



CFA Chief Officer's Advice to the Fire District Review Panel (Section 4K Advice)



2024

Foreword

From humble informal beginnings, the Country Fire Authority (CFA) is one of the largest volunteer-based emergency service organisations in the world specialising in bushfire and incident management and operating as Australia's second largest urban fire service behind Fire Rescue New South Wales. CFA volunteers respond professionally, are highly trained to nationally-recognised training packages that facilitates their interoperability and are appropriately equipped. As members of the communities they protect, the capacity and capability of CFA goes beyond traditional fire service approaches – capitalising on local knowledge, empowering communities, and through engagement changing localised human behaviour.



Emergency management is a shared responsibility and CFA recognises the importance of cooperation and collaboration, both internally and externally. CFA members regularly work with personnel from other emergency management organisations to provide an integrated approach to fire and other emergencies in Victoria. These partnerships are critical to the successful delivery of services to the community and are in keeping with the legislative requirements of the fire agencies, and the Victorian Government's intent of the Fire Services Statement and Fire Services Reform. A complementary operating model provides an opportunity to leverage the existing strengths of both fire agencies and ensure that all Victorians receive a world-class fire service response no matter where they live.

We cannot downplay the importance of the unique value of CFA. A CFA brigade provides more firefighters, more appliances and is more closely positioned to neighbouring brigades to meet community demands than the alternate on-shift career model. The CFA model provides an unrivalled and critical surge capacity in Victoria and is agile – being able to flex up within minutes to respond to major campaign fires and other significant events (such as flood) while also maintaining normal day to day service delivery. The strength of this model has been evidenced for over 150 years.

As climate change impacts the frequency and intensity of fire and severe weather events, there will be ever greater demands on the ability of the emergency management sector to deliver prevention, preparedness, response and recovery programs and to strengthen community empowerment. For ultimate community resilience the greater and longer communities participate in their local fire service the better. I acknowledge there may come a point where a community's capacity or desire to contribute is no longer able to meet the demand or imminent risk. Acknowledging that once community capacity is replaced it is highly unlikely to ever return, best efforts are made to build and sustain community capacity, and following this, ultimately a decision to add career resources may be required.

In developing this response, CFA's guiding principle has been to identify the best possible outcomes for the community, regardless of existing arrangements and responsibilities within the jurisdictions of the two agencies. The Panel has identified 13 service delivery areas which may require additional fire risk treatments and about which it has sought my advice. This report demonstrates that the CFA brigades servicing these areas have the capacity and capabilities needed to keep their communities safe, are viable, and continue to contribute broadly to building social capital.

Analysis of the most recent incident and performance data, and a consideration of the broad range of factors that contribute to effective risk mitigation, provides evidence to underpin my assessment as CFA Chief Officer that the existing arrangements continue to be appropriate. Small variations to the Fire Rescue Victoria (FRV) fire district in four CFA service delivery areas are being proposed (some to occur with immediate effect) which is further detailed in the submission.

This document represents the tireless contributions of many people. I would personally like to thank all those who have been involved in detailed analysis and conversations – most particularly the leaders and membership of the brigades who have so thoughtfully engaged in the review process in the interests of continuing to foster community safety and the ongoing strength and viability of this great organisation which Victorians across the generations have grown to trust and respect.

Jason Heffernan
Chief Officer

Executive Summary

CFA has identified four Agreed Variation Zones (AVZs) that are small portions of current CFA brigade service delivery areas (SDAs) that may transition to the FRV fire district either immediately or upon a defined trigger:

- a southern portion of Berwick SDA – transition to occur when the proposed FRV station at Clyde North is operational
- a southern portion of Carrum Downs SDA – immediate transition
- the Werribee Hospital and University Precinct within the Werribee SDA – immediate transition
- a portion of the Epping SDA – transition to occur upon amalgamation of the CFA Epping and Wollert brigades and establishment of a new CFA station north of the current Epping CFA Fire Station

In the remaining nine brigade areas a change to the current boundary would not be effective in reducing the identified changes in fire risk. CFA outlines the current actions it takes in these areas and specifies some additional risk treatment actions. The CFA will strengthen capability through improved equipment in some SDAs (Eaglehawk, Kangaroo Flat, Sebastopol, Wendouree) and address an evident service delivery challenge in Hampton Park by establishment of a satellite fire station facility.

The CFA has developed a response to the FDRP initial determination based on a detailed assessment of future risk and community outcomes for each area identified

The initial determination of the Fire District Review Panel (FDRP, the Panel) identified 13 CFA SDAs adjacent to the FRV fire district where a change in fire risk may require additional mitigation measures and has sought CFA advice. CFA has undertaken a detailed assessment of risk for each SDA, driven by the relevant CFA brigade with support from their Districts and Regions.

CFA's guiding principle has been to identify the best possible outcomes for the community. This response therefore considers how a change to the FRV fire district boundary, as well as alternative solutions for managing changing fire risk, would affect the delivery of fire services for the community.

CFA provides significant value to the community which would be lost if boundary changes are implemented without due consideration

CFA puts the community at the centre of everything it does. It works with FRV and other partners to deliver high-quality services to protect life and property. CFA and FRV perform different roles and have their own respective unique value propositions. CFA provides Victoria with a trusted, community-connected and highly skilled professional emergency service that builds community resilience and protects life and property from fire and other emergencies. In addition to localised response to communities across Victoria, CFA's volunteer firefighters provide critical surge capacity in Victoria (state-wide), and across Australia, during campaign fire seasons. The inappropriate, or wrongly timed transition can lead to a reduction of volunteer involvement in transitioned areas and risks disengaging existing volunteers, discouraging future volunteering and the current benefits provided by the existing CFA brigades. The current FDRP method does not account for the additional community value provided by CFA brigades and its role in managing risk.

The FDRP risk assessment methodology does not consider all aspects of fire risk and risk prevention or consider broader community outcomes

The FDRP approach does not consider all variables that can affect fire risk and CFA's ability to manage this risk – for example, the demonstrated outcomes delivered by community engagement and initiatives that are focused on prevention. There are often other solutions for managing changing fire risk which may achieve better and more cost-effective outcomes than a change to fire district boundaries. Failure to recognise these variables and solutions could lead to sub-optimal outcomes for Victorian communities, and the government. This will be further explored in Section 4.

The FDRP's method includes some factors that may not be considered appropriate for understanding the effective management of fire risk. This includes metrics such as motor vehicle accident data. The method also focuses heavily on service delivery standard (SDS) 'fail'. Timely response is vital but once a certain threshold of response time is reached there is limited evidence to suggest that further investment in speedier response actually reduces fire fatalities and at that point further investment in fire prevention (such as home smoke alarms) is likely to deliver greater outcomes. It is notable that Victoria already has the lowest response times for urban fire response in Australia. Use of these metrics to assess risk may therefore lead to an incorrect decision on the need for boundary changes. In addition, a transition of SDAs to FRV jurisdiction does not guarantee an improvement in these metrics.

The CFA response builds on the work of the FDRP and provides a more nuanced assessment of possible risk management activities for each individual brigade service delivery area

CFA's assessment of risk for each brigade included more detailed context relating to the achievement of SDS, including the most recent performance trends, the extent to which the SDS was missed and the underpinning reasons. Each brigade also undertook a more detailed assessment of the most recent planning data, and how population growth will affect the brigade's service area and ability to continue to service the community.

The assessment at the brigade level identified four zones that may transition to the FRV fire district within the Berwick, Carrum Downs, Epping and Werribee brigade SDAs. The triggers for these changes have been specified. For the other SDAs a change to the current boundary would not be effective in reducing the identified changes in fire risk. For these areas, targeted appliance upgrades, changes to certain fire station arrangements, and other measures such as targeted volunteer recruitment, retention and training activities will more effectively manage future potential risk.

In future a new approach should be considered that moves away from the current focus on administrative boundaries to consider all aspects of fire risk mitigation and residual risk

The FDRP approach currently appropriately considers potential future fire risk. The approach does not consider risk mitigation activities currently being undertaken and whether the remaining residual risk can be satisfactorily addressed by the fire services. The current method therefore provides an incomplete assessment of whether a change in fire district is necessary. A new approach should be developed that moves away from the current focus on increasing risk factors to one that examines residual fire risk.

CFA's recommended approach would be to develop a method to identify Agreed Variation Zones (AVZs) – areas where a change to the fire service provision or a transition from one agency to the other could be planned based on a holistic residual risk assessment. The thresholds and triggers for each AVZ would be quantified, supporting more effective long-term service delivery planning for the two agencies and leveraging existing resource to risk approaches. A more ongoing assessment of changes in risk and possible risk mitigation activities of this nature would better align with the Fire Service Reform vision for a modern, integrated and sustainable system that keeps Victorians safe.

Figure 1: Agreed Variation Zones for Berwick, Carrum Downs, Epping and Werribee SDAs

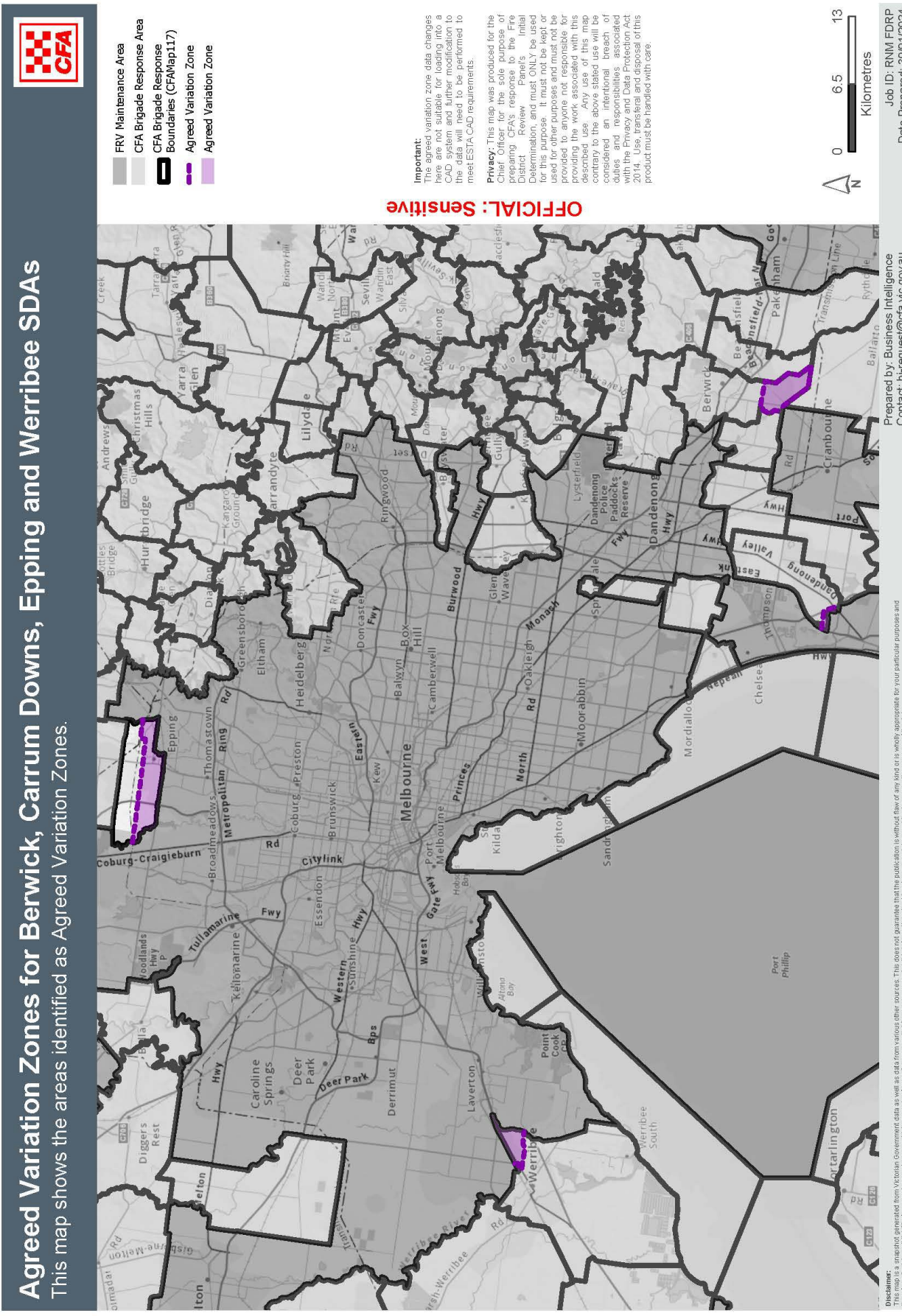


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Section 1: About the Country Fire Authority

1. CFA's Role in Emergency Management

CFA's vision is to ensure that Victorian communities are prepared for and safe from fire. CFA puts the community at the centre of everything it does and works with sector partners to deliver high-quality services to protect life and property. CFA supports the community to prevent and prepare for fire as well as respond to emergencies and works collaboratively with other fire and emergency agencies, including FRV, Forest Fire Management Victoria in the Department of Energy, Environment and Climate Change (FFMV), State Emergency Service (SES), and Ambulance Victoria (AV), to deliver community safety outcomes.

The FDRP was established as an independent public entity to provide advice to the Minister for Emergency Services (the Minister) on whether changes to fire risk across the state could require a change to the FRV fire district. Fire Services Reform (FSR, Reform) that came into effect formally on 1 July 2020 is the most significant change to the fire services in the history of the state. The objective of this change was to ensure that all Victorians receive a world-class fire service response no matter where they live. The strength of CFA and FRV as separate, yet interoperable and complementary, fire services is fundamental to this achieving this objective. In this context, the fire boundary may be seen largely as an administrative construct. To ensure the best outcomes for the community, the FDRP and the Minister must recognise the relative strengths and values of the individual agencies and how they work together to protect and support the community across the emergency management cycle¹. When the agencies work together using a collaborative and complementary approach to optimise the deployment and allocation of interoperable resources, fire risk will be appropriately treated, public safety outcomes improved, and services provided in an efficient and effective manner.

A complementary operating model provides an opportunity to leverage the existing strengths of both agencies. Specialist knowledge and skills that exist in each agency need to be recognised and leveraged and any sense of superiority of one fire service over the other must be dismissed¹. Volunteer fire fighters are trained to nationally recognised standards, facilitating their interoperability and have appliances and equipment that is fit for purpose. CFA challenges the notion that the only way of properly treating elevated fire risk would be to have the jurisdiction transferred from the Country Area of Victoria (CAoV) to the FRV Fire District. It is possible to have a material impact upon fire risk by changing how the operating model is applied, with any boundary change considered only as a final option.

CFA recognises there are situations where the best outcome for the community would be achieved through a change in jurisdiction. However, this point is either when CFA voluntarily makes application to the Minister, or when the service demand on volunteers over an extended period of time is such that the volunteer brigade can no longer effectively mitigate the fire risk to a community. CFA provides detail in this submission about how it proposes to treat areas of elevated risk.

2. The CFA's Role as a Volunteer-based Organisation

Since Reform CFA and FRV perform different roles and have their own respective unique value propositions. Centred around volunteers and community, CFA provides Victoria with a trusted, community-connected and highly skilled professional emergency service that builds community resilience and protects life and property from fire and other emergencies. CFA has over 51,000 volunteers who provide a network of capabilities located across urban, per-urban and rural Victoria, and is Australia's second largest urban fire service behind Fire Rescue New South Wales. CFA operates across a network of 1,210 brigades that are highly responsive and agile to managing fire and other emergencies and provide capacity to manage risk that would otherwise be unachievable on a state-wide scale. As CFA volunteers are part of the communities they protect, the capacity and capability of CFA volunteers goes beyond

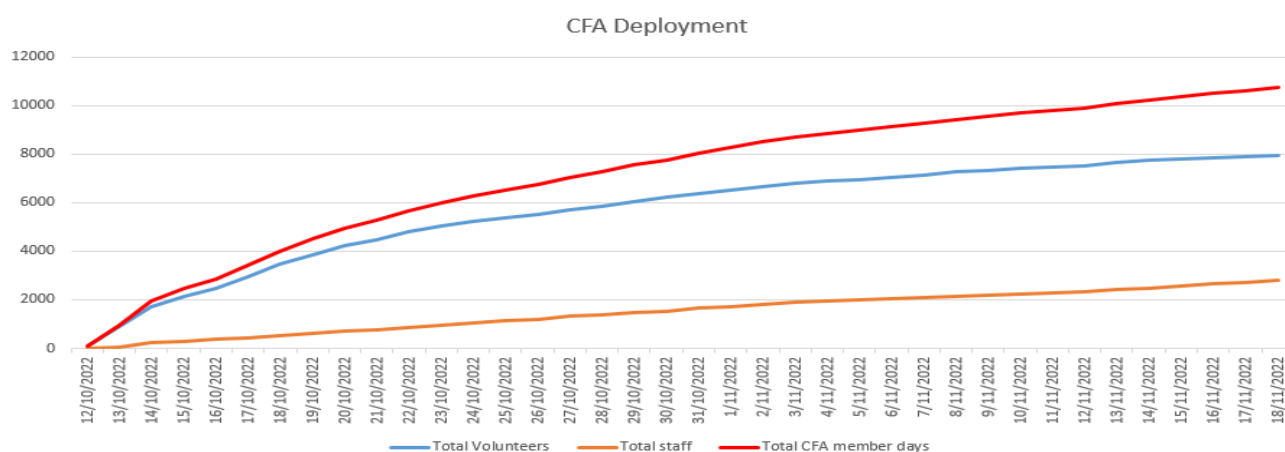
¹ Country Fire Authority Act 1958 Section 2(1)(c-d)

traditional fire service approaches – capitalising on local knowledge, empowering the community and changing localised human behaviour.

In addition to localised response to communities across Victoria, CFA’s volunteer firefighters provide critical surge capacity across Victoria and Australia during campaign fire seasons when demand vastly outweighs the capacity of both local volunteers and career firefighters. The value CFA brings to the State of Victoria from its volunteer surge capacity is unparalleled. For example, CFA members worked 17,486 shifts across the 2019-20 fire season in support of the State's Command and Control Arrangements with thousands of additional shifts undertaken by CFA's front-line crews on the fire-ground.

During Victoria’s flood emergency in 2022 CFA volunteers and staff provided critical support to the emergency from mid-October through to the end of November that year. Over the course of the major emergency 1,531 CFA members performed roles in Incident Control Centres – 576 in District Control Centres, 438 in Regional Control Centres and 280 in the State Control Centre. From amongst volunteer brigades and groups, 7,956 firefighters and 2,161 appliances were deployed across the State.

Figure1: Total CFA deployment to Victorian flood emergency 12 October - 18 November 2022



In the current 2023-24 fire season CFA volunteers have answered the call for assistance through the National Resource Sharing Centre with deployments to Queensland, Northern Territory, and New South Wales. These deployments involved 395 strike team members (firefighters), 56 Incident Management Team personnel, three Air Attack Supervisors and 11 other support personnel.

Services provided by CFA’s volunteer firefighters are cost-effective – a report by Emergency Management Victoria into the value of volunteers showed that the total estimated value of volunteers across Victoria is \$1.9 billion to \$2.5 billion annually². CFA provides a unique value proposition as a volunteer-based urban and rural fire fighting organisation with strong links into the community and high-levels of trust and engagement. The State’s three fire agencies – CFA, FRV and FFMV – work well as complementary services providing a greater range of skills and better outcomes for the community than each individual agency could ever achieve working alone.

3. A Collaborative Approach to Managing Changing Fire Risk

Together, CFA and FRV manage risks from structural fires, bushfires and other critical emergency incidents. Both CFA and FRV are further assisted by FFMV for bushfire. This collaboration is explicitly recognised and supported in legislative arrangements that emphasise the importance of coordination and community safety. The partnership between FRV and CFA is recognised and supported in Section 2A of the *Fire Rescue Victoria Act 1958* and Section 2 of the *Country Fire*

² Emergency Management Victoria (March 2020) 3Vs Final Report: Uncovering the hidden value <https://www.emv.vic.gov.au/how-we-help/volunteers/the-value-of-volunteers-volunteering-and-volunteerism-3vs>

Authority Act 1958, which require both agencies to ‘promote collaboration and coordination between fire services agencies to best meet the safety needs of the community’.

Acknowledging that emergency management is a shared responsibility, CFA and FRV work closely with communities, service providers and all levels of government to support people to be equipped with the skills, information and tools needed to prevent, prepare, respond to, and recover from fires and other emergencies. Achieving this shared vision requires many organisations and the community to work in partnership. No single organisation can reasonably achieve it alone. CFA is committed to supporting this shared vision by continuing to build and maintain a sustainable and effective volunteer-based agency to provide a community-centred emergency service for all Victorians.

In keeping with the respective legislative requirements of both CFA and FRV, and the intent of the Parliament through the Fire Services Statement, CFA has, and continues to use, the then CFA Career Integrated Fire Brigades and now FRV Career Stations to respond into the CAoV to meet community fire risks and supplement and enhance the responses of local CFA volunteer brigades. CFA considers that through complementary fire service principles both FRV and CFA can continue to ensure a high quality service to the Victorian community without a binary ‘one agency or the other’ approach. These principles should include:

- ensuring **primacy of response** is informed by the nearest fire services appliance regardless of agency jurisdiction
- delivering a **co-response model** where there is the opportunity to maximise community safety outcomes
- supporting the development and management of Victoria’s fire and rescue **capability** to safely respond, prevent and suppress fires, and protect life and property
- delivering fire and rescue **functions and responsibilities** through a shared recognition of the capability and capacity of Victoria’s fire agencies
- promoting a community centric approach to **prevention and mitigation** activities for fire and other emergencies to build an informed and resilient community
- recognising and utilising the vital experience, skills and value that both **volunteer and career firefighters** bring to delivering a safe and sustainable fire service for Victoria
- ensuring Victoria’s fire services have a **safe, inclusive and valued workforce** that delivers services through open and respectful engagement and reflects the community they serve
- promoting a **strong and trusted leadership** that acknowledges shared responsibilities, public safety, public value and financial sustainability in the design and delivery of the operating models of Victoria’s fire services.

CFA considers this approach be appropriate, in keeping with the intent of the Parliament of Victoria, and not in itself evidence of any need to change jurisdictional responsibility but rather an appropriate and fiscally responsible means to address risk in a complementary fire service operating model.

4. Delivering on the Intent of Fire Services Reform

On 1 July 2020, the Government’s FSR restored CFA to a volunteer firefighting organisation, and established FRV to help protect Melbourne and Victoria’s largest major regional centres. A key tenet of the Reform is that services delivered by CFA and FRV are outcome-focused, rather than output-focused. FSR also seeks to ensure that CFA and FRV services are complementary, and that the fire agencies work effectively together to ensure Victoria’s communities are safe and resilient. This model must be grounded on suitably skilled and professional workforces (whether paid or unpaid); complementary capabilities; interoperable procedures (including response arrangements) as well as mutual respect, trust and a parity of esteem.

Fire district boundaries should be drawn in recognition of CFA and FRV's unique strengths

The boundaries for the CAoV and FRV fire district establish jurisdictional responsibilities and accountability for both organisations and ensure that there is a single line of authority and accountability for managing emergencies whilst still allowing fire service agencies to support each other when necessary. The placement of these boundaries is a key factor that affects CFA and FRV's interoperability and ability to effectively service Victorian communities. To ensure that CFA and FRV are being effectively utilised, it is important to consider the unique strengths of each organisation, and any consequences of jurisdictional amendment that may see either fire service restricted or removed from responses or performing services to community.

The FDRP's risk assessment methodology is sound but does not consider all aspects of fire risk and risk prevention

The FDRP has the challenging and complex task of reviewing fire district boundaries based on changes in fire risk across Victoria. The FDRP's approach considers several factors affecting fire risk in CFA-serviced areas and factors affecting CFA's ability to manage this risk, including population growth, presence of critical infrastructure, and performance against SDS. However, this approach does not consider all variables that can affect fire risk and CFA's ability to manage this risk – for example, the outcomes delivered by community engagement and initiatives that are focused on prevention. There are also other solutions for managing changing fire risk which may achieve better and more cost-effective outcomes than changes to fire district boundaries. Failure to recognise these variables and solutions could lead to sub-optimal outcomes for Victorian communities, and government.

5. CFA's Response to the FDRP Initial Determination

CFA's response takes an outcome-focused approach and builds on findings from the FDRP initial determination

CFA has analysed the FDRP's initial determination (and accompanying supplementary report), which identifies 13 CFA areas adjacent to FRV fire district boundaries that require further advice from the CFA. In developing this response, CFA's guiding principle has been to identify the best possible outcomes for the community, regardless of existing arrangements and responsibilities within each area between the two agencies. This includes consideration of:

- other factors affecting risk and risk prevention in identified CFA areas that are not considered in the initial determination
- alternative solutions for managing changes in fire risk in identified CFA areas, such as increasing capability, community engagement, and enhanced volunteer recruitment.

This submission has been informed by more up-to-date and validated data than the 2010-2019 incident data that was used for FDRP's initial determination. This pre-Reform operational data was collected by CFA for its internal and specific external reporting purposes, and the degree of data validation varied depending on its intended use. With the amount and type of data requested by the FDRP CFA did not have the time to validate all aspects of the data supplied. In preparing this report greater levels of data validation has taken place and some bespoke data analysis has been undertaken. Some data quality issues have been identified and where this has materially affected decisions relating to risk management at the brigade level it is highlighted in Section 3.

CFA's response considers how interventions to manage changing fire risk would affect interoperability

Interoperability maximises the capabilities of fire service agencies to work together effectively and efficiently through a unified understanding of roles and responsibilities and shared systems, processes, information, communications, technology and training. This integrated approach to emergency management offers substantial benefits to Victoria. Working together, fire service agencies can deliver the interventions that best suit their capability.

This response considers how changes to fire district boundaries, as well as alternative solutions for managing changing fire risk, would affect interoperability between fire service agencies.

Section 2: Statewide Response to the Cycle 1 Initial Determination

CFA has well-established methods to assess fire risk in urban and rural settings which underpin service delivery planning and resource allocation decisions. With the advent of the additional risk assessment process by the FDRP, CFA has sought to understand the cycle 1 initial determination, work with relevant brigades to consider the implications for service delivery and develop an evidence-based response. When considering its response measures CFA has given primary importance to the overall outcomes for the Victorian community, which includes changing risk to local communities, the additional value provided by CFA brigades to the wider community (such as provision of surge capacity and non-response-based fire prevention and mitigation interventions), and the resource demand to the state of achieving these outcomes. CFA notes the findings of the Victorian Bushfire Royal Commission which identified the need for appropriate fire service boundary change mechanisms in its final report in 2010, recognising that “continued urban growth does not necessarily mean that the Metropolitan Fire Brigade [now FRV] ought to be responsible for emergency response in those areas” and that “a range of considerations influence the boundary question, and decisions for future change should be made on the basis of objective factors such as the following:

- comparable service delivery between similar MFB [FRV] and CFA stations
- community expectations
- municipal requests and requirements
- considerations of social capital
- value for money³.”

Changes to boundaries are being recommended where CFA has evidence to suggest this will improve either community safety and interoperability or seek to manage total operational demand on the volunteer workforce to ensure brigade sustainability into the future. In other areas, changes to boundaries are not expected to be the best option for risk mitigation and other measures to address changes in fire risk have been identified.

The statewide response is informed by detailed assessment undertaken by each individual brigade service delivery area identified in the FDRP initial determination. The assessment at the brigade level identified:

- four brigades where CFA identifies an agreed variation zone to be implemented immediately or upon a defined trigger (namely, Berwick, Epping, Carrum Downs and Werribee)
- four brigades where upgrades to the pumper appliance will be able to significantly reduce the increase in risk through reduced response times, expansion of the area able to be serviced and increased capability through improved equipment (namely, Eaglehawk, Kangaroo Flat, Sebastopol, Wendouree)
- one brigade where CFA will address service delivery challenges through the establishment of a satellite fire station (namely Hampton Park). The feasibility of a satellite station will be explored at Wendouree.
- other key measures to reduce risk including targeted volunteer recruitment, retention and training activities, and minor upgrades to some stations to improve access and functionality.

New measures will be resourced through internal reprioritisation of existing CFA funds.

CFA has identified that there were some limitations in the assessment of risk using the FDRP method, which should be considered in future determinations. Further commentary on how the method could be improved in future to enable more effective assessment of community risk is discussed in Section 4.

³ Victorian Bushfire Royal Commission (2010)

6. CFA's Resource to Risk Approach

CFA has been building specialist models to assist in the assessment of fire risk and support prevention, preparedness and response planning for many years. An example is the Victorian Fire Risk Register (Bushfire) tool and process for representatives from local government, fire services, public land managers, utilities and community groups to map assets at risk from bushfire and assess the level of risk to the assets. This model informs Municipal Fire Management Plans and is used by a number of agencies to support their bushfire planning and decision making. The Victorian Fire Risk Register (Structure) tool is based on research into factors affecting the incidence and impact of structure fires within the CFA jurisdiction.

CFA manages a significant physical asset base of approximately \$1.3 billion, including buildings, appliances, vehicles, plant and equipment and information and communications technology assets in order to deliver services to the community. It uses structured processes to assess the risk across the areas for which it has legislative responsibility to inform service delivery approaches; the types of appliances and specialist equipment needed and its people-related capabilities (such as training needs). Planning of the required asset portfolio starts with the service requirements of the CFA. The Service Risk Delivery Model operates across a ten year planning horizon and is informed by specific measures of the community risk environment and brigade environment. It takes account of various inputs (such as, for example, land use planning, population forecasts and building density) and includes data from the Victorian Fire Risk Registers mentioned above. The Model sets out the basis for the allocation of key enabling assets and provides the parameters for assessing any gap between existing assets and required assets. A whole of life asset planning process then considers the future asset capability and capacity requirements followed by the consequential asset preservation requirements. CFA's current approach to applying its resource to Service Risk Delivery Model may need to be reconsidered in light of the FDRP process which introduces an additional risk assessment method against which CFA's current resourcing strategy is being evaluated.

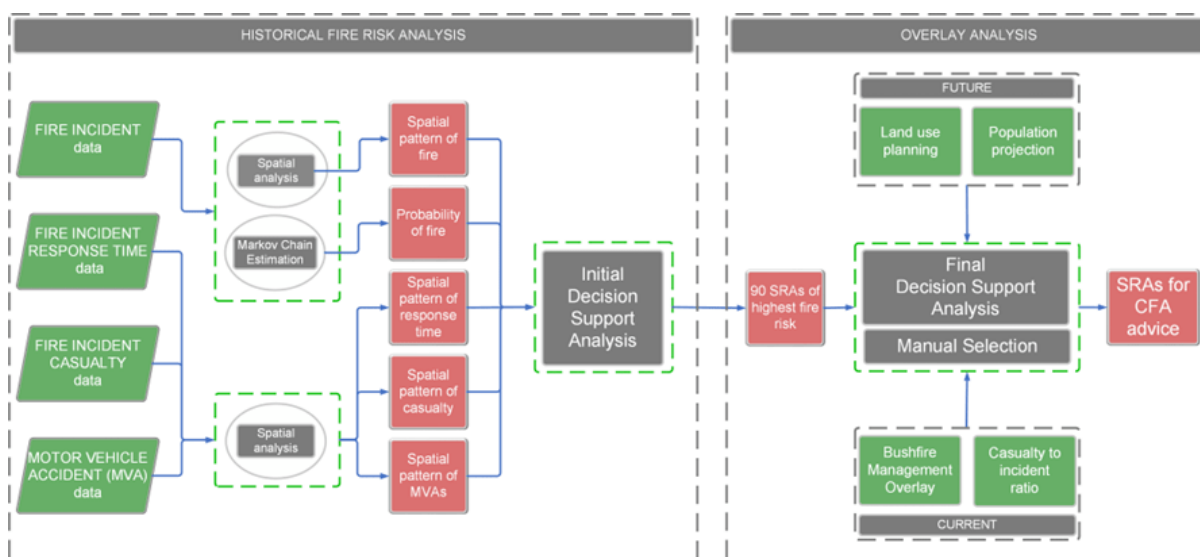
1.1.1 Understanding changing risk at the brigade level

CFA has undertaken a detailed assessment of risk for each service delivery area (SDA) identified by the FDRP's initial determination. This assessment has been driven by the relevant brigades with support from their Districts/Regions. This approach is consistent with the Volunteer Charter which creates a whole of Government imperative to ensure consultation with volunteers on matters which do or might affect them. Each brigade has identified the specific factors relevant to its SDA and to fire risk and has then considered the strategic and local responses to these factors. FDRP's method is based on seven fire risk metrics:

- vehicle fire/motor vehicle accident casualty to total vehicle fire/motor vehicle accident (VCTC ratio)
- building fire casualty to total building fire (BCTC ratio)
- population projections
- proportion of the SDA covered by Bushfire Management Overlay (% BMO)
- land use planning information (% Victorian Planning Authority)
- total demand (based on historical incident data)
- total Service Delivery Standard (SDS) fail.

The data for these metrics has had various statistical analyses applied to produce the initial determination. FDRP's diagrammatic summary of its method is shown in Figure 1.

Figure 1: FDRP's diagrammatic summary of its method



The FDRP initial determination identified 13 CFA brigade SDAs about which it requires advice. FDRP's ranking of these brigades on each of the seven risk metrics was summarised in the table that is shown below. The Panel also produced a supporting report to the initial determination.

Table 1: FDRP's ranking of 13 CFA service delivery areas, by risk metric

Rank*	VCTC Ratio	BCTC Ratio	Population projections	% BMO	%VPA	Total Demand	Total SDS Fail
1	WERRIBEE	EPPING	WYNDHAM VALE	KANGAROO FLAT	KANGAROO FLAT	WERRIBEE	HAMPTON PARK
2	BALLARAT	KANGAROO FLAT	BERWICK	EAGLEHAWK	EAGLEHAWK	BALLARAT	WENDOUREE
3	CARRUM DOWNS	WYNDHAM VALE	HAMPTON PARK	BALLARAT	SEBASTOPOL	HAMPTON PARK	EPPING
4	WYNDHAM VALE	CARRUM DOWNS	EPPING	SEBASTOPOL	EPPING	BERWICK	BALLARAT
5	EPPING	WERRIBEE	NARRE WARREN	BERWICK	WYNDHAM VALE	CARRUM DOWNS	EAGLEHAWK
6	KANGAROO FLAT	BALLARAT	WERRIBEE	WENDOUREE	BERWICK	WENDOUREE	WYNDHAM VALE
7	EDITHVALE	SEBASTOPOL	CARRUM DOWNS	CARRUM DOWNS	WERRIBEE	EPPING	SEBASTOPOL
8	EAGLEHAWK	HAMPTON PARK	EDITHVALE	WYNDHAM VALE	WENDOUREE	NARRE WARREN	WERRIBEE
9	SEBASTOPOL	EDITHVALE	BALLARAT	HAMPTON PARK	BALLARAT	WYNDHAM VALE	CARRUM DOWNS
10	HAMPTON PARK	EAGLEHAWK	KANGAROO FLAT	EPPING	HAMPTON PARK	EAGLEHAWK	EDITHVALE
11	BERWICK	NARRE WARREN	EAGLEHAWK	NARRE WARREN	NARRE WARREN	SEBASTOPOL	BERWICK
12	NARRE WARREN	BERWICK	SEBASTOPOL	WERRIBEE	CARRUM DOWNS	EDITHVALE	NARRE WARREN
13	WENDOUREE	WENDOUREE	WENDOUREE	EDITHVALE	EDITHVALE	KANGAROO FLAT	KANGAROO FLAT

NB: [Grey box] represents SRA containing no value for this metric

* Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

Acronyms

BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

CFA has used the FDRP's initial determination as the starting point for the individual brigade level assessment of changes in fire risk. However, these metrics do not provide a full assessment of risk for each SDA – in part because the data used is historical and also because it does not consider other important elements of mitigating fire risk including community education and direct intervention prevention activities.

Each brigade has provided locally informed, updated insights and information as to the fire risk in the SDA and relevant factors that need to be taken into account since the end of 2019 (given the FDRP data reference period was incidents occurring 2010-2019). This detailed brigade-level assessment has provided a much more nuanced understanding of specific risks and issues than can be achieved through high-level, historical data. CFA acknowledges that it is not possible nor appropriate for the FDRP to conduct such analysis and this is why it is so important for the Chief Officer to be able to provide advice and for this advice to be considered by the Panel prior to any recommendations being made to the Minister.

In working closely with the brigades CFA has ensured the assessment of capability and capacity to respond to risk is grounded in the specific issues and challenges faced by each brigade. The additional interventions outlined in this submission are targeting specific aspects that will achieve the best outcomes for local community. These include reducing response times by relocating assets or investing in faster and safer fire appliances. It is notable that service delivery performance has improved in most of the brigades (7 of the 13) since 2019 (the FDRP data reference period). Where SDS performance did not meet target, brigades identified this was often by a very small margin (by between 1 and 60 seconds). Factors contributing to these results have been analysed and are discussed in Section 3. Where they are due to factors within the brigade's control they are being addressed. In some cases the causes are outside of the brigade's control such as traffic congestion and disruptions from road projects/level crossing removal, radio congestion. Station location is also a relevant factor in some SDAs.

CFA aims to assist in building resilient communities and empowering individuals to make decisions about their safety. Consistent with a shared responsibility approach, community members have a responsibility to understand their risk environment and to undertake measures to mitigate their own exposure to emergencies. For fire events, community safety is achieved through three types of activities: built asset fire safety; community engagement and education; and fire prevention and mitigation. The brigades have identified the fire prevention measures they undertake such as home smoke alarm installation and maintenance for at-risk and vulnerable residents, and the delivery of fire safety programs, which have evidence based positive outcomes for the preservation of life – the primary outcome for fire services worldwide.

1.1.2 Unit of analysis

The spatial analysis undertaken by the FDRP was conducted at the Statistical Area Level 1(SA1) scale. Mesh blocks are the smallest geographic areas defined by the Australian Bureau of Statistics (ABS) and form the building blocks for the larger regions of the Australian Statistical Geography Standard. For the brigade level analysis mesh blocks were used as the base unit of analysis. The CFA uses mesh blocks as they provide the most recent and up to date data and consistent data about land use changes. Other data sources lag and areas that were once paddocks have or are now developing. Currency and accuracy are critical for CFA to plan its service delivery to the community. Using ABS mesh blocks also enables accurate analysis of population and dwelling counts to assess the number of people and homes, and the nature of the homes, serviced by each brigade.

7. Limitations and Qualifications

CFA has identified some specific limitations and challenges in the FDRP method when undertaking the assessment at the brigade-level, including fire casualty data; the use of motor vehicle accident data and 'SDS fail' as measures of risk. Each of these matters is addressed below.

Use of these metrics to assess risk may lead to an incorrect decision on the need for boundary changes, since improving these metrics is not likely to reduce fire risk for the community. Therefore, across each of the brigades, the individual responses have also considered:

- important context relating to the 'SDS fail', including the likely population affected and the underpinning factors
- how population growth will affect each brigade's service area, SDS performance, and the ability to continue to service the community (traffic dampening design and traffic congestion).

These specific issues with the current FDRP method need consideration prior to the next review. Greater nuance is needed to understand the most effective way to reduce risk rather than a focus on simply increasing achievement of SDS. CFA's suggestions about the improvements that can be made in future reviews are in Section 4.

7.1.3 Casualty data

The FDRP's method includes an assessment of fire casualties (injuries and fatalities) with the specific measure being "building fire casualty to total building fire" (abbreviated by the Panel to BCTC). Reducing fire casualties, to the fullest extent possible, is an important goal. CFA's Outcomes Framework places focus on this and, in line with the CFA Vision that Victorian communities are prepared for and safe from fire, it continues to aspire to the ultimate outcome of zero injuries and fatalities. An explicit outcome in the Framework is that 'fires are less harmful to the community' with three indicators relating to fatality and injury (namely, decrease in fire-related fatalities; decrease in the rate of fire-related injuries and decrease in the severity of fire-related injuries). CFA has partnered with the Monash University Accident Research Centre and AV to develop the data set for these performance measures given the known limitations to the data captured from incident reports on which FDRP has relied.

CFA records injuries and fatalities in its Fire Incident Reporting System (FIRS) and the Panel requested full incident data for the period from January 2010 to December 2019 which was extracted from FIRS. This system is used by brigade members to record relevant details after their attendance at each incident. Where an injury is apparent it will be included in the incident report but from the FIRS data there is insufficient information to determine the severity of the injury nor what percentage of injuries might be considered preventable/non-preventable.

Further, CFA records all fatalities regardless of the underlying cause and FIRS data does not exclude fatality data due to deliberate acts or omissions, homicides, or suicides. This is because the occurrence of a fatality can occur after the incident report is submitted and the cause or context of the fire fatality may remain undetermined for some time (and is often subject to coronial or criminal court determinations that can occur many months after the event). CFA understands that FRV (and former MFB) excludes these types of incidents from counting fire fatalities. This naturally leads to an unfavourable comparison between CFA and FRV.

For the purposes of this report, CFA has undertaken an analysis of fire fatalities and whether they met the definition of preventable or non-preventable. Preventable fires exclude those caused by deliberate acts/omissions, homicides or suicides. Where a preventable fire fatality occurs this does not mean that the fire brigade attending the scene has not responded effectively or in a timely manner. Rather, it points to the fact that fire-safe practices and passive fire safety measures (such as an operating home smoke alarm) could have prevented the fatality.

From January 2010 to December 2019 (the FDRP data reference period), there were 1,346 structure fire incidents that required extinguishment by the 13 brigades, with three separate structure fires resulting in three preventable fatalities (0.22% of fire incidents). These preventable fatalities occurred in Hampton Park (2011), Berwick (2012) and Aspendale

Gardens (2016, in the Edithvale Fire Brigade SDA). CFA brigades met SDS for all incidents, responding in less than eight minutes. A working home smoke alarm was only verified to have been installed in one of these properties.

For the period from January 2020 to December 2023, there were 385 structure fire incidents that required extinguishment by the 13 brigades, with five separate structure fire incidents resulting in nine preventable fatalities (2.34% of fire incidents). These occurred in Carrum Downs (2020), Werribee (2021 and 2022), Wendouree (2022) and Epping (2022). CFA brigades met SDS in three of five incidents, responding in less than eight minutes. In the remaining two incidents, FRV was the first agency on scene for one and in the other SDS was missed by only six seconds.

7.1.4 Motor vehicle accidents and vehicle fire

As acknowledged by FDRP, the data on motor vehicle accident (MVA) casualties was introduced late in its process with the specific measure being “vehicle fire/motor vehicle accident casualty to total vehicle fire/ motor vehicle accident” (abbreviated by the Panel to VCTC). The Panel’s only stated rationale for the inclusion of this metric was “due to the potential for the ignition of fuel”⁴. In analysing casualty data, the Panel conflates vehicle fire and vehicle accident and as a result shows ‘vehicle fire and MVA’ as the type of incident that results in the most casualties. MVAs are unquestionably a cause of significant casualties in the state and across the country, but CFA questions the utility of the VCTC metric to meaningfully inform decisions about change in fire risk. Relevant data to illustrate this point is shown below.

For context, it is important to note that Victoria Police is the control agency for MVAs⁵. CFA, FRV, SES and Independent Search and Rescue Organisations are ‘support agencies’ for Road Crash Rescue (RCR) by providing technical response capabilities. The State RCR Arrangements (2023)⁶ detail the standards for equipping, training and response of support agencies and specify the dispatch protocols. All CFA brigades respond to MVAs on urban and rural roads, rescuing people trapped in vehicles and providing first response medical attention. In addition, CFA has 21 RCR Principal Providers across the state which have specialised equipment to perform rescues. They provide a high quality service to the state. The Werribee Fire Brigade, one of the 13 brigades addressed in this submission, is the recipient of a Chief Officer’s Commendation to recognise its response to a tragic road crash in 2021 and the Brigade achieved overall first place in the 2022 New South Wales State RCR Challenge and third place overall in the 2023 Australasian Rescue Organisation Rescue Challenge.

The CFA incident data supplied to FDRP included attendance at motor vehicle collision incidents but these do not relate at all to fire. Where a fire occurs associated with a motor vehicle, this is recorded in FIRS as a ‘fire and explosion’ incident. This will include acts of arson and other vehicle fire events not related at all to vehicle collision.

For the period from January 2010 to December 2019, there were 41,762 MVAs attended by CFA that did not result in a vehicle fire. Separately, there were 17,294 passenger vehicle fires from all sources (deliberate acts, MVAs and non-MVA causes). Significantly, of the passenger vehicle fires, 7,168 (41.4%) were classified as suspicious or deliberate fires, a further 3,304 (19.1%) appeared not to be related to MVAs. There were 4,142 (23.9%) passenger vehicle fires without an ignition factor listed, and the cause of these fires cannot be attributed one way or the other. Overall, 2,680 (4.5%) of 59,056 incidents could perhaps be attributed to fire as a result of an MVA. The assumption that there is a tendency for vehicle collisions to cause or result in a fire is not supported by CFA data.

If the risk associated with an MVA is due to the potential for leaking fluid, fire brigade attendance is typically initiated by Victoria Police. These calls are not treated as a life-threatening emergency response (code 1) but a non-emergency response (code 3) and there is no SDS or urgency.

The metric VCTC has not been assessed further in Section 3 of this submission for the reasons outlined above.

⁴ Fire District Review Panel (March 2023) *The Fire Rescue Victoria Fire District Review 2020-24 Supporting Report to the Determination*

⁵ State Emergency Management Plan

⁶ <https://www.emv.vic.gov.au/responsibilities/state-road-crash-rescue-arrangements>

7.1.5 Service delivery standards

Issues with current service delivery standards as a measure of risk

SDS, as currently defined, is not a good reflection of brigade capabilities and the effective management of fire risk. Evidence for the effect of response times on fire risk outcomes is mixed. While there is some evidence supporting correlations between response times and property damage, there is limited evidence to support links between response times and fire fatalities.

Time to flashover is a critical threshold for injuries, loss of life and property damage. The United States National Fire Protection Agency states that 212°F (100°C) is the maximum survivable temperature limit for humans. This is well below temperatures found in most significant structure fires that are beyond the incipient (initial) stage. In today's fire environments, temperatures can rise to over 500°F (260°C) within three to four minutes. Flashover, which occurs at about 1,100°F (593°C), has been demonstrated to occur well under five minutes⁷.

Fire Rescue New South Wales (FRNSW)⁸ in conjunction with the Commonwealth Scientific and Industrial Research Organisation reproduced results from the United States National Institute of Standards and Technology that showed typical home layouts with modern furnishings can progress to flashover in as little as two to three minutes, whereas similar tests conducted in the 1970s resulted in typical flashover times of 10-20 minutes.

The reduction in time to flashover in the residential fire environment over the past several decades is driven by changes to modern homes. Contributing factors include their size, geometry, increased petroleum based synthetic fuel loads, and a trend towards highly engineered, lightweight construction materials⁹. As a consequence, even with the extremely short response time targets applied by Victorian fire services, in most cases a fire beyond its development stage has transitioned to flashover prior to the fire service's arrival – whether that be a volunteer or career fire service.

After the point of flashover, a reduction in response times has minimal impact on the outcome of a fire. The Victorian Auditor General has stated that “emergency response time measures ... do not provide useful performance information. Targets for the number of minutes to arrive are outdated and not based on evidence”.¹⁰ CFA considers that other risk mitigation measures are likely to be more effective in addressing risk, compared to reducing response time. The method also assumes that population growth will negatively affect fire risk, however this is highly dependent on where the population growth occurs.

It is notable that fire services in other jurisdictions in Australia have quite different performance standards as shown in Table 2. Across Australia and New Zealand no fire service seeks to deliver a response intervention to allow for mitigation or suppression of the fire before, or to mitigate the occurrence of, the modern time to flashover (ie two to three minutes).

⁷ Marsar, S (2010) Survivability Profiling: How long can victims survive in a fire. Fire Engineering

⁸ NSW Fire Rescue Submission to Commonwealth Senate Enquiry into Smoke Alarms (2015)
<https://www.aph.gov.au/DocumentStore.ashx?id=3ae16bfd-7f4a-47e6-a118-28d694a34fb6&subId=401527>

⁹ Kerber, S (2012) Analysis of Changing Residential Fire Dynamics and Its Implications on Firefighter Operational Timeframes. Fire Technology, 865–891. Retrieved from <https://doi.org/10.1007/s10694-011-0249-2>

¹⁰ Victorian Auditor General (2015) Emergency Service Response Times

Table 2: Fire service response time standards across Australia and New Zealand

Jurisdiction	Response Time Standard	Setting	Target
Queensland	14 mins	Structure Fires	90 th percentile
	7.8 mins	Structure Fires	50 th percentile
South Australia	7 mins	Urban Area (Career)*	90 th percentile
	11 mins	Regional Area (Career)	90 th percentile
	No target	Volunteer Stations	N/A
Western Australia	12 mins	Career Station	90 th percentile
	14 mins	Volunteer Station	90 th percentile
New Zealand	8 mins	Career Station	80 th percentile
	11 mins	Volunteer Station	80 th percentile
	30 mins	Bushfire	90 th percentile
Victoria	7.7 mins	FRV	90 th percentile
	9.2 mins	FRV – Medical Calls	90 th percentile
	8 mins	CFA Urban (Hazard Class 2)	90 th percentile
	10 mins	CFA Low Urban (Hazard Class 3)	90 th percentile
	20 mins	CFA Rural (Hazard Class 4)	90 th percentile
	No target	CFA Remote (Hazard Class 5)	N/A
New South Wales	Actual	FRNSW – Fire District	Public reporting of actual average response times at the 50 th and 90 th percentile
	No target	Non-Urban Areas	N/A

(*) Metropolitan District of Adelaide only (21 defined stations)

FRNSW has adopted a different approach to public reporting of fire service response performance. Due to the factors discussed above and the challenges of urban traffic congestion and deliberate actions taken by both local and state governments to slow traffic to improve road safety, it has moved away from a pass / fail assessment against a determined time to a model where it reports against all responses at the 50th and 90th percentile.

Case study – Different response time reporting

Source Fire Rescue New South Wales (FRNSW)

The response time to structure fires at the 50th percentile within fire districts across NSW was 7 minutes 25 seconds, meaning 50% of FRNSW responses to structure fires were within this time. At the 90th percentile the response time to structure fires within fire districts was 12 minutes 11 seconds, meaning that 90% of the time FRNSW responses to structure fires were within this time. Response times at the 90th percentile have increased marginally in recent years, largely due to increased travel times for fire crews. Travel times are impacted by road traffic volumes while deployment of strike teams to large scale incidents, such as the major floods in 2021-22 reduces the availability of crews in their base fire stations, particularly in regional areas with on-call crews.

As part of the annual Report on Government Services (ROGS) the Productivity Commission collects data on response times using the same reporting method of 50th and 90th percentiles. It also collects data on fatalities and fire services expenditure. Average data for the ten years from 2012-2022 is shown in Table 3. This illustrates that despite having faster response times and more expenditure per person in Victoria, the number of fire deaths is not lower than in other jurisdictions.

Table 3: Response time, fire service expenditure and deaths (average 2012-2022)

	NSW	VIC	QLD	WA	SA	TAS
Response times (50th percentile)	7.6	6.7	7.9	9.0	8.0	8.8
Response times (90th percentile)	14.5	10.8	12.4	15.9	14.8	18.2
Fire service expenditure per person	\$167.83	\$270.68	\$144.66	\$183.76	\$157.65	\$226.54
Deaths per million people	4.0	4.4	4.4	3.9	4.4	7.9

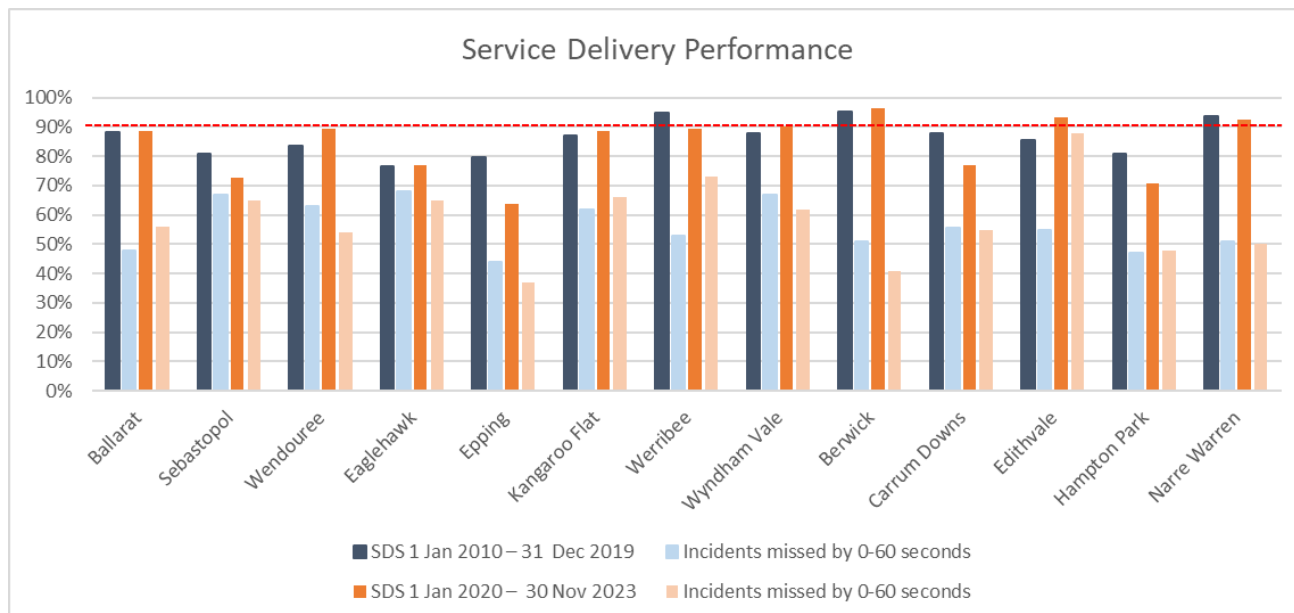
It is clear that service performance measurement focused on response times is of limited use in assessing actual risk to the community.

The Panel states that “*SDS failures have the potential to increase injury and fatality, so SA 1s containing a high number of incidents not meeting the SDS are of major concern*”. CFA analysis shows that of all events where a fatality or injury occurred and SDS was applicable, the majority (84%) were compliant. Analysing incidents that involved fatalities only returns the same conclusion. For the 13 brigades identified by FDRP, again the majority (94% or 34 incidents) of SDS-applicable incidents that involved an injury or fatality were compliant. There is no evidence that suggests any inverse correlation between SDS and injury/fatality outcome.

An analysis of government reported SDS at the organisational level for CFA against the highest of the hazard class risk for response (Hazard Class 2) shows 86% compliance against the target (90%), with 45% of the responses falling short of the target by between 1 and 60 seconds.

An analysis of Customer SDS (combined FRV and CFA response) for the 13 brigades against the highest of the hazard class risk for response (Hazard Class 2) shows 84% compliance against the target (90%), with 57% of the responses falling short of the target by between 1 and 60 seconds. Figure 3 below shows the service delivery performance of the 13 brigades, the proportion of incidents where SDS was met (for the FDRP data reference period and more recently) and the proportion of incidents where SDS was missed by between by between 1 and 60 seconds.

Figure 2: Service delivery performance



The reliability of SDS as a measure of brigade performance is affected when they are stopped enroute by FRV. The overall rate of CFA resources being stopped enroute has more than doubled from FY21 (245) to FY23 (584). Prior to Fire Services Reform the areas with the highest number of instances of career staff cancelling volunteer response were Ballarat City, Boronia and Dandenong. Of the 13 brigades addressed in this report, Ballarat, Wendouree and Sebastopol (all supporting brigades for FRV Ballarat City) are being cancelled or stopped enroute at the highest rates. Ballarat CFA was stopped enroute 234 times out of 358 incidents (65%) over the last five years and, as a result, no brigade SDS for these incidents could be determined.

Other approaches for reducing risk

Fire services the world over have recognised that lowering fire related fatalities in the urban environment requires the active intervention of a non-response fire prevention and mitigation measure. These measures – such as smoke alarm and sprinkler installations, and community engagement and education campaigns – substantially reduce fire risk and are highly cost-effective compared to increasing fire service agency capacity.

Case Study – Smoke Alarm Intervention

Source CFA Noble Park Fire Brigade

With 18 different languages spoken by brigade members, the Noble Park Fire Brigade is using these skills to engage with local residents and keep them safe from fire. The Brigade has been conducting free smoke alarm assessments and replacements in local households for many years now. In one weekend in May 2023, 152 homes were visited across the Greater Dandenong local government area. The campaign resulted in:

- 325 new ten-year smoke alarms installed
- 162 non-compliant smoke alarms found
- 208 residents engaged in discussions about improved home fire safety
- 126 homes provided with home fire safety information packs
- 6 homes identified as needing to be escalated for specialised follow-up (hoarding, safety concerns etc)
- 300 referrals (addressed in a subsequent phase as residents were available)

In the United States, the Centre for Fire Research at the National Institute of Standards and Technology has studied the effect of both smoke alarms and sprinklers in residential occupancies and estimates that:

- when fire sprinklers alone are installed in a residence, the chances of dying in a fire are reduced by 69%, when compared to a residence without sprinklers
- when smoke alarms alone are installed in a residence, a reduction in the death rate of 63% can be expected, when compared to a residence without smoke alarms
- when both smoke alarms and fire sprinklers are present in a home, the risk of dying in a fire is reduced by 82%, when compared to a residence without either.¹¹

In Canada, a study of fire-fighter delivered, door-to-door public education and smoke alarm examination/installation campaigns demonstrated that the campaigns were effective in reducing the frequency and the impact/severity of residential structure fires¹².

Case Study – Sprinkler Intervention

Source British Columbia, Canada¹³

A study in British Columbia assessed the differences in fires in buildings completely protected by sprinkler systems with those fires that occurred in buildings without any sprinkler protection. The study used data from the British Columbia Office of the Fire Commissioner and included all fires reported to that office between October 2006 and October 2011.

The study found that across all residential fires the death rate per 1,000 fires increased by 13.7 times and the injury rate per 1,000 fires increased by 1.5 times in buildings without sprinkler protection. In addition to this, the frequency at which injuries were sustained while building occupants were attempting to escape was significantly reduced in buildings with sprinkler protection. Trends also suggest that there was a reduction in the severity of the injuries sustained when fires occurred in sprinkler protected buildings, with only 0.4% of the total injuries occurring in the presence of sprinklers and categorised as serious (requiring at least three days in hospital and/or at least 15 days off work).

8. Submissions to the Panel

Following release of the initial determination on 30 March 2023, CFA sought clarification from the Panel about whether it intended to invite and/or accept submissions from stakeholders other than CFA, and an assurance that any submissions received would be provided to CFA in full and in a timely fashion. This has been important in ensuring CFA's response to the initial determination can be properly informed and comprehensive. The CFA understands submissions were received from the following:

- Volunteer Fire Brigades Victoria
- Fire Rescue Victoria
- Department of Justice and Community Safety

The confidential nature of the submissions to the Panel is acknowledged and the following is a high level summary of the main themes raised and CFA's general response. Where required the matters raised by a submission have been addressed in relevant other sections.

¹¹ FEMA, USFA Position Paper – Residential Fire Sprinklers, http://www.residentialfiresprinklers.com/wp-content/uploads/2015/06/sprinkler_position_paper.pdf

¹² Clare et al (2013) <https://www.sciencedirect.com/science/article/pii/S0022437512000230#aep-abstract-id6>

¹³ Sprinkler Systems and Residential Structure Fires: Exploring the Impact of Sprinklers for Life Safety and Fire Spread. A report by Fire Chief Len Garis and Dr. Joseph Clare, 2013.

Theme	CFA observation
Importance of complementary fire services	Two of the three submissions directly addressed the importance of complementary fire services and desirability of having this core element of Government policy operating effectively – to the benefit of the community. CFA supports an effective complementary fire service.
A boundary change should only be contemplated where it can achieve an improvement in community safety	CFA agrees - changes should only be recommended to the Minister where necessary, on robust evidence. As demonstrated in Section 3, changing the line on the map will not lead to any different actions or outcomes for these communities – either because a complementary fire services model is already in operation or because adjusting a current CFA area to an FRV area will still see challenges in addressing the risk. All submissions noted that consideration needs to be given to the ability of the fire agency to service the area (and for government to resource the agencies).
Resource implications of boundary shifts	All submissions commented on the importance of considering the resource implications of any proposed boundary change and the capacity/capability of the fire service that would have an expanded response footprint. The CFA agrees and notes that resourcing was among the range of factors the Victorian Bushfire Royal Commission suggested should influence the question of potential boundary change.
Risk assessment method and determining material changes to fire risk	<p>All submissions commented on the FDRP’s underpinning risk assessment method – with one suggesting that it should be expanded to include non-fire risks. Expanding this process beyond fire risk (to functions such as rescue, emergency medical response, hazardous materials, technical rescue etc) is inappropriate and would not allow a comparable assessment of CFA and FRV. Other submissions emphasised the need to have a risk assessment model based on evidence of material changes to fire risk.</p> <p>CFA places community outcomes first and foremost, as do all emergency services organisations. Agencies have clearly defined legislative obligations and well-established processes for determining how they assess and meet the risks in providing their services. Comprehensive accountability and reporting requirements – to Government; the independent Fire Services Implementation Monitor and the wider community – provide transparency on performance and achievement of outcomes.</p> <p>CFA continues to be concerned that the starting assumption in the FDRP process is that where there has been a change in fire risk, volunteer brigades will not be in a position to respond effectively to this and that a boundary change is the only possible response. This is despite the fact that CFA volunteers respond professionally, are highly trained and properly equipped. As CFA outlined in some length when commenting on the Panel’s draft risk methodology there was an opportunity at that time for the Panel to take an alternative approach.</p>
Drivers of risk	One submission focused particularly on the importance of population change. CFA notes this is a valid consideration but should not be the sole consideration of a risk assessment.
Response time data	Two submissions suggested that caution is needed in the interpretation of response time data and CFA agrees. This is not

	only because SDS is an imprecise measure of outcome (see Section 2, page 12) but because there are a range of factors beyond the control of the fire agency that can impact the agency's ability to respond. These include road-related factors (congestion, road works, rail crossings, reduced speed zones); the time of day an incident occurs, and unpredictable events (traffic collisions, extreme weather conditions). These factors affect all fire services equally (see Section 2, page 12).
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9. Summary of Findings from the 13 Brigades

The brigade-level assessment was used to identify appropriate actions to mitigate the risks identified by the FDRP method. Actions are focused on risk mitigation and delivering better outcomes for the community specifically:

- managing specific increases in risk to the community in local areas
- maintaining wider community risk and emergency management outcomes through continued effective delivery of a collaborative complementary fire service model
- considering the overall costs and benefits for the Victorian community from changes in boundaries.

In this assessment CFA has identified actions already being taken and new actions it will take to address risk.

9.1.1 CFA brigades are currently working to address changing fire risk

The FDRP review has provided a new method for assessing areas of changing risk. These risks are already well understood by the specific brigades, and by the organisation as a whole, and are in the process of being addressed as part of CFA's standard approach to service delivery planning and operational performance improvement.

Each of the 13 brigades has identified current activities that are already being undertaken to reduce or mitigate the increased fire risk identified. This exercise has demonstrated the importance of CFA's current role in risk mitigation throughout the emergency response cycle, and the additional values and activities undertaken by CFA.

Across the majority of the 13 brigades on-going risk mitigation activities which will continue to address increasing risk are focused on:

- providing active and targeted support to high-risk areas through a range of community engagement and capability building programs, and installation of smoke alarms and detectors. These activities have been shown to significantly reduce the risk of injuries and fatalities and in particular is a much more effective risk mitigation measure than fire service response interventions
- identifying and addressing key training needs and developing volunteer capability in line with each brigade's operating procedures and requirements. As well as addressing increasing risk there are further benefits to volunteers from training and capability development opportunities. Continuing to build CFA brigade capability is also important for maintaining Victoria's surge capacity which is vital in addressing both urban and bushfire risks across Victoria
- undertaking targeted recruitment, targeted upgrades and relocations of appliances and infrastructure improvements to manage challenges with station access for responding personnel. In some instances station locations are no longer optimal and this is addressed as funding and land become available. Land availability for fire station development and funding availability remain the key constraints to CFA ability to readily address changes in fire risk. It should be noted that this same constraint also affects FRV. Satellite fire stations can be a suitable strategic response.

CFA as a whole, as well as districts and brigades, are going through a process to review current approaches, standards and metrics to support improved operational effectiveness. It is expected that this process will help to improve how CFA identifies and manages community risk overtime, through a range of approaches which are more suitable for a modern and collaborative fire service.

9.1.2 Agreed variation zones

Where risk cannot be addressed through existing activities each brigade recommended specific additional actions to address the change in fire risk factors identified by the FDRP, with a focus on ensuring improved community outcomes and continuing to work effectively with FRV and other emergency service organisations in a complementary model as intended by government. These recommendations have been considered at the district, region and state levels and have directly informed this submission.

CFA has identified defined areas within four brigade SDAs where it agrees there should be a transition to the FRV fire district. These Agreed Variation Zones (AVZs) have been identified based on analysis of the nature and trends of incidents and a consideration of how to best address future community needs. In some instances this can take effect immediately. In others, CFA has proposed the actions that would trigger the variation. In the remaining nine brigade areas a change to the current boundary would not be effective in reducing the identified changes in fire risk. A summary is provided in Table 4.

CFA seeks to collaborate with the FDRP and FRV in future review cycles to develop the notion of AVZs that can be used to support more effective, complementary service planning arrangements (see Section 4 for more detail).

Table 4: Agreed variation zone summary

Eaglehawk	No change to boundary proposed by CFA
Kangaroo Flats	No change to boundary proposed by CFA
Edithvale	No change to boundary proposed by CFA
Berwick	Agreed variation zone to southernmost portion of the SDA, upon the operation of the proposed FRV Clyde North Station
Carrum Downs	Agreed variation zone to southern portion of SDA, with immediate effect
Hampton Park	No change to boundary proposed by CFA
Narre Warren	No change to boundary proposed by CFA
Epping	Agreed variation zone to portion of SDA, upon amalgamation of the Epping and Wollert CFA Brigades and the completion of a new fire station to the north of the current CFA Epping site
Werribee	Agreed variation zone covering the Werribee Hospital and University Precinct, with immediate effect
Wyndham Vale	No change to boundary proposed by CFA
Ballarat	No change to boundary proposed by CFA
Sebastopol	No change to boundary proposed by CFA
Wendouree	No change to boundary proposed by CFA

Other actions have been identified which will address fire risk. At a high level these include:

- upgrades of specific appliances to address particular challenges or risks in particular to reduce response times, expand the area able to be serviced and increase capability through improved equipment and safe systems of work
- establishment of a satellite CFA station in one area to mitigate impediments that exist in service delivery due to traffic congestion and proximity to key areas of risk
- targeted recruitment of new volunteers from particular suburbs close to the fire station or who can be involved in day-time response, retention-related activities and ongoing training of volunteers to ensure sufficient capacity and capability to meet the needs of the community and deliver expected service delivery standards

- ongoing process improvements to increase efficiency and improve ways of working including in better delivering on the intention of the Fire Services Reform and enabling more effective delivery of complementary fire services.

Actions will be resourced by reprioritisation of existing CFA funding.

A detailed description of the analysis undertaken for each brigade is provided in Section 3. Data sources for the brigade analysis are listed in the Appendix.

10. Other risk considerations

Although CFA brigades are treated as individual entities by the review process, as outlined in Section 1 CFA brigades are able to work readily together to effectively and efficiently form strike teams and support response across their district, region and state (as well as nationally). This capacity relies on a strong network of brigades who are willing to give their time to the protection of their communities.

Adjustments to the primary response area of CFA brigades may impact the achievement of complementary fire services in unexpected ways. The Government's Fire Services Statement in 2017 mapped out the vision for a modern, integrated and sustainable system that keeps Victorian's safe with CFA "as a strong and proud volunteer organisation, well-equipped with contemporary, high standard support, tools and systems." The reform process is ongoing and has been complex. The co-located brigades that were formerly CFA integrated stations with career staff and volunteers working side by side have been particularly affected by Reform. In its 2021-22 Annual Report the Fire Services Implementation Monitor noted that "CFA data shows a significant decrease in utilisation of co-located brigade volunteers. In 2019, volunteers in integrated stations attended over 18,600 incidents compared to volunteers at co-located stations attending just over 7,200 incidents for FY 2021–22.¹⁴" The Monitor noted that "some volunteers ... felt underutilised, confused, and unguided, which impacted volunteer morale and motivation at multiple brigades, particularly those in co-located stations and those in close proximity to FRV response area." Consideration of possible indirect consequences (such as volunteer disengagement) will be important in determining the best treatments of the changing fire risk profile and any recommendations or decisions to transition areas from CAoV to the FRV Fire District.

¹⁴ Fire Services Implementation Monitor <https://www.vic.gov.au/fsim-publications>

Section 3: Brigade Analysis

West Region

Ballarat Fire Brigade

Sebastopol Fire Brigade

Wendouree Fire Brigade

North West Region

Eaglehawk Fire Brigade

Epping Fire Brigade

Kangaroo Flat Fire Brigade

Werribee Fire Brigade

Wyndham Vale Fire Brigade

South East Region

Berwick Fire Brigade

Carrum Downs Fire Brigade

Edithvale Fire Brigade

Hampton Park Fire Brigade

Narre Warren Fire Brigade

Ballarat Fire Brigade

1. About the Brigade

Ballarat Fire Brigade is a Class 5 Brigade within the Eureka Group located in District 15 of the West Region. The Brigade has 65 volunteers (as at 31 December 2023) including a Junior Brigade that promotes and delivers youth fire programs.

1.1 History

The Brigade was established in 1856 during the Victorian goldrush and has operated from its current site on the corner of Barkly and East Street Ballarat since 1858. It is the oldest continuously operational fire brigade in the southern hemisphere.

Ballarat is well known for its rich history with thousands flocking to the gold rush in the 1850's. After the population surge, a terrible fire broke out in 1855 destroying many buildings. Following the fire, several meetings were held to discuss forming a fire brigade. Committees were established in the months that followed before the first volunteers commenced duty with Ballarat Fire Brigade in January 1857.

The fire station is historically significant and much admired by the Ballarat community. The fire station's tower was designed by renowned architect, Henry Caselli and constructed in 1864 by local builder and volunteer firefighter, William Cowland. It has played a part in Australia's telecommunication history by providing a telephone system to both of Ballarat's fire stations for many years. The Brigade participates in many events held in or around the station, including the annual Ballarat Heritage Festival. Development of the station site ensures it remains a fit for purpose facility for a contemporary fire service.

