department of Justice and Regulation was renamed to the Department of Justice and Community Safety.

⁵ As defined in the *Hazelwood Mine Fire Inquiry Report, Volume III – Health Improvement*, p.10, such as Beyond Blue, Cancer Council Victoria, and Diabetes Victoria.

Findings provide further information on the progress of actions. IGEM assigns a finding to each action based on a number of factors including achievement against timeframes and evidence of recent progress.

3.5 Reporting

This report encompasses the period 1 August 2018 to 30 July 2019.

IGEM provided relevant stakeholders with a confidential draft of this report for comment prior to finalisation.

IGEM will provide a final copy of the report to the Minister for Police and Emergency Services by 31 October 2019.

The minister will make the 2019 IGEM Hazelwood report publicly available.

3.6 Effectiveness monitoring

The Act contains provisions for IGEM to consider the effectiveness of implementation when undertaking its monitoring activities and extend its monitoring function to consider the effectiveness of implemented improvements.

As this is IGEM's final Hazelwood report required to be tabled in Parliament, and most of the actions from the Victorian Government Implementation Plan are now complete, IGEM extended its reporting to include effectiveness monitoring of selected actions. IGEM's approach and findings from its effectiveness monitoring are detailed in chapter 7.

4. Progress update – Victorian Government actions



The 2016 Victorian Government Implementation Plan sets out the 246 actions being undertaken by the government to fulfil its commitment to implement the recommendations and affirmations of the Inquiry reports.

The actions are grouped numerically under the following themes:

- governance and accountability
- communications and community engagement
- health in the Latrobe Valley
- incident air quality and wellbeing
- Latrobe Valley coal mine regulation
- Latrobe Valley coal mine rehabilitation bonds
- Latrobe Valley Regional Rehabilitation Strategy
- emergency management planning, response and recovery.

In sections 4.1 to 4.8, IGEM reports on the progress of the implementation of each of the government actions in accordance with these themes.⁶

Implementation progress by statutory and non-government health agencies and coal mine operators is reported in chapters 5 and 6.

For a full list of all recommendations, affirmations and actions, including those reported as complete in previous IGEM Hazelwood reports, refer to Appendix A.

4.1 Governance and accountability

The Hazelwood Mine Fire Inquiry triggered a wide ranging program of reforms across state and local government. To support successful delivery of the recommendations and affirmations of the Inquiry reports, the Victorian Government Implementation Plan set out actions to coordinate implementation and publicly report on progress.

The following is a summary of progress on those actions that were assessed as ongoing in the 2018 IGEM Hazelwood report.

Table 4: Status of governance and accountability actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|--------------------------------------|---|---------------------------------------|-------------------------------|----------|-------------|
| GOVERNANCE AND ACCOUNTABILITY | | | | | |
| 1 | Convene meetings of the IDC on a quarterly basis, and more often if required, until December 2019 | N/A | Quarterly until December 2019 | Complete | DPC |
| 5 | Publicly release the IGEM's annual reports in the Victorian Parliament within a reasonable time of receipt by the Minister for Emergency Services | 2014 Inquiry report: recommendation 1 | Annually until 2019 | Ongoing | DJCS |

Action 1. Convene meetings of the IDC on a quarterly basis, and more often if required, until December 2019

The Inter-departmental Committee (IDC) oversees and coordinates actions to implement the recommendations and affirmations in the Inquiry reports, as outlined in the Victorian Government Implementation Plan. The IDC is chaired by DPC. Membership consists of senior representatives from departments and agencies, including CFA, DELWP, DHHS, DJPR, the Department of Treasury and Finance (DTF), EMV, EPA, MFB and WorkSafe Victoria (WorkSafe).

Since the last reporting period DPC convened four IDC meetings from July 2018 to June 2019. IGEM representatives attended three of these meetings.

At the time of reporting, DPC had scheduled IDC meetings for September and December 2019.

Finding

IGEM considers this action has been implemented.

Action 5. Publicly release the IGEM's annual reports in the Victorian Parliament within a reasonable time of receipt by the Minister for Emergency Services

IGEM delivered the 2018 IGEM Hazelwood report (the report) to the then Minister for Emergency Services on 30 October 2018, just prior to caretaker conventions for the 2018 Victorian state election taking effect.⁷ Following the formation of government, IGEM resubmitted the report to the Minister for Police and Emergency Services in December 2018.

Under section 70(5) of the Act, if an IGEM review or report contains any matter relating to an area of responsibility of another minister, the Minister for Police and Emergency Services must consult with that minister. At the time of reporting, the report has yet to be tabled in Parliament.

The Victorian Government Implementation Plan requires IGEM's annual reports to be delivered to the Minister for Police and Emergency Services until 2019.

Finding

IGEM notes delays encountered by this action.

⁶ All actions under the Latrobe Valley coal mine rehabilitation bonds theme were reported as complete in the 2018 IGEM Hazelwood report. A brief summary of this theme is provided in section 4.6.

⁷ Caretaker periods span the time the Legislative Assembly expires until an election result is clear or a new government is commissioned. The caretaker period for the 2018 Victorian election commenced at 6:00 pm on 30 October 2018.

4.2 Communications and community engagement

The 2014 and the 2015–16 Inquiry reports made a number of recommendations and affirmations to enhance the way Victorians receive timely, tailored and relevant public emergency information and warnings so that they can make informed decisions about their safety.

The recommendations and affirmations in the Inquiry reports that relate specifically to communications and community engagement are:

- Recommendation 11 and Affirmations 6 and 14 of the 2014 Inquiry report, which relate to whole-of-government communication during and after emergencies
- Recommendation 12 of the 2014 Inquiry report, which relates to community engagement across the state
- Affirmation 20 of the 2014 Inquiry report, which relates to communications by EPA at state level and community engagement specific to the Latrobe Valley
- Recommendations 3 and 4 of the Death Investigation Inquiry report, and Affirmations 26 and 33 of the 2014 Inquiry report, which relate to communications and community engagement by DHHS.

The Victorian Government Implementation Plan listed the following sub-themes, with associated actions, under the theme of communications and community engagement.

Table 5: Status of communications and community engagement sub-themes

| SUB-THEMES REPORTED AS COMPLETE IN PREVIOUS IGEN HAZELWOOD REPORTS |
|--|
| Communications during emergencies |
| White Paper actions |
| EPA emergency communications |
| Health communications and public health investigations |
| SUB-THEMES ASSESSED IN THIS REPORT |
| Community engagement |
| EPA engagement with the Latrobe Valley community |

The following is a summary of progress on those actions that were assessed as ongoing in the 2018 IGEN Hazelwood report. Refer to Appendix A for a full list of actions, including completed actions.

Progress summary

The Victorian Government Implementation Plan lists 40 actions under the communications and community engagement theme, of which 38 have now been completed, one has been closed and one remains ongoing.

EMV experienced challenges in progressing the final stages of the Latrobe Valley Community Engagement and Planning Project to ensure it met the needs of the Morwell community, and has decided not to proceed with the CBEM approach for Morwell.⁸ Instead, existing Municipal Emergency Management Planning arrangements will be in place for the upcoming summer season and EMV will consider the needs of the Morwell community through the emergency management planning reforms going forward. EMV has informed project stakeholders of its revised approach.

EPA has made significant progress in reconfiguring the air monitoring network in the Latrobe Valley to deliver the community co-design. Different types of air monitors have been installed at the locations chosen by the co-design panel and the data is now displayed on EPA's AirWatch website. However, EPA was unable to identify any low-cost gas sensors that met the intent of the co-design network and it will continue to work with suppliers on improvements to the sensors. EPA has informed the community of this approach and will work with the co-design panel on the implementation of technology that meets the network intent.

IGEM will continue to monitor the ongoing action under this theme and report to the Minister for Police and Emergency Services.

4.2.1 Community engagement

The 2014 Inquiry report articulated the need for departments, agencies and local governments to engage with communities as an integral component of emergency management planning. The Victorian Government Implementation Plan set out a range of actions to put in place a CBEM model in the Latrobe Valley.

The Latrobe Valley Community Engagement and Planning Project aims to assist the community to become more connected and build resilience before, during and after emergencies. The project is guided by the CBEM model developed by EMV, in collaboration with the Harrietville community, to build resilience following the 2013 bushfires.⁹

⁸ CBEM is a collaborative planning and engagement approach, designed to support communities and organisations to work together to develop a safer, more resilient and sustainable future.

⁹ For more information on the CBEM approach refer to emv.vic.gov.au/publications/community-based-emergency-management-overview

Table 6: Status of community engagement actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|-----------------------------|--|--|--------------------------------------|--------|-------------|
| COMMUNITY ENGAGEMENT | | | | | |
| 19 | Deliver the Latrobe Valley Community Engagement and Planning Project | 2014 Inquiry report: recommendation 12 | June 2017 (Revised: October 2018) | Closed | EMV |

Action 19. Deliver the Latrobe Valley Community Engagement and Planning Project

EMV's *Latrobe Valley Community Engagement and Planning Project – Project Plan* outlines the key project outputs for this action and is available on EMV's website.¹⁰

In 2018 IGEM reported that EMV had delivered two of the project plan outputs:

- a community profile identifying the values, capabilities, connectivity and concerns of the Morwell community in an emergency management context
- a CBEM stakeholder engagement and communications plan for Morwell.

EMV also reported encountering challenges which had delayed implementation of this action. These included:

- 'engagement fatigue' in the local community
- complexity of engaging with multiple diverse groups within the community
- taking time to understand community members' values and emergency experiences
- the need for government and the emergency management sector to build relationships and trust, and work with communities in a way that meets their needs.

The two remaining project outputs due in 2018–19 were:

- a CBEM plan for Morwell and the Latrobe Valley
- a final project report.

EMV advised that it has continued to experience challenges in progressing the CBEM plan to ensure it meets the needs of the broader community of Morwell. In November 2018 EMV developed a planning document for the delivery of the Morwell CBEM plan following consultation with the Morwell District Community Recovery Committee. The document outlined that successful implementation of a CBEM plan for Morwell was dependent on community interest, drive and commitment, together with appropriate support by organisations as needed.

In February 2019 EMV prepared a memorandum for the Emergency Management Commissioner (EMC) outlining the project challenges and recommending that the development and implementation of further emergency planning provisions for Morwell should instead proceed through existing Municipal Emergency Management Planning arrangements, led by Latrobe City Council (LCC). EMV will further consider the needs of the

Morwell community through the emergency management planning reforms going forward (refer to Action 225).

The EMC and representatives of EMV met with the Morwell District Community Recovery Committee and LCC in August 2019 to brief them on its decision and revised approach.

EMV has provided IGEM with a closure report detailing the project challenges, the lessons learned for future CBEM initiatives and a commitment to address this action through the Municipal Emergency Management Planning arrangements.

Finding

IGEM considers this action has not been fully implemented. IGEM notes that alternative action is planned to address this action.

4.2.2 EPA engagement with the Latrobe Valley community

The 2014 Inquiry report affirmed EPA's commitment to implement a structured community engagement process with Morwell and surrounding communities.

EPA's Reconnecting with the Latrobe Valley Plan aimed to improve the accessibility of EPA's scientific information and provide opportunities for the local community to work with EPA in the co-design, co collection and co-interpretation of scientific projects. The overall objective was to rebuild community confidence and trust in EPA and its work in the local environment.

The Victorian Government Implementation Plan acknowledged the work already undertaken by EPA on community engagement and set out a series of actions to develop and implement specific engagement initiatives.

The introduction of a Latrobe Valley Citizen Science Program has been a key element of EPA's community engagement approach.

Citizen science involves community volunteers working with EPA to build their skills and understanding of environmental monitoring methods, scientific data and the state of the local environment. The community volunteers then apply this knowledge to develop solutions across a range of projects.

¹⁰ Refer to emv.vic.gov.au/how-we-help/community/building-a-safer-and-more-resilient-community-in-morwell-and-the-latrobe

Table 7: Status of EPA engagement with the Latrobe Valley community action reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|---|---|-------------------------------------|------------------------------------|-------------------|-------------|
| EPA ENGAGEMENT WITH THE LATROBE VALLEY COMMUNITY | | | | | |
| 26 | Complete the reconfiguration of the current ambient air monitoring network (including the smoke sensor sub-network) | N/A | June 2018 (Revised: December 2018) | Ongoing (overdue) | EPA |

Action 26. Complete the reconfiguration of the current ambient air monitoring network (including the smoke sensor sub-network)

In 2017 EPA completed a community co-design process for a new air monitoring network in the Latrobe Valley.¹¹ EPA’s reconfiguration of the current air monitoring network to deliver the community co-design is close to completion.

The reconfigured network has seen EPA install significantly more air monitoring equipment than was available at the time of the Hazelwood mine fire. The monitors are positioned at locations chosen by the co-design panel and include a smoke sensor sub-network.

The reconfigured network contains the following types of equipment:

- particle sensors to measure PM2.5
- particle optical monitors (Dustraks) to measure PM2.5 and PM10
- beta attenuation monitors to measure PM2.5
- cameras – the website displays images updated every three minutes and a time-lapse video of the previous 24 hours.¹²

The data from the air monitoring stations is displayed on the EPA AirWatch website (refer to Figure 1).¹³ EPA ran three co-design panel sessions in 2018–19 to analyse the data coming from the new equipment and provide a forum for feedback.¹⁴ EPA advised that co-interpretation of air quality data will continue as business as usual under the statewide framework for air quality.

Community engagement

In August 2018 EPA sent letters to residents who were located around new air monitoring locations to notify them of the equipment being installed and invite their feedback. EPA has also kept the community informed of the reconfiguration process through regular community newsletters.

Work to be completed

During equipment trials and investigations, EPA identified that low-cost gas sensor technology does not meet

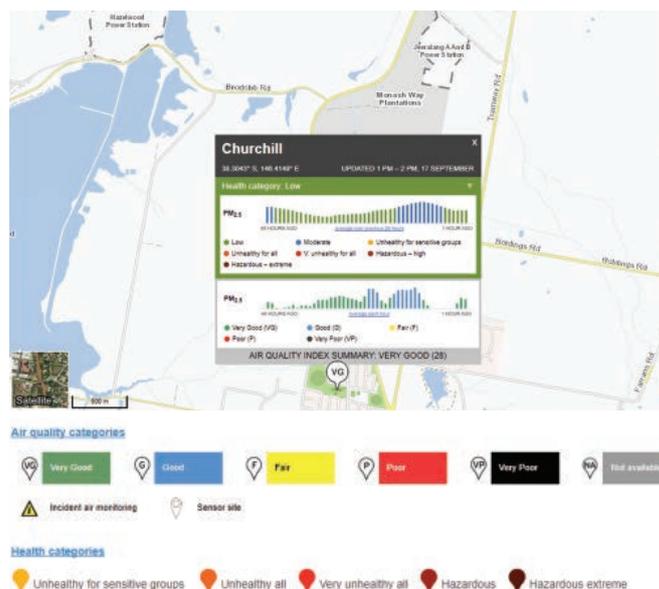
the intent of the co-design network and decided not to include them in the network at this time. EPA advised it will continue to work with suppliers on improvements to gas sensors. It has informed the community of this approach and will work with the co-design panel to decide if the technology reaches an acceptable standard.

IGEM considers that this action will be complete when EPA has reconfigured the network to include the new gas sensors, or the co-design panel reaches a decision not to include the gas sensors in the network.

Finding

IGEM notes progress on this action and that it is overdue. IGEM will continue to monitor this action.

Figure 1: EPA AirWatch



Source: EPA

¹¹ Refer to epa.vic.gov.au/our-work/programs/latrobe-valley-air-monitoring-codesign

¹² Refer to cmcameras.net.au

¹³ AirWatch provides current air quality data to the public, refer to epa.vic.gov.au/EPAAirWatch

¹⁴ In March 2019 the co-design panel advised EPA not to display data from the particle sensors when humidity is higher than 80 per cent due to the sensors displaying inaccurate readings.

4.3 Health in the Latrobe Valley

In addition to highlighting potential health effects of the Hazelwood mine fire, the 2014 Inquiry found that there was a need to substantially improve the overall health of the Latrobe Valley community. Building on this work, the Health Improvement Inquiry report examined factors surrounding health improvements in the Latrobe Valley.

The Board of Inquiry made findings on a broad range of health issues, including chronic disease, mental health, early detection, children's health, Aboriginal health and the effect of social disadvantage on health in the Latrobe Valley.

The Health Improvement Inquiry report provided 12 recommendations and 12 affirmations for government and non-government agencies. Progress relating to these recommendations and affirmations are reported within this theme and chapter 5.

This theme covers the Victorian Government's response to recommendations and affirmations in the Inquiry reports that relate specifically to:

- Recommendations 2 through 5 inclusive, 8 and 10 and Affirmation 5 of the Health Improvement Inquiry report
- Recommendation 2 of the Death Investigation Inquiry report
- Affirmation 26 of the 2014 Inquiry report.

The Victorian Government Implementation Plan lists the following sub-themes, with associated actions, under the theme of health in the Latrobe Valley.

Table 8: Status of health in the Latrobe Valley sub-themes

| SUB-THEMES REPORTED AS COMPLETE IN PREVIOUS IGEN HAZELWOOD REPORTS |
|--|
| Engagement with the Commonwealth |
| Early detection and high risk screening |
| Expanding options to access specialist services |
| Aboriginal health |
| Long Term Health Study |
| Ash in roof cavities |
| SUB-THEMES ASSESSED IN THIS REPORT |
| Governance |
| Prevention |
| Expanding services for people with multiple chronic conditions |
| Mental health |

The following is a summary of progress on those sub-themes and actions that were assessed as ongoing in the 2018 IGEN Hazelwood report. Refer to Appendix A for a full list of actions, including completed actions.

In this section IGEN reports the progress of DHHS – the lead government agency – in implementing actions, recommendations and affirmations.

IGEM also reports the progress of non-government health agencies in implementing recommendations and affirmations in chapter 5.

Progress summary

The Victorian Government Implementation Plan lists 68 actions under the theme of health in the Latrobe Valley, all of which are now complete.

In 2018–19 DHHS partnered with local and statewide health providers, agencies and the community to complete the remaining seven actions under this theme.

The developmental evaluation of the Latrobe Health Innovation Zone, the Health Assembly and the Latrobe Health Advocate, which commenced in early 2018 has transitioned to business as usual. An interim report and three presentations were delivered across 2018–19. The final report, which is due in early 2020, will complete the independent consultant's monitoring of the impact of these innovations. DHHS is working with Federation University Australia to develop local capacity to continue monitoring the impact of health innovations in the Latrobe Valley. In the interim, a contract variation has been made between DHHS and Federation University Australia to appoint a skilled evaluator to undertake evaluations of a range of projects initiated by the Health Assembly.

DHHS continues to participate as a member of the Health Assembly, working with the community to develop priorities across the year. Building on this engagement, DHHS facilitated and enabled ongoing partnerships with a range of organisations through service contracts and network forums focusing on preventative health. DHHS funded additional respiratory nursing hours and allied health services, implemented a range of early detection and high-risk screening initiatives, and continued the focus on mental health by partnering with Lifeline Gippsland on several projects.

DHHS has facilitated the establishment of both chronic disease and mental health forums.

DHHS engaged Gippsland PHN to establish the Chronic Disease Forum Advisory Group, which decided that the chronic disease forum would consist of both community forums and health care professional forums. Both forums commenced in May 2019.

DHHS worked with the Health Assembly to establish the Latrobe Community Mental Health Forum which comprises both local and statewide providers and experts as members. Meetings have commenced with the first themed discussions held in April 2019.

4.3.1 Governance

In 2016 Latrobe City was designated as the Latrobe Health Innovation Zone, the first zone of its kind in Australia. The Latrobe Health Innovation Zone is a dedicated place that gives voice to communities to influence health promotion, planning, priority setting and design. It encompasses a range of initiatives supported by DHHS, statutory and non-government health agencies and communities. Initiatives are underpinned by the Latrobe Health and Wellbeing Charter, which defines the values and guiding principles of the Latrobe Health Innovation Zone.

The Health Improvement Inquiry found that the Victorian Government should establish the Health Assembly and executive board to promote, support and oversee the development of the Latrobe Health Innovation Zone.

Since it was established in December 2016, the Health Assembly has been active in providing collaborative community input to priorities and initiatives to improve the health and wellbeing of Latrobe Valley communities. DHHS holds ongoing membership of the Health Assembly, participating both on the Board and as a general member to inform priorities.

Chapter 5 provides further information about the progress of the Health Assembly and the initiatives supported by health agencies.

Table 9: Status of governance actions reporting as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|-------------------|--|--|---|----------|-------------|
| GOVERNANCE | | | | | |
| 60 | Work with the Latrobe Health Assembly to conduct annual monitoring of the impact of innovation | Health Improvement Inquiry report: recommendations 3 and 5 | Annually in December (transition to business as usual by December 2018) | Complete | DHHS |

Action 60. Work with the Latrobe Health Assembly to conduct annual monitoring of the impact of innovation

In 2017 DHHS commissioned a consulting firm to evaluate the Latrobe Health Innovation Zone, the Health Assembly and the Latrobe Health Advocate (the health initiatives). Rather than conducting annual monitoring, the evaluation is providing regular monitoring and reporting to obtain real-time information and insights.

The evaluation began with the development of an evaluation framework, released in December 2017.¹⁵ Through consultation with communities, the framework has been updated to accurately reflect community needs.

The updated version of the framework, released in March 2019, reflects the Latrobe Health Advocate's annual Statement of Intent, the Health Assembly's strategic plan and the Latrobe Health and Wellbeing Charter.¹⁶

Evaluation will continue until early 2020, collecting information through:

- broad consultation (community surveys)
- direct consultation (attending existing meetings and events)

- targeted consultation (organisation surveys and case studies)
- review of initiative-generated documents and data
- literature review
- publicly available population health and wellbeing data.

Feedback is being provided throughout the evaluation period in the form of presentations and formal reports, which are made available on the DHHS website¹⁷ and through community consultations. At the time of reporting, an interim report and three feedback presentations have been delivered, with a final report to be issued in early 2020 (refer to Figure 2).

DHHS is investing in building local evaluation capacity and capability in the Latrobe Valley to facilitate ongoing monitoring and reporting of the impact of innovation, beyond the conclusion of the evaluation.

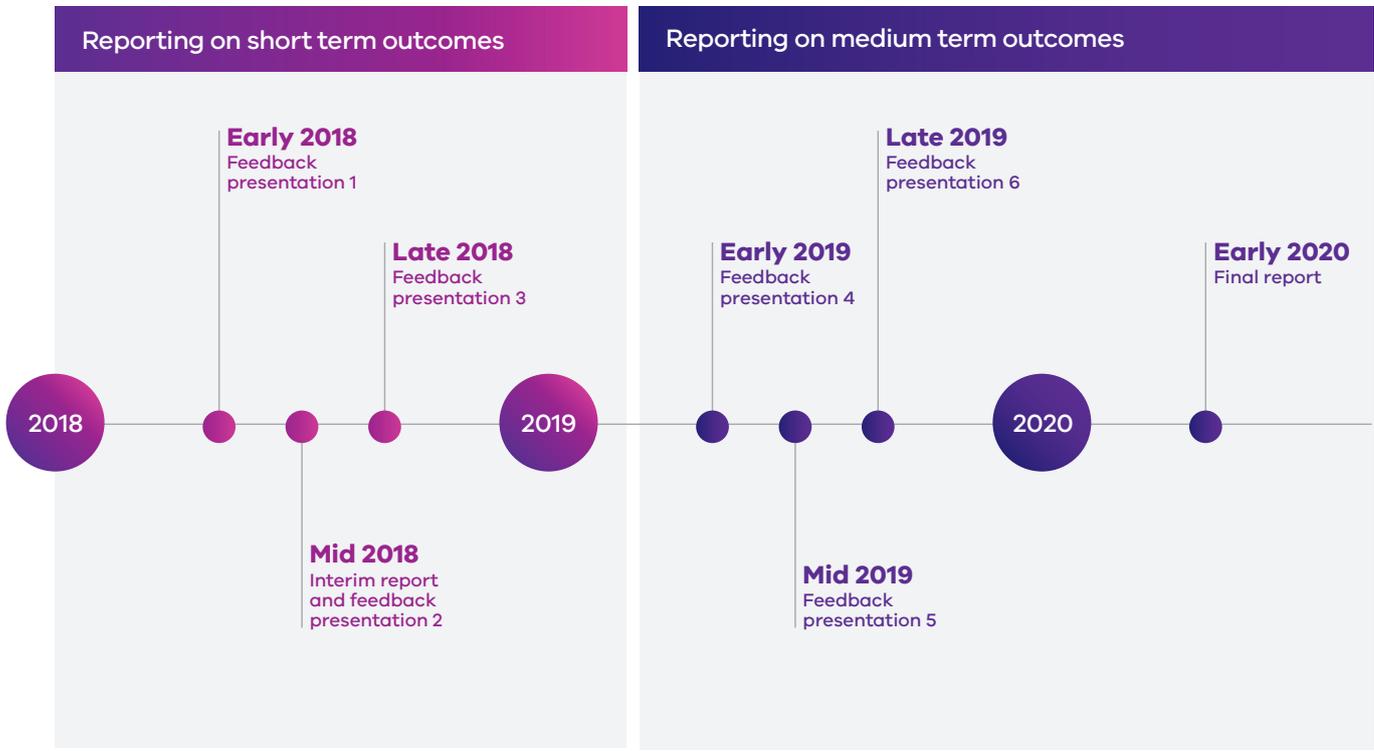
In 2018 IGEM reported that DHHS had contracted Federation University Australia to establish a local evaluation unit to build evaluation capacity in the Latrobe Valley. Federation University Australia has developed a draft operating model, guide and toolkit.

¹⁵ Refer to health.vic.gov.au/about/publications/researchandreports/latrobe-hiz-evaluation-report

¹⁶ Refer to health.vic.gov.au/-/media/health/files/collections/presentations/d/deloitte-lhiz-evaluation-presentation-4.pdf

¹⁷ Refer to health.vic.gov.au/about/health-strategies/latrobe-health-innovation-zone/evaluation-framework

Figure 2: Latrobe Health Innovation Zone evaluation reporting time line



Source: DHHS

DHHS advised that funding has yet to be provided as the proposed operating model is under review. In the interim, a contract variation will enable Federation University Australia to appoint a skilled evaluator to evaluate a range of projects currently being undertaken by the Health Assembly.

IGEM considers that this action has transitioned to business as usual.

Finding

IGEM considers this action has been implemented.

4.3.2 Prevention

The Health Improvement Inquiry found that people in the Latrobe Valley faced significant health challenges compared to most other Victorians. Health conditions are further exacerbated as the Latrobe Valley is also socially and economically disadvantaged relative to the rest of Victoria.

In response, the Victorian Government Implementation Plan sets out a series of actions to put plans, partnerships and funding in place for preventative health in the Latrobe Valley, acknowledging the importance of health promotion and place-based preventative health in improving health and wellbeing.

On 23 October 2017 LCC, in partnership with the Health Assembly and DHHS, adopted the *Living Well Latrobe – Municipal Public Health and Wellbeing Plan 2017–2021*.¹⁸

Efforts to improve the health and wellbeing of the Latrobe Valley community are continuing.

¹⁸ Refer to latrobe.vic.gov.au/Our_Community/Living_Well_Latrobe/Living_Well_Latrobe_Health_and_Wellbeing_Plan

Table 10: Status of prevention actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|-------------------|--|---|-----------------------------|----------|-------------|
| PREVENTION | | | | | |
| 67 | Facilitate active and ongoing partnerships with both local and statewide organisations to drive an integrated, place-based approach to preventive health in the Latrobe Valley | Health Improvement Inquiry report: recommendation 5 | Ongoing from July 2016 | Complete | DHHS |
| 68 | Allocate funding to support locally determined actions to improve health and wellbeing in agreed priority areas and settings | Health Improvement Inquiry report: recommendation 5 | Annually in July until 2019 | Complete | DHHS |

Action 67. Facilitate active and ongoing partnerships with both local and statewide organisations to drive an integrated, place-based approach to preventive health in the Latrobe Valley

This action is linked to Affirmation 8 in chapter 5.

DHHS facilitates active and ongoing partnerships with local and statewide organisations to drive an integrated, place-based approach to preventive health in the Latrobe Valley. Some examples of the initiatives being delivered through these partnerships are:

- Lifeline Gippsland is delivering a mental health awareness program to businesses and organisations in the Latrobe Valley, providing targeted mental health conversations based on a mental wealth approach.¹⁹ The project helps businesses to participate in activities aimed at increasing the mental wealth of their community by increasing their mental health literacy, capacity and capability in supporting mental health issues.
- Gippsland PHN has launched the 'Screen for Me' campaign, which is designed to boost community participation in the national breast, bowel and cervical cancer screening programs. It uses the strength of local community members to have an influence on their loved one's health by asking them to 'Screen for Me'.
- 'Smokefree Gippsland' is an initiative by Quit Victoria and Gippsland PHN reinforcing the role of general practitioners (GPs) in helping patients to quit smoking. The initiative, which was launched in May 2019, aims to embed smoking cessation as part of routine care in general practice.
- With the support of the Health Assembly and Gippsland PHN, the Australian Prostate Centre Blue Bus has been providing local workers with reminders to book in with their doctor for a chat about their prostate health.

- The Department of Education and Training (DET) and LCHS partnered to pilot a community health nurse in primary school program. Through the program, children with unmet health needs have been supported to access healthcare, such as specialist continence care, dental services, paediatrician and general practice.
- Pharmacies, BreastScreen Victoria and Gippsland PHN have united to promote free breast screening to women in the Latrobe Valley. As pharmacies are a family friendly environment that are visited often, they can play a significant role in educating women about the importance of breast screening.
- The 'Working with Men' project aims to achieve healthier mental and physical outcomes for men in Latrobe City. The project is appointing a Latrobe Valley field officer to be employed by the Victorian Men's Shed Association. The field officer will work with local men, Men's Sheds and other men's groups across Latrobe City.
- Churchill Neighbourhood House in partnership with Gippsland PHN are trialling free bus trips for women in Churchill to access breast screening services. Public transport has previously been identified as a barrier to women accessing these services.
- Quantum Support Services is delivering the Adolescents Building Connections program targeting young people from the community who have identified as displaying bullying or aggressive behaviours towards others prior to their escalation in the justice system.

In addition, DHHS continues to provide ongoing funding for existing programs that were previously reported, such as:

- delivery of the Health Innovation Grants Program by the Health Assembly
- the delivery of dental health initiatives by LCHS in partnership with Dental Health Services Victoria
- 'Gippy Girls Can' – a local initiative of the VicHealth campaign, 'This Girl Can – Victoria'.

¹⁹ Mental wealth is about building positive wellbeing in individuals and communities and raising awareness of issues surrounding mental health.

The Victorian Government Implementation Plan lists the due date for this action as 'Ongoing from July 2016'. IGEM notes that DHHS has demonstrated its commitment to delivering this action across three IGEM Hazelwood reports. DHHS also has a recurrent budget to support ongoing partnerships with both local and statewide organisations.

IGEM considers that this action has transitioned to business as usual.

Finding

IGEM considers this action has been implemented.



Image: Gippsland PHN 'Screen for Me' campaign
Source: DHHS

Action 68. Allocate funding to support locally determined actions to improve health and wellbeing in agreed priority areas and settings

In April 2016 the Victorian Government announced \$50 million in the 2016–17 Victorian State Budget to implement all recommendations from the 2015–16 Inquiry reports. Of this funding, \$27.3 million was allocated over five years to improve the health of the Latrobe Valley community.

As at July 2019 DHHS' budget update for the Latrobe Health Innovation Zone outlined funding allocated to implement a number of identified local priorities, including:

- the evaluation of the Latrobe health initiatives (refer to Action 60)
- the Health Assembly operating costs and innovation funding pool
- additional hours of respiratory nursing and allied health services (refer to Actions 82 and 83)
- chronic disease innovation projects, including the chronic disease forum (refer to Action 78).

DHHS has allocated funding for these priorities until 2019–20, with ongoing funding allocated focusing on preventative health, early intervention and screening, service innovation and expansion.

In addition, DHHS has also funded over 40 Health Innovation Grants through the Health Assembly, including:

- Newborough Primary School – Bridges Reading Support Training for Community Members aims to provide training for adult community members to assist primary school students in the development of their reading skills
- United Way Australia – Dolly Parton Imagination Library provides free monthly age-appropriate books selected by early childhood specialists and delivered to the homes of 80 children deemed at risk of vulnerability
- Flexible Learning Option Kurnai College – Latrobe Valley Flexible Learning Option Robotics and Coding Lab aims to provide a real world, hands on program focusing on robotics and coding for students with significant behavioural, social and mental health issues
- Soroptimist International Gippsland Inc web portal project aims to bring all information together relating to community and service groups for women and girls in the region – the web-based portal will assist women to find relevant services and community groups, and provide a mechanism for women involved in community groups to help each other
- Regional Roads Victoria – Staff Health and Wellbeing program will assist in raising awareness and educating staff on the importance of healthy eating, physical activity and positive mental health.

The Victorian Government Implementation Plan required DHHS to allocate funding annually until July 2019.

Finding

IGEM considers this action has been implemented.

4.3.3 Expanding services for people with multiple chronic conditions

The Board of Inquiry heard that the Latrobe Valley experiences higher rates of chronic disease than most other parts of Victoria, and that these people were at increased risk from the Hazelwood mine fire.

In response, the Victorian Government Implementation Plan set out a series of actions aimed at expanding services for people with multiple chronic conditions.

Since 2016 DHHS has funded LCHS to deliver additional respiratory nursing and allied health services.

DHHS commenced work in 2016 on the development of a chronic disease forum. Development of a model approach was reviewed and in consultation with key stakeholders, DHHS has taken a new approach in establishing the chronic disease forum.

Table 11: Status of expanding services for people with multiple chronic conditions actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|---|---|---|---|----------|-------------|
| EXPANDING SERVICES FOR PEOPLE WITH MULTIPLE CHRONIC CONDITIONS | | | | | |
| 78 | Facilitate the establishment of a Chronic Disease Forum, involving both local and statewide providers and experts, to work with the Latrobe Health Assembly to design and develop care pathways to improve coordination for people with chronic disease | Health Improvement Inquiry report: recommendation 5 | December 2016 (Revised: transition to business as usual by June 2019) | Complete | DHHS |
| 82 | Provide an additional 1,500 hours of respiratory nursing service (compared to 2015–16 base level) | Health Improvement Inquiry report: recommendation 5 | September 2018 and September 2019 | Complete | DHHS |
| 83 | Provide an additional 3,400 hours of allied health and care coordination services (compared to 2015–16 base level) | Health Improvement Inquiry report: recommendation 5 | September 2018 and September 2019 | Complete | DHHS |

Action 78. Facilitate the establishment of a Chronic Disease Forum, involving both local and statewide providers and experts, to work with the Latrobe Health Assembly to design and develop care pathways to improve coordination for people with chronic disease

As outlined in the 2018 IGEM Hazelwood report, following low attendance at the 'community-up' forums piloted in 2016 and 2017, DHHS, in consultation with the Health Assembly and a range of chronic disease service providers, revised the approach to this action. The revised approach includes three key elements:

- mapping of key inputs that should inform the nature and work of a future Chronic Disease Forum
- community consultation workshops
- forum delivery.

In order to implement the revised approach, DHHS appointed Gippsland PHN to coordinate the Chronic Disease Forum work. Gippsland PHN established the Chronic Disease Forum Advisory Group (the advisory group) made up of representatives from local and statewide service providers, chronic disease experts and health sector professionals. The first meeting was held in October 2018 with the advisory group meeting approximately every six weeks.

In October 2018 the advisory group agreed that, rather than a single structured forum, a series of forums was a more appropriate approach in developing care pathways to improve coordination for people with chronic disease. The forums will collect information from both community members and health professionals.

Central West Gippsland Primary Care Partnership²⁰ is leading the community member forums to better understand people's experiences of living with chronic disease in the Latrobe Valley.

In April 2019 Gippsland PHN engaged a consulting firm to conduct the health professionals forum, which commenced in May 2019 and aimed to:

- understand the current chronic disease care pathways in Latrobe Valley including enablers and barriers, shortfalls and gaps
- identify chronic disease service provision capacity and capability across the Latrobe Valley
- design and develop care pathways to improve coordination for people with chronic disease.

In November 2019 Gippsland PHN and Central West Gippsland Primary Care Partnership will analyse the results of both the health professional and community forums and develop a joint report for DHHS and the Health Assembly to inform their work. The report will include recommendations relating to design and care pathways to improve the care provided to people with chronic disease.

Finding

IGEM considers this action has been implemented.

²⁰ The Central West Gippsland Primary Care Partnership is a partnership of health and community support agencies who are working together in the municipalities of Baw Baw and Latrobe.

Action 82. Provide an additional 1,500 hours of respiratory nursing service (compared to 2015–16 base level)

In 2018 DHHS advised that LCHS adapted its approach to delivering the additional hours of respiratory nursing by forming a multidisciplinary team including a care coordinator, respiratory nurse and other allied health practitioners.

LCHS has continued this approach throughout 2018–19. In its reporting to DHHS, LCHS demonstrates the provision of 1,500 additional hours funded for respiratory nursing through to June 2019.

DHHS has also advised that LCHS is:

- co-locating respiratory nurses in GP clinics to improve care coordination and capacity
- actively engaging with the Health Assembly asthma management working group to run a professional development evening with GPs, respiratory physicians, hospital clinicians, community health staff, Gippsland PHN, and the Asthma Foundation to give an update on asthma management practice and build awareness of services in the Latrobe Valley.

This was the final year that DHHS was required to provide the additional hours of respiratory nursing services.

Finding

IGEM considers this action has been implemented.

Action 83. Provide an additional 3,400 hours of allied health and care coordination services (compared to 2015–16 base level)

As noted in the 2018 IGEM Hazelwood report, DHHS funded LCHS to provide an additional 3,400 hours of allied health and care coordination services in 2018–19.

LCHS continues to meet the targets for allied health and care coordination, providing 15,639 hours through to June 2019. LCHS has met the target through:

- restructuring its primary health team to improve local access to services along with its model of care
- implementing a 'Health Care Home' model across each of its sites in the Latrobe Valley – each site has a multidisciplinary team comprised of allied health, nursing and GPs
- organising a 'Deep Dive' workshop with peak bodies, specialists, GPs, community health and hospital clinicians, and consumer representatives to look at innovative approaches to chronic disease management.

This was the final year that DHHS was required to provide the additional hours of allied health and care coordination services.

Finding

IGEM considers this action has been implemented.

4.3.4 Mental health

The Health Improvement Inquiry found that the Latrobe Valley has a higher rate of mental illness than other parts of Victoria and noted that the Hazelwood mine fire may have contributed to increased rates of mental illness. The Board of Inquiry considered that mental illness was an important issue that must be addressed in the short to medium term. In response, the Victorian Government Implementation Plan sets out a series of actions aimed at improving the mental health and wellbeing of Latrobe Valley communities.

In 2016 and 2017 DHHS developed an approach to training the local health and community sector on managing mental health issues, funded local programs to increase awareness of mental health and expanded local mental health support in line with community priorities.

Table 12: Status of mental health actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|----------------------|---|---|---|----------|-------------|
| MENTAL HEALTH | | | | | |
| 84 | Facilitate the establishment of a Latrobe Community Mental Health Forum, comprising both local and statewide providers, experts and the community, to focus on strategies and opportunities to work with the Latrobe Health Assembly to enhance the mental health of the Latrobe Valley community | Health Improvement Inquiry report: recommendation 5 | December 2016 (Revised: transition to business as usual by June 2019) | Complete | DHHS |

Action 84. Facilitate the establishment of a Latrobe Community Mental Health Forum, comprising both local and statewide providers, experts and the community, to focus on strategies and opportunities to work with the Latrobe Health Assembly to enhance the mental health of the Latrobe Valley community

As outlined in the 2018 IGEM Hazelwood report, following low attendance at the 'community-up' forums piloted in 2016 and 2017, DHHS, in consultation with the Health Assembly and the Gippsland Mental Health Alliance, revised the approach to this action.

DHHS assisted in the establishment of the Latrobe Community Mental Health Forum Working Group (the working group) with the aim to launch the Latrobe Community Mental Health Forum (the forum). Between July and November 2018, the working group met every four to six weeks to:

- identify key stakeholders and participants to involve in the forum
- undertake a mental health project mapping exercise
- review existing community engagement.

The working group determined that the forum work plan priorities would best be delivered throughout 2019 as a series of themed discussions. The four themes to be addressed throughout 2019 are:

- mental health service system navigation
- social inclusion
- volunteering
- young people.

The forum comprises both local and statewide providers and experts as members, with the first themed discussion held in April 2019. At the time of reporting, the forum had meetings scheduled for October 2019 and November 2019.

DHHS advised that the forum will continue to develop strategies and opportunities to work with the Health Assembly to enhance the mental health of the Latrobe Valley community moving forward.

Finding

IGEM considers this action has been implemented.

4.4 Air quality and wellbeing

The 2014 Inquiry report highlighted the need to improve the timeliness and usefulness of information on air quality and potential health impacts arising from smoke events. This theme covers the Victorian Government's response to recommendations and affirmations in the 2014 Inquiry report that relate specifically to establishing smoke triggers for monitoring, and equipping agencies to undertake rapid air monitoring to protect the health of the community.

These are:

- Recommendation 5 and Affirmation 17, which relate to the capacity to provide rapid air quality monitoring in any location in Victoria
- Recommendation 9 and Affirmations 24 and 25, which relate to the management of public health impacts from large scale, extended smoke events, including planned burns
- Affirmation 18, which relates to creating a body of knowledge on the impacts of extended brown coal mine fire events from the Hazelwood mine fire meta-analysis.

The State Smoke Working Group oversees the implementation of recommendations and affirmations from the Inquiry reports relating to the management of smoke events, including incident air quality monitoring, standards for decision making and communication.

The State Smoke Working Group is co-chaired by DHHS and EMV, and includes representatives from Ambulance Victoria, CFA, DELWP, EPA, MFB, Victoria Police and WorkSafe. The working group reports to the IDC, which oversees and coordinates the government's actions towards implementation of recommendations and affirmations.

The Victorian Government Implementation Plan lists the following themes, with associated actions, under the theme of air quality and wellbeing.