1.2 Context

The Ballarat Fire Brigade primarily services the Ballarat East, Eureka, Bakery Hill, Golden point, Canadian and Mount Pleasant suburbs which mostly encompasses the eastern part of Ballarat. The Brigade responds to a range of emergency events including structural fires (residential and industrial), bushfires and grassfires, incidents at alarmed premises, hazardous materials calls, and motor vehicle collisions.

The Brigade responds to approximately 452 incidents per year and provides a specialist RCR response across Ballarat city and surrounding communities – one of only three RCR brigades in District 15. Considerable time is invested acquiring and maintaining the skills required for this role.

Ballarat has seen a reduction in primary Fire and Explosion calls from an average of 100 incidents across 2014-19, to approximately 50 in 2020-22. There has been an increase in False Alarm calls from an average of 53 in 2014-19 to approximately 65 in 2020-22. The amount of protected premises alarms has decreased from 36 in 2010 to just above 20 in 2022; most of these premises have been decommissioned and no longer operate as high-risk premises. Since 2014, primary Fire and Explosion calls have trended downwards from around 100 per annum to 50 in 2021 and 43 in 2022. Activity and growth in most of the Brigade's SDA is stable as there are very few growth corridors within the SDA. This is due to heritage overlays preventing many properties being demolished and infilled.

CFA members have a unique ability to support communities and empower them to be fire ready. As well as being a trusted authority on fire safety, members are part of the communities they serve. The dedicated Brigade Community Safety Coordinator is part of the Brigade Management Team. Members of Ballarat Fire Brigade have several regular community engagement activities including:

- Fire Safe Kids Program and school visits
- Attending local markets and sporting events
- Community group newsletter articles
- Targeted visits to vulnerable community members
- Participating in multi-agency events
- Supporting yearly Santa runs
- Road trauma awareness sessions.

Through local community houses, fire safety articles from the Brigade are published quarterly and estimated to reach approximately 10,000 community members. The Brigade also responds to direct requests from the community for involvement in a range of ad hoc activities and events.

The Ballarat Fire Brigade is part of the Eureka Group of brigades located in District 15, which also comprises Wendouree, Sebastopol, Ballarat City and Buninyong-Mt Helen Fire Brigades. Together these brigades provide a collective fire service to Ballarat and surrounding areas alongside FRV's Station 67 and Station 68. Although they are treated as individual entities by the review panel process, it is important to note that CFA Fire Brigades, organised as they are in a group structure, are able to work readily together to effectively and efficiently form strike teams and support response across the district, region and the State. Wendouree, Ballarat, and Sebastopol Fire Brigades are all key contributors to the Eureka Group.

Ballarat is a viable, fully functioning urban fire brigade with a strong and reliable membership base and a proud tradition of dedicated, voluntary service. Members across time have come from diverse backgrounds with unique perspectives and opinions – teachers, bus drivers, police officers, factory workers, business owners, students, IT specialists, health care workers, career firefighters, mechanics, full time carers, trades people and those not in paid employment. Many members of the Ballarat Fire Brigade have progressed to become career firefighters or officers of other emergency services. The one thing that unites the Ballarat Fire Brigade members is giving their time and skilled effort to protect and support their community.

2. Brigade Capability Snapshot

2.1 Membership

The Ballarat Fire Brigade has a total membership of 65 members (13 females and 52 males). The Brigade has a good range of experienced and newer brigade members, with most of the membership aged 40 years or younger.

2.2 Fire appliances, other vehicles and specialist equipment

The Ballarat Fire Brigade has four appliances and other equipment to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Ballarat Brigade alone.

Table 1: Fire appliances and vehicles available to the Ballarat Brigade

Vehicle	Vehicle Make	Age
Pumper	Scania	5 years
Tanker	Hino	9 years
Rescue	Mercedes Benz	6 years
Rescue Support	Hino	2 years

Table 2: Vehicle specification

Pumper	Carrying five firefighters, 2,500 litres of water and 4,000 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, gas suits, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage, monitors and foam equipment.
Tanker	Carrying five firefighters, 2,000 litres of water, 1,200 lpm pump, BA, hoses and adaptors, chainsaw, and foam equipment
Rescue	Carrying six firefighters, the vehicle is equipped with battery and hydraulic rescue tools sufficient for road crash and heavy rescue applications. Carrying all items as required by the Emergence Management Commissioner rescue arrangements, CFA equips above the standard to include heavy vehicle stabilisation and jacking, work access platforms. CFA rescue appliances carry sufficient equipment to allow multiple rescue scenes.
Rescue Support	Carrying five firefighters this support vehicle carries additional hydraulic cutting equipment, porta power, a positive pressure ventilation fan, hose bandit machine, low angle access, lighting and generators, air bags, quick erect tent, lock out kit, chainsaw and quick cut saw, thermal imaging camera, oxy viva and defibrillator.

2.3 Station location

The station is at 22 Barkly Street, Ballarat. Operating from the current premises since 1858 with additional construction in 1916, the station is in a major commercial part of Ballarat. It comprises the original station building with meeting facilities and room for two current appliances and historical appliances. A separate building was added in 2014 to provide a new three bay drive through motor room, turn out and store areas.

A fire station's location is important in the successful operation of a volunteer fire brigade. Siting must strike a balance between been located to address service delivery needs but also be readily accessible to and from for emergency responders. The table below describes average daily traffic volumes on Barkly Street and nearby major thoroughfares.

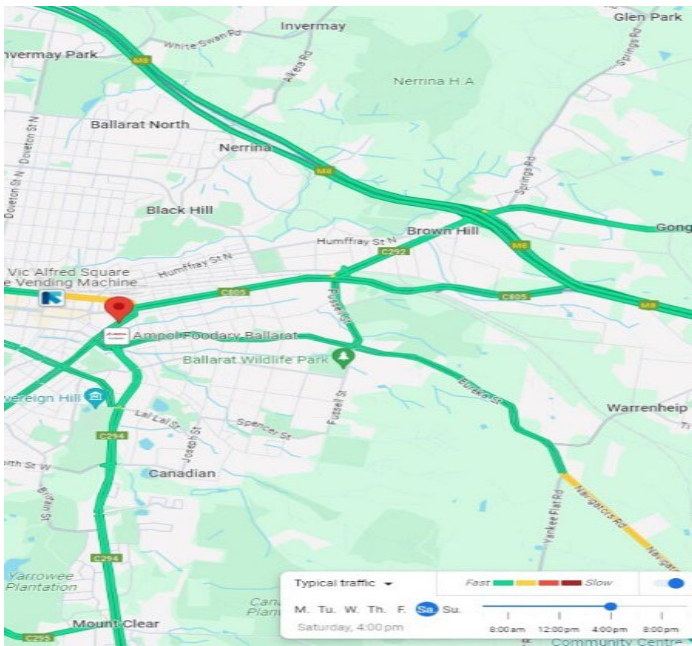
Table 3: Average vehicle movements per day

Location	Road Classification	Average Two-Way Traffic Volumes	Year Captured
Barkly Street Ballarat	Arterial	6,000 vehicle per day	2020
Main Road Ballarat	Arterial	14,000 vehicles per day	2020
Victoria Street Ballarat	Arterial	17,000 vehicles per day	2020

The day of week and time of that day for traffic congestion analysis for the Ballarat Brigade has been determined by the day of the week that there are the most incidents and what time of that day the most incident occur.

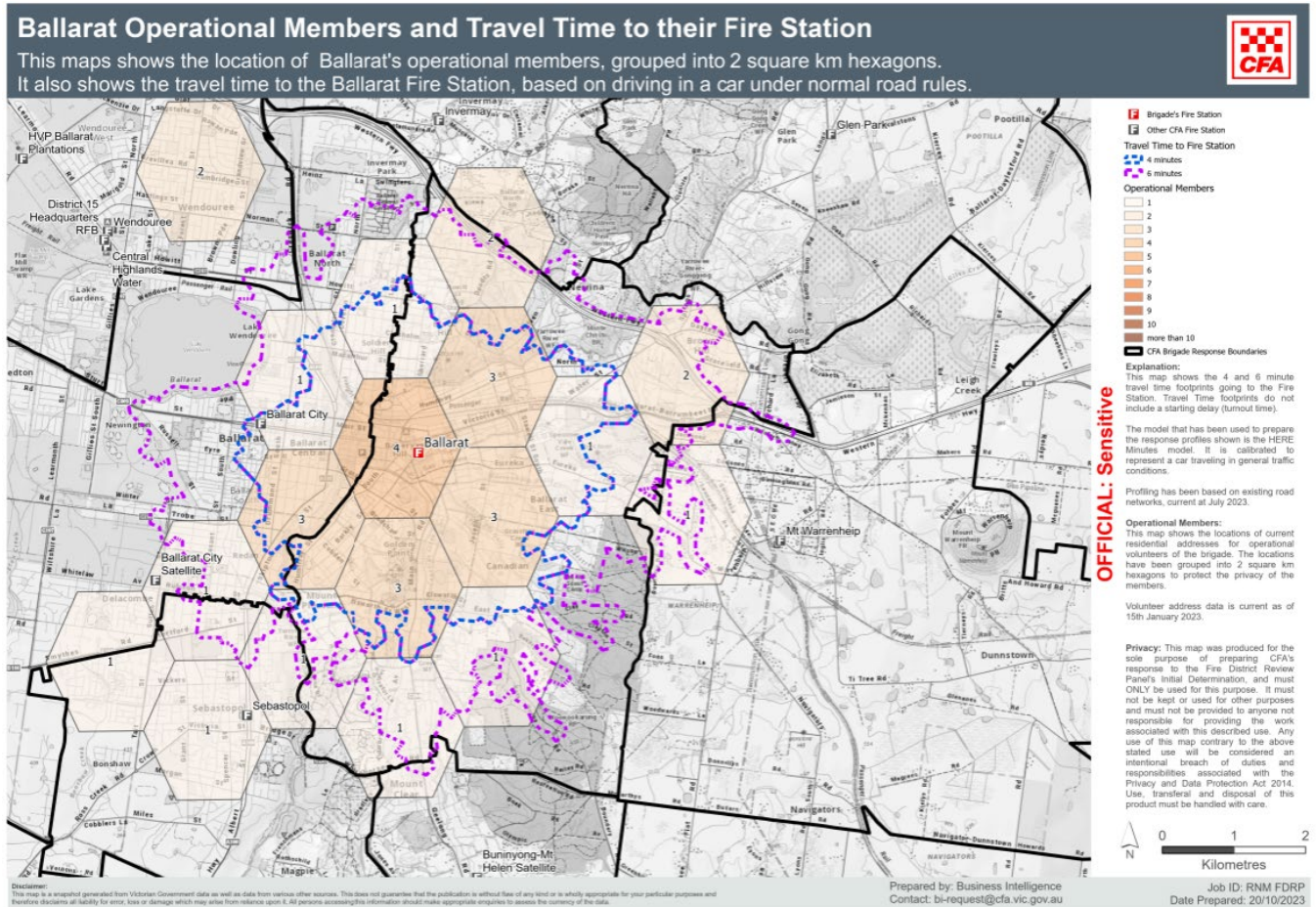
The peak operational time for the Ballarat Brigade is a Saturday at 16:00. Based on the analysis of traffic congestion, there is good traffic movement for the Brigade to operate.

Figure 1: Typical traffic Saturdays 16:00



Further analysis of the home location of responding Ballarat Fire Brigade members within a four minute and six-minute travel time (Figure 2) (under normal road conditions) indicates sufficient resources that reside close to the fire station. To ensure the rapid ongoing mobilisation of volunteers to the station upon activation further recruitment of closer members to the station is a current focus.

Figure 2: Operational members location and travel times



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only has use across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state's resources in both the CAoV and FRV District.

Ballarat's surge and support capacity is provided in the following ways:

- bushfires: as part of Eureka Group, Ballarat is included in the District 15 default first response strike team to significant fires within the district and to other regions and interstate
- structure fires: an automatic response to structure fires in neighboring rural towns where needed to address this risk. In addition, the capacity to support pumper strike teams to significant structure fires as well as township protection when those are under direct threat of bushfire
- RCR capability to City of Ballarat and surrounding areas as determined by the Victorian State Rescue arrangements
- Ballarat has directly supported 59 other brigades to fire and emergencies since 2014
- Ballarat members have accumulated a total of 28,048 individual responses to 4,536 turnouts during 2014 - 2022
- crewing vehicles from other brigades as part of extended and campaign operations.

2.5 Assistance to Fire Rescue Victoria

CFA operates a risk-based model for operational response into the Ballarat SDA. This ensures the closest and most appropriate capability is dispatched to fires and emergencies. FRV is part of initial response to all fire and emergency calls in the Ballarat SDA, ensuring complimentary delivery of services to the community.

On 1 July 2020, FRV reduced CFA Ballarat Brigade response into FRV's primary area and amended long standing support arrangements put in place by CFA pre-reform. This reduction of the Ballarat Fire Brigade from responses into the FRV Fire District has reduced demand for services on the Ballarat Fire Brigade and dropped the overall call service rate as demonstrated in Figure 3 and Figure 4.

Figure 3: Incident count and type of support provided in the FRV Fire District

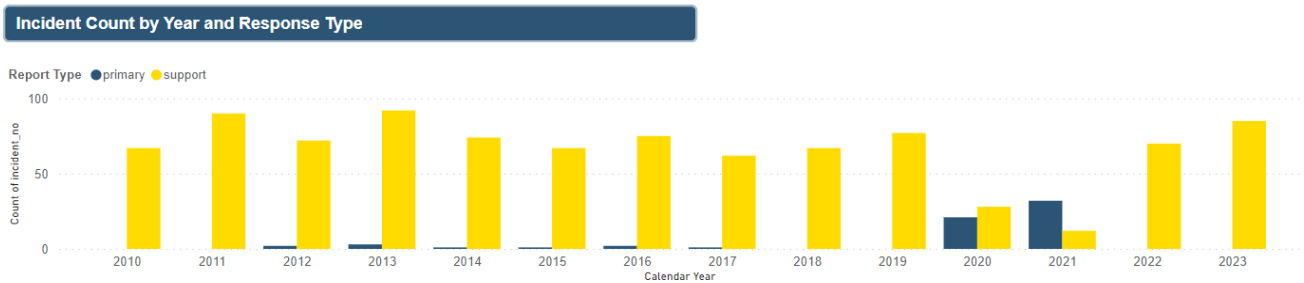
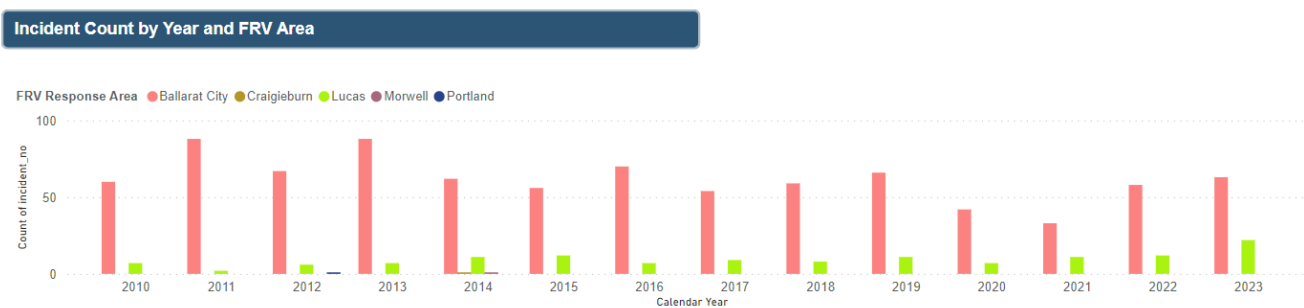


Figure 4: Incident count and type of support provided in the FRV station footprint



2.6 Community engagement activities

The Ballarat Brigade works directly with the community to support regular prevention and preparedness activities, including community fire safety messaging, school visits and direct intervention programs. Examples of the activities promoting fire safety messaging include:

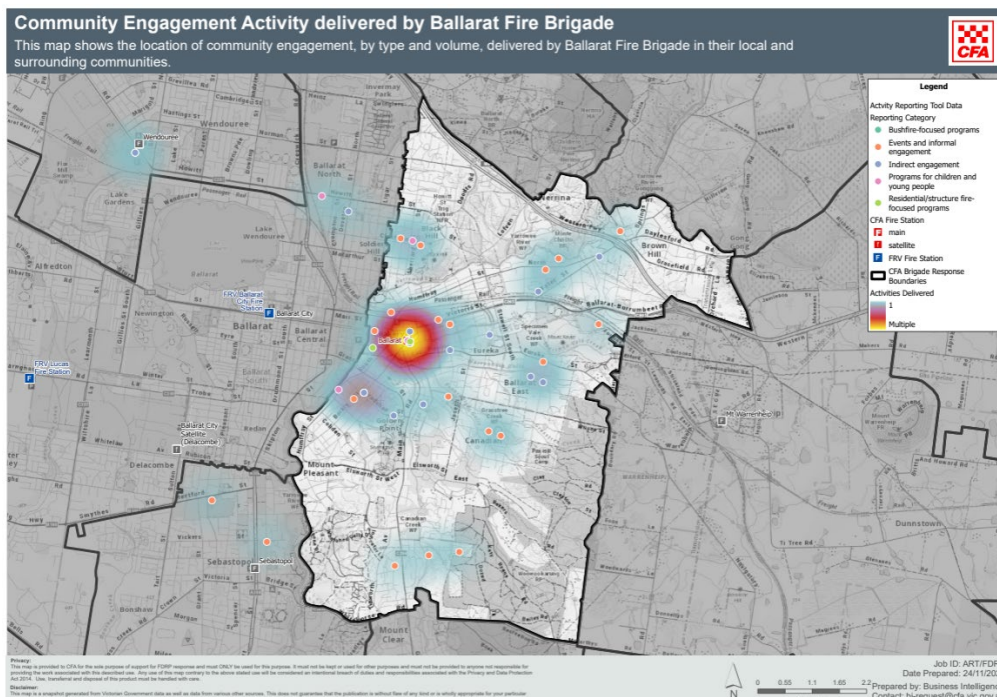
- school, kinder and community group visits
- active social media presence – about 6,000 followers, with re-sharing posts sometimes reaching over 220,000 people. Messages are targeted in line with seasonal campaigns (winter, summer, smoke alarms) and specific risks within the community (for example increases in motor vehicle accidents, kitchen fires, etc)
- attendance at community markets
- regular community newsletter articles (Brown Hill and Ballarat East with an estimated reach of approximately 10,000 residents).

Additional prevention and preparedness activities specifically relating to the Brigade’s RCR response capacity include:

- multi-agency exercises (Code Black, Sovereign Hill Mine, Aerodrome)
- road trauma awareness sessions – TAC, Amber Community (formerly Road Trauma Support Services Victoria)
- cross-training with other rescue and non-rescue brigades, and other services
- rescue demonstrations and awareness at other brigade open days, and emergency services expos.

In 2022, CFA implemented a new platform to allow brigades to centrally record their community engagement activities, allowing a better understanding of community fire safety interventions. Brigades kept records locally and often in a total tally, which did not allow for a spatial understanding of the spread of interventions. Figure 5 below shows community safety interventions undertaken by the Ballarat Fire Brigade as recorded in CFA Activity Reporting Tool application.

Figure 5: Community safety and intervention programs



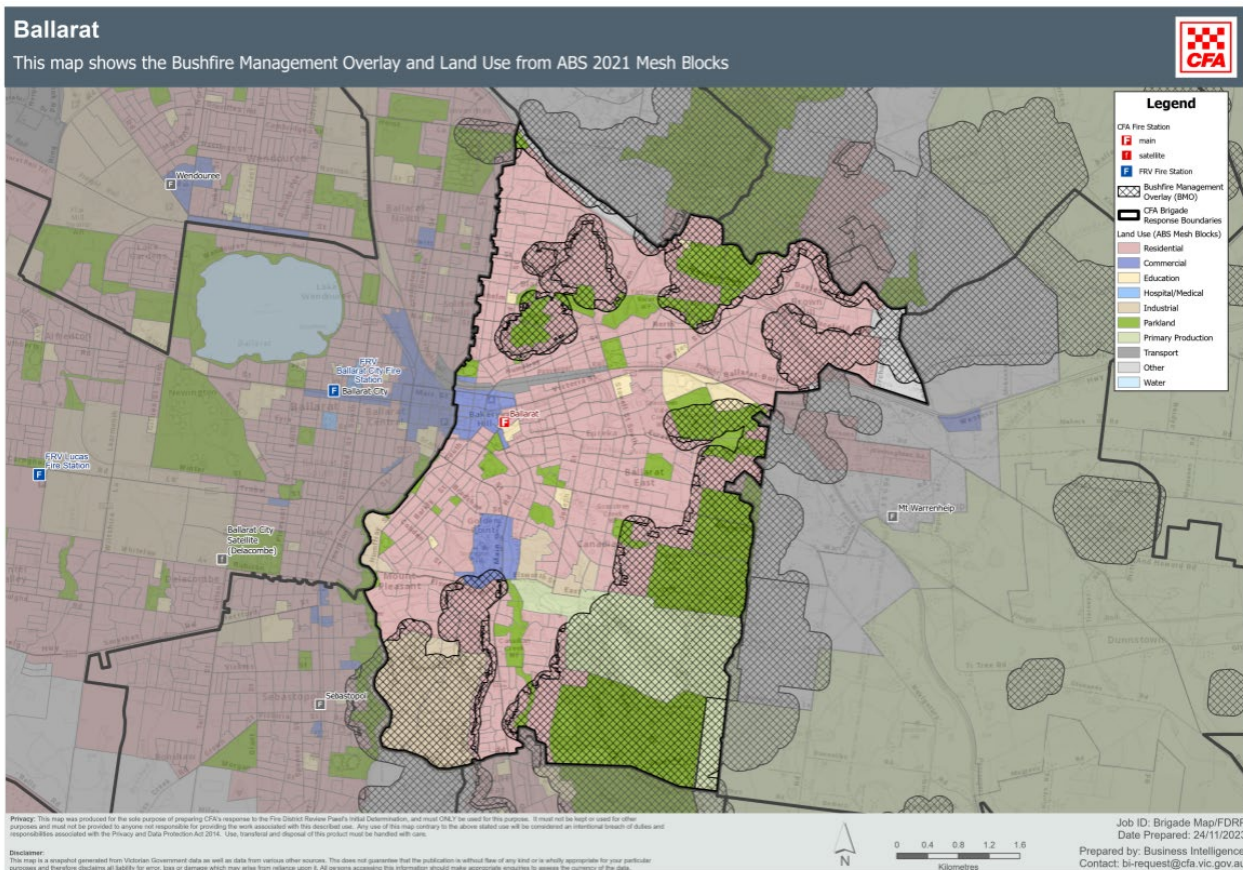
3. Service Delivery Area Profile

The Ballarat Fire Brigade Service Delivery Area (SDA) has a total area of 3,398.9 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses.

Table 4: Ballarat land use planning areas

Land use	Hectares	Proportion of Brigade Area
Commercial	92.7	2.7%
Education	56.9	1.7%
Industrial	247.4	7.3%
Other	79.6	2.3%
Parkland	680.5	20%
Primary Production	304.5	9%
Residential	1,914.1	56.3%
Transport	23.3	0.7%

Figure 6: ABS land use areas and BMO

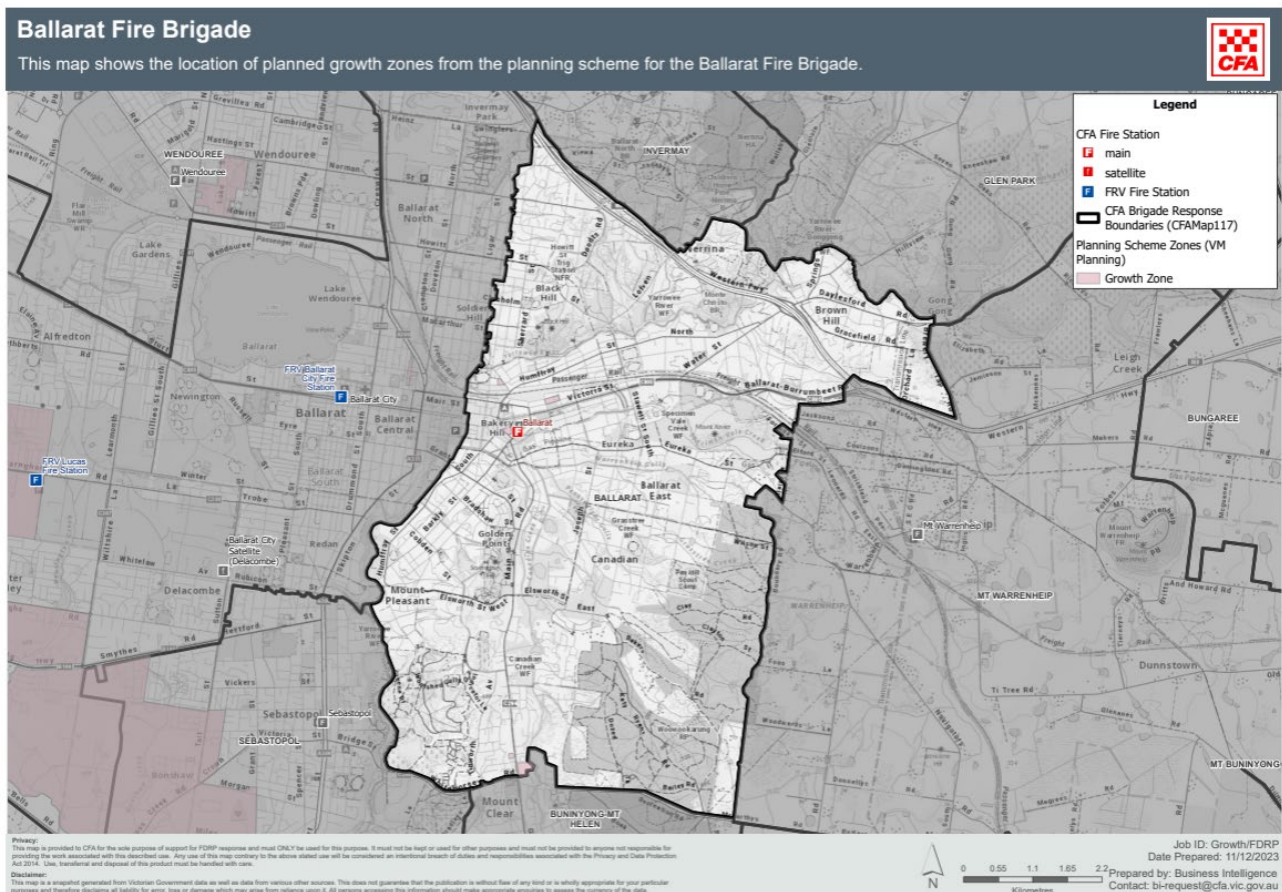


3.1 Growth zones

An analysis of VicPlan the official mapping platform of the Department of Transport and Planning shows development is at capacity with all residential zones developed or in the final stages of completion. This indicates that further expansion of residential development is not likely unless a residential growth zone is indicated.

There are five small areas in the Ballarat Fire Brigade SDA zoned Residential Growth Zone (RGZ). These zones are currently developed with residential housing with the planning regime change occurring in 2014. The RGZ is considered a substantial change area where medium density housing growth and diversity of housing types is encouraged, for example townhouses and apartments around activity centers and close to train stations. There are also a limited range of non-residential uses allowed to serve local community needs.

Figure 7: Planned growth zones from the planning scheme for Ballarat



The prospect of increased urbanised residential development outside of the RGZ is unlikely. Further, the areas specified for industrial and commercial zoning are mostly developed with rapid expansion or growth not possible without significant planning regime change.

Table 5: Urban growth areas

Total Brigade Area (Hectares)	Area (hectares) covered by Industrial Zones	Area (hectares) covered by Growth Zones	% covered by Industrial Zones	% covered by Growth Zones
3399	106.51	5.42	3.13	0.16

Risk Evaluation:

The Ballarat Brigade SDA is an established urban area with significant historical values. Residential and commercial designated planning areas are well established and developed. Changes in developmental risks will be limited to designated RGZ of which there are five totalling 5.42 hectares (or 0.16% of the total brigade SDA). These RGZs are already developed and would require existing landowners to seek to increase building density.

Risk Mitigation:

Ballarat Fire Brigade resource capability of a pumper and tanker combined with the long-established protocol of joint response from FRV and surrounding brigades as a response network, delivers the complementary fire services model and is considered sufficient to treat the residential and industrial risk including the RGZs.

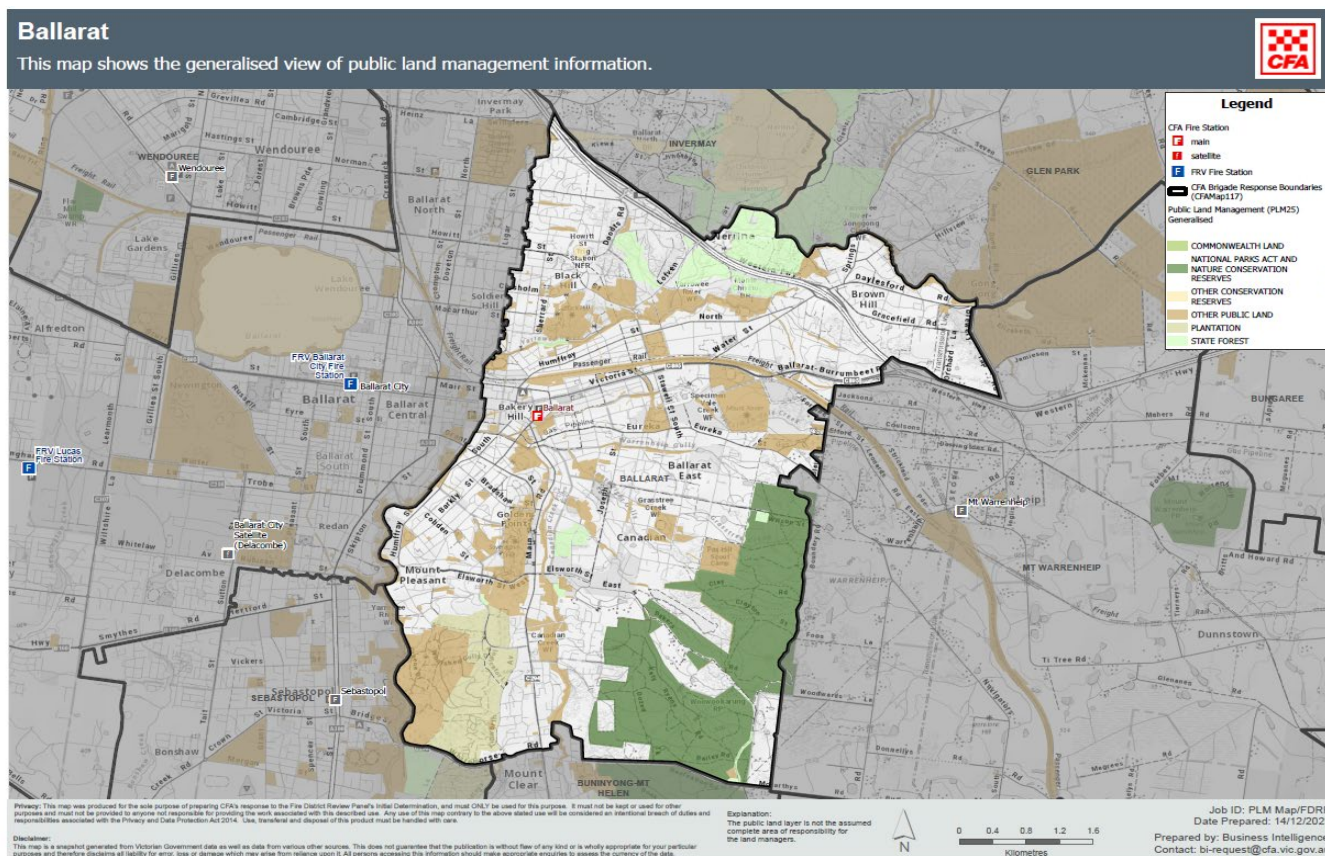
3.2 Bushfire Management Overlay

The Ballarat Fire Brigade SDA has an area of 1,666.50 hectares defined as BMO (or 49.03% of the total brigade area). The BMO applies to land that may be significantly affected by extreme bushfires. A planning permit is required for some types of development to ensure bushfire risk is considered and passive bushfire protection measures are in place to ensure resilience of the development without the intervention of fire services.

CFA Regulation prescribes the establishment of a Forest Industry Brigade (FIB) for forestry operators when land holdings exceed a prescribed limit. FIBs are an important part of the CFA's strategies to reduce the likelihood and impact of wildfire. They are operated by the plantation company but are under the operational control of CFA. Large portions of the BMO in the Ballarat Brigade SDA are serviced by FIBs especially in the southeastern portion of the SDA.

Figure 6 (above) shows the significant area of BMO across the Ballarat Fire Brigade SDA, and Figure 8 provides a view to public land, noting FFMV is responsible and accountable for bushfire suppression on public land.

Figure 8: Public land management information



Risk Evaluation:

The Ballarat Fire Brigade SDA has 1,666.50 hectares as BMO. This equates to 49.03% of the total brigade SDA. A planning permit is required for development to ensure bushfire risk is considered and passive bushfire protection measures are in place to ensure resilience of the development without the intervention of fire services.

Risk Mitigation:

Legislated Forestry Industry Brigades and their operation over private forestry landholdings, combined with the responsibility and accountability for bushfire suppression on public lands with FFMV supported by the CFA Ballarat Brigade is sufficient to treat the risk. In addition, the requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones the BMO risk is considered sufficiently mitigated.

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population change of 1,730 or 7% (derived from ABS census data applied by CFA to the Brigade are as distinct from ABS collection grid cells).

For the local government area in total (City of Ballarat) the forecast seven-year population change is an increase of 14% or 15,180. For the Ballarat Brigade SDA specifically forecast growth of 7% is more likely as there are limited opportunities for residential growth other than changes to existing established housing.

ABS Index of Relative Socio-economic Disadvantage (2021) shows across the Ballarat SDA and the Ballarat Statistical Area Level 1 to be at SEIFA decile 1 (most disadvantaged) to Level 3 (moderate disadvantage).

ABS census data (2021) shows that there are 10,612 dwellings in the Ballarat Brigade SDA. Of these dwellings, 34% are rental houses with 10.48% of these properties state owned. As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair¹⁵.

The population also includes those at higher risk, including people living with a disability, and those with a Culturally and Linguistically Diverse (CALD) background. CFA and FRV have collaborated to create the Prevent – Detect – Escape Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted at those who work in the community and social services sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability. To date 26 community members have undertaken the Prevent–Detect–Escape Program in the area Ballarat Fire Brigade services.

Risk Evaluation:

The degree of social disadvantage (and disability) is unsurprising when examined against the overall age demographics of the population in the Ballarat Brigade SDA. Having regard to fire safety interventions, a large component of the population (34%) resides in rented properties of which 10.48% is state owned. The level of rental housing has led to proliferation of mandated working (checked) smoke alarms which is anticipated to have contributed to the significantly small number of fire fatalities. This has resulted in a better outcome in the Ballarat Fire Brigade SDA than would otherwise be seen in more rural areas across Victoria.

Community engagement activities undertaken by the Ballarat Fire Brigade allow for significant mitigation of risk elements identified in both residential fire and social disadvantage risk.

Risk Mitigation:

To continue to maintain a low count of fire fatalities within the Ballarat Fire Brigade SDA, in consideration of the extent of social disadvantage and disability, a targeted program will be undertaken to increase the participation of carers and support persons in the Prevent – Detect – Escape Program.

In addition, operating smoke alarms is the key driver to survivability of persons within a structure at time of fire ignition. A targeted campaign to significantly increase the instillation and confirmation of smoke alarm instillation across the Ballarat Brigade SDA will continue to mitigate against preventable fire fatalities and maintain the ongoing low occurrence of fire fatalities.

¹⁵ <https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/keeping-the-property-safe/smoke-alarms-and-fire-safety#:~:text=The%20rental%20provider%20must%20ensure%20smoke%20alarms%3A%201,are%20repaired%20or%20replaced%20as%20an%20urgent%20repair.>

4. Service Delivery and Service Demand

4.1 Total demand

Figure 9 shows the total number of unique incident numbers attended by the Ballarat Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response.

Figure 9: Ballarat Brigade incident count by type 1 January 2010 - 18 December 2023

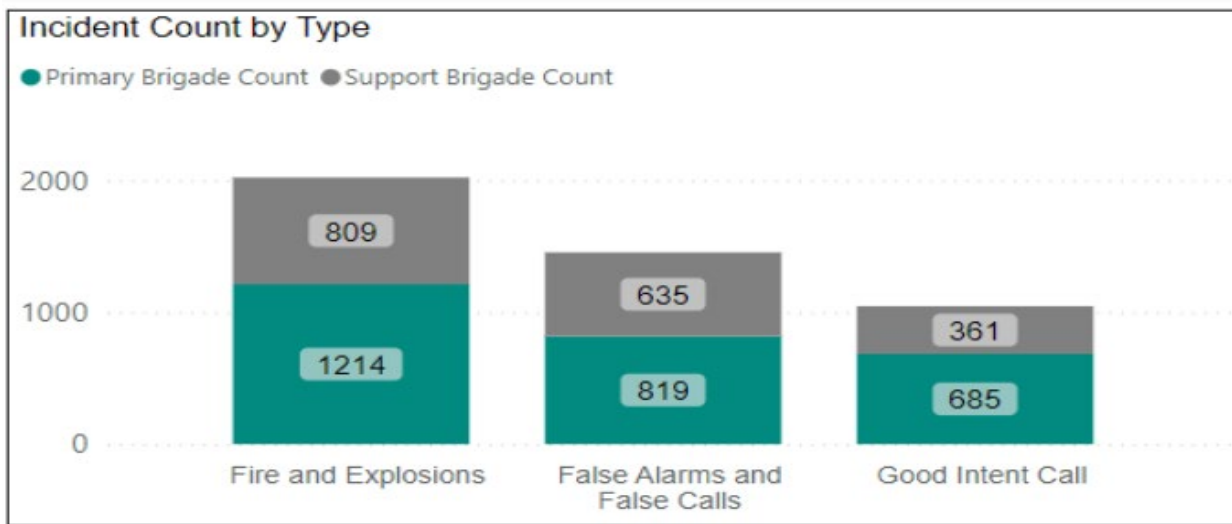


Figure 10 shows the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels in summer and lower periods of activity in the winter months.

Figure 10: Ballarat Brigade incident count by month 1 January 2010 - 18 December 2023

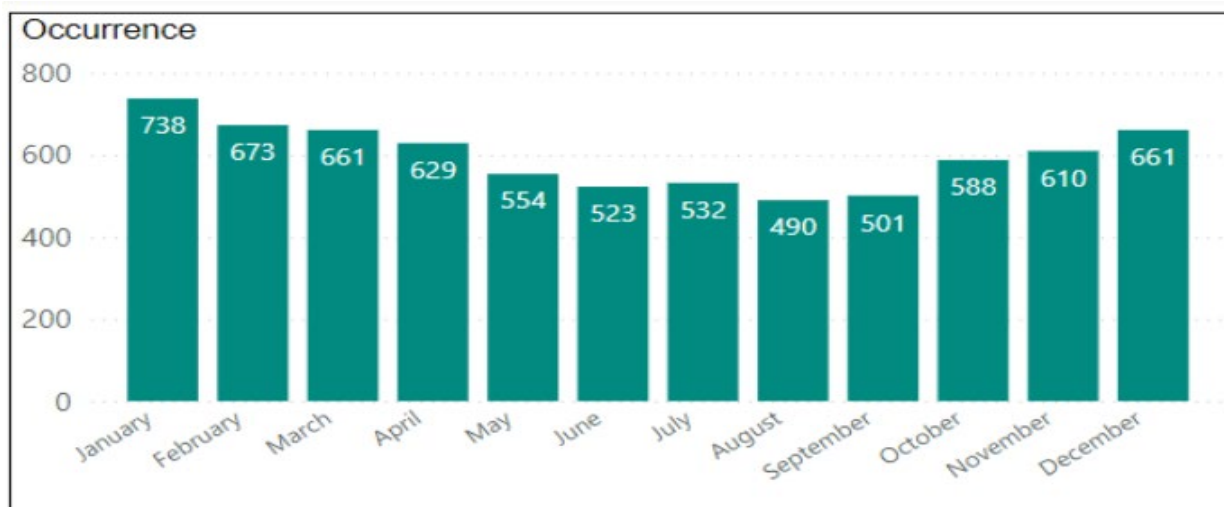
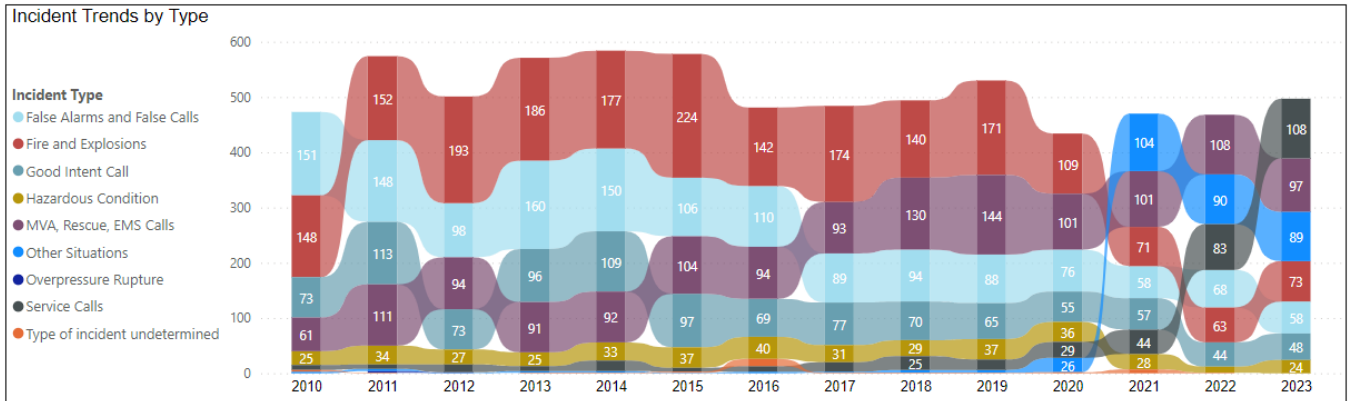


Figure 11 shows a count of all incident types between 1 January 2010 and 18 December 2023. The primary incident types for the Brigade are False alarms and Fire and Explosion related calls and this has remained consistent over time. There is also a notable increase in Other Situation calls since around 2021. 84% of these calls were 'called off/did not arrive'. This is likely the result of local actions by FRV crews to turn back CFA appliances responding to primary CFA calls.

Figure 11: Ballarat Brigade incident count by type by year 2010 - 2023



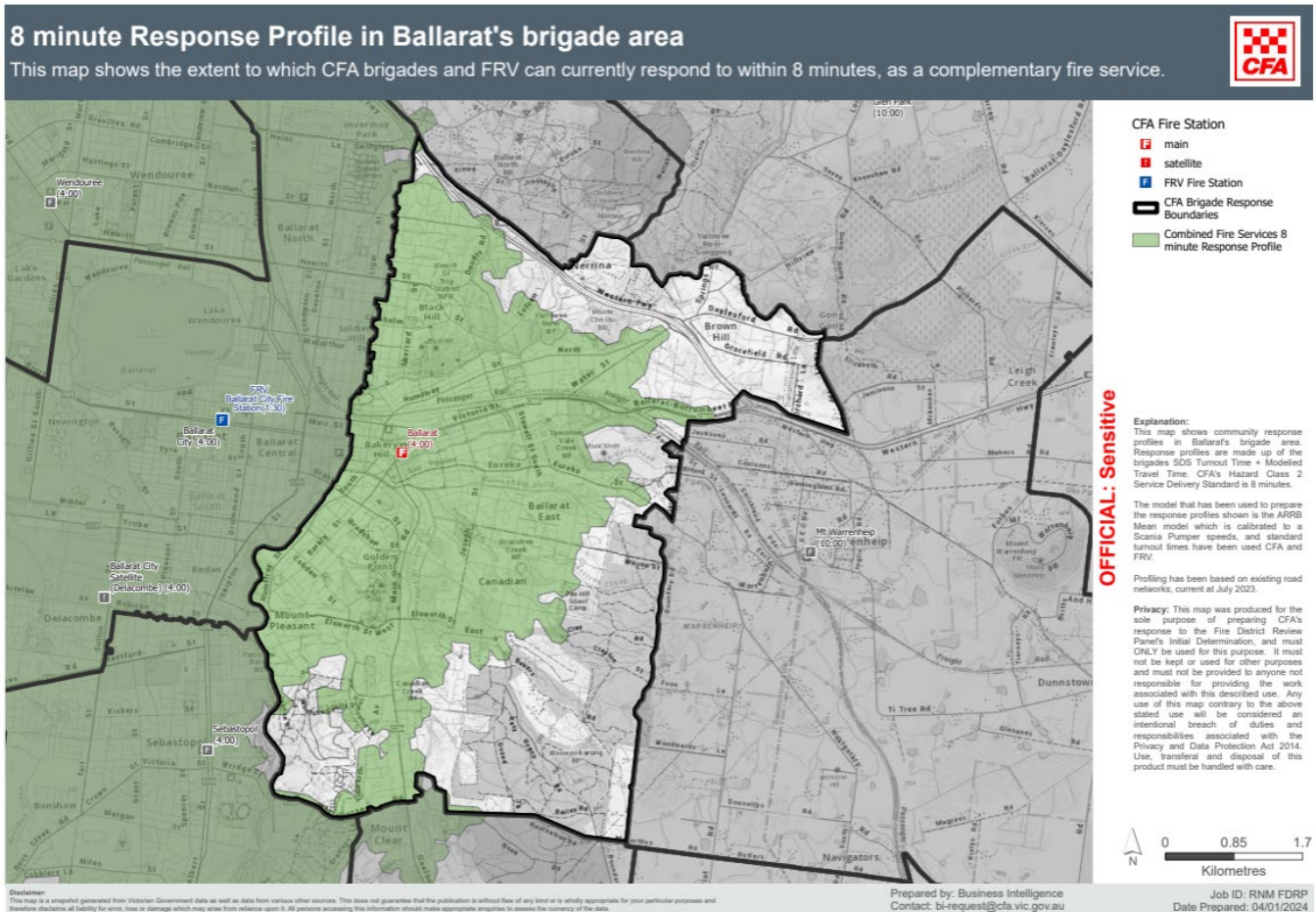
Risk Evaluation:

The primary incident types for the Brigade were False Alarms and Fire and Explosion related calls and remained consistent over time until 2020, where Other Calls, Service Calls and Rescue now lead incident types. There is also a notable increase in Other Situation calls since around 2021. 84% of these calls were classified as 'called off/did not arrive'. This is likely the result of local actions by FRV crews to turn back CFA appliances responding to primary CFA calls. There has been a significant reduction in primary fire calls from an annual average of 100 (2014 to 2019) down to an average of approximately 50 (2020 to 2023). Since Fire Services Reform the Ballarat Brigade, has seen a reduction in total demand of the Brigade's services. This downward trend supports the ongoing sustainability of the volunteer brigade model servicing the Ballarat SDA.

4.2 Service delivery standard

Figure 12 shows the area within the land use that can be serviced within eight minutes by the existing complementary fire service model. Note that Figure 13 shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the 8 minute to scene standard.

Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 82.89% of the road network in the Residential land use
- 100% of the road network in the Commercial land use
- 93.78% of the road network in the Industrial land use
- 94.55% of the road network in the Education land use
- 50.39% of the road network in Parkland land use
- 7.09% of the road network in the Other land use
- 100% of the road network in the Transport land use
- 21.81% of the road network in the Primary Production land use

An analysis of the Ballarat Fire Brigade with established SDS against the respective hazard classes shows the following:

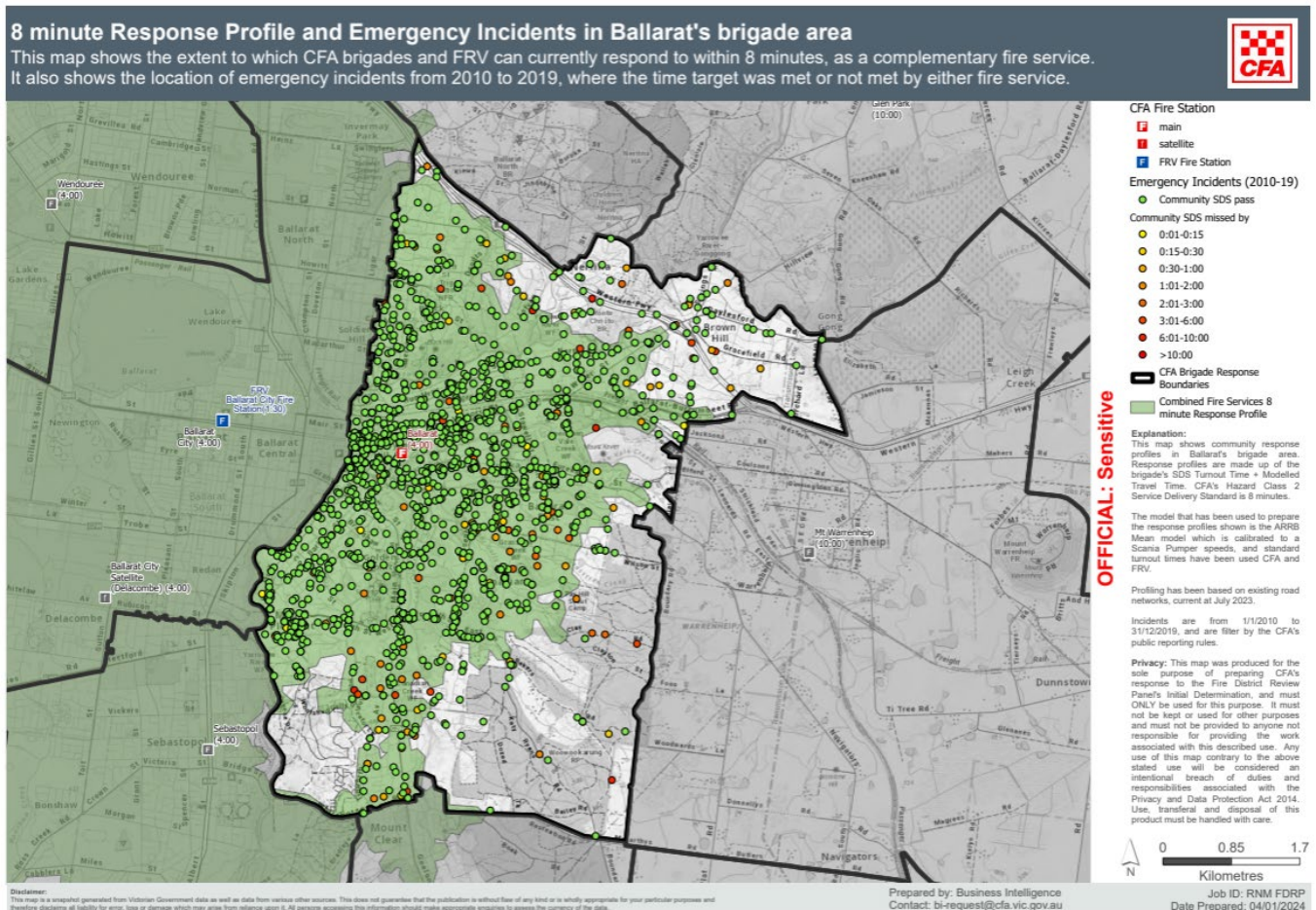
- from 1 January 2010 to 31 December 2019 there were 1,924 emergency incidents within the Ballarat Brigade SDA
- fire services response to emergency incidents was 88.25% compliant with SDS
- for the 226 incidents where SDS was not met over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. Almost half (48%) were missed by 60 seconds or less.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
23 (10%)	40 (18%)	45 (20%)	56 (25%)	38 (17%)	18 (8%)	5 (2%)	1 (0%)

Figure 13 shows graphically the ability for fire services to meet established SDS across the Ballarat SDA.

Figure 13: SDS compliance for the Ballarat Brigade SDA 2010 to 2019



From 1 January 2020 to 30 November 2023:

- there were 779 emergency incidents within the Ballarat Brigade SDA
- fire services response to emergency incidents was 88.6% compliant with SDS (a 0.35% improvement on SDS performance compared to the FDRP data reference period)
- for the 89 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (56%) were missed by 60 seconds or less.

Table 7: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
21 (23.60%)	17 (19.10%)	12 (13.48%)	19 (21.35%)	7 (7.87%)	10 (11.24%)	2 (2.25%)	1 (1.12%)

Risk Evaluation:

Ballarat Fire Brigade and surrounding network of Brigades consistently achieves high success in meeting SDS requirements within the Ballarat SDA with those incidents that miss the standard doing so by only very small margins. Since January 2020 the majority (56%) of SDS misses were by 60 seconds or less.

Risk Mitigation Action:

The Ballarat Brigade recognises to ensure the ongoing ability to ensure timely response, and ongoing maintenance of high service delivery standards, it needs to ensure an appropriate number of volunteers with availability across the 24-hour spectrum. An active recruitment and training campaign will be undertaken.

4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Ballarat Brigade SDA from 2010 to 2023 has had 174 building/structure fires requiring extinguishment.

Table 8: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
11	10	23	18	18	21	6	15	8	16	10	3	7	8	174

An analysis of preventable fire fatalities associated with these 174 building/structure fires has identified there have been no preventable fatalities since 2010. There has been one non-preventable fatality (homicides, suicides, deliberate).

Table 9: Non-preventable fatalities 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
-	-	-	-	1	-	-	-	-	-	-	-	-	-	1

As an RCR provider, the Ballarat Brigade attends many motor vehicle accidents some of which have a fatal outcome. These are not fire-related fatalities.

Risk Evaluation:

The Ballarat Brigade SDA has had no preventable structure/building fire fatalities and only one non preventable (deliberate) fatality. The FDRP ranking of the Ballarat Brigade on this metric may be a data error.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV can control or mitigate.

As a primary rescue provider under the State Rescue Arrangements governed by the Emergency Management Commissioner, the Ballarat Brigade exceeds the established target for performance with a rescue SDS of 100%.

Table 10: Ballarat fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	4 of 13	<p>The Ballarat Fire Brigade and surrounding network of brigades consistently achieves high success in meeting SDS requirements within the Ballarat SDA with those incidents that miss the standard doing so by only small margins (1.75%).</p> <p>The Brigade's SDS performance has improved since the FDRP data reference period.</p>	<p>An active recruitment and training campaign will be undertaken.</p> <p>Consideration will be given to having an arrangement for qualified members of other brigades who work in the Ballarat area to turnout Ballarat appliances when needed.</p>
Bushfire Management Overlay %	3 of 13	<p>The Ballarat Fire Brigade SDA has 49.03% of the total brigade SDA as BMO. A planning permit is required to ensure bushfire risk is considered and passive bushfire protection measures are in place to ensure resilience of the development without the intervention of fire services.</p> <p>The combined capabilities of the FIB, CFA Ballarat Brigade and FFMV (DEECA) is sufficient to treat the risk.</p>	
Total Demand	2 of 13	<p>The Ballarat Brigade since Reform has seen a reduction in total demand for Brigade services. This downward trend will support the ongoing sustainability of the volunteer brigade model servicing the Ballarat SDA.</p> <p>There is a notable increase in 'Other Situation' calls since around 2021. 84% of these calls were classified as 'called off/did not arrive'. This is likely a result of local actions by FRV crews to turn back CFA appliances responding to primary CFA calls.</p>	

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Victorian Planning Authority %	9 of 13	Ballarat Brigade SDA is an established urban area. The RGZ equate to only 0.16% of the total brigade SDA. These RGZ are already developed and would require existing landowners to seek to increase building density. Ballarat Fire Brigade resource capability of an Urban Pumper and Tanker combined with the long-established protocol of joint response from FRV and surrounding brigades as a response network, delivers the complementary fire services model and is considered sufficient to treat.	<p>To continue to maintain a low count of fire fatalities within the Ballarat Fire Brigade SDA, and given the extent of social disadvantage and disability, a targeted program will be undertaken to increase the participation of carers and support persons.</p> <p>Operating smoke alarms is the key driver of survivability of a structure fire. A targeted campaign to significantly increase the installation and checking of home smoke alarms across the Ballarat Brigade SDA will continue.</p>
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio (VCTC)	2 of 13	See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV can control or mitigate.	.
Building fire casualty to total building fire ratio (BCTC)	6 of 13	Ballarat Brigade SDA has had no preventable structure/building fire fatalities and only one non preventable (deliberate) fatality recorded. The FDRP ranking of the Ballarat Brigade on this metric may be a data error	
Population projections	9 of 13	<p>Between 2016 and 2021 there has been an overall population change of 1,730 or 7% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells).</p> <p>The local government area forecasts seven-year population change is an increase of 14% but it is expected to be half this for the Ballarat Brigade SDA as there are limited opportunities for residential growth other than changes to existing established housing.</p>	

Table 11: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Wendouree	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Typical traffic Saturday 16:00

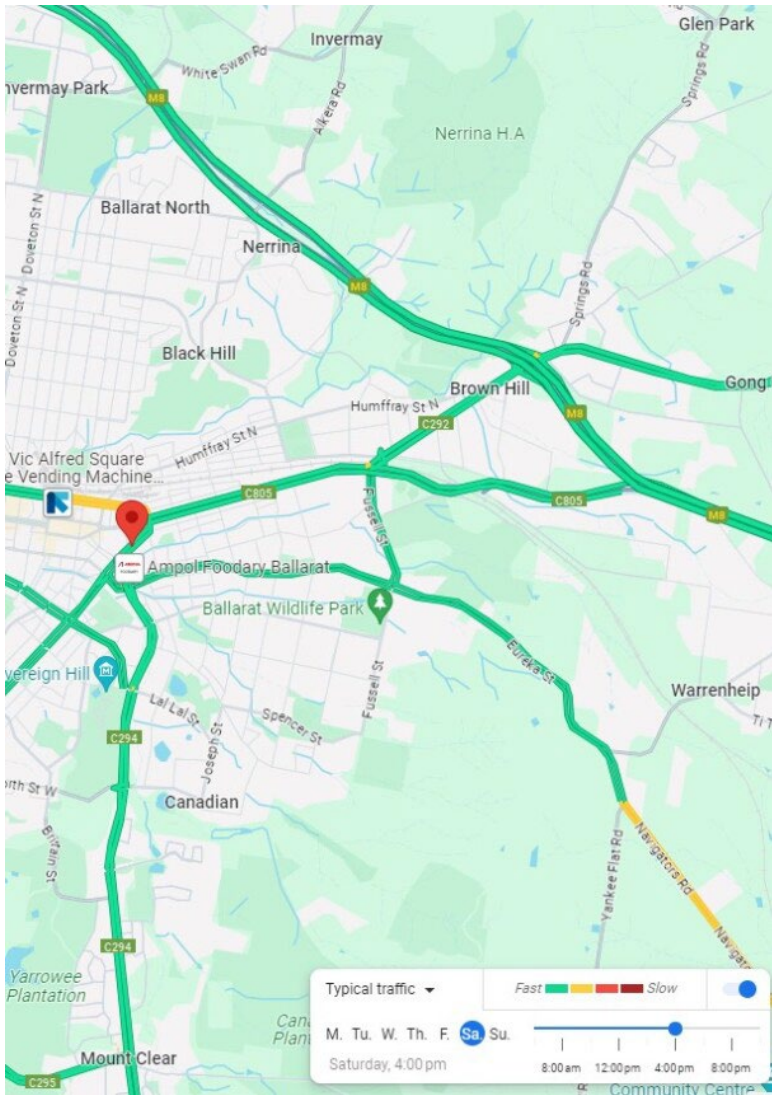


Figure 2: Operational members location and travel times

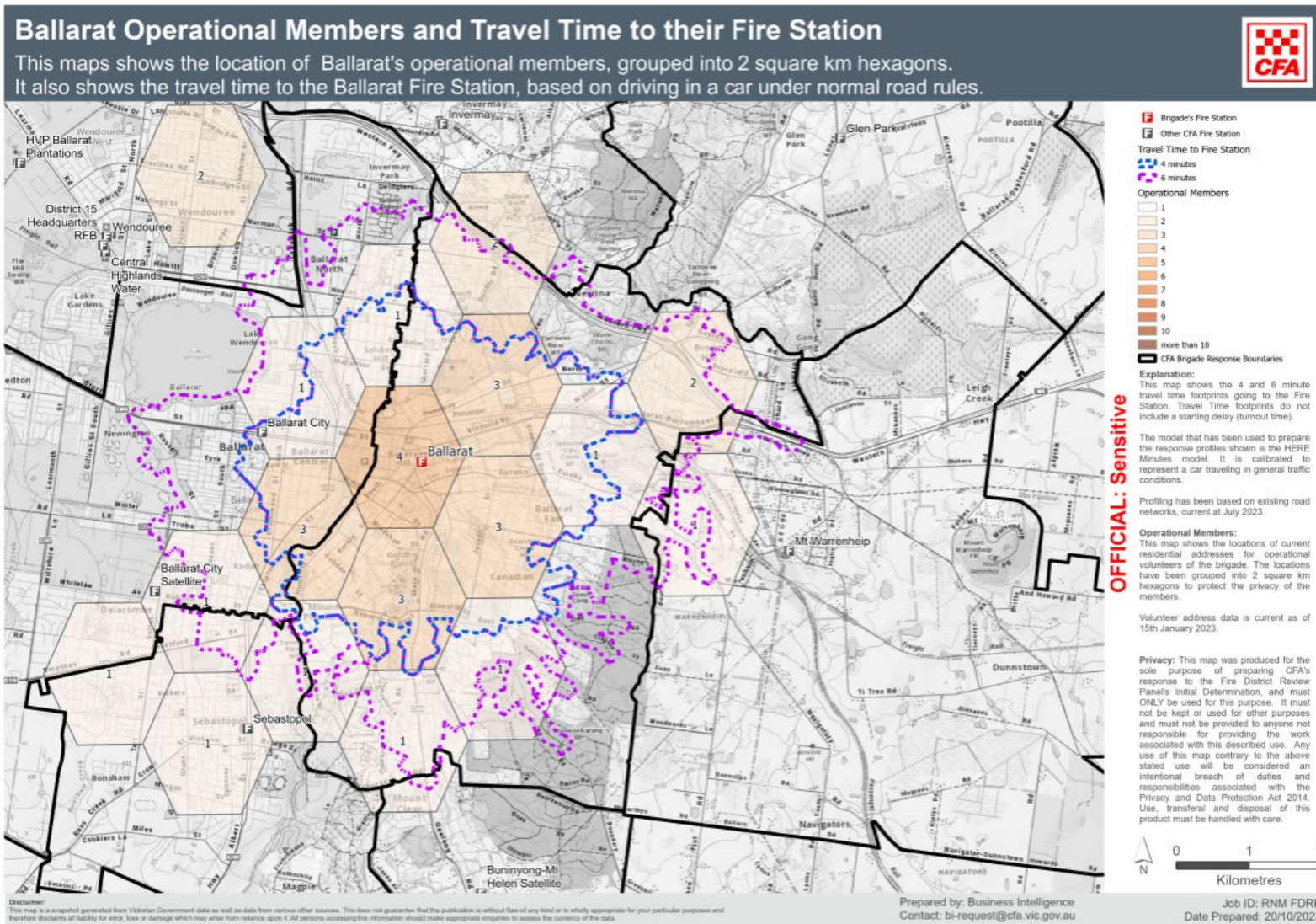


Figure 3: Incident count and type of support provided in the FRV Fire District

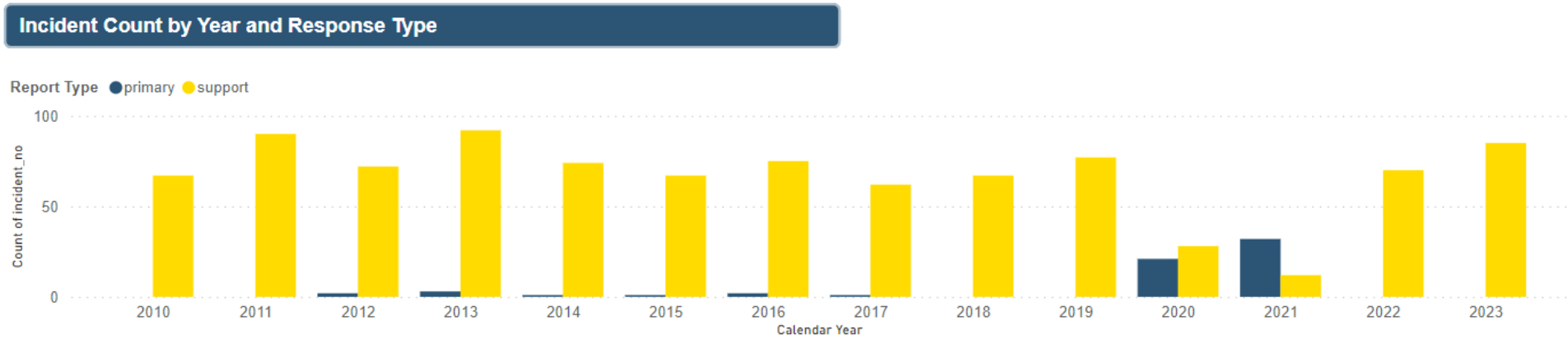


Figure 4: Incident count and type of support provided in the FRV station footprint

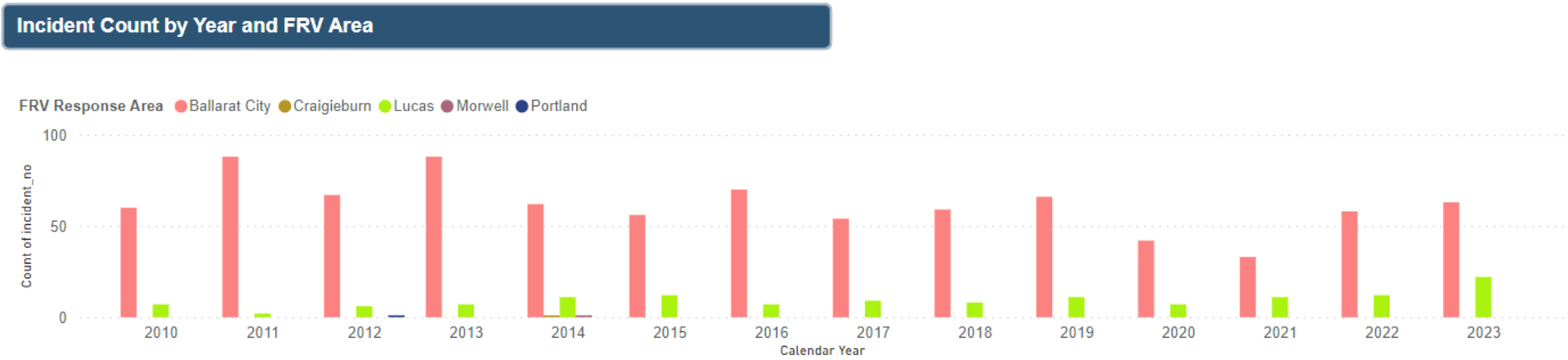


Figure 5: Community safety and intervention programs

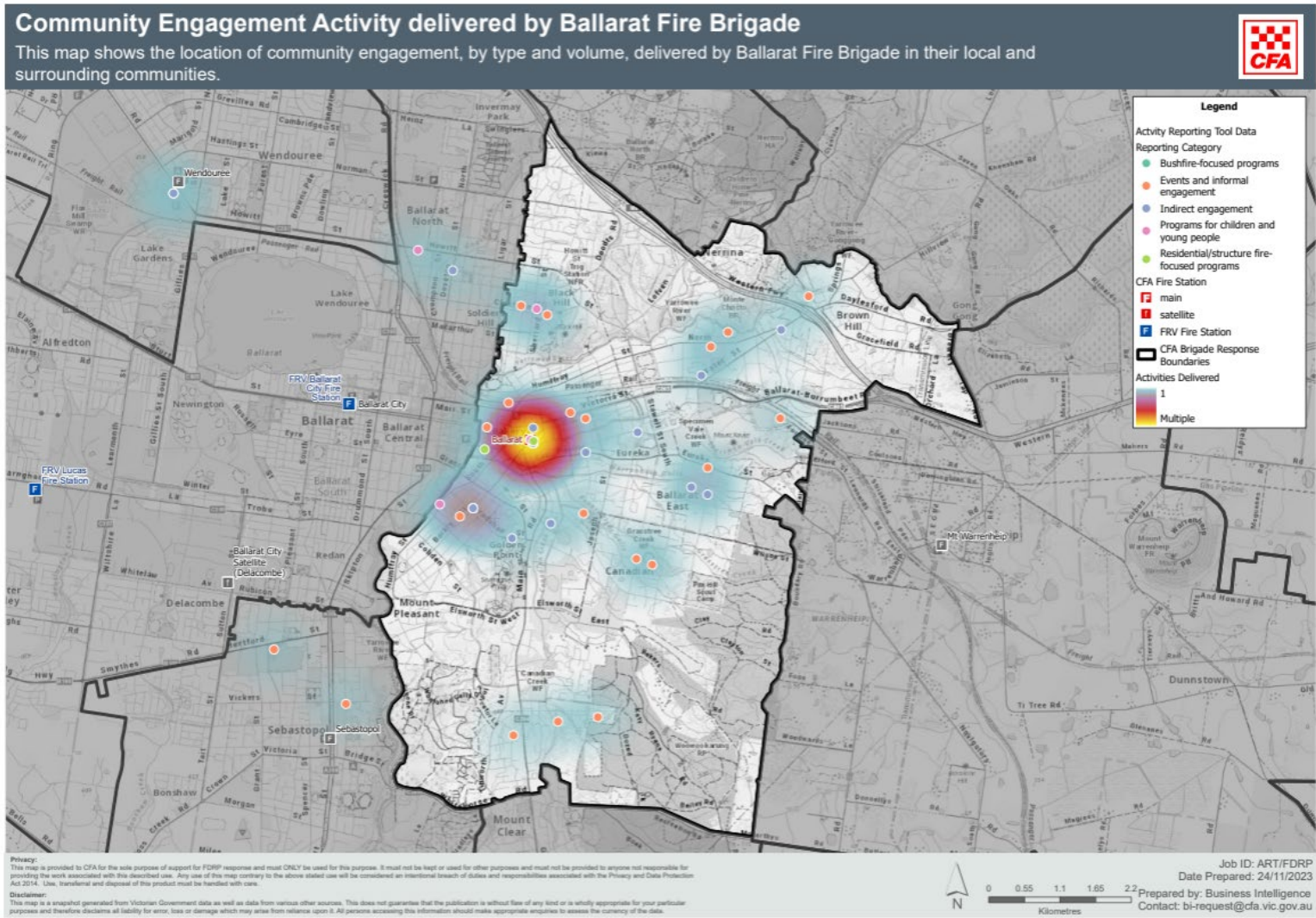


Figure 6: ABS land use areas and BMO

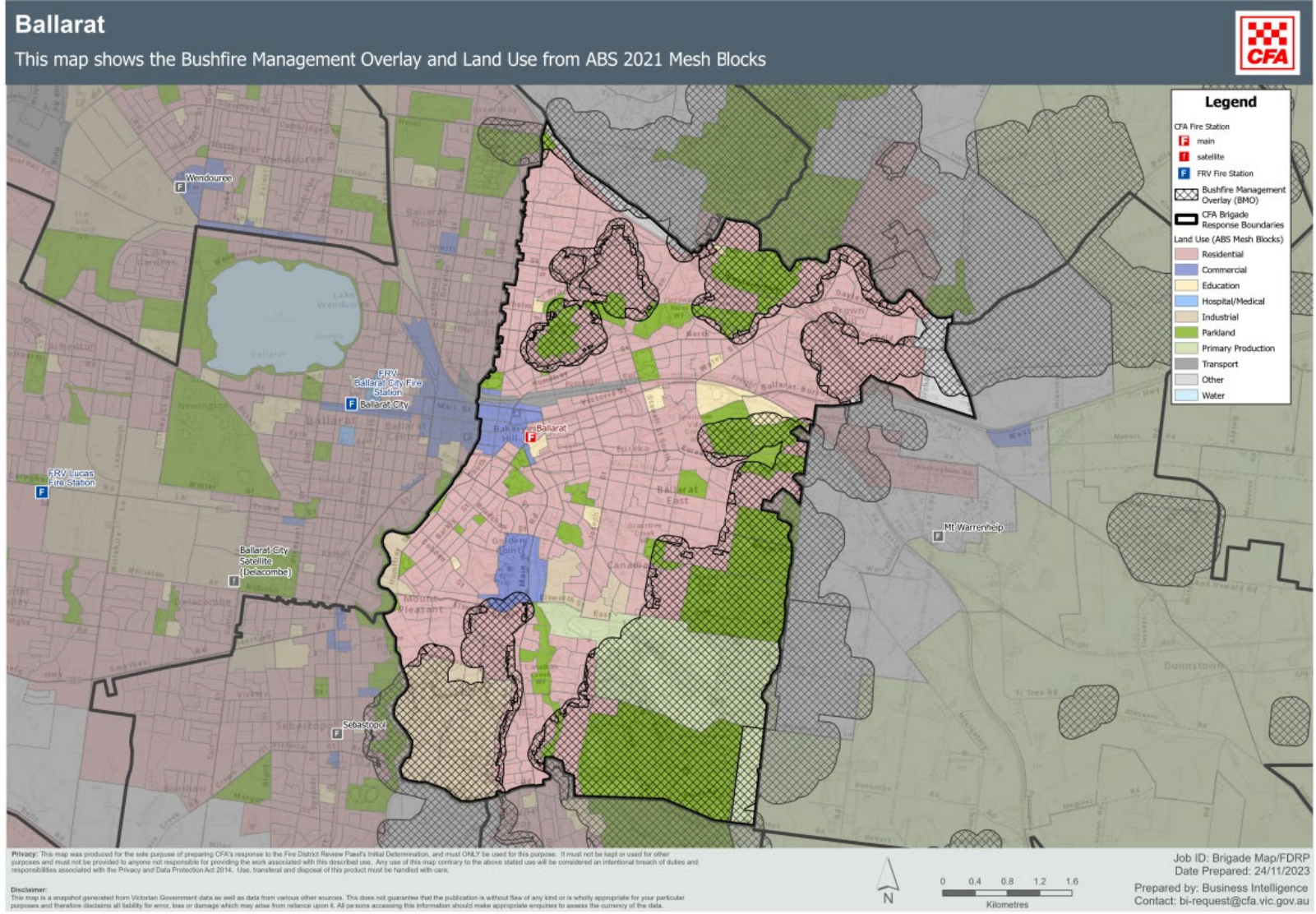


Figure 7: Planned growth zones from the planning scheme for Ballarat

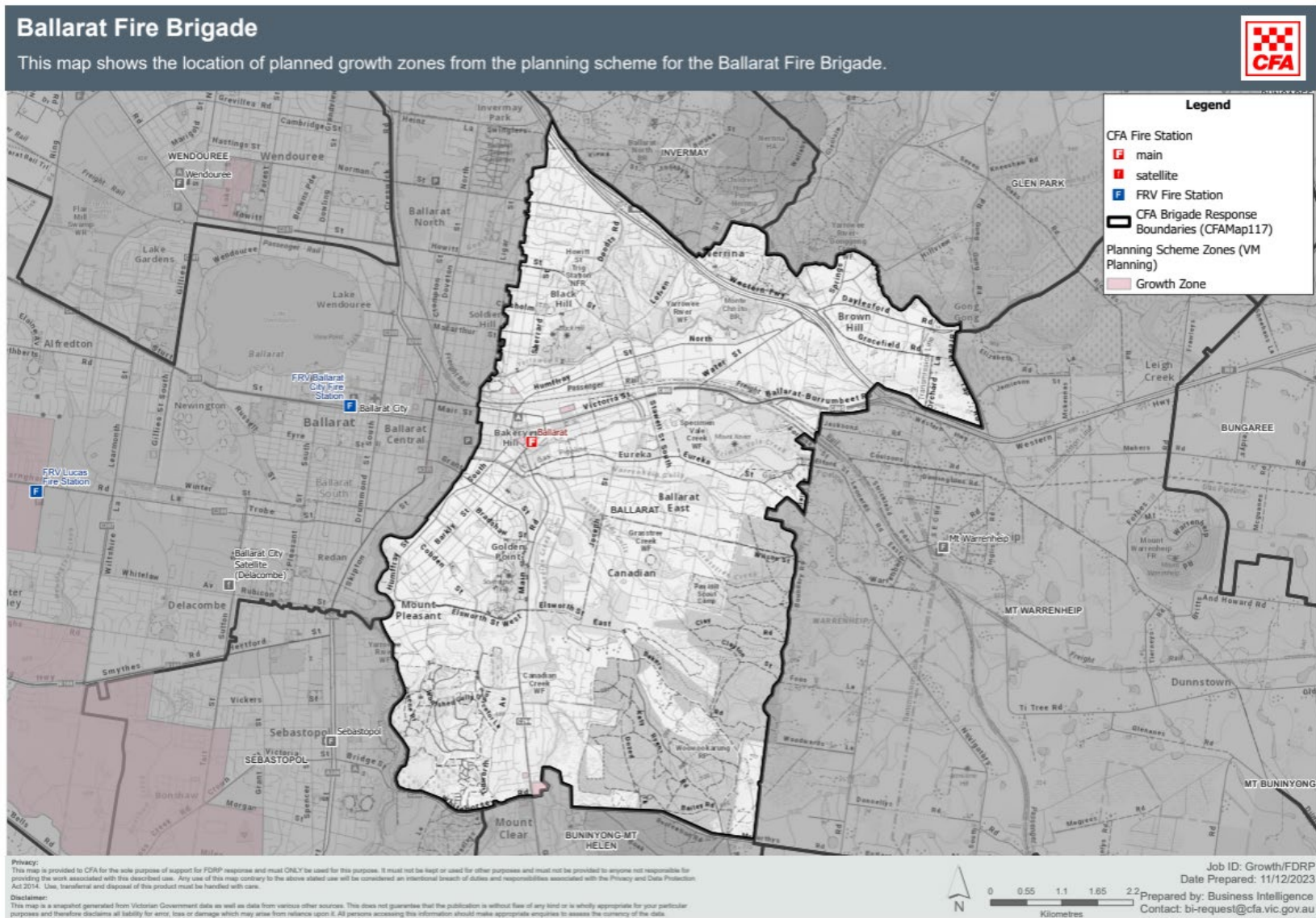


Figure 8: Public land management information

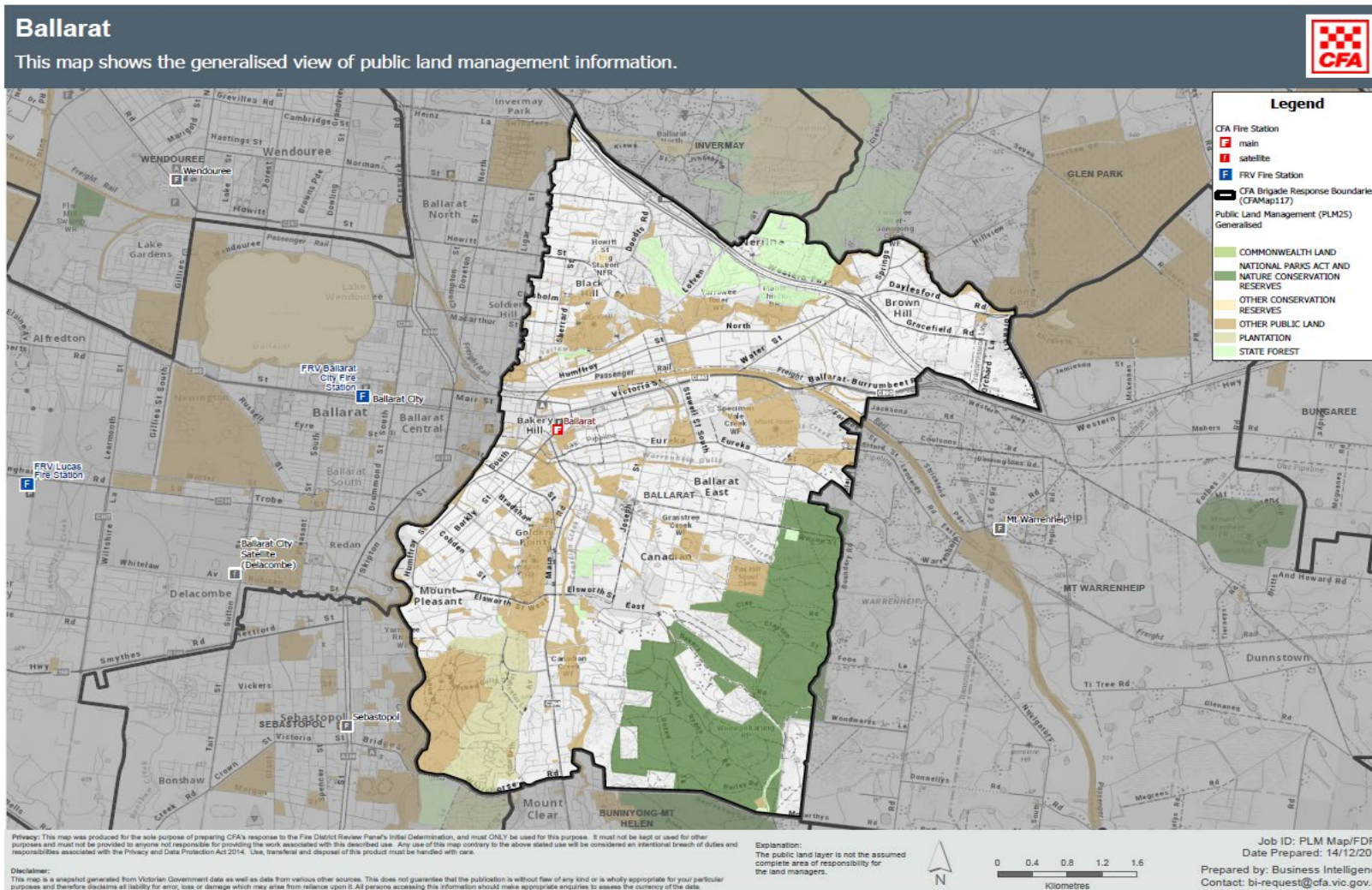


Figure 9: Ballarat Brigade incident count by type 1 January 2010 - 18 December 2023

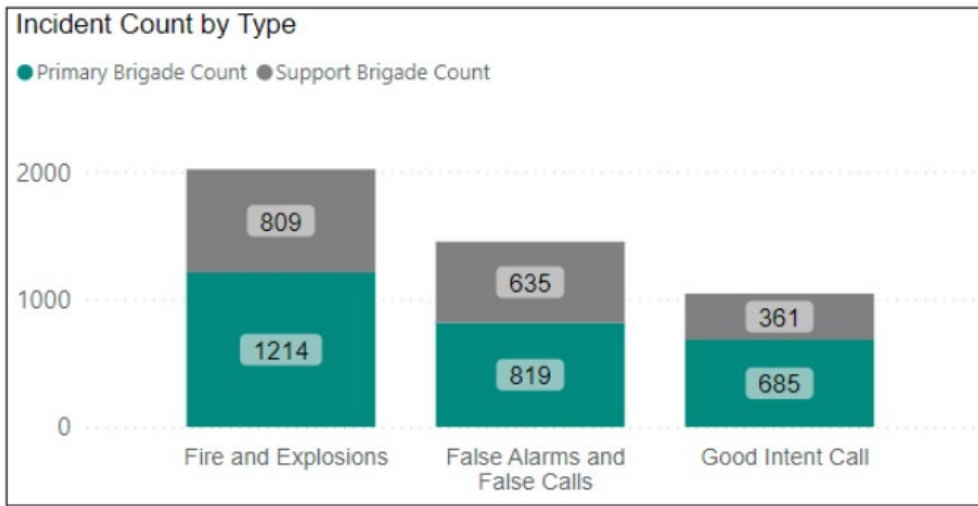


Figure 10: Ballarat Brigade incident count by month 1 January 2010 - 18 December 2023

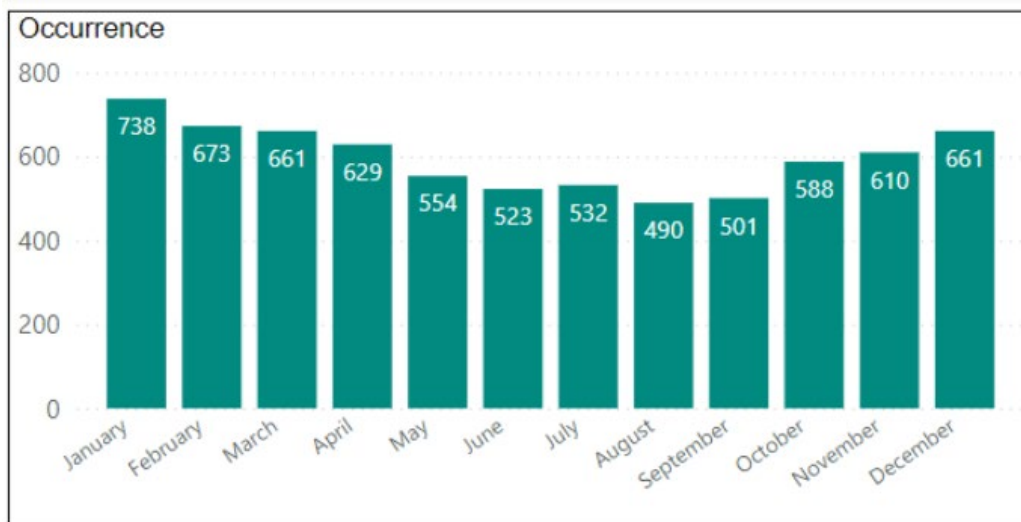


Figure 11: Ballarat Brigade incident count by type by year 2010 - 2023

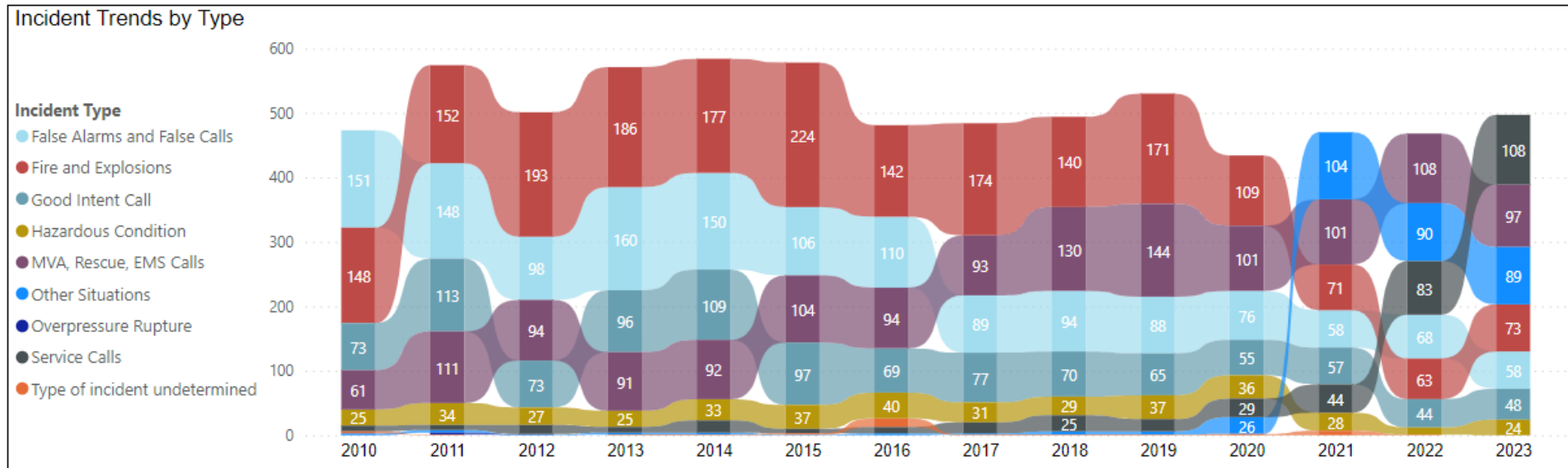


Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes

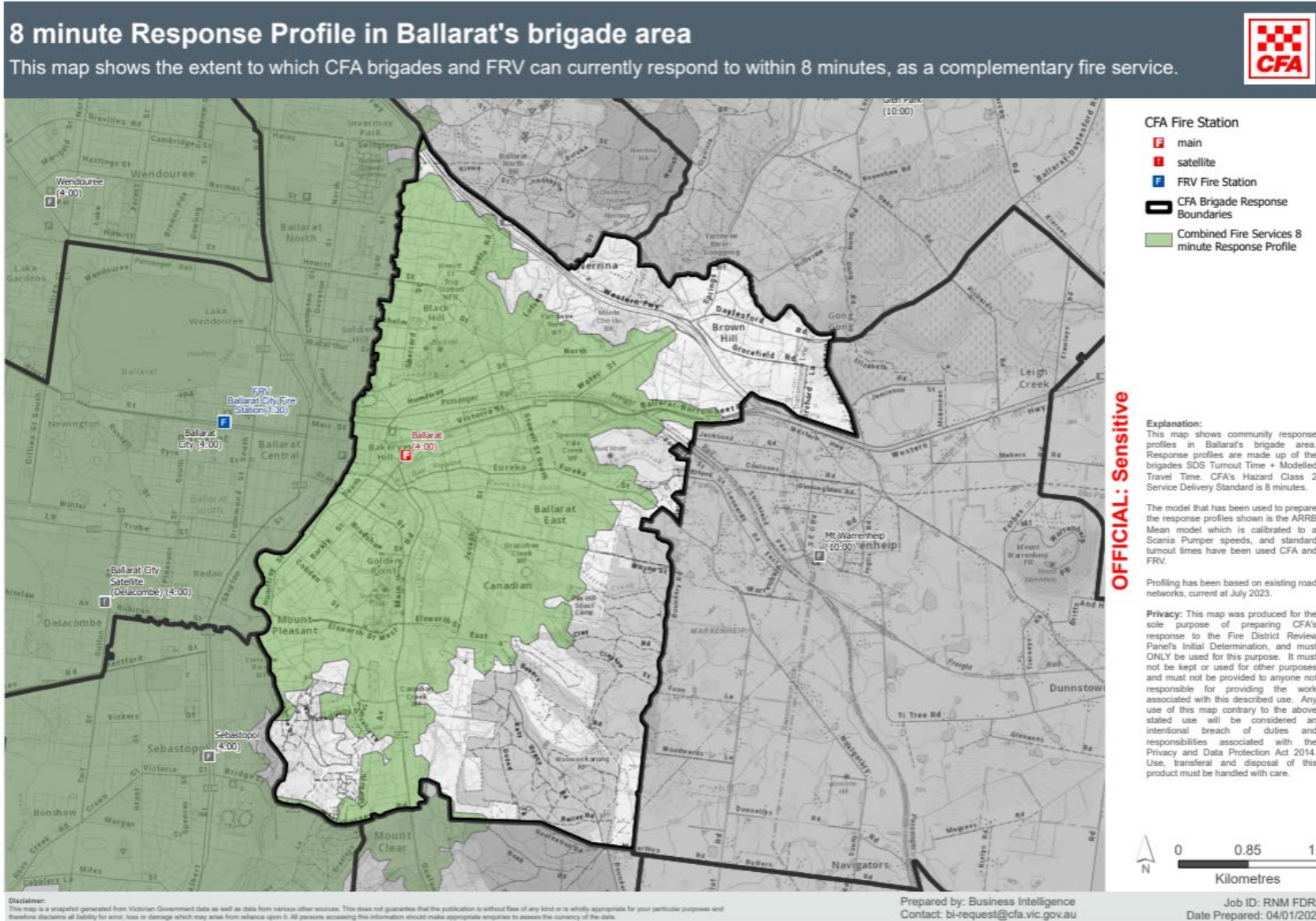
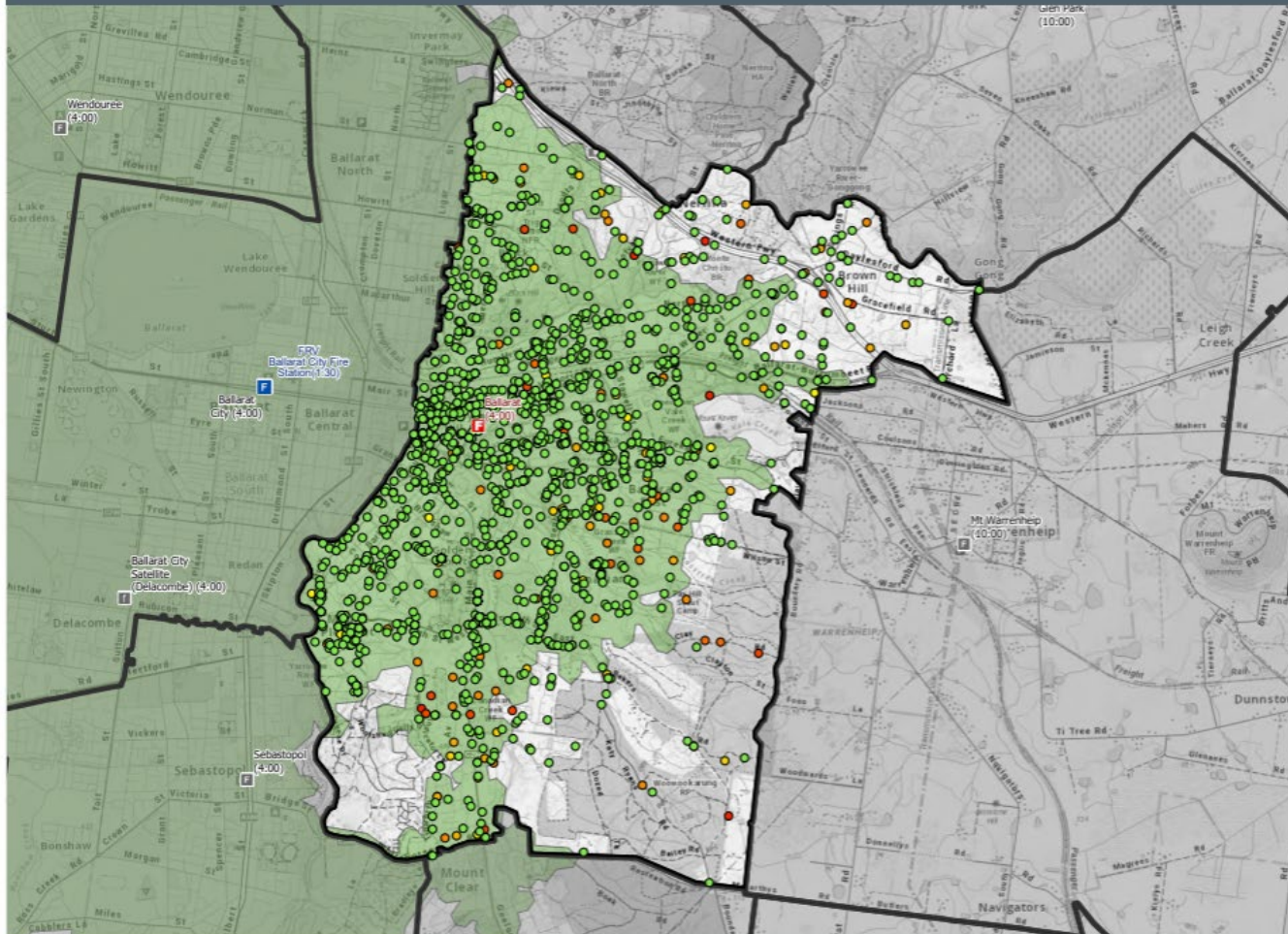


Figure 13: SDS compliance for the Ballarat Brigade SDA 2010 - 2019

8 minute Response Profile and Emergency Incidents in Ballarat's brigade area

This map shows the extent to which CFA brigades and FRV can currently respond to within 8 minutes, as a complementary fire service. It also shows the location of emergency incidents from 2010 to 2019, where the time target was met or not met by either fire service.



- CFA Fire Station
 - main
 - satellite
 - FRV Fire Station
- Emergency Incidents (2010-19)
 - Community SDS pass
- Community SDS missed by
 - 0:01-0:15
 - 0:15-0:30
 - 0:30-1:00
 - 1:01-2:00
 - 2:01-3:00
 - 3:01-6:00
 - 6:01-10:00
 - >10:00
- CFA Brigade Response Boundaries
- Combined Fire Services 8 minute Response Profile

Explanation:
This map shows community response profiles in Ballarat's brigade area. Response profiles are made up of the brigade's SDS Turnout Time + Modelled Travel Time. CFA's Hazard Class 2 Service Delivery Standard is 8 minutes.

The model that has been used to prepare the response profiles shown is the ARRB Mean model which is calibrated to a Scania Pumper speeds, and standard turnout times have been used CFA and FRV.

Profiling has been based on existing road networks, current as July 2023.

Incidents are from 1/1/2010 to 31/12/2019, and are filter by the CFA's public reporting rules.

Privacy: This map was produced for the sole purpose of preparing CFA's response to the Fire District Review Panel's Initial Determination, and must ONLY be used for this purpose. It must not be kept or used for other purposes and must not be provided to anyone not responsible for providing the work associated with this described use. Any use of this map contrary to the above stated use will be considered an intentional breach of duties and responsibilities associated with the Privacy and Data Protection Act 2014. Use, transferal and disposal of this product must be handled with care.



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Disclaimer: This map is a snapshot generated from Victorian Government data as well as data from various other sources. This does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for errors, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

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Job ID: RNM FDRP
Date Prepared: 04/01/2024

Sebastapol Fire Brigade

1. About the Brigade

Sebastapol Fire Brigade is a Class 4 Brigade with CFA District 15. The Brigade has a total membership of 59 volunteers (as at 31 December 2023).

1.1 History

Sebastapol Fire Brigade was established in 1868 and is very proud of its 155 years of service to the community. The fire station was originally placed across the road from its current site at 178-180 Albert St, Sebastapol. It was shifted by traction engine to its current site in January 1929. In 1993 a new motor room was added allowing for the housing of three vehicles. In recent years the Brigade has co-invested with CFA to extend the motor room and acquire land for expansion at the rear of the station.

The Brigade has deep connections with the local Sebastapol and Delacombe communities, and also with other CFA Brigades (particularly those in the Eureka Group) and with FRV Station 67 and Station 68.

1.2 Context

Sebastapol Fire Brigade primarily services the south-eastern corner of Ballarat including Bonshaw and Magpie suburbs. The Brigade responds to a range of emergency events including structural fires (residential and industrial), bushfires and grassfires, incidents at alarmed premises, hazardous materials calls, and motor vehicle accidents. The Brigade responds to approximately 250 incidents per year and provides a specialist response with LPG emergencies (accompanied by a gas flare off appliance). There are approximately 20 incidents per year requiring a specialist response, some are support calls that are in towns located hours away.

Sebastapol has seen a reduction in primary fire calls from 60 in the period 2014 to 2019 to an average of 35 in the period 2020 to 2022. There is notable urban growth to the southwest of the assignment area, where the population has grown between 2,000 and 3,000 and, based on projections, will continue to grow. Small industries such as mechanical workshops and retail continue to expand and these are already significant. In 2019, Sebastapol transferred primary area to Lucas Fire Brigade (now FRV Fire Station 68) as part of the establishment of that station.

CFA members have a unique ability to support communities and empower them to be fire ready. As well as being a trusted authority on fire safety, members are part of the communities they serve. The dedicated Brigade Community Safety Coordinator is part of the Brigade Management Team. The Brigade has an active social media presence, targeting fire safety messaging in various campaigns throughout the year. The Brigade responds to direct requests from the community for involvement in a range of ad hoc activities and events. Members of Sebastapol Fire Brigade also participate in a number of regular community engagement activities including:

- Fire Safe Kids Program and school visits
- attending local markets and sporting events
- community agency open days
- targeted visits to vulnerable community members
- community letter drops with fire safety messaging
- participating in multi-agency events
- supporting Santa runs and very special kids Christmas.

The Brigade, together with Victoria Police, has hosted the 'Cops and Kids' Program for over 25 years. This is a special camp held annually for sick and terminally ill children who are receiving treatment in the Royal Children's Hospital.

Sebastopol Fire Brigade is part of the Eureka Group of Brigades located in District 15, which also comprises Ballarat, Wendouree, Ballarat City and Buninyong-Mt Helen Fire Brigades. Together these brigades provide a collective fire service to Ballarat and surrounding areas alongside FRV. Although they are treated as individual entities by the review panel process, it is important to note that CFA Fire Brigades, organised as they are in a group structure, are able to work readily together to effectively and efficiently form strike teams and support response across their district, region and the state. Wendouree, Ballarat, and Sebastopol Fire Brigades are all key contributors to the Eureka Group.

Sebastopol is a viable, fully functioning urban fire brigade with a strong and reliable membership base and a proud tradition of dedicated, voluntary service. The Brigade has seen more than 13 of their members progress to become career firefighters, many still within the area and three based at FRV Station 68. The one thing that unites the Sebastopol Fire Brigade members is giving their time and skilled effort to protect and support their community.

2. Brigade Capability Snapshot

2.1 Membership

The Sebastopol Fire Brigade has a total membership of 59 members (18 females and 41 males). The Brigade has a good range of experienced and newer brigade members, with most of the membership aged 40 years or younger.

2.2 Fire Appliances, other vehicles and specialist equipment

The Sebastopol Fire Brigade has three appliances and other equipment to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Sebastopol Brigade alone.

Table 1: Fire appliances and vehicles available to the Sebastopol Brigade

Vehicle	Vehicle Make	Age
Pumper	Isuzu	19 years
Tanker	Hino	9 years
LPG Support	Ford Transit	6 years

Table 2: Vehicle specification

Pumper	Carrying six firefighters, 2,000 litres of water and 3,500 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage, monitors and foam equipment.
Tanker	Carrying five firefighters 2,000 litres of water, 1,200 lpm pump, BA, hoses and adaptors, chainsaw and foam equipment
LPG Support	Specialist appliance providing LPG flare off capability for fixed and mobile installations. Include heavy lifting equipment for access/egress to vehicles that have been involved in accidents and/or fire. Only capability of this type in Western Victoria.

2.3 Station Location

The station is located at 178 Albert Street, Sebastopol. The station is located in a key commercial centre of Sebastopol; it is on the major arterial route (Midland Highway) linking Ballarat and Geelong and is one of the busiest roads in regional Victoria. It comprises the historic station building housing meeting facilities and a newer three bay engine room added in 1993.

The location of a fire station is an important element in the successful operation of a volunteer fire brigade. Siting must strike a balance between being located to address service delivery needs but also being readily accessible to and from for emergency responders. The current location provides challenges for both of those aspects.

The table below displays traffic flow data for the major arterial road in the SDA. Albert Street carries some of the highest average traffic flows in the City of Ballarat.

Table 3: Average vehicle movements per day

Location	Road Classification	Average Two Way Traffic Volumes	Year Captured
Albert Street Sebastopol	Arterial	28,000 vehicles per day	2020
Bridge Street Sebastopol	Arterial	9,600 vehicles per day	2020

The day of week and time of that day for traffic congestion analysis for the Ballarat Brigade has been determined by the day of the week that there are the most incidents and what time of that day the most incidents occur. For some brigades there are multiple times for the one day. For Sebastopol the two occasions are both on Fridays at 13:00 (Figure 1) and 18:00 (Figure 2).

Figure 1: Typical traffic Friday 13:00

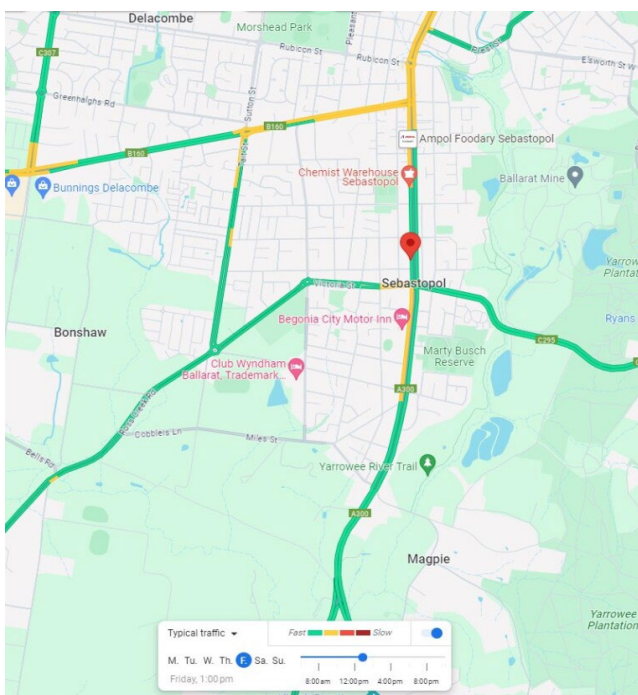
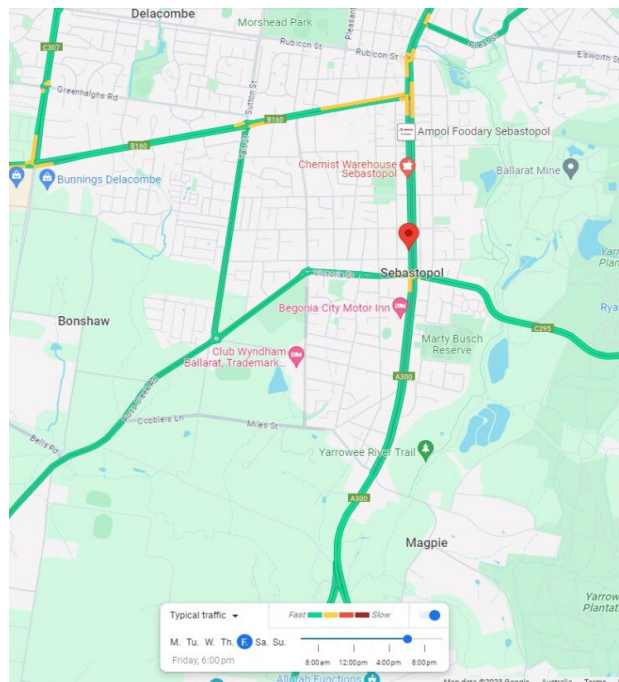


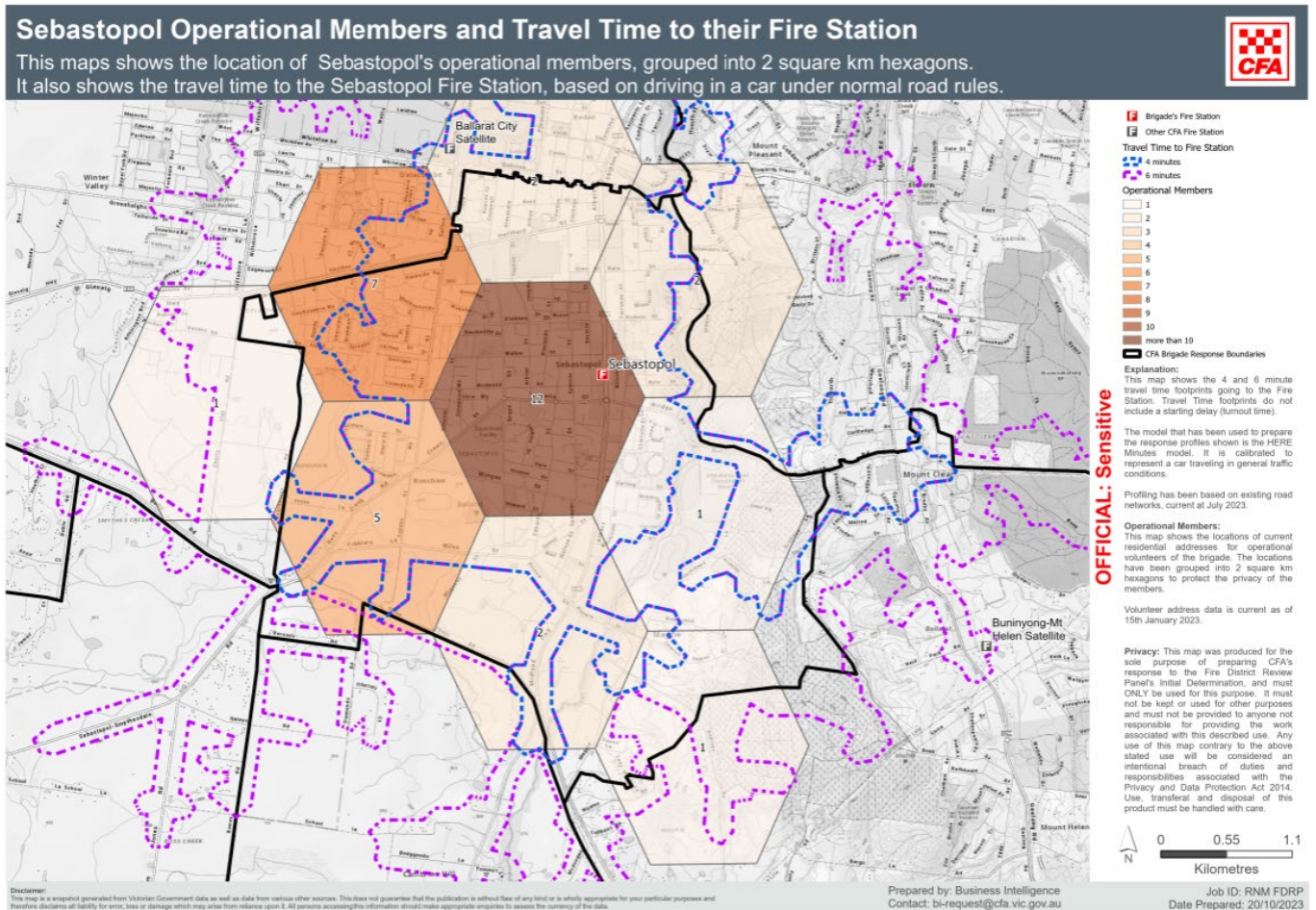
Figure 2: Typical traffic Friday 18:00



Further analysis of the home location of responding Sebastopol Fire Brigade Members within a four minute and six minute travel time (under normal road conditions) indicate sufficient resources to ensure the rapid mobilisation of volunteers to station upon activation (Figure 3).

As part of the enhancements to Brigade infrastructure, a project is being completed this year to provide access to the Sebastopol Fire Station from an adjacent street, allowing operational members access to the fire station without needing to traverse Albert Street. This project has been funded by donations to the Brigade and by CFA.

Figure 3: Operational members location and travel times



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only has use across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state's resources in both the CAoV and the FRV Fire Districts. In particular for Sebastopol, surge and support capacity is provided in the following ways:

- bushfires: as part of Eureka Group, Sebastopol is included in the District 15 default first response strike team to significant fires within the district and to other regions and interstate
- structure fires: an automatic response to structure fires in neighbouring rural towns. In addition, the capacity to support pumper strike teams to significant structure fires as well as township protection when those are under direct threat of bushfire
- specialist support: LPG emergency response capability to the City of Ballarat and the wider Victorian community
- crewing vehicles from other brigades as part of extended and campaign operations.

2.5 Assistance to Fire Rescue Victoria

CFA operates a risk-based model for operational response into the Sebastopol SDA. This ensures the closest and most appropriate capability is dispatched to fires and emergencies. FRV is part of initial response to all fire and emergency calls in the Sebastopol SDA, ensuing complimentary delivery of services to the community.

On 1 July 2020, FRV reduced CFA Sebastopol Brigade response into FRV's primary area and amended long standing support arrangements put in place by CFA prior to Fire Services Reform. This has reduced demand for services on the Sebastopol Fire Brigade and dropped the overall call service rate addressing the demand aspect of the risk identified by the FDRP.

Whilst Sebastopol is still providing some support for the FRV Fire District – what was Lucas (Station 68) and Ballarat City (Station 67) – it has reduced over the years. Figure 4 and Figure 5 show the reduction of service demand.

Figure 4: Incident count and type of support provided in the FRV Fire District

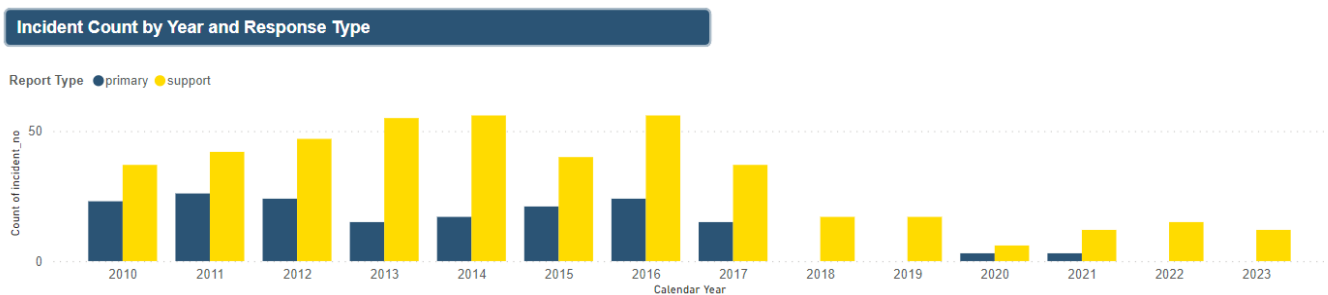
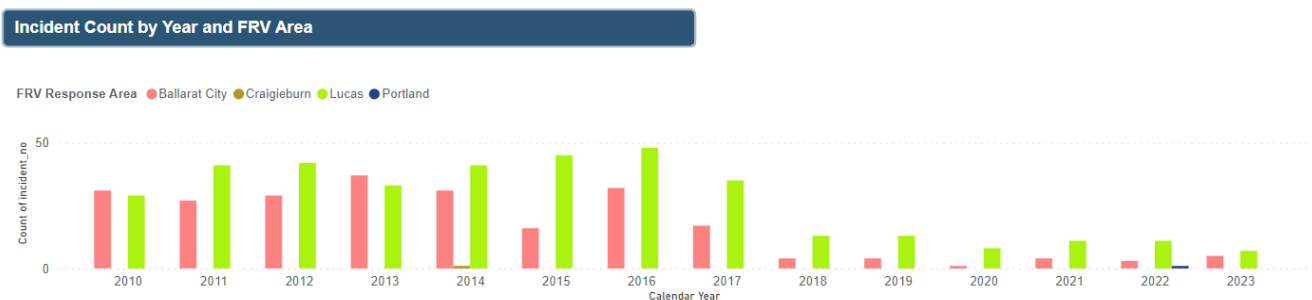


Figure 5: Incident count and type of support provided in the FRV station footprint



2.6 Community engagement activity

The Sebastopol Brigade works directly with the community to support regular prevention and preparedness activities, including community fire safety messaging, school visits and brigade/agency open days, some of which have highlighted the Brigade's specialist LPF flare-off response capability. Examples of the activities promoting fire safety messaging include:

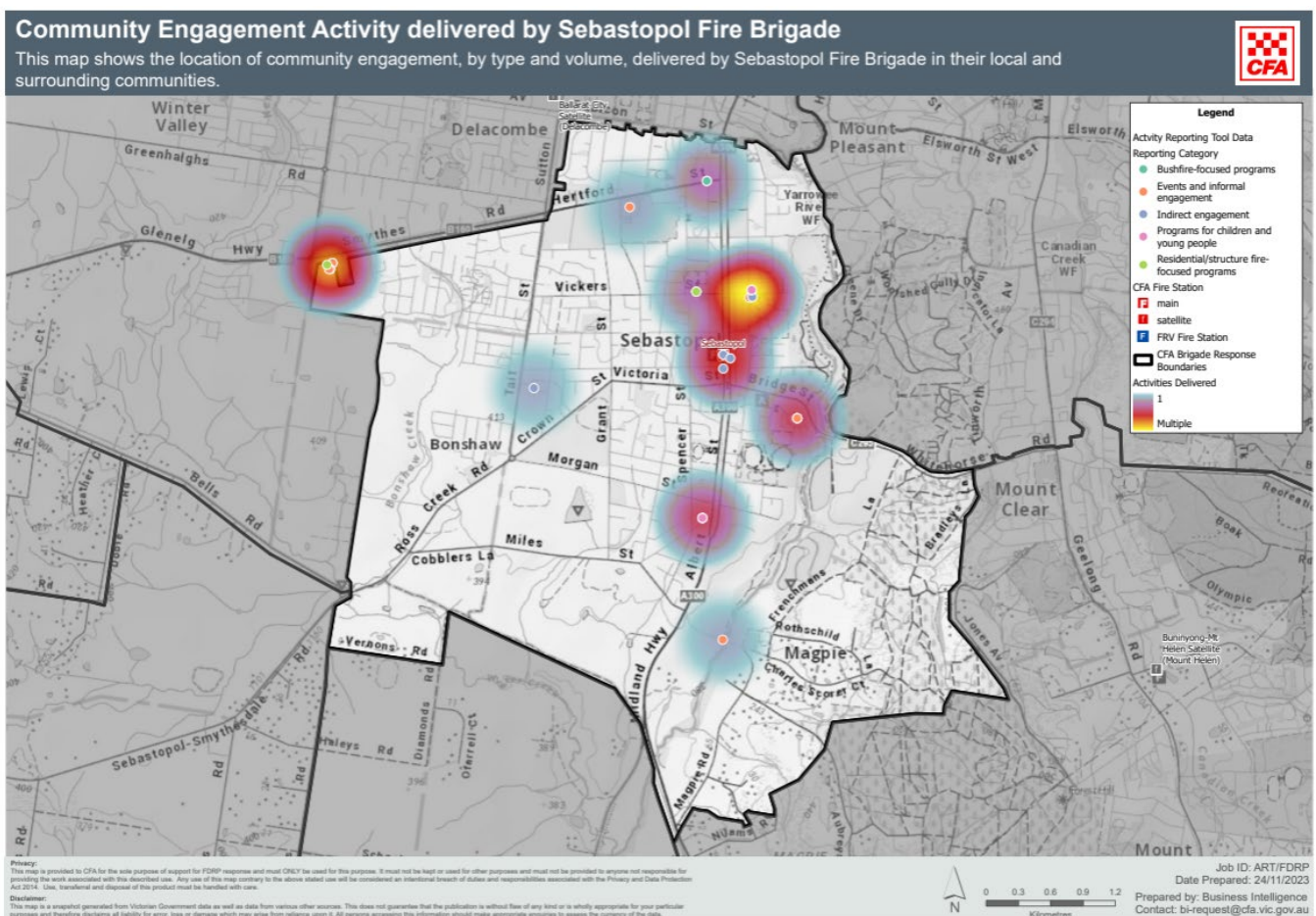
- school, kinder and community group visits, often with the assistance of the neighboring FRV Stations
- active social media presence – approximately 1,800 followers, with re-sharing of posts reaching a much greater audience
- regular community newsletter/community articles.

Community-focused activities that the Brigade has consistently participated in over extended periods of time are indicative of the trusted and long-standing relationship the Brigade has with the local population. These include:

- 45 year relationship with the Royal Children’s Hospital Good Friday Appeal, reaching a cumulative threshold in 2023 of \$500,000 raised and donated
- 42 years distributing calendars door to door to the community, which provides opportunities for fire safety discussions
- 41 years holding Santa Runs
- 28 years supporting the ‘Cops and Kids’ event
- 28 years raising funds for Bluey Day.

In 2022, CFA implemented a new platform to allow brigades to centrally record their community engagement activities, allowing a better understanding of community fire safety interventions. Brigades kept records locally and often in a total tally, which did not allow for a spatial understanding of the spread of interventions. Figure 6 below shows community safety interventions undertaken by the Sebastopol Fire Brigade as recorded in the ART system.

Figure 6: Community safety and intervention programs



3. Service Delivery Area Profile

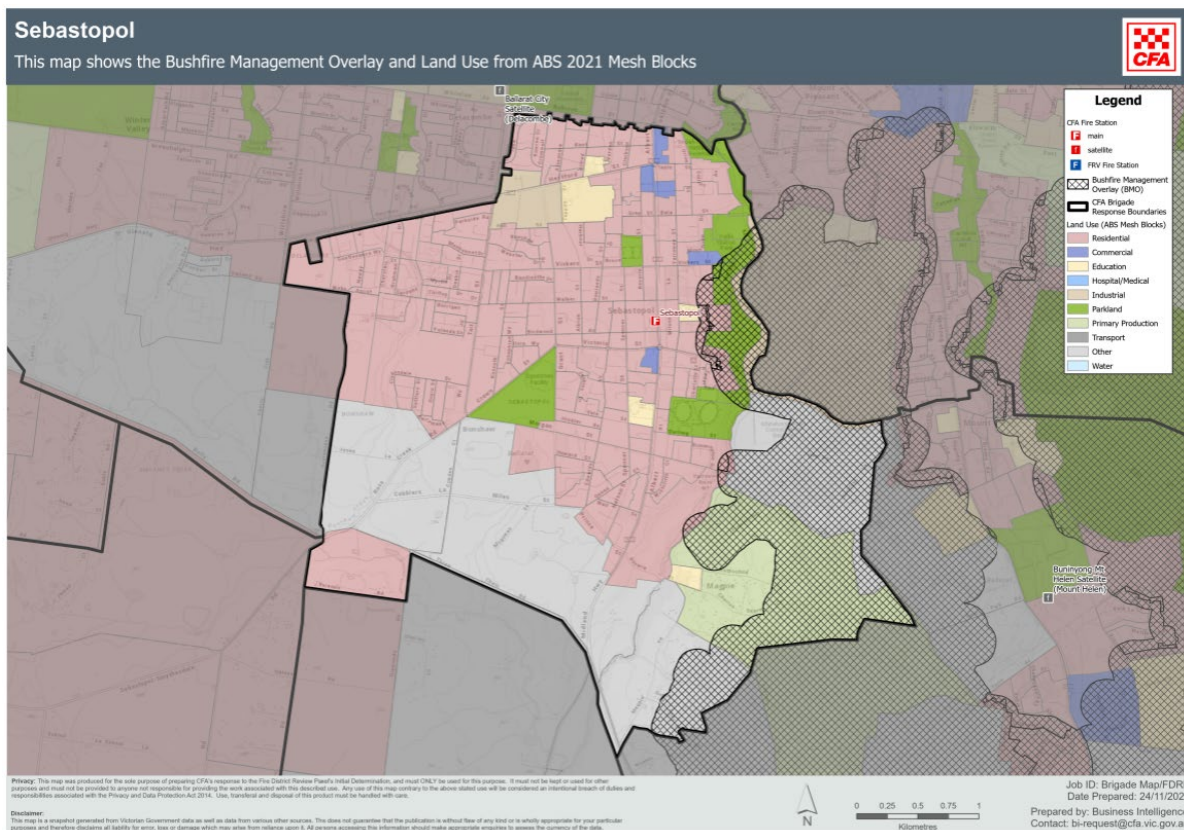
The Sebastopol Fire Brigade SDA has a total area of 1,575.2 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses.

Table 4: Sebastopol land use planning areas

Land use	Hectares	Percentage of Brigade Area
Commercial	13.5	0.9%
Education	27.3	1.7%
Industrial	36.7	2.3%
Other	484.0	30.7%
Parkland	94.1	6.0%
Primary Production	162.8	10.3%
Residential	756.9	48.0%
Transport	0	0%

A map showing the current land use planning uses and applicable mesh block is shown in Figure 7.

Figure 7: ABS land use areas and BMO



3.1 Growth zones

An analysis of VicPlan the official mapping platform of the Department of Transport and Planning, shows development is at capacity with all residential zones developed or in the final stages of completion. This indicates that further expansion of residential development is not likely unless a Residential Growth Zone (RGZ) is indicated.

There is one area within the Sebastopol Fire Brigade SDA that is zoned RGZ that is 419 hectares. The RGZ is considered a substantial change area where medium density housing growth and diversity of housing types is encouraged, for example townhouses and apartments around activity centers and close to train stations. There are also a limited range of non-residential uses allowed to serve local community needs.

Figure 8: Planned growth zones from the planning scheme for Sebastopol

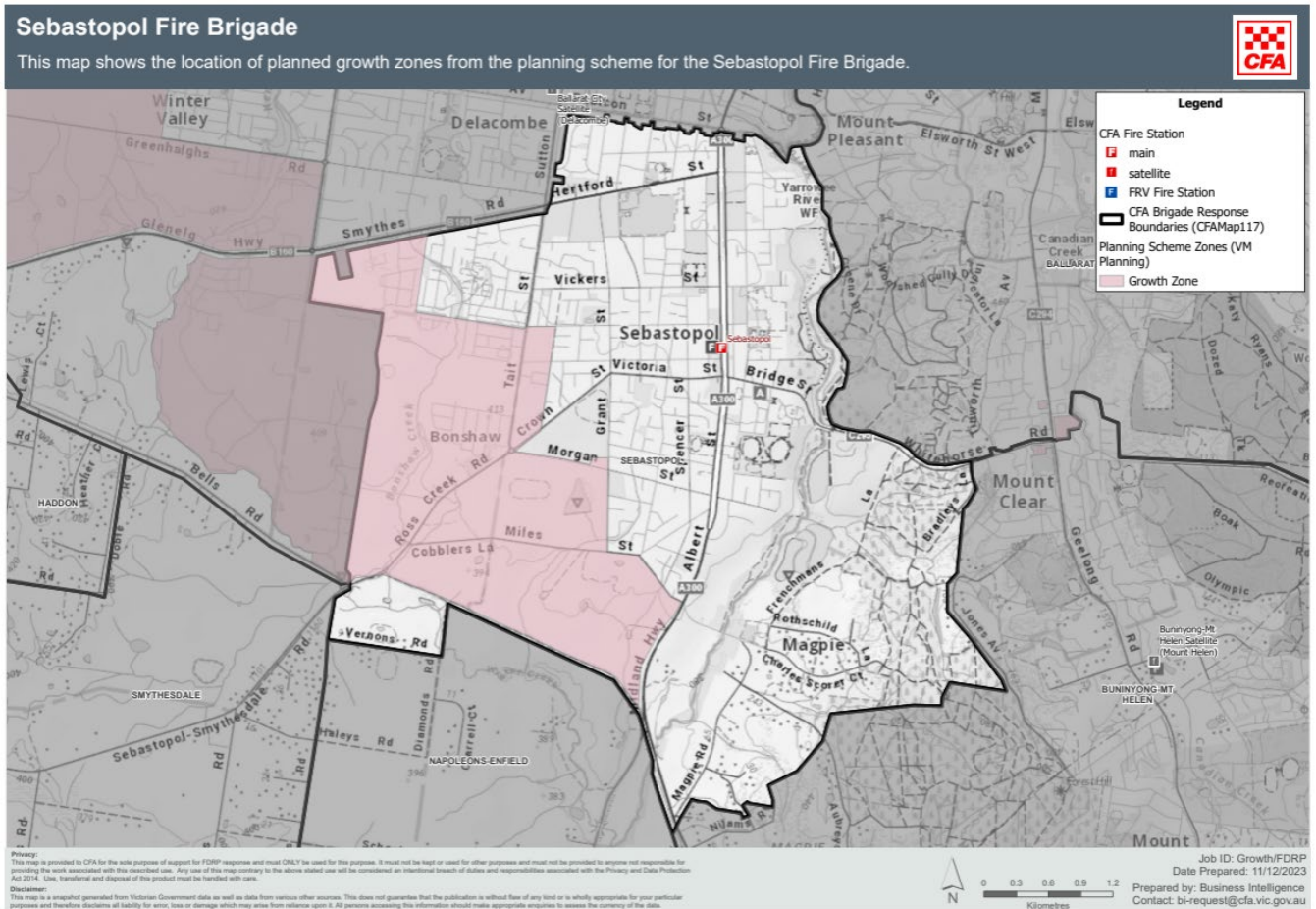


Table 5: Urban growth areas

Total Brigade Area (Hectares)	Area (hectares) covered by Industrial Zones	Area (hectares) covered by Growth Zones	Percentage covered by Industrial Zones	Percentage covered by Growth Zones
1575	25.70	419.07	1.63	26.61

Risk Evaluation:

Sebastopol Brigade SDA is a well-established due to the gold rush in the 1800s that led to settlement of the area. Residential and commercial designated planning areas are well established and developed.

Changes in developmental risks will be limited to designated RGZ of which there is one area (419 hectares or 27% of the SDA). Residential development within the RGZ has commenced notably within Bonshaw. The remainder of the RGZ comprises five acre allotments or larger block sizes that still require planning approval, and investment in roads and services before further development could commence.

Risk Mitigation:

The Sebastopol Fire Brigade resource capability of pumper and tanker combined with the long-established protocol of joint response from FRV and surrounding brigades as a response network, delivers the complementary fire services model and is currently considered sufficient to treat the current residential and industrial risk including the RGZ.

The upgrade of the Sebastopol Pumper from the 19-year-old ISUZU to a modern Scania will provide better response acceleration and equipment to allow for facilitation of continued improvement in service performance.

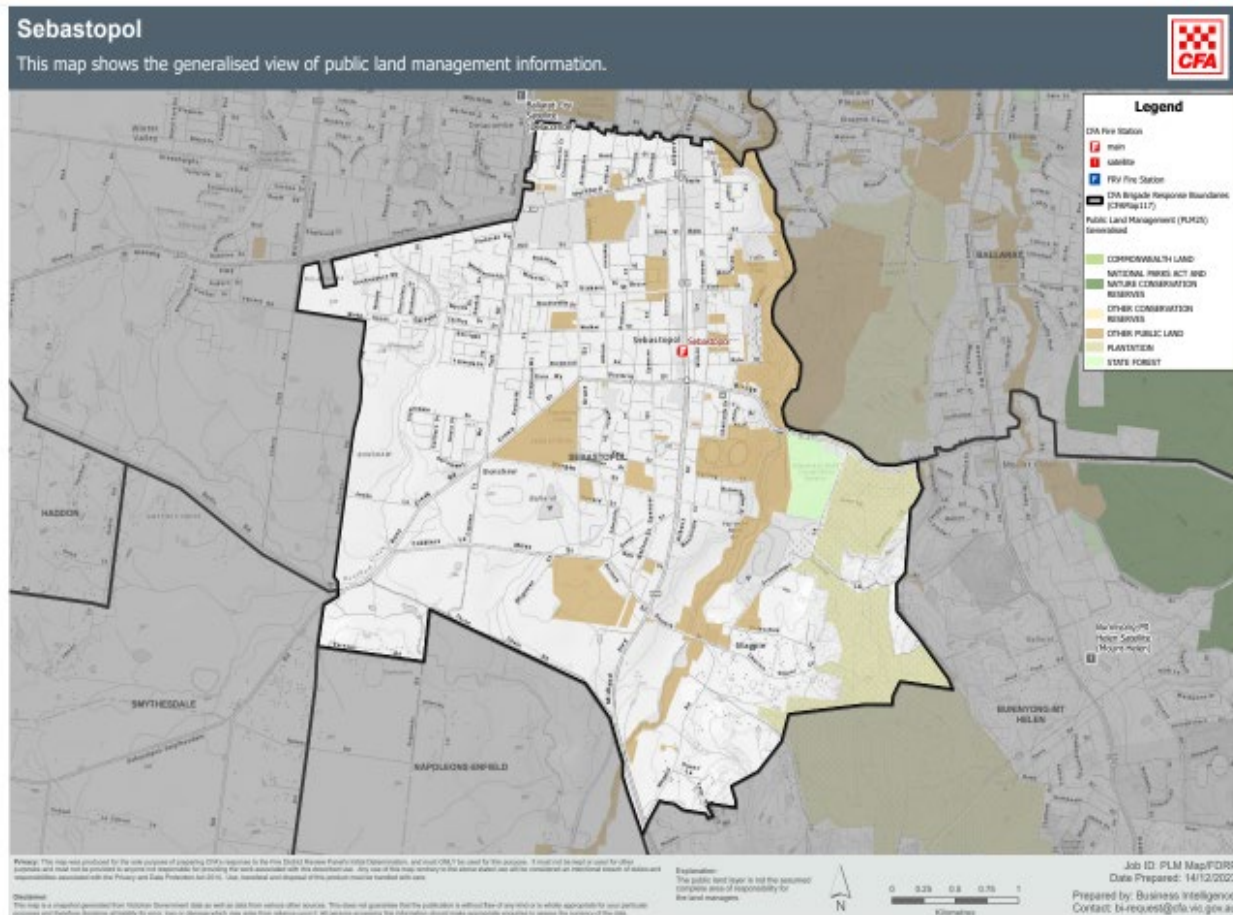
CFA modelling demonstrates an ability to cover a large portion of the proposed RGZ (Figure 13). As further development occurs over the coming five years, a satellite facility in the southernmost portion of the SDA may be needed.

3.2 Bushfire Management Overlay

The Sebastopol Fire Brigade SDA has an area totaling 311.9 hectares defined as BMO (19.8% of the SDA). The BMO applies to land that may be significantly affected by extreme bushfires. A planning permit is required for some types of development to ensure bushfire risk is considered and passive bushfire protection measures are in place to ensure resilience of the development without the intervention of fire services. Figure 6 (above) shows the BMO is limited to the eastern most boundaries of the Brigade SDA.

Figure 9 shows a view of public land, giving consideration to the legislative accountability and responsibility of FFMV.

Figure 9: Public land management information



Central Highlands Water has established a Forestry Industry Brigade (FIB) Brigade (number 15170). Forestry Industry Brigades are required to be established under the Country Fire Authority Act 1958 and Regulation 2014 when a forestry land mass exceeds the prescribed holding. The Central Highlands Water FIB as well as Forest Fire Management Victoria (FFMV) have legislated responsibility for the prevention, suppression and mitigation of the land parcel subject to the BMO (Private Forestry and Public Lands), supported by Sebastopol Fire Brigade.

Risk Evaluation:

The legislated FIB arrangements, in addition to the accountability and responsibility of FFMV and with the bushfire response capability of the Sebastopol Fire Brigade mean that the BMO risk is mitigated. The requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones also assist in managing risk.

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population change of 1,379 or 11% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells). The local government area forecast seven-year population change is an increase of 14% or 15,180.

ABS Index of Relative Socio-economic Disadvantage (2021) shows the Ballarat Statistical Area Level 1 to be at SEIFA decile 1 (most disadvantaged). The Sebastopol-Redan areas are ranked as the second most disadvantaged areas in the Ballarat City Statistical Area.

ABS census data (2021) shows that there are 5,443 dwellings in the Sebastopol Brigade SDA. Of these dwellings, 38% are rental houses, with 10.54% state owned. As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair¹⁶.

The population also includes those at higher risk, including people living with a disability, and increasing numbers of those with a Culturally and Linguistically Diverse (CALD) background.

CFA and FRV have collaborated to create the Prevent – Detect – Escape Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted at those who work in the community and social services sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability. There have been 41 community members undertake the Prevent – Detect – Escape Program in the Sebastopol Fire Brigade SDA.

Risk Evaluation:

The degree of social disadvantage (and disability) is unsurprising when examined against the overall age demographics of the population in the Sebastopol Brigade SDA. Having regard to fire safety interventions, there is a large number of the population within rented properties (38%) of which 10.54% is state housing comprising the most disadvantaged cohort. The level of rental housing has led to proliferation of mandated working (checked) smoke alarms which is anticipated to have contributed to the significantly low number of fire fatalities. This has resulted in a better outcome in the Sebastopol Fire Brigade SDA (no preventable fire fatalities) than would otherwise be seen in more rural and urban areas across Victoria.

Risk Mitigation Action:

To continue to maintain a low count of fire fatalities within the Sebastopol Fire Brigade SDA, in consideration of the extent of social disadvantage and disability, a targeted program will be undertaken to increase the participation of carers and support persons in the Prevent – Detect – Escape Program.

¹⁶ <https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/keeping-the-property-safe/smoke-alarms-and-fire-safety#:~:text=The%20rental%20provider%20must%20ensure%20smoke%20alarms%3A%201,are%20repaired%20or%20replaced%20as%20an%20urgent%20repair.>

4. Service Delivery and Service Demand

4.1 Total demand

Figure 10 shows the total number of unique incident numbers attended by the Sebastopol Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response.

Figure 10: Sebastopol Brigade incident count by type 1 January 2010 - 18 December 2023

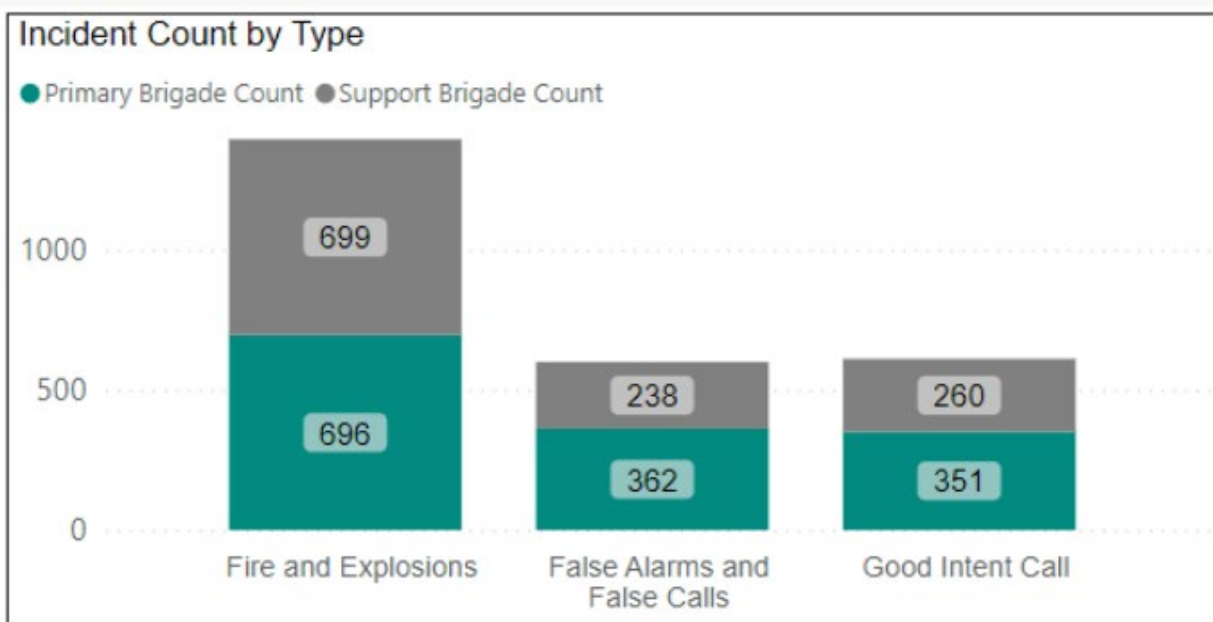


Figure 11 shows a count of the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels in summer and lower periods of activity in the winter months.

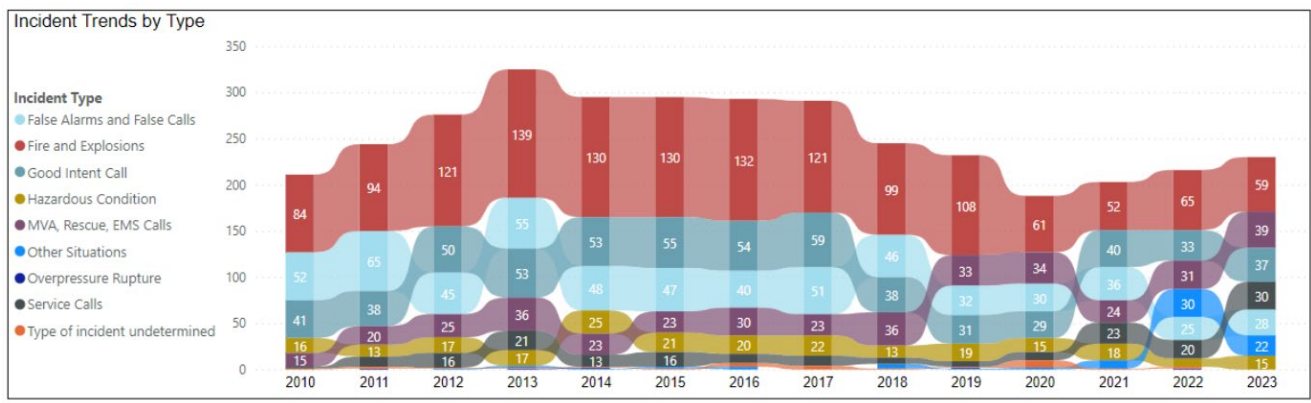
Figure 11: Sebastopol Brigade incident count by month 1 January 2010 - 18 December 2023.