Table 13: Status of air quality and wellbeing sub-themes

| SUB-THEMES REPORTED AS COMPLETE IN PREVIOUS IGEM HAZELWOOD REPORTS |
|--|
| State smoke framework |
| Managing exposure to carbon monoxide (CO) |
| Community smoke, air quality and health standard |
| National compliance standard |
| EPA protocols |
| SUB-THEMES ASSESSED IN THIS REPORT |
| Rapid air quality monitoring |
| Develop integrated predictive services framework |
| EPA meta-analysis |

The following is a summary of progress on those actions that were assessed as ongoing in the 2018 IGEM Hazelwood report. Refer to Appendix A for a full list of actions, including completed actions.

Progress summary

The Victorian Government Implementation Plan lists 34 actions under the air quality and wellbeing theme, of which 32 are now complete. One action was completed under this theme in 2018–19 while the two remaining actions continue to experience delays.

DELWP has completed development of a smoke intelligence module, AQVx, which incorporates data from satellite imagery, field sensors and social media to display in near real-time where and when smoke is present and could be affecting the community. AQVx was launched as a beta version product during the Autumn 2019 planned burn season and was presented to state and regional planned burn coordinators through a demonstration at the State Control Centre.

EPA continues to work with CFA and MFB to finalise an MOU to provide formal data sharing arrangements for an integrated air monitoring and information system. IGEM considers this action will be complete when these arrangements are in place.

The public release of EPA's report on information and knowledge generated from the Hazelwood mine fire

meta-analysis continues to be delayed pending the completion of current legal proceedings.

IGEM will continue to monitor the ongoing actions under this theme and report to the Minister for Police and Emergency Services.

4.4.1 Rapid air quality monitoring

The 2014 Inquiry found that the request for air quality monitoring for the Hazelwood mine fire came too late and that limited equipment and resources delayed EPA's ability to provide data in a timely way. In response, the Victorian Government Implementation Plan set out a series of actions to ensure that:

- the state has the appropriate equipment and resources to monitor air quality within 24 hours of escalation triggers
- air quality monitoring data is used to inform timely decision making to support the Victorian community during a smoke event.

Throughout 2016 and 2017 EPA made significant progress in providing the state with rapid air quality monitoring capacity. This included partnering with the Victoria State Emergency Service (VICSES) to procure 10 mobile air quality monitors. The monitors have been deployed across Victoria to provide incident air monitoring within four hours of the request to deploy.

Table 14: Status of rapid air quality monitoring actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|-------------------------------------|--|--|-----------|-------------------|-------------|
| RAPID AIR QUALITY MONITORING | | | | | |
| 122 | Deliver a fully functional integrated air quality monitoring and information systems | 2014 Inquiry report: recommendation 5 and affirmation 17 | June 2017 | Ongoing (overdue) | EPA |

Action 122. Deliver a fully functional integrated air quality monitoring and information systems

During a smoke event air monitoring data is collected in the field by multiple agencies (CFA, EPA, MFB and VICSES). This data is valuable in supporting the timely management of an incident and in providing incident controllers with the information they need to make decisions on community safety.

In 2018 IGEM reported that EPA was nearing completion of a fully functional integrated air quality monitoring system. EPA's system draws on fire-ground (close to the fire) data provided by CFA and MFB, data from its own monitors and data provided by VICSES in the community surrounding the incident.

EPA's integrated air monitoring system relies on the contributions of responder agencies prior to and during an incident. The original vision of the system emphasised the automated transmission of data, as outlined in the roadmap developed by EPA in 2017. The revised system has greater reliance on manual transmission by responding agencies. Gas data can be provided by CFA through an automated process, with a manual backup process in place.

MFB technology is currently incompatible with automatic transmission of gas data to EPA. In the interim, EPA and MFB have established arrangements for the manual transfer of incident air quality data.

In 2018 EPA, CFA and MFB developed a draft MOU, which details the responsibility and obligations of each party to establish and maintain the data transfer system. At the time of reporting the MOU had yet to be signed by all parties.

EPA has committed to continuing negotiations with both parties, including potential changes to the MOU to enable sign off.

IGEM considers that this action will be complete when these formal arrangements are in place.

Finding

IGEM notes delays encountered by this action and that it is overdue. IGEM will continue to monitor this action.

4.4.2 Develop integrated predictive services framework

Affirmation 24 of the 2014 Inquiry report acknowledges the commitment of the Victorian Government to undertake projects to understand health and predict the movement of smoke from planned burning and bushfires. The Victorian Government Implementation Plan addressed this affirmation by setting out a series of actions to develop an integrated predictive services framework.

Predictive services are a system of information and data, analytical tools and technical experts that provide valuable intelligence to support decision making about hazards – including bushfires, smoke, toxic plumes and floods. They allow risks to be identified prior to impact, enabling proactive plans to be developed and implemented to minimise damage and enhance public safety.

The Predictive Services Framework is an inter-agency project that aims to improve predictive services in Victoria. It is governed by a project control board, with senior representatives from CFA, DELWP, EMV and MFB.

In 2018 DELWP completed a cloud-based information and communications technology platform to support predictive engines for multiple hazards. One of the predictive engines hosted on the platform is the air quality and smoke forecast system (AQFx). AQFx uses information about existing fires, planned burns and meteorological data to produce statewide hourly predictions of smoke dispersion and airborne pollutants.

The Victorian Government Implementation Plan also required DELWP to develop a smoke intelligence model in order to calibrate and validate the smoke predictions produced by the AQFx model.

Table 15: Status of develop integrated predictive services framework actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|---|--|---|-----------------------------------|----------|-------------|
| DEVELOP INTEGRATED PREDICTIVE SERVICES FRAMEWORK | | | | | |
| 134 | Incorporate Predictive Services smoke intelligence module, to incorporate social media, field sensors and satellite image data to calibrate and validate smoke predictions | 2014 Inquiry report: recommendation 9 and affirmation 24 and 25 | June 2018 (Revised: June 2019) | Complete | DELWP |

Action 134. Incorporate Predictive Services smoke intelligence module, to incorporate social media, field sensors and satellite image data to calibrate and validate smoke predictions

Action 134 is linked to Action 132 which was reported as complete in the 2018 IGEM Hazelwood report.

Whereas Action 132 required DELWP to develop a smoke forecasting tool (AQFx), Action 134 required the collection and display of existing smoke data and use of this data to validate smoke predictions.

In 2017 DELWP engaged the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to develop a smoke intelligence module. CSIRO completed initial development of the smoke intelligence module (AQVx) in 2018, however, it was still exploring the potential use of low-cost smoke sensors.

In 2018–19 CSIRO successfully trialled the low-cost sensors as part of a school curriculum program and DELWP has installed permanent sensors at six locations in the Hume region.

IGEM considers the smoke intelligence module – AQVx – is now complete.

AQVx hosts a combination of satellite imagery, Australian Bureau of Meteorology (BOM) radar, Google trends, air quality information and crowd-sourced health intelligence to display in near real-time where and when smoke is present and could be affecting the community. It provides users with a web-based interface that presents a map of Victoria and the ability to overlay and animate evolving smoke transport. A time slider bar at the top of the screen allows the user to review the movement of smoke over time.

Satellite imagery

AQVx uses satellite imagery from the Japanese operated Himawari-8 satellite which enables the BOM to monitor fire and smoke across Australia. Across 2018–19 CSIRO continued to refine an algorithm that enhances AQVx's ability to distinguish smoke from cloud in the satellite images.

Accessing information from the satellite relies on ongoing funding. DELWP has advised that it is committed to funding the further development of AQVx including existing data feeds. DELWP is currently working with its partners to determine the most suitable source of funding to further enhance the sensor, satellite and data collection network.

Field sensors

Real-time air quality information is accessed through the EPA AirWatch website and through low-cost smoke sensors.

In 2019 CSIRO and DELWP successfully trialled smoke observation gadget (SMOG) sensors at two Victorian Government primary schools – Anglesea and Boolarra – through the science, technology, engineering and mathematics program. The program enabled students to build and operate the sensors and collect data, which is uploaded to the internet. Despite the low cost of the SMOG sensors, they can measure smoke particles (PM2.5) at levels close to more expensive monitoring equipment. CSIRO is planning to expand the program to other schools in Victoria and interstate.

DELWP has deployed permanent SMOG units at six Forest Fire Management Victoria offices in the Hume region.

Social media

AQVx imports data from a crowd sourcing application called AirRaterSmoke, which was made available to community members during the 2019 Autumn planned burning season.

AirRaterSmoke allows community members to:

- obtain information on current particulate matter concentrations
- record any symptoms they are experiencing
- submit reports of smoke sightings, including uploading photos.

This information is then submitted to AQVx which uses it to validate smoke plume locations and to provide information about potential health impacts across locations.

AQVx also incorporates a data feed from Google Trends. Google Trends data provides information on the top search queries in Google Search, is freely available and can be geographically filtered to the region and city.

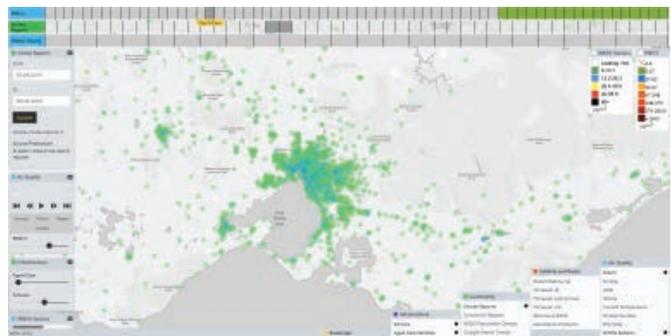
An AQVx documentation and help page has also been developed providing guidance on how to use the tool, including demonstration videos.

AQVx was presented to state planned burn coordinators and interested regional planned burn coordinators through a demonstration at the State Control Centre in April 2019. The tool was also demonstrated at the Australasian Fire and Emergency Service Authorities Council Predictive Services Group meeting in June 2019. CSIRO also engaged with Forest Fire Management Victoria staff at the State Control Centre during the Autumn 2019 planned burning season to gain a better understanding of the user requirements for smoke predictive services.

Finding

IGEM considers this action has been implemented.

Figure 3: AQVx screenshot



Source: DELWP

Table 16: Status of EPA meta-analysis action reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|--------------------------|--|-------------------------------------|---------------------------------------|---------|-------------|
| EPA META-ANALYSIS | | | | | |
| 147 | Release a report on information and knowledge generated from the Hazelwood Mine Fire meta-analysis | 2014 Inquiry report: affirmation 18 | December 2016 (Revised: October 2019) | Ongoing | EPA |

4.4.3 EPA meta-analysis

As an outcome of the 2014 Inquiry report, EPA committed to create a body of knowledge of the impacts of extended brown coal fire events. EPA partnered with emergency response agencies to conduct a meta analysis of air monitoring and environmental data, including smoke plume modelling.

Action 147. Release a report on information and knowledge generated from the Hazelwood Mine Fire meta-analysis

In early 2017 EPA finalised its report on the complete body of information and knowledge generated from the Hazelwood mine fire meta-analysis. EPA shared the report

with agencies to inform emergency response to future brown coal events.

At the time of reporting EPA advised that the public release of this report continues to be delayed pending completion of current legal proceedings relating to the Hazelwood mine fire.

Finding

IGEM notes delays encountered by this action. IGEM will continue to monitor this action.

4.5 Latrobe Valley coal mine regulation

DJPR, WorkSafe, DELWP and EPA are the main agencies responsible for regulating the Latrobe Valley coal mines.

The 2014 Inquiry and the Mine Rehabilitation Inquiry reports identified the need to improve coal mine regulation in the Latrobe Valley and highlighted gaps in the regulation of fire risk.

The Board of Inquiry made a range of recommendations to improve the regulation of specific risks and strengthen the overall regulatory framework for coal mines in the Latrobe Valley. The Board of Inquiry also identified opportunities to improve the regulation of rehabilitation of mine sites in the Latrobe Valley.

In response, the Victorian Government Implementation Plan set out a series of actions to reform the regulatory framework for coal mines, strengthen expertise and performance within regulatory agencies, and better support mine rehabilitation. These are:

- Recommendation 4 and Affirmations 35 and 39 of the 2014 Inquiry report
- Recommendations 2, 4 and 17 and Affirmations 2 and 3 of the Mine Rehabilitation Inquiry report.

Previous IGEM reports outlined the significant reforms that have taken place since the Inquiry to strengthen the regulation of mining operations in Victoria and the Latrobe Valley. Key regulators have strengthened their technical expertise and improved coordination and collaboration. A broad program of legislative reform is now well advanced, with changes already in place to better regulate the risks of mine operations. Regulators have worked with coal mine operators through new joint forums to address knowledge gaps and improve rehabilitation progress.

The following is a summary of progress on actions relating to Latrobe Valley coal mine regulation that were assessed as ongoing in the 2018 IGEM Hazelwood report. Refer to Appendix A for a full list of actions, including completed actions.

Progress summary

The Victorian Government Implementation Plan lists 15 actions under the Latrobe Valley coal mine regulation theme, of which 13 are complete.

Overall, good progress has been made by DJPR, the lead agency responsible for implementation of the two remaining actions in this theme. However, both actions require further time to implement.

DJPR has continued to work with coal mine operators to ensure their proposed work plan variations meet regulatory requirements and set satisfactory progressive rehabilitation milestones. DJPR approved EnergyAustralia Yallourn's work plan variation in March 2019. A work plan variation featuring progressive rehabilitation milestones has yet to be approved for the final coal mine operator, AGL Loy Yang.

DJPR expects implementation of the legislative, policy and administrative reforms to the Latrobe Valley coal mines' regulatory framework to be completed in 2020, an extension of two years from the timeframe in the Victorian Government Implementation Plan.

To advance the reforms, DJPR reintroduced the Mineral Resources (Sustainable Development) Amendment Bill to Parliament in June 2019. The Bill provides for the establishment of a Mine Land Rehabilitation Authority from 1 July 2020 to monitor, maintain and manage registered declared mine land – the Latrobe Valley coal mines are currently the only declared mines. The Bill also provides the foundation for subsequent policy and administrative reforms.²¹

During 2018–19 DJPR also streamlined and modernised Victoria's existing mining regulations and started to develop new regulations specific to declared mines.

IGEM will continue to monitor the ongoing actions under this theme and report to the Minister for Police and Emergency Services.

Table 17: Status of Latrobe Valley coal mine regulation actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|--|--|---|---------------------------|-------------------|-------------|
| LATROBE VALLEY COAL MINE REGULATION | | | | | |
| 158 | Develop progressive rehabilitation milestones, with support from the TRB or other experts | Mine Rehabilitation Inquiry report: recommendation 4 | December 2016 | Ongoing (overdue) | DJPR |
| 162 | Implement policy, administrative and legislative reforms for the Latrobe Valley Coal Mines' regulatory framework | Mine Rehabilitation Inquiry report: recommendation 17 | June 2018 (Revised: 2020) | Ongoing | DJPR |

²¹ The Mineral Resources (Sustainable Development) Amendment Bill 2019 was subsequently enacted in September 2019, following the reporting period for lead organisations.

Action 158. Develop progressive rehabilitation milestones, with support from the TRB or other experts

This action is linked to Recommendation 19 in chapter 6.

The *Mineral Resources (Sustainable Development) Act 1990* (MR(SD) Act) establishes the legal framework to ensure mined land is rehabilitated.

The Mine Rehabilitation Inquiry report recognised the importance of progressive rehabilitation²² to reducing fire risk, and recommended that the government, in consultation with the mine operators:

- increase the rate of progressive rehabilitation by developing milestones within the mines' progressive rehabilitation plans
- require the successful achievement of the milestones.

Progressive rehabilitation forms part of work plans and work plan variations developed by mine operators and approved by DJPR as the regulator.

Since 2016 all three mine operators have submitted work plan variations to DJPR that incorporate progressive rehabilitation milestones. DJPR has assessed the documents with support from the Technical Review Board (TRB), the Latrobe Valley Mine Rehabilitation Commissioner (LVMRC) and referral agencies.

DJPR approved ENGIE's work plan variation for the Hazelwood mine in December 2017, including rehabilitation milestones for the immediate post-station closure and closure planning period.

In mid-2018 DJPR introduced policy changes intended to simplify and streamline work plan variation approval processes.²³ DJPR also published detailed guidance in January 2019 to assist coal mine operators with the preparation of work plans, work plan variations and work plan notifications.²⁴

DJPR approved EnergyAustralia Yallourn's work plan variation in March 2019, both parties having worked to bring the document in line with regulatory requirements over the preceding months. The approved work plan variation includes progressive rehabilitation milestones, and a condition that the rehabilitation and closure plan be updated to account for any outcomes of the LVRRS which is due mid-2020 (refer to section 4.7).

DJPR has yet to approve AGL Loy Yang's work plan variation and continues to work with AGL Loy Yang to ensure regulatory requirements are addressed. In June 2019 DJPR wrote to AGL Loy Yang requesting it to provide timeframes for submission of an updated work plan variation including progressive rehabilitation milestones.

IGEM notes that completion of this action depends on mine operators satisfactorily meeting regulatory requirements. The time required for mine operators to address DJPR feedback on their work plan variations means the timeframe for completion of this action (December 2016) has not been met.

IGEM considers that this action will be complete once progressive rehabilitation milestones are established in AGL Loy Yang's approved work plan variation.

Finding

IGEM notes progress on this action and that it is overdue. IGEM will continue to monitor this action.

Action 162. Implement policy, administrative and legislative reforms for the Latrobe Valley Coal Mines' regulatory framework

The Board of Inquiry identified significant gaps in the regulatory framework governing the Latrobe Valley coal mines, particularly regarding rehabilitation, closure and post closure.

In 2018 IGEM reported completion of the Latrobe Valley Rehabilitation Regulatory Reform Project, which reviewed the regulatory framework for the Latrobe Valley coal mines and developed options for policy, administrative and legislative reform.

Implementation of these reforms began in July 2018 with the introduction to Parliament of the Mineral Resources (Sustainable Development) Amendment Bill 2018 to amend the MR(SD) Act.

The Bill passed the Legislative Assembly in August 2018 but did not pass the Legislative Council before Parliament was dissolved. It was reintroduced in June 2019 as the Mineral Resources (Sustainable Development) Amendment Bill 2019.²⁵

The Bill applies to declared mines – mines determined by the Minister for Resources to pose a significant risk to public safety, the environment or infrastructure. The Latrobe Valley coal mines are currently the only declared mines under the MR(SD) Act.

²² The Mine Rehabilitation report defines progressive rehabilitation as 'the incremental process of mine rehabilitation undertaken during the life of the mine; can only occur on worked out areas of the mine', p. 216.

²³ For more information refer to earthresources.vic.gov.au/legislation-and-regulations/regulation-review-and-reform/statements-of-operating-change

²⁴ Available on earthresources.vic.gov.au/legislation-and-regulations/guidelines-and-codes-of-practice/work-plan-guidelines-for-mining-licences

²⁵ The Mineral Resources (Sustainable Development) Amendment Bill 2019 was enacted in September 2019, following the reporting period for lead organisations.

The Bill includes new provisions for declared mine rehabilitation plans developed by mine operators, which are designed to set clear parameters for mine closure and enable government to make an informed assessment of whether rehabilitation is complete. Rehabilitation plans will need to include:

- closure criteria – conditions to be met by the mine operator before the mine can be closed
- a post-closure plan that sets out the monitoring and maintenance to be carried out after the mine is closed
- an assessment of the risks posed by geotechnical, hydrogeological, water quality and hydrological factors within the mine land.

The Bill includes provisions to establish a Mine Land Rehabilitation Authority on 1 July 2020 to take over the LVMRC's functions in relation to mine rehabilitation and the LVRRS (refer to section 4.7). The Authority will have various functions, including to:

- rehabilitate, monitor, maintain and manage mine land in accordance with post-closure plans
- ensure closure criteria are met before rehabilitation bonds are returned to mine operators
- administer a fund established to subsidise post-closure costs.

DJPR is currently developing new regulations specific to declared mines to sit under the proposed legislation – these are planned to come into effect on 30 June 2020. DJPR advised that it also plans to develop supporting departmental guidelines.

Alongside the ongoing reforms to the Latrobe Valley coal mines' regulatory framework outlined above, DJPR has streamlined and modernised Victoria's mining regulations. The Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019 commenced on 1 July 2019 and replace the previous regulations (although the rehabilitation plan requirements from the previous regulations will continue to apply until 30 June 2020, providing a one-year transition period). The 2019 regulations apply to the Latrobe Valley coal mines until the new regulations specific to declared mines come into effect.

The new regulations make improvements in relation to licence applications, infringements and reporting requirements. They also clarify work plan and rehabilitation plan requirements for new work plans or work plan variations lodged on or after 1 July 2019.²⁶ The new regulations are designed to improve accountability and inform decision making around mine rehabilitation.

Rehabilitation plans in work plan variations lodged on or after 1 July 2020 are required to include information on the final landform, which must be safe, stable and sustainable. They must also include rehabilitation milestones and objectives, and criteria for measuring whether the objectives have been met.

Rehabilitation plans in work plan variations lodged before 1 July 2020 are required to include concepts for the end utilisation of the mine site, proposals for progressive rehabilitation, and proposals for the final rehabilitation and closure of the mine site.

The new regulations were shaped by public input provided through a Regulatory Impact Statement process.²⁷

An Inter-departmental Resources Policy Working Group has contributed to the development of both sets of regulations. Membership comprises representatives of DELWP, DHHS, DJPR, DPC, DTF and EPA.

The original due date for completion of this action was June 2018. In mid-2018 DJPR advised that some of the reforms, such as the establishment of the Mine Land Rehabilitation Authority, would require until 2020 to complete.

Finding

IGEM considers this action is progressing satisfactorily and will continue to monitor this action.



Image: EnergyAustralia Yallourn
Source: EnergyAustralia

²⁶ The rehabilitation plan requirements will apply from 1 July 2020, after a one-year transitional period in which DJPR plans to develop ministerial guidelines to assist industry compliance. For more information refer to earthresources.vic.gov.au/legislation-and-regulations/regulation-review-and-reform/mineral-industries-regulations

²⁷ Refer to earthresources.vic.gov.au/legislation-and-regulations/regulation-review-and-reform/regulatory-impact-statements

4.6 Latrobe Valley coal mine rehabilitation bonds

The Victorian Government Implementation Plan lists 11 actions under the Latrobe Valley coal mine rehabilitation bonds theme. The final action in this theme was reported as complete in the 2018 IGEM Hazelwood report. The following provides a summary of all activity from 2016–18 under this theme.

Background

The 2015–16 Inquiry found that the rehabilitation bonds for each Latrobe Valley coal mine were insufficient to cover the costs of rehabilitation. The purpose of rehabilitation bonds is to ensure financial security should the licensee be unable to meet its rehabilitation obligations.

This section details the government's response to Recommendations 5 to 12 of the Mine Rehabilitation Inquiry report. The recommendations relate to the shortfall that existed between the rehabilitation bonds and the estimated rehabilitation liabilities for the coal mines, and the financial liability for mine rehabilitation when the coal mines are closed.

In response to these recommendations, the Victorian Government Implementation Plan set out a series of actions to ensure the cost of mine rehabilitation in the Latrobe Valley would be borne by the mine operators, and to manage rehabilitation costs into the future.

These actions involved a broad program of reforms, including significant increases in the amounts of rehabilitation bonds for Latrobe Valley coal mine operators and changes to DJPR's bond policy to emphasise the need for accurate estimates of rehabilitation costs.

Rehabilitation bonds

In 2016 the then Minister for Energy and Resources considered the sufficiency of existing rehabilitation bonds and determined that they were insufficient. The minister wrote to each of the Latrobe Valley mine licensees and LCC to consult on a proposal to implement further rehabilitation bonds through a staged approach.

The first two stages, based on the mine operators' self-assessments of rehabilitation costs, set bond amounts at 50 per cent and then at 100 per cent of the self-assessed liability. To support robust self assessments of liability by the mine operators, DJPR and EPA collaborated in 2016 to identify the skills and expertise required to conduct audits of the assessments.

Following the first two stages of bond increases, DJPR revised the rehabilitation bonds policy to place an emphasis on independent assessments to provide greater assurance that estimates of rehabilitation costs are accurate. The revised policy was approved by the Minister for Resources in June 2017. Under the policy, independent assessments are to occur at least every five years or in response to substantial changes to a mine's rehabilitation plan.

Based on independent assessments in line with the policy, DJPR identified the need for a further increase in the bond amount for each of the Latrobe Valley mines. The Minister for Resources and DJPR finalised the third-stage bond increase and published a statement of reasons on the DJPR website in October 2017.

Post mine closure

In November 2016 the government established the Latrobe Valley Authority²⁸ to address the social and economic risks of mine closure on the Latrobe Valley community. The Latrobe Valley Authority has partnered with businesses and the community to deliver a range of initiatives.

In 2018 DJPR determined that costs relating to the ongoing monitoring, maintenance and management of the coal mine sites following closure will be managed through the establishment of a Mine Land Rehabilitation Authority from 1 July 2020 (refer to Action 162).

Table 18: Latrobe Valley coal mine rehabilitation bonds

| MINE | STAGE 1 – TOTAL BOND BY 30 JUNE 2016 | STAGE 2 – TOTAL BOND BY 31 DECEMBER 2016 | STAGE 3 – TOTAL BOND OCTOBER 2017 |
|--------------------------|--------------------------------------|--|-----------------------------------|
| ENGIE Hazelwood | \$36.7 million | \$73.4 million | \$289 million |
| AGL Loy Yang | \$56 million | \$112 million | \$154 million |
| EnergyAustralia Yallourn | \$34.25 million | \$68.5 million | \$148 million |

Source: DJPR

²⁸ Refer to lva.vic.gov.au

4.7 Latrobe Valley Regional Rehabilitation Strategy

The Mine Rehabilitation Inquiry report drew attention to the knowledge gaps surrounding the potential forms of rehabilitation of the Latrobe Valley coal mines. Importantly, the Inquiry recognised the need to consider rehabilitation options for surrounding areas affected by the Latrobe Valley coal mines, in addition to the mine pits themselves.

This section covers the Victorian Government’s response to Recommendations 13, 14 and 18 and Affirmation 3 of the Mine Rehabilitation Inquiry report.

These relate to researching the environmental impacts of proposed mine rehabilitation plans, collaborating with the coal mine operators on an integrated research plan and establishing an independent mine rehabilitation commissioner.

The Victorian Government Implementation Plan sets out a series of actions to deliver the LVRRS, including the Batter Stability Project and five LVRRS stages (refer to Figure 4).

Figure 4: Stages of the LVRRS



Outcome for the community

The Latrobe Valley Regional Rehabilitation Strategy sets a safe, stable and sustainable landform for the Latrobe Valley Coal Mine voids and surrounding areas, providing assurance to the community.

Table 19: Status of Latrobe Valley Regional Rehabilitation Strategy sub-themes

| SUB-THEMES REPORTED AS COMPLETE IN PREVIOUS IGEN HAZELWOOD REPORTS |
|--|
| LVRSS Stage 1: Project initiation |
| LVRSS Stage 2: Existing conditions review |
| SUB-THEMES ASSESSED IN THIS REPORT |
| Batter Stability Project |
| LVRSS Stage 3: Modelling and analysis |
| LVRSS Stage 4: Integrate findings |
| LVRSS Stage 5: Ongoing review and adaptation |

The following is a summary of progress on those actions that were assessed as ongoing in the 2018 IGEN Hazelwood report. Refer to Appendix A for a full list of actions, including completed actions.

Progress summary

The Victorian Government Implementation Plan lists 31 actions under the LVRRS theme, of which 26 have now been completed. Overall, significant progress has been made by DJPR and DELWP, the lead agencies responsible for implementation of the LVRRS. Eight actions were completed in 2018–19.

Across 2018–19 DJPR continued to attend Batter Stability Project Technical Advisory Group (TAG) meetings. IGEN considers that the governance arrangements that are in place combined with DJPR’s continued attendance at the TAG meetings transitions this action to business as usual.

Stage 3 of the LVRRS, 'Modelling and analysis' is now complete. Two major LVRRS stage 3 technical reports were completed in 2018–19.

In April 2019 DJPR completed a regional geotechnical study, which investigated the potential regional ground stability impacts associated with rehabilitation of the Latrobe Valley coal mine voids as pit lakes.

In July 2019 DELWP completed a regional water study, which assessed the feasibility of water-based rehabilitation options for the Latrobe Valley coal mines.

The studies will be used to inform the preparation of the final LVRRS.

The outputs of stage 3 were reviewed by DJPR and DELWP subject matter experts and validated by an independent peer reviewer. Due to the scope and complexities of the technical studies, a small number of tasks have been carried over from stage 3 of the LVRRS into stage 4.

DJPR has integrated the findings and outcomes from parallel studies related to mine rehabilitation, through coordination with the Latrobe Valley mine operators' research programs, attendance at working groups and knowledge exchange forums, and the development of a cloud-based knowledge management framework.

In July 2019 DJPR published an annual report, *Latrobe Valley Regional Rehabilitation Strategy Progress Report July 2018–June 2019*. The report summarises the findings of the regional geotechnical study and the regional water study and sets out the future activities to be completed across 2019–20.

DJPR and DELWP have also made progress on stage 4 of the LVRRS.

In July 2019 DELWP completed a review of the Latrobe Valley coal mine water entitlements and licenses and investigated how these licenses would apply if maintained as the future water access requirements for mine rehabilitation.

In July 2019 DJPR completed a review of the policy, administrative or legislative mechanisms necessary to implement the LVRRS and require the Latrobe Valley coal mine license holders to comply.

Future assurance

The MR(SD) Act requires the LVMRC to prepare a monitoring and evaluation framework for Latrobe Valley coal mine rehabilitation planning activities. In 2018 the LVMRC released the *Latrobe Valley Rehabilitation Monitoring Framework 2018–20* (the framework).

The framework establishes that the LVMRC will evaluate the progress of LVRRS work against timeframes that need to be met to achieve a completed strategy for regional rehabilitation for the Latrobe Valley.

Any significant concerns the LVMRC has during monitoring will be formally reported in writing to the LVRRS Director and Project Manager. These concerns will also be reported to the Minister for Resources through the LVMRC's monthly briefing reports.

IGEM is satisfied that these arrangements will provide appropriate and sufficient assurance for the delivery of the final LVRRS, which is due in June 2020. This report therefore concludes IGEM's monitoring of the implementation progress of the LVRRS.

4.7.1 Batter Stability Project

Mine batters are the sloping pit walls between the top of the mine and the pit floor. If these slopes become unstable, this can present a risk to the safety of workers, the community, public infrastructure, and the environment.

The Batter Stability Project involves research to improve the understanding of the impact of engineering, geology and hydrogeological processes on brown coal mine stability. The project is based on field work at the EnergyAustralia Yallourn mine, with research undertaken by Federation University Australia with technical support from DJPR. The service agreement between EnergyAustralia and DJPR was reported as complete in the 2017 IGEM Hazelwood report, with all milestones met and invoices paid.

The findings of the research will be used across Victoria's open pit coal mines to help prevent major accidents, such as wall collapses, and will inform individual mine rehabilitation plans and the LVRRS. The project is expected to be completed by June 2020.



Image: Batter before grassing, EnergyAustralia Yallourn
Source: EnergyAustralia

Table 20: Status of Batter Stability Project actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|---------------------------------|---|---|----------|----------|-------------|
| BATTER STABILITY PROJECT | | | | | |
| 177 | Participate in the Technical Advisory Group administered by Federation University as required | Mine Rehabilitation Inquiry report: affirmation 3 | Ongoing | Complete | DJPR |

Action 177. Participate in the Technical Advisory Group administered by Federation University as required

Established in 2016, the Batter Stability Project TAG is administered by Federation University Australia to provide technical expert advice to the Batter Stability Project team. The TAG includes representatives from DJPR, Latrobe Valley mine operators, Federation University Australia as well as the LVMRC.

The primary functions of the TAG are to advise on:

- technical matters related to the scoping, conduct and outputs of the project
- design and implementation of the field, laboratory and analysis programs
- any conflict that may arise in priorities or technical constraints.

The TAG also has an ongoing role to monitor the technical and organisational factors critical to the success of the project and review the technical conduct and outcomes against the approved project scope.

Over the past three years of monitoring, DJPR staff have attended TAG meetings on:

- 23 August 2017
- 14 February 2018
- 7 May 2018
- 21 September 2018
- 12 November 2018
- 11 February 2019
- 7 May 2019.

At the time of reporting, meetings for the remainder of 2019 are scheduled for 5 August 2019 and 11 November 2019.

Governance arrangements in the form of a Terms of Reference have been implemented and outline ongoing quarterly meetings that require at least one representative from each of EnergyAustralia Yallourn, Federation University Australia's Geotechnical and Hydrological Engineering Research Group and DJPR to be present to establish a quorum. The frequency of these meetings is subject to change depending on the availability of the members of the TAG and key decision points in the project.

IGEM considers that these governance arrangements combined with the continued attendance of DJPR at the TAG meetings transitions this action to business as usual.

Finding

IGEM considers this action has been implemented.

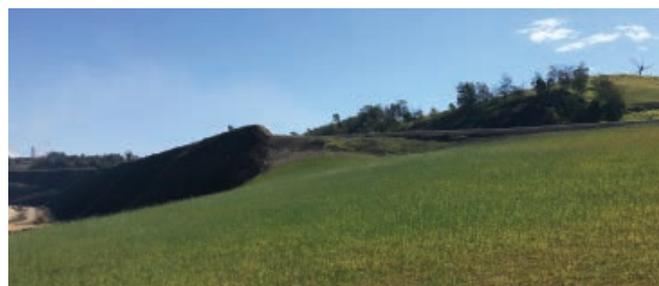


Image: Batter after grassing, EnergyAustralia Yallourn
Source: EnergyAustralia

4.7.2 Latrobe Valley Regional Rehabilitation Strategy – modelling and analysis (stage 3)

Stages 1 and 2 of the LVRRS are complete as outlined in previous IGEM Hazelwood reports.

Stage 3 of the LVRRS sets out to deliver two major regional studies – a regional geotechnical study and a regional water study – to inform plans for the use of pit lakes for the rehabilitation of mine sites. In 2017–18, these studies were progressed through the delivery of consultants' reports and preliminary scoping studies.

During stage 3 a range of important outputs from other regional rehabilitation planning activities will be progressively integrated with the LVRRS. These include:

- the Batter Stability Project being undertaken by Federation University Australia's Geotechnical and Hydrological Engineering Research Group
- the Latrobe Valley Coal Mine Regulatory Review being undertaken by DJPR
- a review of land planning policy being undertaken by DELWP.

Table 21: Status of Latrobe Valley Regional Rehabilitation Strategy – modelling and analysis (stage 3) actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|---|--|---|--------------|----------|-------------|
| LATROBE VALLEY REGIONAL REHABILITATION STRATEGY – MODELLING AND ANALYSIS (STAGE 3) | | | | | |
| 193 | Integrate findings and outcomes from parallel studies related to mine rehabilitation including the Batter Stability Project, MR(SD) Act review and local and state land planning policy review | Mine Rehabilitation Inquiry report: recommendations 14, 15 and 17 | January 2019 | Complete | DJPR |
| 194 | Deliver a regional geotechnical study including: <ul style="list-style-type: none"> • investigation of potential water demands for pit lake fill scenarios • investigation of regional ground stability and associated potential impacts on land use, communities and infrastructure • monitoring – outline likely requirements for long-term regional geotechnical monitoring | Mine Rehabilitation Inquiry report: recommendations 14, 15 and 17 | March 2019 | Complete | DJPR |
| 195 | Deliver a regional water study on the viability of pit lake filling options and impacts, including: <ul style="list-style-type: none"> • potential water availability and use of regional water resources • analysis of potential alternative sources of water to those currently available to the Latrobe Valley Coal Mines, including a high-level technical and financial assessment • potential water quality impacts in pit lakes, groundwater and off-site surface waters • potential impacts on aquatic ecosystems and downstream users • the scope of likely requirements for long-term regional groundwater monitoring | Mine Rehabilitation Inquiry report: recommendations 14, 15 and 17 | March 2019 | Complete | DELWP |
| 196 | Review stage 3 Project outputs and confirm stage 4 work plan, including technical peer review | Mine Rehabilitation Inquiry report: recommendations 14, 15 and 17 | March 2019 | Complete | DJPR |
| 197 | Conduct annual progress review and produce a report | Mine Rehabilitation Inquiry report: recommendations 14, 15 and 17 | July 2019 | Complete | DJPR |

Action 193. Integrate findings and outcomes from parallel studies related to mine rehabilitation including the Batter Stability Project, MR(SD) Act review and local and state land planning policy review

DJPR has integrated findings and outcomes from parallel studies related to mine rehabilitation throughout the life of the LVRRS through the following mechanisms:

Integration with mine operator's research

- Data sharing agreements are in place between DJPR and the three Latrobe Valley mine operators to inform the LVRRS with information held by the mine operators.
- DJPR contributed to the preparation of the Integrated Mines Research Group (IMRG) 10-year research plan, including alignment of the LVRRS and IMRG work programs.
- DJPR's LVRRS project staff continue to attend the IMRG's bimonthly meetings to exchange findings and knowledge between programs.

Knowledge exchange forums

- To integrate findings from the Batter Stability Project, DJPR has attended Batter Stability Project steering committee meetings and TAG meetings to discuss and share information relating to batter stability research and modelling.
- DJPR's LVRRS project staff attend Federation University Australia's Geotechnical and Hydrological Engineering Research Group steering committee meetings to share research findings. The Geotechnical and Hydrological Engineering Research Group works closely with government and industry to improve the safety and sustainability of the Latrobe Valley coal mines.
- As required under Action 183,²⁹ DJPR established the Latrobe Valley Mine Rehabilitation Advisory Committee – which includes representation from key stakeholder groups – to advise on the preparation of the LVRRS and exchange knowledge. The committee meets bimonthly.
- In 2018 the Declared Mine Land Rehabilitation Policy Working Group (a former working group of the Hazelwood IDC) transitioned to the Resources Policy Working Group to reflect the broader scope of policy matters being considered. The Resources Policy Working Group supports the development and alignment of policy in the resources space, particularly land use planning and rehabilitation. In 2019 the Resources Policy Working Group discussed and reviewed the Mineral Resources (Sustainable Development) Amendment Bill in the context of alignment with other Acts, integration across state and federal Acts, and local and state land planning policy reviews.

Information and knowledge management

DJPR has developed a data management framework to enable secure storage, searching and retrieval of information collected and generated as part of the LVRRS (refer to Figure 5). The data management framework is a cloud-based database that can be progressively populated

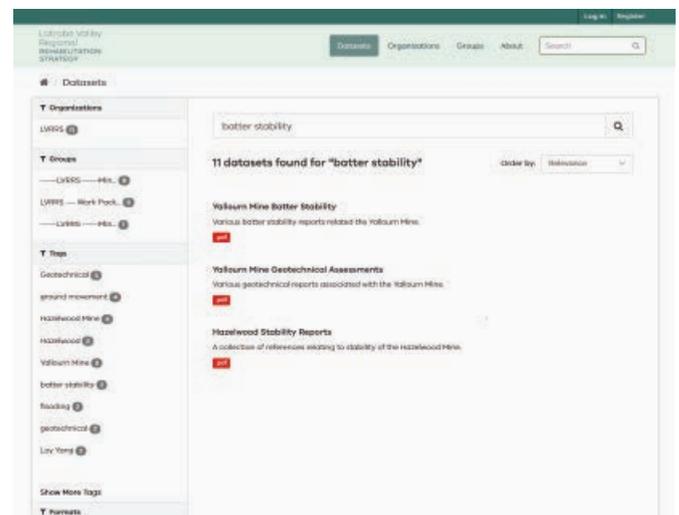
with information as it becomes available. DJPR provided IGEM with access to the database. IGEM observed that it includes, but is not limited to, information relating to batter stability, local planning and technical studies relevant to the regional geotechnical study and the regional water study – refer to Actions 194 and 195.

DJPR advised that the LVRRS will continue to progressively integrate findings from relevant research programs.

Finding

IGEM considers this action has been implemented.

Figure 5: LVRRS data management framework



Source: DJPR

Action 194. Deliver a regional geotechnical study including:

- investigation of potential water demands for pit lake fill scenarios
- investigation of regional ground stability and associated potential impacts on land use, communities and infrastructure
- monitoring – outline likely requirements for long-term regional geotechnical monitoring

The regional geotechnical study set out to investigate potential regional ground stability impacts associated with rehabilitation of the Latrobe Valley coal mine voids as pit lakes and to inform the preparation of the final LVRRS.

In 2018 DJPR provided IGEM with a series of consultant reports as preliminary work for the regional geotechnical study, including the *Latrobe Valley Regional Rehabilitation Strategy – Receptors and Scenarios report*. The report investigates potential water demands for various pit lake fill scenarios and acquires the first element of this action.

²⁹ IGEM reported Action 183 as complete in its 2017 Hazelwood report.

In 2019 DJPR provided IGEM with the second draft of its consultant report *Regional Geotechnical Study – Preliminary Assessment*. The report findings are based on an evolving knowledge base of geotechnical processes and impacts and form the major component of the regional geotechnical study. The study investigates potential regional ground stability issues and associated impacts on water, environmental, Aboriginal and cultural heritage receptors as well as buildings and structures. The study also provided:

- a technical analysis of historical information relating to the effects of mining in the past, including a summary of historical failures, significant ground movements, seismic events, flooding, geology, and hydrogeology
- a feasibility study of the implications of ground movement resulting from partially or totally filling the three mine voids with water, and the impact on receptors³⁰ beyond each mine crest.

The LVRRS 2018–19 progress report outlines the following key findings from the regional geotechnical study:

- there has been gradual subsidence in land level at a regional scale associated with mining and due to groundwater extraction for mine stability
- if rehabilitation is well planned, regional ground movements associated with mine rehabilitation are predicted to be within the range of movements already experienced over the history of mining in the region
- ground movements following mine rehabilitation will require further research and long-term monitoring, with adaptive management measures as necessary
- control of surface water drainage around the mine voids is a key element to achieving safe and stable rehabilitated mine sites
- coal fire risk is best managed by covering exposed coal with soil or water, and a long-term cover maintenance plan will be required.

Although the regional geotechnical study has been completed, DJPR advised that due to delays in establishing data sharing agreements with the three Latrobe Valley coal mine operators, the regional geotechnical study semi-quantitative analysis and preparation of a draft regional geotechnical monitoring plan are now scheduled for delivery in stage 4 of the LVRRS – refer to Action 196 for further information.

Finding

IGEM considers this action has been implemented.

Action 195. Deliver a regional water study on the viability of pit lake filling options and impacts, including:

- potential water availability and use of regional water resources
- analysis of potential alternative sources of water to those currently available to the Latrobe Valley Coal Mines, including a high-level technical and financial assessment
- potential water quality impacts in pit lakes, ground water and off-site surface waters
- potential impacts on aquatic ecosystems and downstream users
- the scope of likely requirements for long-term regional groundwater monitoring

The regional water study set out to assess the viability and potential impacts and benefits of filling the Latrobe Valley coal mines with water as a rehabilitation option and understand the associated water related constraints. The regional water study will also be used to inform the development of the LVRRS.

In July 2019 DELWP produced a peer-reviewed summary report, the *Latrobe Valley Regional Rehabilitation Strategy – Regional Water Study (Action 195) – Summary Report*. The report summarises the findings and conclusions of 13 technical studies that comprise the regional water study and completes the implementation of this action.

DELWP commissioned consultants with specialist skills to undertake 11 studies and DELWP completed the two remaining studies. DELWP advised that all 13 studies have been peer reviewed and are subject to further review by the LVMRRC.

Each element of Action 195 is addressed through a separate technical paper (or multiple papers). The studies that constitute the regional water study are:

- environmental effects scoping study
- climate change projections
- water supply feasibility assessment
- integrated water resource modelling scoping study
- pit lake modelling scoping study
- environmental flow recommendations
- water availability
- water use scenarios
- groundwater flux modelling
- regional groundwater modelling (regional groundwater projections)
- water-related effects assessments
- water availability for mine rehabilitation
- pit lake modelling.

³⁰ Receptors are described in the consultant's report as the environmental, physical infrastructure or social attributes that are considered as important in assessing potential cumulative impacts.

The LVRRS 2018–19 progress report outlines the following key findings from the regional water study:

- the allocation and management of water for mine rehabilitation should be adaptive to periods of dry and wet conditions
- at present there are no alternative sources of water of suitable quality, volume or price that would be considered feasible to assist in mine rehabilitation compared to existing water sources
- no significant water quality risks were identified at any of the mines based on current knowledge, although this will need to be reassessed by the mine operators over the course of the mine rehabilitation planning period
- minimum environmental flow recommendations were identified for the Latrobe River and associated wetlands to ensure that these flow requirements and potential ecological impacts are protected
- groundwater level changes can be adequately monitored using the existing private and state-owned monitoring network if it is maintained and accessible.

Although DELWP has delivered the regional water study, an internal review of the work determined that three tasks from the study will be carried over to stage 4 of the LVRRS due to the need to better clarify input information – refer to Action 196 for further information.

Finding

IGEM considers this action has been implemented.

Action 196. Review stage 3 Project outputs and confirm stage 4 work plan, including technical peer review

DJPR has completed the review of the stage 3 outputs of the LVRRS. The review involved three steps:

- an internal technical review of outcomes and deliverables, noting key findings and any uncertainties to be addressed in further LVRRS work
- a review of learnings to date and identification of changes that may be required to the stage 4 work plan
- a technical peer review of the process undertaken to consider the stage 3 outputs and to refine the stage 4 work plan to confirm that the activities were adequately undertaken and documented.

Internal technical review

In April 2019 DJPR and DELWP subject matter experts completed an internal technical review of their respective actions under stage 3 and each produced a review report. Both reports found that the outputs of stage 3 work were fit for purpose and met the intent of the LVRRS. Both reports also identified that some tasks have experienced delays and will now be incorporated into the stage 4 LVRRS work plan.

DJPR determined that – due to delays in establishing data sharing agreements with the three Latrobe Valley coal mine operators – the regional geotechnical study semi-quantitative analysis and preparation of a draft regional geotechnical monitoring plan are now scheduled for delivery in stage 4 of the LVRRS. The changes were approved by the LVRRS executive directors' steering committee in September 2017. The DJPR report also identified five supplementary tasks needed to support the intent of the LVRRS that will be built into the stage 4 work plan, these are:

- complete a review of fire-related research
- undertake a mine-scale risk assessment of ground stability and fire risk during mine rehabilitation
- establish principles for the LVRRS to ensure all stakeholders are clear and agree on what will be delivered in June 2020
- coal resource sterilisation – assess the potential offset requirements from a pit lake to any future mining operation for the management of safe and stable ground conditions at each site
- prepare a plan to inform stakeholders on LVRRS outcomes and to seek feedback on its implementation.

DELWP determined that several tasks scoped for stage 3 were delayed due to the need to better clarify input information and will be carried over into stage 4 of the LVRRS. These tasks are:

- groundwater scenario modelling
- surface water scenario modelling
- water supply security assessment.

Technical peer review

In April 2019 an independent consultant provided DJPR with a peer review report. The report aimed to ensure that the learnings and outcomes of stage 3 are clear, and have been used in refining and confirming the stage 4 work program.

The review found that both the DELWP and DJPR reviews of stage 3 actions were completed in a satisfactory and comprehensive manner and that changes planned for incorporation into stage 4 were appropriate.

Finding

IGEM considers this action has been implemented.

Action 197. Conduct annual progress review and produce a report

DJPR has completed its *Latrobe Valley Regional Rehabilitation Strategy Progress Report July 2018–June 2019*.³¹

The report includes:

- a summary of the three technical studies completed during stage 3 of the LVRRS; a regional geotechnical study, regional water study and regional land use study
- future activities planned for 2019–20.

Finding

IGEM considers this action has been implemented.

4.7.3 Latrobe Valley Regional Rehabilitation Strategy – integrate findings (stage 4)

Stage 4 of the LVRRS includes:

- a review of the mechanisms necessary to implement the LVRRS
- a review of Latrobe Valley coal mine and power generator water entitlements and licenses required to implement and comply with the LVRRS
- a draft assessment of potential impacts at a regional scale
- a draft integrated regional scale mine rehabilitation strategy
- an assessment of potential impacts at a regional scale
- an integrated regional scale mine rehabilitation strategy.

Table 22: Status of Latrobe Valley Regional Rehabilitation Strategy – integrate findings (stage 4) actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|---|--|---|---------------|----------|---------------------------|
| LATROBE VALLEY REGIONAL REHABILITATION STRATEGY – INTEGRATE FINDINGS (STAGE 4) | | | | | |
| 198 | Review and identify policy, administrative or legislative mechanisms necessary to implement the Latrobe Valley Regional Rehabilitation Strategy and require the Latrobe Valley Coal Mine licence holders to comply | Mine Rehabilitation Inquiry report: recommendation 17 | June 2019 | Complete | DJPR |
| 199 | Review of the Latrobe Valley Coal Mine and power generator water entitlements and licences that may be required to implement and comply with the Latrobe Valley Regional Rehabilitation Strategy | Mine Rehabilitation Inquiry report: recommendations 14 and 15 | June 2019 | Complete | DELWP |
| 200 | Release draft assessment of potential impacts at a regional scale for consultation | Mine Rehabilitation Inquiry report: recommendations 14 and 15 | December 2019 | Ongoing | DJPR (with DELWP support) |
| 201 | Release draft integrated regional scale mine rehabilitation Strategy for consultation | Mine Rehabilitation Inquiry report: recommendations 14 and 15 | December 2019 | Ongoing | DJPR |
| 202 | Assess potential impacts at a regional scale | Mine Rehabilitation Inquiry report: recommendations 14 and 15 | June 2020 | Ongoing | DJPR (with DELWP support) |
| 203 | Deliver integrated regional scale mine rehabilitation strategy | Mine Rehabilitation Inquiry report: recommendations 14 and 15 | June 2020 | Ongoing | DJPR |

³¹ Available on earthresources.vic.gov.au/projects/lvrrs/project-information-and-factsheets/progress-reports

Action 198. Review and identify policy, administrative or legislative mechanisms necessary to implement the Latrobe Valley Regional Rehabilitation Strategy and require the Latrobe Valley Coal Mine licence holders to comply

DJPR advised that as the LVRRS is due for release in June 2020, its review of policy, administrative or legislative mechanisms necessary to implement the LVRRS will take place in two parts:

- a review of policy and legislation changes identified up to June 2019
- a register to be maintained by the project team and updated beyond June 2019 as the content of the LVRRS is refined and new policy or legislative mechanisms required to complete the content are identified (the register will build on Appendix 1 of the review).

DJPR completed its review of identified policy and legislation changes in July 2019. Appendix 1 of the review provides a live document that sets out the legislative policy and license changes potentially required to implement the LVRRS, which DJPR will maintain and update as the LVRRS evolves into a final document. The review covered the following areas.

Resources

The Mineral Resources (Sustainable Development) Amendment Bill 2019³² sets out a broad enabling framework from which the LVRRS can operate. It will:

- replace the LVMRC with a Mine Land Rehabilitation Authority, with broader powers including to monitor implementation of the LVRRS
- clarify the rehabilitation and post-closure obligations of Latrobe Valley coal mines and future declared mines
- require all declared mine licensees to prepare a Declared Mine Rehabilitation Plan, which must be approved by the department head
- establish a post-closure fund for the maintenance and management of former declared mine land after rehabilitation is complete.

The Bill also includes provisions for DJPR to make regulations in relation to the rehabilitation and closure of declared mine land. DJPR advised that its legislative reform program includes work to develop new regulations under this enabling provision.

This action also required DJPR to consider the mechanisms required to make the Latrobe Valley coal mine licence holders comply with the LVRRS. DJPR identified that neither existing legislation, nor the 2019 Bill, strictly require a licensee to comply with any part of the LVRRS. However, a licensee may need to take the LVRRS into consideration at the following points:

- New section 84AZV requires that in considering a Declared Mine Rehabilitation Plan the department head is to consult with the Mine Land Rehabilitation Authority which must, in carrying out its functions, have regard to the LVRRS.
- New section 84AZZ provides that in receiving an application to determine if closure criteria have been met, the minister must request advice from the Mine Land Rehabilitation Authority on the application. Again, the Authority must provide this advice with regard to the LVRRS.

Water

The review notes that the water component will be addressed in DELWP's review of the Latrobe Valley coal mine and power generator water entitlements and licences that may be required to implement and comply with the LVRRS – refer to Action 199.

Planning and environment

DJPR notes in the review that planning and environment were addressed in conjunction with DELWP. The planning review identified scope for further amendments to state and regional policy, with the environment review identifying no current requirement for amendments.

Finding

IGEM considers this action has been implemented.

³² The Mineral Resources (Sustainable Development) Amendment Bill 2019 was subsequently enacted in September 2019, following the reporting period for lead organisations.

Action 199. Review of the Latrobe Valley Coal Mine and power generator water entitlements and licences that may be required to implement and comply with the Latrobe Valley Regional Rehabilitation Strategy

In July 2019 DELWP produced a draft report 'Hazelwood Mine Fire Implementation Plan Action 199 – Review of entitlements and licensing options for mine rehabilitation' (the report).

The report draws on learnings from the regional water study (refer to Action 195) which found that compared to existing water sources, no suitable alternative water source was considered feasible to assist in mine rehabilitation.

The report examined the current water entitlements, agreements and licences for the three Latrobe Valley coal mines, and briefly described how these licenses would apply if maintained as the future water access arrangements.

The report also identifies steps for future work, as the regional water study provides an evolving understanding of future water requirements. The report states that particular consideration will be given to:

- the potential options for bulk water entitlements held by the Latrobe Valley power generators
- stakeholder and community views of different water access arrangements
- how water access may be achieved while minimising impact on consumptive users, the environment and cultural values.

Finding

IGEM considers this action has been implemented.

Actions 200 to 203

These actions are contingent on the completion of stage 3 of the LVRRS.

As previously reported by IGEM, DJPR advised that Action 200 had commenced with finalisation of the *Latrobe Valley Regional Rehabilitation Strategy: Program Summary*.

DJPR and DELWP have prepared draft principles, an engagement time line and a draft plan for delivering Actions 200 to 204.

The principles include a process for reviewing the findings of the consultation and preparing a final LVRRS. DJPR has advised that it anticipates this work will be carried out between late 2019 and early 2020.

Finding

IGEM notes these actions are in the early stages of development.

4.7.4 Stage 5 – Ongoing review and adaptation (subsequent work)

Table 23: Status of stage 5 – ongoing review and adaptation (subsequent work) action reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|--|---|--|--------------------------------|---------|-------------|
| STAGE 5 – ONGOING REVIEW AND ADAPTATION (SUBSEQUENT WORK) | | | | | |
| 204 | Ongoing monitoring and adaptation of the Latrobe Valley Regional Rehabilitation Strategy as new information becomes available, including research and in-mine trials by the operators of the Latrobe Valley Coal Mines and progressive rehabilitation | Mine Rehabilitation Inquiry report: recommendations 4 and 18 | Business as usual by June 2020 | Ongoing | DJPR |

Action 204. Ongoing monitoring and adaptation of the Latrobe Valley Regional Rehabilitation Strategy as new information becomes available, including research and in-mine trials by the operators of the Latrobe Valley Coal Mines and progressive rehabilitation

This action is contingent on completion of stage 4 of the LVRRS (refer to Actions 200 to 203).

The LVRRS is due to be delivered by 30 June 2020. Implementation will then enter stage 5 – Ongoing review and adaptation.

DJPR and DELWP's 2018–19 progress report on development of the LVRRS³³ recognises the need for ongoing monitoring of the strategy's implementation to inform future updates to the LVRRS as mine rehabilitation research, planning and works progress.

Provisions are already in place in the MR(SD) Act to allow the LVRRS to be adapted in response to new information becoming available, such as research findings or rehabilitation trial results. The MR(SD) Act:

- requires the Minister for Resources to review the LVRRS at least once every three years after it is published
- empowers the Minister for Resources to amend the LVRRS at any time, after consulting the Mine Land Rehabilitation Authority.³⁴

Finding

IGEM notes this action is in the early stages of development.

4.8 Emergency management planning, response and recovery

The 2014 Inquiry report includes a number of recommendations and affirmations about the integration of industry into emergency management arrangements, as well as the way the state can build capacity to respond to coal mine fires and other incidents across the Latrobe Valley.

This section covers the Victorian Government's response to Recommendation 2 and Affirmation 10 of the 2014 Inquiry report.

The Victorian Government Implementation Plan lists the following sub-themes, with associated actions, under the emergency management planning, response and recovery theme.

Table 24: Status of emergency management planning, response and recovery sub-themes

| SUB-THEMES REPORTED AS COMPLETE IN PREVIOUS IGEM HAZELWOOD REPORTS |
|--|
| Industry integration in emergency management |
| Natural disaster recovery assistance payment |
| SUB-THEMES ASSESSED IN THIS REPORT |
| Emergency management planning |
| Emergency management training |
| Local government capability |

The following is a summary of progress on those sub-themes and actions that were assessed as ongoing in the 2018 IGEM Hazelwood report. Refer to Appendix A for a full list of actions, including completed actions.

Progress summary

The Victorian Government Implementation Plan lists 42 actions under the emergency management planning, response and recovery theme, of which 37 are now complete.

One action under this theme was reported as complete in 2018–19, with the CFA finalising development of a blended learning program for fighting brown coal mine fires.

The remaining five actions have all previously required extensions to timeframes originally set out in the Victorian Government Implementation Plan. EMV and DELWP continue to make good progress on their respective actions under this theme, however, MFB and CFA led actions have continued to experience delays to their implementation.

The Emergency Management Legislation Amendment Bill 2018 passed through Parliament in August 2018, establishing new arrangements for emergency management planning in Victoria commencing on 1 December 2020. EMV is progressing a program of work to support phased implementation at the state, regional and municipal levels. In consultation with the emergency management sector, EMV is leading the development of a State Emergency Management Plan and accompanying planning guidelines. EMV has also established a program office to support the work and an IDC to provide oversight and advice.

There have been further delays in MFB's provision of personal monitoring equipment to its firefighters with a preliminary supply of the monitors now due in November 2019 and the remaining supply to be delivered by June 2020.

CFA's delivery of face to face brown coal mine firefighter training to career staff has been delayed due to the need to consult with key stakeholders.

³³ Available at earthresources.vic.gov.au/projects/lvrrs/project-information-and-factsheets/progress-reports

³⁴ The Mineral Resources (Sustainable Development) Amendment Bill 2019 provides for the establishment of a Mine Land Rehabilitation Authority on 1 July 2020 (refer to Action 162).

Local Government Victoria (LGV) advanced work on the second phase of a three-phase project to build the capability and capacity of local governments to meet their emergency management responsibilities. Between April and July 2019 LGV worked with councils to evaluate their current and target capability and capacity levels. LGV intends to produce a summary report of the results in late 2019, which will inform phase three of the project – developing plans to address capability and capacity gaps.

IGEM will continue to monitor the ongoing actions under this theme and report to the Minister for Police and Emergency Services.

4.8.1 Emergency management planning

The 2014 Inquiry found that fire management planning is not adequate or effective without an approach that involves the active engagement of all relevant entities.

The Victorian Government Implementation Plan set out a series of actions to improve emergency management planning, including a significant program of legislative reform that would strengthen planning requirements at a regional scale and support an ‘all communities, all emergencies’ integrated approach.

Table 25: Status of emergency management planning actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|--------------------------------------|--|---|--|---------|-------------|
| EMERGENCY MANAGEMENT PLANNING | | | | | |
| 225 | Full implementation of the Emergency Management Legislative Amendment (Planning) Bill 2016 | 2014 Inquiry report: recommendation 3 and affirmations 8 and 37 | December 2018 (Revised: December 2020) | Ongoing | EMV |

Action 225. Full implementation of the Emergency Management Legislative Amendment (Planning) Bill 2016

EMV led the development of the Emergency Management Legislation Amendment Bill 2018, which was introduced into Parliament in February 2018 and enacted on 21 August 2018. The legislation establishes new arrangements for emergency management planning in Victoria and carries a default commencement date of 1 December 2020.³⁵

The legislation provides new governance arrangements to underpin planning at the state, regional and municipal levels. This includes new Regional Emergency Management Planning Committees and Municipal Emergency Management Planning Committees – multi-agency committees with shared responsibility for emergency management planning for their region or municipal district.

The legislation also sets out key requirements for preparing emergency management plans, which must address mitigation, response and recovery, and specify the roles and responsibilities of agencies in relation to emergency management. In addition, oversight and assurance measures aim to assist compliance with the new arrangements and promote effective emergency management planning. IGEM is provided an ongoing role to monitor, review and assess emergency management planning at a system level.

The legislation will be implemented in phases, beginning with changes to emergency management planning at the state level, then the regional level, and then the municipal level (refer to Figure 6). The existing arrangements remain in place at each level until the new framework is rolled out for that level.

EMV has established a program office to support implementation of the planning reforms. A time-limited Emergency Management Planning Reform IDC chaired by the EMC has also been established to provide oversight and advice on the program.³⁶ The first IDC meeting is scheduled for August 2019. IGEM has an observer role on the IDC.

EMV is currently progressing a program of work to support implementation. Key program deliverables are:

- State Emergency Management Planning Guidelines – approval by the Minister for Police and Emergency Services for release in late 2019
- State Emergency Management Plan – approval by the State Crisis and Resilience Council in November 2019, to take effect from March 2020
- Regional Emergency Management Planning Guidelines – approval by the Minister for Police and Emergency Services for release by March 2020
- eight Regional Emergency Management Plans – approval by the EMC, to take effect from December 2020
- Municipal Emergency Management Planning Guidelines – approval by the Minister for Police and Emergency Services for release by December 2020.

EMV has consulted with a range of organisations as part of planning for implementation, and plans to consult with the emergency management sector during development of the State Emergency Management Plan and planning guidelines, in accordance with requirements in the legislation.

³⁵ For more information refer to engage.vic.gov.au/emergency-management-legislation-amendment-planning-bill-2016

³⁶ The IDC includes representatives of Ambulance Victoria, CFA, DELWP, DET, DHHS, DJPR, DOT, DPC, DTF, EMV, LGV, MFB, Municipal Association Victoria, Red Cross, VICSES, Victoria Police, and the Victorian Managed Insurance Authority.

IGEM notes that under section 60AC(b) of the new legislation, a relevant preparer must ensure that they have regard to any relevant guidelines issued under section 77 in the course of preparing the emergency management plan.

IGEM considers this action will be complete once the new emergency management arrangements are in place at state, regional and municipal levels.

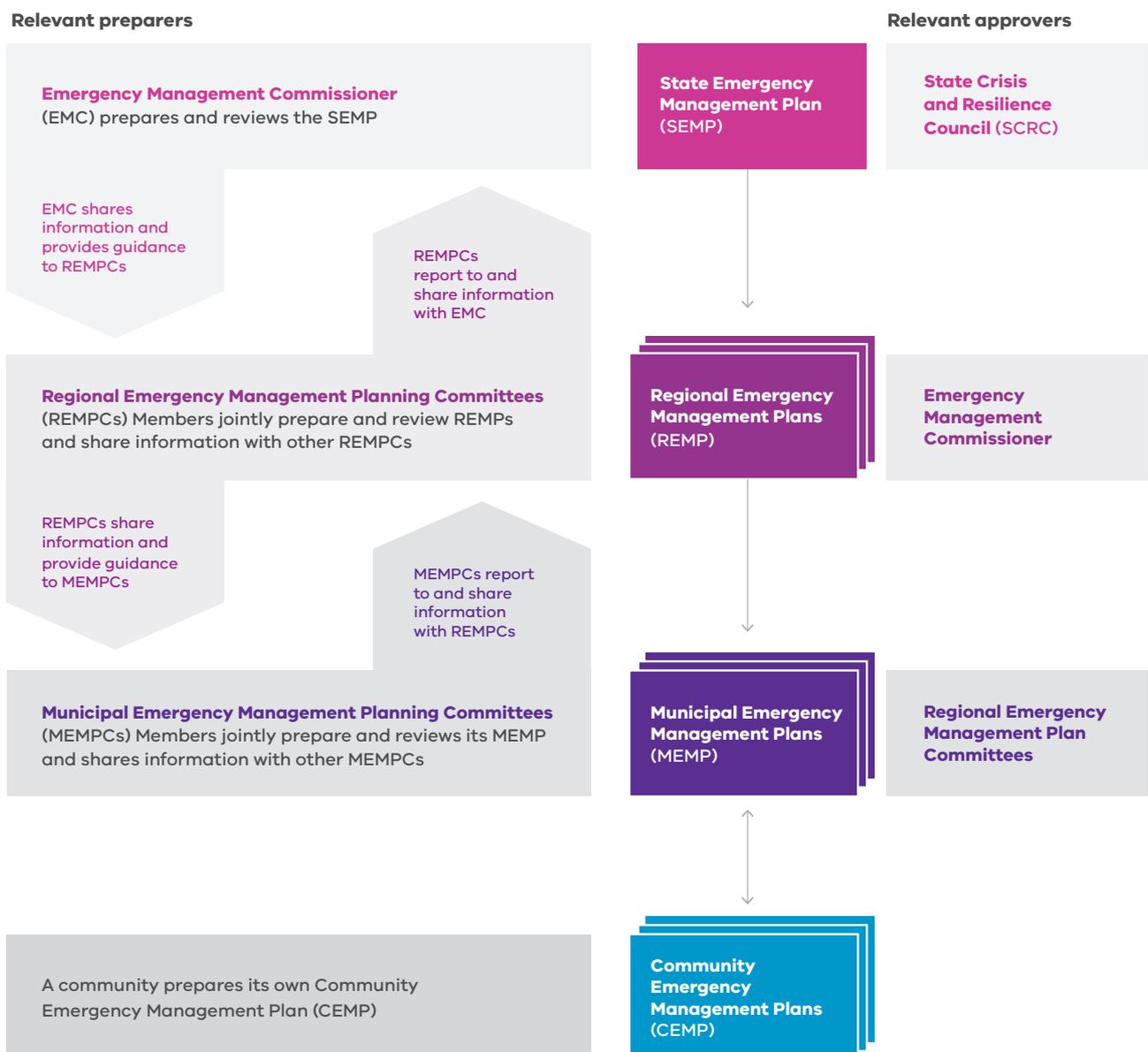
The current due date for this action is December 2020, and it is expected that the legislation will have taken full effect at that time. IGEM notes that the new municipal level plans

will not be in place by then. In August 2019, EMV reported to State Crisis and Resilience Council subcommittees that all current Municipal Emergency Management Plans will roll over and the development of new plans will occur from 2021.

Finding

IGEM notes progress on this action. IGEM will continue to monitor this action.

Figure 6: Emergency management planning levels



Source: EMV

4.8.2 Emergency management training

The 2014 Inquiry found that fire services were inadequately prepared to respond to the hazardous conditions produced by the Hazelwood mine fire, particularly the risk posed to

firefighters from being exposed to CO, which is lethal in high concentrations. Since 2014 CFA and MFB have worked together to develop training in brown coal mine firefighting, including detection and management of CO emissions.

Table 26: Status of emergency management training actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|--------------------------------------|---|-------------------------------------|--|-------------------|-------------|
| EMERGENCY MANAGEMENT TRAINING | | | | | |
| 233 | Provide personal monitoring equipment to MFB firefighters | 2014 Inquiry report: affirmation 12 | June 2016 (Revised: December 2019) | Ongoing | MFB |
| 235 | Convert pilot Brown Coal Mine Firefighting Training Package into a blended learning program (e-learning and face to face) | 2014 Inquiry report: affirmation 11 | October 2016 (Revised: December 2018) | Complete | CFA |
| 238 | Deliver Brown Coal Mine Firefighting Training Package | 2014 Inquiry report: affirmation 11 | November 2016 (Revised: December 2018) | Ongoing (overdue) | CFA and MFB |

Action 233. Provide personal monitoring equipment to MFB firefighters

The 2017 IGEM Hazelwood report noted MFB's decision to revise the timeframes for completion of this action to coincide with end-of-life cycle replacement of existing monitoring equipment in late 2019.

MFB has planned the procurement of monitoring equipment in two phases, beginning with the purchase of a preliminary supply of detectors to enable personal monitoring at large incidents and to commence training. The main supply of detectors will be purchased once training is underway and the detectors are ready to be placed into service.

In 2018–19 MFB advised that there have been additional delays to the procurement of the new detectors.

MFB now expects the tender process to commence in August 2019. The completion date for the delivery of the preliminary supply of detectors has been revised to December 2019, with the remaining supply of equipment to be delivered by June 2020. When the personal monitoring equipment has been received, MFB will work with its fleet services department to ensure that the monitors are able to be housed and recharged in MFB vehicles.

Finding

IGEM notes that full implementation of this action is now expected to occur at least four years after the original due date of June 2016. IGEM finds that this represents an unreasonable delay.

IGEM considers that this action should be progressed as a priority, noting that further delays in the provision of personal monitoring equipment may present a significant risk to firefighter health and safety. IGEM will continue to monitor this action.

Action 235. Convert pilot Brown Coal Mine Firefighting Training Package into a blended learning program (e-learning and face to face)

CFA conducted a pilot Brown Coal Mine Firefighting Training Package at the end of 2016 in CFA District 27 involving operational personnel from CFA Morwell.

CFA found that the two-day training program was too long, and the classroom setting was logistically impractical. Based on these findings, CFA concluded that a video-based program would be more manageable for wider delivery and decided to convert the training package into a blended learning program of e-learning and face-to-face training.

The 2018 IGEM Hazelwood report noted that CFA developed a training video and would use that as the basis for the e-learning component of the training package. CFA has since uploaded the video to the internal learning management system for all CFA and registered members to complete as part of the e-learning module.

CFA advised that if a significant mine fire occurs, the brown coal training video will form part of the induction process before entering the mine to ensure appropriate awareness of the issues relating to a brown coal mine fire.

CFA has developed a draft strategy for providing face-to-face training for the integrated stations. The face-to-face blended learning package uses the online learning option alongside a CFA instructor who poses verbal questions to ensure an acceptable understanding of brown coal firefighting.

Finding

IGEM considers this action has been implemented.

Action 238. Deliver Brown Coal Mine Firefighting Training Package

CFA completed its blended learning program (refer to Action 235) and has commenced delivery of the Brown Coal Mine Firefighting Training Package. At the time of reporting, 12 CFA members had completed the e-learning, with a further 18 progressing through it. These members are from a variety of CFA districts throughout the state.

CFA advised that delivery of the face-to-face training to career staff has been delayed due to the need to consult with key stakeholders.

IGEM notes that this action was due in December 2018.

Finding

IGEM notes progress on this action and that it is overdue. IGEM will continue to monitor this action.

4.8.3 Local government capability

The 2014 Inquiry report identified a lack of clarity about who was responsible for the implementation of regional and municipal fire management plans, which contributed to the plans not being effectively implemented. The Board of Inquiry expressed concern that the plans, although developed with the involvement of a broad range of stakeholders, were of little practical impact.

Actions 242 to 245 are being addressed through the Enhancing the Capability and Capacity of Local Government Project led by DELWP through LGV. The project will assess capability and capacity across the local government sector to determine whether Victoria's 79 councils have the necessary skills and expertise to meet their emergency management obligations.

The project has three phases. In December 2017 phase one of the project concluded with DELWP's publication of the *Councils and emergencies position paper*. The paper describes the emergency management responsibilities and activities that councils undertake before, during and after an emergency.

The Emergency Management Capability and Capacity Steering Committee provides project governance and advice for these actions.

Action 244 was originally due for completion in December 2017 and Action 245 in December 2018. Timeframes have been revised and the actions are now due for completion in November 2019 and June 2020 respectively.

The Enhancing the Capability and Capacity of Local Government Project also delivers on Priority B of the rolling three-year *Victorian Emergency Management Strategic Action Plan* – Enhancing the capability and capacity of local governments to meet their obligations in the management of emergencies. IGEM will report again on this project in 2020 through its legislative function to monitor implementation progress of the Strategic Action Plan.

Table 27: Status of local government capability actions reported as ongoing in 2018

| NO. | ACTION | RELATED RECOMMENDATION/ AFFIRMATION | DUE DATE | STATUS | LEAD AGENCY |
|------------------------------------|--|-------------------------------------|--|---------|-------------|
| LOCAL GOVERNMENT CAPABILITY | | | | | |
| 244 | Review the capability and capacity required for local government to fulfil their emergency management roles and responsibilities | 2014 Inquiry report: affirmation 31 | December 2017 (Revised: November 2019) | Ongoing | DELWP |
| 245 | Develop an action plan to address any local government emergency management capability and capacity gaps | 2014 Inquiry report: affirmation 31 | December 2018 (Revised: June 2020) | Ongoing | DELWP |

Action 244. Review the capability and capacity required for local government to fulfil their emergency management roles and responsibilities

Action 244 is being addressed through phase two of the three-phase Enhancing the Capability and Capacity of Local Government Project.³⁷

In 2018 LGV developed:

- a maturity³⁸ model – a scale of one (lowest maturity) to five (highest maturity). Each maturity level has corresponding target levels of capability and capacity for each of the emergency management responsibilities and activities that councils undertake
- a web-based evaluation platform for councils to:
 - self-assess their target maturity level, based on their risk profile and available resources
 - self-assess their current capability and capacity against their target maturity level for each emergency management responsibility and activity, and identify any gaps.

In November 2018 LGV successfully piloted the evaluation platform with four Barwon South West region councils. Based on the outcomes of the pilot, DELWP made some changes to the evaluation platform and supporting guidance materials for councils.

Full rollout to all councils took place between April and June 2019. All councils completed an evaluation and had it approved by their CEO.

LGV supported councils with guidance materials, including fact sheets and an online training package to help councils understand and complete their evaluation.

LGV also held a series of regional workshops for councils in April and May 2019. IGEM observed one of the workshops in May 2019, where LGV provided an overview of the project and provided guidance on how to use the evaluation platform.

LGV is preparing a Local Government Emergency Management Capability and Capacity Evaluation Summary Report describing the gaps and strengths in councils' emergency management capability and capacity. Results will be grouped by state, region and theme. Individual council results will not appear in the report.

Release of the summary report in late 2019 will complete phase two and initiate phase three of the project (refer to Action 245). The summary report will be distributed to all councils, state-level agencies and the Municipal Association Victoria, and will be publicly available on LGV's website.³⁹

LGV will also provide each council with a summary report of their own evaluation results and a spreadsheet containing their evaluation data.

Action 244 was originally due for completion in December 2017. The completion date was later extended to December 2018. In January 2019 the project sponsor approved an extension of the completion date to November 2019.

Finding

IGEM notes progress on this action and that timeframes have been revised. IGEM will continue to monitor this action.

Action 245. Develop an action plan to address any local government emergency management capability and capacity gaps

Action 245 will be addressed through the final phase of the three-phase Enhancing the Capability and Capacity of Local Government Project.

LGV will consult with the emergency management sector, including councils, to develop strategies and action plans to address gaps in councils' emergency management capability and capacity identified in phase two (refer to Action 244).

LGV advised that several approaches are available for developing action plans, including grouping plans by region, by municipality or by issue. Action plans are expected to include specific programs and projects developed in consultation with government, community and business stakeholders and partners.

Action 245 was originally due for completion in December 2018. The completion date was later extended to December 2019. In January 2019 the project sponsor approved an extension, noting that the action should commence in December 2019 and be completed by June 2020.

Finding

This action is contingent on Action 244. IGEM notes that timeframes have been revised and will continue to monitor this action.

³⁷ For more information refer to localgovernment.vic.gov.au/our-programs/emergency-management/councils-and-emergencies-project

³⁸ The project defines maturity as a measurement of the ability of an organisation for continuous improvement.

³⁹ Refer to localgovernment.vic.gov.au

5. Progress update – Health Improvement Inquiry report – Health agencies

In the Health Improvement Inquiry report, the Board of Inquiry made two recommendations and 12 affirmations for implementation by the four principal health agencies in the Latrobe Valley,⁴⁰ statutory authorities⁴¹ and state-level non-government health agencies.⁴²

Recommendations 11 and 12 relate to supporting the Latrobe Health Innovation Zone and are directed to the four principal health agencies, statutory authorities and state-level, non-government health agencies.

The 12 affirmations reflect commitments made by statutory authorities, state-level non-government health agencies, the key principal stakeholder agencies and

individual members of expert panels to numerous actions relevant to improving health in the Latrobe Valley in the short, medium and long term.

Affirmations 3, 5, 7, 9, 10 and 11 were reported as complete in the 2017 and 2018 IGEM Hazelwood reports.

The following is a summary of progress on the recommendations and affirmations that were assessed as ongoing in the 2018 IGEM Hazelwood report.

Refer to Appendix A for a full list of recommendations and affirmations, including those previously reported as complete.

Table 28: Status of Health Improvement Inquiry report non-government health agency recommendations and affirmations reported as ongoing in 2018

| NO. | RECOMMENDATION/AFFIRMATION | STATUS |
|--------|---|----------|
| Rec 11 | Commit to, support and promote the Latrobe Valley Health Innovation Zone. In particular they should support health innovations and service integration, including the pooling of resources. | Complete |
| Rec 12 | Commit to, support and promote the Latrobe Valley Health Innovation Zone. These bodies should prioritise the Latrobe Valley Health Innovation Zone for investments in program delivery and health innovation projects, recognising that the lessons learned will have broader application | Complete |
| Aff 1 | The commitment of the principal stakeholder organisations for health in the Latrobe Valley to making improvements in the way that they engage with the Latrobe Valley community. | Complete |
| Aff 2 | The commitment of Latrobe Regional Hospital to continue to develop as a regional hospital for the people of the Latrobe Valley and the wider Gippsland area. The Board considers that the State should give serious consideration to ensuring that future investment in this facility is at least equitable with other regional areas in Victoria. | Complete |
| Aff 4 | The intention of Dr Alistair Wright, general physician from Latrobe Regional Hospital and Dr Daniel Steinfort, respiratory physician from the Royal Melbourne Hospital, to work together to understand the risk profile of the Latrobe Valley relevant to lung cancer, and the implications of this for a possible lung cancer screening program. | Complete |
| Aff 6 | The intention of Monash Health and Latrobe Regional Hospital to consider the development of an advanced physician training program for general physicians in the short term. | Complete |
| Aff 8 | The commitment of state-level statutory and non-government health agencies to assist Latrobe Valley organisations and the broader community to improve health through policies, plans, funding, infrastructure, programs, campaigns, training, research and evaluation, recognising that for action to be effective it needs to be community-led as much as possible. | Complete |
| Aff 12 | The Board affirms work being undertaken by the Community Wellbeing Study (part of the Hazelwood Mine Fire Health Study) to enhance agencies' ability to effectively engage with the Latrobe Valley community. | Complete |

⁴⁰ The Health Improvement Inquiry report defines the four principal health agencies as LRH, LCHS, LCC and Gippsland PHN. These are the key organisations responsible for health and wellbeing in the Latrobe Valley.

⁴¹ Statutory authorities refers to public entities such as the EPA, VicHealth and WorkSafe.

⁴² State-level non-government health agencies refers to non-government agencies that have a specific focus on promoting health and/or preventing or addressing ill health across Victoria, such as Beyond Blue, Cancer Council Victoria, Diabetes Victoria, Heart Foundation, the Victorian Branch of the Public Health Association Australia, Quit Victoria and the Victorian Healthcare Association.

5.1 Health Improvement Inquiry report: Recommendation 11

This recommendation is linked to section 4.3 and Affirmation 8.

The Board of Inquiry recommended that each of the principal health agencies in the Latrobe Valley commit to, support and promote the Latrobe Health Innovation Zone. In particular, they should support health innovations and service integration, including the pooling of resources.

Figure 7: Graphical representation of the Latrobe Health Innovation Zone charter



Source: LHA

Governance and coordination

Across 2018–19 the four principal health agencies have continued to demonstrate their commitment to, and support for the Latrobe Health Innovation Zone.

Gippsland PHN, LCC, LCHS and LRH are all foundation members of the Health Assembly and have included Latrobe Health Innovation Zone and related activities as standing agenda items for their respective advisory groups and committees.

In addition:

- LCHS is represented on the Health Assembly Better Care Pillar Group⁴³
- LCHS has undergone a Primary Health Directorate restructure, which is part of an ongoing commitment to provide integrated and accessible care to the community
- LRH provides support for the staffing and operations of the Health Assembly.

LCHS has continued its involvement in the steering committee meetings and has been working collaboratively with LRH to upskill staff and deliver mental health clinics to the community, as reported in the 2017 IGEN Hazelwood report.

Health innovations

In promoting the Latrobe Health Innovation Zone, the principal health agencies have supported health innovations aimed at improving community health outcomes.

LCHS has implemented a Guided Model of Care, which aims to improve the client's ability to self manage their conditions. The Guided Model of Care categorises clients into self-management categories and creates a care plan specific to the client's goals. It is being implemented by LCHS across current chronic disease management services including the diabetes service, respiratory service, and high risk foot clinics. LCHS plans to expand the use of the Guided Model of Care into other services within the organisation, commencing with the lymphoedema service in July 2019.

In line with Action 78, Gippsland PHN in collaboration with DHHS, has continued working on the Chronic Disease Forum by conducting health sector and health professional conversations and forums across local and statewide providers and experts with the aim of identifying and documenting new and improved care pathways to improve coordination for people in Latrobe with chronic disease. Conversations and forums are due to be completed by September 2019, with a final project report to be provided to the Health Assembly by December 2019.

LCC has continued to run events aimed at improving community health outcomes, pooling resources by partnering with external organisations such as GippSport, VicHealth and Youth Space. Events have included:

- Youth in the Park – a free event with activities such as 3x3 basketball, which also incorporates local service providers and agency stalls – including Victoria Police, Latrobe Health Innovation Zone, and RSPCA⁴⁴ – along with speakers and a movie night
- Kanga and a cuppa – a free Kangatraining class is held once a month for mums to attend with their children and have a cuppa and a chat afterwards.

⁴³ Better Care is one of four Pillars developed as part of the Health Assembly Strategic Plan. The Better Care Pillar Group focuses on action areas including chronic health, mental health and dental health.

⁴⁴ Royal Society for the Prevention of Cruelty to Animals

Service integration

The principal health agencies have supported pooling of resources in relation to service integration through their participation and commitment to the Latrobe Health Innovation Zone.

LCHS demonstrated this through the continuation of the chronic disease management diabetes service. This service encompasses a range of different programs including interdisciplinary clinics, a monthly information session for clients called Diabetes Essentials, and diabetes pop-in clinics. LCHS plans to increase the frequency of clinics from August 2019, to offer timely care plans for the community.

DHHS has funded Gippsland PHN to partner with the Collaborative Evaluation Unit at Federation University Australia to evaluate the Early Detection and Screening including Tobacco Program being delivered in the Latrobe Health Innovation Zone.

LRH continued its significant contribution to community projects, including asthma management, by establishing Latrobe Lung Function, the region's first public respiratory testing facility.⁴⁵ The new service provides tests that measure lung capacity and their effectiveness in distributing oxygen into the blood stream.

Although no due date was set by the Inquiry for this recommendation, IGEM notes the significant level of support provided by the four principal health agencies for the Latrobe Health Innovation Zone across the previous three years and the ongoing governance arrangements provided by the Health Assembly.

Finding

IGEM considers this recommendation has been implemented.



Image: 'Youth in the Park' movie night
Source: DHHS

5.2 Health Improvement Inquiry report: Recommendation 12

This recommendation is linked to section 4.3 and Affirmation 8.

The Board of Inquiry recommended that each of the statutory authorities and state-level non government health agencies commit to, support and promote the Latrobe Health Innovation Zone. In particular, they should prioritise investments in program delivery and health innovation projects, recognising that the lessons learned will have broader application.

Statutory authorities and state-level non-government health agencies demonstrate their commitment to support and promote the Latrobe Health Innovation Zone through their ongoing membership on the Health Assembly.

Specific examples of work committed to, supported and promoted in the Latrobe Health Innovation Zone by the statutory authorities and state-level non-government health agencies are detailed in section 4.3 and Affirmation 8.

Finding

IGEM considers this recommendation has been implemented.

5.3 Health Improvement Inquiry report: affirmations

Affirmation 1. The commitment of the principal stakeholder organisations for health in the Latrobe Valley to making improvements in the way that they engage with the Latrobe Valley community.

Refer to Affirmation 8.

Finding

IGEM considers this affirmation has been implemented.

⁴⁵ Refer to lrh.com.au/important-info/news-publications/media-releases/84-2015-media-releases/219-lung-function-tests-now-available

Affirmation 2. The commitment of Latrobe Regional Hospital to continue to develop as a regional hospital for the people of the Latrobe Valley and the wider Gippsland area. The Board considers that the State should give serious consideration to ensuring that future investment in this facility is at least equitable with other regional areas in Victoria.

In October 2018 the Victorian Government pledged \$217 million to further expand LRH. The expansion will include a new theatre complex, intensive care unit, maternity unit and 44 new beds.

The maternity and paediatric services are currently being remodelled and are due for completion in October 2019. Previously a maternity facility only, the Thomson Unit will care for women, children and babies with the inclusion of an expanded special care nursery.