Figure 12 shows a count of all incident types between 1 January 2010 and 18 December 2023. The primary incident types for the Brigade are Fire and Explosion related calls and Good Intent calls, this has remained consistent over time. Since the data collected by the FDRP from 2010 to 2019 total service demand and call rate has notably fallen lessening total demand. A continued focus on reduction of False Alarm and Good Intent calls (protected premise) will further reduce total demand on the Sebastopol SDA.

Substantial reduction in assignment area in 2019 due to the establishment of Lucas Fire Brigade (now FRV Station 68), which has already reduced Sebastopol's SDA, including the area south of the Glenelg Highway across to Bonshaw. The station assignment area for FRV Station 67 was gazetted during Fire Services Reform in 2019. In effect the Sebastopol Brigade has already had a boundary adjustment undertaken.

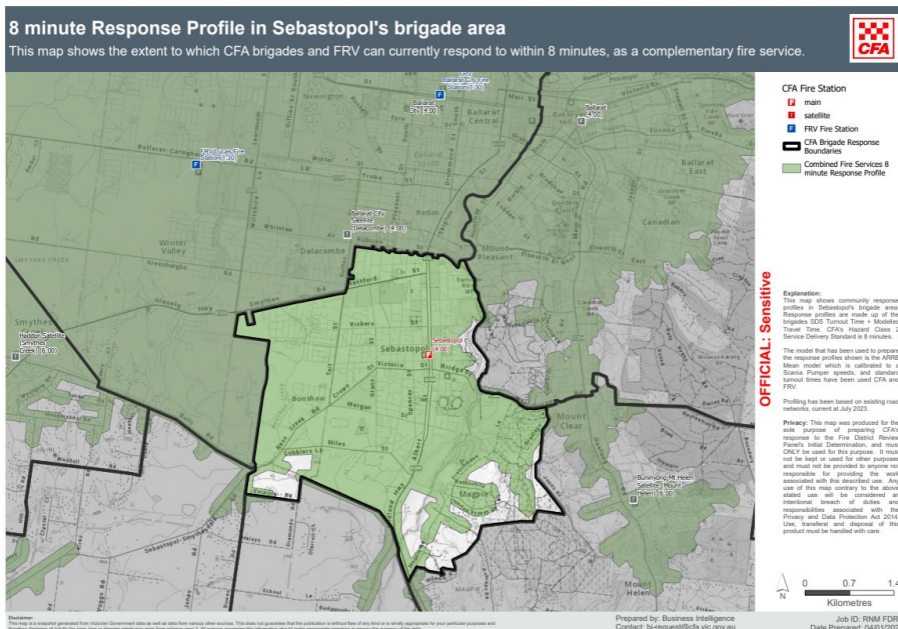
Figure 12 Sebastopol Brigade incident count by type by year 2010 - 2023



4.2 Service delivery standard

Figure 13 shows the area within the land use that can be serviced within eight minutes by the existing complementary fire service model. It should be noted that Figure 13 shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the 8 minute to scene standard.

Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 100% of the road network in the Residential land use
- 100% of the road network in the Commercial land use
- 100% of the road network in the Industrial land use
- 100% of the road network in the Education land use
- 98.35% of the road network in the Parkland land use
- 95.89% of the road network in the Other land use
- 74.36% of the road network in the Primary Production land use.

An analysis of the Sebastopol Brigade with established SDS against the respective hazard classes shows:

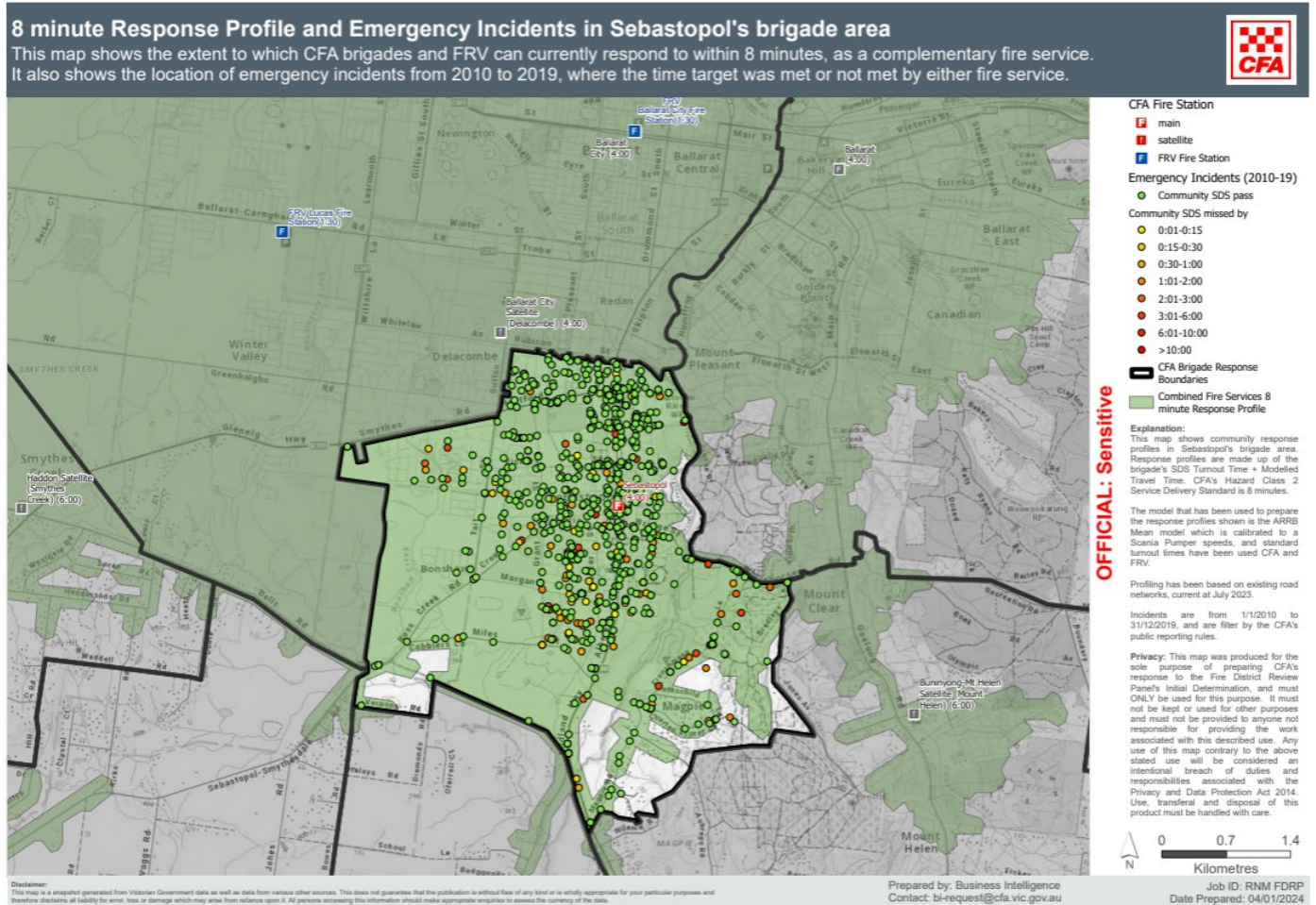
- from 1 January 2010 to 31 December 2019 there were 1,075 emergency incidents within the Sebastopol Brigade SDA
- fire services response to emergency incidents was 81.02% compliant with SDS
- for the 204 incidents where SDS was not met over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (67%) were missed by less than 60 seconds.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
42 (21%)	42 (21%)	51 (25%)	41 (20%)	10 (5%)	12 (6%)	3 (1%)	3 (1%)

Figure 14 shows graphically the ability for fire services to meet established SDS across the Sebastopol SDA.

Figure 14: SDS compliance for the Sebastopol Brigade SDA 2010 - 2019



From 1 January 2020 to 30 November 2023:

- there were 386 emergency incidents within the Sebastopol Brigade SDA
- fire services response to emergency incidents was 72.8% compliant with SDS. This is a reduction (8.22%) in performance standard since the FDRP data reference period
- for the 105 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that the SDS was missed. The majority (65%) were missed by less than 60 seconds. The number of incidents that missed SDS by three to 10 minutes decreased from 8.8% to 4.8%

Table 7: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
23 (22.12%)	21 (20.19%)	24 (23.08%)	21 (20.19%)	10 (9.62%)	4 (3.85%)	1 (0.96%)	0

Risk Evaluation:

The Sebastopol Fire Brigade’s SDS was 81.02% for the FDRP data reference period. The majority (67%) of misses were by less than 60 seconds. SDS performance has declined in the past three years and improvement is an ongoing focus.

Risk Mitigation Actions:

The Brigade has recently cleared a block of land purchased to the rear of the station facility to allow alternate access to the station. The improved station access and an automated rear gate will expedite crews accessing and leaving the station. The upgrade of the Sebastopol pumper from the 19 year old ISUZU to a modern Scania pumper will provide better response acceleration and equipment to allow for anticipated improvement to SDS.

Targeted volunteer recruitment will occur focusing on those living in the streets surrounding the fire station and available to provide daytime response. There will be targeted volunteer training to ensure expedient transition of new recruits to operational duty.

The Brigade will explore a unified approach to fire risk management of protected premises and high-risk industries with FRV, including joint pre-planning and training activities.

4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Sebastopol Brigade SDA from 2010 to 2023 has had a total of 108 Building /structure fires requiring extinguishment.

Table 8: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
9	6	9	6	8	8	11	13	6	10	4	5	7	6	108

An analysis of preventable fire fatalities associated with these 108 building / structure fires shows there has been no preventable fatalities since 2010. In the Sebastopol Brigade SDA, no non-preventable fatalities (homicides, suicides, deliberate) were reported.

Table 9: Non-preventable fatalities 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Risk Evaluation:

The Sebastopol Brigade SDA had no preventable structure/building fire fatalities and no non-preventable (deliberate) fatalities since 2010. The ranking of the Sebastopol Brigade of seven out of 13 in the BCTC may be a data error.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.

Table 10: Sebastopol fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	7 of 13	<p>SDS across the Sebastopol SDA for the review period accounts for 81.02% of the SDA with a shortfall of 8.98% against the target of 90% for the period 2010 to 2019. Of note 67% of misses were by less than 60 seconds.</p> <p>The Sebastopol Fire Brigade and surrounding network of Brigades continue to work on meeting SDS requirements within the Sebastopol SDA.</p>	<p>Station access improvements are underway that will improve the timeliness of response.</p> <p>An upgrade of the Sebastopol pumper to the Scania will provide better response acceleration and equipment to allow for the anticipated improvement to SDS.</p> <p>The Brigade is undertaking targeted volunteer recruitment, with the priority being those in the streets surrounding the station and those able to supplement daytime response. Targeted volunteer training will ensure expedient transition of new recruits to operational duty.</p> <p>The Brigade will also explore a unified approach to fire risk management of protected premises and high-risk industries with FRV, including joint pre-planning and training activities.</p> <p>A more formalised approach to members of other brigades who work in the Sebastopol area being trained/inducted to crew Sebastopol appliances will be implemented.</p>
Bushfire Management Overlay %	4 of 13	<p>The Sebastopol Fire Brigade SDA has 19.8% defined as Bushfire Management Overlay.</p> <p>Due to the legislated FIB arrangements, in addition to the legislative accountability and responsibility of FFMV combined with the bushfire response capability of the Sebastopol Fire Brigade, in addition the requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones the BMO risk is mitigated.</p> <p>A planning permit is required for some types of development to ensure bushfire risk is considered and</p>	

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		passive bushfire protection measures are in place to ensure resilience of the development without the intervention of fire services.	
Total Demand	11 of 13	<p>Reduction in primary fire calls from an average of 60 in the period 2014 to 2019 down to approximately 35 in the period 2020 to 2023.</p> <p>The primary incident types for the Brigade are Fire and Explosion related calls and Good Intent calls, this has remained consistent over time. Since the FDRP data reference period total service demand and call rate has notably fallen lessening total demand.</p> <p>Substantial reduction in assignment area in 2019 due to the establishment of FRV's Lucas Fire Brigade (Station 68) has already reduced Sebastopol's primary response area, including the area south of the Glenelg Highway across to Bonshaw. The station assignment area for FRV Station 67 was formalised and gazetted during Fire Services Reform in 2019. In effect the Sebastopol Brigade has already had a boundary adjustment undertaken.</p>	The Sebastopol Brigade, with the assistance of the District Office will embark on a refreshed approach to working with the owners and occupiers of to protected premises with the aim of reducing the instances of False Alarms and False Calls.
Victorian Planning Authority %	3 of 13	<p>Sebastopol Brigade SDA is a well-established area. Residential and commercial designated planning areas are well established and developed.</p> <p>Changes in developmental risks will be limited to designated RGZ which totals 419 hectares (or 27% of the SDA).</p> <p>Sebastopol Fire Brigade resource capability of a pumper and tanker combined with the long-established protocol of joint response from FRV and surrounding brigades as a response network, delivers the complementary fire</p>	To continue to maintain a low count of fire fatalities within the Sebastopol Fire Brigade SDA, in consideration to the extent of social disadvantage and disability, a targeted program will be undertaken to increase the participation of carers and support persons in the joint CFA/FRV Prevent – Detect – Escape Program.

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		<p>services model and is considered sufficient to treat the current residential and industrial risk including the RGZ.</p> <p>There is a large number of the population within rented properties (38%). The level of rental housing has led to proliferation of mandated working (checked) smoke alarms which is anticipated to have contributed to the significantly low number of fire fatalities. This has resulted in a better outcome in the Sebastopol Fire Brigade SDA (no preventable fire fatalities since 2010) than would otherwise be seen in more rural and urban areas across Victoria.</p>	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio (VCTC)	9 of 13	See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.	
Building fire casualty to total building fire ratio (BCTC)	7 of 13	The Sebastopol Brigade SDA has had no preventable structure/building fire fatalities and no non-preventable (deliberate) fatalities since 2010. The ranking of the Sebastopol Brigade on this ratio may be a data error.	To continue to maintain a low count of fire fatalities within the Sebastopol Fire Brigade SDA, in consideration to the extent of social disadvantage and disability, a targeted program will be undertaken to increase the participation of carers and support persons in the joint CFA/FRV Prevent – Detect – Escape Program.
Population projections	12 of 13	Between 2016 and 2021 there has been an overall population change of 1,379 or 11% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells). The local government area forecast seven-year population change is an increase of 14% or 15,180. CFA considers the current capability and capacity of Sebastopol Brigade complemented by the proposed additional actions address the risk presented by forecast population growth.	

Table 11: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Wendouree	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Typical traffic Friday 13:00

Typical traffic Figure 2: Friday 18:00

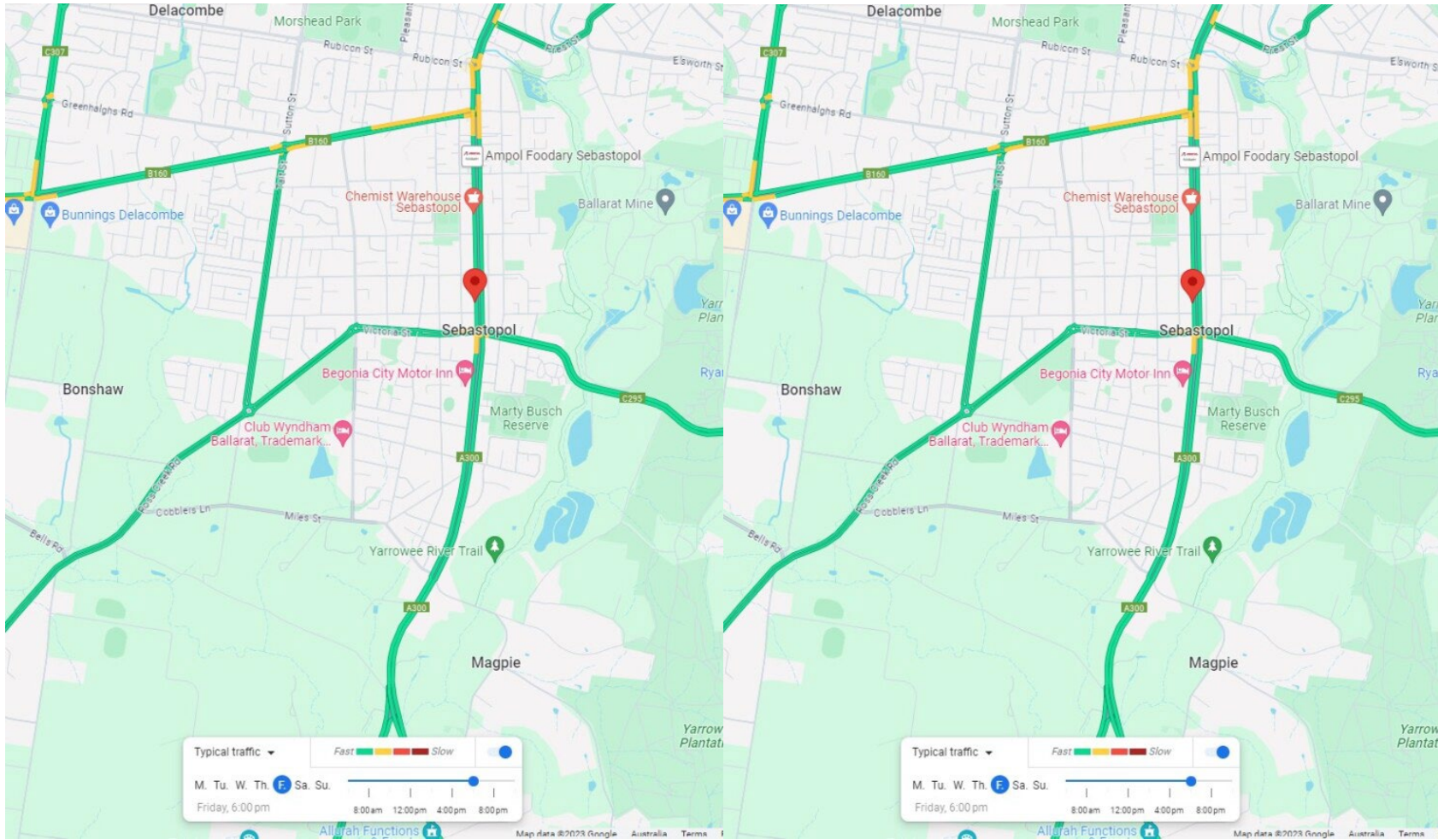
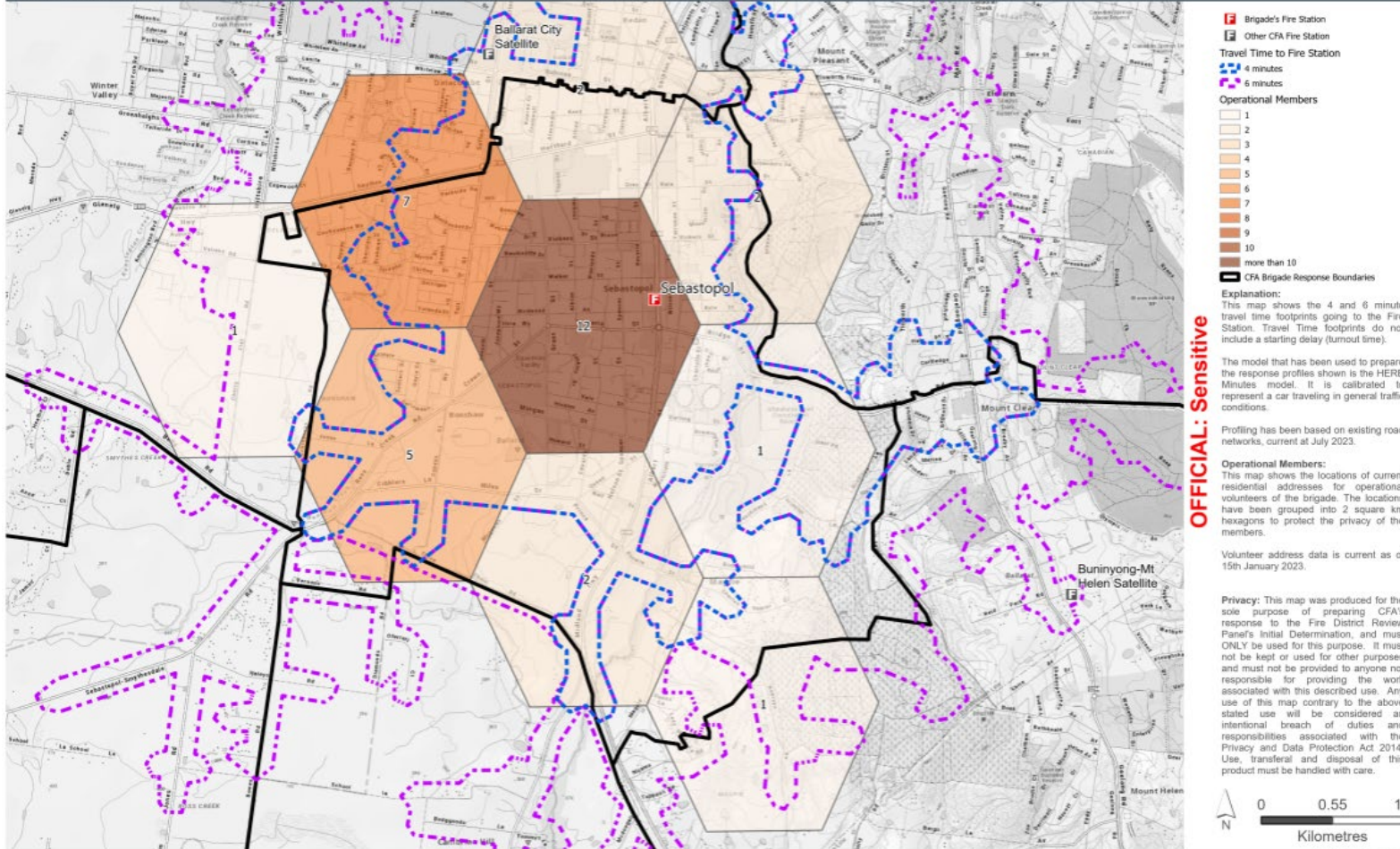


Figure 3: Sebastopol operational member locations

Sebastopol Operational Members and Travel Time to their Fire Station

This maps shows the location of Sebastopol's operational members, grouped into 2 square km hexagons. It also shows the travel time to the Sebastopol Fire Station, based on driving in a car under normal road rules.



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Disclaimer: This map is a snapshot generated from Victorian Government data as well as data from various other sources. This does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

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 Job ID: RNM FDRP
 Date Prepared: 20/10/2023

Figure 4: Incident count and type of support provided in the FRV Fire District

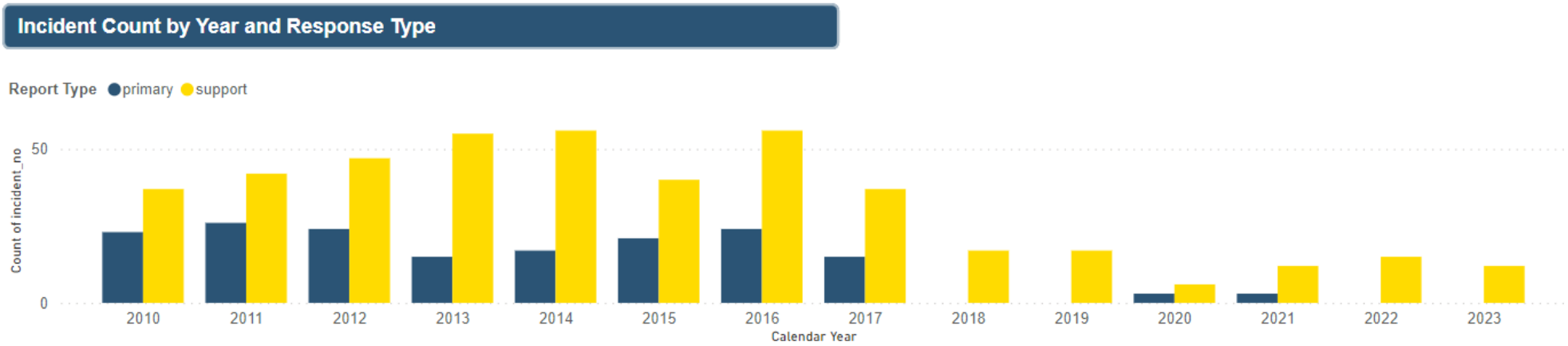


Figure 5: Incident count and type of support provided in the FRV station footprint

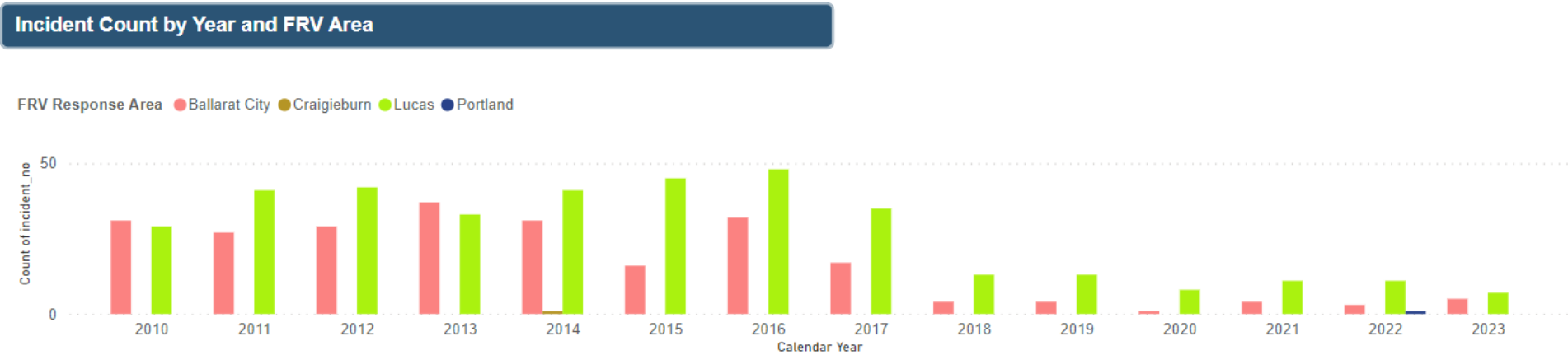


Figure 6: Community safety and intervention programs

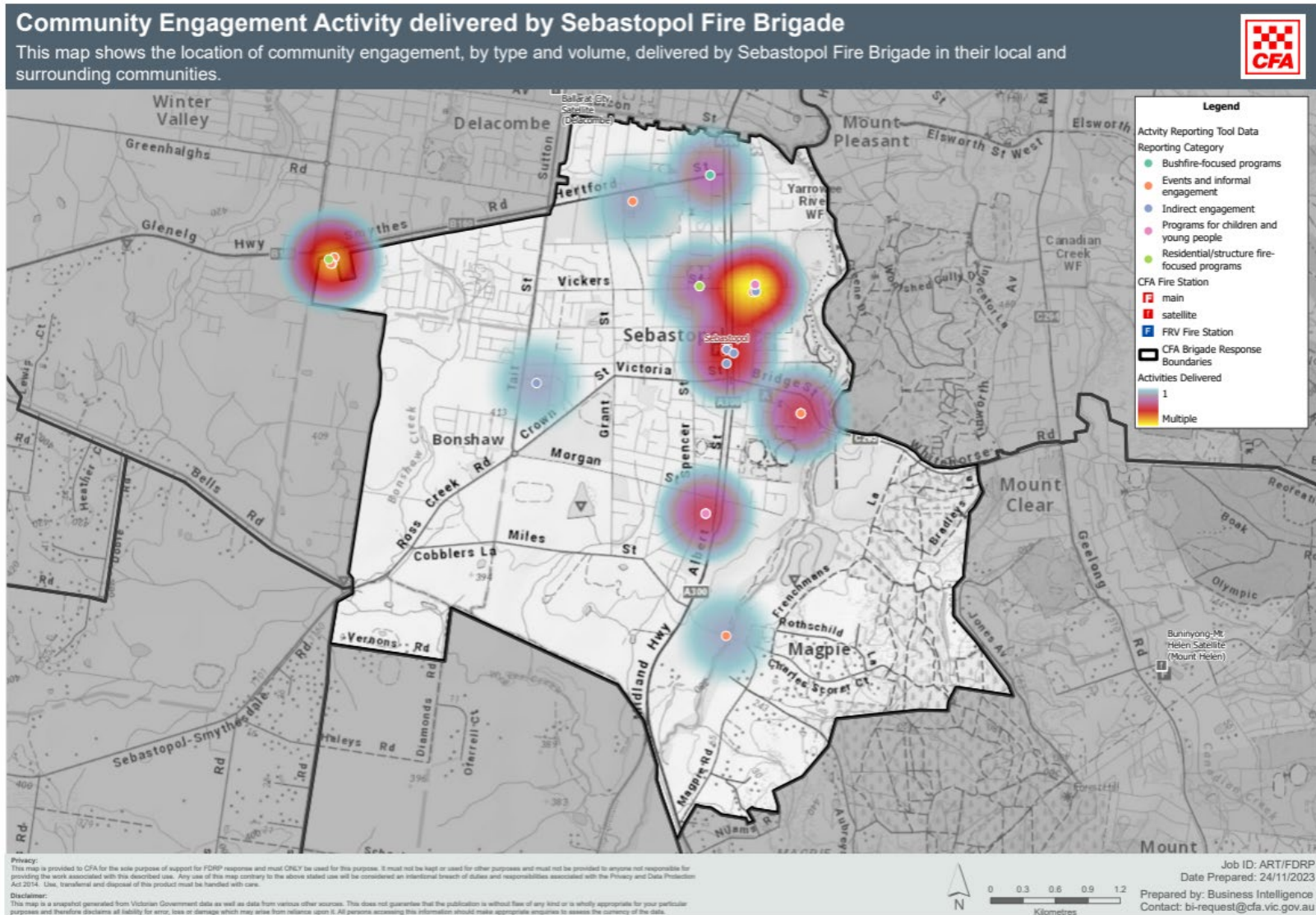


Figure 7: ABS land use areas and BMO

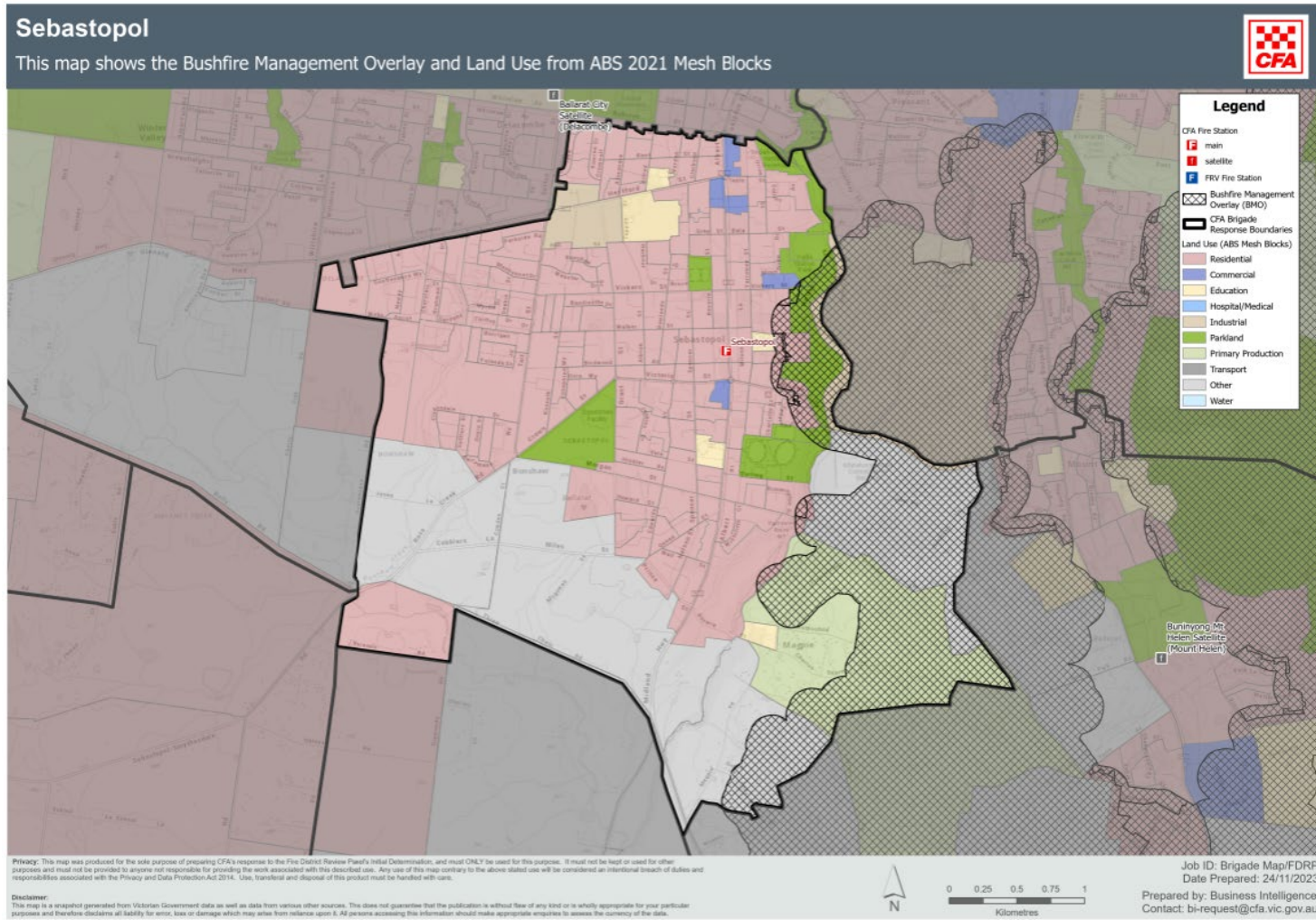


Figure 8: Planned growth zones from the planning scheme for Sebastopol SDA

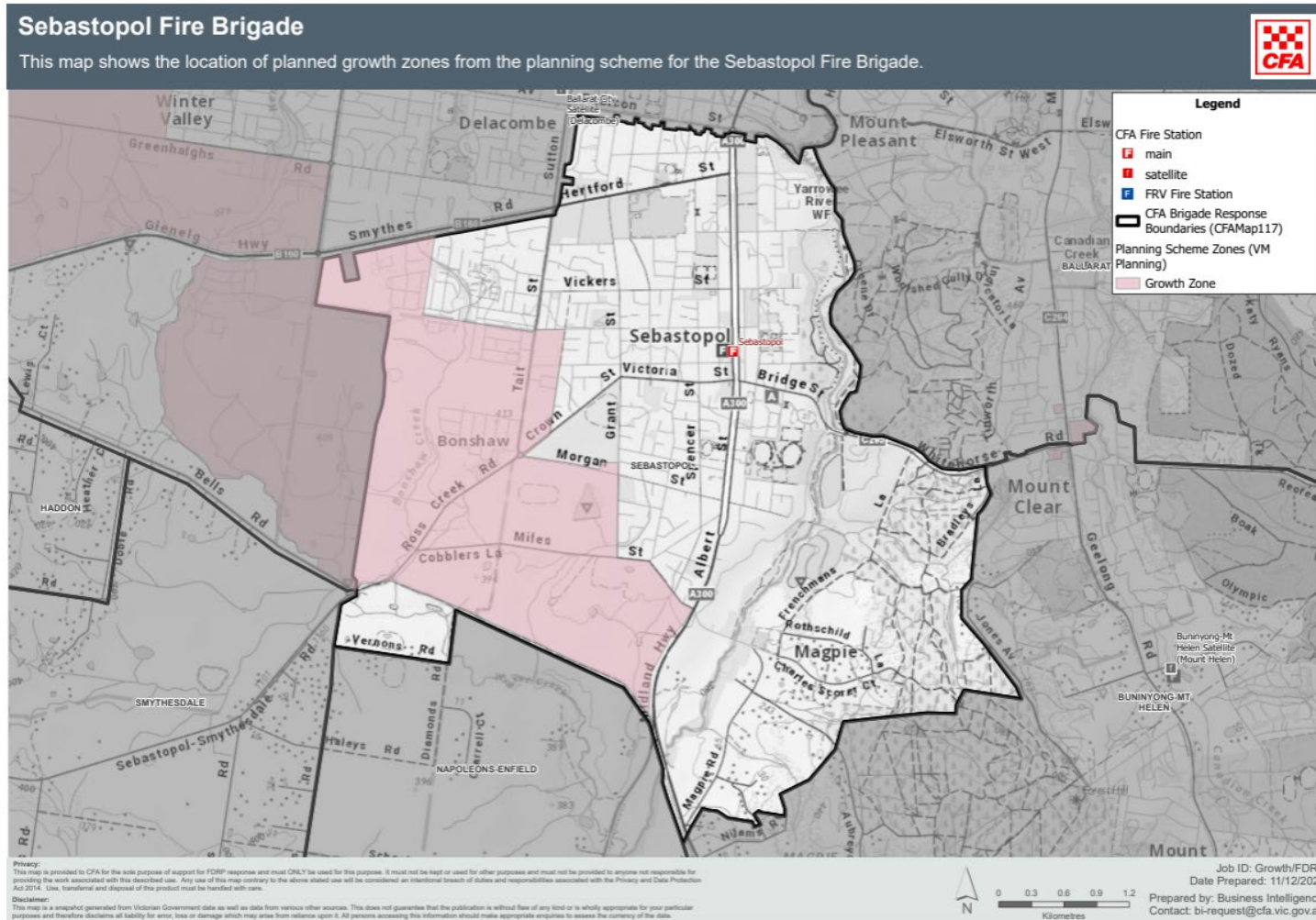


Figure 9: Public land management information

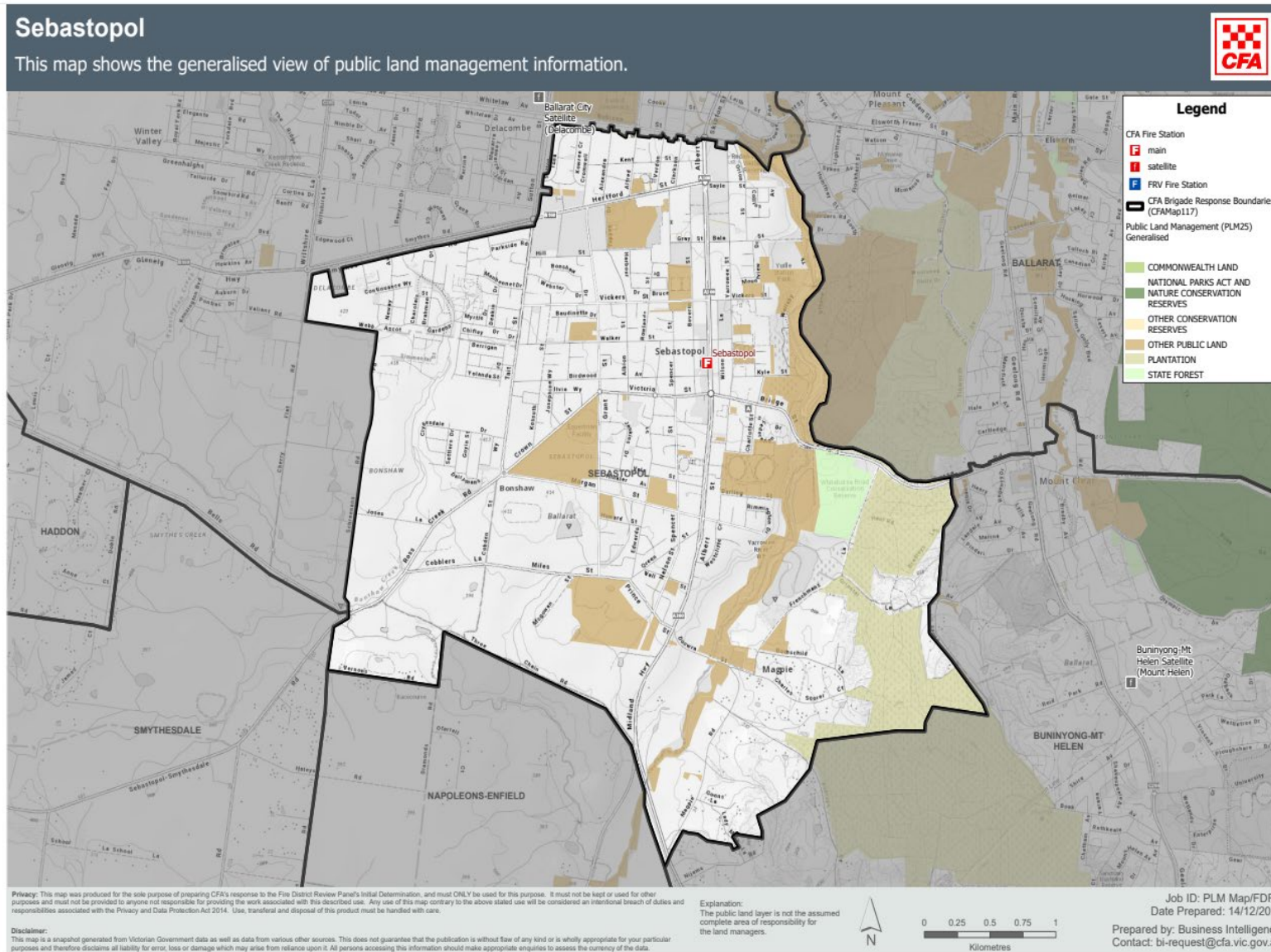


Figure 10: Sebastopol Brigade incident count by type 1 January 2010 - 18 December 2023

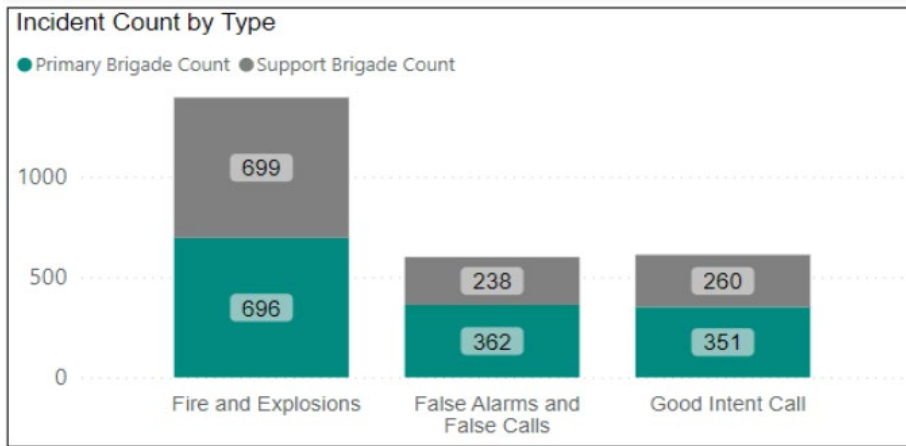


Figure 11: Sebastopol Brigade incident count by month 1 January 2010 - 18 December 2023

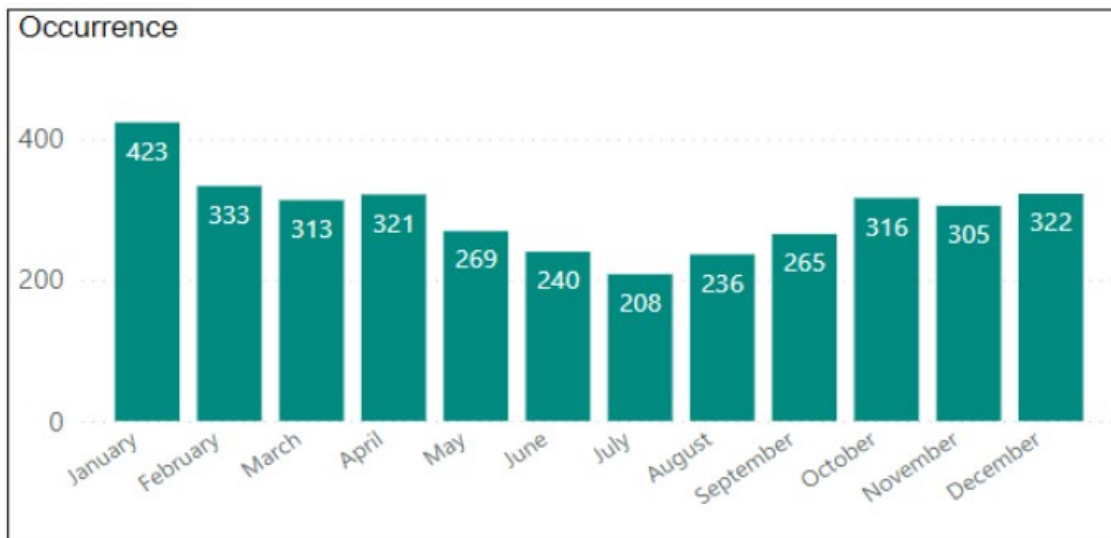


Figure 12: Sebastopol Brigade incident count by type by year 2010 - 2023

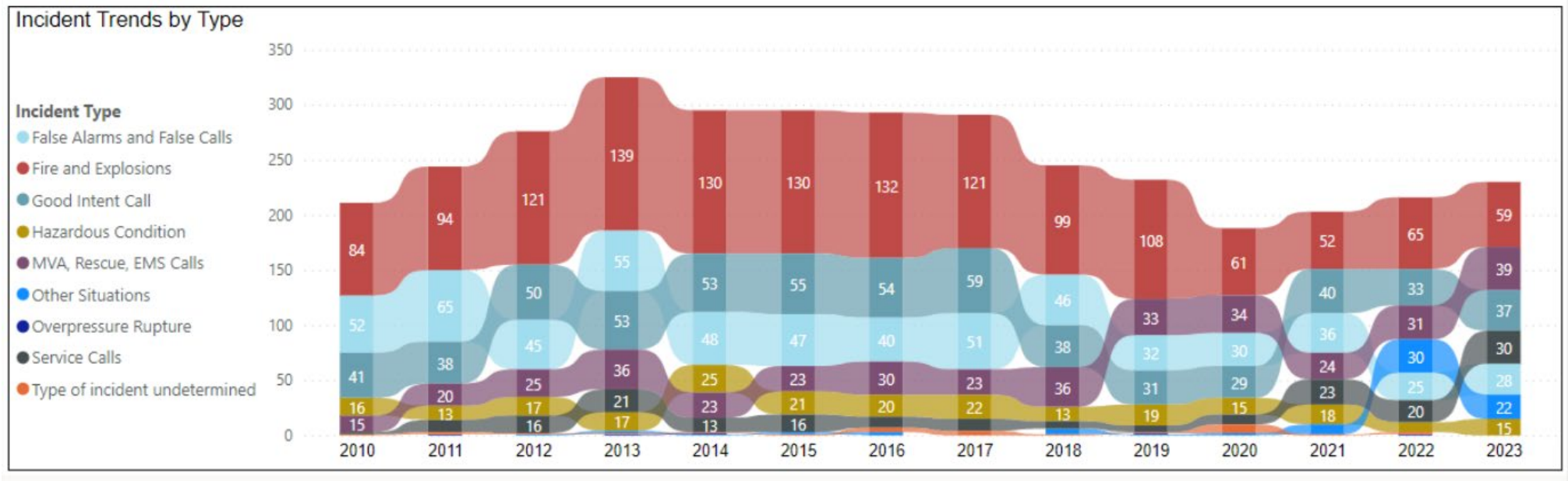


Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes

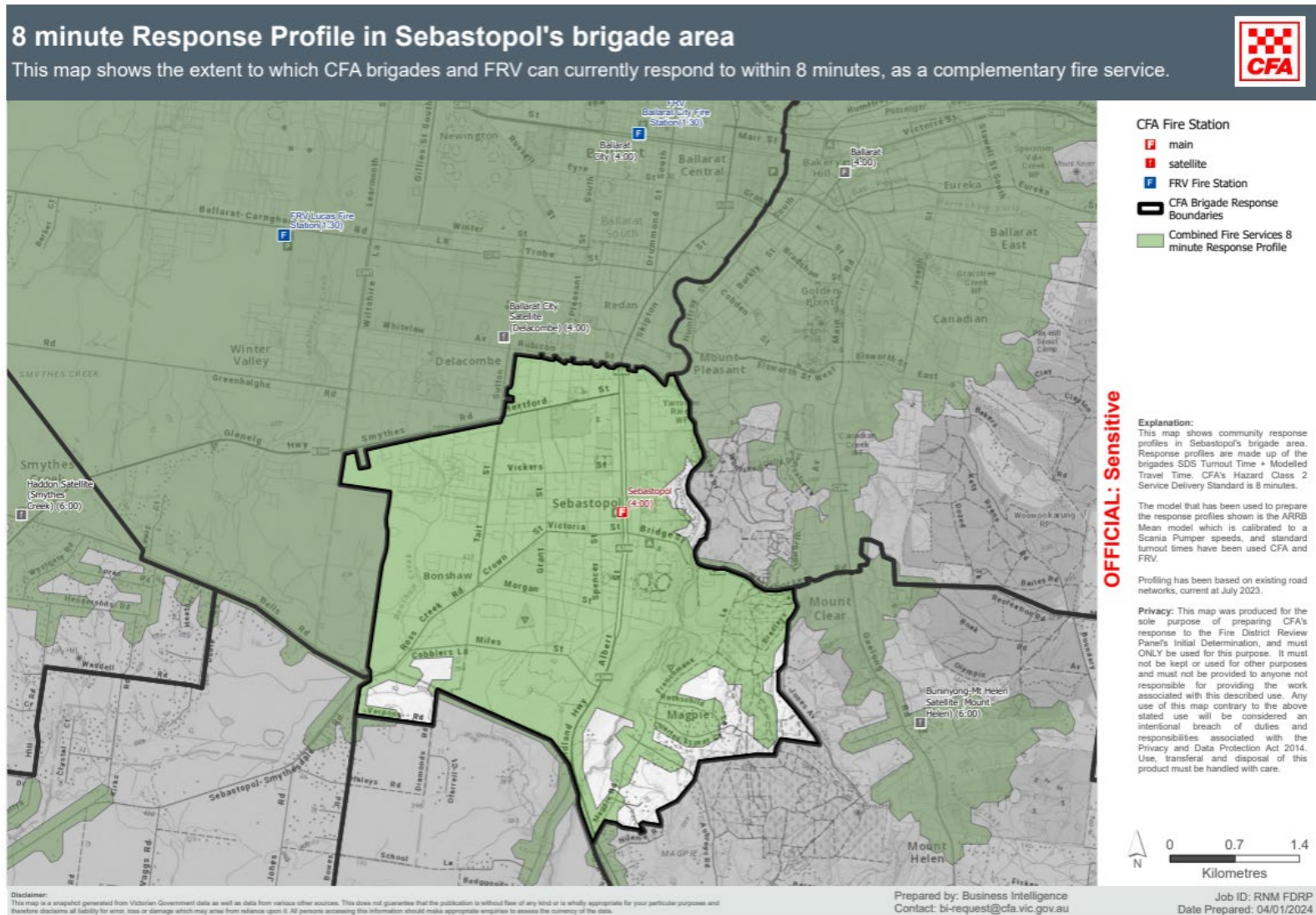
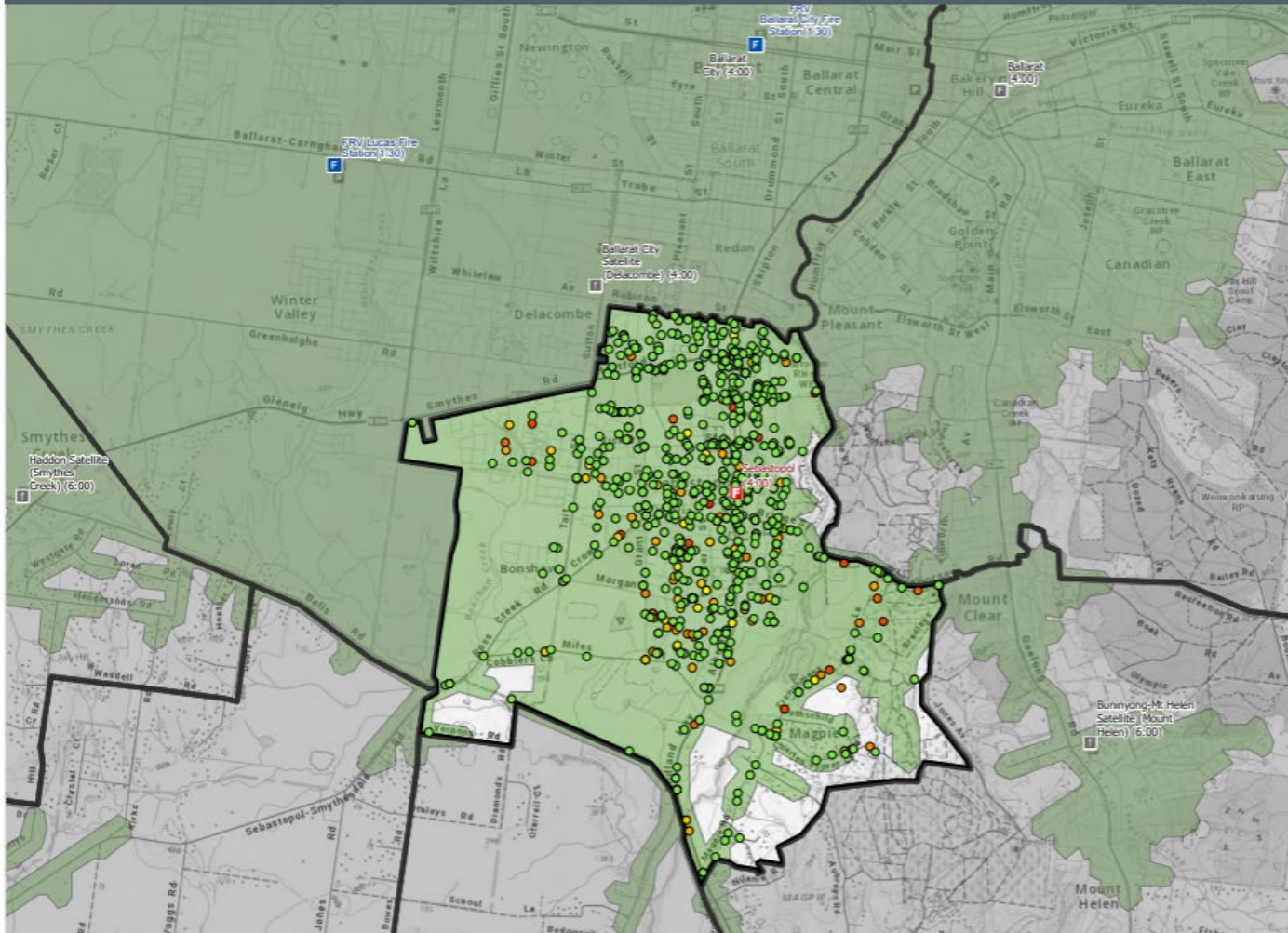


Figure 14: SDS compliance for the Sebastopol Brigade SDA 2010 - 2019

8 minute Response Profile and Emergency Incidents in Sebastopol's brigade area

This map shows the extent to which CFA brigades and FRV can currently respond to within 8 minutes, as a complementary fire service. It also shows the location of emergency incidents from 2010 to 2019, where the time target was met or not met by either fire service.



- CFA Fire Station
 - main
 - satellite
 - FRV Fire Station
- Emergency Incidents (2010-19)
 - Community SDS pass
- Community SDS missed by
 - 0:01-0:15
 - 0:15-0:30
 - 0:30-1:00
 - 1:01-2:00
 - 2:01-3:00
 - 3:01-6:00
 - 6:01-10:00
 - >10:00
- CFA Brigade Response Boundaries
- Combined Fire Services 8 minute Response Profile

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Explanation:
This map shows community response profiles in Sebastopol's brigade area. Response profiles are made up of the brigade's SDS Turnout Time + Modelled Travel Time. CFA's Hazard Class 2 Service Delivery Standard is 8 minutes.

The model that has been used to prepare the response profiles shown is the ARRB Mean model which is calibrated to a Scania Pumper speeds, and standard turnout times have been used CFA and FRV.

Profiling has been based on existing road networks, current at July 2023.

Incidents are from 1/1/2010 to 31/12/2019, and are filter by the CFA's public reporting rules.

Privacy: This map was produced for the sole purpose of preparing CFA's response to the Fire District Review Panel's Initial Determination, and must ONLY be used for this purpose. It must not be kept or used for other purposes and must not be provided to anyone not responsible for providing the work associated with this described use. Any use of this map contrary to the above stated use will be considered an intentional breach of duties and responsibilities associated with the Privacy and Data Protection Act 2014. Use, transferal and disposal of this product must be handled with care.



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Date Prepared: 04/01/2024

Wendouree Fire Brigade

1. About the Brigade

Wendouree Fire Brigade is a Class 5 Brigade within the Eureka Group located in District 15 of West Region. The Brigade has a total membership of 70 volunteers (as at 31 December 2023), including a Junior Urban Competition Team that actively supports youth entry to senior membership of CFA.

1.1 History

Wendouree Fire Brigade was first established in February 1913 with a station located on Howitt Street. In 1923 a new fire station was built adjoining the Wendouree Primary School and this became the Brigade's home until 1932. In that year, the then Country Fire Brigades' Board disbanded the Brigade, and some others, due to the financial impact of the Great Depression. After World War II the expansion of local industry and the need for housing saw Wendouree transform from farmland (with only a local hotel and shop) into an expanding suburb. The 1956 Olympic Village built west of Gillies Street became a social housing complex which helped build the case to re-establish a fire brigade for Wendouree. The work of a foundation member, then CFA Assistant Chief Officer Wally Crompton, and strong support from the Shire of Ballarat, saw the Wendouree Fire Brigade reformed in September 1960. A new station was built in Gillies Street, opposite the monastery on land owned by the Shire of Ballarat. In 1992 the Wendouree Fire Brigade station moved to its current site of Learmonth Road.

1.2 Context

Wendouree Fire Brigade primarily services the Ballarat suburbs of Wendouree, Mitchell Park and Lake Gardens, which mostly encompasses the north-western corner of Ballarat. The Brigade responds to a range of emergency events including structural fires (residential and industrial), bushfires and grassfires, incidents at alarmed premises, hazardous materials calls, and motor vehicle accidents. The Brigade responds to approximately 350 incidents per year and provides a specialist response with the operation of the Forward Operation Vehicle.

There has been a steady reduction of industrial fires due to demolition of older industrial sites and construction of newer buildings with improved fire safety features, upgrading of fire detection, alert and suppression systems in established industries and significant improvements in occupational health and safety practices and regulation. This is reflected in a reduced percentage of False Alarm calls (comprising on average 36% of all calls per year for the period 2000 to 2019; and only 23% of all calls in the first half of 2023). Rapid re-development of social housing especially in the west of the Brigade's SDA, the demolition or renovation of older housing stock and improvements in construction methods have all contributed to reducing numbers of residential fire incidents (comprising on average 37% of all calls per year for the period 2000 to 2019; and only 26% of all calls being Fires and Explosions in the first half of 2023).

CFA members have a unique ability to support communities and empower them to be fire ready. As well as being a trusted authority on fire safety, members are part of the communities they serve. The dedicated Brigade Community Safety Coordinator is part of the Brigade Management Team. Members of Wendouree Fire Brigade have several regular community engagement activities including Fire Safe Kids Program and school visits; attending local markets and sporting events; community agency open days; targeted visits to vulnerable community members; community letter drops with fire safety messaging; participating in multi-agency events; and supporting Santa runs and Very Special Kids Christmas events. The Brigade has an active social media presence targeting fire safety messaging in various campaigns throughout the year. The Brigade's annual calendar always prominently features community safety messaging and the distribution of more than 5,000 calendars to households and businesses in

the Wendouree assignment area provides an excellent opportunity for face to face contact and engagement with community members. The Brigade also responds to direct requests from the community for involvement in a range of ad hoc activities and events.

Wendouree Fire Brigade is part of the Eureka Group of brigades located in District 15, which also comprises the Ballarat, Sebastopol, Ballarat City and Buninyong Fire Brigades. Together these brigades provide a collective fire service to Ballarat and surrounding areas alongside FRV's Station 67 and Station 68. Although they are treated as individual entities by the review panel process, it is important to note that CFA Fire Brigades, organised as they are in a group structure, are able to work readily together to effectively and efficiently form strike teams and support response across their district, region and the state. Wendouree, Ballarat, and Sebastopol Fire Brigades are all key contributors to the Eureka Group. In addition, Wendouree has actively fostered a close relationship with its neighbouring Ballarat Group providing structural firefighting and wildfire support.

Wendouree is a viable, fully functioning urban fire brigade with a strong and reliable membership base and a proud tradition of dedicated, voluntary service. Members across time have come from diverse backgrounds with unique perspectives and opinions – teachers, bus drivers, police officers, factory workers, business owners, students, IT specialists, health care workers, career firefighters, mechanics, full time carers, trades and those not in paid employment. The one thing that unites the Wendouree Fire Brigade members is giving their time and skilled effort to protect and support their community.

2. Brigade Capability Snapshot

2.1 Membership

The Wendouree Fire Brigade has a total membership of 70 members (20 females and 50 males). The Brigade has a good range of experienced and newer brigade members with the majority of the membership aged 40 years or younger.

2.2 Fire appliances, other vehicles and specialist equipment

The Wendouree Fire Brigade has five appliances and other vehicles to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Wendouree Brigade alone.

Table 1: Fire appliances and vehicles available to the Wendouree Brigade

Vehicle	Vehicle Make	Age
Pumper	Isuzu	19 years
Tanker	Iveco	4 years
Forward Operations Vehicle	Mercedes Benz	11 years
Bus	Toyota Coaster	11 years
Support vehicle	Toyota Hilux	7 years

Table 2: Vehicle specification

Pumper	Carrying six firefighters, 2,000 litres of water and 3,500 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, gas suits, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage, monitors and foam equipment.
Tanker	Carrying five firefighters 4,000 litres of water, 1,200 lpm pump, BA, hoses and adaptors, chainsaw and foam equipment
Forward Operations Vehicle	Mobile command centre with capability to operate in remote locations off grid. Includes radio and telephony communications systems, IT equipment including computers and multi-function printer/scanner. This is the only vehicle of its type in CFA's West Region.
Support Vehicle	Crew cab vehicle for personnel transport and fire ground support.
Bus	Standard 20 seater passenger bus used for crew transportation.

2.3 Station Location

The station is located at 82 Learmonth Rd, Wendouree. Constructed in 1992, the station is located on a major thoroughfare in a commercial part of Wendouree. It comprises four drive through vehicle bays, meeting facilities, communications room, workshop and hardstand area for drills. Reflecting its commitment to improving station facilities, the Brigade raised funds to improve infrastructure and amenities, including the addition of a four-bay shed in the rear yard in 2018. The plan is to develop workshop facilities in the shed and then upgrade the station to include change rooms (for members to don and doff personal protective clothing) and office space. This will serve as a business hub for members who can undertake their paid work from the station, supporting more rapid response to fire calls during the day and evenings.

Wendouree Fire Station is located very close to the intersection of three major arterial roads and a level crossing on the Melbourne to Ararat railway line. Access to the station and egress from the station is hampered by the high traffic volumes in this area. The table below shows average vehicle movements per day¹⁷.

Table 3: Average vehicle movements per day

Location	Road Classification	Two Way Traffic Volume	Year Captured
Learmonth Road Wendouree	Arterial	19,000 vehicles per day	2020
Gillies Street Wendouree	Arterial	22,000 vehicles per day	2020
Howitt Street Wendouree	Arterial	20,000 vehicles per day	2020

This same traffic congestion point and nearby rail crossing impact response times of assisting FRV resources from Ballarat City (Station 67) and Lucas (Station 68).

The day of week and time of that day for traffic congestion analysis for the Wendouree Brigade has been determined by the day of the week that there are the most incidents and what time of that day do the most incidents occur. For Wendouree these are Fridays at 19:00 (Figure 1) and Saturdays at 17:00 (Figure 2).

¹⁷ Data Vic

Figure 1: Typical traffic Friday 19:00

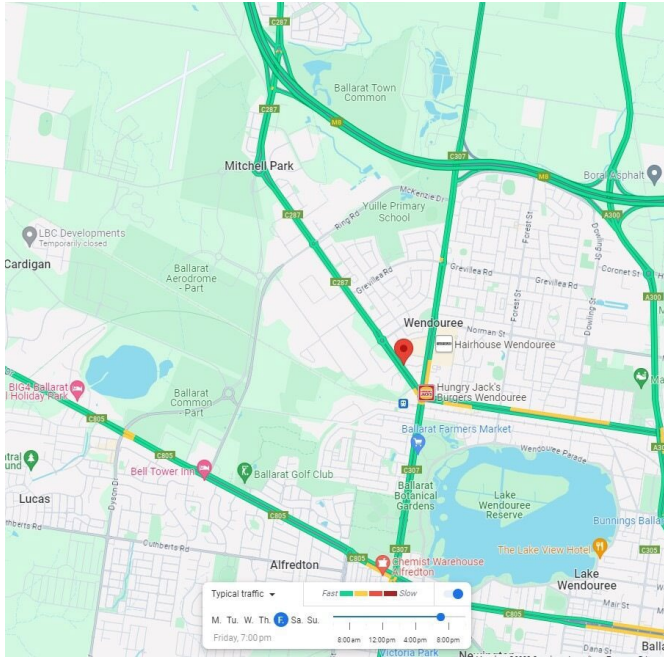
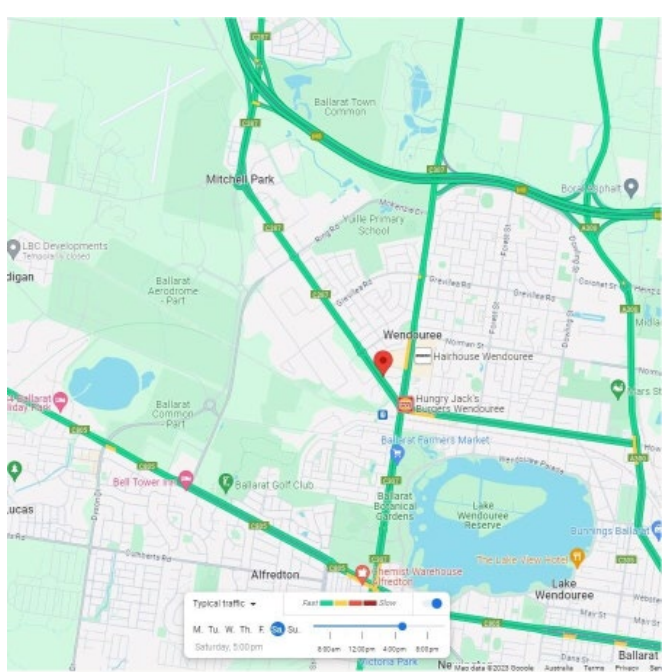
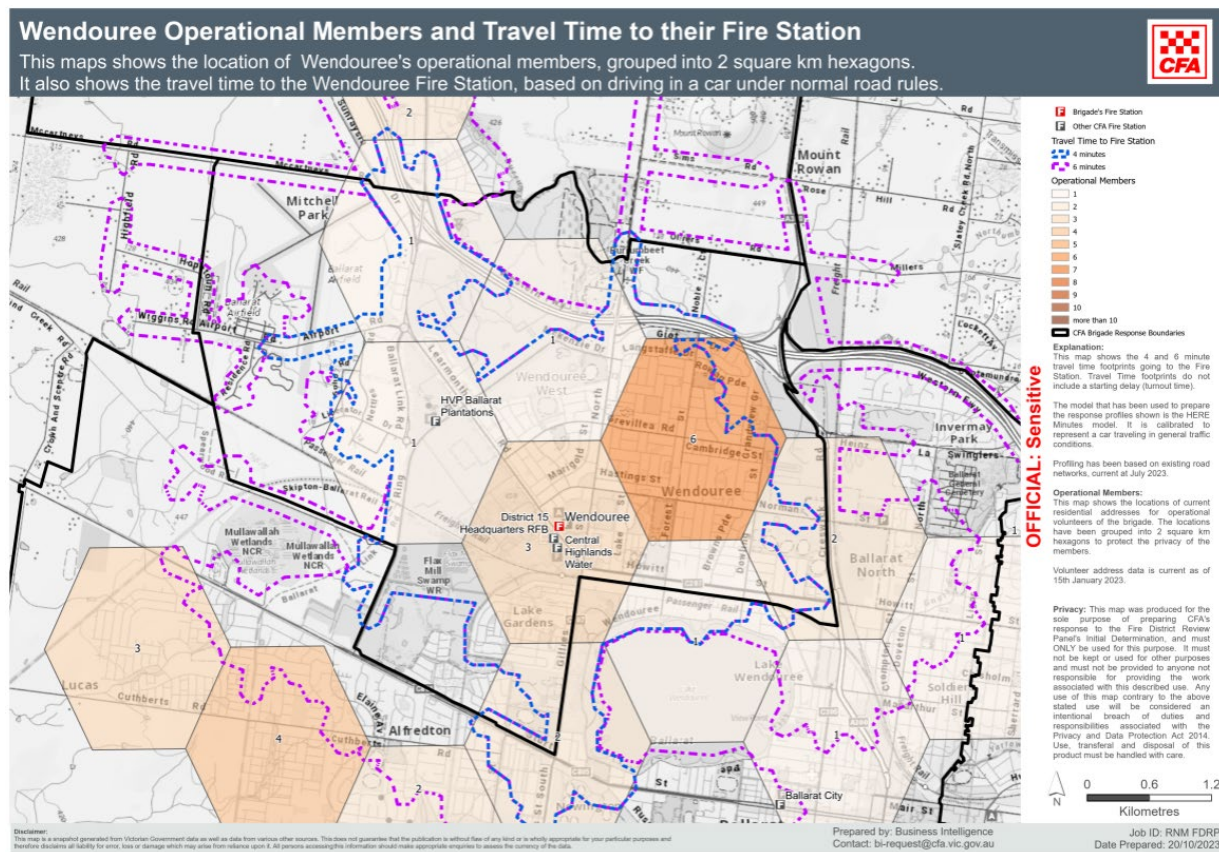


Figure 2: Typical traffic Saturday 17:00



The analysis below of the home location of responding Wendouree Brigade members within a four to six minute travel time (under normal road conditions) indicate sufficient resources to ensure the rapid mobilisation of volunteers to station upon activation (Figure 3). However, traffic congestion impacts the capacity of Wendouree members to travel to the fire station.