Stage 3A of LRH's redevelopment is due for completion in 2023. The development of this larger, more comprehensive health service for the region will also be complemented by a new strategic plan being developed by the LRH Board and Executive, in consultation with staff and the community. The plan commits to working with the public and LRH's health partners to deliver services and programs to respond to the needs of the community.

Finding

IGEM considers this affirmation has been implemented.



Image: Latrobe Regional Hospital main entrance foyer
Source: LRH

Affirmation 4. The intention of Dr Alistair Wright, general physician from Latrobe Regional Hospital and Dr Daniel Steinfort, respiratory physician from the Royal Melbourne Hospital, to work together to understand the risk profile of the Latrobe Valley relevant to lung cancer, and the implications of this for a possible lung cancer screening program.

As outlined in the IGEM 2018 Hazelwood report, Associate Professor Alistair Wright established a lung lesion rapid-access respiratory clinic with the aim of reducing delays from detection to treatment.

LRH advised that Associate Professor Wright has since completed a paper on the clinic which examines primary care referral pathways, timeliness of care for suspicious lung lesions in the region and the impact a hospital-based rapid-access diagnostic clinic may have. Associate Professor Wright's findings indicated that a respiratory-physician-led clinic can achieve best practice for lung cancer management as per national standards.

As part of further development, Associate Professor Wright has liaised with Dr Daniel Steinfort at Melbourne Health, to discuss the establishment of a lung cancer screening program in the Latrobe Valley. A proposal has been created, however, at the time of reporting funding was yet to be secured.

Associate Professor Wright continues to develop localised procedures and treatment options for the clinic and the management of lung cancer.

In 2018–19 the clinic has been enhanced to incorporate more specialists. In addition to a respiratory physician and advanced trainee, the clinic is now supported by a lung cancer nurse practitioner, palliative care nurse practitioner, radiation and medical oncology consultants, and a thoracic surgeon.

LRH advised that the installation of a PET⁴⁶ scanner at Gippsland Radiation Oncology (a partnership between LRH and Alfred Health) will also help to reduce the requirement for patients to travel to Melbourne for the service.

Finding

IGEM considers this affirmation has been implemented.

⁴⁶ A Positron Emission Tomography (PET) scanner allows imaging tests to be conducted, allowing doctors to check for diseases in the body using a special dye containing radioactive tracers.

Affirmation 6. The intention of Monash Health and Latrobe Regional Hospital to consider the development of an advanced physician training program for general physicians in the short term.

Monash Health and LRH have considered the development of an advanced physician training program. LRH advised that it is exploring partnerships with several major metropolitan health services with the aim of enabling an end-to-end physician training program for the region.

In addition to the successful recruitment of an advanced trainee in a combined general medicine and respiratory medicine role in partnership with Monash Health, as outlined in the 2018 IGEM Hazelwood report, recruitment for an advanced trainee in a combined general medicine and oncology role is currently underway.

LRH advised that it is also liaising with Gippsland Medical Training Hub for the development of a Basic Physician Training pathway offering training in the following sub-specialities:

- general medicine
- oncology
- renal
- cardiology (possibly at a later date).

Finding

IGEM considers this affirmation has been implemented.

Affirmation 8. The commitment of state-level statutory and non-government health agencies to assist Latrobe Valley organisations and the broader community to improve health through policies, plans, funding, infrastructure, programs, campaigns, training, research and evaluation, recognising that for action to be effective it needs to be community-led as much as possible.

This affirmation is linked to Actions 66, 75 and 77 in section 4.3.

Throughout 2018–19 the four principal health agencies have continued to support and promote initiatives in the Latrobe Health Innovation Zone. Some specific examples are:

- LCC is:
 - continuing to implement its *Living Well Latrobe – Municipal Public Health and Wellbeing Plan 2017–2021* through ongoing community workshops and events such as ‘This Girl Can – Victoria’, a free event aimed at encouraging and building the confidence of women to participate in physical activity such as Zumba, yoga, Kangatraining, swimming and water aerobics.
- LCHS is:
 - continuing to provide respiratory services, with spirometry⁵⁰ clinics expanding to increase client accessibility – additional services are planned to begin in LCHS Warragul in July 2019
 - collaborating with the Health Assembly on asthma awareness through project #SCARFIE – an awareness campaign conducted throughout Latrobe Valley which aims to educate the community on asthma treatment and causes



Image: ‘Gippy Girls Can’

Source: DHHS

- Gippsland PHN is:
 - implementing the HealthPathways program which has Latrobe Health Innovation Zone specific pathways including smoking cessation, cancer screening, and lifestyle modification along with supporting referral pathways – as at June 2019 there are 225 completed pathways, which were developed with local health professionals and subject matter experts, with work continuing to develop new pathways for the Gippsland region
 - contributing to smoking cessation projects, with the successful ‘Pitch to Quit’ competition and ‘Smokefree Gippsland’⁴⁷ – a joint initiative being implemented with Quit Victoria
 - funding and coordinating the pilot associated with the Place Based Suicide Prevention Project,⁴⁸ and the expansion of this project to a second site at Bass Coast – this project includes the development of training for GPs, and community suicide prevention training for the Aboriginal community, HALT⁴⁹ for tradespeople and the inclusion of signposts in high-risk road and rail areas
 - working with Quit Victoria and local community experts to co-develop and implement a localised approach supporting smoking cessation until 2020 by increasing community knowledge of smoking risk, increasing the provision of best practice and evidence-based care, and improving patient screening and data recording practices.

⁴⁷ Refer to gphn.org.au/smokefree-gippsland

⁴⁸ Refer to gphn.org.au/programs/primary-mental-health-care/place-based-suicide-prevention-program

⁴⁹ The Hope Assistance Local Tradies (HALT) program provides mental health support services to local tradespeople.

⁵⁰ Spirometry is a common measure of lung function.

- implementing a High-Risk Foot Clinic run weekly at Moe and Morwell sites by advanced practice podiatrists, diabetes nurse educators and dieticians – the High-Risk Foot Clinic provides comprehensive care for patients with neurovascular foot complications.



Image: Career day initiative connecting students with clinical and non-clinical staff

Source: LRH

- LRH is:
 - increasing its focus on connecting with young people – it has initiated tours of the hospital, career days on site which connect students to clinical and non-clinical staff, and continues to support the Latrobe Valley based STEM⁵¹ Sisters program, encouraging girls to explore science, technology and engineering
 - continuing the HARP⁵² Chronic Disease Management Program with nurses attending public events to support community health initiatives and screening opportunities for both men and women
 - presenting a monthly newsletter in the Latrobe Valley Express newspaper to advise the community of LRH services and programs – it highlights ways in which the community can work with LRH to improve health outcomes through co-design opportunities and participation in community groups.

Throughout 2018–19 statutory authorities and state-level non-government health agencies have supported and promoted a range of initiatives in the Latrobe Health Innovation Zone. Some examples are:

- Diabetes Victoria is:
 - continuing to work with LCHS to deliver the *Life!* program⁵³
 - training staff in six GP clinics and pharmacies to screen and refer high-risk patients to the *Life!* program
 - delivering nine *Life!* group courses and telephone health coaching services to over 80 Latrobe Valley residents
 - collaborating with Gippsland PHN to promote the *Life!* program through various channels, including HealthPathways and the Gippsland PHN Link newsletter
 - delivering five workplace healthy living sessions at LRH and Loy Yang Power Station.

- VicHealth is:
 - working with LCC to promote ‘This Girl Can – Victoria’ campaign in Latrobe, which focuses on Victorian women aged 18 and over who are less active and aims to empower them to get active without worrying about being judged – LCC successfully obtained a grant to continue the promotion of this campaign
 - implementing its Regional Sports Program, which aims to increase physical activity of less active Victorians in rural and regional areas – GippSport is working with sport clubs, state sport associations, local government and other partners to introduce more sport and active recreation opportunities.
- Quit Victoria is:
 - a key partner working with Gippsland PHN to develop and deliver a range of targeted smoking cessation initiatives in the Latrobe Valley until 2020
 - delivering face to face smoking cessation brief advice training to more than 100 primary care health professionals – data from 2015 to 2018 shows an increase of more than 250 per cent in health professional referrals to Quitline
 - developing a ‘toolkit’ of online training and resources for GPs and their practices designed to motivate and enable GPs to have more frequent and effective conversations about smoking cessation.
- Cancer Council Victoria is:
 - delivering training sessions to practice nurse networks across Gippsland on cervical screening and self-collection
 - co-funding New Wave Gippsland with BreastScreen Victoria as part of a DHHS Disability project – New Wave Gippsland was funded \$3181 to deliver peer education sessions to improve bowel, breast and cervical screening for people with disabilities in Gippsland
 - raising awareness about early screening for bowel cancer by conducting a stand-up comedy set in Morwell.
- The Heart Foundation:
 - hosted a Health Assembly Co-Design Facilitator to lead a discussion on heart health and risk reduction
 - has developed a targeted program of work to increase the number of eligible Australians having their cardiovascular disease risk assessed – this includes tools and resources for both patients and health professionals
 - launched a Heart Age Calculator aimed at increasing people’s understanding of their cardiovascular disease risk and motivating them to see their GP for a full assessment
 - is working to increase uptake of cardiovascular disease risk assessment nationally by supporting health professionals and practice staff to utilise the new Heart Health Check MBS⁵⁴ item and the Quality Improvement Practice Incentive Program.

⁵¹ Science, Technology, Engineering and Mathematics.

⁵² Hospital Admissions Risk Program.

⁵³ Refer to diabetesvic.org.au/the-life-program

⁵⁴ the Medicare Benefits Schedule (MBS) is a listing of the Medicare services subsidised by the Australian government.

Similar to Recommendation 11, no timeframe was set by the Inquiry for completion of this affirmation. However, IGEM notes the significant and ongoing commitment of state-level statutory and non-government health agencies to assist Latrobe Valley organisations and the broader community to improve health through the implementation of policies, plans, programs and campaigns.

Finding

IGEM considers this affirmation has been implemented.

HIGH RISK FOOT CLINIC

LCHS provided the following case study on the High Risk Foot Clinic

Background

This client was referred to the High Risk Foot Clinic service due to long-standing foot ulcers, which were initially managed by his GP. Throughout his journey at LCHS, the client has had multiple diabetes foot ulcers healed in the High Risk Foot Clinic followed by formation of new foot ulcers due to co-morbidities of social and mental health, combined with complications associated with chronic diseases. The client has also been attended to by the District Nursing Service for regular wound dressing changes at the client's residence. The nursing staff have raised concerns several times through the care journey about the high risk compromise to maintain infection control standards at the client's residence.

The client has communicated reluctance to adhere to the recommended treatment plan to heal the foot ulcer due to recent events in the client's family, which triggered a further decrease in motivation to attend scheduled appointments and adherence to any self-management strategies for treatment of the diabetes foot ulcers.

The process

Communications between representatives from the District Nursing Service and High Risk Foot Clinic raised two major concerns:

- the client's capacity to remain in an environment where further contamination of the diabetes foot ulcers could occur
- the client's adherence to remain in the recommended offloading device, which is a crucial aspect of helping diabetes foot ulcers to heal.

With the issues identified, a management plan to be co-facilitated by the High Risk Foot Clinic and District Nursing Service was formulated. Two joint consultations were held with the client to communicate concerns and agreements were achieved between the client and the two services to address the concerns identified.

Outcomes/organisations learnings

Goals achieved:

- Minimised client's risk of wound contamination by offering the client the option to have all wound dressing appointments at LCHS. Transportation assistance was discussed and offered, however, the client agreed to attend LCHS clinics for all wound dressing related appointments.
- Wound management duties are to be primarily managed by District Nursing staff with the High Risk Foot Clinic reviewing the client every 2–3 weeks. Regular updates and case conferences are planned between the District Nursing Service and the High Risk Foot Clinic to monitor and review progress.
- Joint consultation attended by the High Risk Foot Clinic Senior Podiatrist to discuss use of the offloading device to enable wound healing. The offloading device was reviewed and adjusted by the Senior Podiatrist for comfort. The client agreed to stay in the offloading device as advised. District Nursing staff documented the plan for the use of the offloading device to monitor adherence and flag any issues with the High Risk Foot Clinic.

This experience highlighted the value of multidisciplinary service integration and the benefits it could bring to clients with effective cross-service communication, mutual goal setting and implementation of joint action plans.

It has also highlighted the importance of identifying core work of other services and the tremendous potential to provide high levels of customer service and increased potential to further develop staff capability. The restructure to a more integrated model of service has bridged the gaps between these two teams to allow more effective management of many mutual complex clients in a collaborative manner.

Both District Nursing and High Risk Foot Clinic staff provided positive feedback on the value of working collaboratively. As a result, an additional High Risk Foot Clinic day has been set up to be run by a Senior Podiatrist. This was established with the intention of District Nursing staff flagging clients of concern to be seen by the Senior Podiatrist for a second opinion. Within two weeks of establishing this initiative, two new clients have been flagged to attend the High Risk Foot Clinic for second opinions.

Affirmation 12. The Board affirms work being undertaken by the Community Wellbeing Study (part of the Hazelwood Mine Fire Health Study) to enhance agencies' ability to effectively engage with the Latrobe Valley community.

The Community Wellbeing Stream of the Long Term Health Study is conducted by Federation University Australia's Centre of Research for Resilient Communities in collaboration with researchers from the Monash School of Rural Health.

The key aims are to investigate community perceptions of:

- the impact of the smoke event on community wellbeing
- the elements that are important for effective communication during and after the smoke event
- the effectiveness of community rebuilding activities.

Community wellbeing researchers obtained and analysed data on community recovery and communication during and after the Hazelwood mine fire, with the findings to be presented in two reports.

The first report, *Community Wellbeing Stream Report Volume 1: Community perceptions of the impact of the smoke event on community wellbeing and of the effectiveness of communication during and after the smoke event*⁵⁵ was released in May 2019.

The report addressed the first two of the three aims – the impact of the smoke event on community wellbeing and the elements that are important for effective communication during and after the smoke event – and found that:

- communication from the authorities in relation to the mine fire was perceived by the community to be flawed, at times contradictory, not reflective of their experiences and not meeting their needs
- a narrow range of channels was used in the initial communication to the public by authorities and as a result the community experienced a vacuum of information relating to health impacts and types of support available
- social media and news media took on an important role during the mine fire emergency as there was a closer alignment between the topics covered and community concerns

- there were three main factors that led to a loss of trust in authorities:
 - problems with communication and the way information was presented
 - the perceived lack of an emergency plan
 - the perceived lack of accountability
- the community's resilience was affected and its capacity to respond effectively was reduced as a result of the flaws in communicating with the public.
- The *Community Wellbeing Volume 2* report focuses on community perceptions of the effectiveness of community rebuilding activities. At the time of reporting, volume two is in the final stages of internal review.

In addition, Stream Lead Dr Susan Yell has been invited to attend the Health Assembly Positive Culture Pillar Group meetings to discuss the contribution the Community Wellbeing Stream's research can make to the work of the group. Dr Yell has also joined the Gippsland PHN Social Network Analysis Advisory Group, which is using social network methodologies to support Early Detection and Screening Including Tobacco.

In June 2019 the Community Wellbeing stream joined the other Hazelwood Health Study research streams in a public community engagement session in Morwell where the research outcomes to date and plans for the next five years were discussed and affirmed by the community.

Finding

IGEM considers this affirmation has been implemented.

⁵⁵ Refer to monash.edu/_data/assets/pdf_file/0006/1766139/CW-Report-Volume-1_v1.0.pdf

6. Progress update – Mine Rehabilitation Inquiry report – Coal mine operators

During the 2015–16 Inquiry, the Board of Inquiry was unable to make a definitive assessment on the viable rehabilitation option for each of the three Latrobe Valley mines due to many areas of uncertainty that were not addressed by relevant agencies and the mine operators. These issues included mine stability, sourcing water, water quality and fire risk.

The Board of Inquiry concluded that to provide certainty about the rehabilitation options a significant amount of research must be conducted into these issues in the short to medium term and in a coordinated manner.

In the Mine Rehabilitation Inquiry report, the Board of Inquiry made 17 recommendations to be implemented by the state. The associated actions are included in the Victorian Government Implementation Plan and reported on in chapter 4.

The Board of Inquiry made two recommendations, and one affirmation, for implementation by the Latrobe Valley mine operators.

Affirmation 1, where the three Latrobe Valley coal mine operators committed to increasing coordination and collaboration between themselves and the regulator, was reported as complete in the 2017 IGEM Hazelwood report.

The following is a summary of progress on the recommendations that were assessed as ongoing in the 2018 IGEM Hazelwood report.

Refer to Appendix A for a full list of recommendations and affirmations, including those previously reported as complete.

Table 29: Status of Mine Rehabilitation Inquiry report coal mine operator recommendations and affirmations reported as ongoing in 2018

| NO. | RECOMMENDATION/AFFIRMATION | STATUS |
|--------|---|----------|
| Rec 18 | By 31 December 2016, develop an integrated research plan that identifies common research areas and priorities for the next 10 years, to be reviewed every three years. The plan should be developed in consultation with the Mining Regulator and relevant agencies, research bodies and experts. The list of research topics identified in Part 6.11 [of the Victorian Government Implementation Plan] can be used as a starting point for discussion. The Commissioner and Statutory Authority should promote and coordinate this research (see Recommendations 14 and 15). | Complete |
| Rec 19 | Increase the rate of progressive rehabilitation by achieving milestones within the mines' progressive rehabilitation plans, as set by the Mining Regulator under Recommendation 4. | Ongoing |

6.1 Mine Rehabilitation Inquiry report: Recommendation 18

By 31 December 2016, develop an integrated research plan that identifies common research areas and priorities for the next 10 years, to be reviewed every three years. The plan should be developed in consultation with the Mining Regulator and relevant agencies, research bodies and experts.

The list of research topics identified in Part 6.11 can be used as a starting point for discussion. The Commissioner and Statutory Authority should promote and coordinate this research (see Recommendations 14 and 15).

The IMRG was established in July 2016 and comprises representatives of the three Latrobe Valley mine operators – ENGIE Hazelwood, EnergyAustralia Yallourn and AGL Loy Yang.

The December 2016 publication *Integrated Mines Research Group Ten Year Research Plan* identified a range of research topics developed by the IMRG through stakeholder consultation. These include:

- cover on coal
- full lake benefits and interconnectivity between mine pit lakes

- pit lake fill rates
- horizontal drains
- long-term pit lake water quality
- existing rehabilitation experiences
- social and economic effects of mine closure and proposed final land use of mine sites
- spontaneous combustion
- stability
- time lines for maintenance and monitoring
- wave action, beaching and shoreline treatment including vegetation.

The IMRG has met every two months since 2017 to share information on the various research projects. Research outcomes from the projects have common ownership and will be shared between the three mine operators.

This recommendation requires that the IMRG research plan be reviewed every three years. The first three-year review is due for completion in December 2019.

The IMRG steering committee, comprising senior representatives of the three mine operators, is leading the review process considering the scope, time lines, progress and deliverables of each research project and making any changes deemed appropriate. The review is also considering proposals for additional research

projects. The LVMRC has provided advice on the review process, identifying areas of focus for future research.

EnergyAustralia has provided IGEM with copies of review materials produced to date. The IMRG will share outcomes of the review with IGEM, DJPR and the LVMRC.

This recommendation also requires the LVMRC to coordinate and promote the IMRG research.

The LVMRC has been closely involved with the IMRG since his appointment in May 2017. During 2018–19 the LVMRC has continued to attend IMRG meetings to understand the scope and progress of the research being undertaken, and to advise on the direction of the research and possible approaches to embedding it nationally and internationally. The LVMRC attended individual research project meetings where appropriate, including the Batter Stability Project managed by Federation University Australia's Geotechnical and Hydrogeological Engineering Research Group.

The LVMRC has also attended briefings from ENGIE on studies underway to support the finalisation of the Hazelwood mine rehabilitation and closure plan. IGEM attended a community information session in June 2019 at which the LVMRC provided Latrobe Valley community members with an update on the research projects.

In June 2019 the Minister for Resources reintroduced a Bill to the Victorian Parliament to amend the MR(SD) Act (refer to Action 162). The Bill provides for the establishment of a Mine Land Rehabilitation Authority on 1 July 2020, to supersede the LVMRC and take on his functions in relation to mine rehabilitation.⁵⁶

Going forward, the IMRG will provide IGEM with the outcomes of each three-year review, in accordance with IGEM's role as a stakeholder in the IMRG research plan review process.

Finding

IGEM considers this recommendation has been implemented.

6.2 Mine Rehabilitation Inquiry report: Recommendation 19

Increase the rate of progressive rehabilitation by achieving milestones within the mines' progressive rehabilitation plans, as set by the Mining Regulator under Recommendation 4.

This recommendation is linked to Action 158 in chapter 4.

The Mine Rehabilitation Inquiry report recommended that the three Latrobe Valley coal mine operators increase the rate of progressive rehabilitation by achieving milestones within their progressive rehabilitation plans.

The Victorian Government Implementation Plan sets out that progressive rehabilitation milestones will be built into work plan variations for the Latrobe Valley coal mines and approved by DJPR as the regulator.

To progress this recommendation, the coal mine operators have submitted work plan variations that incorporate proposed progressive rehabilitation milestones to DJPR.

The 2018 IGEM Hazelwood report noted that DJPR approved ENGIE's work plan variation for the Hazelwood mine in December 2017.

DJPR approved EnergyAustralia Yallourn's work plan variation in March 2019 and continues to work with AGL Loy Yang to finalise its work plan variation (refer to Action 158).

ENGIE Hazelwood

ENGIE ceased mining at Hazelwood in March 2017. DJPR approved ENGIE's work plan variation in December 2017.

The work plan variation details the rehabilitation works ENGIE intends to undertake during the immediate post-station closure and closure planning period, expected to run to around 2021. Final rehabilitation works are expected to take a further 10 to 15 years.

ENGIE's rehabilitation approach for the immediate post-station closure and closure planning period covers domains including:

- mine batters
- mine floor
- ash storage
- overburden dumps
- waterways
- dams
- infrastructure
- roads and hardstand
- buildings
- pasture land.

⁵⁶ The Mineral Resources (Sustainable Development) Amendment Bill 2019 was subsequently enacted in September 2019.

ENGIE provided the following summary of rehabilitation work undertaken in 2018–19 towards the milestones set out in the work plan variation:

- 4 hectares of rehabilitation completed, making a total of 712 hectares rehabilitated to date
- 31 hectares of clay cover completed, bringing the total clay cover to 297 hectares.

ENGIE also advised that since mine closure it has:

- completed the East Field Eastern Batter surcharge
- completed mine batter surcharge designs for the East Field Northern Batters and the West Field Southern Batters, which have been approved by Earth Resources Regulation (ERR)⁵⁷
- completed decommissioning of all redundant mining plant.

ENGIE is developing a detailed rehabilitation and closure plan for submission to DJPR for approval at the end of 2019. The rehabilitation and closure plan will be underpinned by a comprehensive risk assessment and management framework and will identify closure objectives and final closure criteria for ENGIE to meet prior to relinquishing its mine licence.

The rehabilitation and closure plan will seek approval for ENGIE's closure concept of a full pit lake, with filling to commence in 2021. ENGIE has prepared a concept master plan setting out its vision for the Hazelwood site after rehabilitation and conveying future land use opportunities and investment potential across the site. ENGIE will present the plan to the Latrobe Valley community in late 2019.

AGL Loy Yang

Over the course of 2018–19 AGL Loy Yang and DJPR have continued working together to finalise a work plan variation that includes progressive rehabilitation milestones (refer to Action 158).

The work plan variation includes a progressive rehabilitation approach to the following areas:

- unaffected land within the mine licence area (pasture and grazing land)
- waterways
- overburden dumps
- mine batters
- the pit floor and the pit void.

AGL Loy Yang has continued to report on the area of land rehabilitated within the mine site – during 2018–19 it completed 36.2 hectares of rehabilitation (while disturbing 34.4 hectares in mining operations), bringing the total area rehabilitated to date to 661.8 hectares.

AGL Loy Yang plans to undertake approximately 26 hectares of rehabilitation during 2019–20, and aims to progressively rehabilitate an average of 20 hectares a year until 2025.

EnergyAustralia Yallourn

Over the second half of 2018 EnergyAustralia Yallourn continued rehabilitation works in accordance with the target commitments in its existing Risk Assessment and Management Plan. It has completed 33 hectares of rehabilitation during 2018, for a cumulative area of 1,366 hectares rehabilitated since mining operations commenced.

EnergyAustralia Yallourn submitted a work plan variation incorporating revised progressive rehabilitation targets to DJPR in February 2019, which DJPR approved in March 2019 (refer to Action 158).

EnergyAustralia Yallourn's work plan variation outlines a progressive rehabilitation approach towards a mine pit lake and surrounding grasslands. The progressive rehabilitation approach covers:

- interim rehabilitation of the projected lake areas to reduce fire risk and provide erosion control, dust mitigation and improved visual amenity
- final rehabilitation of areas above the anticipated final lake level.

The key progressive rehabilitation targets are:

- mine rehabilitation – rehabilitate an area of the mine greater than or equal to the area disturbed during the year
- cover exposed coal – progressively reducing the area of exposed coal to 312 hectares by December 2019, 300 hectares by December 2020 and 290 hectares by December 2021.

In July 2019 EnergyAustralia Yallourn advised it has rehabilitated 34.1 hectares since the start of 2019 and estimated the area of exposed coal at 307 hectares.

Energy Australia expects that mining disturbance will continue at approximately 25 hectares per year and rehabilitation at approximately 30 hectares per year until mining operations cease in 2032.

⁵⁷ The ERR branch sits within DJPR and plays a key role in regulating the resources industry, attracting and facilitating investment and managing access to the earth resources of Victoria. Refer to earthresources.vic.gov.au

Future assurance in relation to mine rehabilitation

Going forward, the three Latrobe Valley coal mine operators are required to report annually to ERR on their rehabilitation activities, in accordance with current regulations. They are also required to report to ERR every six months on mine stability.

IGEM will continue to monitor Action 158 until AGL Loy Yang's work plan variation, incorporating progressive rehabilitation milestones, is approved by DJPR. IGEM will also continue to monitor progress towards achieving progressive rehabilitation milestones for EnergyAustralia Yallourn and AGL Loy Yang – the two operating Latrobe Valley coal mines.

The LVRRS planned for release in June 2020 seeks to set a safe, stable and sustainable landform for the Latrobe Valley coal mine voids and surrounding areas (refer to section 4.6).⁵⁸

A new Mine Land Rehabilitation Authority, set to be established on 1 July 2020, will provide ongoing assurance to the Victorian community that public sector bodies and coal mine operators are implementing the LVRRS and planning for the rehabilitation and management of declared mine land (refer to Action 162).

The government intends to facilitate the publication of rehabilitation plans where this information is not commercial-in-confidence, to increase transparency and provide clarity for the community in relation to mine rehabilitation.⁵⁹

Finding

IGEM considers this recommendation is progressing satisfactorily. IGEM will continue to monitor this recommendation.



Image: Coal coverage and progressive rehabilitation, EnergyAustralia Yallourn
Source: EnergyAustralia



Image: Progressive rehabilitation works, AGL Loy Yang
Source: AGL



Image: East field batter rehabilitation, ENGIE Hazelwood
Source: ENGIE

⁵⁸ For more information see earthresources.vic.gov.au/projects/lvrrs

⁵⁹ Refer to *State of Discovery: Mineral Resources Strategy 2018–2023*, available on earthresources.vic.gov.au/geology-exploration/industry-investment/mineral-resources-strategy

7. Effectiveness monitoring



7.1 Background

IGEM is responsible for implementation monitoring of all recommendations and affirmations from the 2014 and 2015–16 Hazelwood Mine Fire Inquiry reports. Up until 2018 IGEM's implementation monitoring approach considered implementation progress and assigned each recommendation or affirmation an implementation status of complete, ongoing or closed.

The Act contains provisions for IGEM to consider the effectiveness of implementation when undertaking its monitoring activities⁶⁰ and extend its monitoring function to consider the effectiveness of implemented improvements.

As this is IGEM's final Hazelwood report required to be tabled in Parliament, and most of the actions from the Victorian Government Implementation Plan are now complete,⁶¹ IGEM extended its reporting to include effectiveness monitoring of selected actions.

7.1.1 Aim

The aim is to monitor the effectiveness of the implementation of a selection of completed government actions to provide assurance to government and the community on how lessons from the Hazelwood Mine Fire Inquiry have turned into improvements in practice. The monitoring also identifies examples of good practice and reflects any challenges to effective implementation experienced by organisations responsible for leading the implementation of actions.

7.1.2 Scope

To manage the reporting burden on lead organisations, IGEM limited the scope of effectiveness monitoring to three government actions. The selection criteria for the actions chosen are outlined in section 7.2.1.

Effectiveness monitoring

IGEM considers effectiveness to be:

The extent to which the activities undertaken by lead organisations to implement relevant actions achieved their stated objectives.

Effectiveness monitoring applies a lower level of analysis than a more holistic evaluation which is typically designed to assess the achievement of outcomes of a project or program of work.

7.2 Approach

7.2.1 Selection of actions for effectiveness monitoring

In November 2018 IGEM wrote to the lead organisations responsible for implementing the 246 government actions to inform them of its intention to monitor the effectiveness of the implementation of a selection of actions for this report. The letter provided details on the proposed approach and invited lead organisations to nominate actions to be considered for effectiveness monitoring.

IGEM received a total of 10 nominated actions across lead organisations.

In December 2018 IGEM held an internal workshop to select actions (three to four) for effectiveness monitoring. The 10 nominated actions were discussed for their alignment with a predetermined set of selection criteria developed by IGEM (refer to Table 30). The criteria were developed in line with the *Assurance Framework for Emergency Management* assurance principles (refer to section 3.1) and with consideration of IGEM's statutory objectives.

Table 30: Selection criteria for effectiveness monitoring actions

| CRITERIA | RATIONALE |
|--|--|
| Action has led to outputs that have been used in practice | In line with IGEM's assurance principles, the sector requires time to implement changes. |
| Lessons identified are transferrable | To foster continuous improvement of the sector, examples of good practice should be transferrable to other, similar projects. |
| Action has clear objectives in lead agency project planning | IGEM can identify project objectives as the basis for effectiveness monitoring, to support transparency and procedural fairness. |
| Action has not been covered by existing assurance activities | To reduce burden on lead organisations, actions that have been or will be the focus of other assurance activities were not considered for inclusion. |
| Actions selected cover a range of reforms including at least one that is community focused | To provide broad assurance coverage and assurance to the community most affected by the Hazelwood mine fire. |

⁶⁰ Refer to section 64(4) of the *Emergency Management Act 2013*.

⁶¹ The 2018 IGEM Hazelwood report found that of the 246 actions set out in the Victorian Government Implementation Plan, only 35 actions remained ongoing.

At the end of the workshop IGEM selected three actions that best met the selection criteria.

Table 31: Actions selected for effectiveness monitoring

| ACTION # | ACTION | IMPLEMENTATION PLAN THEME | LEAD ORGANISATION |
|----------|--|--|-------------------|
| 24 | Complete a community co-design process for a new air monitoring network (including smoke sensor sub-network) | EPA engagement with the Latrobe Valley community | EPA |
| 77 | Embed the smoking cessation initiative, in partnership with key providers | Health – Early detection and high-risk screening | DHHS |
| 153 | Undertake twice-yearly workshops on the MOU between DEDJTR and WorkSafe | Latrobe Valley coal mine regulation | DJPR/WorkSafe |

7.2.2 Information collection

IGEM worked closely with the four lead organisations to develop an approach to information collection. IGEM's effectiveness monitoring was informed by documentary information, direct observations of meetings and workshops and semi-structured interviews.

Documentary information

Where possible IGEM drew on information previously provided by lead organisations as part of their Hazelwood reporting. IGEM used project plans and other documents previously provided by lead organisations to develop an effectiveness monitoring matrix for each action. Each matrix outlined the key objectives for the action, the critical success factors that would lead to the objectives being met, and suggestions for additional organisation documentation that could inform IGEM's effectiveness monitoring.

IGEM received additional documentary information from EPA, DHHS, WorkSafe and DJPR in March 2019. IGEM also reviewed publicly available information such as independent reports, research papers and media releases.

IGEM attendance at meetings and workshops

IGEM staff attended meetings and workshops held by lead organisations as observers, to supplement documentary evidence. For Action 153, IGEM attended a quarterly MOU meeting held in March 2019 and a biannual MOU workshop held in May 2019. For Action 24, IGEM attended an EPA air monitoring network co-design panel meeting held in March 2019.

Semi-structured interviews

Semi-structured interviews were conducted with stakeholders to supplement documentary information and observations of meetings and workshops.

IGEM conducted a total of 21 semi-structured interviews across the three actions to further inform its effectiveness monitoring. IGEM provided each lead organisation with an interview plan and consulted with them to develop a list of suitable interviewees. Between April and June 2019 IGEM interviewed stakeholders responsible for implementing the actions as well as participants or end-users of the actions.

IGEM developed interview plans for each action to address critical success factors and project objectives. Interviewees were provided with a copy of their interview questions prior to their interview, as well as an interviewee information sheet that explained their rights and IGEM's confidentiality and privacy provisions. All interviewees signed informed consent forms prior to the interview taking place. Interviews were audio-recorded and transcribed verbatim, and interviewees were offered a copy of their interview transcript.

A de-identified list of interviewees can be found in Appendix C.

7.2.3 Analysis and reporting

When assessing the overall effectiveness of each action, IGEM first considered each action objective separately, in particular:

- the contribution of the reported activity to meeting the action objective
- the documentary information available to support the reported activity
- the degree to which the interview data supported the effectiveness of implementation and corroborated the documentary information.⁶²

IGEM has provided a summary of activity and a finding or observation for each action objective. IGEM has also provided an overall finding for each action based on the analysis of the information across all action objectives.

⁶² In some cases, minor alterations have been made to quotes presented in text to assist with clarity or to maintain anonymity of the interviewee.

7.2.4 Stakeholder engagement

IGEM places a high priority on engagement with stakeholders.

IGEM worked closely with the four lead organisations – EPA, DHHS, WorkSafe and DJPR – across all stages of the effectiveness monitoring process, including:

- the selection of action objectives and critical success factors from lead organisations' project plans and other documentary information
- the data collection approach, including interview plans and questions
- review of a consultation draft of the report.

Acknowledgements

IGEM acknowledges the level of support provided by EPA, DHHS, Gippsland PHN, WorkSafe and DJPR for the effectiveness monitoring component of the 2019 IGEM Hazelwood report. Their transparency in providing documentary information, access to subject matter experts for IGEM interviews, and their commitment to continuous improvement of the sector is commended.

7.2.5 Limitations in assurance

IGEM acknowledges that there are some limitations to the effectiveness monitoring.

To manage the reporting burden on organisations, IGEM invited lead organisations to nominate actions they wished to be considered for effectiveness monitoring. IGEM notes that it is unlikely that organisations would nominate actions they felt were not implemented effectively.

IGEM liaised with lead organisations to develop a list of potential interviewees, therefore interviewees did not represent a random sample. In line with the effectiveness monitoring scope, IGEM only conducted a small number of interviews for each action and therefore responses may not be representative of all stakeholder experiences and opinions.

To best ensure the validity of data, IGEM:

- compared data across interview responses, documentary information provided by organisations, IGEM's observations at meetings, and publicly available reports
- provided stakeholders with a draft copy of the report for their review and feedback.

7.3 Action 24 (EPA) – Complete a community co-design process for a new air monitoring network (including smoke sensor sub-network)

SUMMARY OF FINDINGS

IGEM finds that:

- EPA's method was effective in enabling the community to participate in a co-design process to determine a future air monitoring program in the Latrobe Valley.
- Community members involved in the co-design process have an improved understanding of air monitoring in the Latrobe Valley.
- The co-design process improved confidence in data from the air monitoring network for co-design panel members and for the community members IGEM interviewed.

7.3.1 Background

Public submissions to the 2015–16 Inquiry showed uncertainty about the appropriate level of air monitoring in the Latrobe Valley and highlighted the need for increased air monitoring to meet community concerns.

The Victorian Government Implementation Plan committed to working with the local community to understand the environmental issues that affect them the most and to co-design a longer-term air monitoring network to meet the information needs of both EPA and the community. This commitment led to Action 24 – complete a community co-design process for a new air monitoring network (including smoke sensor sub-network).

7.3.2 Community co-design process

EPA engaged a co-design consultant in May 2016 to conduct a co-design process with members of the local community, enabling them to determine their own needs with expert support and facilitation.

The Latrobe Valley Air Monitoring Co-Design Panel (the panel) was made up of 36 representatives of the local community, supported by EPA technical experts. The panel met three times between September and October 2016 to:

- share information about air quality
- define and rank issues and concerns
- explore different solutions and air monitoring options
- evaluate proposed solutions.

Action 24 was reported as complete in the 2017 IGEM Hazelwood report after the co-design process had concluded.

The process resulted in a map of a new preferred community co-designed air monitoring network that was agreed on by the panel (refer to Figure 8). The map was subsequently provided to the broader community on EPA’s co-design website.⁶³

Figure 8: Community co-design air monitoring network



Source: EPA, August 2018

7.3.3 Effectiveness monitoring

IGEM reviewed project plans and other documentation provided by EPA and developed three project objectives as the basis for effectiveness monitoring, in consultation with EPA (refer to Figure 9).

To align with Action 24, IGEM limited the scope of effectiveness monitoring to the community co-design process. The effectiveness of the implemented air monitoring network was not in scope.

To assess the effectiveness of each objective, IGEM reviewed documentation provided by EPA and conducted semi-structured interviews with both community members and stakeholders involved with the co-design process.⁶⁴ Each objective is considered in this section, followed by observations of good practice, challenges to effective implementation, and an overall effectiveness finding.

Figure 9: Action 24 objectives

| Action 24 – Complete a community co-design process for a new air monitoring network (including smoke sensor sub-network) | |
|--|---|
| Objective 1 | Have the community participate in a co-design process to help determine the future air monitoring program in the Latrobe Valley |
| Objective 2 | Improved Latrobe Valley community understanding of air monitoring |
| Objective 3 | Co-design process improves local community confidence in data from the air monitoring network |

Objective 1 – Have the community participate in a co-design process to help determine the future air monitoring program in the Latrobe Valley

EPA approached the co-design process with the aim of co-designing an air monitoring network with the Latrobe Valley community that would meet their needs and help address their concerns around air quality issues.

Recruitment of panel members

EPA recruited 36 community members to form the co-design panel as follows:

- approximately 50 per cent of panel members were selected randomly and invited to participate
- approximately 30 per cent were selected from people expressing interest in the process
- approximately 20 per cent were invited because of their long-term interest in air quality in the Latrobe Valley.

EPA used a consultant for the recruitment of the random sample to ensure there was a balance of gender, geographic coverage, and age cohorts to reflect the demographics of the area.

The co-design sessions

EPA ran three formal co-design sessions:

- The first session was held on 15 September 2016 and focused on informing participants about air quality monitoring. It included multiple presentations from EPA staff and other scientific experts.
- The second session was held on 13 October 2016 and focused on discussing various locations, options and costs involved in different types of air monitoring and to begin co-designing solutions in smaller break-out groups.
- The formal co-design process concluded with the third panel session held on 27 October 2016. The session focused on bringing the small group co-designs together to arrive at a consensus on a single model for the air monitoring network.

Follow-up sessions were conducted to keep the panel informed of the progress of the commissioning of the network.

There was widespread agreement from co-design panel members that EPA ran the sessions well. Staff facilitated the sessions so that everyone had an opportunity to have their say. Panel members reported that staff were able and willing to answer questions, and they believed that the panel was facilitated in an unbiased way.

My personal treatment from EPA staff has always been respectful. I've never felt dismissed.

Co-design panel member

⁶³ Refer to epa.vic.gov.au/our-work/programs/latrobe-valley-air-monitoring-codesign

⁶⁴ Refer to Appendix C for further interview details.

I thought it was very, very good. Absolutely every single person had their say. The EPA experts were there to answer our questions. And didn't shy away. And they were very informative.

Co-design panel member

EPA took a variety of measures to ensure the sessions ran smoothly and catered to everyone's needs, including that:

- the location was easily accessible by public transport
- the venue had a separate quiet space for panel members to go to if they needed a break
- there were enough staff and experts on hand to answer questions and speak to panel members one on-one as needed.

Given the complex and technical nature of the information they were asking panel members to understand and apply, EPA provided the panel members with maps of the region and different colours of modelling clay to map out where the monitoring stations would be and what types of monitors would be at each location. EPA advised this was done to ensure that panel members would not be disadvantaged by varying levels of air monitoring knowledge.

EPA staff debriefed after each session to discuss what worked well and what could have been improved. These debriefs helped shape the subsequent sessions. For example, feedback from panel members showed that the first session was content-heavy and did not allow enough time for discussion and participation by panel members. EPA therefore ensured that the following sessions were focused on discussion and equal participation from panel members.

Community input

The co-design panel was recruited to make decisions about the number, type and location of air monitoring equipment. The panel was asked to work with a small number of constraints, which EPA communicated at the beginning of the process:

- there was a set budget to buy and operate equipment
- the Traralgon air monitoring station could not be altered.

Apart from the budget and the absolute must haves, the community members decided everything.

EPA employee

The feedback forms completed by panel members' after the final co-design session showed that most felt that their input was included in the development of the network.

The three members of the co-design panel IGEM interviewed felt that their input was considered as part of the development of the air monitoring network. This is consistent with the panel members' feedback forms provided by EPA.

I had my opinions and they were taken on board. I think it was a fair outcome really.

Co-design panel member

I would have to say that looking at the proposed sites, that we certainly had an influence in those sites.

Co-design panel member

When asked if there were any decisions about the air monitoring network design that they felt they did not have input into, the three panel members IGEM interviewed said they felt they had input into all decisions about the network.

The air monitoring network design

Panel members and EPA staff agreed that handing over control to the community ensured that community concerns were addressed and the information that the community really wanted to know was embedded in the design. Both the information provided by EPA and IGEM interview data revealed a general community concern coming out of the Hazelwood mine fire that EPA's air monitoring network was inadequate. First-hand knowledge and experience from community members who lived in the area was crucial to finding out what problems needed to be addressed so that the design could be fit for purpose.

A lot of people who are passionate about air quality have lived in areas where they've been badly affected, so they know the effects first hand.

Latrobe Valley community member

We can make all the assumptions in the world about what local issues are. But unless you stop and talk to people, you just don't know.

EPA employee

This whole idea of a broad sweep of things wouldn't have come out unless we were having that conversation with the community.

EPA employee

The co-design process concluded with panel members reaching a consensus on a final design for the new air monitoring network. The final design expanded the air monitoring network to include different types of monitors and smoke sensors at a variety of locations around the Latrobe Valley.

Many interviewees, including EPA staff, felt that the community co-design process produced an air monitoring network that would most likely look different to one designed by EPA alone.

We had five air monitoring stations over the duration of the Hazelwood mine fire. One was a permanent station. The suggestion was that once the fire was over we'd go back to one, maybe two. And that was what triggered the co-design, the community said you can't take away our five, it's critical. Now they have approximately 20 across the region. Differing quality. So, it's radically different that way.

EPA employee

Finding 1

IGEM finds that EPA's method was effective in enabling the community to participate in a co-design process to determine a future air monitoring program in the Latrobe Valley.

Objective 2 – Improved Latrobe Valley community understanding of air monitoring

During the Hazelwood mine fire, EPA collected and communicated scientific data to Latrobe Valley residents and other key stakeholders. Many community members and other stakeholders criticised EPA's communications as being unclear and ineffective.

While most residents were aware of EPA's air monitoring program, there was a clear disconnect between the air quality information that the community expected and what EPA was providing. This was exacerbated by the complexity and technicality of air monitoring data.

Many panel members went into the co-design process with minimal knowledge of air monitoring. The first co design session focused on providing panel members with the information and understanding of air quality they needed to be able to effectively make decisions on the design of the network. The consultant engaged to evaluate the panel sessions observed that this was a steep learning curve for panel members, however, EPA endeavoured to make the information accessible and easy to understand.

EPA encouraged panel members to visit one of the existing air monitoring stations to see how they work. Several went to the Traralgon air monitoring station where they had the opportunity to see how the monitors work and to speak to EPA experts. Panel members reported this as a positive and informative experience as it helped them develop a practical understanding of the work they were doing.

What's a sulfur dioxide monitor? All of a sudden, it's there and it's working; you can see the charts. So, it was very informative.

Co-design panel member on visiting the Traralgon air monitoring station

In their feedback forms many of the panel members reported that the co-design process had increased their understanding of local air quality issues. IGEM interviews

with co-design panel members showed they demonstrated a good knowledge of the location and types of air monitors in the Latrobe Valley and their different functions.

Both staff and panel members agreed that centralising the community in the process resulted in a network that reflected what the community wanted to know. Ensuring that the community understood the purpose of the different monitors and why they were in their locations enabled them to better read and understand the data.

AirWatch

EPA's AirWatch website provides a map that shows air quality information measured by EPA's air monitoring stations around Victoria.⁶⁵ Data at each location is updated each hour. In November 2017 EPA asked co design panel members to complete a survey on the usability of its AirWatch system. Of the seven respondents, five found the AirWatch air quality information easy to understand, one found the information to be technical and another thought it would benefit from clearer descriptions of the pollutants and what they mean.

IGEM interview data also provided varying results. One interviewee reported that even though they were aware of AirWatch prior to the co-design process, the sessions enhanced their understanding and enabled them to better comprehend the air monitoring data. Another interviewee felt that EPA could review the AirWatch interface to make it more user friendly.

There may be room to improve that, so it's more user friendly with graphics.

Latrobe Valley community member

EPA advised that it is currently considering projects to design better customer experience on its website as part of its transformation program.

The co-design process clearly improved understanding of air monitoring for those involved. However, given that only a small sample of the local community was involved, it is difficult to determine whether the process improved understanding for the wider community.

You can never reach the whole of a community; you can only reach pockets. But it gave us champions; people who understood what we were doing, why we were doing it, why you go about doing things these ways. And then when conversations come up they could tackle that and have that informed conversation.

EPA employee

Finding 2

IGEM finds that community members involved in the co-design process have an improved understanding of air monitoring in the Latrobe Valley.

⁶⁵ Refer to epa.vic.gov.au/our-work/monitoring-the-environment/epa-airwatch

Objective 3 – Co-design process improves local community confidence in data from the air monitoring network

After the Hazelwood mine fire, there was widespread mistrust of the communications coming from EPA about the underlying health impacts of air quality in the Latrobe Valley. The disconnect between what the government was reporting and what people were experiencing was made clear in submissions to the 2015–16 Hazelwood Mine Fire Inquiry.

IGEM only interviewed a small number of co-design panel and community members and is therefore unable to provide assurance on the broader Latrobe Valley community's confidence and trust in EPA's air monitoring network.

Local community confidence

From the beginning of the co-design process EPA committed to implementing the co-design panel's design if it developed a solution close to a consensus, and within the funds available.

The hands-on involvement of the community, and the freedom they were given to design what they wanted with minimal restrictions created a sense of ownership and responsibility over the final product. Being empowered to respond to their own concerns through the co-design process contributed to increased confidence in EPA and the data from the air monitoring network.

I think it's led to more community confidence, and that's extremely important.

Co-design panel member

The panel members reported that they believed the new network they designed would be better than the existing network, especially regarding the locations of the monitors and the pollutants being monitored. The panel members IGEM interviewed also believed that if a situation like the Hazelwood mine fire occurred again, EPA would be able to handle it differently and would have better data to communicate to the public due to the co design process.

Despite EPA's initial plans to have the network fully implemented during 2018, full implementation was delayed as more was understood about the limitations of gas sensor technology. Although most panel members IGEM interviewed stated that their confidence in the network had increased following the co design process, some expressed difficulty in separating their positive experiences of the process with the disappointment of not having a fully implemented air monitoring network.

It was the very first co-design process I've been involved in and I thought it was very good, but I've since lost faith in the process when it wasn't delivered.

Co-design panel member

EPA staff acknowledged that the local community may have become disenfranchised given EPA's initial commitment to implement what the panel put forward.

My biggest disappointment is that we haven't been able to roll it out in the time that we should have.

EPA employee

EPA advised that this has been an area for learning, and it has since changed its approach to procuring new equipment to encompass a longer trial period when new technologies are involved.

Finding 3

IGEM finds that the co-design process improved confidence in the data from EPA's air monitoring network for co-design panel members and for the community members IGEM interviewed.

7.3.4 Conclusion

IGEM identified three objectives from project planning that it considered closely aligned with the requirements of Action 24, in consultation with EPA. These focused on conducting the co-design process, increasing local community understanding of air monitoring and improving local community confidence in data from the air monitoring network.

IGEM considers that the three objectives have been effectively implemented, and therefore concludes that Action 24 has been implemented effectively overall.

Examples of good practice

IGEM observed several examples of good practice throughout the monitoring process:

- From the beginning of the co-design process EPA was open and honest with the panel regarding the scope of the project and the limitations on their decision making.
- Despite initial challenges in doing so, EPA sought strong 'buy-in' from key staff, including at senior levels of management.
- EPA committed to implementing what the panel designed.
- EPA recruited a cross-section of panel members, representing different demographics and interests from across the community.
- During the co-design process, EPA took practical steps to ensure inclusivity.
- EPA has maintained communications with panel members since the co-design process and has kept them informed of the progress of implementation of the new air monitoring network.

- EPA effectively applied many of the public participation principles defined in the Victorian Auditor General's (VAGO) *Public Participation in Government Decision-making* better practice guide, including transparency and integrity, openness, accountability and inclusiveness.
- EPA effectively applied several elements of better practice in public participation and government decision making from the VAGO guide including:
 - **Define** – the scope of the project and decisions required of the panel members was clearly communicated.
 - **Identify** – EPA effectively identified who was directly and indirectly affected by, interested in, or able to influence the decision being made, and removed barriers to participation.
 - **Understand** – EPA was aware of the technical nature of the science and the potential steep learning curve for panel members. EPA also catered for a range of knowledge of air monitoring by using physical artefacts in the design stage.
 - **Document** – EPA prepared a project plan and a stakeholder communication plan. EPA also engaged an independent consultant to provide a final report on the process.
 - **Implement** – EPA implemented the co-design process as outlined in the project plan. EPA debriefed and reflected throughout the process to ensure continuous improvement and positive outcomes.
 - **Evaluate** – EPA contracted a consultant to provide an evaluation report. EPA has also advised that it plans to apply learnings from the co-design process to future similar projects.

Challenges to effective implementation

IGEM observed the following challenges to effective implementation of the co-design process:

- Difficulties in conveying complex scientific information to the panel members. The first co-design session was content-heavy and there was a sense that participants were overloaded.
- Delays in implementing the new network have overshadowed the success of the process and may have impacted on the local community's confidence in the air monitoring network.

A further opportunity for improvement was identified during the effectiveness monitoring. EPA invited other external stakeholders to the co-design sessions as observers. IGEM interview responses suggest that the observer status at the co-design sessions could have been more clearly communicated at an earlier stage of engagement.

Despite these challenges, the process contributed to rebuilding trust between EPA and the co-design panel members and has led to an expanded air monitoring network for the Latrobe Valley community.

Action 24 Effectiveness Finding

IGEM finds that this action has been implemented effectively.



Image: Images from the co-design air monitoring network cameras were used by EPA to encourage land owners to check weather conditions before burning off

Source: EPA, March 2019

7.4 Action 77 (DHHS) – Embed the smoking cessation initiative in partnership with key service providers

SUMMARY OF FINDINGS

IGEM finds that:

- Health professionals have increased skills, confidence and knowledge in smoking cessation through engagement, education and quality improvement activities. IGEM notes that training for community and social service professionals will be delivered at a future date in line with Gippsland PHN's project plan.
- System improvements have been made to support practitioners to provide best practice care.

IGEM has observed technical limitations to the improvement of patient screening and data recording practices. IGEM notes that further work is underway to address these limitations.

7.4.1 Background

In addition to highlighting potential health effects of the Hazelwood mine fire, the 2014 Inquiry found that the overall health of the Latrobe Valley community needed to improve. At the time of the Hazelwood mine fire, Gippsland had the highest rate of smoking prevalence in Victoria, with Latrobe City having one of the highest prevalence's of daily smokers in local government areas.⁶⁶

The 2015–16 Health Improvement Inquiry Report found that people in the Latrobe Valley faced significant health challenges compared to most other Victorians. The report also highlighted the importance of early detection of chronic disease and supported greater access to processes to screen patients who are at risk.

The Board of the Health Improvement Inquiry recommended that additional funding be provided to the Health Assembly and Executive Board, and the Office of the Latrobe Health Advocate, to implement health initiatives to support long-term health improvements in the region.⁶⁷

The Victorian Government Implementation Plan committed to improving health services in the Latrobe Valley. In response to Recommendation 5 from the Health Improvement Inquiry Report, the government committed to improving early detection and screening for chronic disease. The actions set out to address this recommendation involved several aimed at encouraging smokers in the Latrobe Valley to quit smoking. DHHS led the implementation of Action 77 – Embed the smoking cessation initiative in partnership with key service providers.

7.4.2 The Latrobe Valley Smoking Cessation Initiative

DHHS contracted Gippsland PHN to support the implementation of a Latrobe Valley Smoking Cessation Initiative (the smoking cessation initiative). Gippsland PHN's project planning established that it would work with a broad range of service providers, the Health Assembly and community members to develop and implement a local approach supporting smoking cessation. Gippsland PHN's approach comprised three key focus areas:

- training for primary care health professionals
- general practice system change
- improving uptake of evidence-based cessation services.

The smoking cessation initiative has been embedded with key service providers, and Action 77 was assessed as complete in the 2018 IGEM Hazelwood report. However, Gippsland PHN advised that it will continue to develop further training programs for health professionals including an online learning module, in partnership with Quit Victoria. Gippsland PHN will also continue to develop and deliver a range of targeted smoking cessation activities in the Latrobe Valley until 2020.

In May 2019 Gippsland PHN in partnership with Quit Victoria and the Health Assembly, launched 'Smokefree Gippsland', an extension of the 'Smokefree Latrobe' campaign. 'Smokefree Gippsland' aims to reinforce the crucial role of GPs in helping patients quit smoking and aims to embed smoking cessation as part of routine care in general practice.

7.4.3 Effectiveness monitoring

IGEM reviewed project plans and other documentation provided by DHHS and Gippsland PHN and developed three project objectives as the basis for effectiveness monitoring, in consultation with DHHS (refer to Figure 10).

To assess the effectiveness of each objective, IGEM reviewed documentation provided by DHHS and Gippsland PHN and conducted semi-structured interviews with both health professionals and stakeholders involved with the implementation of the smoking cessation initiative.⁶⁸

Each objective is considered in this section, followed by observations of good practice, challenges to effective implementation, and an overall effectiveness finding.

Figure 10: Action 77 objectives

| Action 77 – Embed the smoking cessation initiative in partnership with key service providers | |
|--|--|
| Objective 1 | Health professionals and community and social service professionals have increased skills, confidence and knowledge in smoking cessation through engagement, education and quality improvement activities |
| Objective 2 | System improvements support practitioners to provide best practice care |
| Objective 3 | Improve patient screening and data recording practices in general practice, hospitals, dental practices, community health services and other primary care clinics to evaluate impacts of system changes, particularly among priority population groups |

⁶⁶ Refer to health.vic.gov.au/public-health/population-health-systems/health-status-of-victorians/survey-data-and-reports/victorian-population-health-survey/victorian-population-health-survey-2014

⁶⁷ Recommendation 5, *Hazelwood Mine Fire Inquiry Report 2015/2016 Volume III*, p. 124–125.

⁶⁸ Refer to Appendix C for further interview details.

Objective 1 – Health professionals and community and social service professionals have increased skills, confidence and knowledge in smoking cessation through engagement, education and quality improvement activities

Gippsland PHN approached this objective by providing training to Latrobe Valley health professionals in an evidence-based approach to support quitting, called the 'Ask, Advise and Help' model.⁶⁹ The model is based on a body of smoking cessation research that suggests:

- Advice on quitting from a health professional, even if brief, is highly influential. If a person does not receive this advice, they are less likely to quit.⁷⁰
- A brief intervention⁷¹ by a health professional combined with Quitline⁷² coaching will increase the quitting success rate to 10 per cent and adding nicotine replacement therapy will almost double that success.⁷³

Gippsland PHN identified Quit Victoria and Alfred Health as key support partners to provide health professional training by leveraging specialist expertise and existing funded activity:

- **Quit Victoria** is a program of the Cancer Council Victoria funded by Cancer Council Victoria and the Victorian Government through VicHealth and DHHS. Quit Victoria delivers a range of tobacco control measures including the Quitline, training and social marketing.⁷⁴
- **Alfred Health** provides training tools and resources to support healthcare facilities to implement smoking cessation policies and protocols and to provide training on contemporary best practice use of smoking cessation pharmacotherapy.⁷⁵

Quit Victoria worked with Alfred Health to refresh its smoking cessation education and developed a discipline-specific model to cater for a diverse range of health organisations and professionals. Gippsland PHN advised that training packages were tailored for clinicians including GPs, nurses, pharmacists, oral and allied health professionals.

Gippsland PHN provided IGEM with a copy of the training slides for GPs, including references to the scientific evidence-base supporting the approach.

Throughout May and June 2017 Gippsland PHN delivered eight face-to-face smoking cessation training sessions. Each session ran for two hours and was facilitated by subject matter experts from Quit Victoria and Alfred Health.

Gippsland PHN invited 26 general practices in the Latrobe Valley to participate in the training. Thirteen practices agreed to participate. Of the 13 general practices, clinical staff from 12 of the practices and GPs from five practices attended the training sessions. The breakdown of the number of training attendees by profession can be found in Table 32.⁷⁶

Table 32: Smoking cessation training attendees by profession

| HEALTH PROFESSIONAL | TOTAL TRAINING PARTICIPANTS |
|---------------------|-----------------------------|
| GPs | 24 |
| Nurses | 27 |
| Dental health | 35 |
| Practice manager | 1 |
| Allied health | 6 |
| Pharmacist | 11 |
| Other | 4 |
| Total | 108 |

Source: Gippsland PHN, May 2019.

⁶⁹ The Ask, Advise and Help model streamlines the Royal Australasian College of General Practitioners existing five-stage model to fit within a standard GP consultation. Refer to quit.org.au/resources/health-professionals/how-help-your-patient-quit

⁷⁰ Refer to quit.org.au/resources/health-professionals/how-help-your-patient-quit

⁷¹ Refer to Appendix D for definition of brief intervention.

⁷² Refer to Appendix D for definition of Quitline.

⁷³ Kotz, D., Brown, J. and West, R. 2014. 'Prospective Cohort Study of the Effectiveness of Smoking Cessation Treatments Used in the "Real World"'. *Mayo Clinic Proceedings*, 89(10), pp. 1360–1367.

⁷⁴ Refer to quit.org.au

⁷⁵ Refer to alfredhealth.org.au

⁷⁶ IGEM notes that Gippsland PHN's project plan describes a staged approach to training delivery. Although training has been provided for GPs, dentists, pharmacists and allied health professionals, training for social service providers is yet to be delivered. This training is due to be delivered by June 2020.

Gippsland PHN provided training participants with evaluation forms to be completed immediately after the training session. Overall, participants rated the training positively. With respect to addressing objective one – that health professionals have increased skills, confidence and knowledge in smoking cessation – the evaluation data supports the effectiveness of the training as follows:

- **Skills:**
 - 97 per cent reported knowing how to refer clients to the Quitline
 - 95 per cent reported being able to use appropriate pharmacotherapies to assist smoking cessation
 - 92 per cent reported being able to conduct a brief intervention.
- **Confidence:**
 - 81 per cent reported that they would be confident to deliver an intervention.
- **Knowledge:**
 - 94 per cent felt they could identify options for providing clients with behavioural supports
 - 91 per cent reported that they understood the importance of facilitating smokers to quit
 - 95 per cent reported that they understood the importance of making an enthusiastic offer of help
 - 92 per cent reported they felt it was important to deliver a smoking cessation intervention.

IGEM interviewed a range of health professionals who had received the training. When asked about their training experiences, nearly all comments supported the positive feedback provided in the training evaluation forms.

Several interviewees talked about the training reinforcing the importance of asking patients about their smoking status. One talked about the efficacy of the method, commenting that the brief interventions worked well across all people. One talked about not only having more confidence to ask patients about their smoking status themselves, but also having the confidence to point out to other clinicians that they should also be asking about patients' smoking status.

In some cases, increased confidence was associated with an increase in knowledge.

[My confidence] has definitely increased because I'm aware of more options for patients. It's easier for me to ask the question. So, when a patient asks, 'What information can I get?' I tell them, 'You can go to this place or I can put a referral through.'

Allied health professional

Only one GP who received the training was interviewed. They provided positive feedback about the facilitators and felt that the content was relevant and built upon their existing skills.

From a training point of view, the content was good, it was very relevant and applicable to what GPs do.

GP

As well as completing the training evaluation forms, the GPs also participated in an accredited quality improvement activity.

GPs quality improvement activity

Gippsland PHN in partnership with Quit Victoria developed the quality improvement activity for GPs – 'Implement a Systematic Approach to Smoking Cessation in General Practice' to comply with the Plan-Do-Study-Act (PDSA) principles.⁷⁷ The activity was accredited with the Royal Australian College of General Practitioners (RACGP) as part of its professional development program for GPs, which provided an incentive for GPs to participate.

Gippsland PHN advised that the following activities and learning outcomes were addressed:

- review new and emerging literature on tobacco and smoking cessation
- extract and examine patient data relating to smoking status
- assess the general practice environment to ensure it is conducive to patients making attempts to quit
- implement the Ask, Advise and Help model on 20 current smokers
- assess training participants for improvements in knowledge, attitude, behaviours, skills or practice systems because of undertaking the PDSA.

GPs submitted PDSA activities directly to Quit Victoria and the data was unavailable to IGEM.

IGEM interviewed several GPs who had either completed the Ask, Advise and Help training or had knowledge of and experience in implementing the Ask, Advise and Help model. Comments indicated that GPs supported the efficacy of the approach.

I think those brief interventions work really well across all people.

GP

However, with respect to implementing Ask, Advise and Help in practice, all three GPs interviewed described the time limitations of consultations as an ongoing challenge, for example:

Probably all GPs talk about the burden of time limits... you've got patients with a number of complex health needs that they're trying to address in a short period of time. Preventative and behavioural change stuff can be a bit hard to prioritise.

GP

⁷⁷ Refer to Appendix D for definition of the Plan-Do-Study-Act (PDSA) Model for Improvement Project..

In late 2018 Gippsland PHN and Quit Victoria adapted the face-to-face training into an online training model to be made available for all general practices. Gippsland PHN created a dedicated web page including links to the online training module, quality improvement activity and useful resources for clinicians published by Quit Victoria.⁷⁸

Community and social service professionals

Most of the work on the smoking cessation initiative to date has focused on health services. Gippsland PHN advised that, where possible, community and social service professionals have been engaged, including through innovation forums. Gippsland PHN has yet to expand its work to implement the Ask, Advise and Help model to community and social service professionals. Gippsland PHN's project plan indicates that training is due to be delivered to community and social service providers by June 2020.

Finding 4

IGEM finds that this objective has been implemented effectively for GPs and allied health professionals. IGEM notes that training for community and social service professionals will be delivered at a future date in line with Gippsland PHN's project plan.

Objective 2 – System improvements support practitioners to provide best practice care

Gippsland PHN approached this objective by:

- developing localised clinical and referral pathways for the HealthPathways portal
- providing GPs with an electronic referral to the Quitline.

HealthPathways

HealthPathways is a national online portal,⁷⁹ designed to be used at the point of care to guide best practice assessment and management of common medical conditions, including when and where to refer patients.⁸⁰

Each 'pathway' provides health professionals with web-based information about a specific condition or health issue. This information can include a synopsis of current evidence and clinical guidelines, along with information about local referral options. HealthPathways is designed to support health professionals during consultations and is available to medical specialists, nurses, allied health and other health professionals for use within their scope of practice.

Gippsland PHN's HealthPathways Project is the primary mechanism used for reviewing and redesigning clinical referral pathways and associated resources for the Gippsland region. IGEM observed two mechanisms used by the HealthPathways Project to contribute to objective two of the smoking cessation initiative:

- the formation of the HealthPathways smoking cessation clinical working group that enabled Gippsland PHN, expert advisors, hospital clinicians and general practice teams to work together to review and customise clinical referral pathways for local requirements
- providing a web-based, point-of-care guide to support health professionals to provide smoking cessation advice and localised referral pathways.

In June 2017 Gippsland PHN convened a Smoking Cessation HealthPathways Working Group, with membership including Gippsland PHN project staff and managers, GPs, respiratory specialists, cessation generalists and specialists, staff of the Lakes Entrance Aboriginal Health Association and allied health representatives.

The working group reviewed existing smoking cessation pathways with a view to customising them for the Gippsland region. Following the review, three clinical pathways and one referral pathway were developed for the smoking cessation initiative.

The four pathways and examples of topics covered by each are:

- **smoking cessation advice (clinical pathway)**
 - risks associated with smoking
 - nicotine dependence
 - pharmacotherapy management.
- **smoking in pregnancy (clinical pathway)**
 - benefits of quitting to both the mother and baby
 - helping fathers to quit
 - smoking after pregnancy and risks to children's health.
- **nicotine replacement therapy (clinical pathway)**
 - dispelling myths associated with nicotine replacement therapy
 - nicotine replacement therapy product information
 - nicotine replacement therapy patch strength.
- **smoking cessation programs (referral pathway)**
 - Quitline
 - Lakes Entrance Aboriginal Health Association – smoking cessation support.

Gippsland PHN advised that from April 2018 to May 2019 it had received 155 requests to use HealthPathways across a range of users including allied and dental health, practice managers, GPs and nurses.

⁷⁸ Refer to gphn.org.au/smoking-cessation-initiative

⁷⁹ Refer to gphn.org.au/programs/healthpathways

⁸⁰ IGEM reported on HealthPathways under Action 75 of the 2018 IGEM Hazelwood report, refer to igem.vic.gov.au

Although it has observed the system improvements made to HealthPathways, IGEM found its use to be inconsistent across interviewees. For example, one allied health professional saw HealthPathways as a tool that was more applicable to GPs.

It's more of a GP thing. We do have access to it but don't particularly use it as a regular form. I think it is more targeted towards GPs and it is the GPs that utilise it.

Allied health professional

Evidence provided for the 2018 IGEM Hazelwood report suggested that the number of page views across the entire Gippsland HealthPathways platform had increased since its launch in 2017. The smoking cessation HealthPathways pages have been visited a total of 159 times since their launch in August 2018.

Quitline e-Referrals

The three clinical medical software products most commonly used in general practice in the Latrobe Valley are Best Practice, Zedmed and Medical Director. Gippsland PHN, in partnership with Quit Victoria, commissioned the development of electronic Quitline referral templates, and prepared guidance to general practices to incorporate these into their software system.

Despite these systems being in place, at the time of reporting Quit Victoria had not received any e-Referrals from Latrobe Valley general practices. Gippsland PHN advised that further analysis is required to understand if there are any barriers to uptake, or whether GPs find it easier to refer to the Quitline using traditional methods.

Although no e-Referrals have been received by Quit Victoria, statistics provided by Gippsland PHN and validated by Quit suggest that the number of patient referrals to Quitline by health professionals in the Latrobe Valley in general, and Latrobe City area in particular, has been increasing since 2015 – refer to Table 33.

Finding 5

IGEM finds that system improvements have been made to support practitioners to provide best practice care.

Table 33: Referrals to Quitline by health professionals over time for Latrobe and neighbouring local government areas

| LOCAL GOVERNMENT AREA | POPULATION ⁸¹ | 2015 | 2016 | 2017 | 2018 | TOTAL |
|-----------------------|--------------------------|-----------|-----------|------------|------------|------------|
| Latrobe | 73,257 | 34 | 57 | 60 | 90 | 241 |
| Baw Baw | 48,479 | 2 | 4 | 13 | 15 | 34 |
| East Gippsland | 45,040 | 3 | 6 | 16 | 14 | 39 |
| Wellington | 42,983 | 8 | 5 | 12 | 8 | 33 |
| Bass Coast | 32,804 | 9 | 3 | 8 | 11 | 31 |
| South Gippsland | 28,703 | 2 | 6 | 8 | 17 | 33 |
| Total | 271,266 | 58 | 81 | 117 | 155 | 411 |

Source: Gippsland PHN.

⁸¹ 2016 Australian Bureau of Statistics Census data.

Objective 3 – Improve patient screening and data recording practices in general practice, hospitals, dental practices, community health services and other primary care clinics to evaluate impacts of system changes, particularly among priority population groups

Gippsland PHN has planned a staged approach to improving data recording systems, prioritising patient screening and data recording for GPs. To evaluate the impacts of system changes eventuating from the smoking cessation initiative, Gippsland PHN required general practice systems to record the percentage of patients who:

- have their smoking status recorded
- have been offered a brief intervention.

Gippsland PHN has focused on the use of the Population Level Analysis and Reporting (POLAR) GP software tool as its source of patient smoking status data.⁸² POLAR GP is a data analysis and extraction tool. It enables general practices to extract and analyse de-identified clinical information from local general practices to enable quality improvement and population health planning. At the time of this report, Gippsland PHN advised that 17 of the 26 general practices in the Latrobe Valley have the POLAR GP data extraction tool enabled.

POLAR GP works by interrogating data from existing medical software systems including Best Practice and Medical Director.⁸³

GPs who undertook the PDSA quality improvement activity as part of the 'Ask, Advise and Help' training completed two training cycles related to patient screening and data recording practices. Table 34 shows the percentage of patients with their smoking status recorded over time.

If patient screening recording practices were improving over time, the percentage of patients with an 'unknown' smoking status would be expected to decrease. Given that the PDSA quality improvement activity focused on data recording, a more marked decrease would be expected for PDSA clinics. Instead the percentage of patients with an unknown smoking status has increased over time for both PDSA and non-PDSA clinics.

Although POLAR GP can capture the number of patients prescribed with nicotine replacement therapy, it cannot presently capture when a patient has been offered a brief intervention to quit smoking. Gippsland PHN advised that this is because medical software systems including Best Practice and Medical Director do not presently include this functionality.

A further limitation of the software highlighted by both Gippsland PHN staff and a GP interviewee is that changes to the smoking status are not date stamped. Therefore, a patient's journey to quitting is not recorded, and GPs are not provided with feedback on when patients were last asked about their smoking status.

Gippsland PHN advised that it is currently working to request clinical software vendors to add fields that support GPs' data recording practices, including a field to record offers of brief interventions.

Observation 1

IGEM has observed technical limitations to the effective implementation of this objective. IGEM notes that further work is underway to address these limitations.

Table 34: Percentage of patients with smoking status recorded in calendar year increments

| | 2015 NON-PDSA CLINICS | 2015 PDSA CLINICS | 2016 NON-PDSA CLINICS | 2016 PDSA CLINICS | 2017 NON-PDSA CLINICS | 2017 PDSA CLINICS | 2018 NON-PDSA CLINICS | 2018 PDSA CLINICS |
|-------------------------|-----------------------------|----------------------|-----------------------------|----------------------|-----------------------------|----------------------|-----------------------------|----------------------|
| Smoker % (number) | 25.2 (9413) | 13.1 (1641) | 26.0 (10,848) | 14.0 (1779) | 26.3 (11,489) | 14.6 (1946) | 26.5 (11,089) | 16.2 (2346) |
| Ex-smoker % (number) | 23.3 (8732) | 22.6 (2837) | 22.9 (9570) | 23.2 (2949) | 22.8 (9939) | 22.6 (3013) | 23.3 (9745) | 22.1 (3210) |
| Unknown % (number) | 17 (7686) | 17.5 (2664) | 18.4 (9402) | 17.8 (2751) | 19.5 (10,574) | 19.3 (3184) | 20.5 (10,813) | 20.9 (3832) |

Source: Gippsland PHN.

⁸² Refer to outcomehealth.org.au/polar.aspx

⁸³ The POLAR GP website states that integration with Zedmed (the third most commonly used software in Latrobe Valley general practices) will be available soon.

7.4.4 Conclusion

IGEM identified three objectives from Gippsland PHN project planning that it considered closely aligned with the requirements of Action 77, in consultation with DHHS. These focused on the training of health professionals and social service providers in the Ask, Advise and Help model, the development of systems to support best practice care and the improvement of patient screening and data recording practices.

IGEM considers that the first two objectives have been implemented effectively, with limitations to the effective implementation of objective 3 that require the engagement and cooperation of commercial software suppliers. Overall, IGEM concludes that Action 77 has been implemented effectively.

Elements of good practice

IGEM observed the following elements of good practice:

- Gippsland PHN provided incentive for GPs to participate in the smoking cessation initiative through the RACGP continuous development program.
- The training has led to at least one allied health professional IGEM interviewed becoming a 'champion' of the initiative within their workplace. This has enabled the training messages and associated practices to be reinforced. This was described to IGEM as being especially important when there was a high turnover of staff and a risk of losing the benefits associated with the training.

Challenges to effective implementation

IGEM observed the following challenges to implementation:

- Although the Ask, Advise and Help model was developed to allow for brief interventions within the time constraints of a patient consultation, GPs are still reporting lack of time with patients as a perceived barrier to successful application of the model (and preventative medicine in general).
- Not all allied health services or professionals have signed agreements to use HealthPathways, meaning it is not consistently used by health professionals across health settings.
- Challenges of working with third-party commercial software suppliers, specifically that existing medical software does not contain the necessary features to record whether patients have been offered a brief intervention to quit smoking.
- Gippsland PHN's focus on general practice has meant there is more work to do around strengthening systems and data recording practices for health professionals other than GPs.

These challenges and limitations are consistent with Gippsland PHN's approach to initially focus on general practice. Despite these challenges, Quit Victoria data suggests that the number of Quitline referrals from Latrobe Valley health professionals has increased since the commencement of the smoking cessation initiative.

Action 77 Effectiveness Finding

IGEM finds that this action has been implemented effectively, noting that there are some technical limitations to the improvement of patient screening and data recording practices.

7.5 Action 153 (DJPR/WorkSafe) – Undertake twice yearly workshops on the MOU between DEDJTR and WorkSafe

SUMMARY OF FINDINGS

IGEM finds that:

- The sharing of information has led to better connectedness between WorkSafe and ERR.⁸⁴ IGEM notes that there may be an opportunity to explore further areas in which shared guidance might be useful.
- The MOU supported WorkSafe and ERR working together effectively to monitor and enforce compliance with mine fire risk. IGEM notes that this can be further enhanced with the development of annual timetables for joint oversight visits/inspections and verification/audits.
- The biannual MOU workshops have been effective for ensuring that WorkSafe and ERR are better connected to monitor and enforce compliance with mine fire risk across both regulatory regimes.

⁸⁴ In January 2019 the former Department of Economic Development, Jobs, Transport and Resources (DEDJTR) transitioned into the Department of Jobs, Precincts and Regions (DJPR) and the Department of Transport (DOT). Earth Resources Regulation (ERR) is a branch within DJPR.

7.5.1 Background

The 2014 Inquiry report highlighted gaps in the regulation of coal mine fire risk and identified the need to improve coal mine regulation in the Latrobe Valley.

The 2014 Inquiry report draws attention to 1 January 2008 – when responsibility of oversight of occupational health and safety (OHS) matters in Victorian mines was transferred from the Mining Regulator to the Victorian Workcover Authority.

The Mining Regulator no longer considered itself to have any role in regulating fire risk at the Hazelwood mine. Meanwhile, the Victorian Workcover Authority has concentrated its resources on monitoring workplace risks that have the greatest potential to cause worker fatalities.

2014 Inquiry report, p. 150

The Board of Inquiry made a range of recommendations to improve the regulation of specific risks as well as strengthen the overall regulatory framework for coal mines in the Latrobe Valley.

Recommendation 4 of the 2014 Inquiry report required the state to acquire the expertise necessary to monitor and enforce compliance with fire risk control measures adopted by the Victorian coal mining industry under both the mine licensing and OHS regimes.

In response, the government committed to ERR and WorkSafe proactively and collaboratively monitoring and enforcing compliance with legislation and regulations applicable to the Latrobe Valley mines, including fire risk control measures.

The principal regulatory mechanisms that currently govern the risk and prevention of fire at the Latrobe Valley coal mines are:

- licensee work plans⁸⁵ required under the MR(SD) Act – administered and enforced by the ERR unit within DJPR
- OHS laws – administered and enforced by WorkSafe.

Under the MR(SD) Act and the MR(SD) Regulations, ERR is responsible for regulating mine operators' compliance with mining licenses⁸⁶ and work plans. ERR guidance materials for developing work plans includes requirements for license holders to identify and assess all risks the works may pose to the environment, to the public, or to nearby land, property or infrastructure. It also requires licensees to include a risk management plan that specifies the measures the licensee will use to eliminate or minimise identified risks. Where noncompliance with work plans is identified, ERR can use compliance tools including infringement notices, enforceable undertakings, remedial notices and enforcement orders.

In Victoria, workplace health and safety is governed by a system of laws, regulations and compliance codes which set out the responsibilities of employers and workers to ensure that safety is maintained at work. WorkSafe is the health and safety regulator for Victoria. Where noncompliance with OHS laws is detected, WorkSafe can use compliance tools including improvement notices, prohibition notices, or directions to cease work.

In May 2015 the former DEDJTR Secretary and the Chief Executive of WorkSafe approved an MOU between ERR and WorkSafe. The MOU establishes the commitment of both parties to work together in areas of overlapping responsibility and cooperate in the administration of their respective legislative requirements.

The Victorian Government Implementation Plan set out a series of actions to address Recommendation 4, including Action 153 which requires ERR and WorkSafe to undertake twice-yearly workshops on the MOU.

7.5.2 The MOU between WorkSafe and ERR

The 2015 MOU sets out shared objectives for WorkSafe and ERR, including:

- ensuring the effective cooperation of both parties
- assisting workplaces and other parties to meet the requirements of both parties without any unnecessary duplication of effort.

To achieve the objectives, the MOU states that WorkSafe and ERR will share relevant information to the extent permitted by law and will work together to actively manage areas of overlapping responsibility. One area of regulatory overlap between WorkSafe and ERR is 'mine fire prevention, mitigation and suppression'.⁸⁷ The MOU is supported by supplementary materials such as action plans and joint activity protocols.

A revised MOU was signed by both parties in May 2019 and has no formal end date. As the MOU was updated after IGEM commenced its effectiveness monitoring, IGEM has used the 2015 MOU as the basis for monitoring activity.⁸⁸

MOU governance

Under its governance arrangements the MOU is to be reviewed periodically by the parties to ensure its ongoing effectiveness. The governance arrangements also require WorkSafe and ERR to:

- meet quarterly to review the relevance of the MOU and to discuss learnings, especially those associated with areas of overlapping responsibility
- hold biannual workshops to involve regional staff in reporting on relevant activities in their regions.

⁸⁵ Refer to Appendix D for definition of a work plan.

⁸⁶ Refer to Appendix D for definition of mining licence.

⁸⁷ The three other areas of regulatory overlap are; mine stability, explosives (including blasting) and well integrity.

⁸⁸ All further references to the MOU in this report refer to the 2015 MOU.

Action 153 of the 2016 Victorian Government Implementation Plan requires WorkSafe and ERR to undertake biannual MOU workshops and ensure that these transitioned to business as usual by July 2017. IGEM reported Action 153 as complete in its 2017 IGEM Hazelwood report.

7.5.3 Effectiveness monitoring

As there were no government actions related to implementing the MOU, IGEM took a broad interpretation of Action 153 to consider effectiveness of the MOU beyond the twice-yearly workshops.⁸⁹

To establish objectives for effectiveness monitoring, IGEM reviewed the MOU and supplementary guidance materials for their alignment with Recommendation 4. IGEM developed a single project objective, in consultation with WorkSafe and ERR (refer to Figure 11).

Figure 11: Action 153 objective



IGEM gathered information and analysed data from several sources to form the basis of its effectiveness monitoring including:

- documentary information provided by WorkSafe and ERR
- semi-structured interviews with WorkSafe and ERR employees conducted by IGEM
- IGEM direct observation of a quarterly MOU meeting held in March 2019 and a biannual MOU workshop held in May 2019.

The objective is considered in this section, followed by observations of good practice, challenges to effective implementation, and an overall effectiveness finding.

Objective – Worksafe and ERR are better connected to monitor and enforce compliance with mine fire risk across both regulatory regimes

IGEM reviewed the MOU and identified the following key processes that could lead to improved connectedness between the two organisations:

- information sharing
- working together to monitor and enforce compliance with mine fire risk
- biannual MOU workshops and quarterly meetings.

Each of these processes will now be explored in more detail.

Information sharing

The MOU sets out that *'the exchange of relevant information and records will assist both WorkSafe and ERR to effectively administer their respective legislation'*. The MOU prescribes the following types of information to be shared by the parties that IGEM deemed to be relevant to the objective:

- tenement data⁹⁰ – to be provided by ERR annually
- employee statistics⁹¹ – to be provided by WorkSafe annually
- potential identified breaches of the other regulator's legislation⁹²
- guidance materials.

IGEM was provided with documentation demonstrating that WorkSafe and ERR have been sharing information for all the listed information types.

Tenement data and employee statistics

ERR tenement data provides WorkSafe with details of ERR mining licensees, the type of industry and production and/or expenditure values. WorkSafe employee statistics provide ERR with details of the licensees under WorkSafe's regulatory control, including related safety and incident data to the extent permitted by law. Interview responses confirmed that WorkSafe and ERR staff had been sharing both forms of operational data.

Interview responses indicate that the sharing of data has assisted the parties to perform their respective regulatory roles through applying a risk-based approach to identifying sites of potential interest.

⁸⁹ This scope also aligns with the intent of Recommendation 4 of the 2014 Inquiry. The monitoring scope was determined in consultation with WorkSafe and ERR.

⁹⁰ Refer to Appendix D for definition of tenement data.

⁹¹ Refer to Appendix D for definition of employee statistics.

⁹² Where the potential breach involves an area of overlapping responsibility, inspectors from both regulators would be required to work together to resolve the matter.

Sharing of information is vitally critical to what we need to do. It's not just the face-to-face. There are records and emails that get sent through that a site is doing x, y and z and are you aware of x, y and z so that we can be on top of any emerging issues. The sharing of information and issues goes beyond that though. Their information now informs our risk profiling as well. So, ERR talk about production rates, extractive rates for various sites, which will inform our processes as to do we need to go and target those sites, are they small, medium, large?

WorkSafe employee

Potential identified breaches of the other regulator's legislation

IGEM was provided with several examples of notifications of potential breaches of the other regulator's legislation. This included WorkSafe and ERR senior management sharing emails advising of potential breaches of the other regulator's legislation.

IGEM also observed discussions of potential breaches of the other regulator's legislation at meetings and workshops.

To demonstrate the effectiveness of the MOU for improving connectedness, more than one interviewee stated that observing a potential breach of their own legislation now prompted them to think about potential breaches of the other regulator's legislation.

If we go out there and see something wrong, all we need to do is just flick that mental switch to say, well who else would be interested in this? Well, there's a clear OHS risk of a fall from a height to crush. Okay yes, we should make that call to WorkSafe as well.

ERR employee

A quarry had been visited by WorkSafe several times and it was shut, fenced, and signed with contact details. A complaint had gone through to ERR to say that this quarry now appeared to be a dumping ground for old vehicles, and kids on site riding motorbikes. ERR went out and they informed us of certain activities that were going on there. So, there were no fences, no gates anymore. They identified security issues and security is an issue for both parties, people shouldn't be going in there. So, they identified several issues and notified us.

WorkSafe employee

Guidance materials

Regulators develop guidance materials to assist licensees to understand their legislative obligations and to prepare required documents such as work or management plans. Examples of shared guidance materials co developed by WorkSafe and ERR included guidance for fire risk management that was presented to the Construction Material Processors Association, and requirements for blasting and blast management. When interviewees were asked about the use of shared guidance materials one senior manager described it as an area for improvement for the two parties. Another suggested that if the blasting

guidance is well received they will explore other areas in which shared guidance might be useful. WorkSafe and ERR are also exploring the potential to co brand guidance materials.

Overall, IGEM has observed that the sharing of information between WorkSafe and ERR has been effective in the following ways:

- **Informing risk assessment** – interview responses indicate that the sharing of data has helped the respective organisations to apply a risk-based approach to their work.
- **Providing more resources for identifying potential breaches** – interview responses indicate that having both regulator's staff alert to potential breaches of the other regulator's legislation and the sharing of this information has enhanced the capacity to identify potential breaches.

When they give us information that we wouldn't already know it absolutely helps, because we have six inspectors and 2000 sites so we just don't have the resources to know everything. They're the eyes and ears across the state, which is good.