Figure 3: Operational members location and travel times



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only has use across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state’s resources in both the CAoV and the FRV Fire District. In particular for Wendouree surge and support capacity is provided in the following ways:

- bushfires: As part of Eureka Group, Wendouree is included in the District 15 default first response strike team to significant fires within the district and to other regions and interstate
- structure fires: An automatic response to structure fires in neighboring rural towns and the capacity to support pumper strike teams to significant structure fires as well as township protection when those are under direct threat of bushfire
- consistently crewing vehicles as part of extended and campaign operations
- logistical support using the Brigade’s bus
- support to District 15 Aircraft Re-Loading Crew (bomber re-loading)
- forward Operations Vehicle responding to significant events
- training support: Wendouree station is frequently used by CFA and other agencies as a training venue. Wendouree also supports other brigades and members with specialised training in structural firefighting and FOV operations.

2.5 Assistance to Fire Rescue Victoria

CFA operates a risk based model for operational response into the Wendouree SDA. This ensures the closest and most appropriate capability is dispatched to fires and emergencies. FRV is part of initial response to fire and emergency calls in the Wendouree SDA, ensuring complementary delivery of fire services to the community.

On 1 July 2020, FRV reduced Wendouree Fire Brigade responses into FRV’s primary area and amended long standing support arrangements put in place by CFA prior to Reform. This reduction of Wendouree Fire Brigade responses into the FRV Fire District has reduced demand for services on the Wendouree Fire Brigade and dropped the overall call service rate addressing the demand aspect of the risk identified by the FDRP. Wendouree provides some support into the FRV Fire District but this has reduced over the years. Figure 4 and figure 5 shows the reduction of service demand.

Figure 4: Incident count and type of support provided in the FRV Fire District

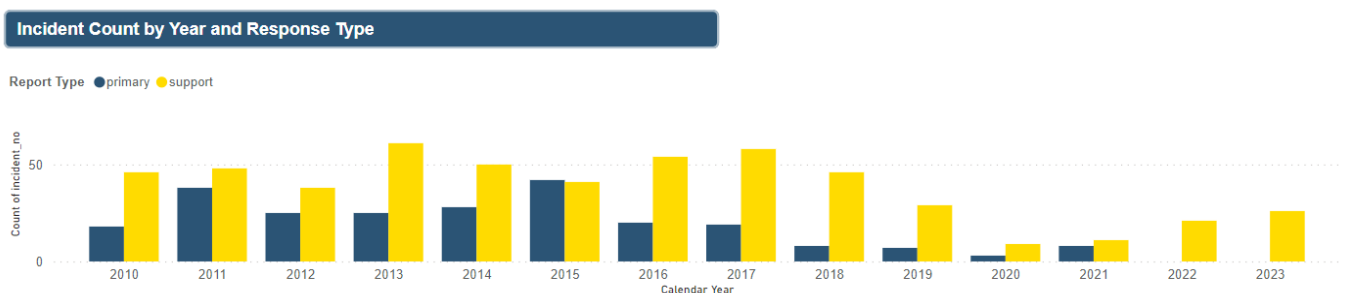
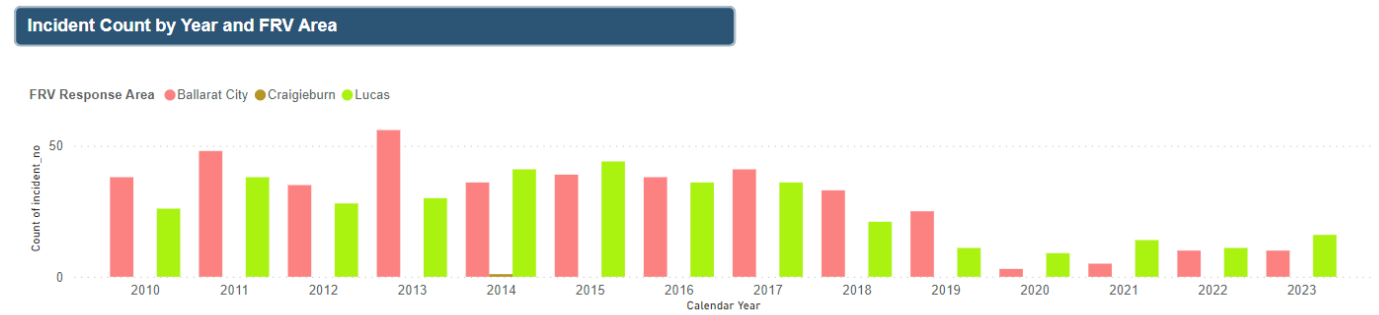


Figure 5: Incident count and type of support provided in the FRV station footprint

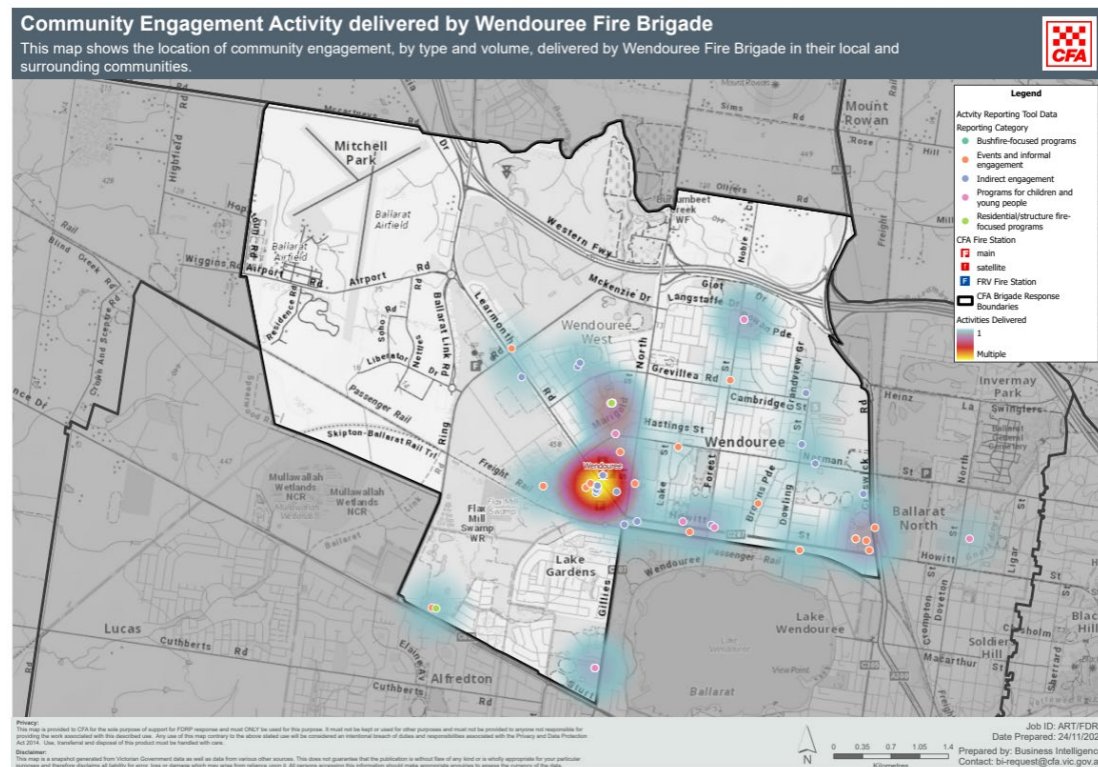


2.6 Community engagement activity

The Wendouree Brigade works directly with the community to support regular prevention and preparedness activities including community fire safety messaging, school visits and direct intervention programs. It has a large number of industrial properties within the SDA. For protected premises and high-risk industry management, experienced brigade members will work with the District Office and these businesses to reduce preventable false alarms and enable early identification and management of fire.

CFA in 2022 implemented a new platform to allow brigades to centrally record community engagement activities to allow better understanding of community fire safety interventions. Brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of interventions. Figure 6 below shows community safety interventions undertaken by the Wendouree Fire Brigade as recorded in the ART system.

Figure 6: Community safety and intervention programs



3. Service Delivery Area Profile

The Wendouree Fire Brigade SDA has a total area of 2,245 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses.

Table 4: Wendouree land use planning areas

Land Use	Hectares	Percentage of Brigade Area
Commercial	39.7	1.8%
Education	57.9	2.6%
Industrial	468.8	20.9%
Other	407.0	18.1%
Parkland	174.1	7.8%
Primary Production	47.8	2.1%
Residential	681.9	30.4%
Transport	367.9	16.4%

A map showing the current land use planning uses and applicable mesh block is shown in Figure 7. Public land management information is shown in Figure 8.

Figure 7: ABS land use areas and BMO

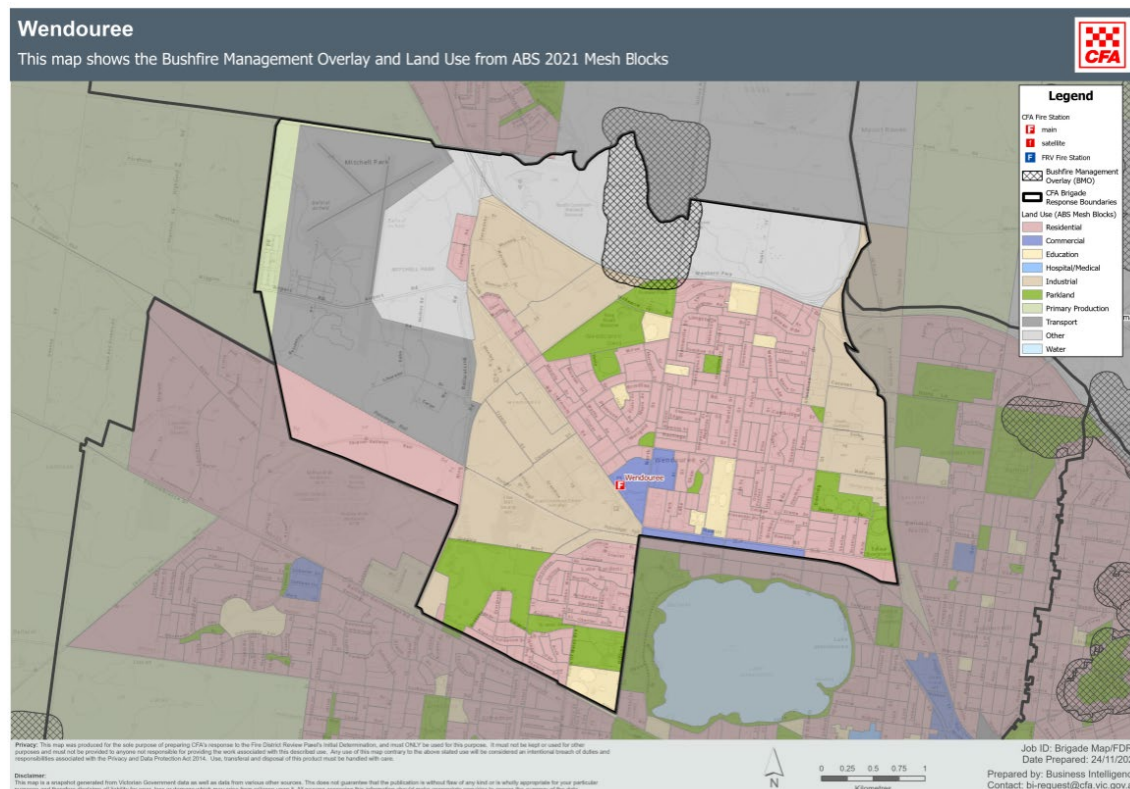
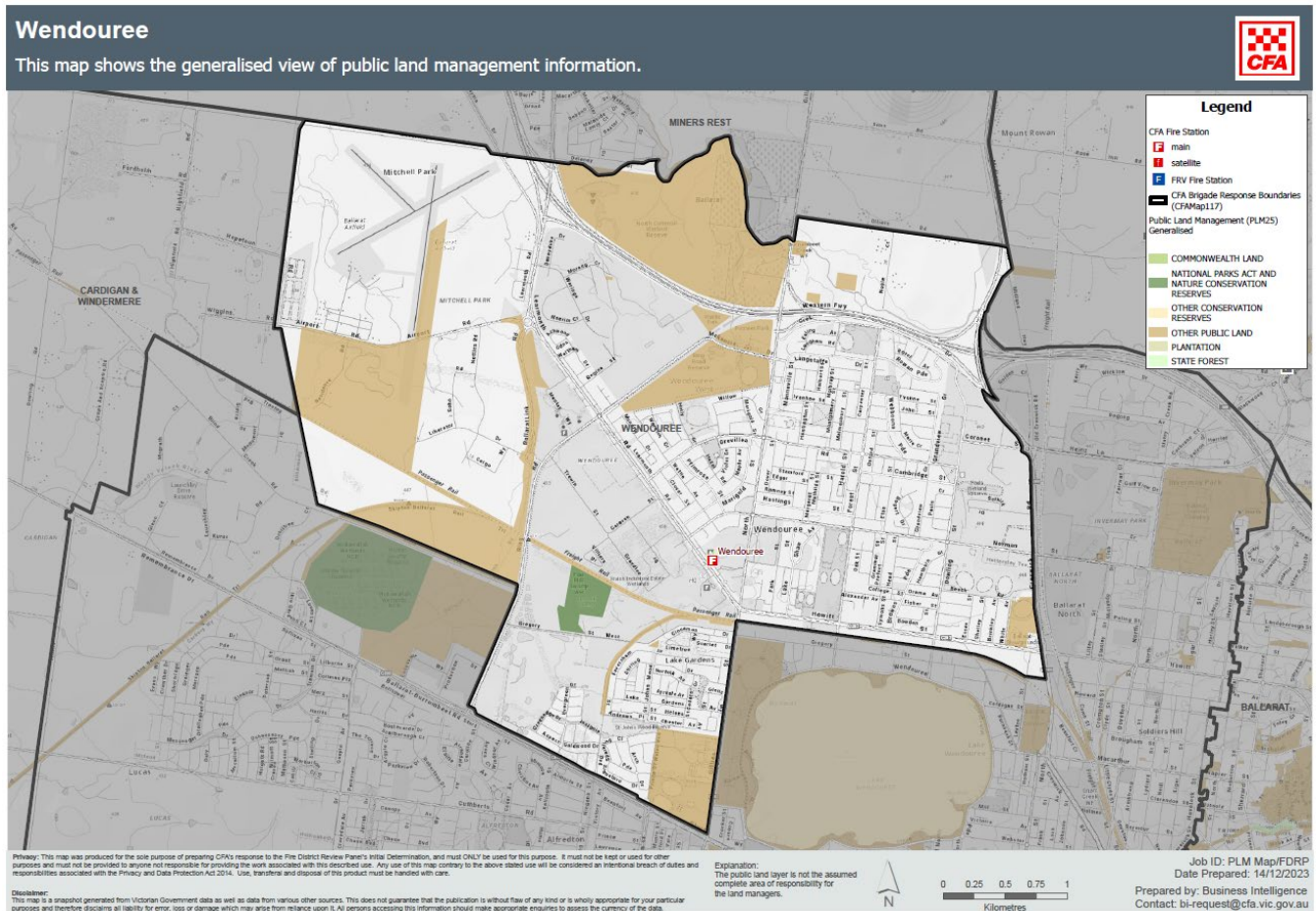


Figure 8: Public land management information



3.1 Growth zones

An analysis of VicPlan, the official mapping platform of the Department of Transport and Planning, shows development is at capacity within all residential zones developed or in the final stages of completion. This indicates that further expansion of residential development is not likely unless a Residential Growth Zone (RGZ) is indicated.

There are three areas within the Wendouree Fire Brigade SDA that are zoned RGZ. The zone closest to the Wendouree Fire Station is currently developed with residential housing with the planning regime change occurring in 2014. The RGZ is considered a substantial change area where medium density housing growth and diversity of housing types is encouraged, for example townhouses and apartments around activity centers and close to train stations. There is also a limited range of non-residential uses allowed to serve local community needs. The other RGZs in the north of the SDA are the existing Ballarat Town Common and the former Wendouree tip. The prospects of increased urbanised residential development outside of the growth zone is unlikely. The areas specified for industrial and commercial zoning appear to be mostly developed with rapid expansion or growth not possible without significant planning regime change.

Figure 9: Planned growth zones from the planning scheme for Wendouree

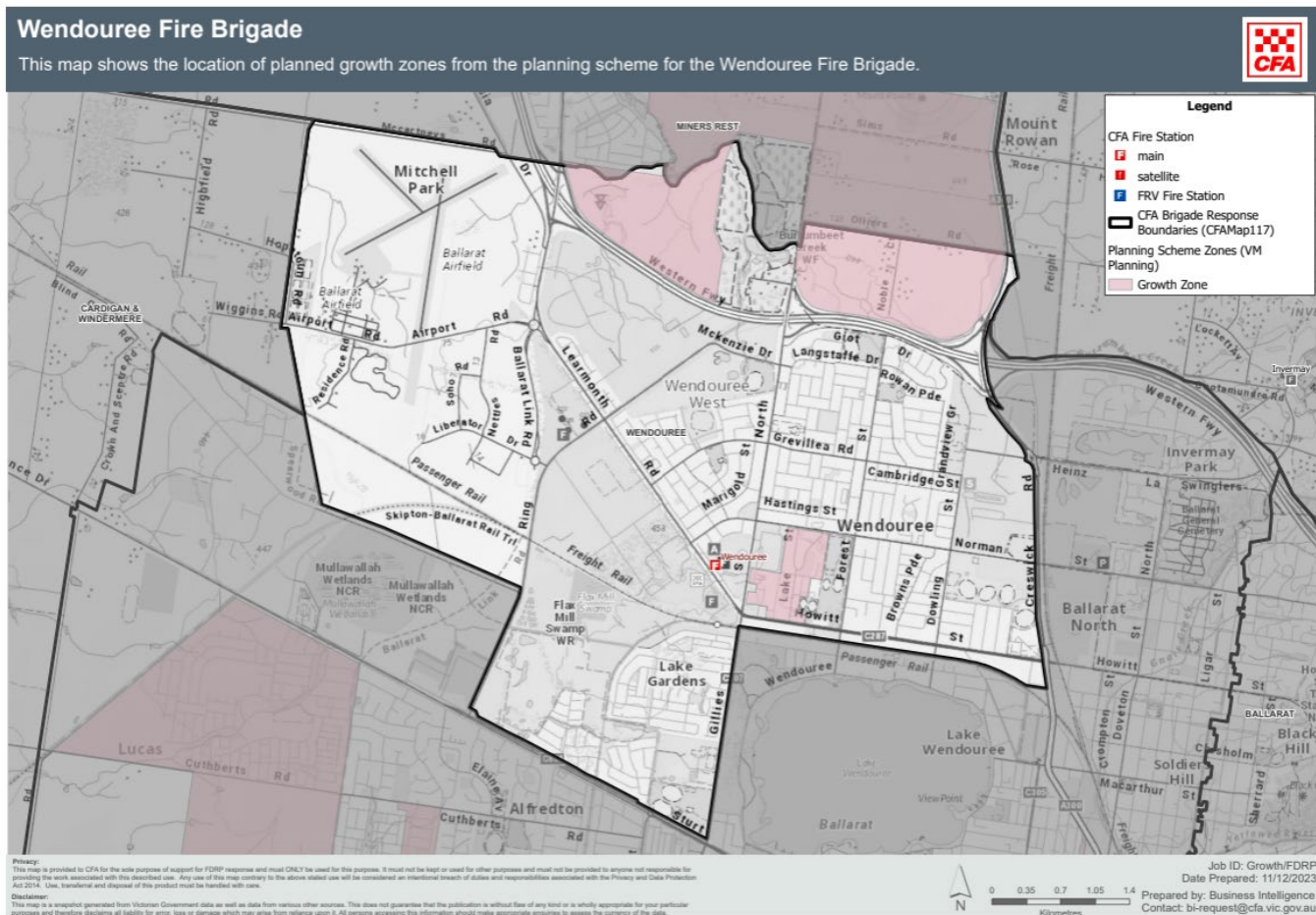


Table 5: Urban growth areas

Total Brigade Area (Hectares)	Area (hectares) covered by Industrial Zones	Area (hectares) covered by Growth Zones	% covered by Industrial Zones	% covered by Growth Zones
2245	402.54	222.24	17.93	10.03

Risk Evaluation:

Wendouree Brigade SDA is an established urban area of Ballarat with limited forecast growth, particularly in the residential areas. Residential and commercial designated planning areas are well established and developed, with the risk unlikely to alter in any significant way in the foreseeable future. Possible changes in developmental risks will be limited to designated three RGZs which account for 10.03% of the total Brigade SDA. One RGZ is already developed. The remaining areas would both require significant planning and community acceptance before any development could proceed.

Risk Mitigation:

Wendouree Fire Brigade primary appliances consisting of a pumper and heavy tanker combined with the long-established protocol of joint response from FRV and surrounding brigades, delivers the risk based and complementary fire services model and is considered sufficient to treat the current residential and industrial risk including the RGZs. The planned upgrade of the Wendouree pumper to a modern Scania appliance will provide better response acceleration and equipment and support continued improved service delivery.

3.2 Bushfire Management Overlay

The Wendouree Fire Brigade SDA has areas of 88.6 hectares defined as BMO (Figure 7 above). This equates to 3.95% of the SDA and is predominantly managed grasslands and plantation. A planning permit is required for some types of development to ensure bushfire risk is considered and passive bushfire protection measures are in place to ensure resilience of the development without the intervention of fire services.

Central Highlands Water established a Forestry Industry Brigade (FIB) number 15170. Forestry Industry Brigades are required to be established under the Country Fire Authority Act 1958 and Regulation 2014 when a forestry land mass exceeds the prescribed holding. The Central Highlands Water FIB has legislated responsibility for the prevention, suppression and mitigation of the land parcel subject to the BMO, supported by Wendouree Fire Brigade.

Risk Mitigation:

Due to the legislated FIB arrangements, combined with the bushfire response capability of the Wendouree Fire Brigade, and the requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones, the BMO risk is sufficiently mitigated.

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population change of 424 or 3% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS SA1 collection grid cells).

For the local government area as a whole (City of Ballarat) the forecast seven year population increase is 14% or 15,180. Population growth in Wendouree will be limited and the projected growth corridors for the City of Ballarat are unlikely to be in the Wendouree Brigade SDA.

ABS Index of Relative Socio-economic Disadvantage (2021) shows a Statistical Area Level 1 to be at SEIFA decile 1 (most disadvantaged), which includes the Wendouree Brigade SDA and surrounding areas. The Brigade's responses to addressing this risk are limited to that portion of the SA1 that falls within the Wendouree SDA.

ABS census data (2021) shows that there are 5,983 dwellings in the Wendouree Brigade SDA. Of these dwellings, 38% are rental houses. The rental housing stock includes a significant proportion (17.78%) that is state owned. As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair¹⁸.

CFA and FRV have collaborated to create the Prevent – Detect – Escape Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability. There have been 34 community members undertake the Prevent – Detect – Escape Program in the Wendouree Fire Brigade SDA.

¹⁸ <https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/keeping-the-property-safe/smoke-alarms-and-fire-safety#:~:text=The%20rental%20provider%20must%20ensure%20smoke%20alarms%3A%201,are%20repaired%20or%20replaced%20as%20an%20urgent%20repair.>

Risk Evaluation:

The predominate aspect of disadvantage in Wendouree is an aging population. Aging is associated with increasing disability and age-related disadvantage is associated with diminished retirement incomes. Over time the aging population will shift as younger people occupy the housing stock. Regarding fire safety interventions, there is a large component of the population within rented properties (38%) of which 17.78% is state owed and maintained. The level of rental housing has led to a proliferation of mandated working (checked) smoke alarms, which is anticipated to have contributed to the outcome of only one preventable fire fatality in the Wendouree SDA since 2010. Community engagement activities undertaken by the Wendouree Fire Brigade allow for significant mitigation of risk elements identified in both residential fire and social disadvantage risk.

Risk Mitigation Action:

To continue to maintain a low count of fire fatalities within the Wendouree Fire Brigade SDA, and in consideration of the extent of social disadvantage and disability, focus will be placed on increasing the participation of carers and support people in the CFA//FRV Prevent – Detect – Escape program.

4. Service Delivery and Service Demand

4.1 Total demand

Figure 10 displays the total number of unique incident numbers attended by the Wendouree Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), and further categorised as a primary or support response. The number of fire related incidents and false alarms are almost split evenly with False Alarm calls being slightly higher overall.

Figure 10: Wendouree Brigade incident count by type 1 January 2010 - 18 December 2023

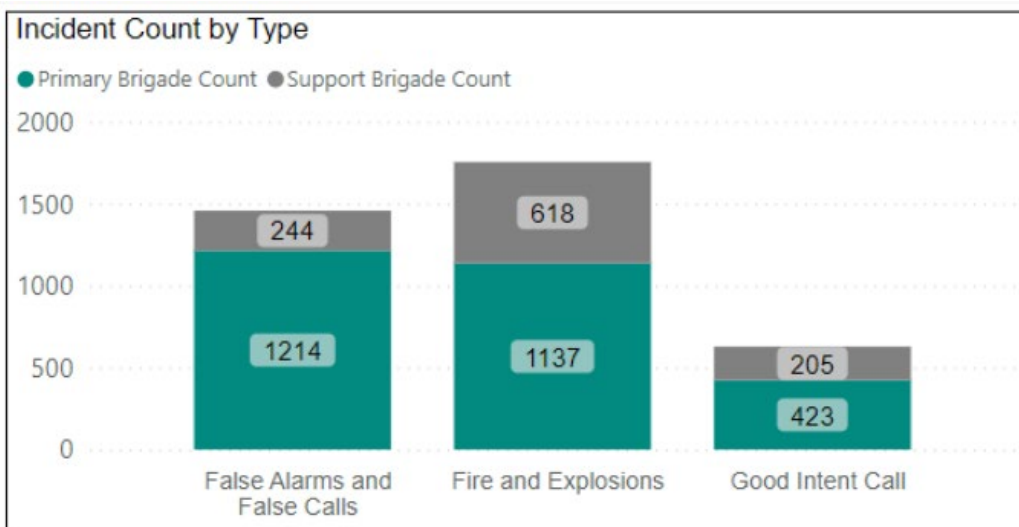


Figure 11 displays the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows higher average activity levels in summer and lower periods of activity in the winter months.

Figure 11: Wendouree Brigade incident count by month 1 January 2010 - 18 December 2023

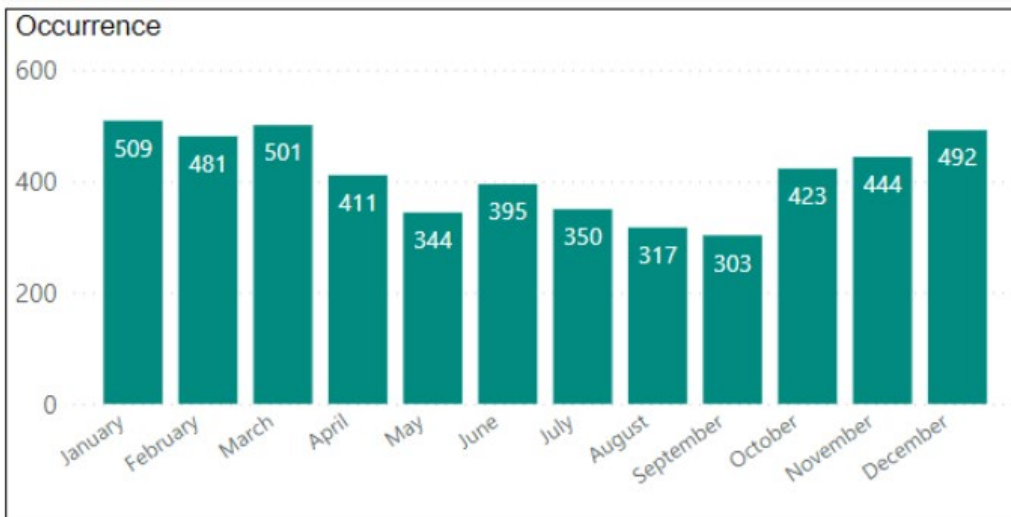
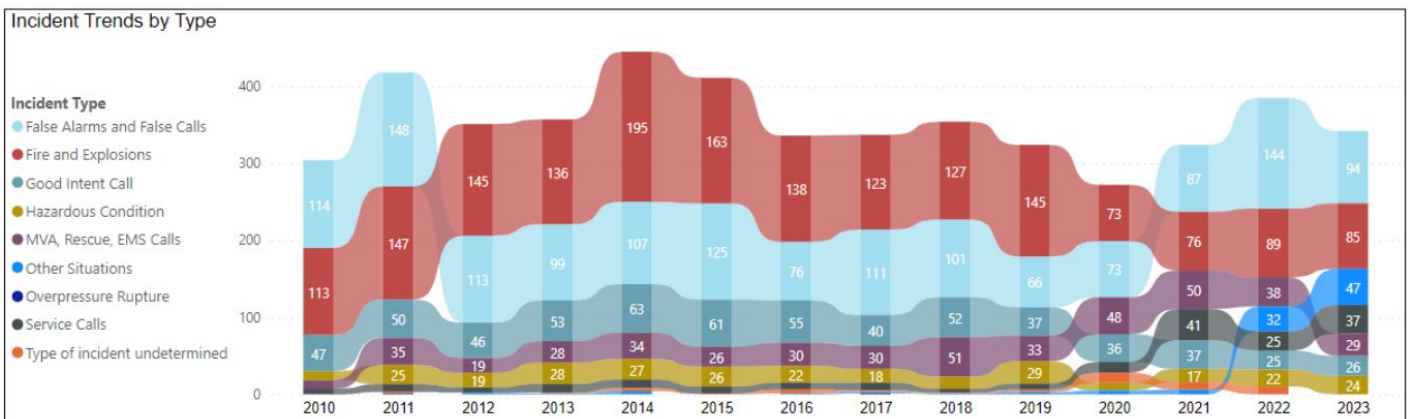


Figure 12 displays all incident types between 1 January 2010 and 18 December 2023. The primary incident types for the Brigade are False Alarms and Fire and Explosion related calls, which has remained consistent over time.

There is also a notable increase in Other Situation calls since 2021, with 84% of these calls being ‘called off/did not arrive’. This is likely a result of local actions by FRV crews to turn back CFA appliances that are responding to primary CFA calls.

The creation of Lucas Fire Brigade (now FRV Station 68) in 2019 reduced the Wendouree SDA by approximately 680 hectares or 23%. This produced a corresponding reduction in demand for Wendouree Fire Brigade.

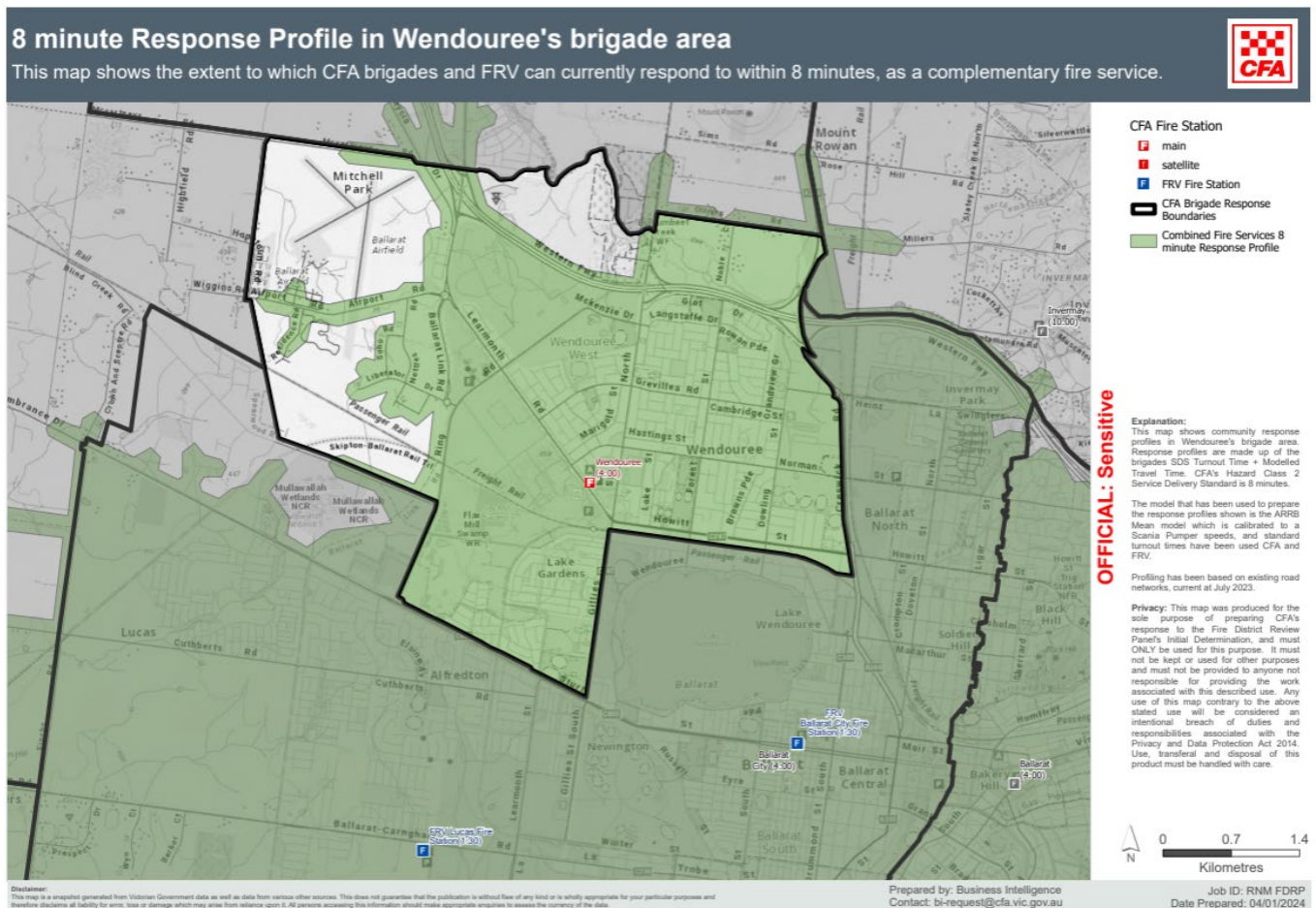
Figure 12: Wendouree Brigade incident count by type by year 2010 - 2023



4.2 Service Delivery Standards

Figure 13 shows the area within the land use that can be serviced within eight minutes by the existing complementary fire service model. The figure below shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the 8 minute to scene standard.

Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 99.71% of the road network in the Residential land use
- 100% of the road network in the Commercial land use
- 100% of the road network in the Industrial land use
- 100% of the road network in the Education land use
- 100% of the road network in the Parkland land use
- 100% of the road network in the Other land use
- 82.17% of the road network in the Transport land use
- 47.11% of the road network in the Primary Production land use.

An analysis of the Wendouree Brigade responses against established SDS according to the respective hazard classes shows:

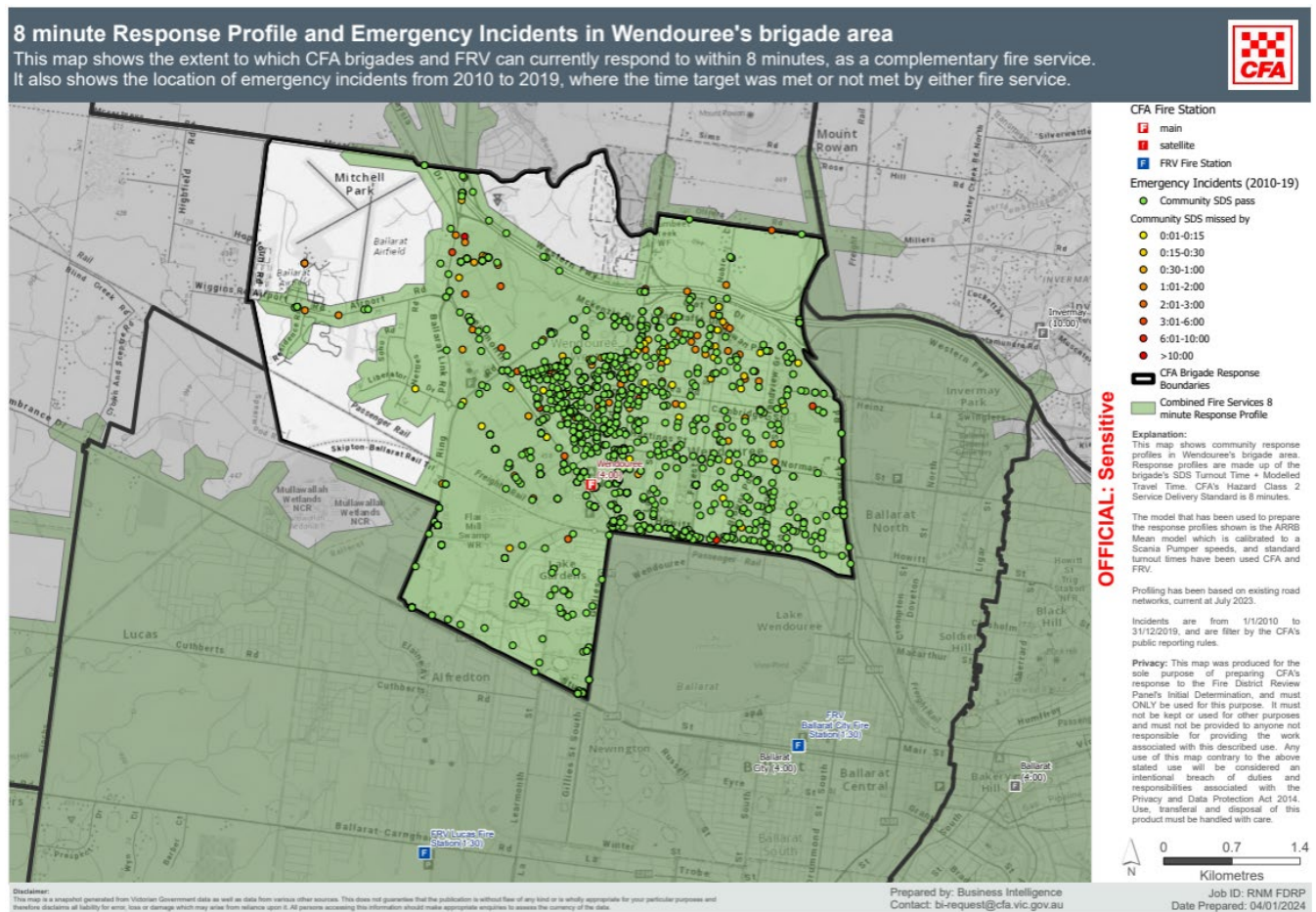
- from 1 January 2010 to 31 December 2019 there were 1,999 emergency incidents within the Wendouree SDA
- fire services response to emergency incidents was 83.4% compliant with SDS
- for the 331 incidents where SDS was not met over the 10 years, the following table indicates the number of emergency incidents and the time that SDS was not met. The majority (63%) were missed by less than 60 seconds.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
73 (22%)	58 (18%)	76 (23%)	72 (22%)	32 (10%)	15 (5%)	4 (1%)	1 (0%)

Figure 14 shows graphically the ability for fire services to meet established SDS across the Wendouree SDA.

Figure 14: SDS compliance for the Wendouree Brigade SDA 2010 - 2019



From 1 December 2020 to 30 November 2023:

- there were 827 emergency incidents within the Wendouree Brigade SDA
- fire services response to emergency incidents was 89.4% compliant with SD, only 0.6% below the target of 90% and a 7% improvement on the FDRP data reference period
- for the 88 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that SDS was not met. The majority (54%) were missed by less than 60 seconds.

Table 7: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
17 (19.32%)	16 (18.18%)	14 (15.91%)	32 (36.36%)	5 (5.68%)	3 (3.41%)	0 (0%)	1 (1.14%)

Risk Evaluation:
 Wendouree Fire Brigade and the surrounding network of brigades consistently achieve high success in meeting SDS requirements within the Wendouree SDA with those incidents that miss the standard doing so by small margins. Known traffic impediments of the three arterial roads and the rail crossing are the main contributors to SDS misses against the 90% target. SDS performance has improved since the FDRP data reference period.

Risk Mitigation:
 An upgrade of the Wendouree pumper to a Scania appliance will provide better response acceleration and equipment to allow for facilitation of continued improved SDS.
 CFA will undertake a feasibility assessment into establishment of a satellite fire station in the vicinity of Gilles Street and Grevillea Road in the north of the SDA. This may improve response performance by addressing risk outside the eight minute travel zone and would take advantage of being located close to members’ residential locations.
 Targeted volunteer recruitment will occur from residents of the suburbs of Wendouree, Mitchell Park and Lake Gardens, and a focus will be on members able to support daytime response. Targeted volunteer training linked to this recruitment will ensure expedient transition of new recruits to operational duty.
 A unified approach to fire risk management of protected premises and high-risk industries with FRV, including joint pre-planning and training activities, will be pursued.

4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Wendouree Brigade SDA from 2010 to 2023 had a total of 143 building/structure fires requiring extinguishment.

Table 8: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
14	10	14	12	21	18	6	5	10	10	4	6	7	6	143

An analysis of preventable fire fatalities associated with these 143 building/structure fires shows only one preventable fatality found in 2022 (after the FDRP data reference period). This fatality was investigated with no operable smoke alarm found to be installed. The Wendouree Brigade SDA has no non-preventable fatality (homicides, suicides, deliberate) since 2010.

Table 9: Non-preventable fatalities 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Risk Evaluation:

The Wendouree Brigade SDA has had one preventable structure/building fire fatality and no non-preventable (deliberate) fatalities since 2010.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and the limited utility of it as a measure of fire risk which either CFA or FRV can control or mitigate.

Table 10: Wendouree fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	2 of 13	Wendouree Fire Brigade and the surrounding network of brigades consistently achieves high success in meeting SDS requirements within the Wendouree SDA. Where SDS has not been met the majority of misses are by less than 60 seconds. SDS performance has improved since the FDRP data reference period.	<p>An upgrade of the Wendouree pumper to a Scania appliance will provide better response acceleration and equipment to allow for facilitation of continued improved SDS.</p> <p>CFA will undertake a feasibility assessment into establishment of a satellite fire station in the vicinity of Gilles Street and Grevillea Road in the north of the SDA. This may improve response performance by addressing risk outside the eight minute travel zone and would take advantage of being located close to members' residential locations.</p> <p>Targeted volunteer recruitment will occur from residents of the suburbs of Wendouree, Mitchell Park and Lake Gardens, and a focus will be on members able to support daytime response. Targeted volunteer training linked to this recruitment will ensure expedient transition of new recruits to operational duty.</p> <p>A unified approach to fire risk management of protected premises and high-risk industries with FRV, including joint pre-planning and training activities, will be pursued.</p>
Bushfire Management Overlay %	6 of 13	<p>The BMO in the Wendouree SDA equates to 3.95% of the total area and is predominately grasslands.</p> <p>The legislated FIB arrangements, combined with the bushfire response capability of CFA and the requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones the BMO risk is sufficiently mitigated.</p>	
Total Demand	6 of 13	The primary incident types for the Brigade are False Alarms and Fire and Explosion related calls and this has remained consistent over time. Substantial reduction in assignment area in 2019 due to the establishment of Lucas Fire Brigade (now known as FRV Station 68), reduced by approximately one third Wendouree's primary response area, including	For protected premises and high-risk industry management, experienced brigade members will work with the District Office and these businesses to reduce preventable false alarms and enable early identification and management of fire.

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		<p>the suburb of Alfredton and surrounds.</p> <p>There has been a notable increase in Other Situation calls since 2021 with 84% of these calls being 'called off/did not arrive'. This is likely a result of changes to the support arrangements after the establishment of FRV. At times being turned back occurs as CFA vehicles are travelling to fire calls, even within the CFA assignment area.</p> <p>Since 2021 the leading cause of demand is now False Alarms/False Calls.</p>	
Victorian Planning Authority %	8 of 13	<p>Wendouree Brigade SDA is a mature, well-built up area, with limited growth forecast in the foreseeable future. Residential and commercial designated planning areas are well established and developed.</p> <p>Changes in developmental risks will be limited to designated RGZs of which there are three. These areas total 222.24 hectares, accounting for 10.03% of the total Brigade SDA. One RGZ is already developed and would require existing landowners to seek to increase building density. The remaining areas would both require significant planning and community acceptance to be developed.</p> <p>Wendouree Fire Brigade resource capability of a pumper and tanker combined with the long-established protocol of joint response from FRV and surrounding brigades as a response network, delivers the complementary fire services model and is considered sufficient to treat the current residential and industrial risk including the RGZs.</p> <p>Community engagement activities undertaken by the Wendouree Fire Brigade allow for significant mitigation of risk elements identified in both residential fire and social</p>	Wendouree Fire Brigade will focus on increasing the participation of carers and support persons in the joint CFA/FRV Prevent – Detect – Escape Program.

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		disadvantage risk.	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio (VCTC)	13 of 13	See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.	
Building fire casualty to total building fire ratio (BCTC)	No value	The Wendouree Brigade SDA has had one preventable structure/building fire fatality since 2010, and no non-preventable fatalities.	
Population projections	13 of 13	Between 2016 and 2021 there has been an overall population change of 424 or 3% (derived from ABS census data applied by CFA to the brigade area as distinct from ABS SA1 collection grid cells). While the local government area, the City of Ballarat, forecast a seven year population increase of 14% or 15,180, population growth in Wendouree will be limited due to the area being almost entirely urbanised already.	

Table 12: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Wendouree	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Typical traffic Friday 19:00

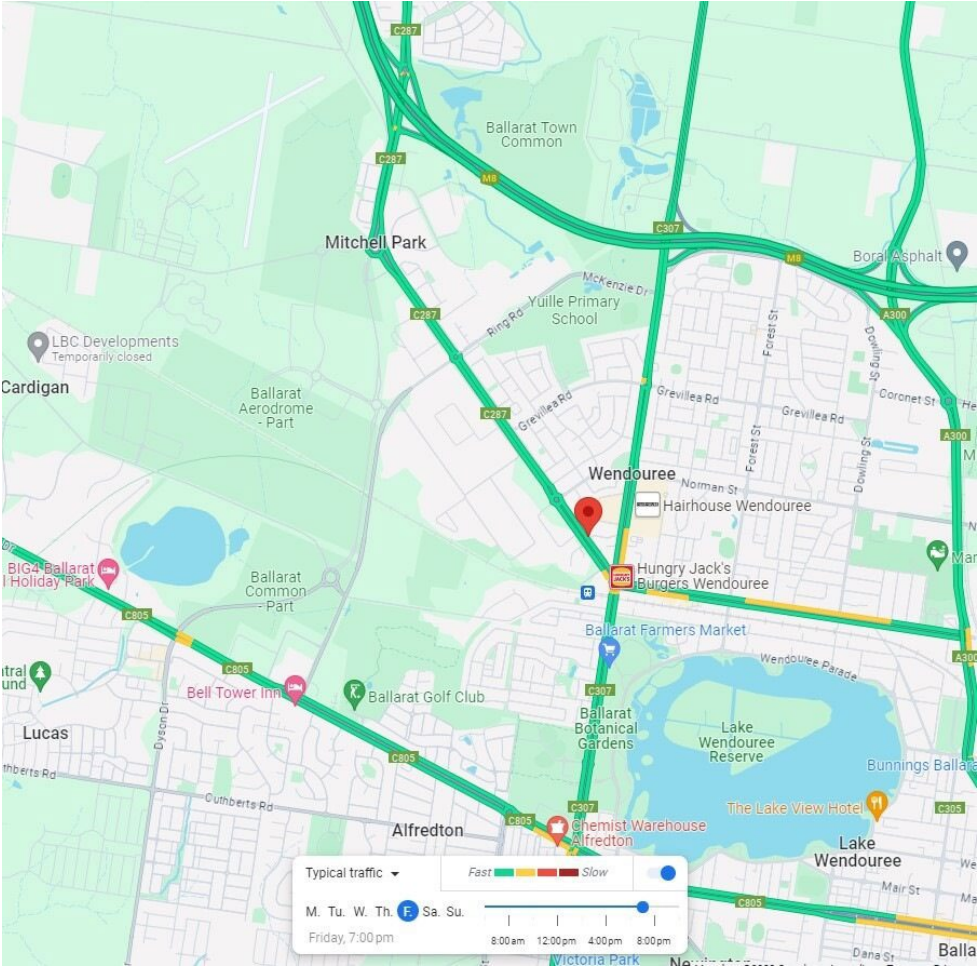


Figure 2: Typical traffic Saturday 17:00

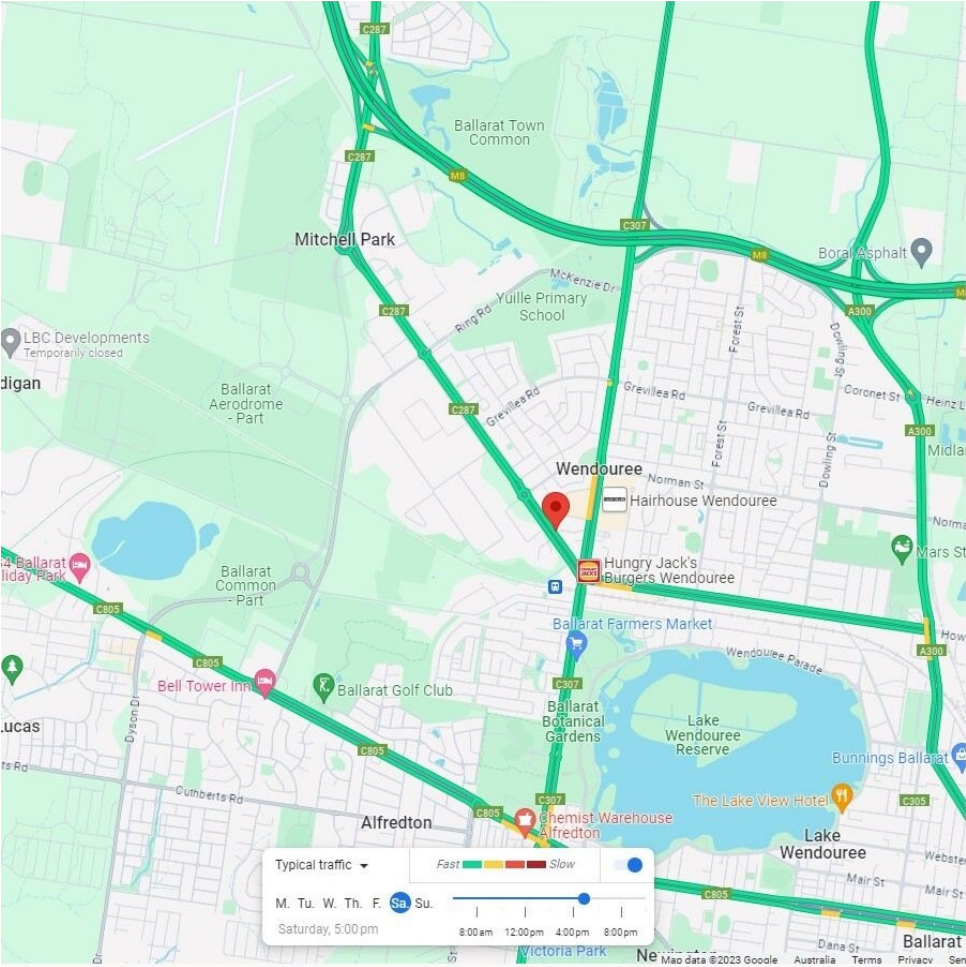
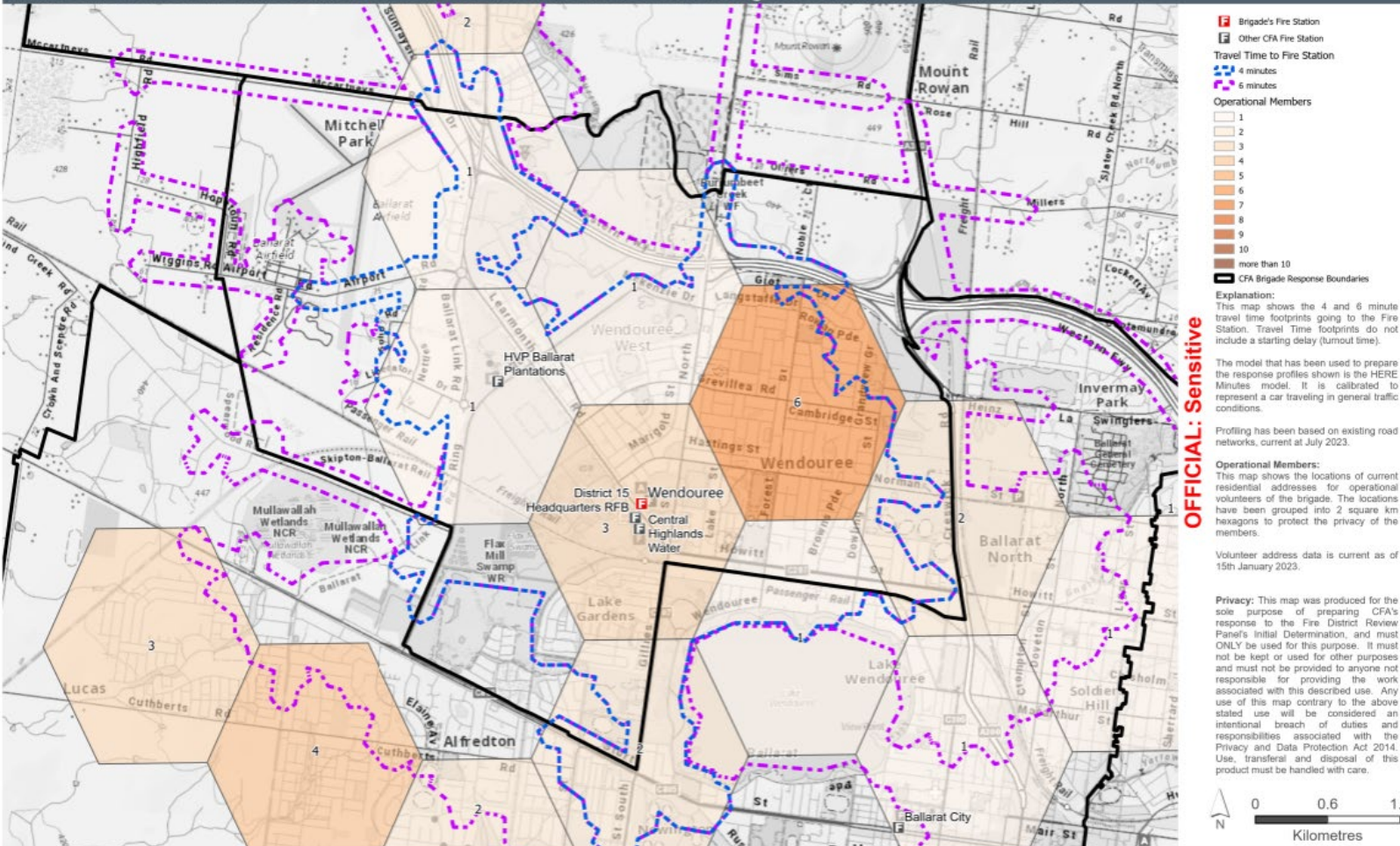


Figure 3: Operational members location and travel times

Wendouree Operational Members and Travel Time to their Fire Station

This maps shows the location of Wendouree's operational members, grouped into 2 square km hexagons. It also shows the travel time to the Wendouree Fire Station, based on driving in a car under normal road rules.



- Brigade's Fire Station
- Other CFA Fire Station
- Travel Time to Fire Station**
- 4 minutes
- 6 minutes
- Operational Members**
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- more than 10
- CFA Brigade Response Boundaries

Explanation:
This map shows the 4 and 6 minute travel time footprints going to the Fire Station. Travel Time footprints do not include a starting delay (turnout time).

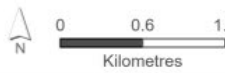
The model that has been used to prepare the response profiles shown is the HERE Minutes model. It is calibrated to represent a car traveling in general traffic conditions.

Profiling has been based on existing road networks, current at July 2023.

Operational Members:
This map shows the locations of current residential addresses for operational volunteers of the brigade. The locations have been grouped into 2 square km hexagons to protect the privacy of the members.

Volunteer address data is current as of 15th January 2023.

Privacy: This map was produced for the sole purpose of preparing CFA's response to the Fire District Review Panel's Initial Determination, and must ONLY be used for this purpose. It must not be kept or used for other purposes and must not be provided to anyone not responsible for providing the work associated with this described use. Any use of this map contrary to the above stated use will be considered an intentional breach of duties and responsibilities associated with the Privacy and Data Protection Act 2014. Use, transfer and disposal of this product must be handled with care.



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Figure 4: Incident count and type of support provided in the FRV Fire District

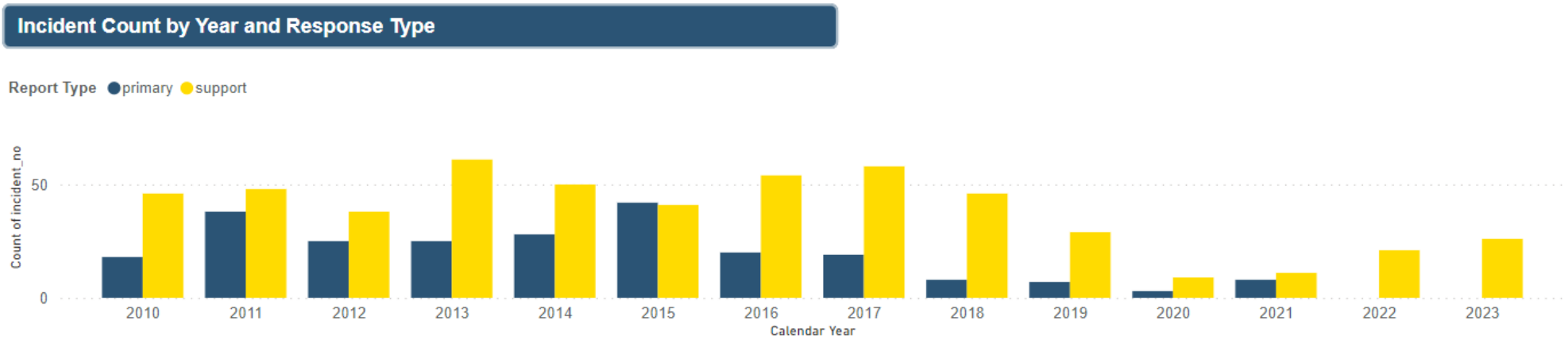


Figure 5: Incident count and type of support provided in the FRV station footprint

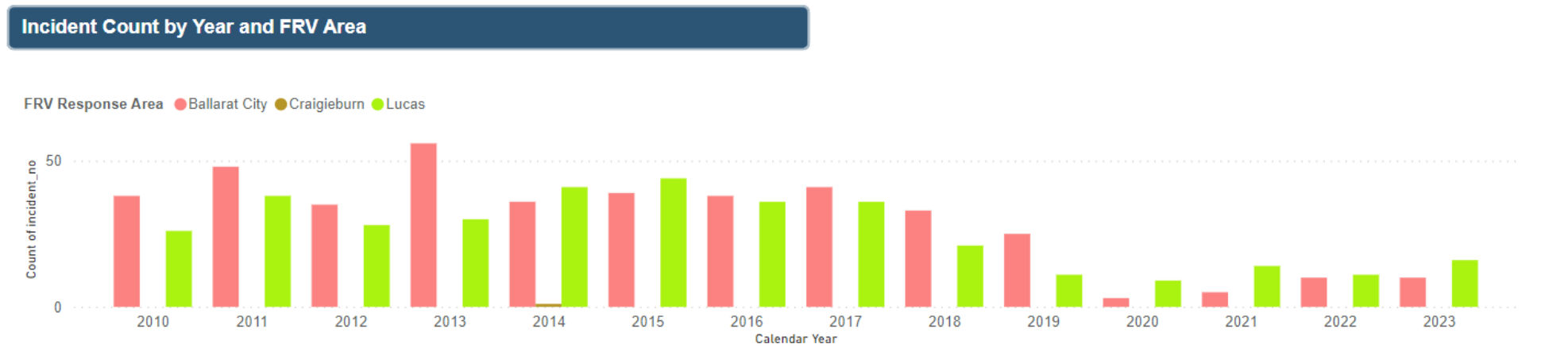


Figure 6: Community safety and intervention programs

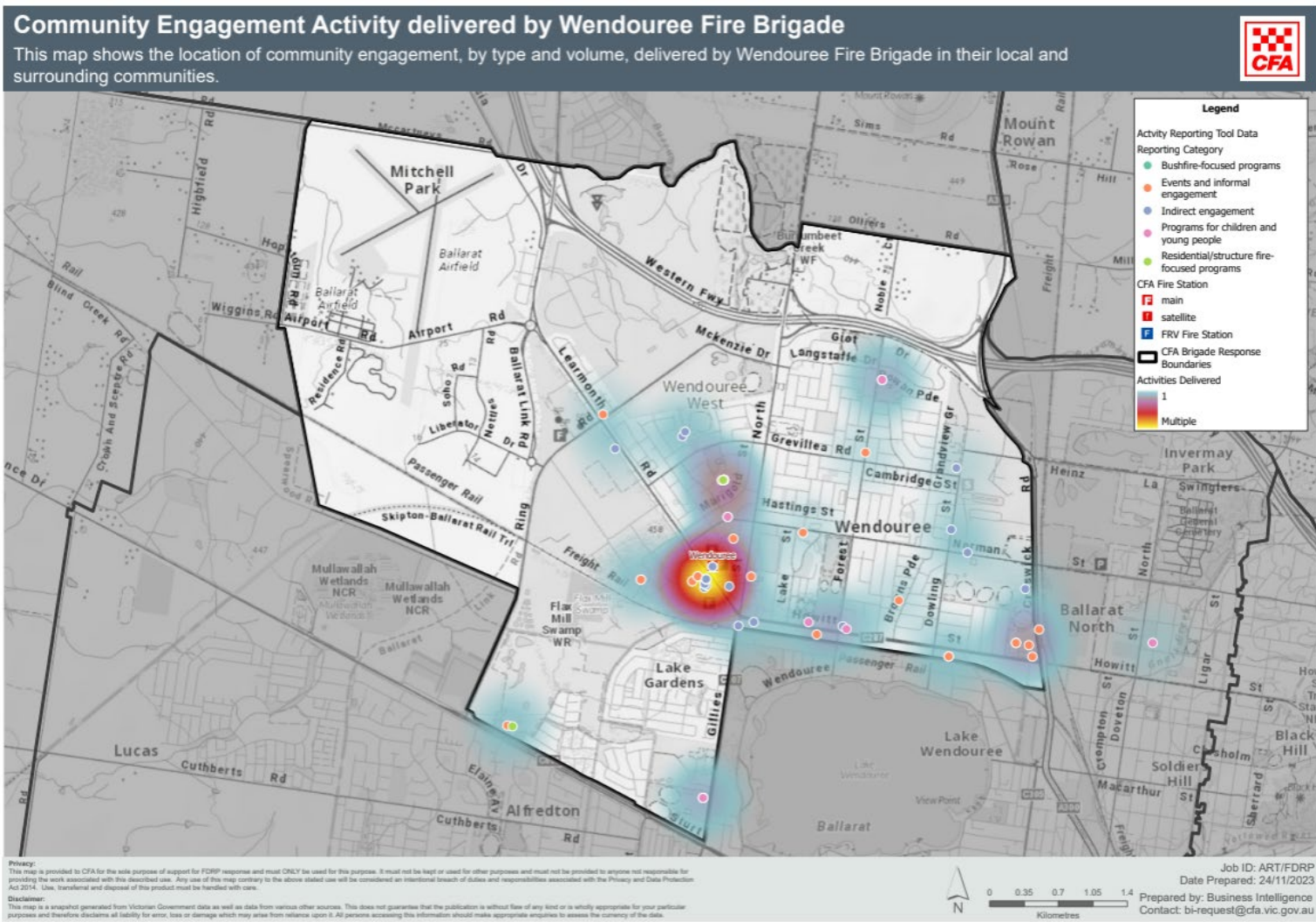


Figure 7: ABS land use areas and BMO

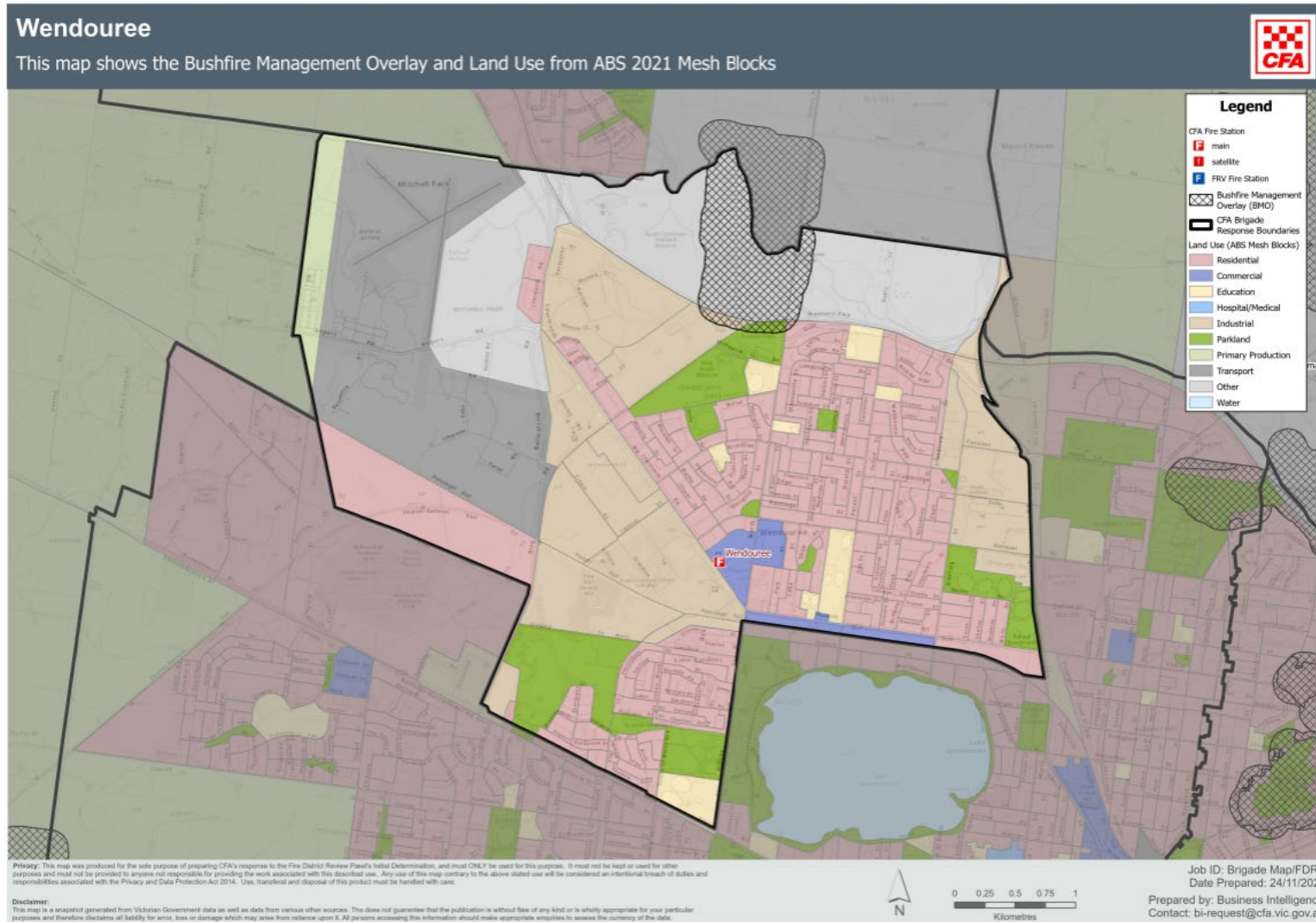


Figure 8: Public land management information

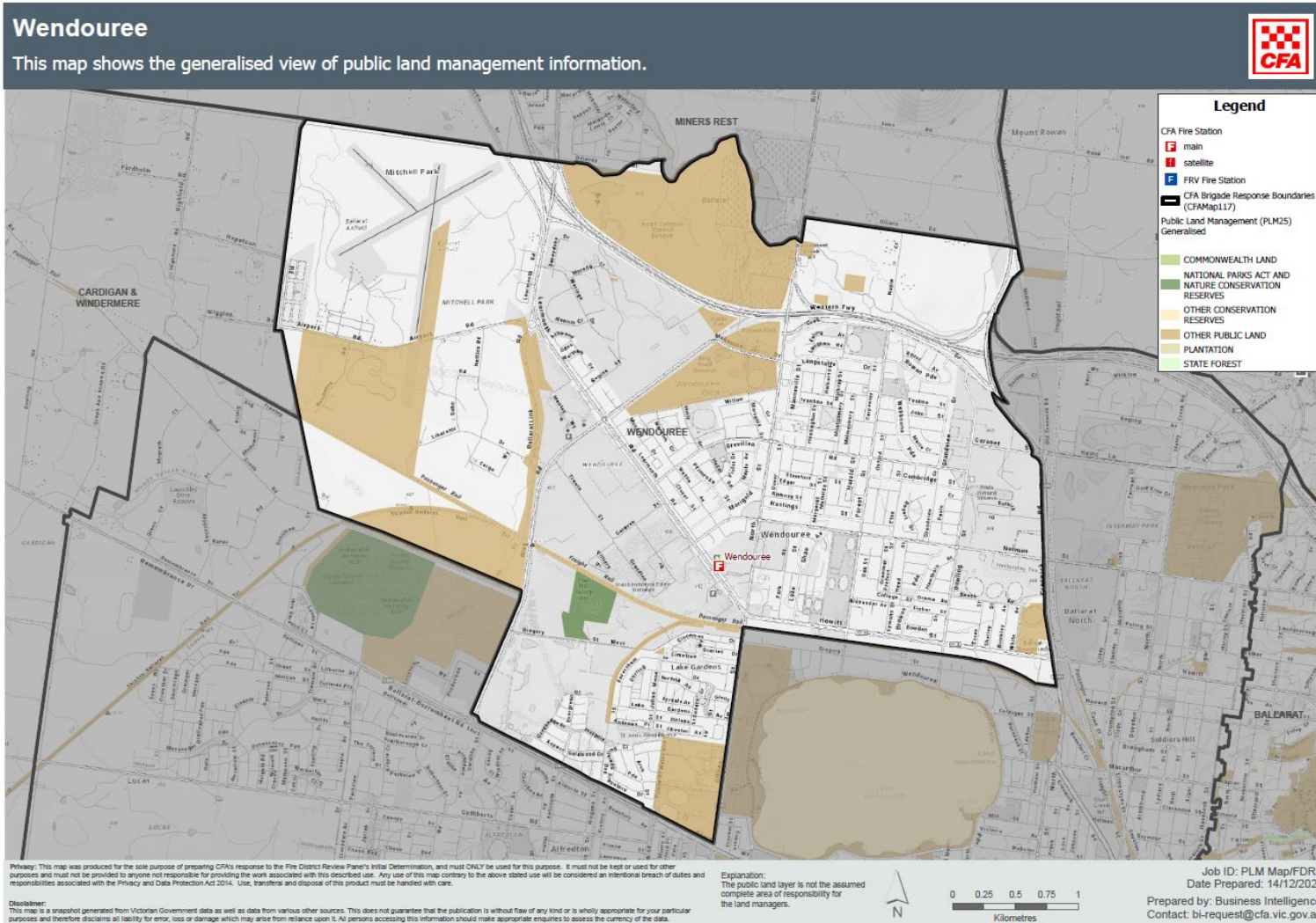


Figure 9: Planned growth zones from the planning scheme for Wendouree

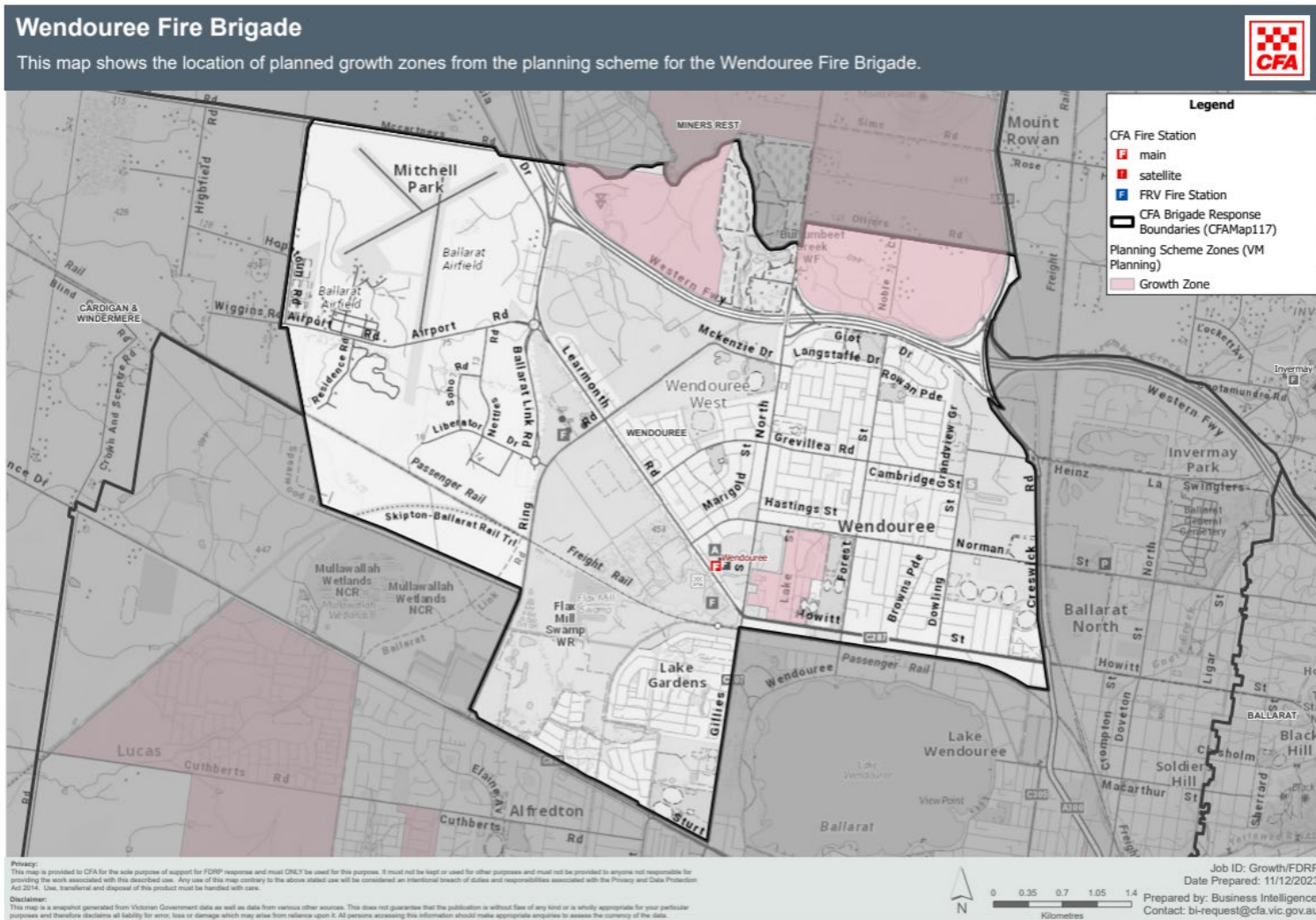


Figure 10: Wendouree Brigade incident count by type 1 January 2010 - 18 December 2023

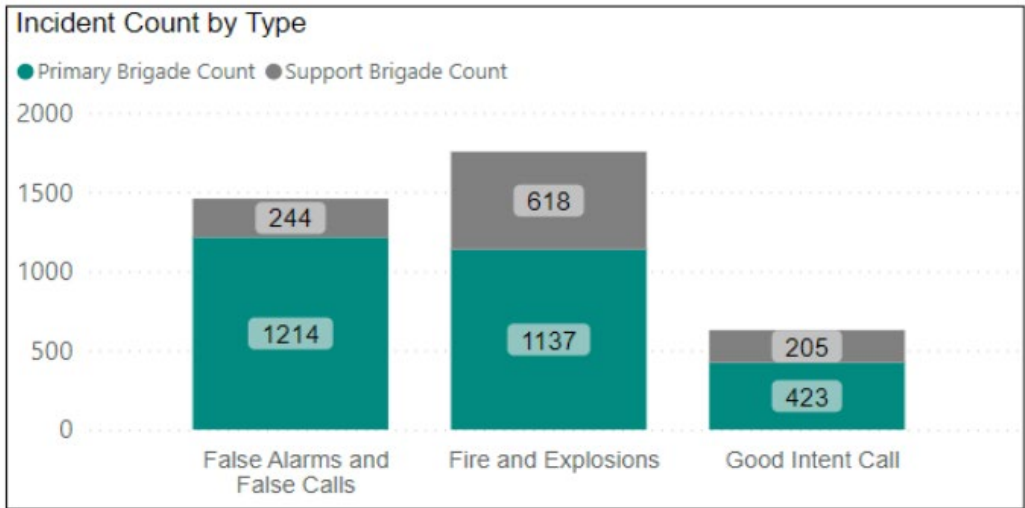


Figure 11: Wendouree Brigade incident count by month 1 January 2010 - 18 December 2023

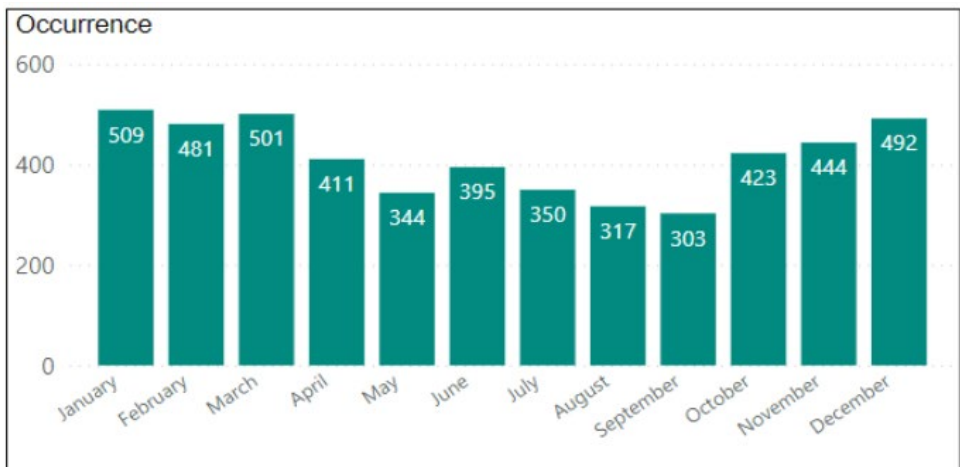
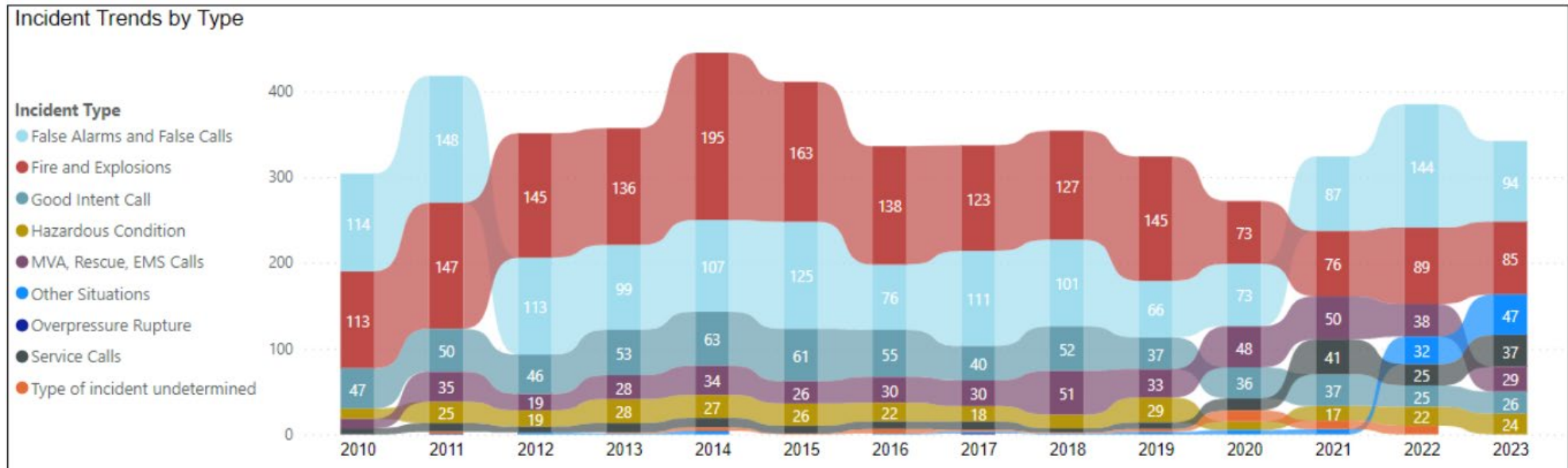


Figure 12: Wendouree Brigade incident count by type by year 2012 - 2023



11.

Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes

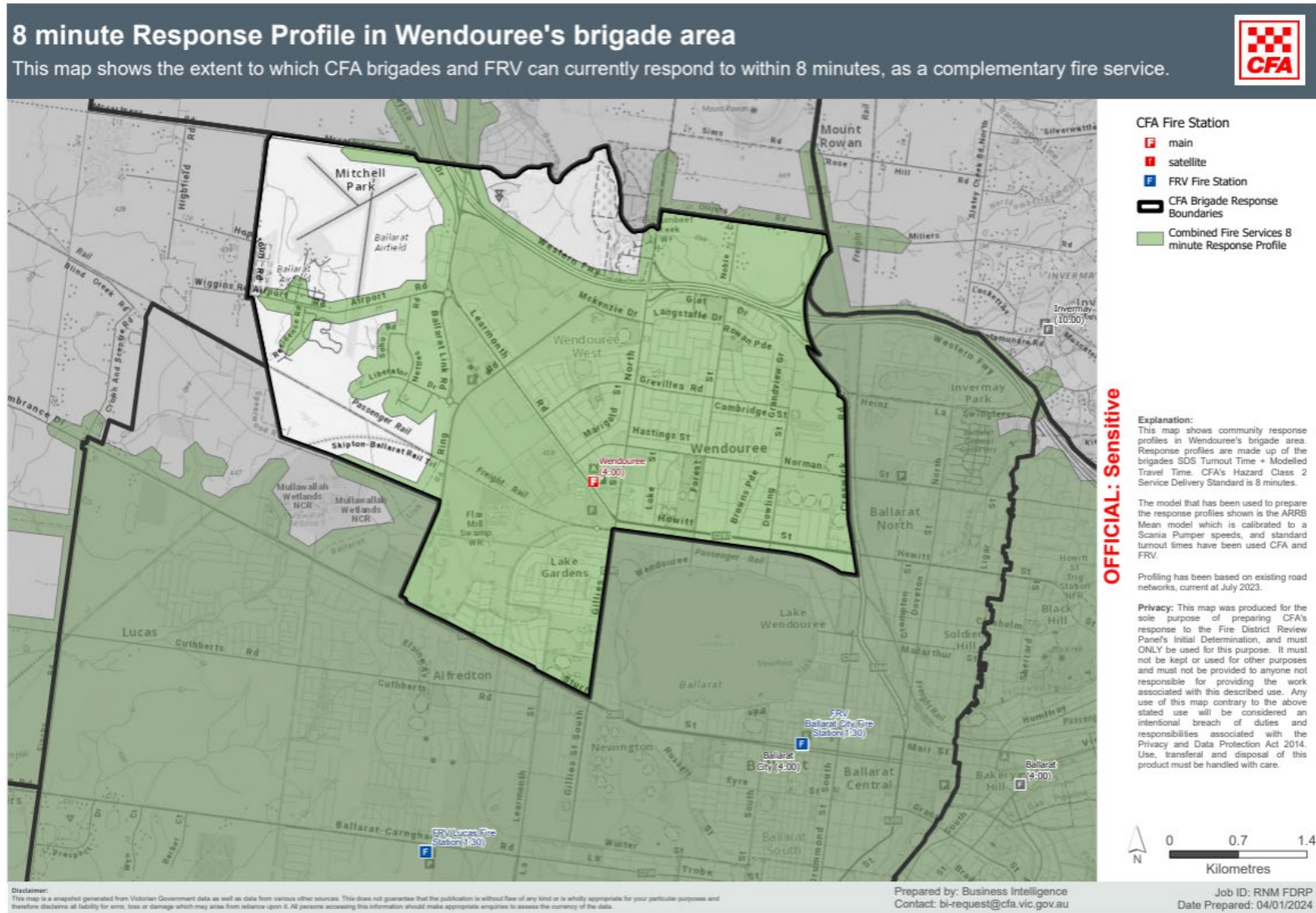
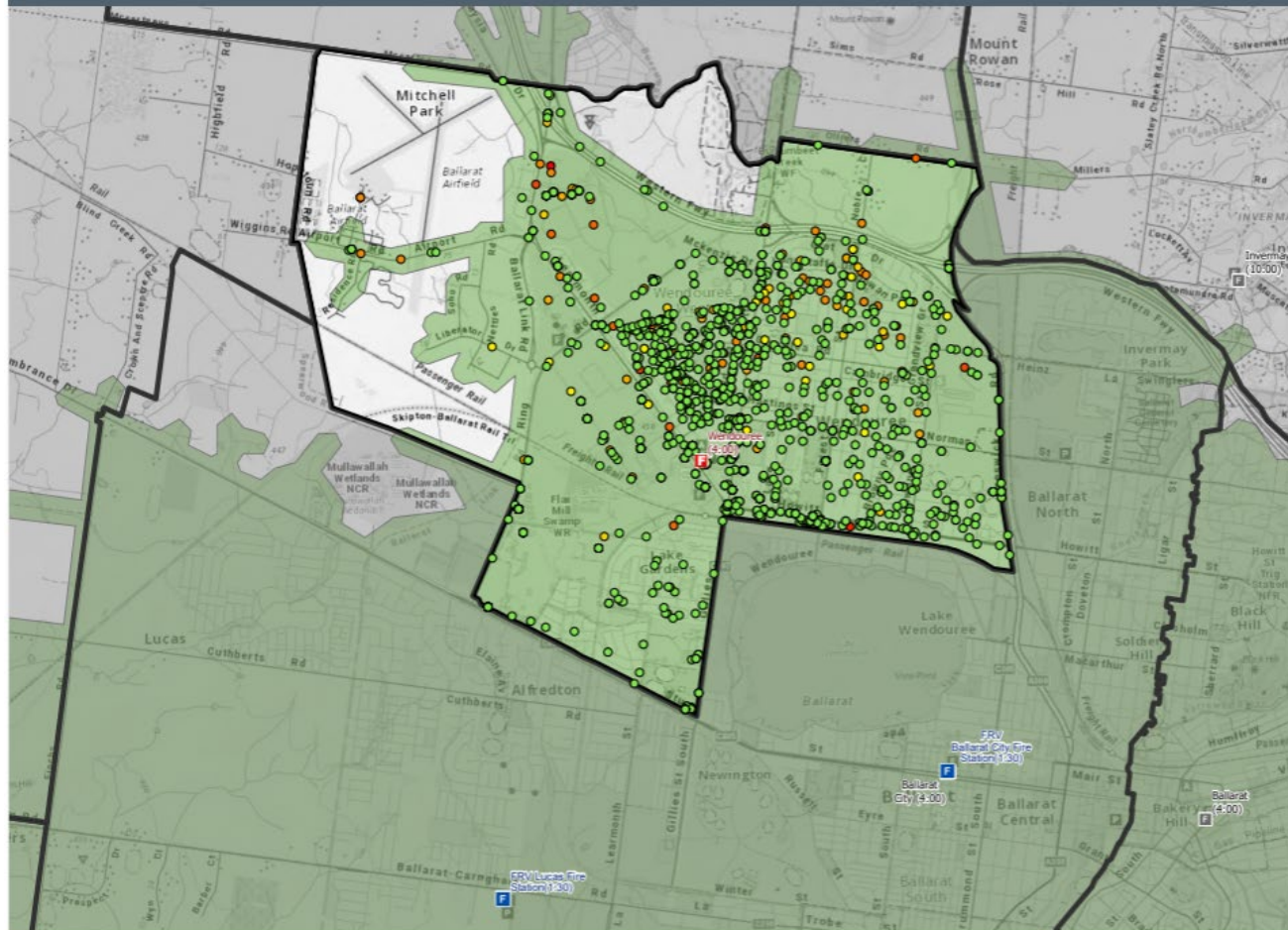


Figure 14: SDS compliance for the Wendouree Brigade SDA 2010 - 2019

8 minute Response Profile and Emergency Incidents in Wendouree's brigade area

This map shows the extent to which CFA brigades and FRV can currently respond to within 8 minutes, as a complementary fire service. It also shows the location of emergency incidents from 2010 to 2019, where the time target was met or not met by either fire service.



- CFA Fire Station
 - main
 - satellite
 - FRV Fire Station
- Emergency Incidents (2010-19)
 - Community SDS pass
- Community SDS missed by
 - 0:01-0:15
 - 0:15-0:30
 - 0:30-1:00
 - 1:01-2:00
 - 2:01-3:00
 - 3:01-6:00
 - 6:01-10:00
 - >10:00
- CFA Brigade Response Boundaries
- Combined Fire Services 8 minute Response Profile

OFFICIAL: Sensitive

Explanation:
This map shows community response profiles in Wendouree's brigade area. Response profiles are made up of the brigade's SDS Turnout Time + Modeled Travel Time. CFA's Hazard Class 2 Service Delivery Standard is 8 minutes.

The model that has been used to prepare the response profiles shown is the AARRB Mean model which is calibrated to a Scania Pumper speeds, and standard turnout times have been used CFA and FRV.

Profiling has been based on existing road networks, current at July 2023.

Incidents are from 1/1/2010 to 31/12/2019, and are filter by the CFA's public reporting rules.

Privacy: This map was produced for the sole purpose of preparing CFA's response to the Fire District Review Panel's Initial Determination, and must ONLY be used for this purpose. It must not be kept or used for other purposes and must not be provided to anyone not responsible for providing the work associated with this described use. Any use of this map contrary to the above stated use will be considered an intentional breach of duties and responsibilities associated with the Privacy and Data Protection Act 2014. Use, transferal and disposal of this product must be handled with care.



Disclaimer:
This map is a snapshot generated from Victorian Government data as well as data from various other sources. This does not guarantee that the publication is without bias of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Eaglehawk Fire Brigade

1. About the Brigade

The Eaglehawk Fire Brigade is a Class 4 Brigade within the Fortuna Group located in District 2 of the North West Region. The Eaglehawk Fire Brigade has a total membership of 47 volunteers (as at 31 December 2023). The Brigade is focused on achieving diversity within its ranks with female members currently making up 26% of the overall membership and holding the key leadership positions of Captain, 2nd Lieutenant and Secretary.

1.1 History

Established in 1873, the Eaglehawk Fire Brigade has a long history, and in 2023 proudly celebrated 150 years of dedicated service to the Eaglehawk and surrounding community.

The need for a first fire engine in Eaglehawk was first discussed in 1862, with conversation continuing over the next decade until a fire brigade was formed under the control of the Borough Council in 1873. The Brigade obtained its first horse drawn reel in 1895 and was the last brigade to have one when Jack a 22 year old horse was retired upon the arrival of the Brigade's first motorised reel in 1928.

The current fire station has housed the Brigade since 1900, and the arch of the stable doors and the pulley system for the fire horse harnesses are still evident within a current meeting room. The fire station is a historical treasure trove, lined with an array of photographs, honour rolls and trophies, capturing the amazing history through to current times. Trophies and memorabilia have been won by Eaglehawk sporting teams through the decades, with firefighting skills honed through competitions and demonstrations.

Through community events, the history and current service of the Brigade is regularly and proudly demonstrated and celebrated. The restored appliances often form part of local events, where the Brigade is able to showcase the past and demonstrate that it is a modern, contemporary fire service with fit for purpose appliances, equipment, and approaches to community education.

1.2 Context

The Eaglehawk Brigade has adapted with the changing risk environment. There was significant development over the past few decades and the Brigade rose to those challenges, recruiting new members, refining training and adapting to the new risk environment. The increase in population has now slowed and there are no current residential or industrial growth zones in the Brigade area.

Strong working relationships with FRV, neighboring CFA brigades and FFMV maximise the complementary fire service provided to the community to ensure community safety. Established relationships and collaborative work with the City of Greater Bendigo Council ensures tailored and targeted prevention activities to reduce risk for residents and visitors to the area.

The Brigade has a fleet of appliances and specialist skills and experience in grass and bushfire response, particularly critical for response in the urban-rural fringe area. Some of the equipment used by the Brigade has been funded by generous community donations.

Eaglehawk volunteers are dedicated members who respond not only to fire and other emergency situations in their own community but also actively participate in short and long-haul strike teams when needed. They are passionate, well connected and support each other and their community and are in turn supported by their families to enable their dedicated service. Brigade members are embedded within many community networks and understand the intricacies of the area, best positioning them to support at-risk individuals and groups.

The Brigade works hard to empower the community to be prepared for and safe from fire through a range of prevention, preparedness, and educational pursuits. It has a strong leadership team in place with experienced and energised people to continuously improve this viable, progressive, and highly capable brigade.

2. Brigade Capability Snapshot

2.1 Membership

The Eaglehawk Fire Brigade has a total of 47 members (11 females and 36 males). The Brigade has a good range of experienced and newer brigade members with most members (including most operational members) under 40 years of age.

2.2 Fire appliances, other vehicles and specialist equipment

The Eaglehawk Fire Brigade has three appliances and other equipment to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Eaglehawk Brigade alone.

Table 1: Fire appliances and vehicles available to the Eaglehawk Brigade

Vehicle	Type	Age
Pumper	Isuzu	26 years
Tanker	Hino	18 years
Field Command Vehicle	Ford Ranger	3 years

Table 2: Vehicle specification

Pumper	Carrying six firefighters, 1,200 litres of water and 3,000 lpm pump. Contains standard CFA urban stowage including electronic BA sets, positive pressure fan, thermal imaging camera, forceable entry tools, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage and foam equipment.
Tanker	Carrying five firefighters 4,000 litres of water, 1,200 lpm pump, BA, hoses and adaptors, chainsaw and foam equipment.
Field Command Vehicle	A small transport vehicle designed for fireground operations for management personnel.

2.3 Station location

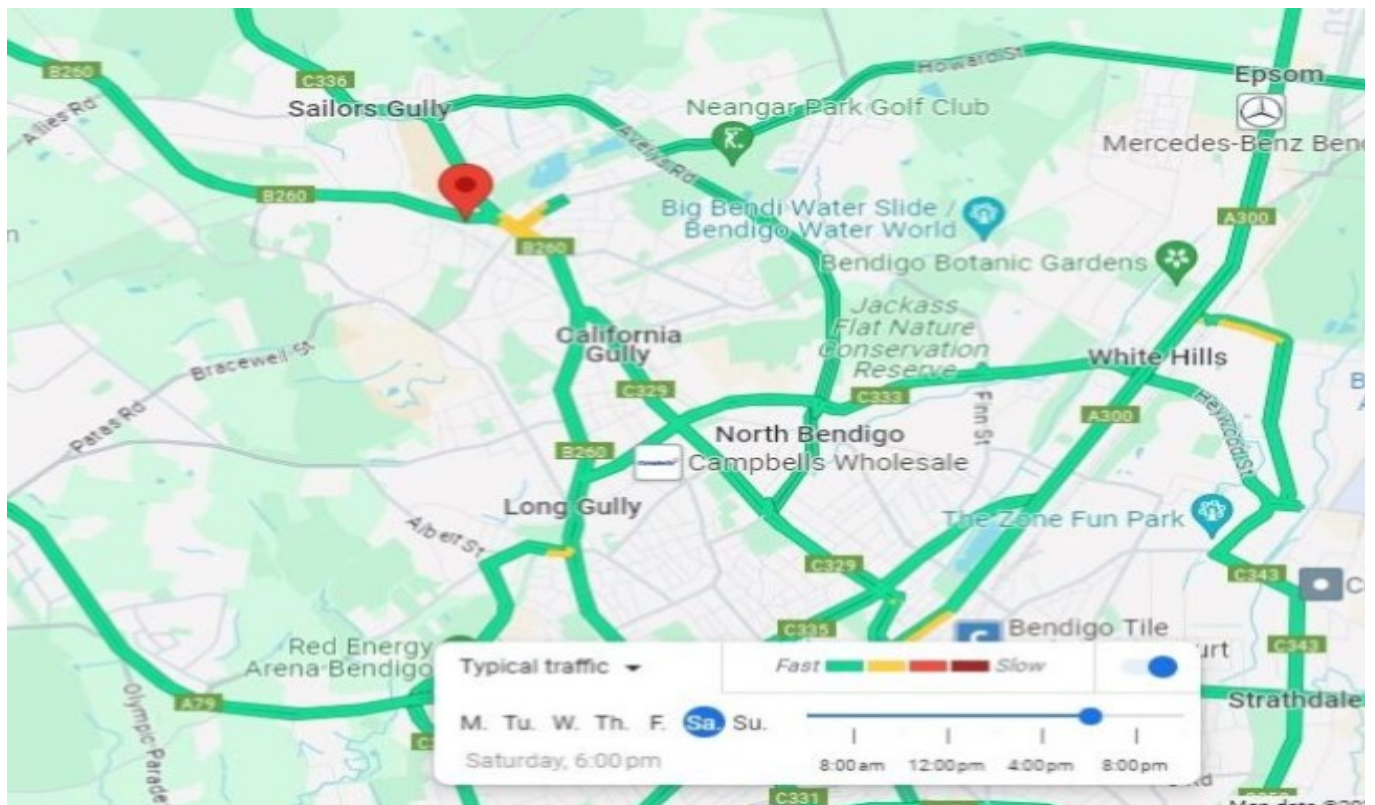
The station is located centrally at 29 Loddon Valley Hwy, Eaglehawk. This station has evolved over time to ensure it continues to be fit for purpose for a contemporary emergency service. The station has four engine bays with an older 2x double drive through motor room and a small external shed. Funding from the Volunteer Emergency Services Equipment Program has recently been approved for minor facility improvements. This will support the growth, development, and continuous improvement of the Brigade's facilities as it continues to grow. Improvements to be made using the grant include:

- refurbishment of two offices into a transition space in which members can store and change into their Personal Protective Clothing safely prior to entering the engine bays
- conversion of all bathroom facilities to unisex to help provide an inclusive and safe environment for all members of the Brigade and the wider community
- transitioning one underutilised large meeting room into an area with workstations to enable members to complete training, conduct small breakout meetings, and undertake professional development at times that meet their needs.

The location and equipment of a fire station are important elements in the successful operation of a volunteer fire brigade. Siting must strike a balance between being located to address service delivery needs but also being readily accessible to and from for emergency responders.

The day of week and time of that day for traffic congestion analysis for the Eaglehawk Brigade has been determined by the day of the week that there are the most incidents and what time of that day that the most incidents occur. In the case of Eaglehawk this is Saturday at 18:00 (Figure 1).

Figure 1: Typical traffic Saturday 18:00

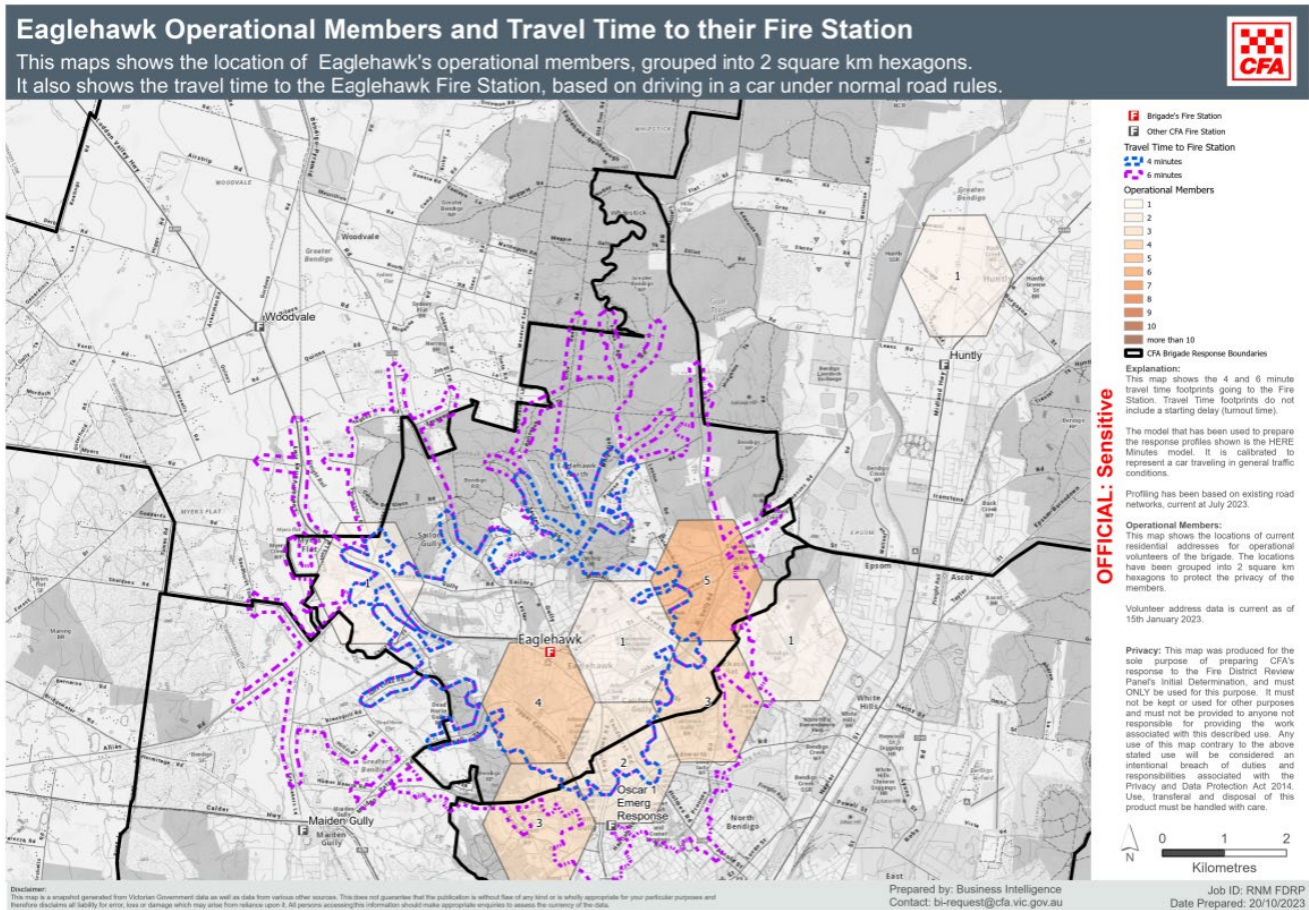


As shown in Figure 1, good traffic flow and minimal congestion assists timely access to and from the current Eaglehawk Fire Station site.

Analysis of the home location of responding Eaglehawk Fire Brigade members within a four minute and six minute travel time (under normal road conditions) indicates sufficient resources to ensure the rapid mobilisation of

volunteers to station upon activation (Figure 2).

Figure 2: Operational members location and travel times



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only has use across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state's resources in both the CAoV and the FRV Fire District.

The Eaglehawk Brigade plays an active role in supporting short and long-haul strike teams when needed. Over recent years the Brigade has participated in strike teams in response to the 2014 Grampian fires and 2019-20 fires in Mallacoota, as well as supporting deployments to fires in NSW Black Summer of 2019-20. Most recently brigade members supported the multi-agency preparedness and response for the Victorian floods in 2022.

The Eaglehawk Brigade conducts hose repairs for all CFA District 2 brigades, following the recent update and move by CFA to utilise Storz couplings. The success of this work has also seen the Brigade extend its annual testing regime to support other agencies including Department of Energy, Environment and Climate Action and the Victorian Emergency Management Training Centre Huntly campus. In addition to undertaking annual testing, the Eaglehawk Brigade has repaired over 437 lengths of hose across the last two years.

2.5 Assistance to Fire Rescue Victoria

FRV is dispatched to support CFA to all code 1 structure fires in the Eaglehawk Fire Brigade SDA, ensuring complementary delivery of service to the community. On 1 July 2020, FRV reduced CFA Eaglehawk Brigade response into FRV's primary area and amended long standing support arrangements put in place by CFA pre-Reform.

Figure 3: Incident count and type of support provided in the FRV Fire District

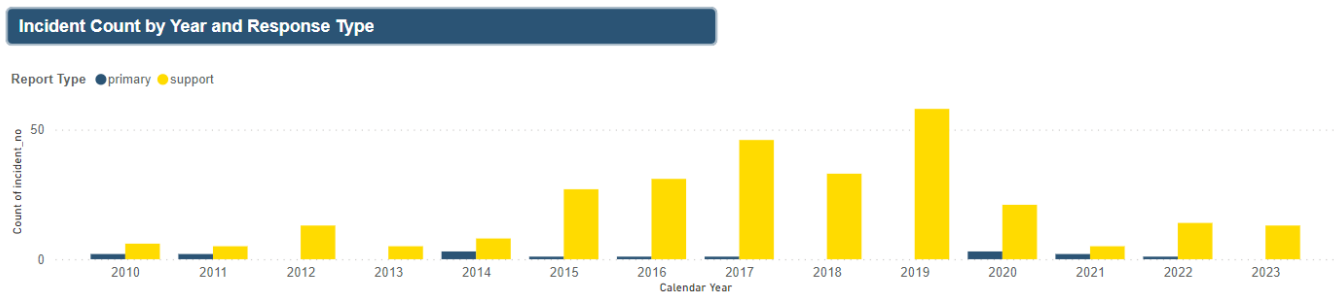
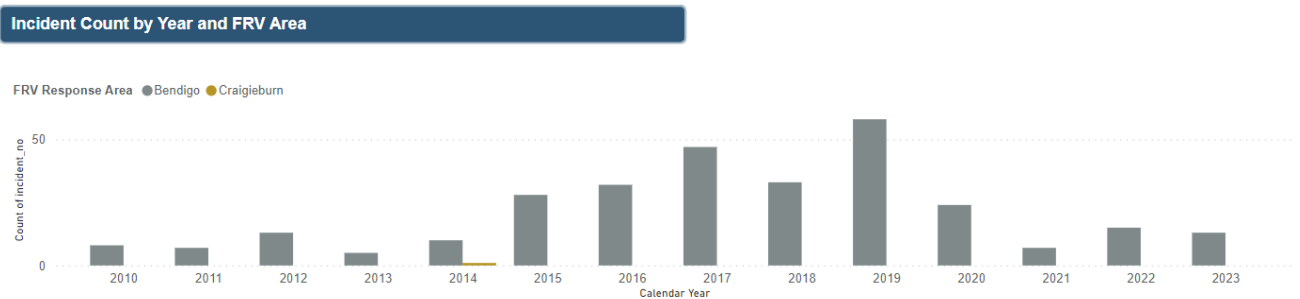


Figure 4: Incident count and type of support provided in the FRV station footprint



The Eaglehawk Brigade provides specialist capability into the FRV Bendigo footprint area for fire and other incidents, particularly for the bush blocks in the FRV footprint which require the appliances, equipment and grass/scrub and bushfire capability of the CFA.

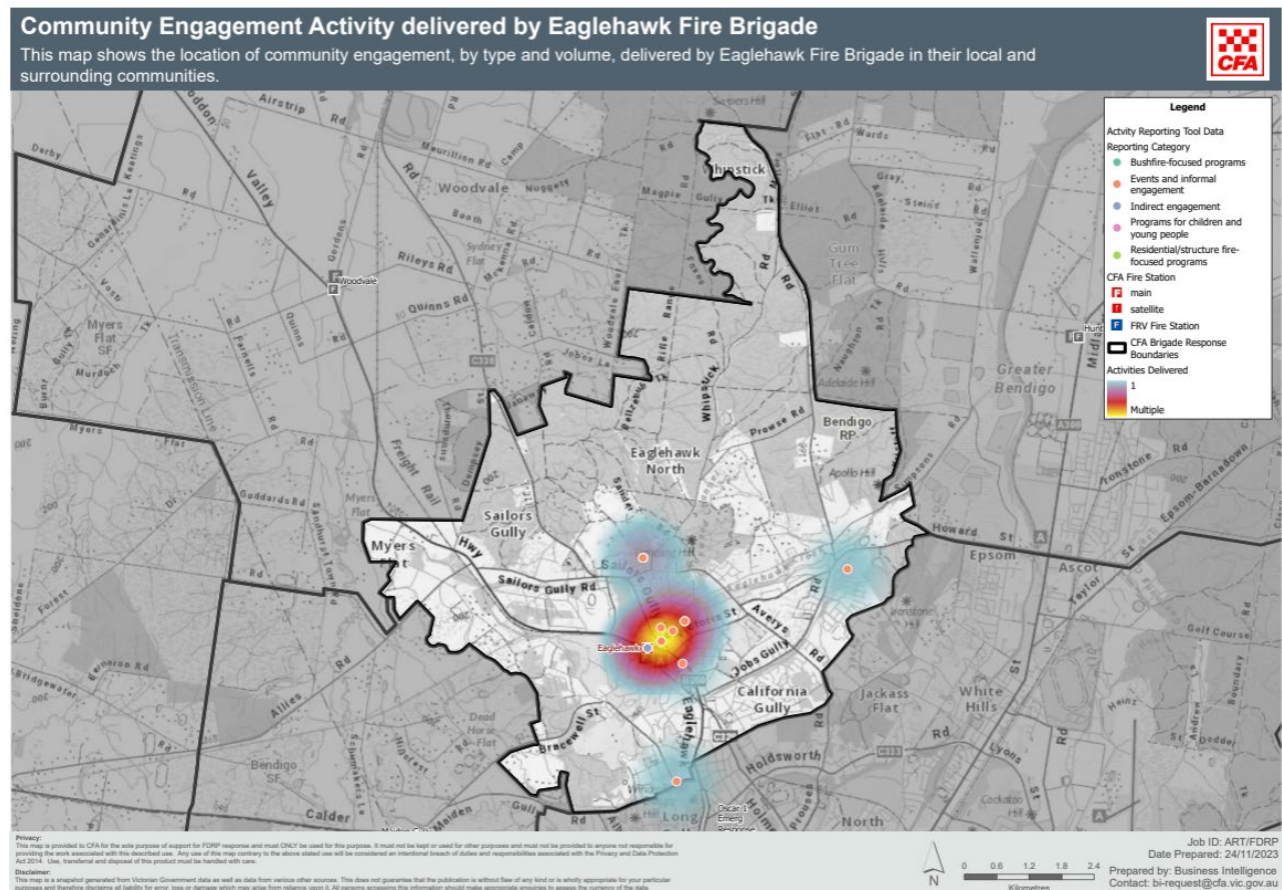
2.6 Community engagement activities

The Eaglehawk Brigade works directly with the community undertaking and supporting regular prevention and preparedness activities including community fire safety messaging (street corner, markets etc.), school visits and direct intervention programs. Brigade community engagement priorities include:

- the northern bushland/urban interface including Victorian Fire Risk Register properties
- creek corridor properties
- vulnerable people
- Karen migrant community.

In 2022, CFA implemented a new platform to allow brigades to centrally record community engagement activities to allow a better understanding of community fire safety interventions. Previously, brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of interventions. Figure 5 below shows community safety interventions undertaken by the Eaglehawk Fire Brigade as recorded in the ART system.

Figure 5: Community safety and intervention programs



Fire safety messaging is provided in person and through developed community relationships (e.g., with community health) but also in print and online. The Brigade utilises the fire safety materials that CFA has translated into an extensive range of languages other than English, including in its work with the Karen migrant community.

The Eaglehawk Brigade has a strong online presence, with a significant number of community members following the Facebook page (over 3,500 followers) and Instagram profile (over 1,000 followers). Social media is used by the Brigade for regular and seasonal community education and awareness posts on topics such as Australian Fire Danger Ratings, servicing and cleaning of heaters and chimneys and unattended cooking.

Print media is also used for tailored and targeted safety messages, with the Brigade regularly contributing to various publications and newsletters such as the '3556 magazine' which focuses on happenings within Eaglehawk.

Fire Equipment Maintenance is in place for over 130 clients in Eaglehawk and the surrounding communities with a client base including a mix of public and private workplaces, such as schools, retail outlets, bus lines and other heavy vehicles. This critical work establishes good relationships with staff and business owners, ensuring that portable fire equipment is serviced on a regular basis and is in good working order in the event of an emergency incident. Some of this work is conducted by trained brigade members and the remainder by qualified sub-contractors. The funds generated are used to purchase additional equipment that further enhances the Brigade's ability to meet community needs.

The Brigade has established relationships with the City of Greater Bendigo Council and the broader North West Region Vegetation Management Team to ensure prevention activities are tailored and targeted within the area, reducing risk for residents and travelers. The Brigade also partners with (and members participate in) FFMV burns, including traditional owner burns. A traditional owner burn is scheduled to be undertaken in 2023-24.

Significant sites within the SDA which are prioritised for community engagement activity, operational pre-planning, and exercising (as relevant) include: public housing, aged care facilities, community infrastructure, commercial and industrial premises, a major rail link, motel, grasslands and bushland urban interface (including creeks and reserved land corridors).

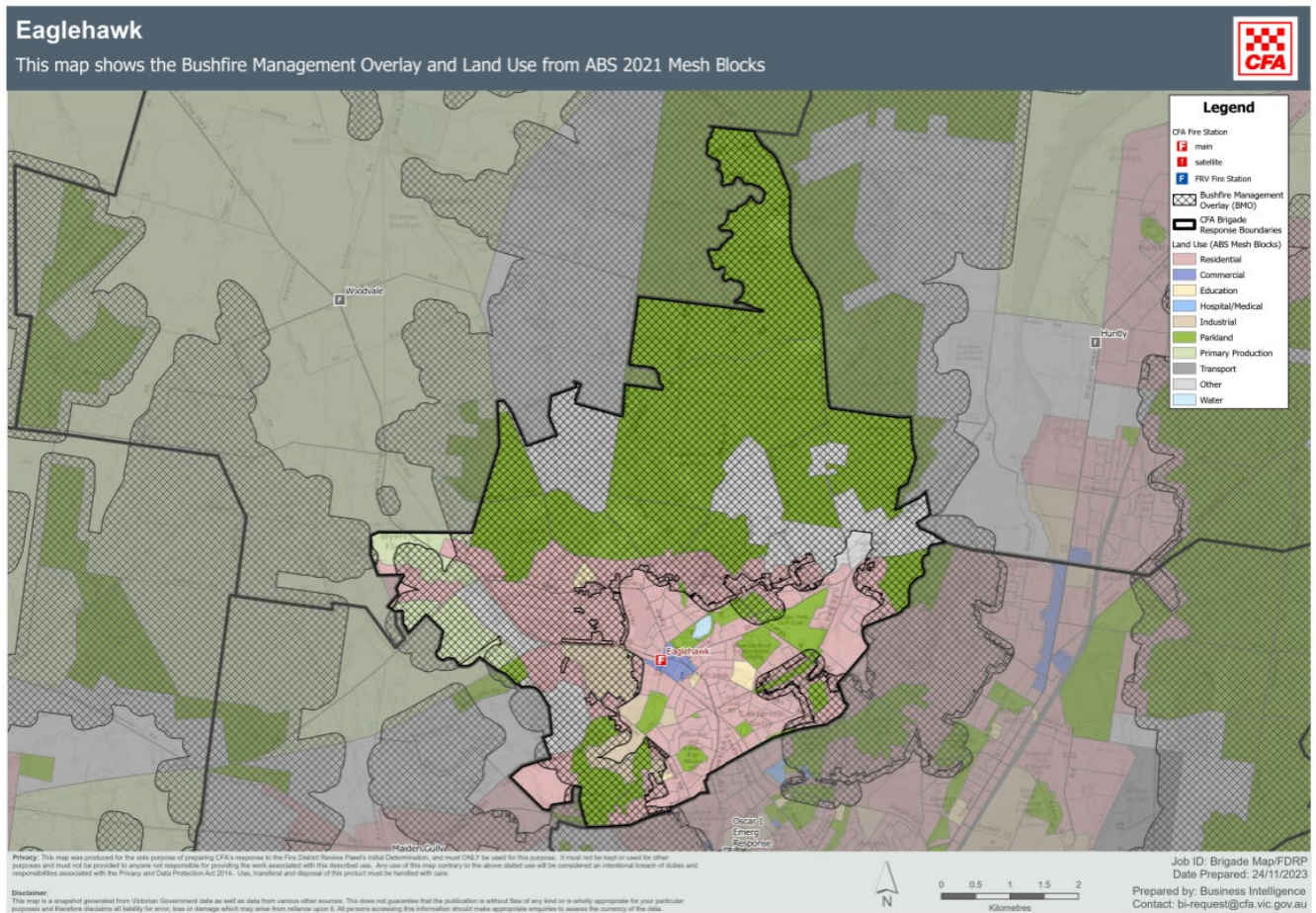
3. Service Delivery Profile Area

The Eaglehawk Fire Brigade SDA has a total area of 3,963.2 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses, as mapped in Figure 6.

Table 3: Eaglehawk land use planning areas

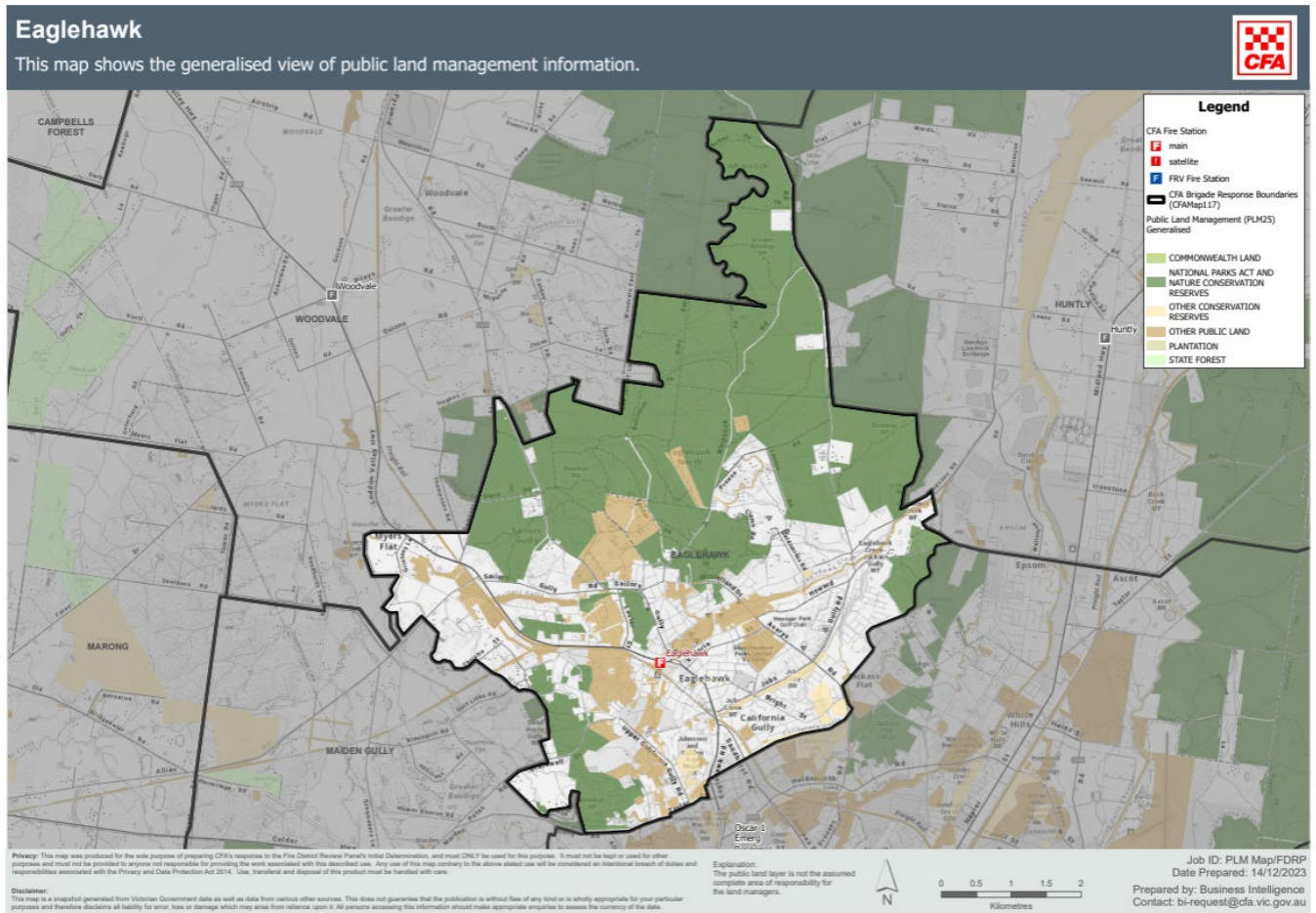
Land use	Hectares	Percentage of Brigade Area
Commercial	19.7	0.5%
Education	23.4	0.6%
Industrial	120.8	3.0%
Other	549.8	13.9%
Parkland	1,897.8	47.9%
Primary Production	173.9	4.4%
Residential	1,171.1	29.5%
Water	6.6	0.2%

Figure 6: ABS land use areas and BMO



A significant proportion of the SDA is public land (see Figure 7), and FFMV is the control agency for response to fire in state forest, national parks and protected public land. It also has responsibility for the delivery of programs to reduce the risk of bushfire in these areas. CFA supports FFMV’s response in state forest, national parks and protected public lands to achieve an effective complementary fire service for the community.

Figure 7: Public land management information



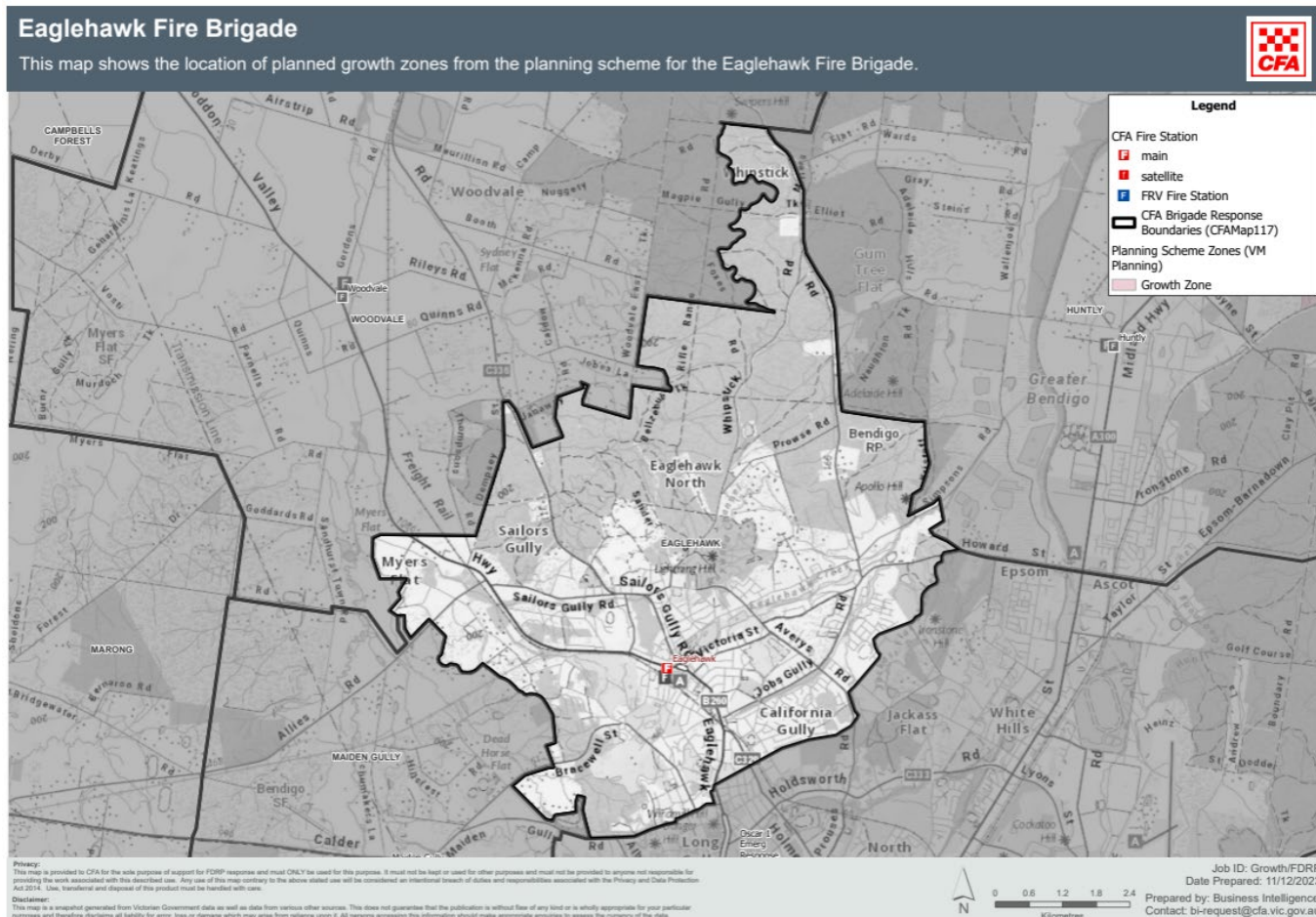
3.1 Growth zones

While the SDA has historically experienced a level of growth and development, an analysis of VicPlan, the official mapping platform of the Department of Transport and Planning shows there are no current residential or industrial growth zones within the Eaglehawk SDA. Any further growth is expected to be predominantly infill of the area rather than expansion.

Table 4: Urban growth areas

Total Brigade Area (Hectares)	Area (hectares) covered by Industrial Zones	Area (hectares) covered by Growth Zones	% covered by Industrial Zones	% covered by Growth Zones
3963	104.38	0.00	2.63	0.00

Figure 8: Planned growth zones from the planning scheme for Eaglehawk



Risk Evaluation:

While the SDA has historically experienced a level of growth and development, an analysis of VicPlan, the official mapping platform of the Department of Transport and Planning shows there are no current residential or industrial growth zones within the Eaglehawk SDA. Any further growth is expected to be predominantly infill of the area rather than expansion.

Risk Mitigation:

The Eaglehawk Fire Brigade resource capability of a pumper and tanker combined with the long-established protocol of joint response from FRV, FFMV and surrounding brigades as a response network, delivers the complementary fire services model and is considered sufficient to treat the current residential and industrial risk noting that there is no planned residential growth zones and development is at current capacity.

The upgrade of the Eaglehawk pumper from the 26 year old ISUZU to a modern Scania will provide better response acceleration and equipment to allow for facilitation of continued improved service delivery.

3.2 Bushfire Management Overlay

The Eaglehawk Fire Brigade SDA has 3,161.5 hectares defined as BMO (Figure 6 above). This equates to 80% of the total brigade area. The BMO applies to land that may be significantly affected by extreme bushfires. A planning permit is required for some types of development to ensure bushfire risk is considered and passive bushfire protection measures are in place to ensure resilience of the development without the intervention of fire services.

The BMO in the Eaglehawk Brigade area includes significant parkland and other land use types including residential and industrial. Much of the land covered by the BMO is public land, on which FFMV are the control agency for response to fire.

Risk Evaluation:

A complementary fire service is provided to the community by CFA and FFMV for much of the land covered by BMO in the Eaglehawk SDA. The majority of BMO is public land, for which FFMV is the control agency for reducing the risk and response to fire. The combined capabilities of the Eaglehawk Brigade, FFMV and FRV is sufficient to treat the risk. This is also supported by the requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones.

3.3 Population projections and social disadvantage

Between 2016 and 2021 there was an overall population change of 634 (6%) (derived from ABS census data applied by CFA to the brigade area as distinct from ABS collection grid cells).

For the local government area (City of Greater Bendigo) the forecast seven-year population change (from 2021 census) is an increase of 13% or 14,809. It is notable that significantly slower growth is forecast year on year for the Eaglehawk area¹⁹

The ABS Index of Relative Socio-economic Disadvantage (2021) shows the Eaglehawk Statistical Area Level 1 to be at SEIFA decile 1, Quintile 1, reflecting a high level of social disadvantage.

ABS census data (2021) shows that there are 4,787 dwellings in the Eaglehawk Brigade area. Of these dwellings, 30% are rental houses (16% of which are state owned). As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have the batteries replaced as required and are repaired or replaced as an urgent repair.

The population also includes those at higher risk, including people living with a disability, and those with a culturally and linguistically diverse (CALD) background. CALD community members include refugees from the Karen community, some of whom have been fearful of firefighters in uniform due to their experience in war torn areas.

CFA and FRV have collaborated to create the Prevent – Detect – Escape Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability.

¹⁹ Population summary | City of Greater Bendigo | Population forecast (id.com.au)

Risk Evaluation:

While Eaglehawk SDA has historically seen significant growth, the expected forward projection for the Eaglehawk area shows slowing and significantly lower growth than that projected for the local government area. Community engagement activities undertaken by the Eaglehawk Fire Brigade allow for mitigation of risk elements identified in both residential fire and social disadvantage risk.

Risk Mitigation Action:

The Eaglehawk Brigade has an ongoing focus on targeting high risk groups through community engagement including through partnering with organisations such as community health allowing them to reach vulnerable populations. The Brigade has a particular focus on increasing participation in the Prevent – Detect – Escape program, and delivery of the Smoke Alarm installation program (brigade members are currently completing training).

4. Service Delivery and Service Demand

4.1 Total demand

Figure 9 shows the total number of unique incident numbers attended by the Eaglehawk Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response.

Figure 9: Eaglehawk Brigade incident count by type 1 January 2010 - 18 December 2023

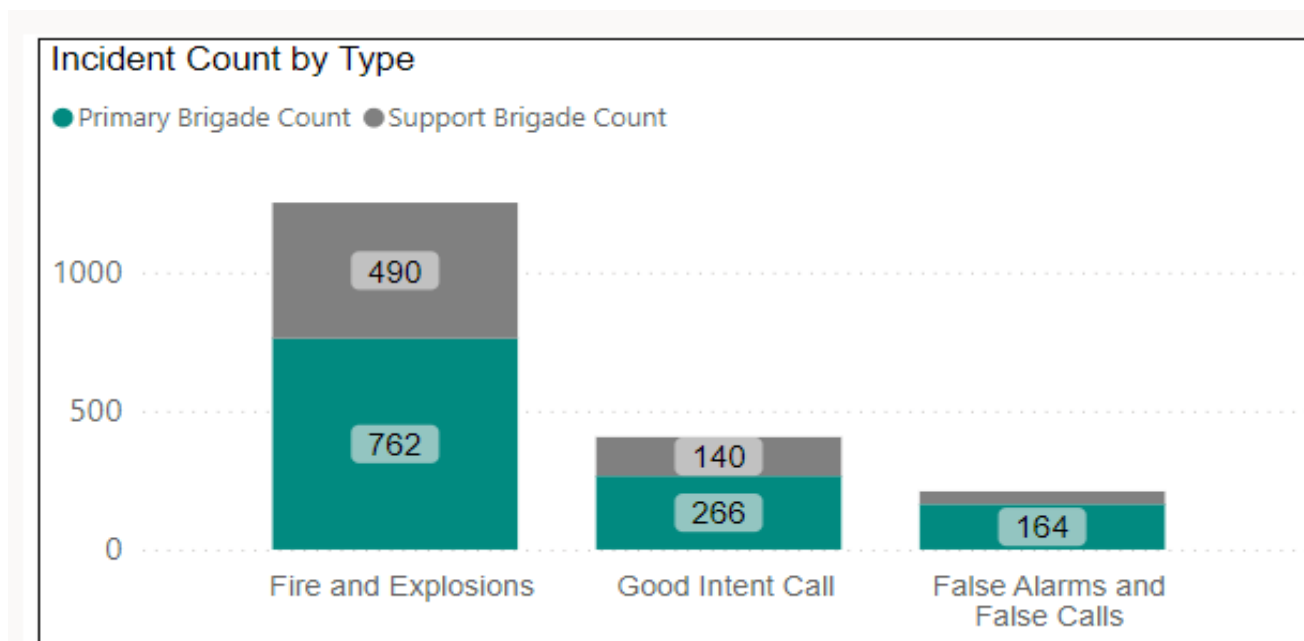


Figure 10 shows a count of the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels in summer and lower periods of activity in the winter months.

Figure 10: Eaglehawk Brigade incident count by month 1 January 2010 - 18 December 2023

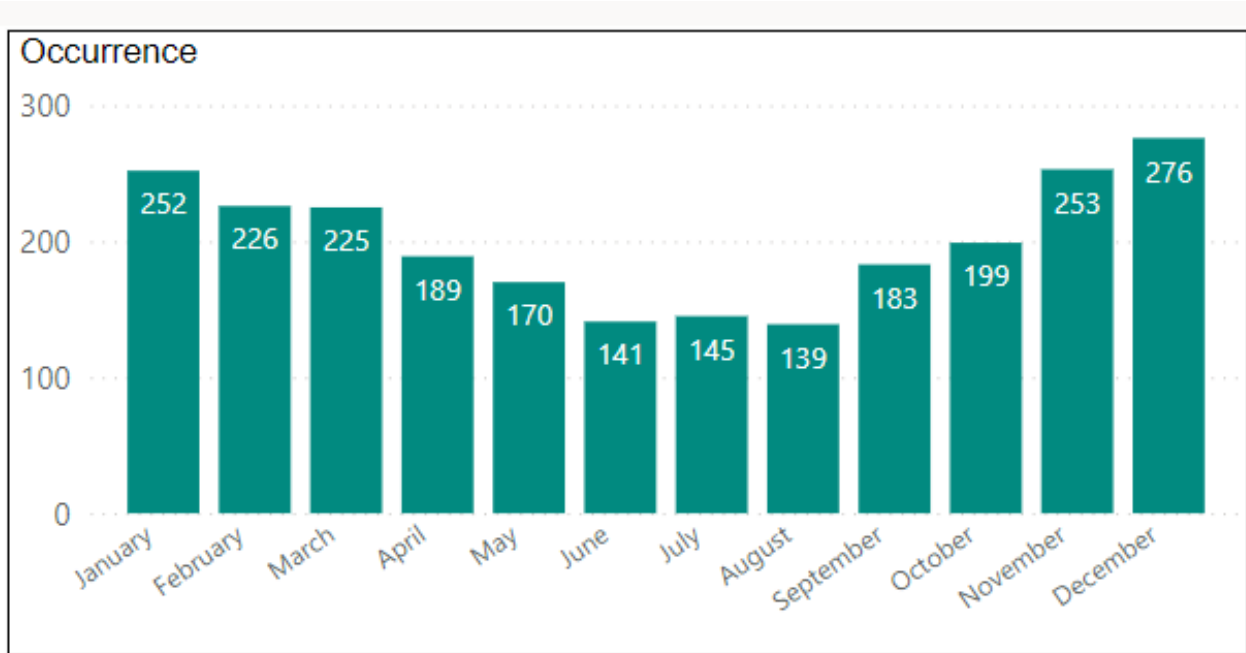
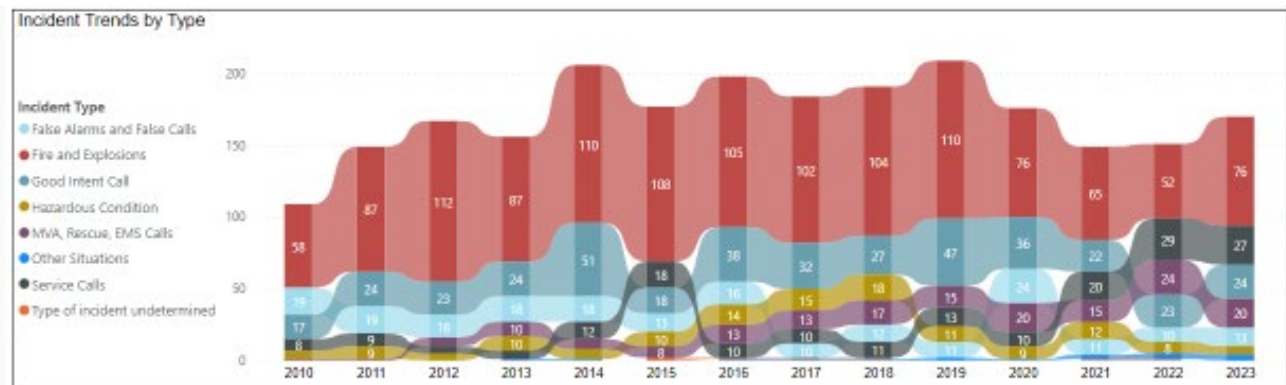


Figure 11: Eaglehawk Brigade incident count by type by year 2010 - 2023



Risk Evaluation:

The primary incident types for the Brigade are fire and explosion related. This has remained consistent over time, although the number of this call type has trended downwards since 2019, with an increasing number of service calls (support to other agencies) across the same period. The Eaglehawk Brigade is well equipped (both in capability and capacity) for all incident types within the SDA, and combined with FFMV and FRV provides an effective and efficient complementary fire service to the community. An upgrade of the Eaglehawk Brigade’s pumper will further enhance capability and the service provided to the community.

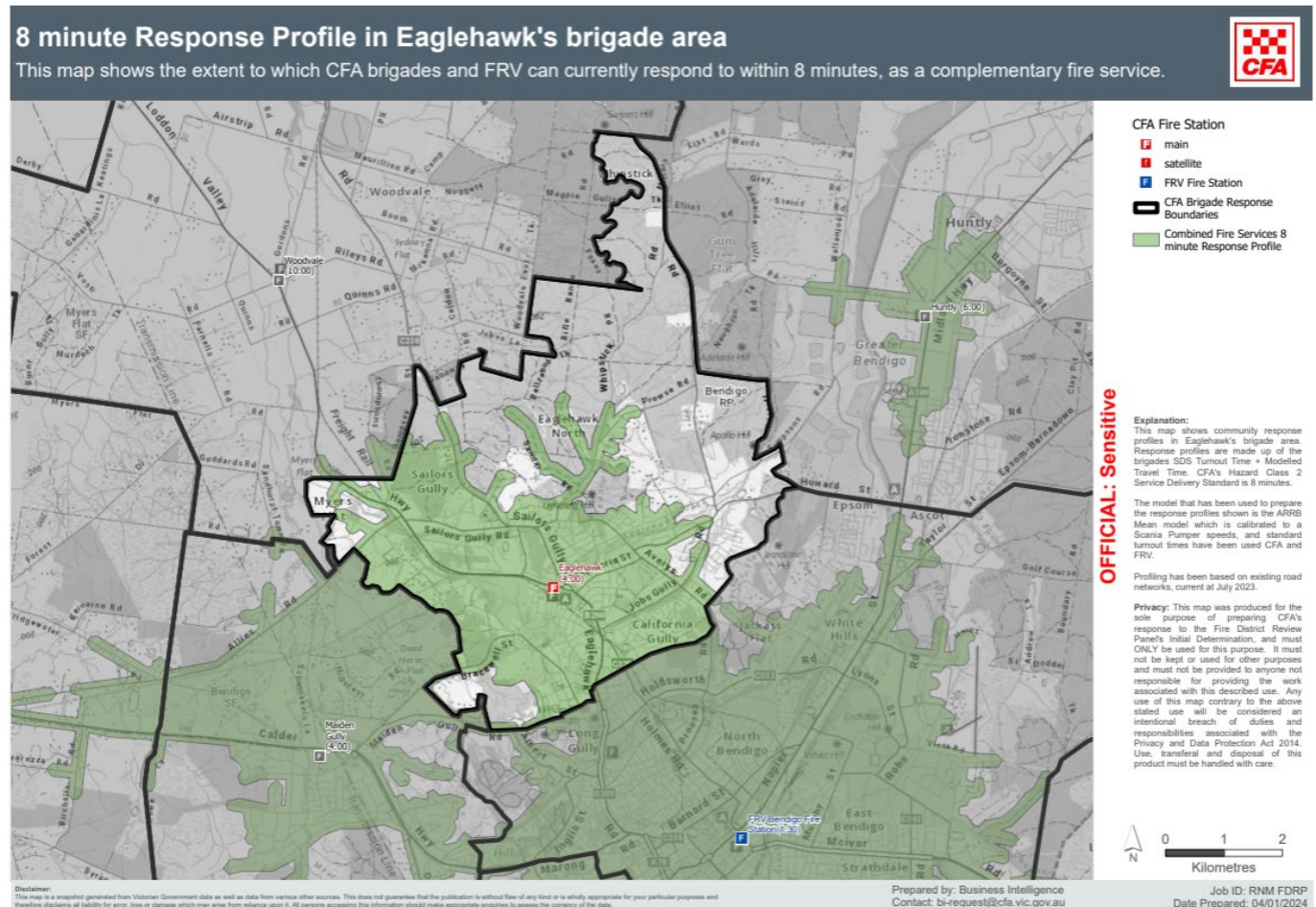
Risk Mitigation Action:

The Eaglehawk Brigade has seen a reduction in total demand of the Brigade’s services since Fire Services Reform. This downward trend will support the ongoing sustainability of the volunteer brigade model servicing the Eaglehawk SDA.