WorkSafe employee

- **Providing a shared understanding of licensee compliance and/or safety culture** – interview responses and IGEM's observations from meetings and workshops suggest that licensees with a high-risk profile for one regulator are likely to also present a high-risk profile for the other regulator.

Key health and safety concerns about manual handling for instance, may not concern ERR to a point, however, it's the underlying attitudes behind those actions, where you understand that if they were difficult to deal with they're likely to be the same across all types of issues. Then we develop a better feel for what we call inspector gut feel. And that also informs our risk profile a little bit as well.

WorkSafe employee

- **Presenting a joined-up and consistent regulatory response** – some interviewees reported that licensees had previously tried to 'play off' the two regulators against each other. In other words, a common defence for an action that may contravene one regulator's act was that the other regulator directed them to take that action. The interviewees reported that with increased information sharing and communication between WorkSafe and ERR this practice was more difficult for the licensees to attempt.

The licence holder will often look for a gap between the parties. Because if organisation A says only five people are needed but organisation B says 10, they're going to claim that, 'organisation A said five' but if you all agree that seven are needed, then...

ERR employee

Finding 6

IGEM finds that the sharing of information has led to better connectedness between WorkSafe and ERR. IGEM notes that there may be an opportunity to explore further areas in which shared guidance might be useful.

Working together to monitor and enforce compliance with mine fire risk

The MOU describes the activities that WorkSafe and ERR are to undertake to work together as:

- joint oversight visits/inspections⁹³
- joint verification/audits⁹⁴
- resolving potential breaches of overlapping responsibilities
- providing advice to external stakeholders.

Joint oversight visits/inspections and verification/audits

To monitor compliance with their respective legislation, ERR conducts inspections and audits, whereas WorkSafe conducts oversight visits and verifications. All four activities form a planned examination or review of management systems, data, records and operations of tenements administered by ERR and/or WorkSafe.

IGEM was provided with documentary evidence demonstrating that WorkSafe and ERR had conducted joint oversight visits/inspections and joint verification/audits.

To provide more details about the effectiveness of these visits, IGEM asked WorkSafe and ERR employees about their experiences conducting joint oversight visits/inspections and joint verification/audits. All respondents expressed positive views of the process, for example:

They're good when they're relevant topics, so things that they regulate I think are very useful. Over the years we've gotten better at saying, 'Why don't you come on day one because we're looking at A, B and C' rather than being there for two days and being bored. So yeah, I think they're effective now because we've learnt how to do them better and invite the right people for the right reasons.

WorkSafe employee

Joint visits are just a really good thing. It inevitably elongates the visit, you're not as quick. But what you sacrifice in terms of time, you gain in terms of I think an overall outcome and to a lesser extent efficiency... The added bonus for myself is I've learnt quite a lot about what WorkSafe do...it just trains your eye that little bit better to actually understand the things that are important to them and what's right and what's wrong. That then allows me to make a better call in the future if I'm observing something similar.

ERR employee

We go there and provide a united front and demonstrate that what's important to us is equally important to WorkSafe and that we are going to work well together. The historical duty holder model, particularly for the more complex, the more advanced, the more well-resourced duty holders, have effectively tried to divide and conquer between the regulators. 'Well WorkSafe told me it was fine, what are you worried about?' And vice versa...So being able to effectively nip that in the bud by having really good presence collectively, is really important.

ERR employee

Resolving potential breaches of overlapping responsibilities

Although several documents provided to IGEM contained examples of the parties resolving potential breaches of overlapping responsibilities, the example most relevant to mine fire risk emerged from the semi-structured interviews. This example involved ERR's and WorkSafe's response to a regulatory concern around mine fire risk.

Co-regulator response under the MOU

In August 2018 WorkSafe and ERR collaborated (with CFA and EPA assistance) to respond to a potential regulatory concern around mine fire risk. Evidence provided to IGEM suggests the agencies undertook a thorough and considered process to ensure all regulatory concerns were addressed. The process provided a solution to a novel regulatory problem, using CFA subject matter expertise to apply a risk-based approach.

But no one agency could have done that, CFA couldn't have done that by themselves, WorkSafe couldn't have done it by themselves, we couldn't have done it by ourselves. It was only that collective that allowed us to come up with that.

ERR employee

In early 2019 ERR engaged a consultant to conduct an evaluation of the co-regulator's response.

The report highlighted several elements of good practice, the most relevant to IGEM effectiveness monitoring being:

- the MOU provided a solid foundation for the co-regulators to work together

⁹³ Refer to Appendix D for definitions of oversight visits and inspections.

⁹⁴ Refer to Appendix D for definitions of verifications and audits.

- there was effective communication between the co-regulators throughout the course of the issue
- each organisation played an appropriate role in the process, with a clear logic underpinning their contribution.

IGEM interviews highlighted further examples of good practice:

- the response drew upon CFA subject matter expertise to provide a risk-based solution to a novel regulatory problem
- the joined-up response ensured that all regulatory concerns were addressed
- ERR and WorkSafe both sought executive commitment for the compliance action at the Secretary/Chief Executive level – although the independent report into the co-regulator’s response found that executive commitment was not documented early on in the process.

MOU activities yet to be undertaken

The MOU sets out that the parties will set annual timetables for joint oversight visits/inspections and verification/audits. IGEM observed evidence that individual parties were sharing their timetables with the other regulator. However, annual timetables for joint activities have not been developed to date. Interviewees reported the following challenges around developing these timetables:

- turnover of regional staff
- varying workloads and resourcing capabilities across different regions for each regulator
- an element of the work requires the parties to react to potential risks once becoming aware of them, which makes the forward planning of such visits difficult.

WorkSafe and ERR have advised they are aware that setting annual timetables for joint activities is an area for improvement and are working on a solution to incorporating these moving forward.

Finding 7

IGEM finds that the MOU supported WorkSafe and ERR working together effectively to monitor and enforce compliance with mine fire risk. IGEM notes that this can be further enhanced with the development of annual timetables for joint oversight visits/inspections and verification/audits.



Image: ERR inspectors in the field
Source: DJPR

Biannual MOU workshop and quarterly meetings

Section 5 of the MOU describes the governance arrangements by which the parties operate to ensure the ongoing effectiveness of the MOU, including:

- biannual workshops – representatives from each regulator’s regional offices join senior metropolitan managers to report on relevant activities in their regions
- quarterly meetings – to review the relevance of the MOU and to discuss learnings, especially areas of overlapping responsibility.

IGEM attended a quarterly meeting in March 2019 and a biannual workshop in May 2019 as observers. IGEM observed the following activities at the biannual workshop:

- an update on the regulation of metropolitan hazardous waste facilities and associated challenges and learnings
- a discussion of the changes in the revised MOU, which was approved by both parties in May 2019
- a discussion of each regulator’s organisational charts and personnel changes
- a discussion of regional incidents and shared learnings – examples included dust hazards, coal mine fire risks and fall of ground incidents
- a presentation on silica dust risks and controls
- a presentation on edge protection and blasting preparation and activities.

IGEM asked interviewees about their experiences of participation in previous biannual workshops. All respondents indicated that when they had attended the workshops they had found them to be of benefit. There was agreement among respondents that the workshops were particularly useful for forming relationships with their peers from the other regulator.

The best value comes in the breaks where people get to mix around...we get the conversations rolling a little bit, particularly for those people who might be more regionally based, can they find their counterpart... it gives them a bit more opportunity to interact.

WorkSafe employee

IGEM observed that there was strong buy-in from regional staff who attended the event. A large proportion of the conversation and learnings was driven by regional staff, rather than by senior management. These staff also felt comfortable to make suggestions for continuous improvement activities. The suggestions were treated with due consideration and respect by senior management even where there was some disagreement.

Through attendance at the quarterly meeting and biannual workshop, IGEM also observed the importance of sharing operational 'stories' for informing risk assessments. One important underlying process appears to be the pervasive nature of a poor compliance and/or safety culture.

One of the classic rules of regulation is if a regulated entity is bad for one regulator, they'll be bad for all of them. If they are failing on their WorkSafe requirements, they'll be failing on their EPA requirements.

ERR employee

IGEM observed the following activities at the quarterly meeting:

- an update on the regulation of metropolitan hazardous waste facilities and associated challenges and learnings
- WorkSafe update on personnel changes
- WorkSafe operational updates and learnings
- ERR update on personnel changes
- ERR operational update and learnings
- a discussion on how to improve risk assessments and risk matrices
- sharing of individual schedules for planned activities
- a progress update on the MOU revision.

IGEM also observed the following elements from the MOU being discussed at the meeting:

- examples of joint oversight visits/inspections being organised at the inspector level
- examples of notifications of potential identified breaches of the other regulator's legislation
- a discussion of shared guidance materials
- opportunities for shared training.

WorkSafe advised that the learnings from the meetings and workshops conducted under this MOU are being used to drive activity with other regulators.

The MOU with Energy Safe is being reviewed as well as EPA for that matter. We're looking at six-monthly workshops. We're looking at quarterly management meetings as well. There are some really good positives to come out of this and I'm hoping that it actually filters through to other corners of WorkSafe, not just within earth resources.

WorkSafe employee

Finding 8

IGEM finds that the biannual MOU workshops have been effective for ensuring that WorkSafe and ERR are better connected to monitor and enforce compliance with mine fire risk across both regulatory regimes.

7.5.4 Conclusion

IGEM applied a broad interpretation of Action 153 to consider the effectiveness of the MOU in ensuring that WorkSafe and ERR are better connected to monitor and enforce compliance with mine fire risk across both regulatory regimes.

IGEM considers that the objective has been effectively implemented and therefore concludes that Action 153, and the MOU more broadly, has been implemented effectively.

Examples of good practice

IGEM observed several examples of good practice throughout the monitoring process such as:

- the sharing of information and intelligence between regulators for informing risk assessments
- joined-up responses have provided greater impetus for organisations to react and intervene⁹⁵
- strong buy-in from regional staff who have driven MOU-related activities rather than waiting to be directed by senior management
- the MOU has contributed to ERR and WorkSafe achieving the following characteristics of best practice for the governance objective of 'Cooperation amongst regulators' as specified in the *Department of Treasury's Statement of Expectations Framework for Regulators, 2018*:⁹⁶
 - The regulator engages and coordinates on a regular basis with other regulators whose regulated parties overlap with their own.
 - Regulatory practices are streamlined between regulators (for example, information is only required to be provided to government once and that data is shared between regulators).

Challenges to effective implementation

IGEM observed that the main challenge to implementing the MOU has been the practical constraints for developing annual timetables for joint oversight visits/inspections and joint verifications/audits.

Action 153 Effectiveness Finding

IGEM finds that this action has been implemented effectively.

⁹⁵ Examples were provided to IGEM demonstrating that this practice has extended to other organisations such as CFA.

⁹⁶ Refer to dtf.vic.gov.au/reducing-regulatory-burden/statement-expectations-regulators

8. Concluding remarks

This is IGEM's fourth and final report as sole monitor of the implementation of actions, recommendations and affirmations arising from the Hazelwood mine fire inquires.⁹⁷ It is also the last IGEM monitoring report to be tabled in Parliament as required by the Victorian Government Implementation Plan.

Overall, IGEM has found significant progress has been made by government departments and agencies, health agencies and coal mine operators to implement the actions, recommendations and affirmations arising from the 2014 and 2015–16 Hazelwood mine fire inquires.

Of the 35 ongoing government actions from the 2018 IGEM Hazelwood report, 19 actions have been completed in the period covered by this report – 1 August 2018 to 30 July 2019. In addition, two recommendations, and six affirmations from the Health Improvement Inquiry report and one recommendation from the Mine Rehabilitation Inquiry report have been completed in this period.

A full summary of the status of all recommendations, affirmations and actions is provided in Appendix A.

IGEM commends the substantial work achieved by all lead organisations during this period to implement wide ranging reforms for the state and the Latrobe Valley. In particular, IGEM recognises the considerable contribution by health agencies in supporting the implementation of significant health improvement initiatives for the Latrobe Valley.

IGEM will continue to monitor 11 of the 16 government actions that remain ongoing, and report on future progress directly to the Minister for Police and Emergency Services. The remaining five ongoing actions relating to the Latrobe Valley Regional Rehabilitation Strategy will be monitored by the Latrobe Valley Mine Rehabilitation Commissioner. IGEM will also continue to monitor the last remaining recommendation from the Mine Rehabilitation Inquiry report.

IGEM thanks all lead government departments and agencies, health agencies and the Latrobe Valley mine operators for their cooperation and strong support of IGEM in carrying out its monitoring and reporting activities. Their commitment to continuous improvement is commended.



Image: Latrobe Valley sunrise
Source: Latrobe City Council

⁹⁷ Under the current formal arrangements.

9. References



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Appendix A

Status of Hazelwood
Mine Fire Inquiry
recommendations
and affirmations

Hazelwood Mine Fire Inquiry Report 2014

On 1 January 2019 the former Department of Economic Development, Jobs, Transport and Resources (DEDJTR) transitioned into the new Department of Jobs, Precincts and Regions (DJPR) and the new Department of Transport (DOT); and the Department of Justice and Regulation (DJR) was renamed to the Department of Justice and Community Safety (DJCS).

For actions completed prior to this report, DEDJTR and DJR are listed as lead agency. For actions that were assessed in the current report, DJPR and DJCS are listed as lead agency.

Table 35: Status of recommendations, affirmations and actions from the 2014 Hazelwood Mine Fire Inquiry Report

| HAZELWOOD MINE FIRE INQUIRY REPORT 2014 | | | |
|--|---|-------------|---------------|
| RECOMMENDATION 1 | | | STATUS |
| The State empower and require the Auditor-General or another appropriate agency, to: | | | Ongoing |
| <ul style="list-style-type: none"> oversee the implementation of these recommendations and the commitments made by the State and GDF Suez during this Inquiry; and report publicly every year for the next three years on the progress made in implementing recommendations and commitments. | | | |
| No. | Action | Lead agency | Action status |
| 3 | Assist the Minister for Emergency Services to request that the IGEM begins monitoring implementation of all 2014 Inquiry Report recommendations and affirmations, by Government and GDF Suez, with annual reports on progress | DJR | Complete |
| 5 | Publicly release the IGEM's annual reports in the Victorian Parliament within a reasonable time of receipt by the Minister for Emergency Services | DJCS | Ongoing |
| RECOMMENDATION 2 | | | STATUS |
| The State establish, for any future incident, integrated incident management teams with GDF Suez and other Victorian essential industry providers, to: | | | Complete |
| <ul style="list-style-type: none"> require that emergency services personal work with GDF Suez and other appropriate essential industry providers; and implement the Australasian Inter-service Incident Management System. | | | |
| No. | Action | Lead agency | Action status |
| 205 | Convene an industry forum in the Latrobe Valley, with quarterly attendance | CFA | Complete |
| 206 | Update local emergency management plans to incorporate industry into emergency management planning and response ⁹⁸ | EMV | Complete |
| 207 | Develop the Latrobe Valley Coal Mines Major Emergency – Strategic Concept of Operations and Industry Integration | EMV | Complete |
| 208 | Hold exercise "Latrobe 15" to implement and test the pilot integrated management structure, fully integrating industry into the REMT and IMTs | EMV | Complete |
| 209 | Finalise the Latrobe Valley Coal Mines Major Emergency – Strategic Concept of Operations and Industry Integration | EMV | Complete |

⁹⁸ The Gippsland Region Emergency Relief and Recovery Plan; the Gippsland Risk and Consequence Plan Bushfire and heat 2015–16; and the Gippsland RCT and REMT Fire Readiness Matrix 2015–16.

| | | | |
|-----|---|-----------|----------|
| 210 | Train Emergency Commanders and identified staff in AIIMS Level 2 accreditation ⁹⁹ and enable designated ENGIE personnel to attend regional ICC during incidents that have potential to impact the mine | EMV | Complete |
| 211 | Finalise the Coal Mine Emergency Taskforce Status Report detailing the status and initiatives undertaken by the Taskforce members | EMV | Complete |
| 212 | Hold Coal Mine Taskforce Exercise to further implement and test the pilot integrated management structure, fully integrating industry into the REMT and IMTs | EMV | Complete |
| 213 | District 27 District Command Centre is operational | CFA | Complete |
| 214 | Deliver the Final Report of the Latrobe Valley Coal Mine Taskforce | EMV | Complete |
| 215 | Attend bi-monthly CGEIG Standardisation Committee meetings | EMV & CFA | Complete |
| 216 | Update EMV Joint Standing Operating Procedure for Incident Management Team Operations to incorporate industry integration into IMT operations | EMV | Complete |
| 217 | Assist in the re-write of the AIIMS doctrine to accommodate the full integration of industry into the AIIMS structure and process | EMV | Complete |

RECOMMENDATION 3

STATUS

The State enact legislation, to:

- require Integrated Fire Management Planning; and
- authorise the Emergency Management Commissioner to develop and implement regional and municipal fire management plans.

Ongoing

| No. | Action | Lead agency | Action status |
|-----|---|-------------|---------------|
| 222 | Release the draft Emergency Management Legislative Amendment (Planning) Bill 2016 for public consultation | EMV | Complete |
| 225 | Full implementation of the Emergency Management Legislative Amendment (Planning) Bill 2016 | EMV | Ongoing |

RECOMMENDATION 4

STATUS

The State:

- bring forward the commencement date of s. 16 of the *Mineral Resources (Sustainable Development) Amendment Act 2014* (Vic), to facilitate the requirement that approved work plans specifically address fire prevention, mitigation and suppression; and
- acquire the expertise necessary to monitor and enforce compliance with fire risk measures adopted by the Victorian coal mining industry under both the mine licensing and occupational health and safety regimes.

Complete

| No. | Action | Lead agency | Action status |
|-----|---|--------------|---------------|
| 148 | Develop a Latrobe Valley Mine Dust – Industry Sector Strategy | EPA | Complete |
| 149 | Bring forward the commencement of amendments to the MR(SD) Act, to facilitate the requirement that approved Work Plans specifically address fire prevention, mitigation and suppression | DEDJTR | Complete |
| 150 | Endorse schedules to the DEDJTR and EPA Statement of Agreement | DEDJTR & EPA | Complete |

⁹⁹ Training was used by personnel during mine declared SEVERE & EXTREME fire danger days in 2015–16. See initiatives from the Latrobe Valley Coal Mine Emergency Taskforce status report December 2016 files-em.em.vic.gov.au/public/EMV-web/Coal-Mines-Emergency-Management-Taskforce-Final-Report.pdf

| | | | |
|-----|---|-------------------|----------|
| 151 | Establish a Mine Fire and Emergency Unit | DEDJTR | Complete |
| 153 | Undertake twice yearly workshops on the MOU between DEDJTR and WorkSafe | DEDJTR & WorkSafe | Complete |
| 154 | Engage technical specialists to assist WorkSafe in the assessment of coal mine fire risk | WorkSafe | Complete |
| 157 | Sign an MOU (DEDJTR and CFA) that describes roles and responsibilities around fires and fire risk at earth resource sites | DEDJTR & CFA | Complete |

RECOMMENDATION 5**STATUS**

The State equip itself to undertake rapid air quality monitoring in any location in Victoria, to:

Ongoing

- collect all relevant data, including data on PM2.5, carbon monoxide and ozone; and
- ensure this data is used to inform decision-making within 24 hours of the incident occurring.

| No. | Action | Lead agency | Action status |
|-----|---|-------------|-------------------|
| 114 | Endorse the Rapid Deployment of Air Quality Monitoring for Community Health Guideline | EPA | Complete |
| 115 | Endorse the JSOP 03.18 for Rapid Deployment of Air Quality Monitoring for Community Health | EPA | Complete |
| 116 | Deliver rapid response monitoring capacity for PM2.5 and CO, including transitional data and information management processes for decision making during an event | EPA | Complete |
| 117 | Refine the response model, decision support tools and deployment procedures for 2016/17 summer fire season by incorporating lessons learned | EPA | Complete |
| 118 | Two mobile stations built and operational for deployment to complex events of extended duration and significant community impact | EPA | Complete |
| 119 | Train relevant staff in EPA regional offices in air quality equipment deployment during emergency events | EPA | Complete |
| 120 | Pre-deploy smoke monitors to identified high-risk sites across regional Victoria | EPA | Complete |
| 121 | Establish EPA and VicSES partnership and train VicSES staff in deployment of smoke monitors | EPA | Complete |
| 122 | Deliver a fully functional integrated air quality monitoring and information systems | EPA | Ongoing (overdue) |

RECOMMENDATION 6**STATUS**

The State take the lead in advocating for a national compliance standard for PM2.5.

Complete

| No. | Action | Lead agency | Action status |
|-----|---|-------------|---------------|
| 140 | Advocate for NEPC decision on particulate standards for NEPM AAQ | EPA | Complete |
| 141 | Amend the SEPP AAQ to formally adopt the national PM2.5 standard, once approved | DELWP & EPA | Complete |

| RECOMMENDATION 7 | | | STATUS |
|---|--|-------------|---------------|
| The State review and revise the community carbon monoxide response protocol and the firefighter carbon monoxide response protocol, to: | | | Complete |
| <ul style="list-style-type: none"> ensure both protocols are consistent with each other; ensure both protocols include assessment methods and trigger points for specific responses; ensure GDF Suez and other appropriate essential industry providers are required to adopt and apply the firefighter carbon monoxide protocol; and inform all firefighters about the dangers of carbon monoxide poisoning, and in particular, highlight the increased risks for those with health conditions and those who are pregnant. | | | |
| No. | Action | Lead agency | Action status |
| 135 | Endorse a revised Standard for Managing Exposure to Significant Carbon Monoxide Emissions, which incorporates the expert panel assessment of CO air quality reference values and: <ul style="list-style-type: none"> Latrobe Valley Coal Fire Carbon Monoxide Response Protocol (February 2014) Standard for Managing Significant Carbon Monoxide Emission (for Occupational Exposure) (August 2014) | DHHS | Complete |
| 136 | Endorse the JSOP 03.20 for Managing Significant Community Exposure to Carbon Monoxide from Smoke | DHHS | Complete |

| RECOMMENDATION 8 | | | STATUS |
|--|--|-------------|---------------|
| The State review and revise the Bushfire Smoke Protocol and the PM2.5 Health Protection Protocol, to: | | | Complete |
| <ul style="list-style-type: none"> ensure both protocols are consistent with each other; and ensure both protocols include assessment methods and trigger points for specific responses. | | | |
| No. | Action | Lead agency | Action status |
| 127 | Engage appropriate experts to undertake a review of internationally recognised graduated smoke frameworks and the epidemiological basis for these frameworks | DHHS | Complete |
| 137 | Endorse the Community Smoke, Air Quality and Health Protocol | DHHS | Complete |
| 138 | Endorse the Community Smoke, Air Quality and Health Standard | DHHS | Complete |
| 139 | Endorse the JSOP 03.19 for Managing Significant Community Exposures to Fine Particles from Smoke | DHHS & EMV | Complete |

| RECOMMENDATION 9 | | | STATUS |
|---|---|-------------|---------------|
| The State develop and widely disseminate an integrated State Smoke Guide, to: | | | Complete |
| <ul style="list-style-type: none"> incorporate the proposed State Smoke Plan for the management of public health impacts from large scale, extended smoke events; include updated Bushfire Smoke, carbon monoxide and PM2.5 protocols; and provide practical advice and support materials to employers, communities and individuals on how to minimise the harmful effects of smoke. | | | |
| No. | Action | Lead agency | Action status |
| 34 | Review the Better Health Channel and health.vic site | DHHS | Complete |
| 36 | Appoint a Senior Science Policy Adviser to assist in implementing the State Smoke Framework | DHHS | Complete |

| | | | |
|-----|--|------------|----------|
| 37 | Develop draft 'smoke and your health' communication materials for the 2015/16 summer season | DHHS | Complete |
| 38 | Develop a 'smoke and your health' engagement strategy for 2015/16 | DHHS | Complete |
| 39 | Undertake community focus testing of the draft 'smoke and your health' communication materials for the 2015/16 summer season | DHHS | Complete |
| 40 | Finalise the 'smoke and your health' communication materials for the 2015/16 summer season | DHHS | Complete |
| 41 | Distribute 'smoke and your health' communications materials for 2015/16 summer season | DHHS | Complete |
| 42 | Evaluate 'smoke and your health' communications materials for 2015/16 summer season | DHHS | Complete |
| 43 | Develop an implementation plan for the 'smoke and your health' engagement strategy that outlines target groups, methods of engagement and timeframes until November 2017 | DHHS | Complete |
| 44 | Evaluate the 'smoke and your health' community engagement strategy | DHHS | Complete |
| 45 | Update the 'smoke and your health' community engagement strategy to reflect learnings from engagement with stakeholders and the evaluation | DHHS | Complete |
| 123 | Endorse State Smoke Framework, Version 2.0 | DHHS & EMV | Complete |
| 124 | Revise the fire warning templates to include smoke and health messaging | DHHS & EMV | Complete |
| 128 | Undertake a plume modelling project to develop an enhanced capability for the prediction of toxic smoke and chemical releases from fires and hazardous material incidents | CFA | Complete |
| 129 | Establish sector governance arrangements for the Predictive Services Framework, including Project Control Board comprising representation from EMV, DELWP, CFA and MFB | DELWP | Complete |
| 130 | Undertake a user and decision making needs assessment of community, industry and emergency management sector to inform development of predictive services systems, tools and products before, during and after hazard events | DELWP | Complete |
| 131 | Design an ICT system architecture (design) for the Predictive Services ICT Platform | DELWP | Complete |
| 132 | Build an ICT platform for hazard prediction (including smoke) models | DELWP | Complete |
| 133 | Design data management requirements for the Predictive Services Framework | DELWP | Complete |
| 134 | Incorporate Predictive Services smoke intelligence module, to incorporate social media, field sensors and satellite image data to calibrate and validate smoke predictions | DELWP | Complete |

| RECOMMENDATION 10 | | | STATUS |
|--|---|-------------|---------------|
| The State should continue the long-term health study, and: | | | Complete |
| <ul style="list-style-type: none"> • extend the study to at least 20 years; • appoint an independent board, which includes Latrobe Valley community representatives, to govern the study; and • direct that the independent board publish regular progress reports. | | | |
| No. | Action | Lead agency | Action status |
| 96 | Provide mortality and allied data to the Long Term Health Study lead contractor | DHHS | Complete |
| 97 | Publicly release the first annual Monash University Report on the Long Term Health Study | DHHS | Complete |
| 98 | Publicly release the second annual Monash University Report on the Long Term Health Study | DHHS | Complete |
| 99 | Publicly release the third annual Monash University Report on the Long Term Health Study | DHHS | Complete |

| RECOMMENDATION 11 | | | STATUS |
|---|--|-------------|---------------|
| The State review and revise its communication strategy, to: | | | Complete |
| <ul style="list-style-type: none"> • ensure all emergency response agencies have, or have access to, the capability and resources needed for effective and rapid public communications during an emergency; and • ensure, where appropriate, that private operators of essential infrastructure are included in the coordination of public communications during an emergency concerning that infrastructure. | | | |
| No. | Action | Lead agency | Action status |
| 6 | Circulate a draft State Communications Strategy to EMJPIC members for consultation | EMV | Complete |
| 7 | Test the draft State Communications Strategy at the Latrobe Valley Coal Mine Taskforce August 2016 Exercise | EMV | Complete |
| 8 | Incorporate private operators of essential infrastructure in the State Communications Strategy | EMV | Complete |
| 9 | Submit the State Communications Strategy to SCRC for consideration and approval | EMV | Complete |
| 10 | Develop operational guidelines/procedure to support the State Communications Strategy | EMV | Complete |
| 11 | Provide training to key managers at Incident, Regional and State Level (including EMJPIC members, Level 3 Controllers, Regional and State control positions) on the State Communications Strategy and supporting operational guideline/procedure | EMV | Complete |

| RECOMMENDATION 12 | | | | STATUS |
|---|---|-------------|---------------|----------|
| The State, led by Emergency Management Victoria, develop a community engagement model for emergency management to ensure all State agencies and local governments engage with communities and already identified trusted networks as an integral component of emergency management planning. | | | | Complete |
| No. | Action | Lead agency | Action status | |
| 17 | Engage a dedicated EMV community engagement officer based in the Latrobe Valley | EMV | Complete | |
| 18 | Develop a plan for the Latrobe Valley Community Engagement and Planning Project | EMV | Complete | |
| 19 | Deliver the Latrobe Valley Community Engagement and Planning Project | EMV | Closed | |
| RECOMMENDATION 13 | | | | STATUS |
| GDF Suez revise its Emergency Response Plan, to: | | | | Complete |
| <ul style="list-style-type: none"> require an increased state of readiness on days of Total Fire Ban; require pre-establishment of an Emergency Command Centre; require pre-positioning of an accredited Incident Controller as Emergency Commander; and require any persons nominated as Emergency Commander to have incident controller accreditation and proficiency in the use of the Australasian Inter-service Incident Management System. | | | | |
| RECOMMENDATION 14 | | | | STATUS |
| GDF Suez establish enhanced back-up power supply arrangements that do not depend wholly on mains power, to: | | | | Complete |
| <ul style="list-style-type: none"> ensure that the Emergency Command Centre can continue to operate if mains power is lost; and ensure that the reticulated fire services water system can operate with minimal disruption if mains power is lost. | | | | |
| RECOMMENDATION 15 | | | | STATUS |
| GDF Suez: | | | | Complete |
| <ul style="list-style-type: none"> conduct, assisted by an independent consultant, a risk assessment of the likelihood and consequences of fire in the worked out areas of the Hazelwood mine, and an assessment of the most effective fire protection for the exposed coal surfaces; prepare an implementation plan that ensures the most effective and reasonably practicable controls are in place to eliminate or reduce the risk of fire; and implement the plan. | | | | |
| No. | Action | Lead agency | Action status | |
| R15.1 | Conduct, assisted by an independent consultant, a risk assessment of the likelihood and consequences of fire in the worked out areas of the mine, including an assessment of the most effective fire protection means for exposed coal surfaces | ENGIE | Complete | |
| R15.2 | Fire Risk Implementation Plan prepared | ENGIE | Complete | |
| R15.3 | Plan implemented | ENGIE | Complete | |

| RECOMMENDATION 16 | | | STATUS |
|---|--|-------------|---------------|
| GDF Suez: | | | Complete |
| <ul style="list-style-type: none"> review its 'Mine Fire Service Policy and Code of Practice' so that it reflects industry best practice and ensures that, by taking a risk management approach, it is suitable for fire prevention, mitigation and suppression in all parts of the Hazelwood mine; and incorporate the revised 'Mine Fire Service Policy and Code of Practice' into the approved work plan for the Hazelwood mine. | | | |
| No. | Action | Lead agency | Action status |
| R16.1 | GDF Suez reviews its 'Mine Fire Service Policy and Code of Practice' so that it reflects industry best practice and ensure that, by taking a risk management approach, it is suitable for fire prevention, mitigation and suppression in all parts of the Hazelwood mine | ENGIE | Complete |
| R16.2 | GDF Suez to apply to DEDJTR for its revised Mine Fire Service Policy and Code of Practice to be incorporated into the Hazelwood Mine Work Plan | ENGIE | Complete |
| RECOMMENDATION 17 | | | STATUS |
| GDF Suez adopt and apply the firefighter carbon monoxide response protocol. | | | Complete |
| RECOMMENDATION 18 | | | STATUS |
| GDF Suez improve its crisis management communication strategy for the Hazelwood mine in line with international best practice. | | | Complete |
| AFFIRMATION 1 | | | STATUS |
| The State develop a Strategic Action Plan to improve and strengthen Victoria's emergency management capability. | | | Complete |
| AFFIRMATION 2 | | | STATUS |
| The State establish Emergency Management Victoria as the new overarching body for emergency management in Victoria. | | | Complete |
| AFFIRMATION 3 | | | STATUS |
| The State establish an Emergency Management Commissioner to ensure that control arrangements are in place, and coordinate the response roles of relevant agencies' resources. | | | Complete |
| AFFIRMATION 4 | | | STATUS |
| The State establish Inspector General Emergency Management as the assurance authority for Victoria's emergency management arrangements. | | | Complete |
| AFFIRMATION 5 | | | STATUS |
| The State establish a Volunteer Consultative Forum for the Government to consult with volunteers and ensure their views are heard. | | | Complete |

| AFFIRMATION 6 | | | STATUS |
|---|---|-------------|---------------|
| The State implement actions set out in the White Paper on Emergency Management Reform to improve community awareness and education, and make information available during emergencies. | | | Complete |
| No. | Action | Lead agency | Action status |
| 12 | EM-COP to be operational | EMV | Complete |
| 13 | Upgrade the VicEmergency website to support all-communities all-emergencies use over 2015/16 summer season | EMV | Complete |
| 14 | Launch the VicEmergency app | EMV | Complete |
| 15 | Roll all existing emergency management information systems into EM-COP, to be available for use by all emergency management personnel | EMV | Complete |
| 16 | Align call centre arrangements for all government departments and agencies for emergency management messaging | EMV | Complete |
| AFFIRMATION 7 | | | STATUS |
| The State strengthen industry engagement with the community. | | | Complete |
| No specific actions have been assigned to address this affirmation in the Victorian Government Implementation Plan, however IGEM notes that it is contingent on a number of engagement activities (see Actions 208, 209 and 211). | | | |
| AFFIRMATION 8 | | | STATUS |
| The State improve the State planning framework for emergencies. | | | Ongoing |
| No. | Action | Lead agency | Action status |
| 222 | Release the draft Emergency Management Legislative Amendment (Planning) Bill 2016 for public consultation | EMV | Complete |
| 225 | Full implementation of the Emergency Management Legislative Amendment (Planning) Bill 2016 | EMV | Ongoing |
| AFFIRMATION 9 | | | STATUS |
| The State improve Government engagement with the coal mine sector regarding emergency management plans | | | Complete |
| No specific actions have been assigned to address this affirmation in the Victorian Government Implementation Plan, however IGEM notes that it is contingent on a number of engagement activities (see Actions 205, 206 and 213). | | | |
| AFFIRMATION 10 | | | STATUS |
| The State improve integration of industry in the response to an emergency. | | | Complete |
| No. | Action | Lead agency | Action status |
| 205 | Convene an industry forum in the Latrobe Valley, with quarterly attendance | CFA | Complete |

| | | | |
|-----|--|-----------|----------|
| 206 | Update local emergency management plans to incorporate industry into emergency management planning and response ¹⁰⁰ | EMV | Complete |
| 207 | Develop the Latrobe Valley Coal Mines Major Emergency – Strategic Concept of Operations and Industry Integration | EMV | Complete |
| 208 | Hold exercise “Latrobe 15” to implement and test the pilot integrated management structure, fully integrating industry into the REMT and IMTs | EMV | Complete |
| 209 | Finalise the Latrobe Valley Coal Mines Major Emergency – Strategic Concept of Operations and Industry Integration | EMV | Complete |
| 210 | Train Emergency Commanders and identified staff in AIIMS Level 2 accreditation ¹⁰¹ and enable designated ENGIE personnel to attend regional ICC during incidents that have potential to impact the mine | EMV | Complete |
| 211 | Finalise the Coal Mine Emergency Taskforce Status Report detailing the status and initiatives undertaken by the Taskforce members | EMV | Complete |
| 212 | Hold Coal Mine Taskforce Exercise to further implement and test the pilot integrated management structure, fully integrating industry into the REMT and IMTs | EMV | Complete |
| 214 | Deliver the Final Report of the Latrobe Valley Coal Mine Taskforce | EMV | Complete |
| 215 | Attend bi-monthly CGEIG Standardisation Committee meetings | EMV & CFA | Complete |
| 216 | Update EMV Joint Standing Operating Procedure for Incident Management Team Operations to incorporate industry integration into IMT operations | EMV | Complete |
| 217 | Assist in the re-write of the AIIMS doctrine to accommodate the full integration of industry into the AIIMS structure and process | EMV | Complete |

AFFIRMATION 11**STATUS**

The State improve training for career and volunteer firefighters to include lessons highlighted by the Hazelwood mine fire.

Ongoing

| No. | Action | Lead agency | Action status |
|-----|---|-------------|---------------|
| 226 | Retrofit two heavy tankers with specialist CAFS capability for deployment in Churchill and Traralgon South (within District 27) | CFA | Complete |
| 230 | Develop a pilot Brown Coal Mine Fire-fighting Training Package, which incorporates Standard for Managing Exposure to Significant Carbon Monoxide Emissions and associated JSOPs | CFA | Complete |
| 231 | Development of a Detection Team (Scientific Officers and HAZMAT) Training Package | CFA & MFB | Complete |
| 234 | Release tender for two purpose-built specialist CAFS trucks | CFA | Complete |
| 235 | Convert pilot Brown Coal Mine Fire-fighting Training Package into a blended learning program (e-learning and face to face) | CFA | Complete |

¹⁰⁰ The Gippsland Region Emergency Relief and Recovery Plan; the Gippsland Risk and Consequence Plan Bushfire and heat 2015–16; and the Gippsland RCT and REMT Fire Readiness Matrix 2015–16.

¹⁰¹ Training was used by personnel during mine declared SEVERE & EXTREME fire danger days in 2015–16. See initiatives from the Latrobe Valley Coal Mine Emergency Taskforce status report December 2016 files-em.em.vic.gov.au/public/EMV-web/Coal-Mines-Emergency-Management-Taskforce-Final-Report.pdf

| | | | |
|-----|---|-----------|-------------------|
| 236 | Develop and deliver training to IMTs with a focus on Incident Controllers | CFA & MFB | Complete |
| 237 | Deliver Detection Team Training (Scientific Officers and HAZMAT) | CFA & MFB | Complete |
| 238 | Deliver Brown Coal Mine Fire-fighting Training Package | CFA & MFB | Ongoing (Overdue) |

AFFIRMATION 12**STATUS**

The State improve OHS in emergency response to include lessons highlighted by the Hazelwood mine fire. Ongoing

| No. | Action | Lead agency | Action status |
|-----|--|-------------|---------------|
| 135 | Endorse a revised Standard for Managing Exposure to Significant Carbon Monoxide Emissions, which incorporates the expert panel assessment of CO air quality reference values and: <ul style="list-style-type: none"> Latrobe Valley Coal Fire Carbon Monoxide Response Protocol (February 2014) Standard for Managing Significant Carbon Monoxide Emission (for Occupational Exposure) (August 2014) | DHHS | Complete |
| 136 | Endorse the JSOP 03.20 for Managing Significant Community Exposure to Carbon Monoxide from Smoke | DHHS | Complete |
| 227 | Undertake a health monitoring trial with LifeAid at emergency site in Portland and Kaladbro | CFA | Complete |
| 228 | Locate CFA Health monitoring teams located at nine locations across Victoria (eight regionally, and one at headquarters) | CFA | Complete |
| 229 | Release the revised CFA District 27 Operating Procedures for Latrobe Valley Open Cut Mines, which aligns to the Standard for Managing Exposure to Significant Carbon Monoxide Emissions (July 2015) | CFA | Complete |
| 230 | Develop a pilot Brown Coal Mine Fire-fighting Training Package, which incorporates Standard for Managing Exposure to Significant Carbon Monoxide Emissions and associated JSOPs | CFA | Complete |
| 232 | Contract on-call capability with health services and fire services | CFA & MFB | Complete |
| 233 | Provide personal monitoring equipment to MFB firefighters | MFB | Ongoing |

AFFIRMATION 13**STATUS**

The State develop an integrated emergency resource planning framework for the Latrobe Valley. Complete

| No. | Action | Lead agency | Action status |
|-----|---|-------------|---------------|
| 221 | Develop guidelines to support the management of ongoing response requirements in relation to Class 1 emergencies impacting on the Latrobe Valley Coal Mines | EMV | Complete |
| 224 | Consider emergency resource planning in CFA's District 27 boundaries at the industry forum | CFA | Complete |

| AFFIRMATION 14 | | | STATUS |
|---|---|-------------|---------------|
| The State review emergency management communications arrangements across Government commissioned by the State Crisis and Resilience Council, including consideration of: | | | Complete |
| <ul style="list-style-type: none"> i. the roles and functions of emergency communications committees; ii. enhancing specialist crisis communications capability within Government; iii. the use of established local networks as a way to communicate during emergencies; iv. additional emergency communications training for Government employees; and v. developing a coordinated approach to the use of social media by Government during emergencies. | | | |
| AFFIRMATION 15 | | | STATUS |
| The State conduct a National Review of Warnings and Information. | | | Complete |
| AFFIRMATION 16 | | | STATUS |
| The State review Environment Protection Authority (EPA) emergency protocols, incorporating lessons from the Hazelwood mine fire. | | | Complete |
| No. | Action | Lead agency | Action status |
| 30 | Complete a review of DHHS structures for public health and emergency management related communications teams | DHHS | Complete |
| 33 | Establish a Communications Health and Emergency Management Team | DHHS | Complete |
| 35 | Develop new processes and protocols (including standard messaging templates) for Better Health Channel and health.vic site based on the review | DHHS | Complete |
| 142 | Revise the EPA's emergency management accountabilities | EPA | Complete |
| 143 | Conduct exercises to test EPA protocols | EPA | Complete |
| 144 | Establish the Environment Protection Incident Management System, using the AIIMS structure | EPA | Complete |
| 145 | Refine the relevant EPA protocols, incorporating lessons from exercises | EPA | Complete |
| 146 | Train staff in emergency management and response protocols for 2015/16 summer fire season | EPA | Complete |
| AFFIRMATION 17 | | | STATUS |
| The State clarify future expectations of incident air monitoring and scenarios, and determine the appropriate inventory of equipment. | | | Ongoing |
| No. | Action | Lead agency | Action status |
| 114 | Endorse the Rapid Deployment of Air Quality Monitoring for Community Health Guideline | EPA | Complete |
| 115 | Endorse the JSOP 03.18 for Rapid Deployment of Air Quality Monitoring for Community Health | EPA | Complete |
| 116 | Deliver rapid response monitoring capacity for PM2.5 and CO, including transitional data and information management processes for decision making during an event | EPA | Complete |

| | | | |
|-----|---|-----|-------------------|
| 117 | Refine the response model, decision support tools and deployment procedures for 2016/17 summer fire season by incorporating lessons learned | EPA | Complete |
| 118 | Two mobile stations built and operational for deployment to complex events of extended duration and significant community impact | EPA | Complete |
| 119 | Train relevant staff in EPA regional offices in air quality equipment deployment during emergency events | EPA | Complete |
| 120 | Pre-deploy smoke monitors to identified high-risk sites across regional Victoria | EPA | Complete |
| 121 | Establish EPA and VicSES partnership and train VicSES staff in deployment of smoke monitors | EPA | Complete |
| 122 | Deliver a fully functional integrated air quality monitoring and information systems | EPA | Ongoing (overdue) |

AFFIRMATION 18**STATUS**

EPA to coordinate a meta-analysis, including smoke plume modelling, of air monitoring data and other relevant information collected during the Hazelwood mine fire to create a body of knowledge of the impacts of extended brown coal fire events.

Ongoing

| No. | Action | Lead agency | Action status |
|-----|--|-------------|---------------|
| 147 | Release a report on information and knowledge generated from the Hazelwood Mine Fire meta-analysis | EPA | Ongoing |

AFFIRMATION 19**STATUS**

The Department of Health and EPA to undertake further development on the carbon monoxide and PM2.5 protocols and an engagement and education program around environmental and health standards.

Complete

| No. | Action | Lead agency | Action status |
|-----|--|-------------|---------------|
| 127 | Engage appropriate experts to undertake a review of internationally recognised graduated smoke frameworks and the epidemiological basis for these frameworks | DHHS | Complete |
| 135 | Endorse a revised Standard for Managing Exposure to Significant Carbon Monoxide Emissions, which incorporates the expert panel assessment of CO air quality reference values and: <ul style="list-style-type: none"> Latrobe Valley Coal Fire Carbon Monoxide Response Protocol (February 2014) Standard for Managing Significant Carbon Monoxide Emission (for Occupational Exposure) (August 2014) | DHHS | Complete |
| 136 | Endorse the JSOP 03.20 for Managing Significant Community Exposure to Carbon Monoxide from Smoke | DHHS | Complete |
| 137 | Endorse the Community Smoke, Air Quality and Health Protocol | DHHS | Complete |
| 138 | Endorse the Community Smoke, Air Quality and Health Standard | DHHS | Complete |
| 139 | Endorse the JSOP 03.19 for Managing Significant Community Exposures to Fine Particles from Smoke | DHHS & EMV | Complete |

| AFFIRMATION 20 | | | STATUS |
|--|---|-------------|---------------|
| EPA review its communications response and implement a structured community engagement process with the Morwell and surrounding communities. | | | Complete |
| No. | Action | Lead agency | Action status |
| 20 | Deliver the EPA Emergency Response Communications Protocol | EPA | Complete |
| 21 | Evaluate the pilot Citizen Science Program | EPA | Complete |
| 22 | Identify local community networks and their environment information sources by undertaking a social network analysis | EPA | Complete |
| 23 | Evaluate the pilot communication and engagement approach | EPA | Complete |
| 25 | Evaluate existing activities of the Citizen Science Program and adapt them as necessary to remain relevant to the local community | EPA | Complete |
| 27 | Deliver new participation opportunities as part of the Citizen Science Program for the Latrobe Valley community | EPA | Complete |
| AFFIRMATION 21 | | | STATUS |
| EPA will be monitoring PM2.5 at all its fixed automatic air quality monitoring locations by the end of July 2014. | | | Complete |
| AFFIRMATION 22 | | | STATUS |
| The State will have an automatic air quality monitoring station in the south of Morwell for the next 12 months [to March 2015]. | | | Complete |
| AFFIRMATION 23 | | | STATUS |
| The State review the State Environment Protection Policy for Ambient Air Quality. | | | Complete |
| No. | Action | Lead agency | Action status |
| 140 | Advocate for NEPC decision on particulate standards for NEPM AAQ | EPA | Complete |
| 141 | Amend the SEPP AAQ to formally adopt the national PM2.5 standard, once approved | DELWP & EPA | Complete |
| AFFIRMATION 24 | | | STATUS |
| The State develop a State Smoke Plan covering the management of potential public health impacts from large scale, extended smoke events. | | | Complete |
| No. | Action | Lead agency | Action status |
| 34 | Review the Better Health Channel and health.vic site | DHHS | Complete |
| 36 | Appoint a Senior Science Policy Adviser to assist in implementing the State Smoke Framework | DHHS | Complete |
| 37 | Develop draft 'smoke and your health' communication materials for the 2015/16 summer season | DHHS | Complete |
| 38 | Develop a 'smoke and your health' engagement strategy for 2015/16 | DHHS | Complete |

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|-----|--|------------|----------|
| 39 | Undertake community focus testing of the draft 'smoke and your health' communication materials for the 2015/16 summer season | DHHS | Complete |
| 40 | Finalise the 'smoke and your health' communication materials for the 2015/16 summer season | DHHS | Complete |
| 41 | Distribute 'smoke and your health' communications materials for 2015/16 summer season | DHHS | Complete |
| 42 | Evaluate 'smoke and your health' communications materials for 2015/16 summer season | DHHS | Complete |
| 43 | Develop an implementation plan for the 'smoke and your health' engagement strategy that outlines target groups, methods of engagement and timeframes until November 2017 | DHHS | Complete |
| 44 | Evaluate the 'smoke and your health' community engagement strategy | DHHS | Complete |
| 45 | Update the 'smoke and your health' community engagement strategy to reflect learnings from engagement with stakeholders and the evaluation | DHHS | Complete |
| 123 | Endorse State Smoke Framework, Version 2.0 | DHHS & EMV | Complete |
| 124 | Revise the fire warning templates to include smoke and health messaging | DHHS & EMV | Complete |
| 128 | Undertake a plume modelling project to develop an enhanced capability for the prediction of toxic smoke and chemical releases from fires and hazardous material incidents | CFA | Complete |
| 129 | Establish sector governance arrangements for the Predictive Services Framework, including Project Control Board comprising representation from EMV, DELWP, CFA and MFB | DELWP | Complete |
| 130 | Undertake a user and decision making needs assessment of community, industry and emergency management sector to inform development of predictive services systems, tools and products before, during and after hazard events | DELWP | Complete |
| 131 | Design an ICT system architecture (design) for the Predictive Services ICT Platform | DELWP | Complete |
| 132 | Build an ICT platform for hazard prediction (including smoke) models | DELWP | Complete |
| 133 | Design data management requirements for the Predictive Services Framework | DELWP | Complete |
| 134 | Incorporate Predictive Services smoke intelligence module, to incorporate social media, field sensors and satellite image data to calibrate and validate smoke predictions | DELWP | Complete |

AFFIRMATION 25**STATUS**

The State undertake projects to understand health impacts and predict the movement of smoke from planned burning and bushfires. Complete

| No. | Action | Lead agency | Action status |
|-----|---|-------------|---------------|
| 123 | Endorse State Smoke Framework, Version 2.0 | DHHS & EMV | Complete |
| 124 | Revise the fire warning templates to include smoke and health messaging | DHHS & EMV | Complete |

| | | | |
|-----|--|-------|----------|
| 128 | Undertake a plume modelling project to develop an enhanced capability for the prediction of toxic smoke and chemical releases from fires and hazardous material incidents | CFA | Complete |
| 129 | Establish sector governance arrangements for the Predictive Services Framework, including Project Control Board comprising representation from EMV, DELWP, CFA and MFB | DELWP | Complete |
| 130 | Undertake a user and decision making needs assessment of community, industry and emergency management sector to inform development of predictive services systems, tools and products before, during and after hazard events | DELWP | Complete |
| 131 | Design an ICT system architecture (design) for the Predictive Services ICT Platform | DELWP | Complete |
| 132 | Build an ICT platform for hazard prediction (including smoke) models | DELWP | Complete |
| 133 | Design data management requirements for the Predictive Services Framework | DELWP | Complete |
| 134 | Incorporate Predictive Services smoke intelligence module, to incorporate social media, field sensors and satellite image data to calibrate and validate smoke predictions | DELWP | Complete |

AFFIRMATION 26**STATUS**

The State improve local engagement on health issues.

Complete

| No. | Action | Lead agency | Action status |
|-----|--|-------------|---------------|
| 46 | Appoint a dedicated community engagement officer, based in the DHHS Traralgon office | DHHS | Complete |

AFFIRMATION 27**STATUS**

The State improve communication around psycho-social support to communities affected by emergencies.

Complete

AFFIRMATION 28**STATUS**

The State commission a long-term study into the long-term health effects of the smoke from the Hazelwood mine fire.

Complete

| No. | Action | Lead agency | Action status |
|-----|---|-------------|---------------|
| 96 | Provide mortality and allied data to the Long Term Health Study lead contractor | DHHS | Complete |
| 97 | Publicly release the first annual Monash University Report on the Long Term Health Study | DHHS | Complete |
| 98 | Publicly release the second annual Monash University Report on the Long Term Health Study | DHHS | Complete |
| 99 | Publicly release the third annual Monash University Report on the Long Term Health Study | DHHS | Complete |

| AFFIRMATION 29 | | STATUS | |
|--|---|-------------|---------------|
| The State review the Personal Hardship Assistance Program and Implementation Guidelines for consistency and clarity of purpose. | | Complete | |
| AFFIRMATION 30 | | STATUS | |
| The State implement new technology for recording emergency assistance payments. | | Complete | |
| No. | Action | Lead agency | Action status |
| 246 | Introduce new technology to track payments | DHHS | Complete |
| AFFIRMATION 31 | | STATUS | |
| Local Government Victoria coordinate emergency management officers across local councils. | | Ongoing | |
| No. | Action | Lead agency | Action status |
| 240 | Hold planning days with all 11 collaborative council clusters to assist with strategic planning | DELWP | Complete |
| 241 | Conduct an annual forum for all council emergency management staff in Bendigo | DELWP | Complete |
| 242 | Define the roles and responsibilities of local government in emergency management | DELWP | Complete |
| 243 | Review the current roles and responsibilities of local government in emergency management for alignment with the defined roles and responsibilities | DELWP | Complete |
| 244 | Review the capability and capacity required for local government to fulfil their emergency management roles and responsibilities | DELWP | Ongoing |
| 245 | Develop an action plan to address any local government emergency management capability and capacity gaps | DELWP | Ongoing |
| AFFIRMATION 32 | | STATUS | |
| The State improve relief and recovery information available to Culturally and Linguistically Diverse communities. | | Complete | |
| AFFIRMATION 33 | | STATUS | |
| The State review relief and recovery communications and community engagement initiatives. | | Complete | |
| AFFIRMATION 34 | | STATUS | |
| The State prepare Regional Growth Plans. | | Complete | |
| AFFIRMATION 35 | | STATUS | |
| The State implement a risk-based approach for work plans. | | Complete | |
| The 2015 Annual report indicated this affirmation was ongoing but would be fulfilled by the 2015 actions R4.2, 4.8 and R4.11. As these are now complete, IGEM considers this affirmation has been completed. | | Complete | |

| AFFIRMATION 36 | | | STATUS |
|--|--|--------------|---------------|
| The State implement the Victorian Critical Infrastructure Resilience Strategy. | | | Complete |
| No. | Action | Lead agency | Action status |
| 218 | Publish the Critical Infrastructure Resilience Strategy | EMV | Complete |
| 219 | Enact the Emergency Management (Critical Infrastructure Resilience) Act 2014 | EMV | Complete |
| 220 | Declare 'vital' critical infrastructure in the Latrobe Valley | EMV | Complete |
| 223 | Begin the Critical Infrastructure Resilience Improvement Cycle | DEDJTR & EMV | Complete |
| AFFIRMATION 37 | | | STATUS |
| The State enhance emergency risk mitigation planning. | | | Ongoing |
| No. | Action | Lead agency | Action status |
| 222 | Release the draft Emergency Management Legislative Amendment (Planning) Bill 2016 for public consultation | EMV | Complete |
| 225 | Full implementation of the Emergency Management Legislative Amendment (Planning) Bill 2016 | EMV | Ongoing |
| AFFIRMATION 38 | | | STATUS |
| The State review the Latrobe City Municipal Emergency Management Plan. | | | Complete |
| No. | Action | Lead agency | Action status |
| 239 | Assist the Latrobe City Council to finalise their Municipal Emergency Management Plan, based on the review undertaken by Regional Emergency Management Committee and the audit by VicSES | DELWP | Complete |
| AFFIRMATION 39 | | | STATUS |
| The State initiate a joint program for regulators, emergency service agencies and the Emergency Management Commissioner to assess the prevention and preparedness controls on sites across Victoria. | | | Complete |
| No. | Action | Lead agency | Action status |
| 152 | Establish a Victorian Earth Resources Regulator Forum, with membership including WorkSafe and EPA | DEDJTR | Complete |

| AFFIRMATION 40 | | STATUS |
|---|---|-------------|
| The State establish an appropriate mechanism to monitor implementation of the actions set out in its submission and the Government's response to the Board of Inquiry's recommendations. | | Ongoing |
| No. | Action | Lead agency |
| 3 | Assist the Minister for Emergency Services to request that the IGEM begins monitoring implementation of all 2014 Inquiry Report recommendations and affirmations, by Government and GDF Suez, with annual reports on progress | DJR |
| 5 | Publicly release the IGEM's annual reports in the Victorian Parliament within a reasonable time of receipt by the Minister for Emergency Services | DJCS |
| GDF SUEZ AFFIRMATION 1 | | STATUS |
| GDF Suez nominate a group of staff to be trained in the Phoenix Rapidfire modelling tool prior to the 2014/2015 fire season. | | Complete |
| GDF SUEZ AFFIRMATION 2 | | STATUS |
| GDF Suez offer enhanced training prior to the 2014/2015 fire season and on an ongoing basis, to personnel who are intended to perform a role under the emergency command structure and relevant emergency service agencies. | | Complete |
| GDF SUEZ AFFIRMATION 3 | | STATUS |
| GDF Suez establish an emergency command structure at the mine to deal with Extreme Fire Danger Days. | | Complete |
| GDF SUEZ AFFIRMATION 4 | | STATUS |
| GDF Suez notify Country Fire Authority (CFA) of the identity and contact details of those personnel holding these roles. | | Complete |
| GDF SUEZ AFFIRMATION 5 | | STATUS |
| On Extreme Fire Danger Days, GDF Suez ensure more personnel are rostered on and additional contractors are available for dedicated fire protection duties. | | Complete |
| GDF SUEZ AFFIRMATION 6 | | STATUS |
| GDF Suez upgrade signage within the mine to make orientation easier for non-mine personnel. | | Complete |
| GDF SUEZ AFFIRMATION 7 | | STATUS |
| GDF Suez negotiate with SP AusNet regarding a feasibility study to upgrade the MHO substation from temporary to permanent standard. | | Complete |
| GDF SUEZ AFFIRMATION 8 | | STATUS |
| GDF Suez initiate a programme for reducing vegetation in the worked out areas of the northern batters to reduce fire risk commencing in the areas closest to Morwell. | | Complete |

| GDF SUEZ AFFIRMATION 9 | | STATUS | |
|---|---|-------------|---------------|
| GDF Suez maintain and continue to use the additional pipe system located in the northern batters which was installed during the 2014 fire and install additional pipework as identified. | | Complete | |
| GDF SUEZ AFFIRMATION 10 | | STATUS | |
| GDF Suez conduct a review of the current pipework and condition in the areas of the mine other than the eastern section of the northern batters. | | Complete | |
| GDF SUEZ AFFIRMATION 11 | | STATUS | |
| On Extreme Fire Danger Days GDF Suez instigate wetting down of non-operational areas. | | Complete | |
| GDF SUEZ AFFIRMATION 12 | | STATUS | |
| GDF Suez nominate a representative to attend the meetings of the Municipal Fire Prevention Committee convened by Latrobe City Council. | | Complete | |
| GDF SUEZ AFFIRMATION 13 | | STATUS | |
| GDF Suez nominate designated people to be in attendance at the CFA Incident Control Centre during an emergency which threatens the mine. | | Complete | |
| GDF SUEZ AFFIRMATION 14 | | STATUS | |
| GDF Suez review its own communications protocol to ensure that during the response to a fire which is capable of impacting on the community, it is able to communicate messages to the community via any protocol adopted following the review by all agencies. | | Complete | |
| No. | Action | Lead agency | Action status |
| GDF A15.1 | Giving proper regard to OH&S Regulations, and in consultation with WorkSafe, GDF Suez Safety Assessment and Safety Management Systems for mine fire revised | ENGIE | Complete |
| GDF SUEZ AFFIRMATION 15 | | STATUS | |
| GDF Suez work with Victorian WorkCover Authority (VWA) to review its Safety Assessment and Safety Management System in light of rr. 5.3.21 and 5.3.23 of the Occupational Health and Safety Regulations 2007 (Vic). | | Complete | |
| GDF SUEZ AFFIRMATION 16 | | STATUS | |
| GDF Suez develop a Carbon Monoxide management protocol for firefighter and mine employee safety prior to the 2014/2015 fire season, in consultation with VWA and CFA. | | Complete | |
| GDF SUEZ AFFIRMATION 17 | | STATUS | |
| GDF Suez undertake the rehabilitation set out in Exhibit 88 – Statement of James Faithful, annexure 5 and discuss the appropriate timing of each sequence of rehabilitation with the Department of State Development, Business and Innovation. | | Complete | |

Hazelwood Mine Fire Inquiry Report 2015–2016, Volume II – Investigations into 2009–2014 deaths

Table 36: Status of recommendations, affirmations and actions from the Hazelwood Mine Fire Inquiry Report 2015–16, Volume II

| HAZELWOOD MINE FIRE INQUIRY REPORT 2015–16, VOLUME II | | | |
|---|--|-------------|---------------|
| RECOMMENDATION 1 | | | STATUS |
| The State should review the State Smoke Framework and the Community Smoke Air Quality and Health Protocol in light of the findings of this Inquiry about an increased risk of death from air pollution due to fire. The State should engage independent expert consultants to assist in this review. | | | Complete |
| No. | Action | Lead agency | Action status |
| 125 | Engage an independent consultant to undertake a review of the use of the protocols under the State Smoke Framework and during a smoke event in the 2015/16 summer season (Somerton tip fire) | EMV | Complete |
| 126 | Publicly release independent consultant report on the review of the use of the State Smoke Framework and associated protocols during the Somerton tip fire | EMV | Complete |
| RECOMMENDATION 2 | | | STATUS |
| The State should reconsider, as a matter of priority, its approach to improving community engagement relevant to the health of the Latrobe Valley, which it committed to improving in the <i>Hazelwood Mine Fire Inquiry Report Victorian Government Implementation and Monitoring Plan</i> , October 2014. No specific actions have been assigned to address this recommendation in the Victorian Government Implementation Plan, however IGEM notes that it is contingent on a range of actions assigned to the Latrobe Valley Health Assembly (See Section 4.3) | | | Complete |
| RECOMMENDATION 3 | | | STATUS |
| The State should strengthen its processes to ensure that health information provided by the State to the general public is transparent, reliable and appropriate, to facilitate a good understanding of public health issues as required by the <i>Public Health and Wellbeing Act 2008</i> (Vic). | | | Complete |
| No. | Action | Lead agency | Action status |
| 30 | Complete a review of DHHS structures for public health and emergency management related communications teams | DHHS | Complete |
| 33 | Establish a Communications Health and Emergency Management Team | DHHS | Complete |
| 35 | Develop new processes and protocols (including standard messaging templates) for Better Health Channel and health.vic site based on the review | DHHS | Complete |

| RECOMMENDATION 4 | | | STATUS |
|--|---|-------------|---------------|
| The State should mandate a rigorous process for the investigation of matters of public health concern to avoid real or perceived conflicts of interest, which includes requiring independent experts to declare whether the State has suggested any substantial changes to their advice and whether any changes have been adopted. | | | Complete |
| No. | Action | Lead agency | Action status |
| 28 | Deliver refresher contract management training for DHHS procurement staff | DHHS | Complete |
| 29 | Engage an independent consultant to undertake a review of DHHS procurement and contract management policies and procedures for obtaining independent expert advice | DHHS | Complete |
| 31 | Develop a plan to implement the findings and recommendations of the independent expert report on DHHS procurement and contract management policies and procedures | DHHS | Complete |
| 32 | Deliver the plan to implement the findings and recommendations of the independent expert report on DHHS procurement and contract management policies and procedures | DHHS | Complete |

| RECOMMENDATION 5 | | | STATUS |
|---|--|-------------|---------------|
| The State should engage the Hazelwood Mine Fire Implementation Monitor to monitor and report publicly, on a regular basis, the implementation of the recommendations adopted by the State arising from this report. | | | Ongoing |
| No. | Action | Lead agency | Action status |
| 4 | Assist the Minister for Emergency Services to request that the IGEM begins monitoring implementation of all reopened Inquiry Report recommendations and affirmations by Government and non-Government organisations, with annual reports on progress | DPC & DJR | Complete |
| 5 | Publicly release the IGEM's annual reports in the Victorian Parliament within a reasonable time of receipt by the Minister for Emergency Services | DJCS | Ongoing |

| AFFIRMATION 1 | | | STATUS |
|---|--|-------------|---------------|
| The Board affirms the State's commitment to reimburse Voices of the Valley the amount it paid to the Victorian Registry of Births, Deaths and Marriages for death records data. | | | Complete |
| No. | Action | Lead agency | Action status |
| 2 | Reimburse Voices of the Valley for fee paid to Victorian Registry of Births, Deaths and Marriages for death records data | DPC | Complete |

Hazelwood Mine Fire Inquiry Report 2015–2016, Volume III – Health Improvement

Table 37: Status of recommendations, affirmations and actions from the Hazelwood Mine Fire Inquiry Report 2015–16, Volume III

| HAZELWOOD MINE FIRE INQUIRY REPORT 2015–16, VOLUME III | | | |
|---|--|-------------|---------------|
| RECOMMENDATION 1 | | | STATUS |
| <p>The State empower the Hazelwood Mine Fire Implementation Monitor or another appropriate agency to:</p> <ul style="list-style-type: none"> oversee the implementation of these recommendations report publicly on progress every year for the next eight years identify in each report any additional actions the State should take to ensure the intent of this report is achieved. | | | Ongoing |
| No. | Action | Lead agency | Action status |
| 4 | Assist the Minister for Emergency Services to request that the IGEM begins monitoring implementation of all reopened Inquiry Report recommendations and affirmations by Government and non-Government organisations, with annual reports on progress | DPC & DJR | Complete |
| 5 | Publicly release the IGEM's annual reports in the Victorian Parliament within a reasonable time of receipt by the Minister for Emergency Services | DJCS | Ongoing |
| RECOMMENDATION 2 | | | STATUS |
| <p>The State designate the Latrobe Valley as a special geographical zone for health improvement (Latrobe Valley Health Innovation Zone) for a minimum of eight years (two electoral cycles), with a focus on innovation, integration, and community engagement.</p> | | | Complete |
| No. | Action | Lead agency | Action status |
| 48 | Designate the Latrobe Valley as the Latrobe Valley Health Zone | DHHS | Complete |

| RECOMMENDATION 3 | | | STATUS |
|--|--|-------------|---------------|
| <p>The State establish the Latrobe Valley Health Assembly and executive Board to promote, support and oversee the development of the Latrobe Valley Health Innovation Zone.</p> <p>The Latrobe Valley Health Assembly should ensure that:</p> <ul style="list-style-type: none"> • Health improvement strategies: <ul style="list-style-type: none"> – are informed by a strong community engagement process – focus on reducing health inequities – draw on the capacity, goodwill and opportunities present – integrate actions across relevant providers – are evaluated for their wider applicability across Victoria. • Initial health improvement programs are focused on innovative ways to deliver: <ul style="list-style-type: none"> – social marketing programs which build pride of place – integrated care for people with chronic diseases, especially those with related mental health conditions – tele-medicine services to reduce the barriers of access to medical specialists and other health practitioners – promotion of mental wellbeing, including the prevention of family violence – smoking cessation programs which are effective for priority groups. • In allocating funding for health improvement programs, serious consideration is given to the proposals supported by the Board in Parts 4–7 of this report. • Funds are principally distributed to the organisations of the Latrobe Valley that may singly or in partnership deliver health improvement programs supported by the Latrobe Valley Health Assembly. The Board of the Latrobe Valley Health Assembly may also directly fund and manage programs through the Office of the Health Advocate. | | | Complete |
| No. | Action | Lead agency | Action status |
| 51 | Assist the Latrobe Health Taskforce to recruit an initial local team to support the work of the taskforce and Latrobe Health Assembly | DHHS | Complete |
| 52 | Develop an engagement strategy to help the Latrobe Health Taskforce to identify and attract broad community and business and industry representatives to consider membership of the Latrobe Health Assembly | DHHS | Complete |
| 53 | Begin an expression of interest process to establish the membership of the Latrobe Health Assembly | DHHS | Complete |
| 54 | Support the Latrobe Health Taskforce to develop and finalise terms of reference and associated operating model in active partnership with the Latrobe community and incorporating development of: <ul style="list-style-type: none"> • the governance structure of the Latrobe Health Assembly, including forums and groups reporting to the Assembly • a constitution, partnering agreement or MOU (as appropriate) for the Latrobe Health Assembly • preparation of information to assist the Latrobe Health Assembly to identify outcomes and processes for monitoring and reporting | DHHS | Complete |
| 55 | Facilitate the appointment of the Latrobe Valley Health Assembly, and an independent Chair of the Latrobe Valley Health Assembly | DHHS | Complete |
| 56 | Facilitate consideration by the Latrobe Health Assembly of all draft documents prepared by the Latrobe Health Taskforce for amendment and adoption | DHHS | Complete |
| 58 | Work with the Latrobe Health Assembly to develop a measurement and reporting plan, utilising an outcomes framework, so that the impact of health innovation in the Latrobe Valley Health Zone can be monitored | DHHS | Complete |

| | | | |
|----|--|------|----------|
| 59 | Participate as a member of the Latrobe Health Assembly to identify priorities | DHHS | Complete |
| 60 | Work with the Latrobe Health Assembly to conduct annual monitoring of the impact of innovation | DHHS | Complete |

RECOMMENDATION 4**STATUS**

The State appoint a suitably qualified Health Advocate on the recommendation of the executive Board of the Latrobe Valley Health Assembly, to be supported by an Office.

Complete

No specific actions have been assigned to address this recommendation in the Victorian Government Implementation Plan, however IGEM notes that it is contingent on the establishment of the Latrobe Valley Health Assembly (see Action 55).

RECOMMENDATION 5**STATUS**

The State support and fund the development and delivery of health improvement strategies in the Latrobe Valley Health Innovation Zone.

Complete

The State should:

- provide earmarked funding for the Health Innovation Zone and the establishment of the Office of the Health Advocate to the Board of the Latrobe Valley Health Assembly, which will be held accountable for the appropriate use of such funding
- allocate funding that is at least three times that for the Hazelwood Mine Fire Health Study per annum, and not less than \$8.1 million per year (indexed to inflation) for an initial period of eight years
- require that the funding for the health improvement strategies is allocated to reduce health inequities by:
 - strengthening health services (including chronic disease management, mental health services, early detection and high risk screening, health workforce development)
 - promoting healthy living (including health behaviours, healthy workplaces, healthy environments, children and young people, mental wellbeing and prevention of family violence)
 - building pride of place (including communication, community engagement and social marketing).

| No. | Action | Lead agency | Action status |
|-----|--|-------------|---------------|
| 50 | Work with the Latrobe Health Taskforce to map current area partnerships | DHHS | Complete |
| 57 | Develop the roles and responsibilities of the Health Advocate, in consultation with the Latrobe Health Assembly | DHHS | Complete |
| 60 | Work with the Latrobe Health Assembly to conduct annual monitoring of the impact of innovation | DHHS | Complete |
| 65 | Provide information and evidence regarding previous place-based prevention interventions to inform the Latrobe Health Taskforce and the Latrobe Health Assembly's work | DHHS | Complete |
| 66 | Support the Latrobe Health Taskforce and the Latrobe Health Assembly to partner with Latrobe City Council in the development of the Latrobe MPHW Plan 2017–21 | DHHS | Complete |
| 67 | Facilitate active and ongoing partnerships with both local and statewide organisations to drive an integrated, place-based approach to preventive health in the Latrobe Valley | DHHS | Complete |
| 68 | Allocate funding to support locally determined actions to improve health and wellbeing in agreed priority areas and settings | DHHS | Complete |
| 69 | Review current population and opportunistic screening rates, practices and services in the Latrobe Valley | DHHS | Complete |

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|----|---|------|----------|
| 70 | In consultation with the community and other relevant stakeholders, develop a plan for implementing a system-wide approach to encourage health professionals to ask patients about their smoking and offer support to quit | DHHS | Complete |
| 71 | Implement the smoking cessation initiative, in partnership with the Latrobe Health Assembly, the community and other stakeholders | DHHS | Complete |
| 72 | Based on the outcomes of the review of population screening rates, practices and services, develop a strategy and implementation plan to improve access to screening services for vulnerable and high-risk groups | DHHS | Complete |
| 73 | Based on the outcomes of the review of opportunistic screening rates, practices and services, support the Latrobe Health Assembly to develop a strategy and implementation plan to improve access to opportunistic screening and early intervention services for identified priority areas | DHHS | Complete |
| 74 | Support the Latrobe Health Assembly to commence a trial of integrated screening and assessment approaches for chronic disease | DHHS | Complete |
| 75 | Promote, and increase the use of, existing primary care systems to assist healthcare providers to identify clients for screening | DHHS | Complete |
| 76 | Partner with providers across the Latrobe Valley's health system to develop and implement recruitment and health promotion strategies to encourage community participation in available health screening opportunities | DHHS | Complete |
| 77 | Embed the smoking cessation initiative, in partnership with key service providers | DHHS | Complete |
| 78 | Facilitate the establishment of a Chronic Disease Forum, involving both local and statewide providers and experts, to work with the Latrobe Health Assembly to design and develop care pathways to improve coordination for people with chronic disease | DHHS | Complete |
| 79 | Invite primary health partner agencies to investigate options for co-location of respiratory nurses within general practices in the Latrobe Valley | DHHS | Complete |
| 80 | Provide an additional 1,000 hours of respiratory nursing service at Latrobe Community Health Service (compared to 2015/16 base level) | DHHS | Complete |
| 81 | Expand the early intervention in chronic disease program, delivered by Latrobe Community Health Service, to provide an additional 2,500 hours of allied health and care coordination services (compared to 2015/16 base level) | DHHS | Complete |
| 82 | Provide an additional 1,500 hours of respiratory nursing service (compared to 2015/16 base level) | DHHS | Complete |
| 83 | Provide an additional 3,400 hours of allied health and care coordination services (compared to 2015/16 base level) | DHHS | Complete |
| 84 | Facilitate the establishment of a Latrobe Community Mental Health Forum, comprising both local and statewide providers, experts and the community, to focus on strategies and opportunities to work with the Latrobe Health Assembly to enhance the mental health of the Latrobe Valley community | DHHS | Complete |
| 85 | Work with health and community sector partners to develop an approach to the delivery of workforce skills in primary mental health service delivery, which will involve mentoring, supervision and training (where required) in managing mental health issues associated with chronic disease | DHHS | Complete |

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|----|--|------|----------|
| 86 | Provide funding for the development of strategies to increase awareness and community understanding of mental health issues, and how and where to get help | DHHS | Complete |
| 87 | Expand local mental health support in line with agreed community priorities | DHHS | Complete |
| 88 | Provide funding for the development and delivery of programs to increase awareness of mental health issues | DHHS | Complete |
| 89 | Develop and implement a marketing campaign to promote telehealth as an option for accessing health services | DHHS | Complete |
| 90 | Enable telehealth capacity at more points of primary and acute healthcare | DHHS | Complete |
| 91 | Facilitate the development of telehealth education and training packages targeted to health service providers | DHHS | Complete |
| 92 | Facilitate the delivery of telehealth education and training packages to health service providers in the Latrobe Valley | DHHS | Complete |

RECOMMENDATION 6

STATUS

The State review the scope and structure of the Hazelwood Mine Fire Health Study.

Complete

The State should:

- review the scope of the Hazelwood Mine Fire Health Study to consider whether the Adult Survey can include additional cohorts who do not reside in Morwell, including emergency responders to the Hazelwood mine fire
- reaffirm its commitment to a 20 year study and the importance of having a strong governance structure which ensures that the interests of the Latrobe Valley community are foremost in the short, medium and longer-term
- establish a process whereby key health information obtained through the Health Study about the health status of the population and the effects from the Hazelwood mine fire is provided to the study participants, the community, local health practitioners and the Latrobe Valley Health Assembly
- establish a process whereby policy-relevant health information obtained through the Health Study is considered by the State for action to improve the health of the Latrobe Valley and other populations in Victoria.

| No. | Action | Lead agency | Action status |
|-----|---|-------------|---------------|
| 100 | Engage an independent contractor to review the scope and structure of the Long Term Health Study | DHHS | Complete |
| 101 | Agree on a project plan for the review of the scope and structure of the Long Term Health Study | DHHS | Complete |
| 102 | Agree of the consultation and stakeholder engagement strategy for the review of the scope and structure of the Long Term Health Study | DHHS | Complete |
| 103 | Publicly release contractor report on the review of the scope and structure of the Long Term Health Study | DHHS | Complete |
| 104 | Response to report on the review of the scope and structure of the Long Term Health Study released | DHHS | Complete |

| RECOMMENDATION 7 | | | STATUS |
|---|--|-------------|---------------|
| The State assist in establishing an independent community controlled health organisation for the Latrobe Valley Aboriginal community and co-fund a new culturally appropriate health and community facility which will help with the engagement of Aboriginal young people. | | | Complete |
| No. | Action | Lead agency | Action status |
| 93 | Work with the local Latrobe Aboriginal community to identify priorities for investment | DHHS | Complete |
| 94 | Work with the Latrobe Local Aboriginal Community Partnership to scope the potential for a gathering place | DHHS | Complete |
| 95 | Support implementation of initiatives to address priorities identified with the local Latrobe Aboriginal community | DHHS | Complete |

| RECOMMENDATION 8 | | | STATUS |
|--|--|-------------|---------------|
| The State engage with the Commonwealth Government at the highest ministerial level so that the Commonwealth Department of Health: | | | Complete |
| <ul style="list-style-type: none"> formally recognises the designation of the Latrobe Valley as a Health Innovation Zone pools funding with the State to provide integrated services for the management of chronic disease and mental health conditions in the Latrobe Valley provides health innovation funding to the Gippsland Primary Health Network, commensurate to innovation funds provided by the State for community health and health promotion in the Latrobe Valley. | | | |
| No. | Action | Lead agency | Action status |
| 61 | Develop a proposal for a COAG integrated chronic disease trial in Victoria, with Gippsland as the preferred priority location | DHHS | Complete |
| 62 | Engage directly with the Federal Minister for Health to identify the health needs of the Latrobe Valley community and the importance of the recommendations of the Health Improvement Report | DHHS | Complete |
| 63 | Present the Gippsland proposal for integrated chronic disease trial to Commonwealth officials | DHHS | Complete |
| 64 | Progress a bilateral agreement with joint Commonwealth and State investment for a chronic disease integration trial in Gippsland if selected by the Commonwealth as trial site | DHHS | Complete |

| RECOMMENDATION 9 | | | STATUS |
|--|---|-------------|---------------|
| The State ensure that ash contained in roof cavities in Morwell is analysed and acted on. | | | Complete |
| The State should: | | | |
| <ul style="list-style-type: none"> commission an analysis of the ash contained in roof cavities of houses in Morwell and publish the results of that analysis to the community and Latrobe Valley Health Assembly, together with clear advice about the potential known, or unknown health effects. if the analysis of the ash residue in roof cavities reveals any content that is potentially hazardous to health or of unknown impact on health, conduct an audit of the extent of the exposure to ash and develop an action plan to remove the ash from all affected houses. | | | |
| No. | Action | Lead agency | Action status |
| 105 | Develop a project proposal for sampling ash residue in roof cavities in Morwell | DHHS | Complete |

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|-----|---|------|----------|
| 106 | Publish a factsheet on hazards in roof cavities to provide advice to the community on how to protect their health when entering roof cavities | DHHS | Complete |
| 107 | Engage with key stakeholders, such as the Long Term Health Study Community Advisory Committee, Latrobe Valley Health Assembly and Voices of the Valley, in a workshop to discuss the proposed implementation plan to assess the risk from exposure to ash in roof cavities (as a result of the Hazelwood Mine Fire) | DHHS | Complete |
| 108 | Engage an independent expert (with project management and health risk assessment expertise) to: <ul style="list-style-type: none"> refine the proposed sampling plan for the analysis of ash residue in roof cavities assist with implementation of the project | DHHS | Complete |
| 109 | Establish communication tools including a dedicated web page for project updates and other tools recommended by the key stakeholders in the initial engagement | DHHS | Complete |
| 110 | Hold a community forum to engage with community stakeholders on: <ul style="list-style-type: none"> final project plan and planned activities in Morwell finalised sampling plan communication tools | DHHS | Complete |
| 111 | Commence project with sampling activities (recruitment of houses, testing and analysis). The independent expert will engage an occupational hygienist to conduct the testing and analysis | DHHS | Complete |
| 112 | Publicly release independent expert report | DHHS | Complete |
| 113 | Engage stakeholders through open house to communicate and discuss the report's assessment of the health risk from exposure to ash in roof cavities as a result of the coal mine fire in 2014 | DHHS | Complete |

RECOMMENDATION 10**STATUS**

The State create, as an interim measure for 12 months, a Latrobe Valley Health Innovation Taskforce to assist in progressing recommendations 1–4.

Complete

| No. | Action | Lead agency | Action status |
|-----|---|-------------|---------------|
| 49 | Establish a time-limited Latrobe Health Taskforce to support the creation of the Latrobe Valley Health Assembly | DHHS | Complete |
| 51 | Assist the Latrobe Health Taskforce to recruit an initial local team to support the work of the taskforce and Latrobe Health Assembly | DHHS | Complete |

RECOMMENDATION 11**STATUS**

Each of the four principal health agencies in the Latrobe Valley commit to, support and promote the Latrobe Valley Health Innovation Zone. In particular they should support health innovations and service integration, including the pooling of resources.

Complete

RECOMMENDATION 12**STATUS**

Each of the statutory authorities and state-level non-government health agencies in the Latrobe Valley commit to, support and promote the Latrobe Valley Health Innovation Zone. These bodies should prioritise the Latrobe Valley Health Innovation Zone for investments in program delivery and health innovation projects, recognising that the lessons learned will have broader application.