4.2 Service delivery standard

Figure 13 shows the percentage of road within the land use that can be serviced within eight minutes by the existing (CFA/FRV) complementary fire service. It should be noted that Figure 13 shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the eight minutes to scene standard.

Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 88.43% of the road network in the Residential land use
- 100% of the road network in the Commercial land use
- 100% of the road network in the Industrial land use
- 100% of the road network in the Education land use
- 63.66 of the road network in the Parkland land use
- 55.07% of the road network in the Other land use
- 83.14% of the road network in the Primary Production land use
- 100% of the road network in the Water land use

An analysis of the Eaglehawk Brigade with established SDS against the respective hazard classes shows:

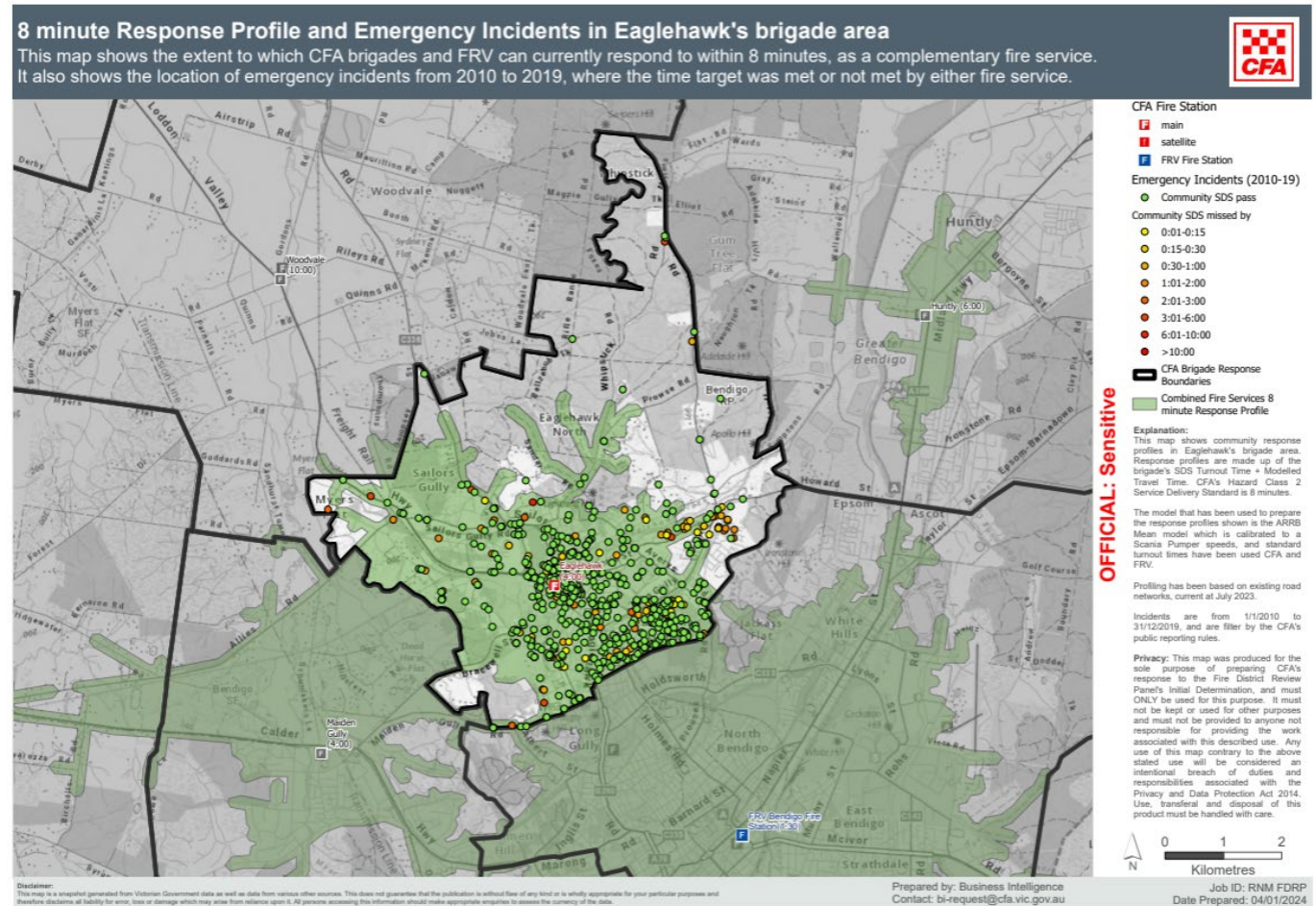
- from 1 January 2010 to 31 December 2019 there were 755 emergency incidents within the Eaglehawk Brigade SDA
- fire services response to emergency incidents was 76.42% compliant with SDS
- for the 178 incidents where SDS was not met over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (68%) were missed by 60 seconds or less.

Table 5: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3-6 minutes	6-10 minutes	More than 10 minutes
42 (23.60%)	28 (15.73%)	51 (28.65%)	31 (17.42%)	14 (7.87%)	7 (3.93%)	3 (1.69%)	2 (1.12%)

Figure 14 shows graphically the ability for fire services to meet established SDS across the Eaglehawk SDA.

Figure 14: SDS compliance for the Eaglehawk Brigade SDA 2010 - 2019



From 1 January 2020 to 30 November 2023:

- there were 285 emergency incidents within the Eaglehawk Brigade SDA
- fire services response to emergency incidents was 76.8% compliant with SDS. This is a 0.5% improvement on SDS performance when compared to the FDRP’s data reference period
- for the 66 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (65%) were missed by less than 60 seconds. Improvement has been made in the reduction of missed calls beyond the 180 second mark (6.74%).

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
10 (15.15%)	14 (21.21%)	19 (28.79%)	14 (21.21%)	5 (7.58%)	4 (6.06%)	0 (0%)	0 (0%)

To maintain and enhance the Brigade capability and response times, the Brigade is implementing the following:

- targeted recruitment of new members, primarily focussed on availability of people who live within four to six minutes from the station
- review of fire incident reports to ensure accuracy, including ensuring all relevant information is included such as road hazards and school zones. Data analysis indicates some incidents were reported incorrectly as Hazard Class 2 rather than as Hazard Class 3, which negatively impacted SDS
- review of radio protocols with operational members to ensure that response messaging is actioned immediately
- drivers to review routes to incidents at various times of day to minimise travel time
- training of additional drivers and BA Operators.

Risk evaluation:

The complementary fire service in the Eaglehawk SDA consistently achieves SDS results in the high 70s with the majority of incidents that miss the standard doing so by only very small margins. **SDS performance has improved since the FDRP data reference period, and the number of incidents where SDS is missed beyond the 180 second mark has also reduced. Known traffic impediments, radio congestion and some member availability, singular or in combination are the main contributors to SDS misses against target.**

Data analysis has identified some instances of incorrect hazard class reporting with the effect that a number of recorded SDS misses were incidents that were responded to within the required standard. Due to the volume of data recorded for the Brigade, a full historical review was not practical for the purposes of this report but the matter will be rectified for all future FIRS reports.

Risk mitigation:

The Eaglehawk Brigade has an active recruitment and training campaign to support the ongoing viability and sustainability of the Brigade and ensure timely response at all times of the day and night.

In addition, the Brigade is reviewing fire reports to ensure accuracy, will be reviewing radio protocols with operational members, reviewing routes to incidents to minimise travel and will seek to train additional drivers and

BA Operators.

Also supporting efficiency and effectiveness, the Brigade has operational response pre-plans in place for 19 premises, with eight of these being alarmed and the remaining 11 being high risk premises. All plans are reviewed on an annual basis, with members attending premises for familiarisation purposes. Pre-plans are also exercised as part of ongoing training.

To further enable the Brigade to enhance its capability to meet the needs of Eaglehawk and surrounding communities into the future upgrading the pumper will assist the Brigade in many ways. Benefits include an increased road presence, nett power and torque to combat the hills and other road conditions in and out of the Brigade SDA, therefore supporting an enhanced response time.

4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Eaglehawk Brigade SDA from 2010 to 2023 has had a total of 86 building/structure fires requiring extinguishment.

Table 7: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
5	3	10	4	3	7	12	4	9	6	7	6	4	6	86

An analysis of preventable fire fatalities associated with these 86 building/structure fires has indicated that there were no preventable fatalities. One non-preventable fatality (medical episode) occurred.

Table 8: Non-preventable fatalities 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
-	-	-	-	1	-	-	-	-	-	-	-	-	-	1

Risk Evaluation:

The Eaglehawk Brigade SDA has had no preventable structure/building fire fatalities since 2010 and only one non-preventable fatality (medical episode). The FDRP ranking of the Eaglehawk Brigade as 10 out of 13 in for the BCTC ratio may be a data error.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.

Table 9: Eaglehawk fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	5 of 13	<p>The Eaglehawk Brigade is mostly challenged in meeting the SDS between the hours of 10:00 and 14:00 with a gap also evident at 07:00 and 22:00. The Brigade is recruiting new members and its SDS has improved since the FDRP data reference period.</p> <p>FRV is dispatched to support CFA to all Code 1 Structure Fires in the Eaglehawk Fire Brigade SDA, ensuring complementary delivery of service to the community.</p>	<p>An active recruitment and training campaign is being undertaken to support the ongoing viability and sustainability of the Brigade.</p> <p>In addition, the Brigade is reviewing fire reports to ensure accuracy, will be reviewing radio protocols with operational members, will be reviewing routes to incidents to minimise travel and is looking to train additional drivers and BA Operators.</p> <p>To further enable the Brigade to enhance its capability to meet the community needs, upgrading the pumper will assist the Brigade in many ways. Benefits include an increased road presence, nett power and torque to combat the hills and other road conditions in and out of the Brigade SDA, therefore supporting an enhanced response time.</p>
Bushfire Management Overlay %	2 of 13	<p>The majority of BMO in the SDA is public land, for which FFMV (DEECA) is the control agency for risk mitigation and response to fire.</p> <p>The combined capabilities of the CFA Eaglehawk Brigade, FFMV and FRV is sufficient to treat the risk. This is also supported by the requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones.</p>	
Total Demand	10 of 13	<p>The primary incident types for the Brigade are fire and explosion related. This has remained consistent over time, although the number of fire and explosion related calls has trended downwards since reform, with an increasing number of service calls (support to other agencies) across the same period.</p> <p>The Eaglehawk Brigade is well equipped (capability and</p>	<p>The upgrade of the Eaglehawk Brigade's pumper will further enhance capability and the service provided to the community.</p>

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		capacity) for all incident types within the SDA, and with FFMV (DECCA) and FRV capability and capacity provide an effective and efficient complementary fire service to the community.	
Victorian Planning Authority %	2 of 13	<p>The Eaglehawk Fire Brigade is well equipped (capability and capacity) for fire risk of the SDA, including significant area classified as parkland and the bushland urban interface.</p> <p>CFA, FFMV and FRV capability and capacity provide an effective and efficient complementary fire service to the community. An upgrade of the Eaglehawk Brigade pumper would further enhance capability and the service provided to the community.</p> <p>There are no current residential or industrial growth zones within the Eaglehawk SDA and any further growth is expected to be predominantly infill of the area rather than expansion.</p>	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio	8 of 13	See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.	
Building fire casualty to total building fire ratio	10 of 13	The Eaglehawk Brigade SDA has had no preventable structure/building fire fatalities since 2010 and only one non-preventable fatality (medical episode). The FDRP ranking of the Eaglehawk Brigade of 10 out 13 for this measure may be a data error.	
Population projections	11 of 13	The population projection for the Eaglehawk SDA shows slowing and significantly lower growth than that projected for the local government area as a whole.	The Eaglehawk Brigade has an ongoing focus on targeting high risk groups through community engagement. The Brigade has a particular focus on increasing participation in the Prevent – Detect – Escape Program, and delivery of the

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		Community engagement activities undertaken by the Eaglehawk Brigade allow for significant mitigation of risk elements identified in both residential fire and social disadvantage risk.	Smoke Alarm installation program (brigade members are currently completing training).

Table 10: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Eaglehawk	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Typical traffic Saturday 18:00

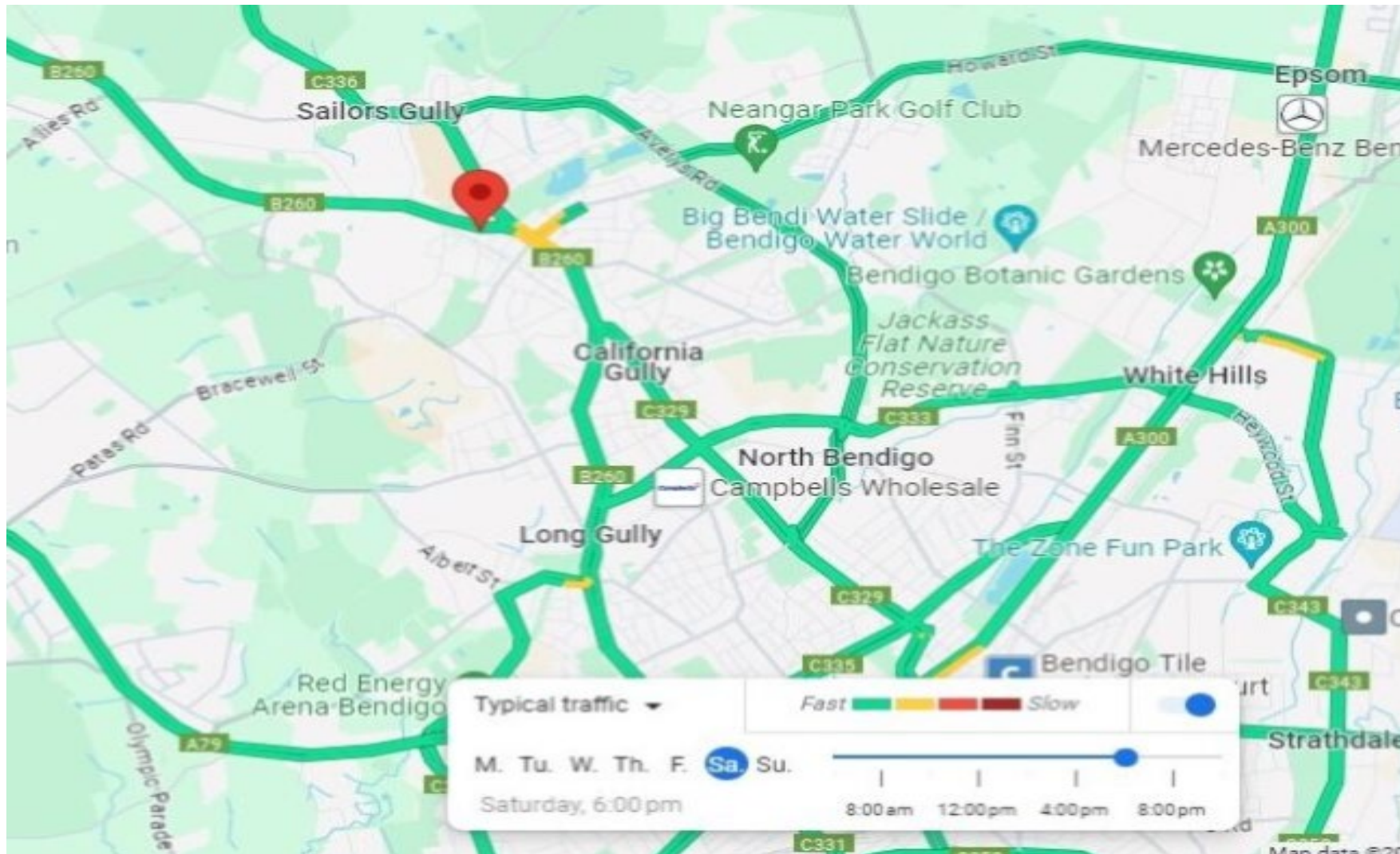


Figure 2: Operational members location and travel times

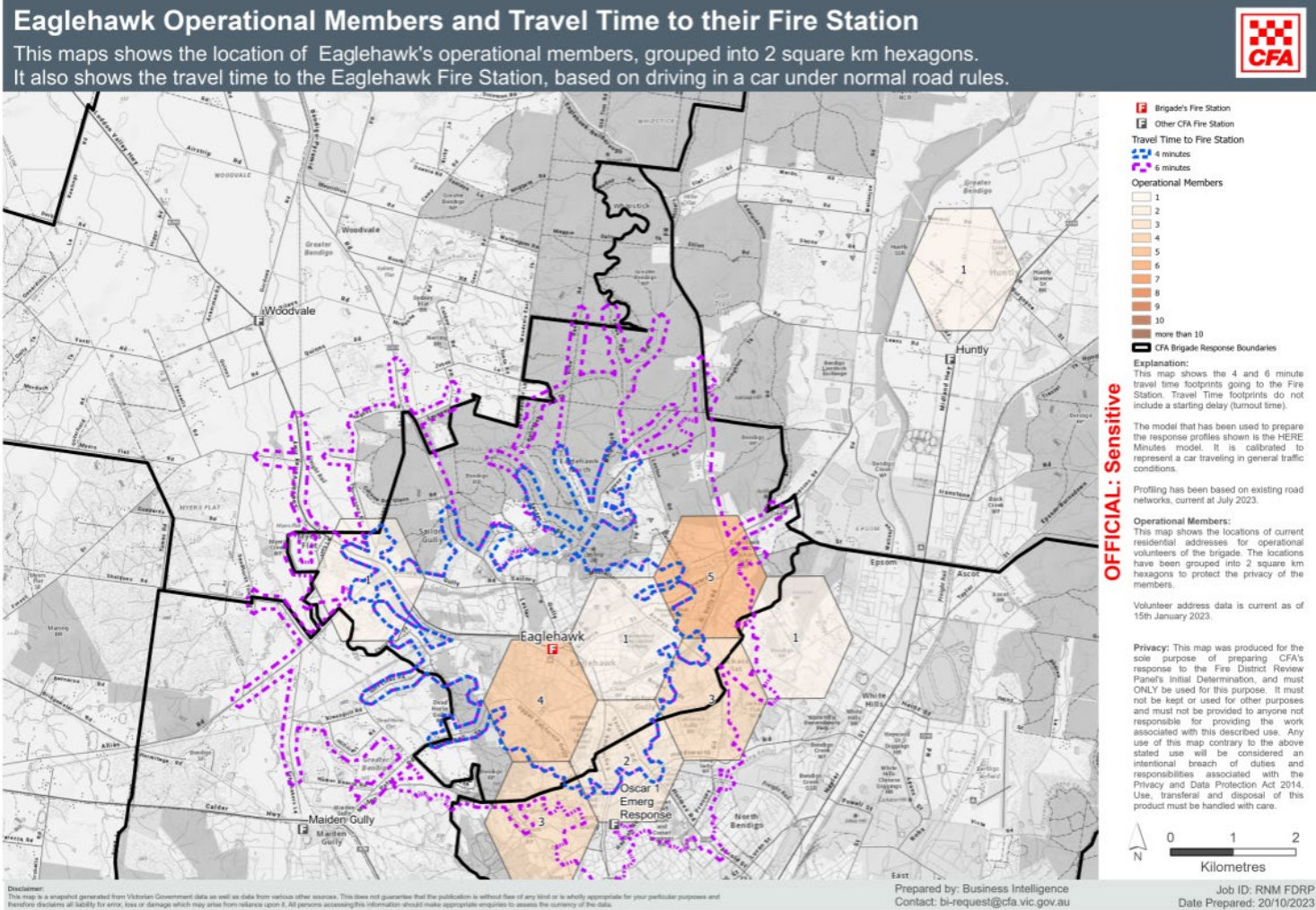


Figure 3: Incident count and type of support provided in the FRV Fire District

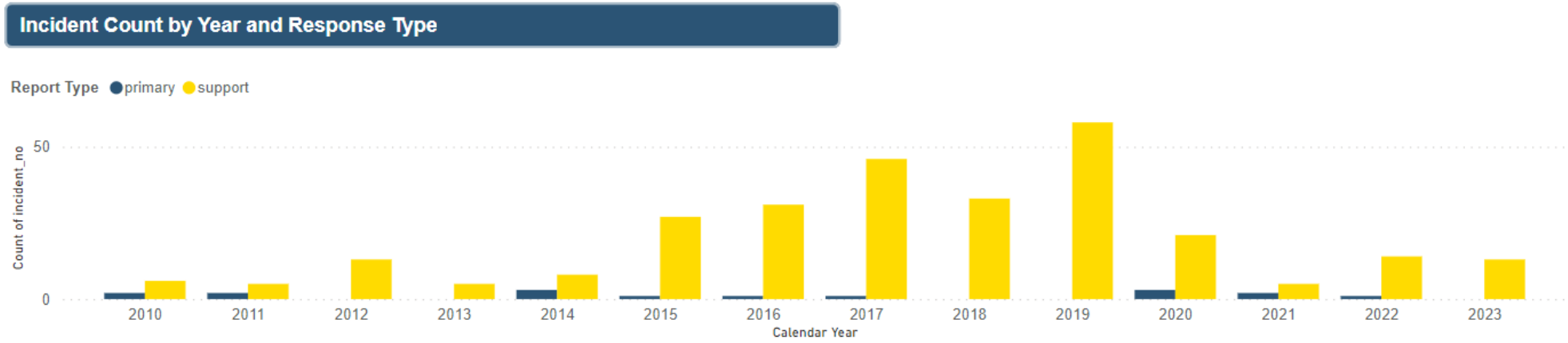


Figure 4: Incident count and type of support provided in the FRV station footprint

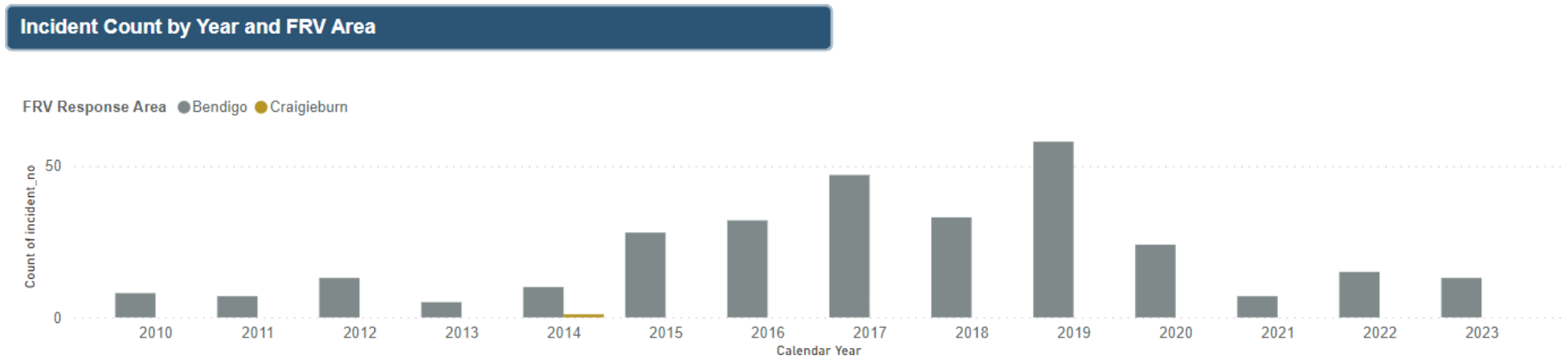


Figure 5: Community safety and intervention programs

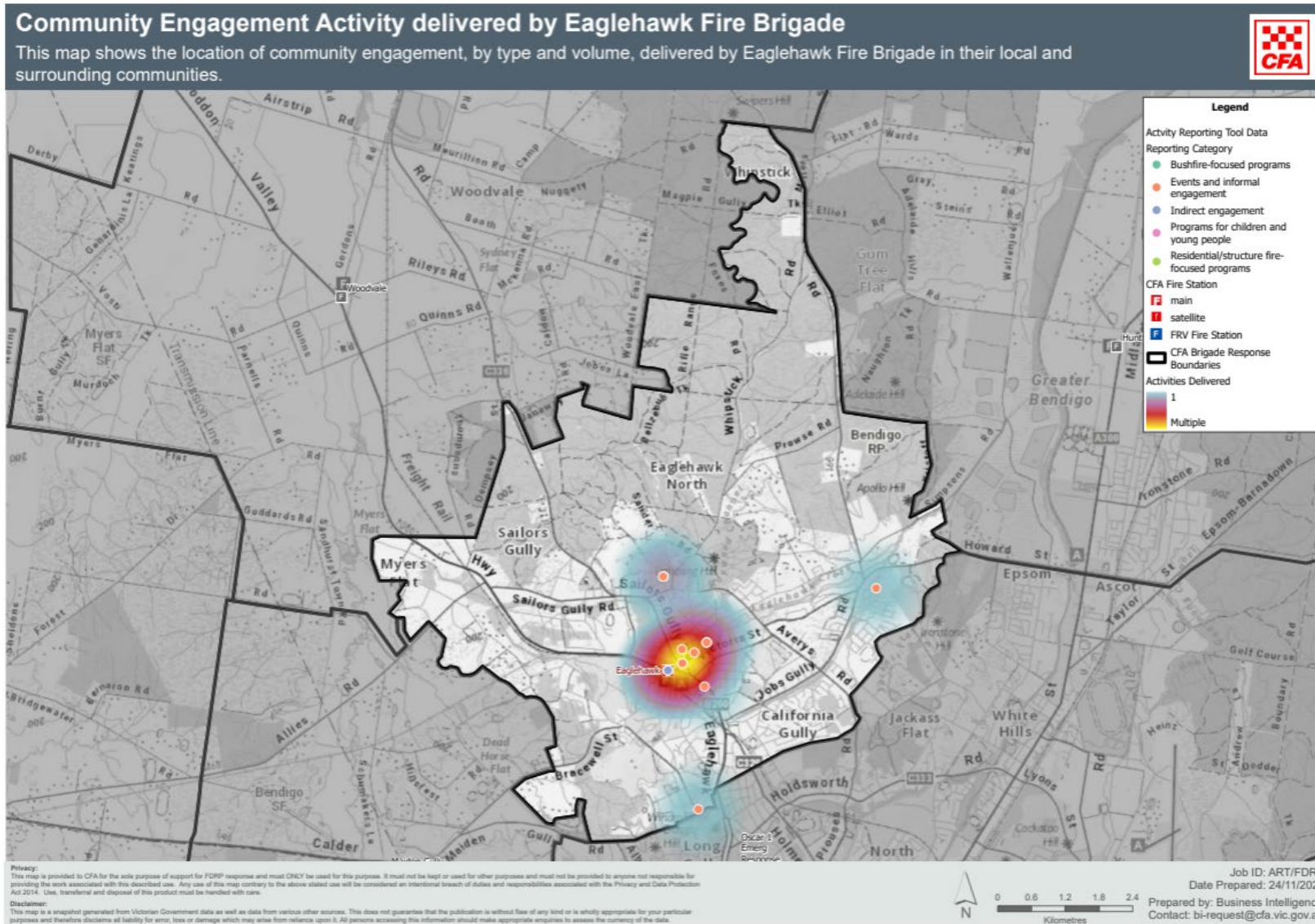


Figure 6: ABS land use areas and BMO

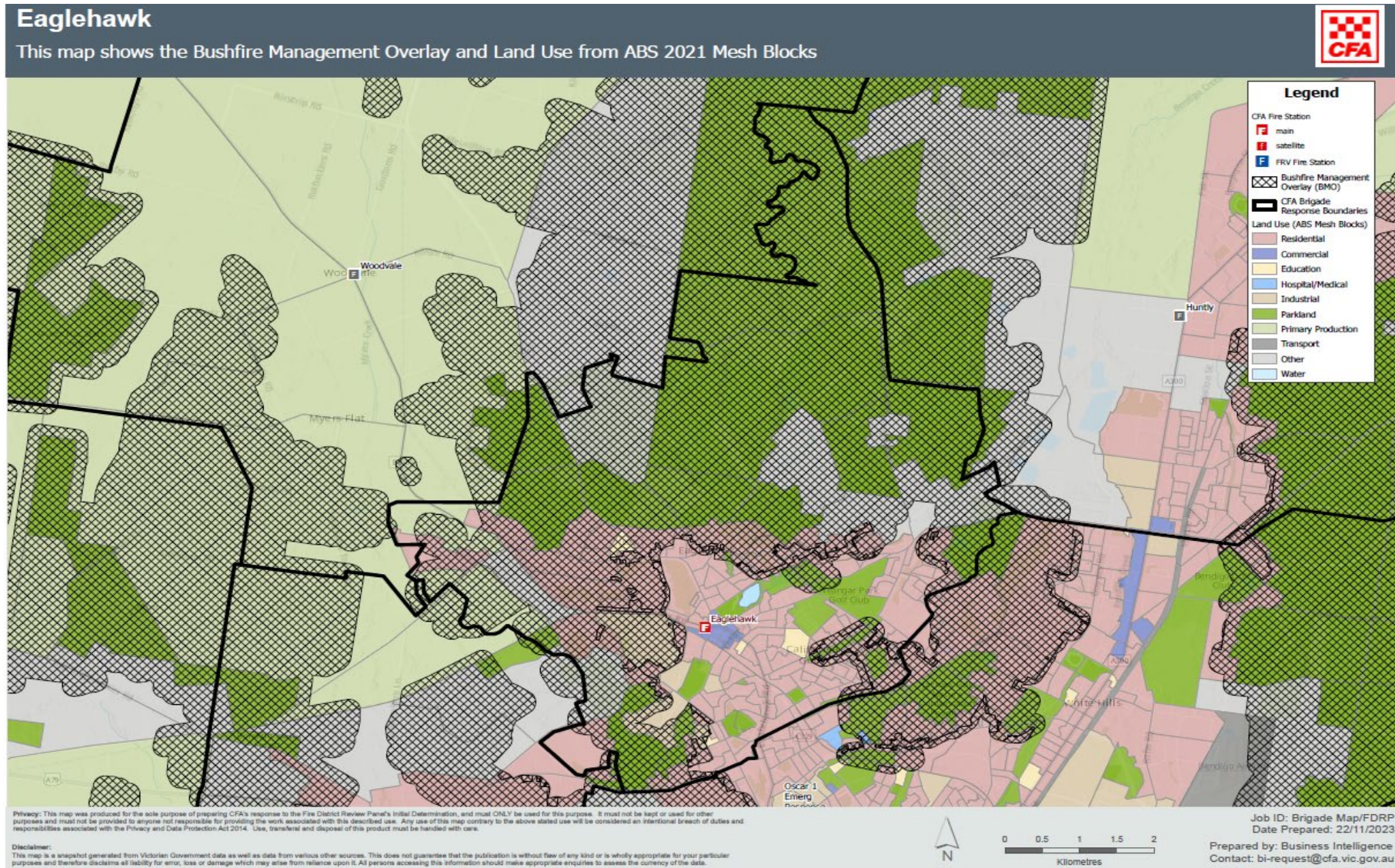


Figure 7: Public land management information

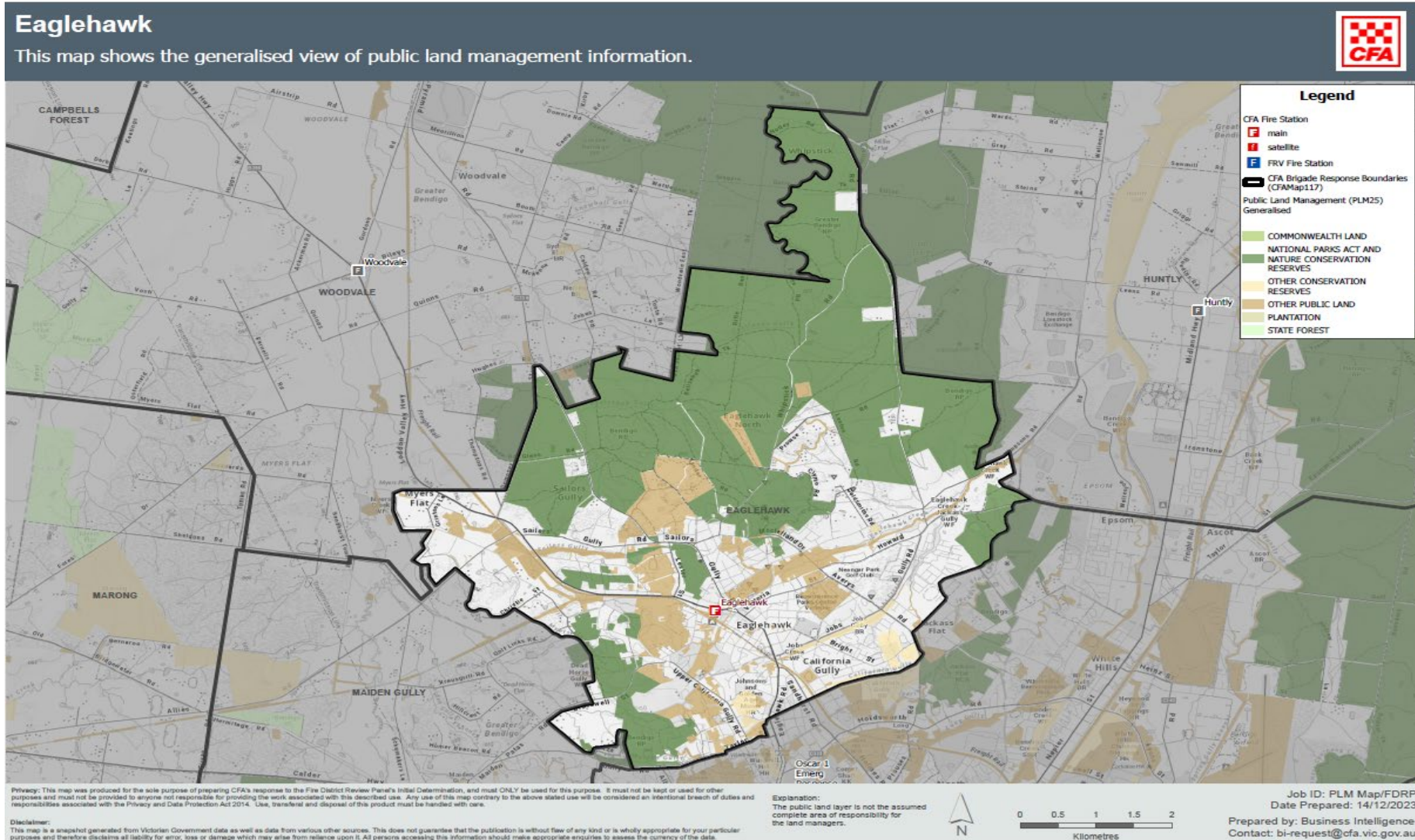


Figure 8: Planned growth zones from the planning scheme for Eaglehawk

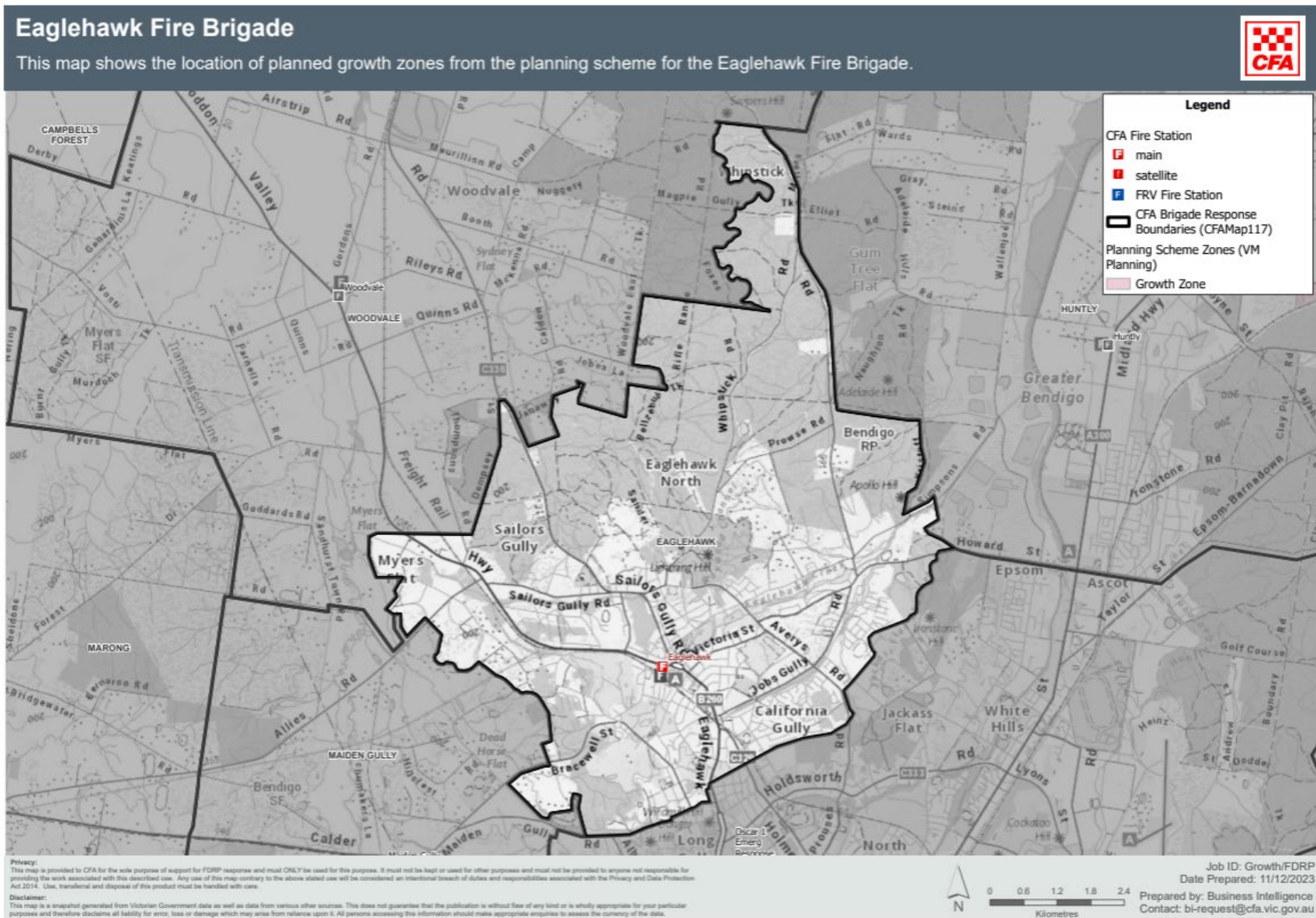


Figure 9: Eaglehawk Brigade incident count by type 1 January 2010 - 18 December 2023

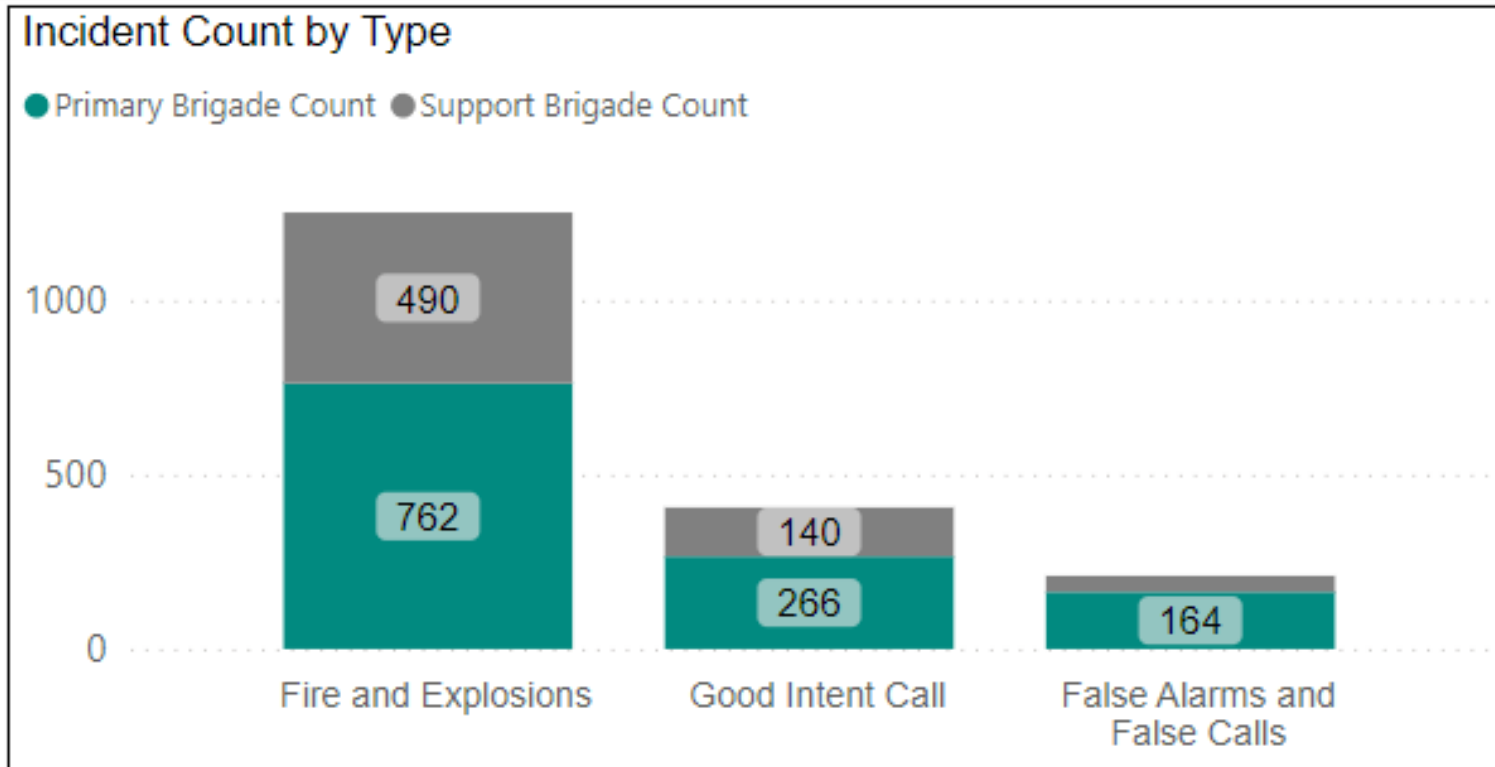


Figure 10: Eaglehawk Brigade incident count by month 1 January 2010 - 18 December 2023

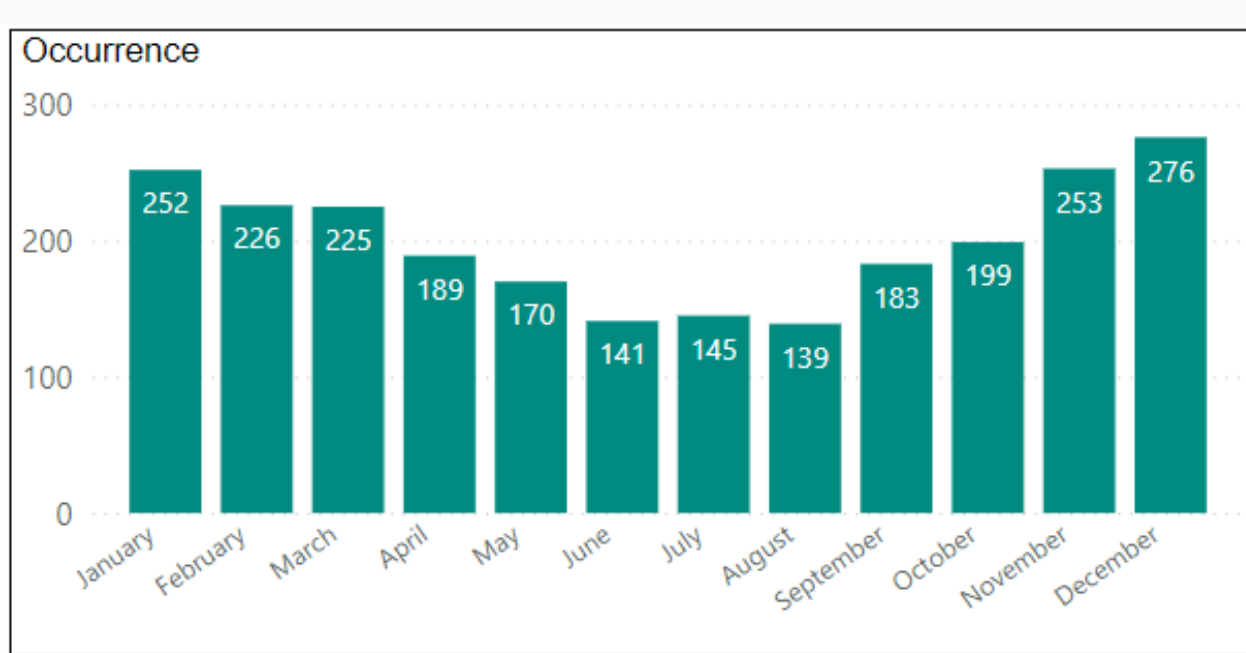


Figure 11: Eaglehawk Brigade incident count by type by year 2010 - 2023

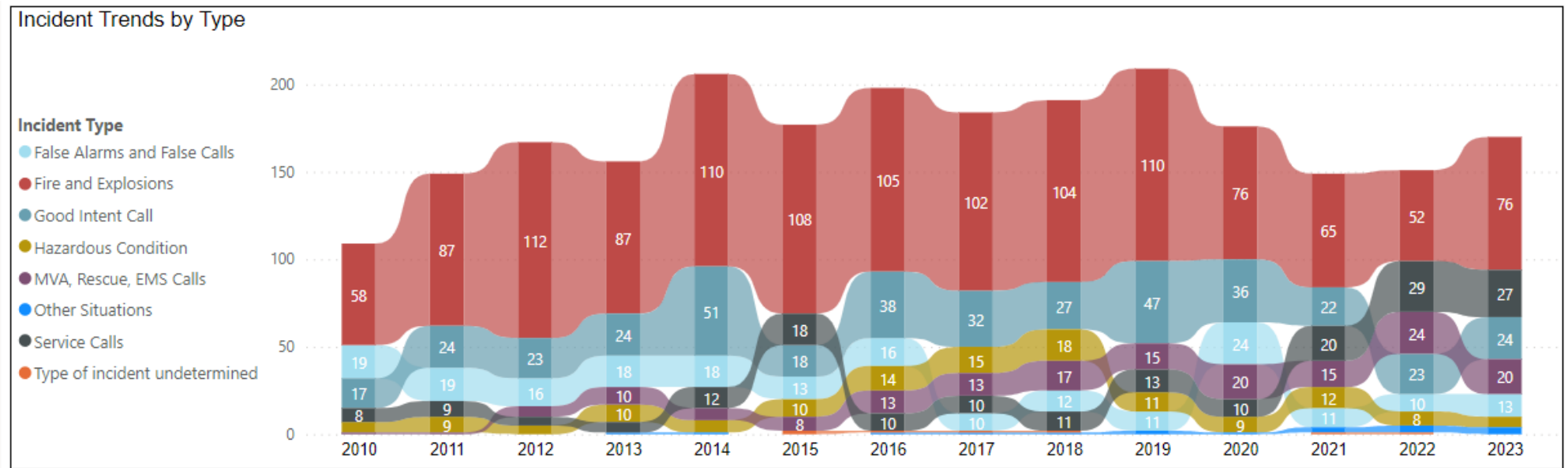


Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes

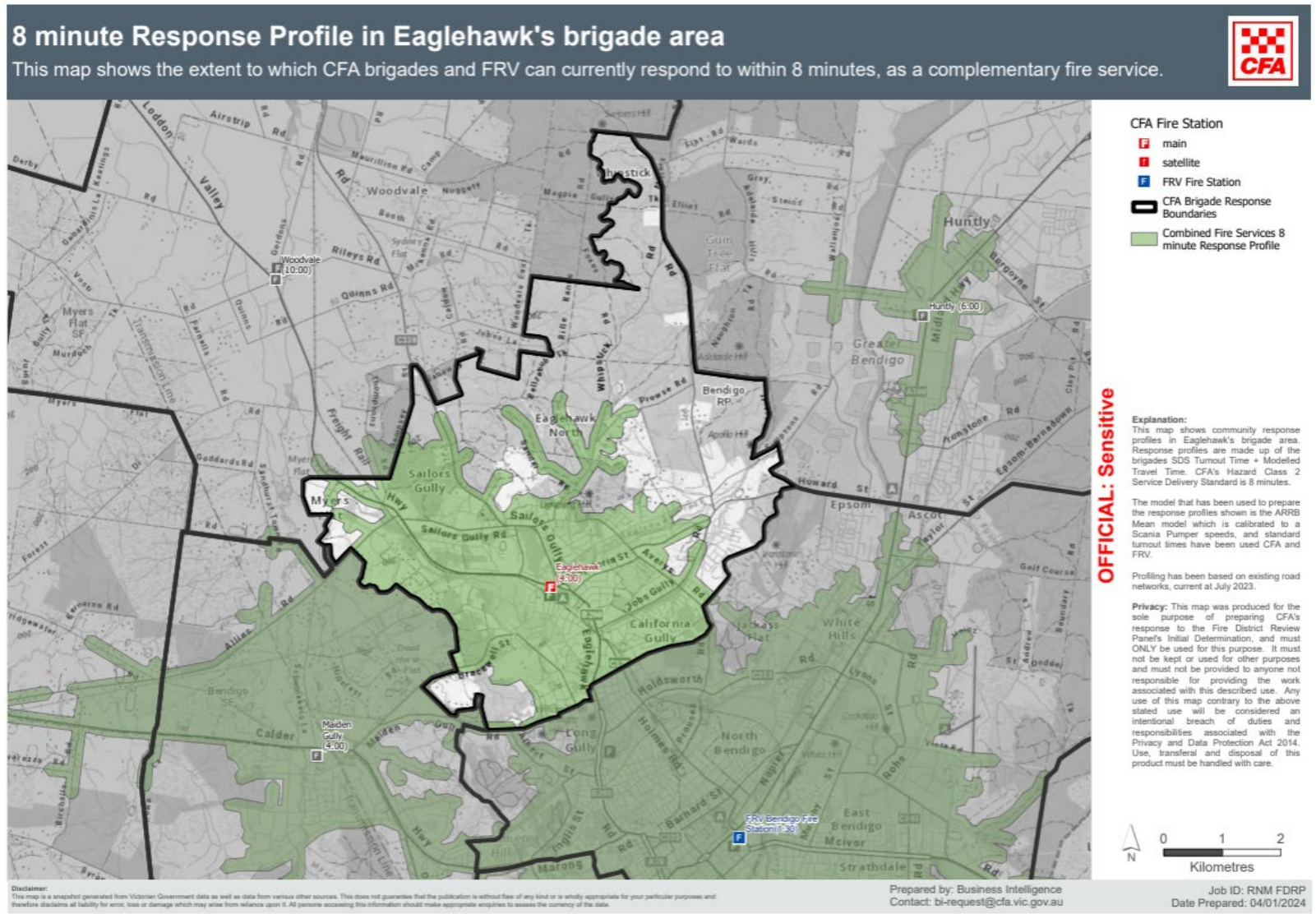
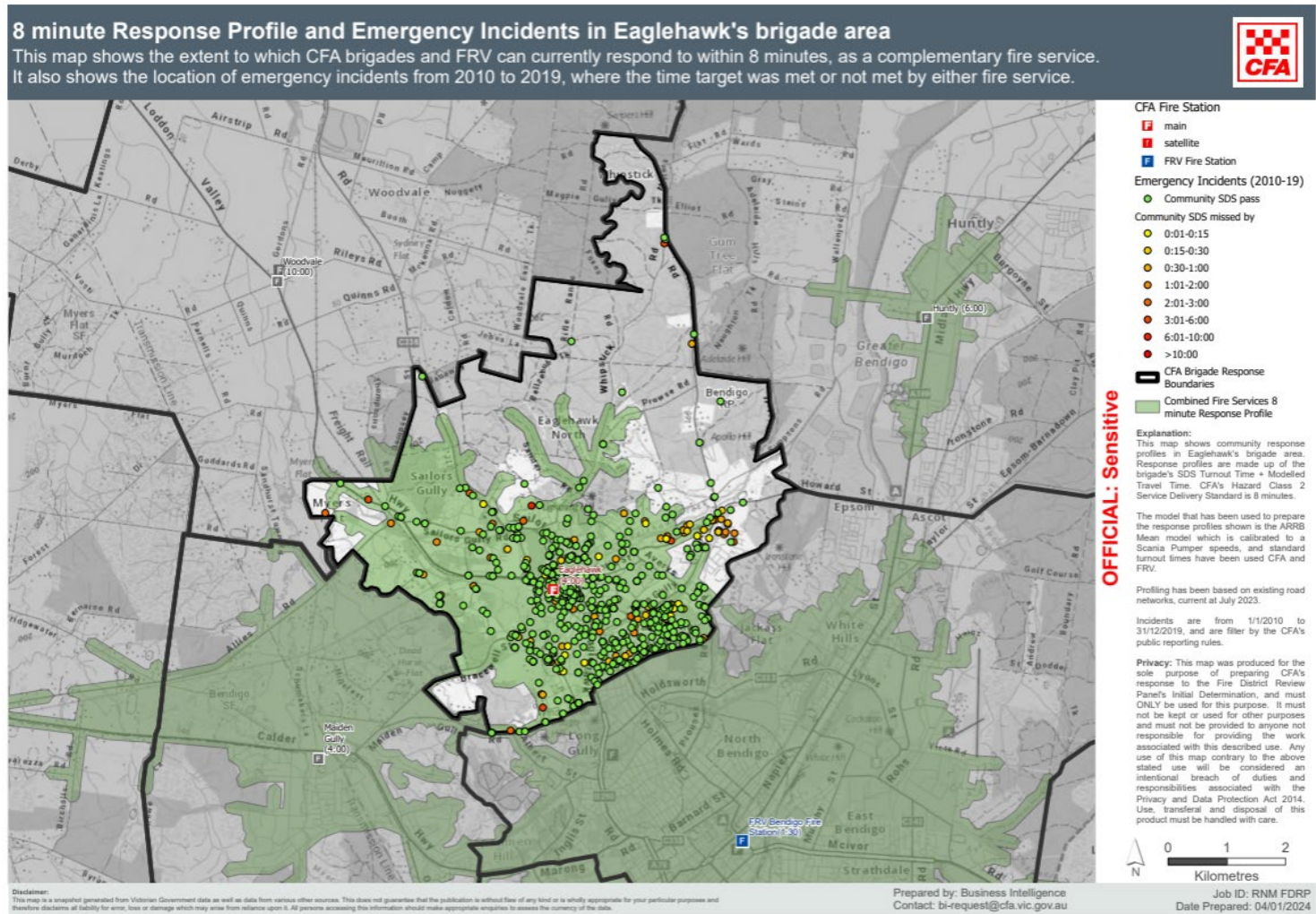


Figure 13: SDS compliance for the Eaglehawk Brigade SDA 2010 – 2019



Epping Fire Brigade

1. About the Brigade

The Epping Fire Brigade is a Class 5 Brigade within the Hume Group located in District 14 of the North West Region. The Brigade has a total membership of 59 volunteers (as at 31 December 2023) and since 1980 has been an Emergency Management Commissioner accredited Road Crash Rescue Brigade.

1.1 History

The Epping Fire Brigade was initially established as a rural fire brigade in 1944. At the time, the City of Whittlesea had a total population of 5,723. The Brigade determined its response area, which consisted of open farmland and a small village on High Street; an area of approximately 8,400 square hectares.

In 1950, the Brigade received its first fire truck from CFA (a 1947 Austin Standard tanker) and a fire station on Houston Street, Epping was constructed. The then Metropolitan Fire Brigade boundary adjoined the Epping response area at the City of Preston boundary, and the fire services have been responding collaboratively ever since.

In the mid-1970s the Brigade began investigating rescue operations and in 1979 purchased and equipped its first rescue appliance through community fundraising. In January 1987, the Brigade was officially registered as an urban fire brigade and in May of the same year, construction commenced on the current station at the corner of O'Hens Road and Epping Road with a major upgrade occurring in 2011.

Since the mid-1990s – when a string of fires were caused by residents cooking tomatoes on outside fires during fire danger periods – the Brigade has been very active in community education and engagement pursuits. Members understand local risks and tailor and target key messages to high-risk groups, and the community in general. Through a mix of face-to-face interactions and social media, the Brigade is a trusted source of fire safety information and education, which assists in motivating fire safe behaviours in the community.

1.2 Context

The Epping Fire Brigade SDA and the adjoining Wollert and District Fire Brigade SDA are in a high growth corridor with previous farming land now zoned as residential and several housing estates are under development.

Significant development of the road network and traffic congestion influence incident response (both the type of incidents attended by the Brigade and the efficiency of response).

Equipped for the urban rural interface area with appliances, equipment and suitable training, the Brigade has established a strong relationship with the City of Whittlesea, adjoining CFA brigades and FRV stations and the community, maximising the strength of the complementary fire service being provided.

The Brigade continues to adapt to mitigate the changing risk and maintains a strong and active membership base.

Brigade members serve as representatives on the CFA/Volunteer Fire Brigades Victoria (VFBV) Fire Equipment Maintenance Advisory Committee, CFA Rescue Association, and the District 14 Planning Committee. Members also have representatives on the District 14 VFBV Executive Committee. Every three months the Epping Captain, District 14 Commanders, and Hume and Whittlesea/Diamond Valley Group Officers meet with FRV Northern Zone Assistant Chief Fire Officer and Commanders to discuss operational matters of mutual interest and how they will continue to work together to service the community.

The Brigade's local knowledge and experience enables it to effectively engage with community about their risk and what they need to do to stay safe. By understanding this risk, the Brigade has created an effective Community Engagement Plan which enables it to continue to grow and further develop the strong relationships and networks it has within the local community. All engagement is tailored to meet the needs of the targeted groups, with a focus on education and information on fire awareness, prevention and safety.

2. Brigade Capability Snapshot

2.1 Membership

The Epping Fire Brigade has a total membership of 59 members with a gender mix of seven females and 52 males. The Brigade has a healthy age profile with the average member age of 45 years.

The Epping Brigade is part of a network of 135 principal providers supporting Victorian RCR arrangements which are in place to ensure an effective, sound and sustainable system of RCR that delivers the best possible care to, and safe extrication of people involved in road crashes.

The Brigade currently has five accredited trainers and assessors who support District 14 and other brigades across the State in delivering training activities.

2.2 Fire appliances, other vehicles and specialist equipment

The Epping Fire Brigade has five appliances and vehicles to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Epping Brigade alone.

Table 1: Fire appliances and vehicles available to the Epping Brigade

Vehicle	Type	Age
Pumper	Scania	6 years
Tanker	Isuzu	22 years
Rescue	Heavy rescue specialist appliance	8 years
Rescue support	Holden Commodore RS wagon	5 years
Field Command Vehicle	Ford Ranger	7 years

Table 2: Vehicle specification

Pumper	Carrying five firefighters, 2,000 litres of water and 4,000 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, gas detector, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, fire extinguishers, salvage equipment, water monitors and fire fighting foam producing equipment, and a thermal imaging camera.
Tanker	Carrying five firefighters 3,000 litres of water, 900 lpm pump, BA, hoses and adaptors, chainsaw and foam equipment.
Rescue	To provide equipment for the safe extrication of persons trapped due to road crash or industrial incidents.
Rescue support	To provide equipment for the safe extrication of persons trapped due to road crash or industrial incidents.
Field Command Vehicle	Field command vehicle (FCV) used to support fire ground operations and incident command and control. Appropriate design and size to operate in both a bush and urban setting. Includes multiple radios, 4WD. The FCV is used in a range of incident management roles including; incident control in a level 1 fire, Operations Officer, Sector Commander, Strike Team Leader, Ground Observer or Staging Area activities for level 2 or 3 incidents.

2.3 Station Location

The Epping station opened in 1988 and is located at 2 O'Herns Rd, Epping. The Epping SDA adjoins FRV's Epping Station response area at the City of Darebin boundary with a longstanding collaboration between the services providing an efficient and effective complementary fire service for the local community.

Extensions and renovations to the station have been made over the years to accommodate the growth of the Brigade, to house additional appliances suitable to the risk environment and to enhance the space to train, undertake drills and complete the management functions of the Brigade. The most recent major upgrade was completed in 2011. The Epping station has two main buildings on site. The older refurbished building comprises a meeting room and associated facilities. The newer building comprises of a three bay drive through Motor Room and turn out area. There is also a garage which houses the FCV, in addition two smaller outbuildings.

The location of a fire station is an important element in the successful operation of a volunteer fire brigade. Siting must strike a balance between been located to address service delivery needs but also be readily accessible to and from for emergency responders.

Analysis of the Epping Fire Brigade's peak activity within the primary SDA shows that the two most peak times for brigade dispatches is 08:00 and 17:00. Typical traffic patterns at these times is shown in Figures 1 and 2 below.

Figure 1: Typical traffic 08:00

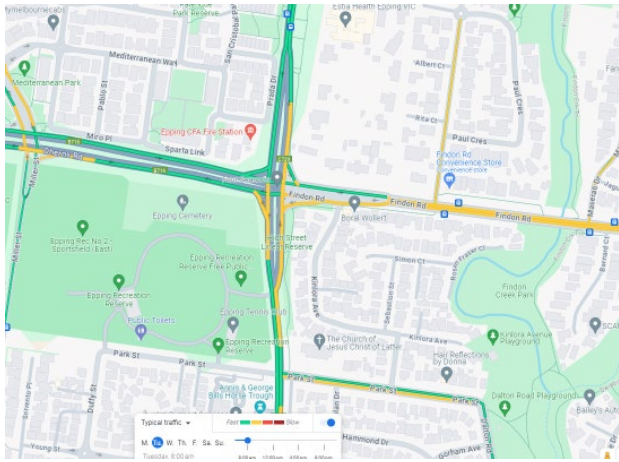
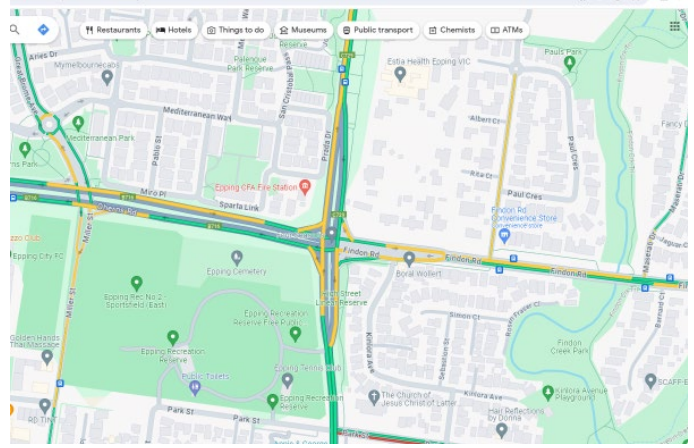


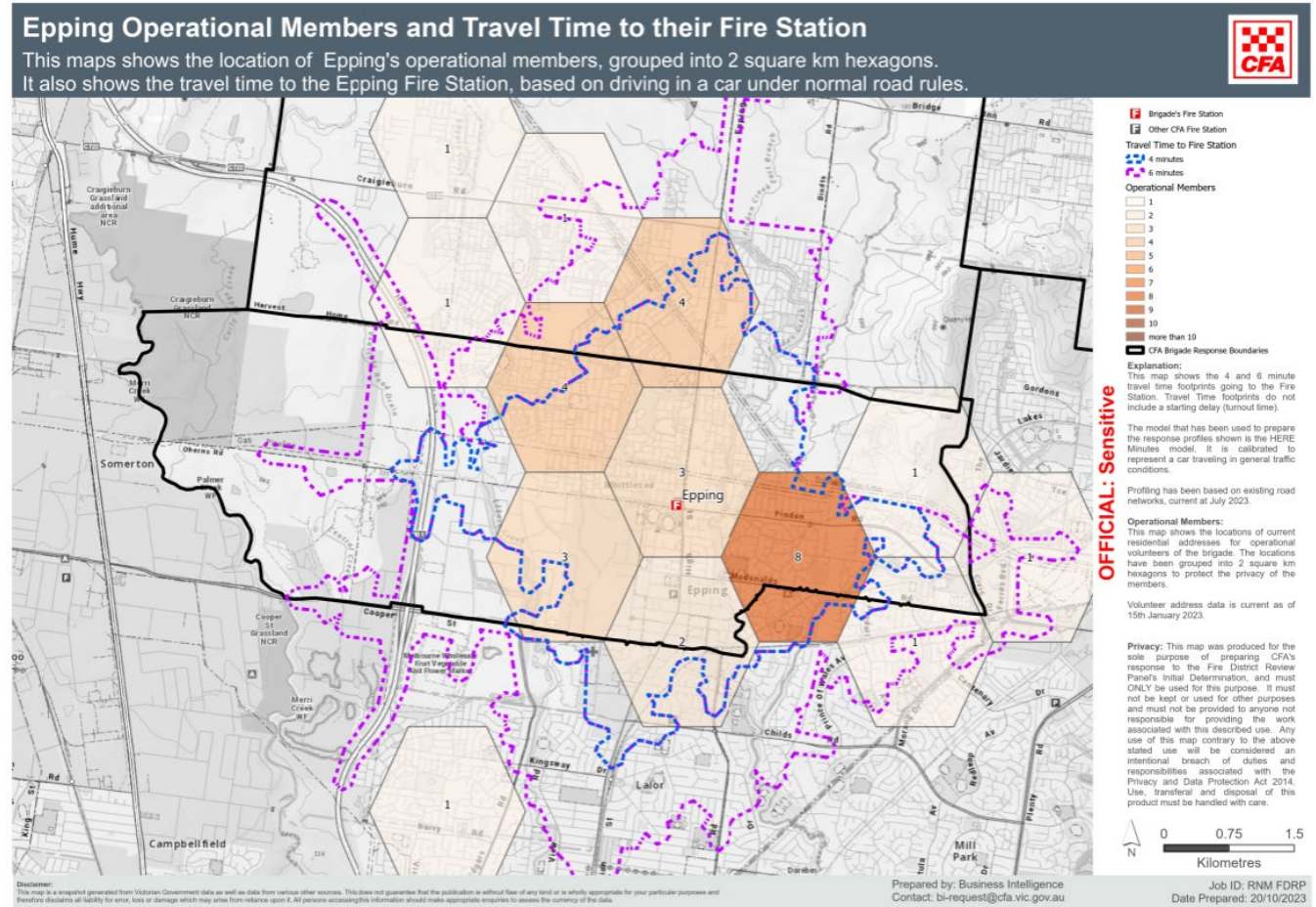
Figure 2: Typical traffic 17:00



Analysis of the home location of Epping Fire Brigade members within a four minute and six minute travel time (under normal road conditions) shows capacity for rapid mobilisation of volunteers to station upon activation (Figure 3).

Traffic congestion around the major intersection of O'Herns Rd and Epping Road is constant at both peak times and slows traffic access to and from the current Epping Fire Station site. Further, the area has been subject to significant roadworks for a protracted period (close to ten years), impacting travel times for all emergency service vehicles.

Figure 3: Operational members location and travel times



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only provides support across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state's resources in both the CAoV and the FRV Fire District. The Epping Brigade has a long and proud history of contributing to strike team deployments, both members and appliances, across Victoria and interstate for fires, floods, and other emergencies. This includes:

- in 2019-20, many members were deployed interstate to New South Wales and to Gippsland in Victoria
- in 2022, support was provided by members to the flood affected areas of Victoria
- in 2023, support was provided to the fire response of the Queensland Fire and Emergency Services.

2.5 Assistance to Fire Rescue Victoria

In 2022-23, 37% of calls to the Epping Fire Brigade were support calls, the majority of which were support to CFA's Wollert and District Fire Brigade and to FRV. Figures 4 and 5 below show the number of responses of the Epping Brigade to the FRV Fire District. There has been a general declining trend since 2016, although there is a noted increase in 2022 and 2023.

FRV is dispatched to support CFA to all code 1 calls in the Epping SDA, further ensuring complementary service delivery to the community.