Complete

| AFFIRMATION 1 | STATUS |
|--|----------|
| The Board affirms the commitment of the principal stakeholder organisations for health in the Latrobe Valley to making improvements in the way that they engage with the Latrobe Valley community. | Complete |
| AFFIRMATION 2 | STATUS |
| The Board affirms the commitment of Latrobe Regional Hospital to continue to develop as a regional hospital for the people of the Latrobe Valley and the wider Gippsland area. The Board considers that the State should give serious consideration to ensuring that future investment in this facility is at least equitable with other regional areas in Victoria. | Complete |
| AFFIRMATION 3 | STATUS |
| The Board affirms the commitment of Ms Kellie O'Callaghan, Chair of the Board of Latrobe Regional Hospital, to progress a community screening day, in partnership with the community and other major health services. This day could be approached as the 'launch' of a new outreach screening program to support chronic disease prevention. | Complete |
| AFFIRMATION 4 | STATUS |
| The Board affirms the intention of Dr Alistair Wright, general physician from Latrobe Regional Hospital and Dr Daniel Steinfort, respiratory physician from the Royal Melbourne Hospital, to work together to understand the risk profile of the Latrobe Valley relevant to lung cancer, and the implications of this for a possible lung cancer screening program. | Complete |
| AFFIRMATION 5 | STATUS |
| The Board affirms the proposal of the State to move towards a 'person-centred' healthcare system with equitable access, as documented in the Health 2040 Summit discussion paper. | Complete |
| AFFIRMATION 6 | STATUS |
| The Board affirms the intention of Monash Health and Latrobe Regional Hospital to consider the development of an advanced physician training program for general physicians in the short term. | Complete |
| AFFIRMATION 7 | STATUS |
| The Board affirms the commitment of the Gippsland Primary Health Network to develop 'care pathways' to assist general practitioners in the management of complex conditions. | Complete |
| AFFIRMATION 8 | STATUS |
| The Board affirms the commitment of state-level statutory and non-government health agencies to assist Latrobe Valley organisations and the broader community to improve health through policies, plans, funding, infrastructure, programs, campaigns, training, research and evaluation, recognising that for action to be effective it needs to be community-led as much as possible. | Complete |
| AFFIRMATION 9 | STATUS |
| The Board affirms the commitment by the Children and Youth Area Partnership to include an early intervention focus to protect vulnerable children and support access to education for children in out-of-home care, having regard to the fact that children in the Latrobe Valley often start school developmentally behind their peers when measured according to the Australian Early Development Index. | Complete |
| AFFIRMATION 10 | STATUS |
| The Board affirms the commitment of the Latrobe City Council to develop a tracks, trails and paths strategy to create supportive environments for physical activity and community engagement. | Complete |

| AFFIRMATION 11 | STATUS |
|--|----------|
| The Board affirms the commitment of members of a Health improvement Forum expert panel on community engagement and communication to work together to develop a community-led shared vision for the health, wellbeing and prosperity of the Latrobe Valley. The panel comprised representatives from EW Tipping Foundation, Gippsland Multicultural Service, GDF Suez Australian Energy, Latrobe City Council, Latrobe Valley Express, Morwell Community Recovery Committee, Morwell Neighbourhood House, VicHealth and Voices of the Valley. | Complete |
| AFFIRMATION 12 | STATUS |
| The Board affirms work being undertaken by the Community Wellbeing Study (part of the Hazelwood Mine Fire Health Study) to enhance agencies' ability to effectively engage with the Latrobe Valley community. | Complete |

Hazelwood Mine Fire Inquiry Report 2015–2016, Volume IV – Mine Rehabilitation

Table 38: Status of recommendations, affirmations and actions from the Hazelwood Mine Fire Inquiry Report 2015–16, Volume IV

| HAZELWOOD MINE FIRE INQUIRY REPORT 2015–16, VOLUME IV | | | |
|--|--|-------------|---------------|
| RECOMMENDATION 1 | STATUS | | |
| The State empower the Hazelwood Mine Fire Implementation Monitor, in a legislated role independent from the Victorian public service, to: | Ongoing | | |
| <ul style="list-style-type: none"> oversee the implementation of these recommendations and the commitments made by the State and the mine operators during this Inquiry for the next three years report publicly on an annual basis on the progress made in implementing the recommendations and commitments for the next three years. | | | |
| No. | Action | Lead agency | Action status |
| 4 | Assist the Minister for Emergency Services to request that the IGEM begins monitoring implementation of all reopened Inquiry Report recommendations and affirmations by Government and non-Government organisations, with annual reports on progress | DPC & DJR | Complete |
| 5 | Publicly release the IGEM's annual reports in the Victorian Parliament within a reasonable time of receipt by the Minister for Emergency Services | DJCS | Ongoing |
| RECOMMENDATION 2 | STATUS | | |
| The State redress gaps in expertise by employing or engaging suitably skilled and experienced personnel in mine closure and rehabilitation liability assessments, and obtaining regular advice and guidance from the Technical Review Board. | Complete | | |
| No. | Action | Lead agency | Action status |
| 156 | Employ or engage suitable expertise in mine closure and rehabilitation liability assessments | DEDJTR | Complete |

| RECOMMENDATION 3 | | | STATUS |
|--|---|--------------|-------------------|
| <p>The State provide appropriate and ongoing resources to the Technical Review Board, particularly for the purpose of providing strategic advice on mine stability and rehabilitation.</p> <p>No specific actions have been assigned to address this recommendation in the Victorian Government Implementation Plan, however IGEM notes that it is related to the ongoing appointment of the Technical Review Board (see Action 156).</p> | | | Complete |
| RECOMMENDATION 4 | | | STATUS |
| <p>The State increase the rate of progressive rehabilitation by developing milestones within the mines' progressive rehabilitation plans in consultation with the mine operators and the Technical Review Board, and require the successful achievement of the milestones.</p> | | | Ongoing |
| No. | Action | Lead agency | Action status |
| 158 | Develop progressive rehabilitation milestones, with support from the TRB or other experts | DJPR | Ongoing (overdue) |
| 204 | Ongoing monitoring and adaptation of the Latrobe Valley Regional Rehabilitation strategy as new information becomes available, including research and in-mine trials by the operators of the Latrobe Valley Coal Mines and progressive rehabilitation | DJPR | Ongoing |
| RECOMMENDATION 5 | | | STATUS |
| <p>The State, by 31 December 2016, specify the manner and form of rehabilitation liability assessments for use by the Latrobe Valley mine operators in their 2016–17 rehabilitation liability assessments and future assessments.</p> | | | Complete |
| No. | Action | Lead agency | Action status |
| 167 | Specify the manner and form for rehabilitation liability assessments for the Latrobe Valley Coal Mines | DEDJTR | Complete |
| RECOMMENDATION 6 | | | STATUS |
| <p>The State, by 31 December 2016, review whether the criteria for accreditation of auditors under s. 53S of the <i>Environment Protection Act 1970</i> (Vic) are appropriate having regard to the necessary skills and expertise required to conduct an audit under s. 79A of the <i>Mineral Resources (Sustainable Development) Act 1990</i> (Vic). If necessary, the Mineral Resources Act and the accreditation process should be amended to ensure appropriately qualified auditors can be engaged for s. 79A audits.</p> | | | Complete |
| No. | Action | Lead agency | Action status |
| 168 | Identify skills and expertise for the conduct of rehabilitation liability assessment audits | DEDJTR | Complete |
| 169 | Amend the accreditation criteria as necessary for auditors appointed under section 53S of the EP Act | EPA | Complete |
| 170 | Assess current pool of appointed auditors for the appropriate skills and expertise | DEDJTR & EPA | Complete |

| RECOMMENDATION 7 | | | STATUS |
|--|---|-------------|---------------|
| The State require that the 2016–17 rehabilitation liability assessments provided by mine operators are conducted in accordance with the requirements developed under Recommendation 5. | | | Complete |
| No. | Action | Lead agency | Action status |
| 171 | Finalise rehabilitation liability assessments | DEDJTR | Complete |
| RECOMMENDATION 8 | | | STATUS |
| The State, by 30 June 2017, require each of the Latrobe Valley mine operators to engage an auditor, under s. 79A(3) of the <i>Mineral Resources (Sustainable Development) Act 1990</i> (Vic), to certify that its 2016–17 rehabilitation liability assessment has been prepared in accordance with the rehabilitation liability assessment guidelines (as per Recommendations 5 and 7); to certify that the assessment is accurate; and pursuant to s. 79A(4) of the Act, to forward a copy of the certificate to the Minister for Resources. | | | Complete |
| No. | Action | Lead agency | Action status |
| 171 | Finalise rehabilitation liability assessments | DEDJTR | Complete |
| RECOMMENDATION 9 | | | STATUS |
| The State, by 30 June 2016, request the Minister for Resources to consider the sufficiency of the existing rehabilitation bonds pursuant to s. 80(4) of the <i>Mineral Resources (Sustainable Development) Act 1990</i> (Vic) having regard to this report and any other relevant material. | | | Complete |
| <ul style="list-style-type: none"> If the Minister for Resources deems the existing rehabilitation bonds insufficient, the Minister should consider increasing the rehabilitation bonds on an interim basis to at least: <ul style="list-style-type: none"> – Yallourn mine: \$34.25 million – Hazelwood mine: \$36.7 million – Loy Yang mine: \$56 million <p>The interim increase should be undertaken in accordance with s.80(4) of the Mineral Resources Act.</p> If the Minister deems the existing rehabilitation bonds sufficient, the Minister should publish a statement setting out the reasons for that conclusion on the website of the Department of Economic Development, Jobs, Transport and Resources. | | | |
| No. | Action | Lead agency | Action status |
| 163 | Consult under section 80 of the MR(SD) Act with each of the Latrobe Valley Coal Mines' licensees and the Latrobe City Council on the proposal to implement further Rehabilitation Bonds at 50 per cent of the Latrobe Valley Coal Mines self-assessed liabilities | DEDJTR | Complete |
| RECOMMENDATION 10 | | | STATUS |
| The State, upon completing the Bond Review Project, review the bond amount required by the mine operators. This should take into account the mine operators' 2016–17 rehabilitation liability assessment, conducted in accordance with Recommendations 5, 7 and 8 and the findings of this Inquiry. The Minister for Resources should then require the mine operators to enter into further rehabilitation bonds, if the rehabilitation bonds are deemed to be insufficient. | | | Complete |
| No. | Action | Lead agency | Action status |
| 172 | Implement further Rehabilitation Bonds if required based on final rehabilitation liability assessments, bond policy review and Inquiry findings, and publish statement of reasons for decision on the DEDJTR website | DEDJTR | Complete |

| RECOMMENDATION 11 | | | STATUS |
|--|---|-------------|---------------|
| <p>The State include risk-based financial assurance mechanisms in the revised financial assurance system, as a method of encouraging progressive rehabilitation. The mechanisms should take into account the size, assets and ownership of the mine operator; the mine operator's history of compliance; demand for coal; and the nature of the mine operation. The mechanisms should also be consistent and transparent, with the level of the financial assurance assessed on a case-by-case basis.</p> | | | Complete |
| No. | Action | Lead agency | Action status |
| 166 | Complete bond policy review | DEDJTR | Complete |
| RECOMMENDATION 12 | | | STATUS |
| <p>The State establish a post-closure trust fund to mitigate the likely costs arising from ongoing monitoring, maintenance and management of the rehabilitated mine sites after closure. The State should also consider establishing a post-closure community fund for the Latrobe Valley, to mitigate the likely social and economic impacts of mine closure. The mine operators and the State should contribute to both of these funds.</p> | | | Complete |
| No. | Action | Lead agency | Action status |
| 173 | <p>Determine an effective mechanism to manage:</p> <ul style="list-style-type: none"> the costs of ongoing monitoring, maintenance and management of the earth resources industry sites risks of closure on the community's social and economic welfare | DEDJTR | Complete |
| RECOMMENDATION 13 | | | STATUS |
| <p>The State, by 31 December 2016, undertake Action 6.8 of the 2011 <i>Gippsland Region Sustainable Water Strategy</i>, to review the mines' rehabilitation strategies and consider impacts on groundwater and surface water resources.</p> | | | Complete |
| No. | Action | Lead agency | Action status |
| 185 | Review current mine rehabilitation strategies, in consultation with DELWP and EPA, to identify water requirements for mine closure and restoration strategies. | DEDJTR | Complete |
| RECOMMENDATION 14 | | | STATUS |
| <p>The State, by 30 June 2017, establish an independent Latrobe Valley Mine Rehabilitation Commissioner, until the Statutory Authority is established under Recommendation 15. It should be a statutory appointment by amendment to the <i>Mineral Resources (Sustainable Development) Act 1990 (Vic)</i> with the following core functions relevant to mine rehabilitation:</p> <ul style="list-style-type: none"> advising the Minister, State and industry on a range of matters, including policy, legislation and regulation monitoring the implementation and effectiveness of strategies undertaking strategic audits of State departments and mine operators conducting investigations into significant issues with powers to obtain information coordinating parties to resolve outstanding issues promoting and coordinating research to address knowledge gaps, as contained in Recommendation 18 sharing and publishing information including research findings undertaking public education and community engagement publishing an annual report | | | Ongoing |
| No. | Action | Lead agency | Action status |
| 161 | Consult with the Latrobe Valley Mine Rehabilitation Commissioner about the options for policy, administrative and legislative reform for the Latrobe Valley Coal Mines' regulatory framework | DEDJTR | Complete |

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|-----|---|--------|----------|
| 179 | Establish MOU between DEDJTR and DELWP to implement the project as a schedule to the existing partnership agreement | DEDJTR | Complete |
| 180 | Prepare an overarching stakeholder engagement strategy for the project (and refine in response to experience) | DEDJTR | Complete |
| 181 | Appoint independent peer reviewers | DEDJTR | Complete |
| 182 | Conduct workshop(s) to develop project scope, methodology, including consultation with the operators of the Latrobe Valley Coal Mines to ensure integration with research program to be undertaken by the operators | DEDJTR | Complete |
| 183 | Establish Latrobe Valley Mine Rehabilitation Advisory Committee | DEDJTR | Complete |
| 184 | Review Stage 1 Project outputs and confirm Stage 2 work plan, including technical peer review | DEDJTR | Complete |
| 186 | Establish the Latrobe Valley Mine Rehabilitation Commissioner as a statutory appointment under the MR(SD) Act | DEDJTR | Complete |
| 187 | Review of existing Latrobe Valley coal mine and power station water entitlements and water licensing (groundwater and surface waters) | DELWP | Complete |
| 188 | Report on existing water use, water availability, aquatic ecosystems and water quality to provide baseline data and inform the works program | DELWP | Complete |
| 189 | Brief the Latrobe Valley Mine Rehabilitation Commissioner, upon commencement, on the work program delivered to date, the forecast work program and the engagement approach | DEDJTR | Complete |
| 190 | Conduct annual progress review and produce a report | DEDJTR | Complete |
| 191 | Assess possible impacts on water availability due to climate change and climate variability (not including possible additional water demand for mine closures) to be used in the modelling on water availability and potential impacts | DELWP | Complete |
| 192 | Review Stage 2 Project outputs and confirm Stage 3 work plan, including technical peer review | DEDJTR | Complete |
| 193 | Integrate findings and outcomes from parallel studies related to mine rehabilitation including the Batter Stability Project, MR(SD) Act review and local and state land planning policy review | DJPR | Complete |
| 194 | Deliver a regional geotechnical study including: <ul style="list-style-type: none"> • investigation of potential water demands for pit lake fill scenarios • investigation of regional ground stability and associated potential impacts on land use, communities and infrastructure • monitoring – outline likely requirements for long-term regional geotechnical monitoring | DJPR | Complete |

| | | | |
|-----|--|---------------------------|----------|
| 195 | Deliver a regional water study on the viability of pit lake filling options and impacts, including: <ul style="list-style-type: none"> • potential water availability and use of regional water resources • analysis of potential alternative sources of water to those currently available to the Latrobe Valley Coal Mines, including a high-level technical and financial assessment • potential water quality impacts in pit lakes, groundwater and off-site surface waters • potential impacts on aquatic ecosystems and downstream users • the scope of likely requirements for long-term regional groundwater monitoring | DELWP | Complete |
| 196 | Review Stage 3 Project outputs and confirm Stage 4 work plan, including technical peer review | DJPR | Complete |
| 197 | Conduct annual progress review and produce a report | DJPR | Complete |
| 199 | Review of the Latrobe Valley Coal Mine and power generator water entitlements and licences that may be required to implement and comply with the Latrobe Valley Regional Rehabilitation Strategy | DELWP | Complete |
| 200 | Release draft assessment of potential impacts at a regional scale for consultation | DJPR (with DELWP support) | Ongoing |
| 201 | Release draft integrated regional scale mine rehabilitation Strategy for consultation | DJPR | Ongoing |
| 202 | Assess potential impacts at a regional scale | DJPR (with DELWP support) | Ongoing |
| 203 | Deliver Integrated regional scale mine rehabilitation strategy | DJPR | Ongoing |

RECOMMENDATION 15

STATUS

The State establish an independent Latrobe Valley Mine Rehabilitation Authority, as a statutory body by amendment to the *Mineral Resources (Sustainable Development) Act 1990 (Vic)* to commence no later than 2026, or earlier in the event of premature closure of one of the Latrobe Valley mines.

Ongoing

The Statutory Authority's responsibilities should include those of the Commissioner, with increased or additional focus on the following:

- planning for post-closure monitoring and maintenance, including clarifying roles and financial obligations
- identifying processes for community and key stakeholder input into the assessment of rehabilitation against closure criteria
- addressing key issues that arise as a result of final rehabilitation
- monitoring water availability and conducting regional water modelling that more accurately estimates pit lake fill times.

| No. | Action | Lead agency | Action status |
|-----|---|-------------|---------------|
| 179 | Establish MOU between DEDJTR and DELWP to implement the project as a schedule to the existing partnership agreement | DEDJTR | Complete |
| 180 | Prepare an overarching stakeholder engagement strategy for the project (and refine in response to experience) | DEDJTR | Complete |
| 181 | Appoint independent peer reviewers | DEDJTR | Complete |

| | | | |
|-----|--|--------|----------|
| 182 | Conduct workshop(s) to develop project scope, methodology, including consultation with the operators of the Latrobe Valley Coal Mines to ensure integration with research program to be undertaken by the operators | DEDJTR | Complete |
| 183 | Establish Latrobe Valley Mine Rehabilitation Advisory Committee | DEDJTR | Complete |
| 184 | Review Stage 1 Project outputs and confirm Stage 2 work plan, including technical peer review | DEDJTR | Complete |
| 187 | Review of existing Latrobe Valley coal mine and power station water entitlements and water licensing (groundwater and surface waters) | DELWP | Complete |
| 188 | Report on existing water use, water availability, aquatic ecosystems and water quality to provide baseline data and inform the works program | DELWP | Complete |
| 189 | Brief the Latrobe Valley Mine Rehabilitation Commissioner, upon commencement, on the work program delivered to date, the forecast work program and the engagement approach | DEDJTR | Complete |
| 190 | Conduct annual progress review and produce a report | DEDJTR | Complete |
| 191 | Assess possible impacts on water availability due to climate change and climate variability (not including possible additional water demand for mine closures) to be used in the modelling on water availability and potential impacts | DELWP | Complete |
| 192 | Review Stage 2 Project outputs and confirm Stage 3 work plan, including technical peer review | DEDJTR | Complete |
| 193 | Integrate findings and outcomes from parallel studies related to mine rehabilitation including the Batter Stability Project, MR(SD) Act review and local and state land planning policy review | DJPR | Complete |
| 194 | Deliver a regional geotechnical study including: <ul style="list-style-type: none"> • investigation of potential water demands for pit lake fill scenarios • investigation of regional ground stability and associated potential impacts on land use, communities and infrastructure • monitoring – outline likely requirements for long-term regional geotechnical monitoring | DJPR | Complete |
| 195 | Deliver a regional water study on the viability of pit lake filling options and impacts, including: <ul style="list-style-type: none"> • potential water availability and use of regional water resources • analysis of potential alternative sources of water to those currently available to the Latrobe Valley Coal Mines, including a high-level technical and financial assessment • potential water quality impacts in pit lakes, groundwater and off-site surface waters • potential impacts on aquatic ecosystems and downstream users • the scope of likely requirements for long-term regional groundwater monitoring | DELWP | Complete |
| 196 | Review Stage 3 Project outputs and confirm Stage 4 work plan, including technical peer review | DJPR | Complete |
| 197 | Conduct annual progress review and produce a report | DJPR | Complete |
| 199 | Review of the Latrobe Valley Coal Mine and power generator water entitlements and licences that may be required to implement and comply with the Latrobe Valley Regional Rehabilitation Strategy | DELWP | Complete |

| | | | |
|-----|---|---------------------------|---------|
| 200 | Release draft assessment of potential impacts at a regional scale for consultation | DJPR (with DELWP support) | Ongoing |
| 201 | Release draft integrated regional scale mine rehabilitation Strategy for consultation | DJPR | Ongoing |
| 202 | Assess potential impacts at a regional scale | DJPR (with DELWP support) | Ongoing |
| 203 | Deliver Integrated regional scale mine rehabilitation strategy | DJPR | Ongoing |

RECOMMENDATION 16**STATUS**

The State consult with the Commissioner and subsequent Statutory Authority about all work plan variations for the Latrobe Valley coal mines, and the development of policy, legislation and regulation relating to mine rehabilitation in the Latrobe Valley.

N/A¹⁰²**RECOMMENDATION 17****STATUS**

The State amend the *Mineral Resources (Sustainable Development) Act 1990 (Vic)* and the Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2013 (Vic) to address the issues that have been raised throughout the Inquiry, such as the need for:

Ongoing

- a dedicated Part of the Mineral Resources Act that exclusively regulates the Latrobe Valley mines
- definitions and criteria for progressive and final rehabilitation
- definitions and criteria for closure
- transparent processes for the referral of work plans and work plan variations to relevant State agencies and referral authorities, which compel the Mining Regulator to act on the advice received
- strengthened criteria for community consultation and engagement under s. 39A of the Mineral Resources Act and/or in community engagement plans
- clarity about the roles of the mine operators and the State in ongoing post-closure monitoring and maintenance
- clarity about the role and required skills and expertise of auditors of rehabilitation liability assessments and the auditor accreditation process (see Recommendation 6).

| No. | Action | Lead agency | Action status |
|-----|---|-------------|---------------|
| 160 | Review the regulatory framework for the Latrobe Valley Coal Mines and develop options for policy, administrative and legislative reform | DEDJTR | Complete |
| 162 | Implement policy, administrative and legislative reforms for the Latrobe Valley Coal Mines' regulatory framework | DJPR | Ongoing |
| 179 | Establish MOU between DEDJTR and DELWP to implement the project as a schedule to the existing partnership agreement | DEDJTR | Complete |
| 180 | Prepare an overarching stakeholder engagement strategy for the project (and refine in response to experience) | DEDJTR | Complete |
| 181 | Appoint independent peer reviewers | DEDJTR | Complete |
| 182 | Conduct workshop(s) to develop project scope, methodology, including consultation with the operators of the Latrobe Valley Coal Mines to ensure integration with research program to be undertaken by the operators | DEDJTR | Complete |
| 183 | Establish Latrobe Valley Mine Rehabilitation Advisory Committee | DEDJTR | Complete |

¹⁰² This action is beyond the scope of the Victorian Government Implementation Plan and will be implemented after October 2019.

| | | | |
|-----|--|--------|----------|
| 184 | Review Stage 1 Project outputs and confirm Stage 2 work plan, including technical peer review | DEDJTR | Complete |
| 187 | Review of existing Latrobe Valley coal mine and power station water entitlements and water licensing (groundwater and surface waters) | DELWP | Complete |
| 188 | Report on existing water use, water availability, aquatic ecosystems and water quality to provide baseline data and inform the works program | DELWP | Complete |
| 189 | Brief the Latrobe Valley Mine Rehabilitation Commissioner, upon commencement, on the work program delivered to date, the forecast work program and the engagement approach | DEDJTR | Complete |
| 190 | Conduct annual progress review and produce a report | DEDJTR | Complete |
| 191 | Assess possible impacts on water availability due to climate change and climate variability (not including possible additional water demand for mine closures) to be used in the modelling on water availability and potential impacts | DELWP | Complete |
| 192 | Review Stage 2 Project outputs and confirm Stage 3 work plan, including technical peer review | DEDJTR | Complete |
| 193 | Integrate findings and outcomes from parallel studies related to mine rehabilitation including the Batter Stability Project, MR(SD) Act review and local and state land planning policy review | DJPR | Complete |
| 194 | Deliver a regional geotechnical study including: <ul style="list-style-type: none"> • investigation of potential water demands for pit lake fill scenarios • investigation of regional ground stability and associated potential impacts on land use, communities and infrastructure • monitoring – outline likely requirements for long-term regional geotechnical monitoring | DJPR | Complete |
| 195 | Deliver a regional water study on the viability of pit lake filling options and impacts, including: <ul style="list-style-type: none"> • potential water availability and use of regional water resources • analysis of potential alternative sources of water to those currently available to the Latrobe Valley Coal Mines, including a high-level technical and financial assessment • potential water quality impacts in pit lakes, groundwater and off-site surface waters • potential impacts on aquatic ecosystems and downstream users • the scope of likely requirements for long-term regional groundwater monitoring | DELWP | Complete |
| 196 | Review Stage 3 Project outputs and confirm Stage 4 work plan, including technical peer review | DJPR | Complete |
| 197 | Conduct annual progress review and produce a report | DJPR | Complete |
| 198 | Review and identify policy, administrative or legislative mechanisms necessary to implement the Latrobe Valley Regional Rehabilitation Strategy and require the Latrobe Valley Coal Mine licence holders to comply | DJPR | Complete |

| RECOMMENDATION 18 | | | STATUS |
|---|---|-------------|-------------------------|
| <p>The mine operators by 31 December 2016, develop an integrated research plan that identifies common research areas and priorities for the next 10 years, to be reviewed every three years. The plan should be developed in consultation with the Mining Regulator and relevant agencies, research bodies and experts. The list of research topics identified in Part 6.11 can be used as a starting point for discussion. The Commissioner and Statutory Authority should promote and coordinate this research (see Recommendations 14 and 15).</p> | | | Complete ¹⁰³ |
| No. | Action | Lead agency | Action status |
| 159 | Contribute to the preparation of an integrated research plan, which identifies common research areas between the operators of the Latrobe Valley Coal Mines for the next 10 years | DEDJTR | Complete |
| 179 | Establish MOU between DEDJTR and DELWP to implement the project as a schedule to the existing partnership agreement | DEDJTR | Complete |
| 180 | Prepare an overarching stakeholder engagement strategy for the project (and refine in response to experience) | DEDJTR | Complete |
| 181 | Appoint independent peer reviewers | DEDJTR | Complete |
| 182 | Conduct workshop(s) to develop project scope, methodology, including consultation with the operators of the Latrobe Valley Coal Mines to ensure integration with research program to be undertaken by the operators | DEDJTR | Complete |
| 183 | Establish Latrobe Valley Mine Rehabilitation Advisory Committee | DEDJTR | Complete |
| 184 | Review Stage 1 Project outputs and confirm Stage 2 work plan, including technical peer review | DEDJTR | Complete |
| 190 | Conduct annual progress review and produce a report | DEDJTR | Complete |
| 204 | Ongoing monitoring and adaptation of the Latrobe Valley Regional Rehabilitation strategy as new information becomes available, including research and in-mine trials by the operators of the Latrobe Valley Coal Mines and progressive rehabilitation | DJPR | Ongoing |
| RECOMMENDATION 19 | | | STATUS |
| <p>The mine operators increase the rate of progressive rehabilitation by achieving milestones within the mines' progressive rehabilitation plans, as set by the Mining Regulator under Recommendation 4.</p> | | | Ongoing |
| AFFIRMATION 1 | | | STATUS |
| <p>The Board affirms the commitments of EnergyAustralia, GDF Suez and AGL Loy Yang to increase coordination and collaboration between themselves and the regulatory authorities.</p> | | | Complete |

¹⁰³ Although IGEM has assessed Action 204 as ongoing, IGEM considers that the intent of this recommendation has been met by the coal mine operators and the LVMRC and therefore considers this recommendation is complete.

| AFFIRMATION 2 | | | STATUS |
|---|---|-------------|---------------|
| The Board affirms the commitments of the Mining Regulator contained in the <i>Earth Resources Regulation 2015–16 Action Plan</i> to: | | | Complete |
| <ul style="list-style-type: none"> • lead and strengthen its relationship with the Department of Environment, Land, Water and Planning and other regulators (for example, the Environment Protection Authority and WorkSafe) to ensure information is shared, and there is consistency and cooperation in carrying out regulatory functions • draft a guideline for providing clear information to industry about requirements under risk-based work plans • build its operational technical capability by drawing on the Technical Review Board to provide more strategic technical advice • implement risk-based mining work plans as required by recent changes to the Mineral Resources Act and the Mineral Industries Regulations • establish a work plan assessment taskforce to identify relevant high-risk sites to submit risk-based work plans (which will most likely include the Latrobe Valley mines) • establish a Mine Fire Safety Unit to provide advice and lead regulatory, compliance and education activities related to fire safety. | | | |
| No. | Action | Lead agency | Action status |
| 151 | Establish a Mine Fire and Emergency Unit | DEDJTR | Complete |
| 152 | Establish a Victorian Earth Resources Regulator Forum, with membership including WorkSafe and EPA | DEDJTR | Complete |
| 155 | Deliver DEDJTR ERR 2015–16 Action Plan | DEDJTR | Complete |
| AFFIRMATION 3 | | | STATUS |
| The Board affirms the commitment of the Mining Regulator, the mine operators and research groups to progress key studies such as the Mine Batter Stability Project at the Yallourn mine and the Loy Yang mine rehabilitation trials. | | | Complete |
| No. | Action | Lead agency | Action status |
| 174 | Execute contracts with Energy Australia and Federation University for the Batter Stability Project | DEDJTR | Complete |
| 175 | Appoint Project Manager within DEDJTR to review progress reports and report to the DEDJTR Project Control Board | DEDJTR | Complete |
| 176 | Public launch of the Batter Stability Project | DEDJTR | Complete |
| 177 | Participate in the Technical Advisory Group administered by Federation University as required | DJPR | Complete |
| 178 | Provide funding upon completion of milestones as per schedules to the contracts with Energy Australia and Federation University | DEDJTR | Complete |

Appendix B:

Status and findings
for all actions,
recommendations
and affirmations
monitored in 2018–19

| CHAPTER 4 – VICTORIAN GOVERNMENT ACTIONS | | | |
|--|------|---|-------------------|
| ACTION | LEAD | | STATUS |
| GOVERNANCE AND ACCOUNTABILITY | | | |
| 1 | DPC | Convene meetings of the IDC on a quarterly basis, and more often if required, until December 2019 | Complete |
| | | Finding: IGEM considers this action has been implemented. | |
| 5 | DJCS | Publicly release the IGEM's annual reports in the Victorian Parliament within a reasonable time of receipt by the Minister for Emergency Services | Ongoing |
| | | Finding: IGEM notes delays encountered by this action. | |
| COMMUNICATIONS AND COMMUNITY ENGAGEMENT | | | |
| 19 | EMV | Deliver the Latrobe Valley Community Engagement and Planning Project | Closed |
| | | Finding: IGEM considers this action has not been fully implemented. IGEM notes that alternative action is planned to address this action. | |
| 26 | EPA | Complete the reconfiguration of the current ambient air monitoring network (including the smoke sensor sub-network) | Ongoing (overdue) |
| | | Finding: IGEM notes progress on this action and that it is overdue. IGEM will continue to monitor this action. | |
| 60 | DHHS | Work with the Latrobe Health Assembly to conduct annual monitoring of the impact of innovation | Complete |
| | | Finding: IGEM considers this action has been implemented. | |
| 67 | DHHS | Facilitate active and ongoing partnerships with both local and statewide organisations to drive an integrated, place-based approach to preventive health in the Latrobe Valley | Complete |
| | | Finding: IGEM considers this action has been implemented. | |
| 68 | DHHS | Allocate funding to support locally determined actions to improve health and wellbeing in agreed priority areas and settings | Complete |
| | | Finding: IGEM considers this action has been implemented. | |
| 78 | DHHS | Facilitate the establishment of a Chronic Disease Forum, involving both local and statewide providers and experts, to work with the Latrobe Health Assembly to design and develop care pathways to improve coordination for people with chronic disease | Complete |
| | | Finding: IGEM considers this action has been implemented. | |

CHAPTER 4 – VICTORIAN GOVERNMENT ACTIONS

| ACTION | LEAD | | STATUS |
|--|-------|---|-------------------|
| 82 | DHHS | Provide an additional 1,500 hours of respiratory nursing service (compared to 2015–16 base level) | Complete |
| | | Finding: IGEM considers this action has been implemented. | |
| 83 | DHHS | Provide an additional 3,400 hours of allied health and care coordination services (compared to 2015–16 base level) | Complete |
| | | Finding: IGEM considers this action has been implemented. | |
| 84 | DHHS | Facilitate the establishment of a Latrobe Community Mental Health Forum, comprising both local and statewide providers, experts and the community, to focus on strategies and opportunities to work with the Latrobe Health Assembly to enhance the mental health of the Latrobe Valley community | Complete |
| | | Finding: IGEM considers this action has been implemented. | |
| 122 | EPA | Deliver a fully functional integrated air quality monitoring and information systems | Ongoing (overdue) |
| | | Finding: IGEM notes delays encountered by this action and that it is overdue. IGEM will continue to monitor this action. | |
| 134 | DELWP | Incorporate Predictive Services smoke intelligence module, to incorporate social media, field sensors and satellite image data to calibrate and validate smoke predictions | Complete |
| | | Finding: IGEM considers this action has been implemented. | |
| 147 | EPA | Release a report on information and knowledge generated from the Hazelwood Mine Fire meta-analysis | Ongoing |
| | | Finding: IGEM notes delays encountered by this action. IGEM will continue to monitor this action. | |
| LATROBE VALLEY COAL MINE REGULATION | | | |
| 158 | DJPR | Develop progressive rehabilitation milestones, with support from the TRB or other experts | Ongoing (overdue) |
| | | Finding: IGEM notes progress on this action and that it is overdue. IGEM will continue to monitor this action. | |
| 162 | DJPR | Implement policy, administrative and legislative reforms for the Latrobe Valley Coal Mines' regulatory framework | Ongoing |
| | | Finding: IGEM considers this action is progressing satisfactorily and will continue to monitor this action. | |

| CHAPTER 4 – VICTORIAN GOVERNMENT ACTIONS | | | |
|---|-------|--|----------|
| ACTION | LEAD | | STATUS |
| LATROBE VALLEY REGIONAL REHABILITATION STRATEGY (LVRRS) | | | |
| 177 | DJPR | Participate in the Technical Advisory Group administered by Federation University as required | Complete |
| <p>Finding: IGEM considers this action has been implemented.</p> | | | |
| 193 | DJPR | Integrate findings and outcomes from parallel studies related to mine rehabilitation including the Batter Stability Project, MR(SD) Act review and local and state land planning policy review | Complete |
| <p>Finding: IGEM considers this action has been implemented.</p> | | | |
| 194 | DJPR | Deliver a regional geotechnical study including: <ul style="list-style-type: none"> • investigation of potential water demands for pit lake fill scenarios • investigation of regional ground stability and associated potential impacts on land use, communities and infrastructure • monitoring – outline likely requirements for long-term regional geotechnical monitoring | Complete |
| <p>Finding: IGEM considers this action has been implemented.</p> | | | |
| 195 | DELWP | Deliver a regional water study on the viability of pit lake filling options and impacts, including: <ul style="list-style-type: none"> • potential water availability and use of regional water resources • analysis of potential alternative sources of water to those currently available to the Latrobe Valley Coal Mines, including a high-level technical and financial assessment • potential water quality impacts in pit lakes, groundwater and off-site surface waters • potential impacts on aquatic ecosystems and downstream users • the scope of likely requirements for long-term regional groundwater monitoring | Complete |
| <p>Finding: IGEM considers this action has been implemented.</p> | | | |
| 196 | DJPR | Review Stage 3 Project outputs and confirm Stage 4 work plan, including technical peer review | Complete |
| <p>Finding: IGEM considers this action has been implemented.</p> | | | |
| 197 | DJPR | Conduct annual progress review and produce a report | Complete |
| <p>Finding: IGEM considers this action has been implemented.</p> | | | |
| 198 | DJPR | Review and identify policy, administrative or legislative mechanisms necessary to implement the Latrobe Valley Regional Rehabilitation Strategy and require the Latrobe Valley Coal Mine licence holders to comply | Complete |
| <p>Finding: IGEM considers this action has been implemented.</p> | | | |

CHAPTER 4 – VICTORIAN GOVERNMENT ACTIONS

| ACTION | LEAD | | STATUS |
|--|------------------------------------|---|----------|
| 199 | DELWP | Review of the Latrobe Valley Coal Mine and power generator water entitlements and licences that may be required to implement and comply with the Latrobe Valley Regional Rehabilitation Strategy | Complete |
| <p>Finding: IGEM considers this action has been implemented.</p> | | | |
| 200 | DJPR (with DELWP support) | Release draft assessment of potential impacts at a regional scale for consultation | Ongoing |
| <p>Finding: IGEM notes these actions are in the early stages of development.</p> | | | |
| 201 | DJPR | Release draft integrated regional scale mine rehabilitation Strategy for consultation | Ongoing |
| <p>Finding: IGEM notes these actions are in the early stages of development.</p> | | | |
| 202 | DJPR (with DELWP support) | Assess potential impacts at a regional scale | Ongoing |
| <p>Finding: IGEM notes these actions are in the early stages of development.</p> | | | |
| 203 | DJPR | Deliver integrated regional scale mine rehabilitation strategy | Ongoing |
| <p>Finding: IGEM notes these actions are in the early stages of development.</p> | | | |
| 204 | DJPR | Ongoing monitoring and adaptation of the Latrobe Valley Regional Rehabilitation strategy as new information becomes available, including research and in-mine trials by the operators of the Latrobe Valley Coal Mines and progressive rehabilitation | Ongoing |
| <p>Finding: IGEM notes this action is in the early stages of development.</p> | | | |
| EMERGENCY MANAGEMENT PLANNING, RESPONSE AND RECOVERY | | | |
| 225 | EMV | Full implementation of the Emergency Management Legislative Amendment (Planning) Bill 2016 | Ongoing |
| <p>Finding: IGEM notes progress on this action. IGEM will continue to monitor this action.</p> | | | |
| 233 | MFB | Provide personal monitoring equipment to MFB firefighters | Ongoing |
| <p>Finding: IGEM notes that full implementation of this action is now expected to occur at least four years after the original due date of June 2016. IGEM finds that this represents an unreasonable delay. IGEM considers that this action should be progressed as a priority, noting that further delays in the provision of personal monitoring equipment may present a significant risk to firefighter health and safety. IGEM will continue to monitor this action.</p> | | | |

| CHAPTER 4 – VICTORIAN GOVERNMENT ACTIONS | | | |
|---|-------------|--|-------------------|
| ACTION | LEAD | | STATUS |
| 235 | CFA | Convert pilot Brown Coal Mine Firefighting Training Package into a blended learning program (e-learning and face to face) | Complete |
| | | Finding: IGEM considers this action has been implemented. | |
| 238 | CFA and MFB | Deliver Brown Coal Mine Firefighting Training Package | Ongoing (overdue) |
| | | Finding: IGEM notes progress on this action and that it is overdue. IGEM will continue to monitor this action. | |
| 244 | DELWP | Review the capability and capacity required for local government to fulfil their emergency management roles and responsibilities | Ongoing |
| | | Finding: IGEM notes progress on this action and that timeframes have been revised. IGEM will continue to monitor this action. | |
| 245 | DELWP | Develop an action plan to address any local government emergency management capability and capacity gaps | Ongoing |
| | | Finding: This action is contingent on Action 244. IGEM notes that timeframes have been revised and will continue to monitor this action. | |
| CHAPTER 5 – PROGRESS UPDATE – HEALTH IMPROVEMENT INQUIRY REPORT – HEALTH AGENCIES | | | |
| ACTION | | | STATUS |
| Rec 11 | | Commit to, support and promote the Latrobe Valley Health Innovation Zone. In particular they should support health innovations and service integration, including the pooling of resources. | Complete |
| | | Finding: IGEM considers this recommendation has been implemented. | |
| Rec 12 | | Commit to, support and promote the Latrobe Valley Health Innovation Zone. These bodies should prioritise the Latrobe Valley Health Innovation Zone for investments in program delivery and health innovation projects, recognising that the lessons learned will have broader application. | Complete |
| | | Finding: IGEM considers this recommendation has been implemented. | |
| Aff 1 | | The commitment of the principal stakeholder organisations for health in the Latrobe Valley to making improvements in the way that they engage with the Latrobe Valley community. | Complete |
| | | Finding: IGEM considers this affirmation has been implemented. | |
| Aff 2 | | The commitment of Latrobe Regional Hospital to continue to develop as a regional hospital for the people of the Latrobe Valley and the wider Gippsland area. The Board considers that the State should give serious consideration to ensuring that future investment in this facility is at least equitable with other regional areas in Victoria. | Complete |
| | | Finding: IGEM considers this affirmation has been implemented. | |

CHAPTER 5 – PROGRESS UPDATE – HEALTH IMPROVEMENT INQUIRY REPORT – HEALTH AGENCIES

| ACTION | | STATUS |
|--------|---|----------|
| Aff 4 | The intention of Dr Alistair Wright, general physician from Latrobe Regional Hospital and Dr Daniel Steinfort, respiratory physician from the Royal Melbourne Hospital, to work together to understand the risk profile of the Latrobe Valley relevant to lung cancer, and the implications of this for a possible lung cancer screening program. | Complete |
| | <p>Finding: IGEM considers this affirmation has been implemented.</p> | |
| Aff 6 | The intention of Monash Health and Latrobe Regional Hospital to consider the development of an advanced physician training program for general physicians in the short term. | Complete |
| | <p>Finding: IGEM considers this affirmation has been implemented.</p> | |
| Aff 8 | The commitment of state-level statutory and non-government health agencies to assist Latrobe Valley organisations and the broader community to improve health through policies, plans, funding, infrastructure, programs, campaigns, training, research and evaluation, recognising that for action to be effective it needs to be community-led as much as possible. | Complete |
| | <p>Finding: IGEM considers this affirmation has been implemented.</p> | |
| Aff 12 | The Board affirms work being undertaken by the Community Wellbeing Study (part of the Hazelwood Mine Fire Health Study) to enhance agencies' ability to effectively engage with the Latrobe Valley community. | Complete |
| | <p>Finding: IGEM considers this affirmation has been implemented.</p> | |

CHAPTER 6 – PROGRESS UPDATE – MINE REHABILITATION INQUIRY REPORT – COAL MINE OPERATORS

| ACTION | | STATUS |
|--------|--|----------|
| Rec 18 | By 31 December 2016, develop an integrated research plan that identifies common research areas and priorities for the next 10 years, to be reviewed every three years. The plan should be developed in consultation with the Mining Regulator and relevant agencies, research bodies and experts. The list of research topics identified in Part 6.11 [of the Victorian Government Implementation Plan] can be used as a starting point for discussion. The Commissioner and Statutory Authority should promote and coordinate this research (see Recommendation 14 and 15). | Complete |
| | <p>Finding: IGEM considers this recommendation has been implemented.</p> | |
| Rec 19 | Increase the rate of progressive rehabilitation by achieving milestones within the mines' progressive rehabilitation plans, as set by the Mining Regulator under Recommendation 4. | Ongoing |
| | <p>Finding: IGEM considers this recommendation is progressing satisfactorily. IGEM will continue to monitor this recommendation.</p> | |

Appendix C:

Effectiveness Monitoring – Interview details

| ACTION # | PARTICIPANT TYPE | NUMBER OF PARTICIPANTS |
|----------|---|------------------------|
| 24 | Co-design panel member | 3 |
| | Community member interested in air quality (not a co-design panel member) | 2 |
| | EPA employee | 2 |
| | LCC employee | 1 |
| | TOTAL: | 8 |
| ACTION # | PARTICIPANT TYPE | NUMBER OF PARTICIPANTS |
| 77 | Quit Victoria employee | 1 |
| | Allied health professional | 2 |
| | GP | 3 |
| | Gippsland PHN employee | 1 |
| | TOTAL: | 7 |
| ACTION # | PARTICIPANT TYPE | NUMBER OF PARTICIPANTS |
| 153 | WorkSafe Victoria employee | 3 |
| | DJPR ERR employee | 2 |
| | CFA employee | 1 |
| | TOTAL: | 6 |

Appendix D:

Glossary



| TERM | DEFINITION |
|---------------------------------------|---|
| Audit | A systematic review of management systems, data, records and operations conducted under tenements administered by ERR, within a defined scope. |
| Brief intervention | Short interactions aimed at helping people stop smoking by providing opportunistic advice, encouragement and referral to external support provided by health professionals. |
| Inspections | An examination or a formal evaluation of data, records and operations conducted under tenements administered by ERR. This may include inspections that are planned or unplanned. |
| Mining licence | A mining licence gives the licence holder the sole right to mine for specified minerals. ERR grants mining licences. |
| Oversight visits | A formally planned examination and evaluation of predetermined specific topics including their systems, data, records, processes and operations conducted under tenements administered by WorkSafe. Such WorkSafe reviews evaluate compliance tenement owners have with their own systems and that of legislation administered by WorkSafe. |
| Plan-Do-Study-Act (PDSA) Model | A Plan, Do, Study, Act (PDSA) cycle uses a “trial and learning” approach in which an idea, hypothesis or a suggested solution for improvement is made then tested on a small scale before any changes are made to the whole system. It is a cyclical model because the desired improvement is not always achieved in one cycle, so the process is refined and the cycle is repeated. |
| Quitline | A confidential telephone service that provides advice and information to members of the public to help them quit smoking. |
| Tenement data | Details of DJPR mining licensees, the type of industry and production and/or expenditure values. |
| Verifications | A formally planned systematic review of the implementation and functionality of safety management systems, data, records, processes and operations conducted under tenements administered by WorkSafe. Such WorkSafe reviews evaluate whether tenement owners complying with their own systems and that of legislation administered by WorkSafe. |
| Work plan | <p>A document describing the nature and scale of the proposed mineral exploration activities to be undertaken on a licence. It is intended to provide guidance to operations staff at the exploration site as well as informing other readers such as council or government officers in order to facilitate decisions, approvals, compliance, and enforcement functions. It must be clear, concise and contain sufficient detail to enable a reader to understand the activities proposed to be undertaken at the site, their potential risks and impacts, and the control or management actions required.</p> <p>Any holder of a mining, retention, exploration or prospecting licence who proposes to carry out exploration must submit a work plan to ERR.</p> |
| WorkSafe employee statistics | Details of the licensees under WorkSafe's regulatory control, including related safety and incident data. |

Sources: CFA, DHHS, DJPR, Gippsland PHN, WorkSafe, Quit Victoria.



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