Figure 4: Incident count and type of support provided in the FRV Fire District

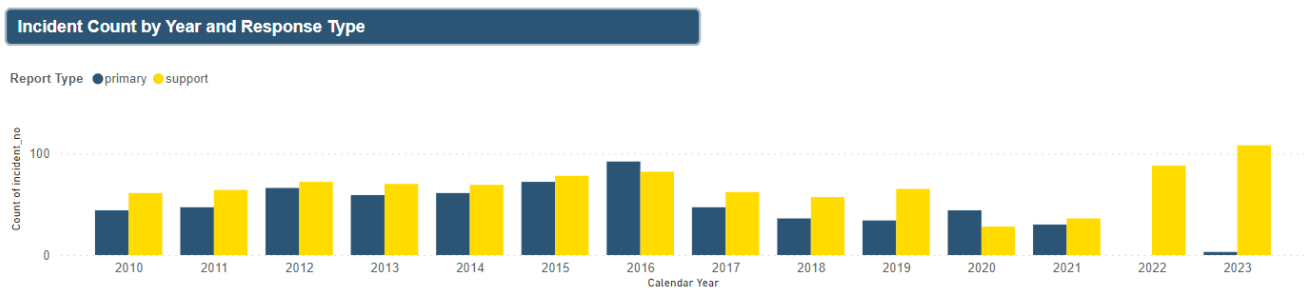
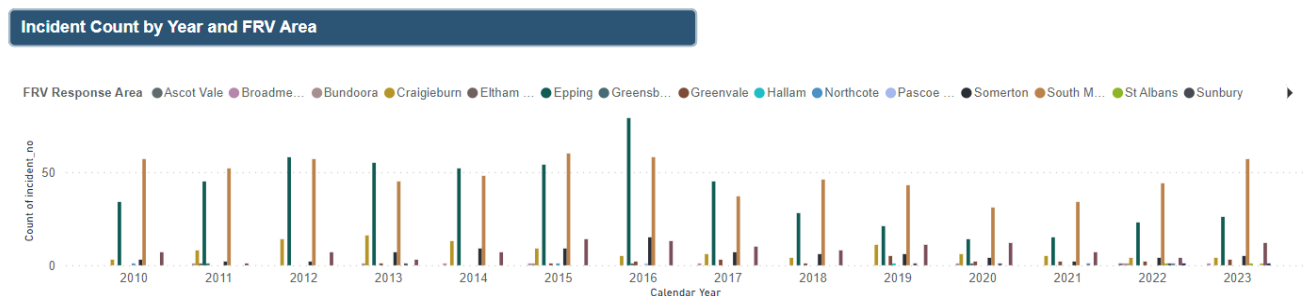


Figure 5: Incident count and type of support provided in the FRV station footprint



2.6 Community engagement activities

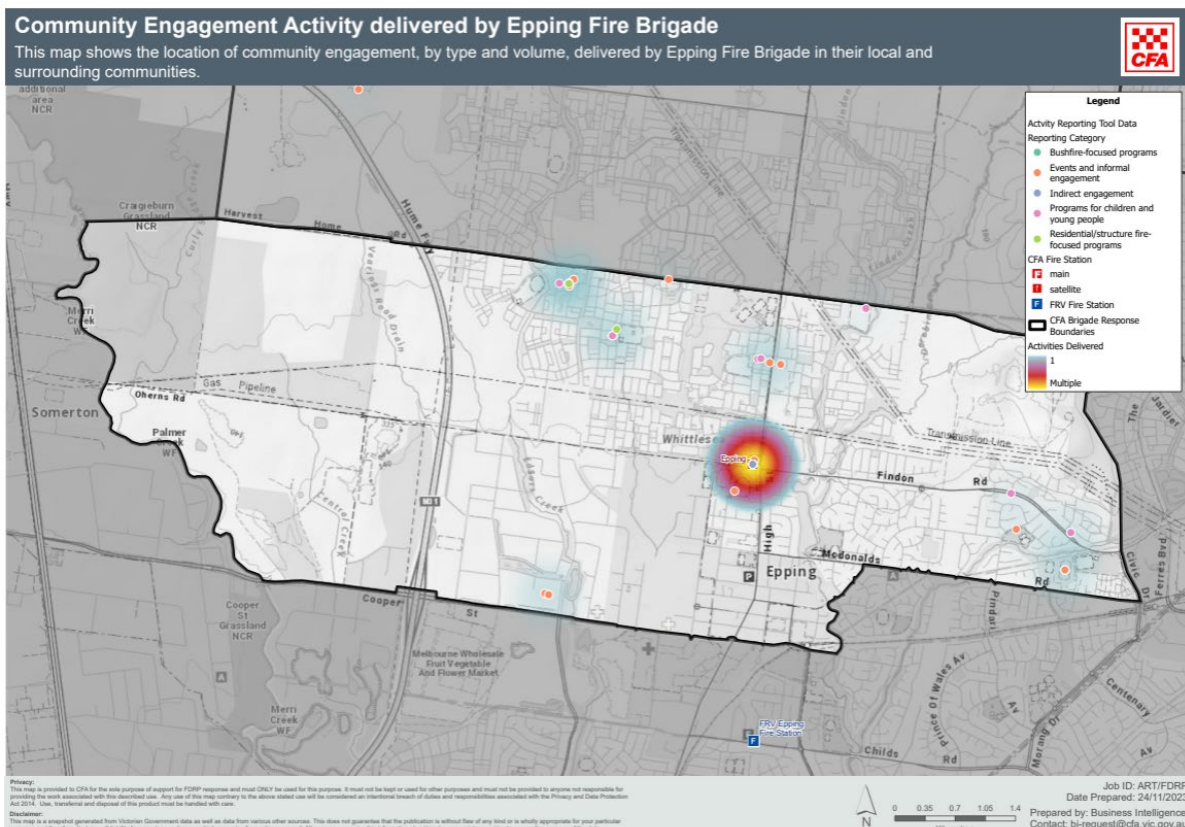
The Epping Brigade works directly with the community in prevention and preparedness activities including community fire safety messaging and direct community engagement programs. Several CFA programs are delivered within the community, including the Fire Safe Kids Program being delivered to schools and pre-schools, the use of static unattended displays and pop-up displays at local shopping centres and stores (such as Bunnings), visits to local business owners, participation in local community events such as the Good Friday Appeal, multicultural events, and the Brigade's annual open day. Connections have been developed and fostered with multicultural groups through the delivery of prevention and preparedness activities which have resulted in the recruitment of new members from these communities.

The Brigade focuses on targeting key messages to high-risk groups and the broader community. High risk groups within the Epping SDA include the Culturally and Linguistically Diverse (CALD) community and young people. The Fire Safe Kids Program teaches children about the dangers of fire, the risks and possible injuries and property loss, all in an age-appropriate delivery method. It is important that young children understand fire danger and are equipped to take simple actions to protect themselves. The Brigade currently has six members who are trained to deliver this program.

The Brigade engages with its community through various social media platforms, ensuring the best reach across a variety of different demographics. The Epping Brigade has 7,000 followers on Facebook, 12,000 followers on Instagram and 12,000 followers on YouTube. The Brigade is very active on social media and posts at least twice each week. A strong ongoing relationship with the local newspaper, the Whittlesea Leader, ensures that the Brigade can provide important information to the local community through this medium.

In 2022, CFA implemented a new platform Activity Reporting Tool (ART) to allow brigades to centrally record community engagement activities. Before the implementation of ART brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of activities. As a result of the use of ART the Brigade has been able to tailor the community engagement activities to specific target groups

Figure 6: Community safety and intervention programs



The Brigade has a visible presence within the community through the delivery of Fire Equipment Maintenance. This service is currently provided to 50 customers, including manufacturing industries, schools, other CFA brigades, hotels, and community centres. Services are provided through qualified brigade members and a qualified sub-contractor. This work provides the Brigade with regular ongoing funding which is used to purchase additional resources to enhance the service it provides to the community. Visiting these sites also increases members familiarity with individual premises and their layout which contributes to an enhanced operational response.

Epping Fire Brigade SDA has 38 protected premises all of which have current pre-incident plans. These plans are reviewed annually, ensuring all members are familiar with the premises and know what to do in the event of a call out.

The Brigade has established a strong relationship with the City of Whittlesea, which conducts approximately 20 planned burns a year. Epping Brigade members are not only actively involved in these burns, but also provide support across the state as part of the Planned Burn Task Force

3. Service Delivery Area Profile

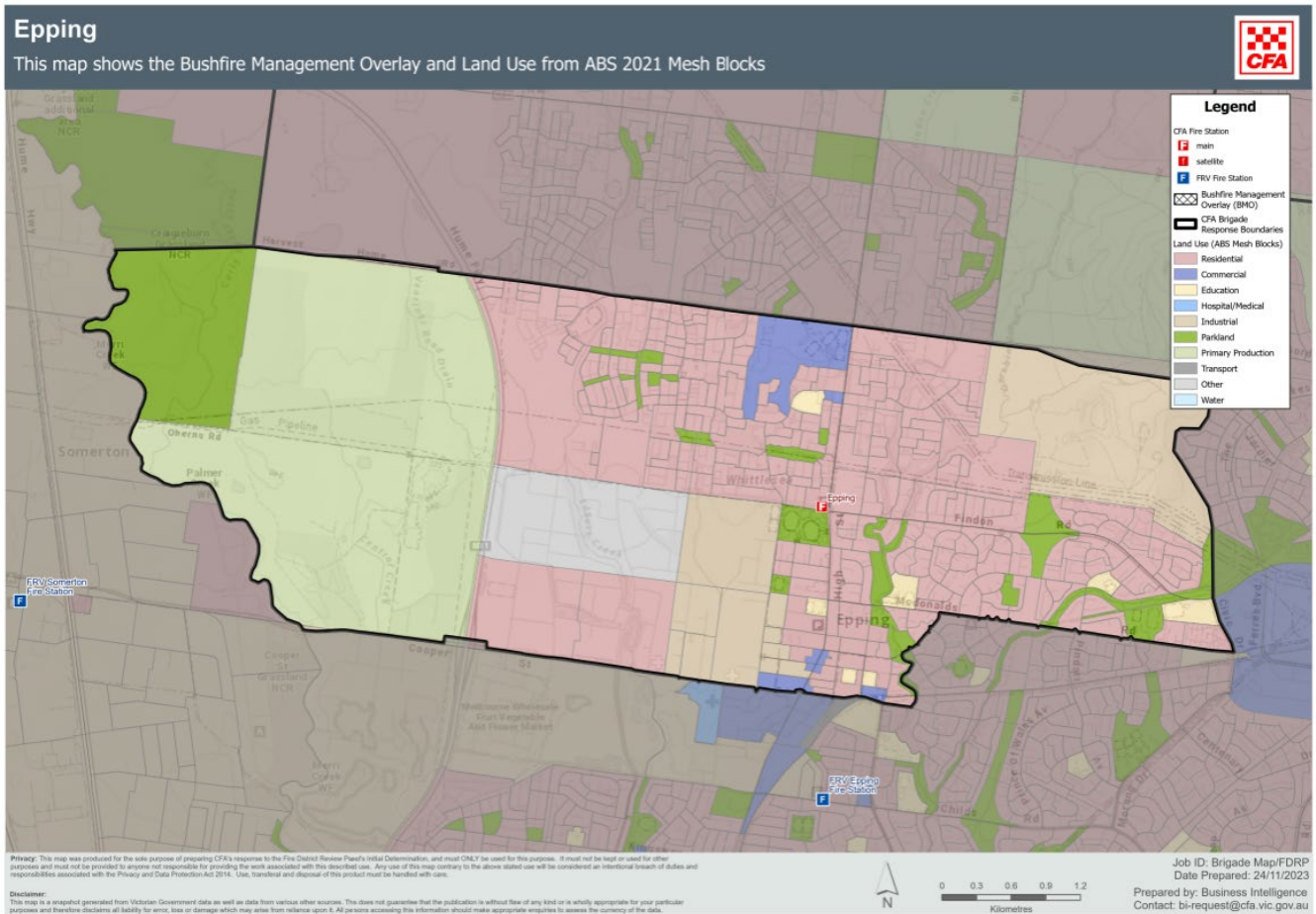
The Epping Fire Brigade SDA has a total area of 2,696.9 hectares. Land use planning areas as recorded by ABS mesh blocks with the SDA made up of the following land uses.

Table 3: Epping land use planning areas

Land Use	Hectares	Percentage of Brigade Area
Commercial	61.8	2.3%
Education	30.5	1.1%
Hospital/Medical	0	0%
Industrial	362.1	13.4%
Other	136.2	5 %
Parkland	265.7	9.9 %
Primary Production	718.1	26.6%
Residential	1,122.5	41.6%
Transport	0	0%

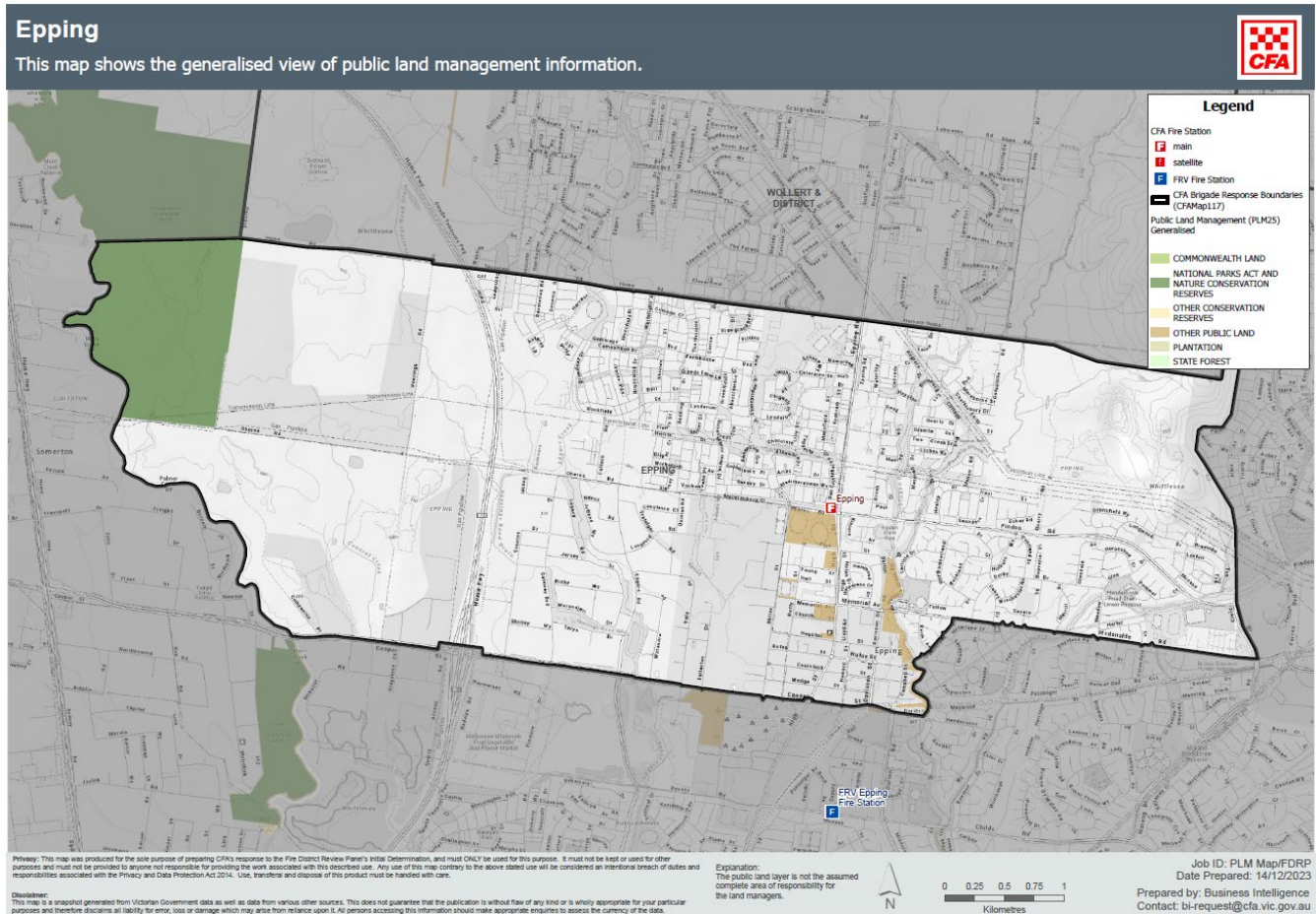
A map showing the current land use planning and applicable mesh block is shown in Figure 7. There has been further development in Epping Fire Brigade SDA since the 2021 Census.

Figure 7: ABS land use areas and BMO



The SDA which sits in the City of Whittlesea which is an identified area of growth. Residential estates are currently under construction, with additional Precinct Structure Plans under consideration. These plans will provide extensive upgrades to road and transport networks across the local government area, impacting accessibility and traffic patterns in the short and longer term, affecting all emergency services response times.

Figure 8: Public land management information



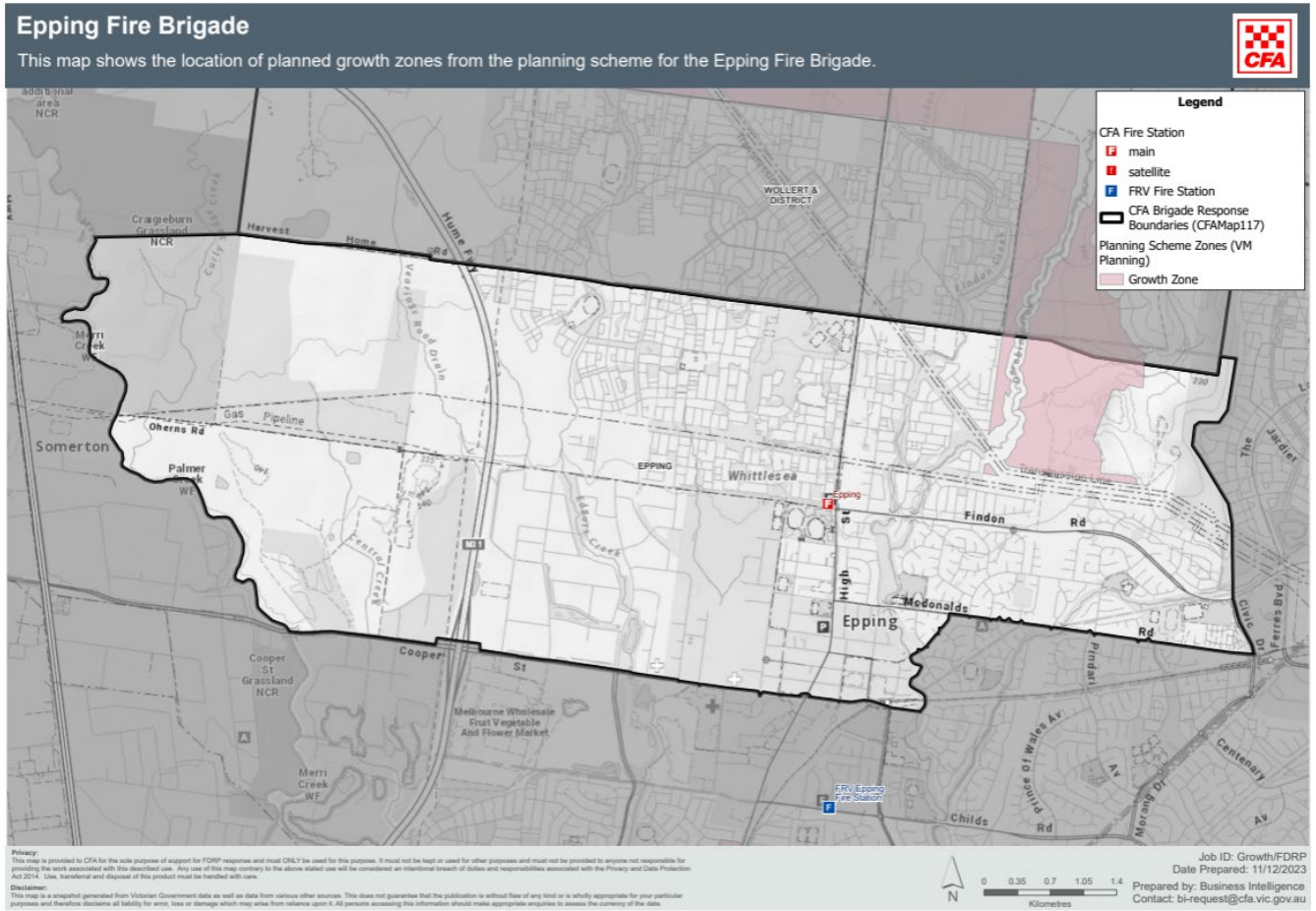
3.1 Growth zones

An analysis of VicPlan, the official mapping platform of the Department of Transport and Planning shows 304.89 hectares (11.3%) in the Brigade SDA covered by Industrial Zones and 91.20 (3.38%) hectares of designated growth zone. As shown in the table below and Figure 9, the majority of growth zone is designated as industrial zones.

Table 4: Urban growth areas

Total Brigade Area (Hectares)	Area (hectares) covered by Industrial Zones	Area (hectares) covered by Growth Zones	% covered by Industrial Zones	% covered by Growth Zones
2697	304.89	91.20	11.3	3.38

Figure 9: Planned growth zones from the planning scheme for Epping



Risk Evaluation:

There is diversity in land use across the Epping SDA and it has experienced notable residential growth over the last ten years. The Epping Fire Brigade has response capability and capacity to mitigate fire risk across all land use types. This includes trained volunteers and equipment (pumper and tanker). The long-established protocol of providing assistance to and receiving assistance from FRV means the complementary fire services model maximises the service to the community and treatment of the current residential and industrial risk including the proposed growth zone.

3.2 Bushfire Management Overlay

There is no area in the Epping SDA which is defined as BMO (Figure 6 above).

3.3 Population projections and social disadvantage

The current population of the Epping SDA is 27,501. Between 2016 and 2021 there was an overall population change of 1,335 (5%) (derived from ABS census data applied by CFA to the Brigade SDA as distinct from ABS collection grid cells).

For the local government area as a whole (City of Whittlesea) forecast seven-year population change (from census 2021) is an increase of 54,962 or 24%. The expected growth of the Epping SDA however is slowing and sits below the projected growth for the overall local government area²⁰.

ABS census data (2021) shows that there are 9,084 dwellings in the Epping Brigade SDA. Of these dwellings, 30% are rental houses. As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair.

The population includes a number of groups and individuals of known higher risk including Culturally and Linguistically Diverse (CALD) and those for whom English is a second language. These groups are a focus for the Brigade's community engagement activities. The ABS Index of Relative Socio-economic Disadvantage (2021) shows the Epping area has a SEIFA of decile 3 and quintile 2.

CFA and FRV have collaborated to create the Prevent – Detect – Escape Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. The Epping Fire Brigade has an ongoing focus on increasing participation in the Prevent – Detect – Escape Program.

Risk Evaluation:

The Epping SDA has seen significant growth, but the expected growth of Epping is slowing and is lower than the projected growth for the total local government area. Community engagement activities undertaken by the Epping Fire Brigade allow for mitigation of risk elements identified in both residential fire and social disadvantage risk.

Risk Mitigation Action:

The Brigade will focus on increasing participation in the Prevent – Detect – Escape program to target high risk groups in the community.

4. Service Delivery and Service Demand

4.1 Total demand

Figure 10 shows the total number of unique incident numbers attended by the Epping Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response.

²⁰ <https://forecast.id.com.au/whittlesea/population-summary#:~:text=Between%202021%20and%202041%2C%20the,average%20annual%20change%20of%202.24%25>

Figure 10: Epping Brigade incident count by type 1 January 2010 - 18 December 2023

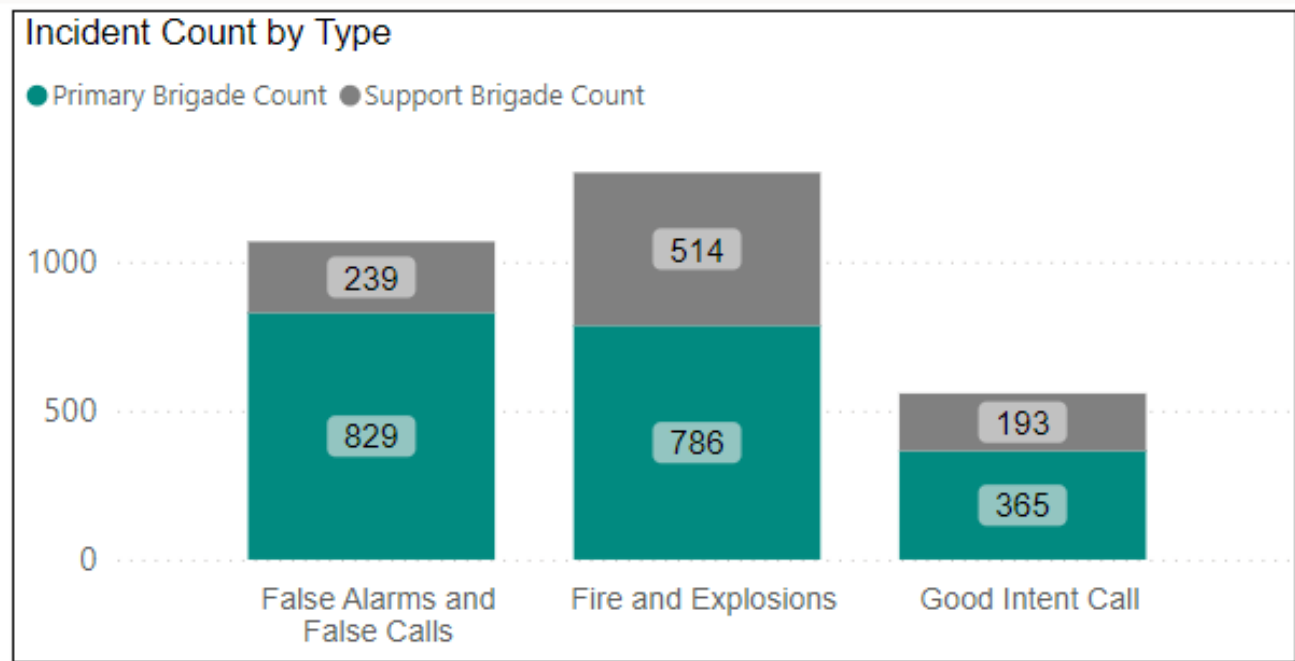


Figure 11 shows a count of the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels in summer and lower periods of activity in the winter months.

Figure 11: Epping Brigade incident count by month 1 January 2010 - 18 December 2023

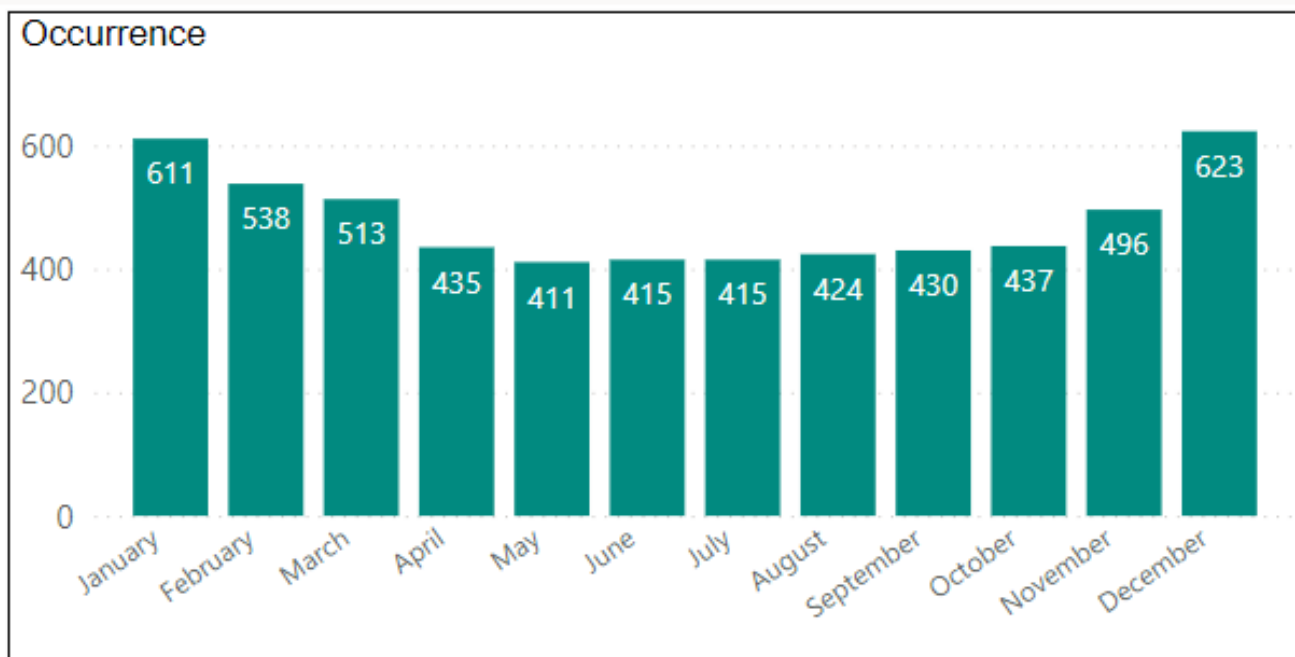
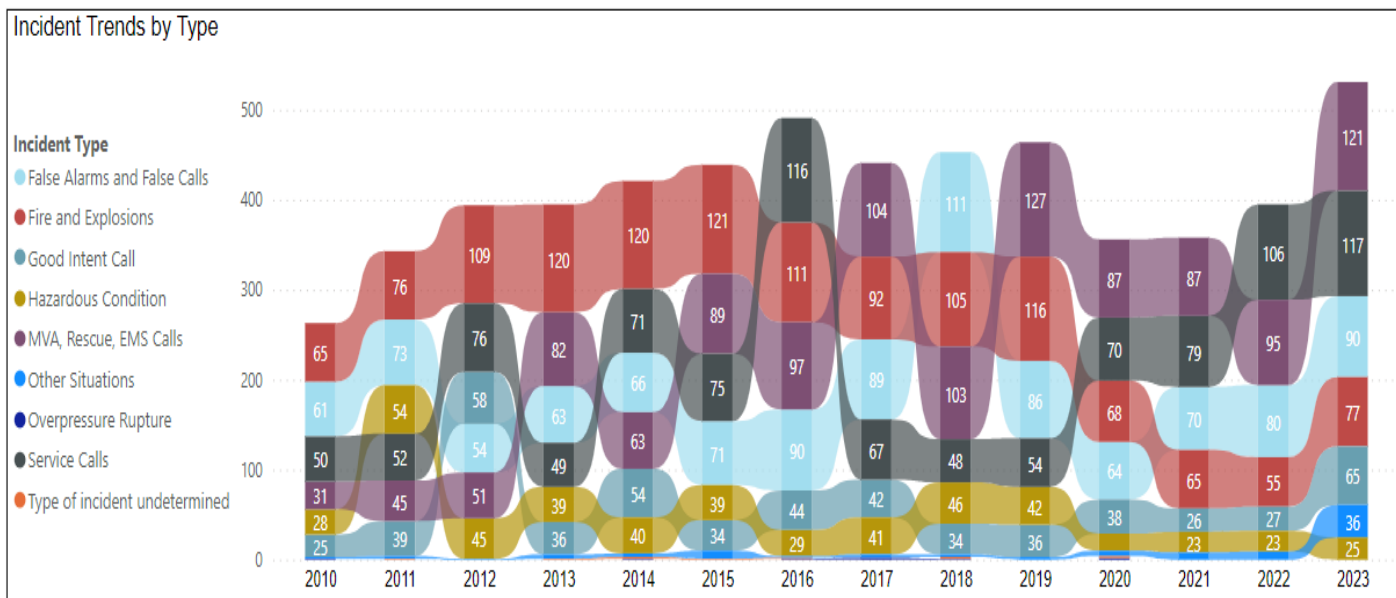


Figure 12 shows a count of all incident types between 1 January 2010 and 18 December 2023. The primary incident types for the Brigade are Motor Vehicle Accidents (MVA), Rescue and Emergency Medical Services (EMS) calls and service calls (including support to FRV). The Epping Fire Brigade’s specialist RCR capability is well placed to address and respond to the increased number of MVA, Rescue and EMS calls.

Figure 12: Epping Brigade incident count by type by year 2010 - 2023



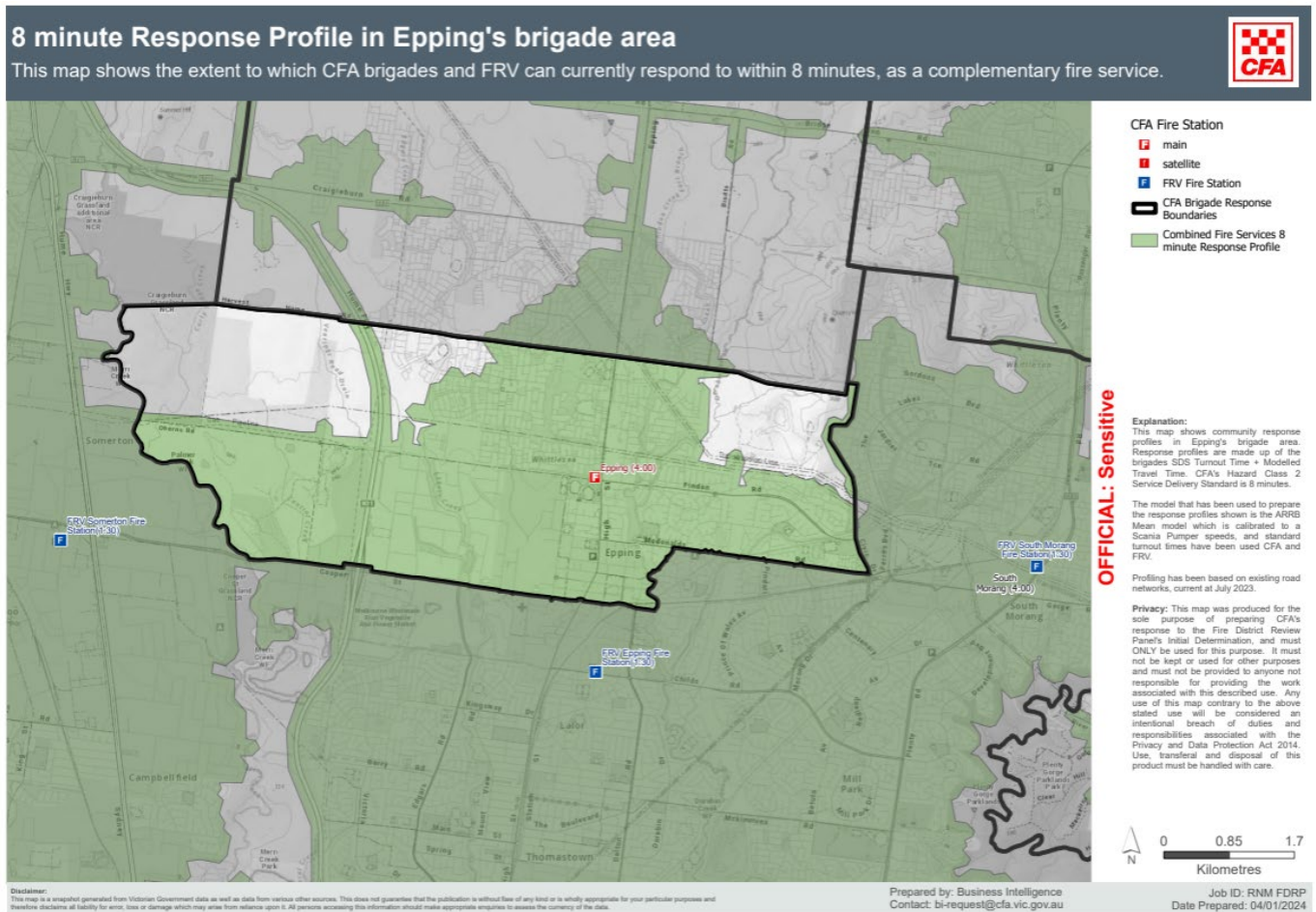
Risk Assessment:

The total number and type of incidents is impacted by growth within the SDA, land use and ongoing development of the road network. This translates to a significant demand for MVA, Rescue and EMS incident response and the Brigade is dispatched to a high level of service calls, which includes support provided to FRV for fire and other incidents. The Epping Brigade has the capability to be dispatched to all incident types in the SDA including the skills and equipment required for fire suppression and RCR across the urban rural interface areas. The Brigade currently has 38 operational response pre-plans in place for all the protected premises in the SDA.

4.2 Service delivery standard

Figure 13 shows the area within the land use that can be serviced within eight minutes by the existing complementary fire service model. The figure below shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the 8 minute to scene standard.

Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 92.19% of the road network in the Residential land use
- 100% of the road network in the Commercial land use
- 100% of the road network in the Industrial land use
- 100% of the road network in the Education land use
- 99.85% of the road network in the Parkland land use
- 100% of the road network in the Other land use
- 93.51% of the road network in the Primary Production land use
- 100% of the road network in the Hospital/Medical land use

An analysis of the Epping Fire Brigade with SDS against respective hazard classes shows:

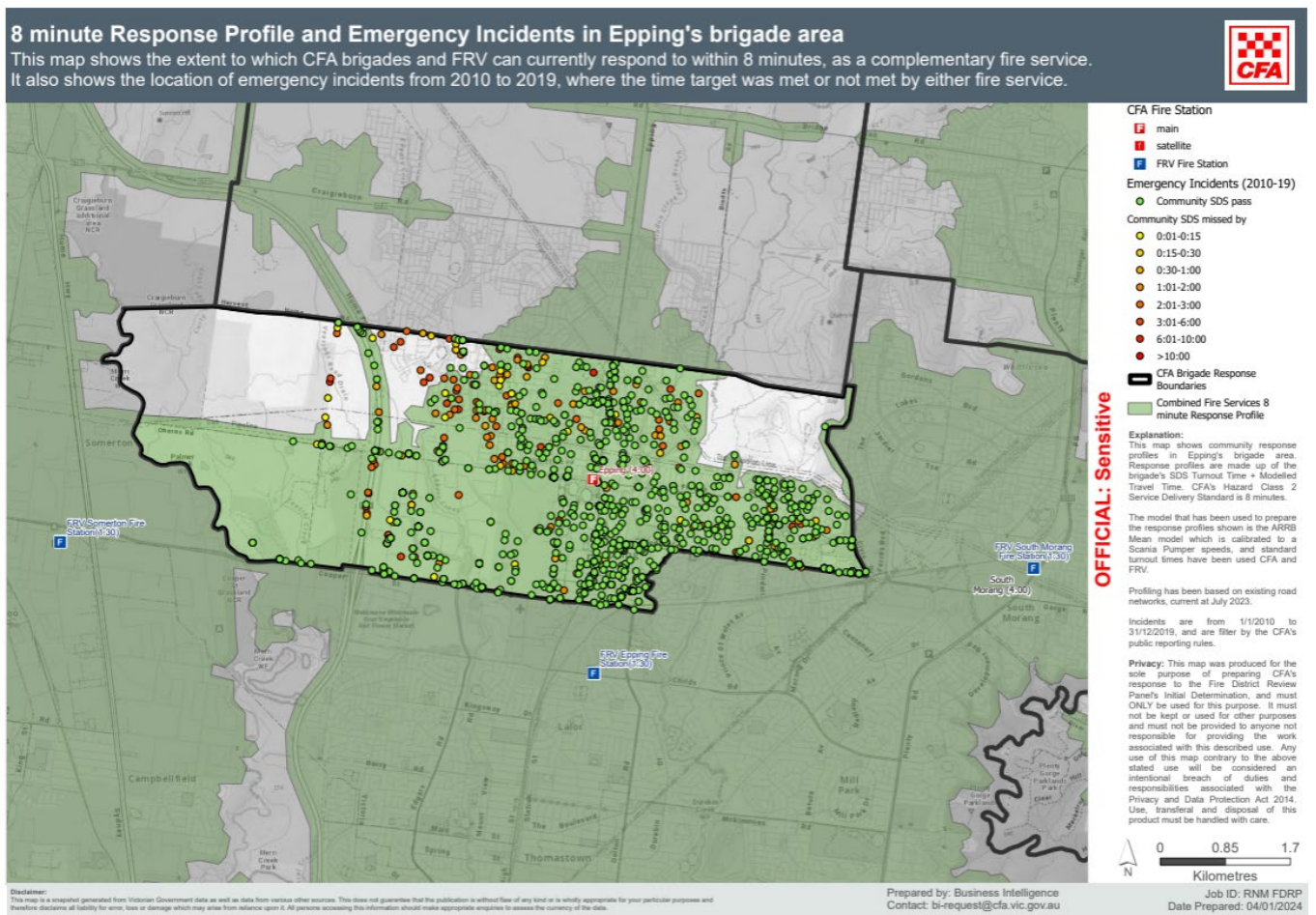
- from 1 January 2010 to 31 December 2019 there were 1,623 emergency incidents within the Epping Brigade SDA
- fire services response to emergency incidents was 79.5% compliant with SDS
- for the 332 incidents where SDS was missed over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. Of these, 43.6% were missed less than 60 seconds.

Table 5: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
39 (12%)	30 (9%)	76 (23%)	76 (23%)	58 (17%)	41 (12%)	9 (3%)	3 (1%)

Figure 14 shows graphically the ability for fire services to meet established SDS across the Epping SDA. The challenges in relation to response times are due to several factors including urban growth in the northern suburbs, increased road usage, traffic congestion (especially during peak hours) and major ongoing road works.

Figure 14: SDS compliance for the Epping Brigade SDA 2010 - 2019



From 1 January 2020 to 30 November 2023:

- there were 733 emergency incidents within the Epping Brigade SDA
- fire services response to emergency incidents was 63.7% compliant with SDS
- for the 266 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that SDS was missed. Of these, 37% were missed less than 60 seconds.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 Minutes
36 (13.58%)	20 (7.55%)	38 (14.34%)	61 (23.02%)	52 (19.62%)	49 (18.49%)	6 (2.26%)	3 (1.13%)

Risk Assessment:

The majority of the risk within the Epping SDA area can be serviced within eight minutes. The Epping Fire Brigade appliances are fit for purpose and are suited to the risk environment, including the urban rural interface areas. Response support provided by FRV and adjoining CFA brigade areas and a longstanding collaboration between brigades maximises the complementary fire service for the local community.

The Epping Fire Brigade SDS is below target and performance has declined since the FDRP data reference period. The challenges in relation to response times are due to several factors including urban growth in the northern suburbs, increased road usage, traffic congestion (especially during peak hours) and ongoing major road works. Nonetheless, action is needed.

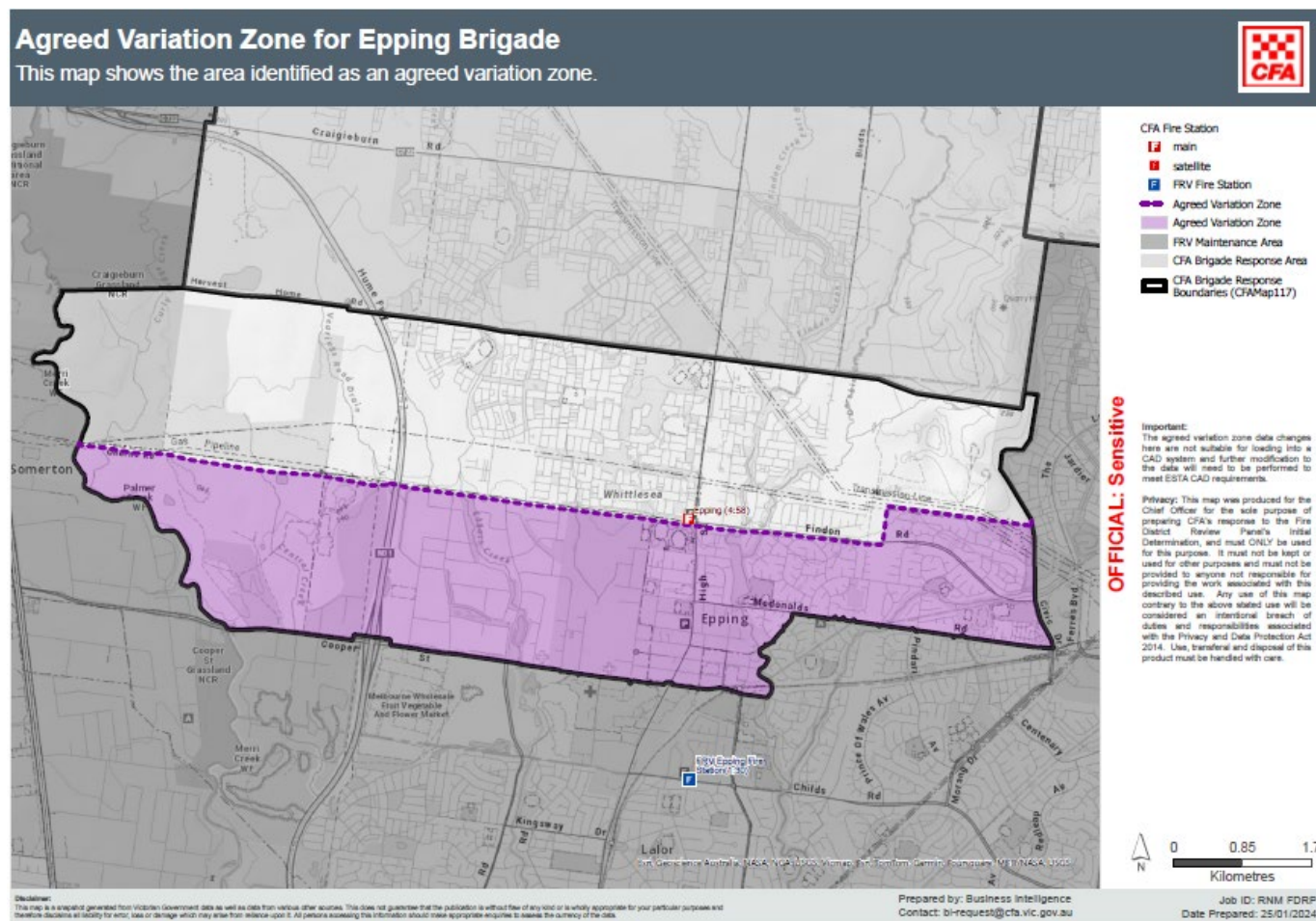
Risk mitigation:

The Brigade has a focus on recruitment and the implementation of a formal succession planning process to ensure the sustainability of the Brigade membership into the future and response to local risk. Recruitment campaigns are conducted regularly with targeted groups including those in proximity to fire station (within four minutes), and those with availability to respond during business hours. The projected growth is likely to continue to impact service delivery needs in the future, particularly with the current location of the station not conducive to timely access and response. Adjustment to CFA service arrangements in the area and a subsequent change to the FRV Fire District are appropriate.

Agreed Variation Zone (AVZ):

CFA recognises that due to the proximity of the CFA Epping Brigade and FRV Epping (Station 11) it is inevitable that career firefighters can reach half of the Epping SDA within the FRV's SDS. CFA considers that a portion of the Epping SDA can be agreed as a variation zone upon meeting of an appropriate trigger. The amalgamation of the CFA's Epping and Wollert brigades and the completion of a new fire station to the north of the current CFA Epping site is the proposed trigger to enact the AVZ (Figure 15).

Figure 15: Agreed variation zone



4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Epping Brigade SDA from 2010 to 2023 has had a total of 89 building/structure fires requiring extinguishment.

Table 7: Total building/structure fires 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
3	3	4	11	14	9	5	8	6	4	4	6	9	3	89

An analysis of preventable fire fatalities associated with these 89 building/structure fires has identified no preventable fatalities. The bulk of the fatality data associated with the Epping Fire Brigade is in the Motor Vehicle Accident/ Road Crash Rescue category not relevant to the BCTC ratio. As a primary provider of rescue services across Epping and surrounding areas it is not unexpected that vehicle accident fatalities would be recorded by the Brigade.

Risk Evaluation:

The Epping Brigade SDA has had no preventable or non-preventable structure/building fire fatalities since 2010. The FDRP ranking of the Epping Brigade as one out 13 on the BCTC ratio may be taking account of non-fire related casualties.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.

Table 8: Epping fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	3 of 13	<p>The majority of the risk within the Epping SDA can be serviced within eight minutes. Epping Fire Brigade appliances are fit for purpose and are suited to the risk environment, including the urban rural interface areas.</p> <p>Response support provided by FRV and adjoining CFA brigade areas and a longstanding collaboration between brigades maximises the complementary fire service for the local community.</p> <p>The challenges in relation to response times are due to several factors including urban growth in the northern suburbs, increased road usage, traffic congestion, especially during peak hours and major ongoing road works.</p>	<p>Agreed Variation Zone: CFA recognises that due to the proximity of the CFA Epping Brigade and FRV Epping (Station 11) it is inevitable that career firefighters can reach half of the Epping SDA within the FRV's SDS. CFA considers that a portion of the Epping SDA can be agreed as a variation zone upon meeting of an appropriate trigger. The amalgamation of the CFA's Epping and Wollert CFA brigades and the completion of a new fire station to the north of the current Epping site is the proposed trigger to enact the AVZ (Figure 15).</p>
Bushfire Management Overlay %	No value	There is no area in the Epping SDA which is defined as BMO.	
Total Demand	7 of 13	<p>The total number and type of incidents is impacted by growth within the area, land use and development of the road network.</p> <p>The road network development in the Epping Brigade SDA translates to a significant demand for MVA, rescue and EMS incident response. This risk is well managed by Epping's specialists RCR capabilities.</p>	
Victorian Planning Authority %	4 of 13	There is broad diversity in land use across the Epping SDA. The long-established protocol of providing assistance to and receiving assistance from FRV means the complementary fire services model maximises the service to the community and treatment of the current	

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		residential and industrial risk including the proposed growth zone.	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio	5 of 13	See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.	
Building fire casualty to total building fire ratio	1 of 13	The Epping Brigade SDA has had no preventable or non-preventable structure/building fire fatalities since 2010. The FDRP ranking of the Epping Brigade may be taking account of non-fire related casualties.	
Population projections	4 of 13	<p>The Epping SDA has seen significant growth, however, the expected growth of the Epping area is slowing and lower than the projected growth for the local government area.</p> <p>Community engagement activities undertaken by the Epping Fire Brigade allow for significant mitigation of risk elements identified in both residential fire and social disadvantage risk.</p>	The Epping Fire Brigade has an ongoing focus on targeting high risk groups and seeks to increase participation in the Prevent – Detect – Escape Program.

Table 9: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Epping	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Typical traffic 08:00

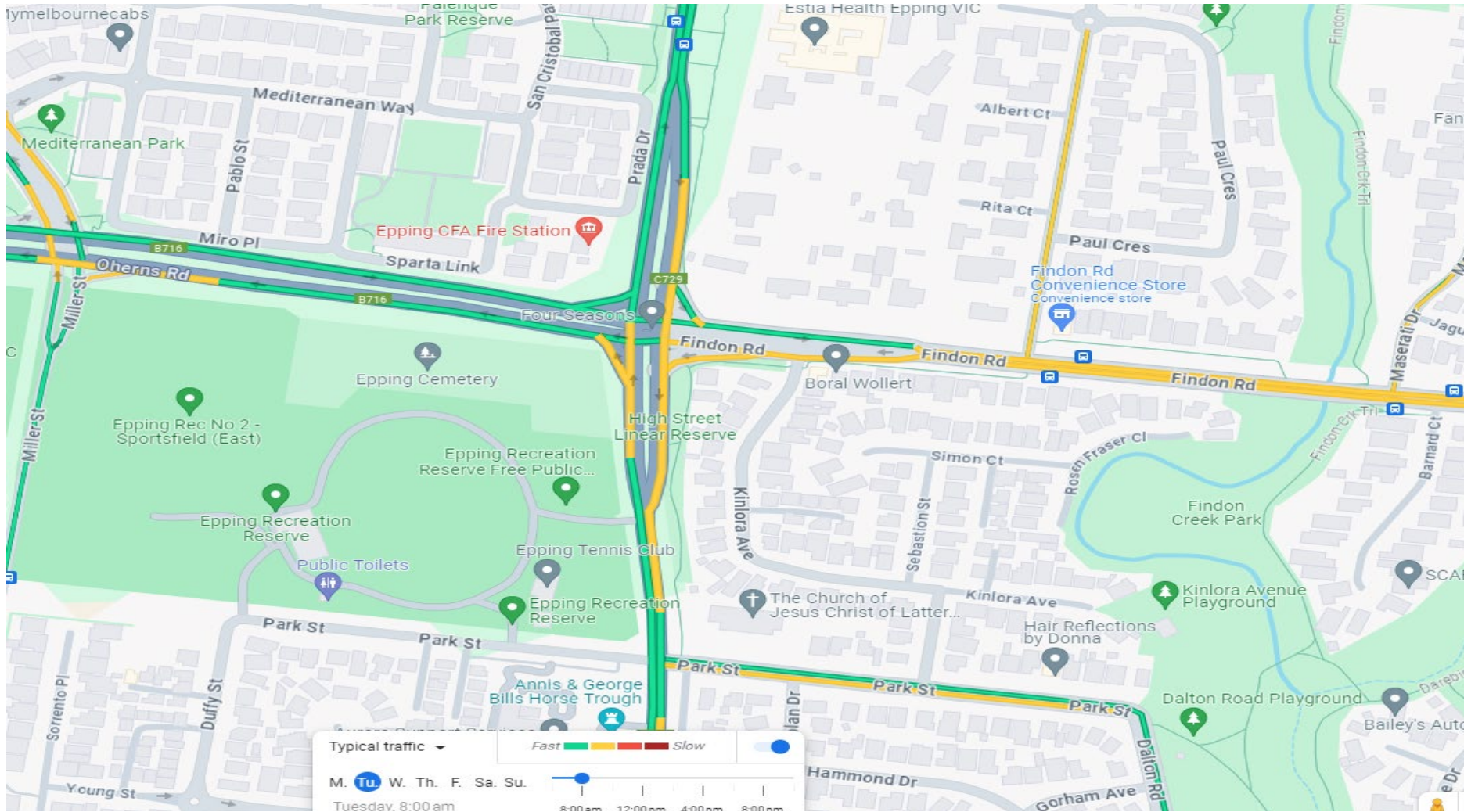


Figure 2: Typical traffic 17:00

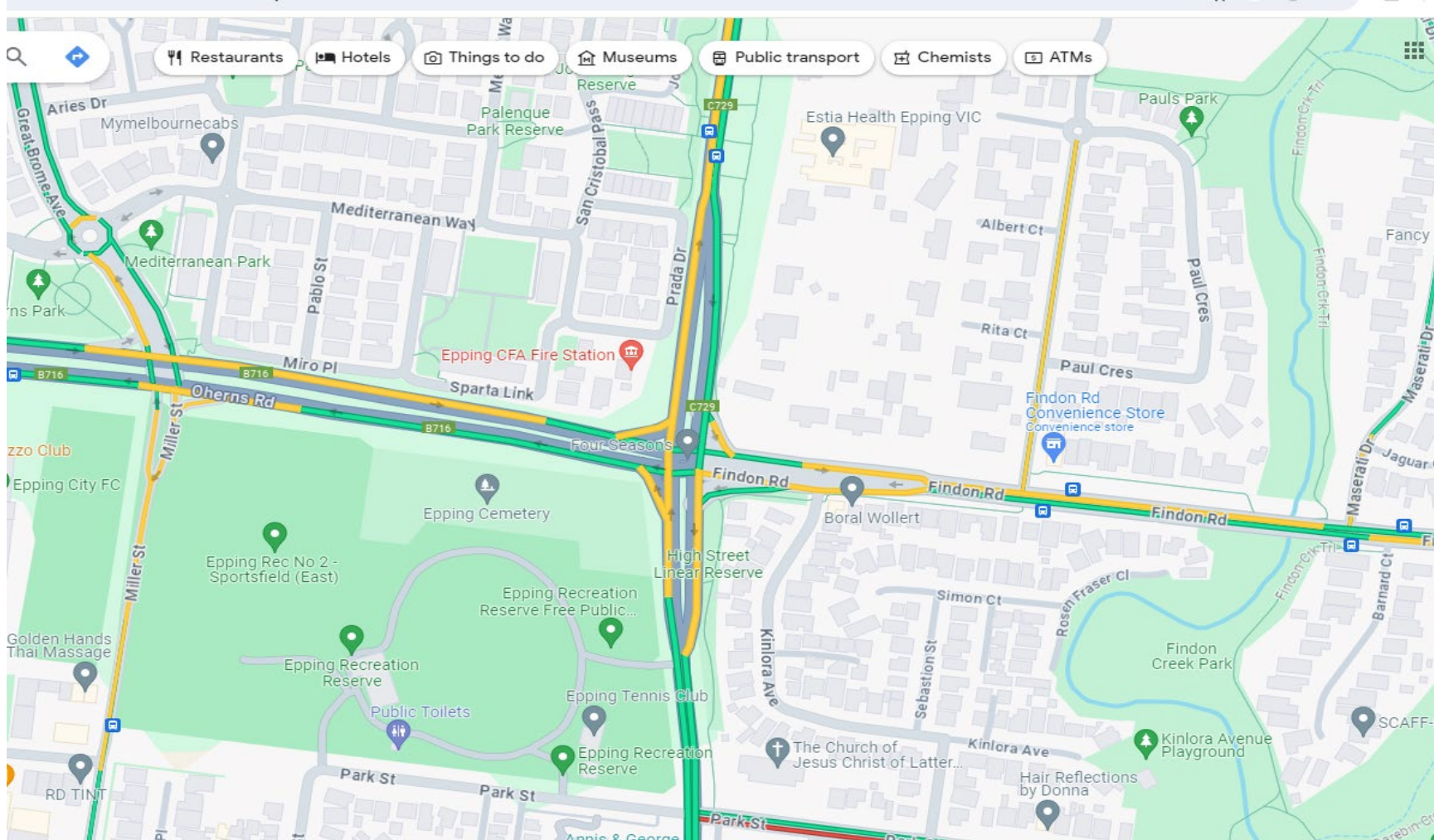


Figure 3: Operational members location and travel times

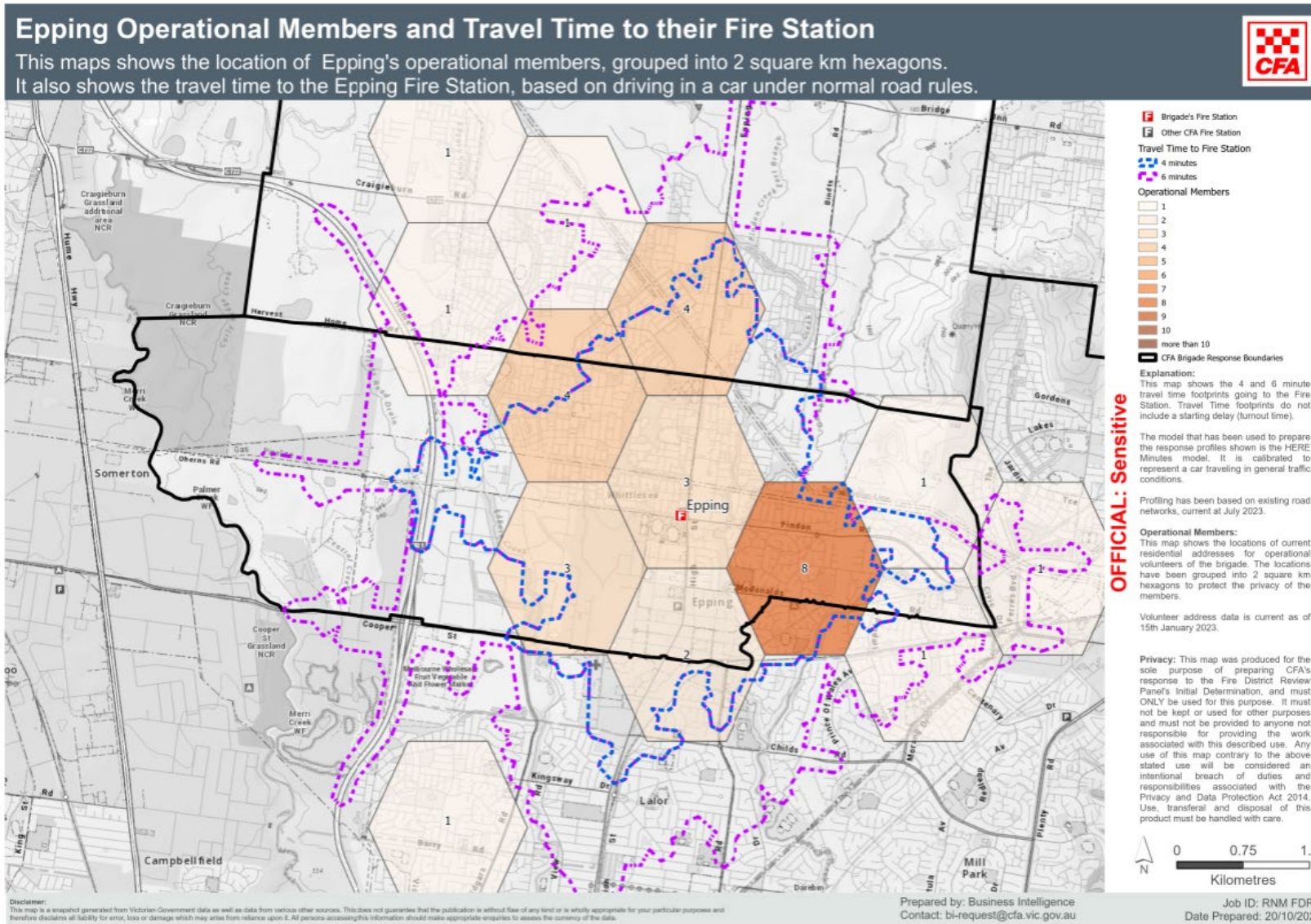


Figure 4: Incident count and type of support provided in the FRV Fire District

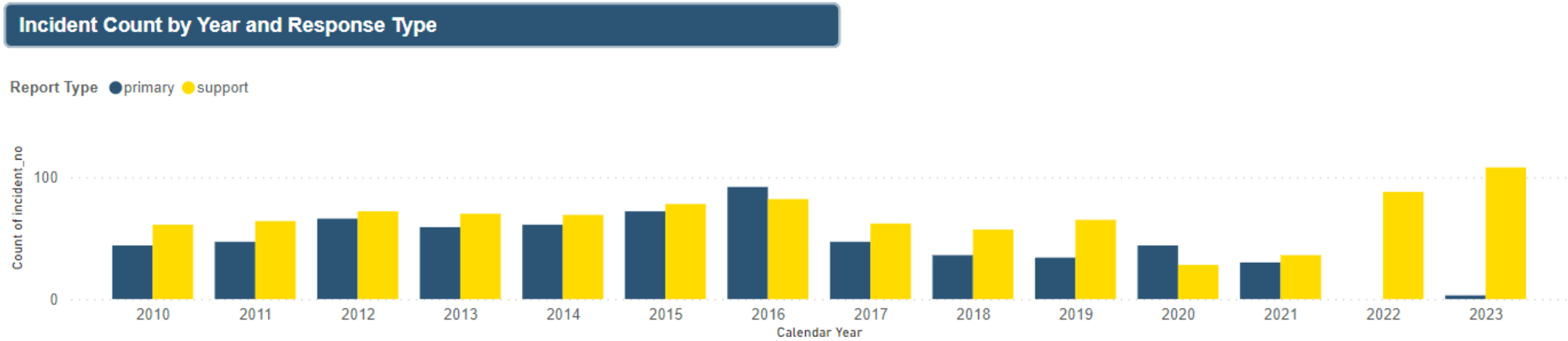


Figure 5: Incident count and type of support provided in the FRV station footprint

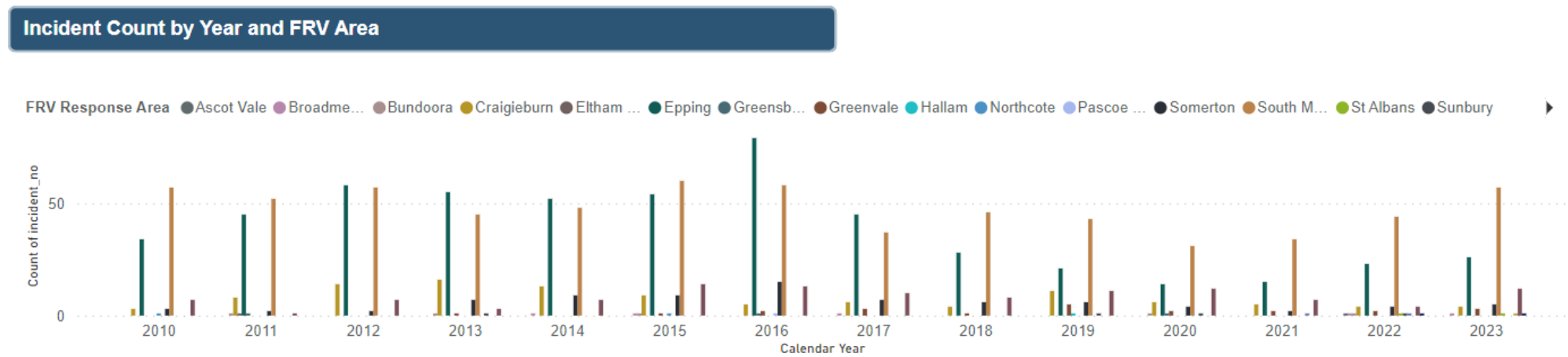


Figure 6: Community safety and intervention programs

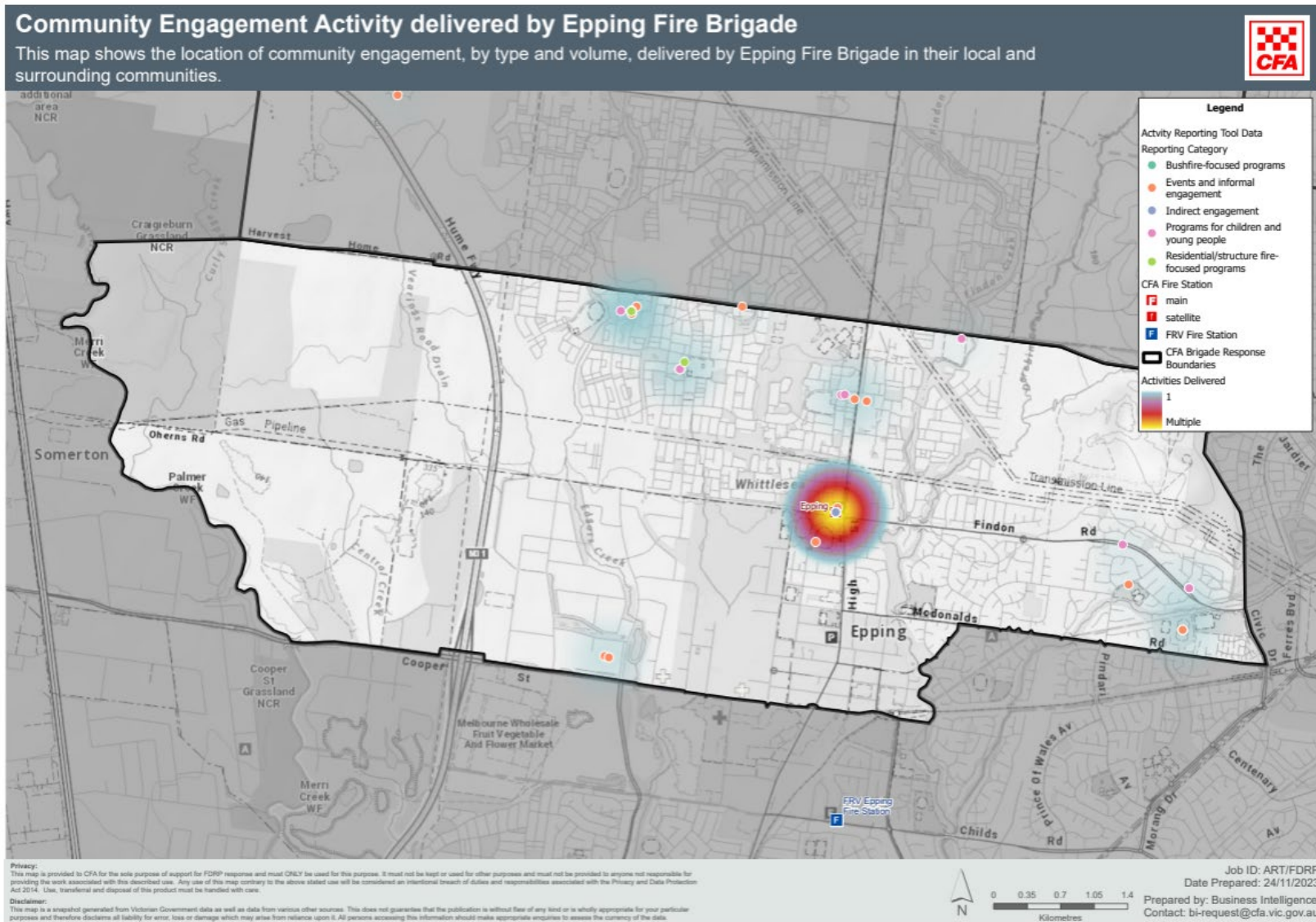


Figure 7: ABS land use areas and BMO

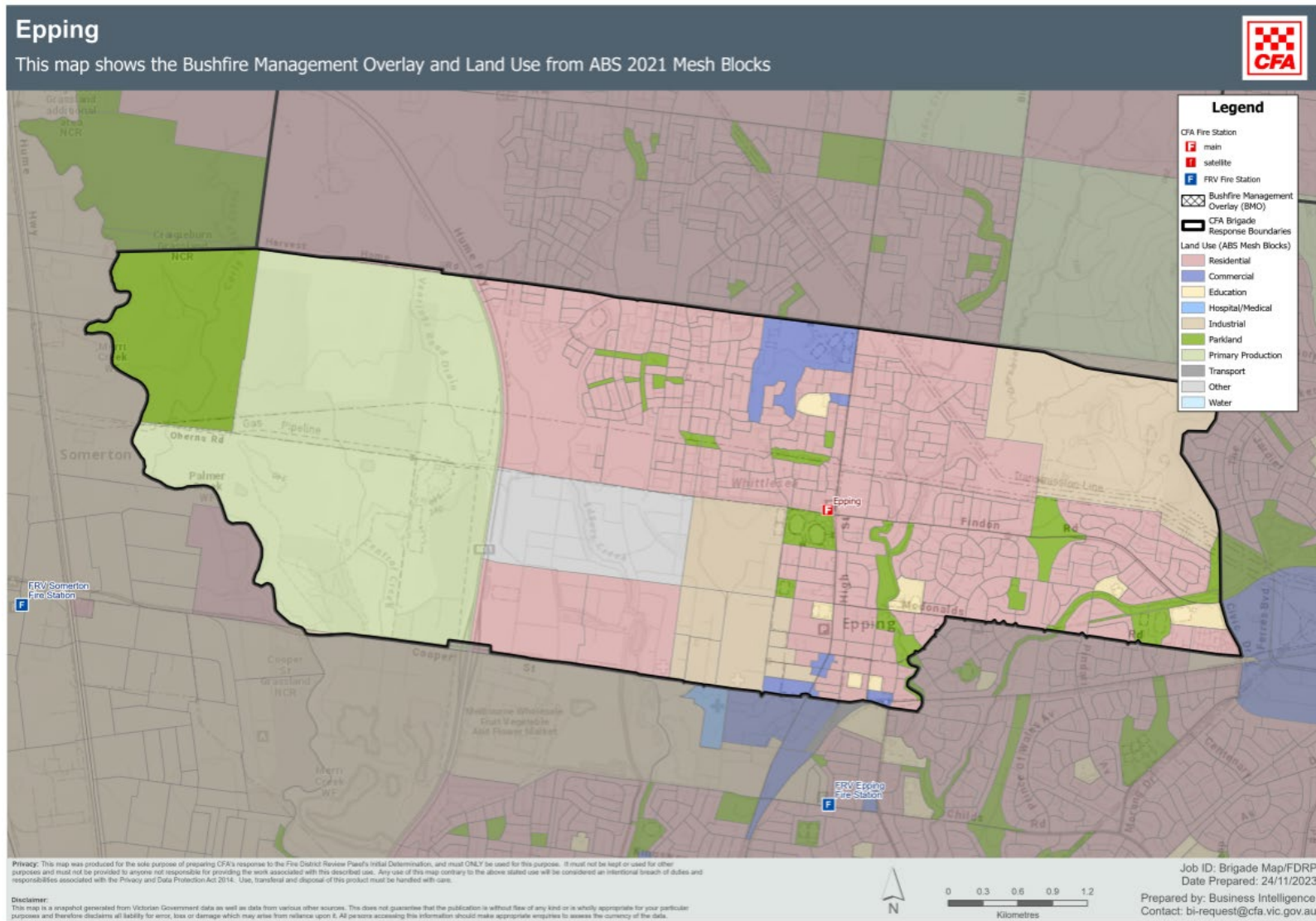


Figure 8: Public land management information

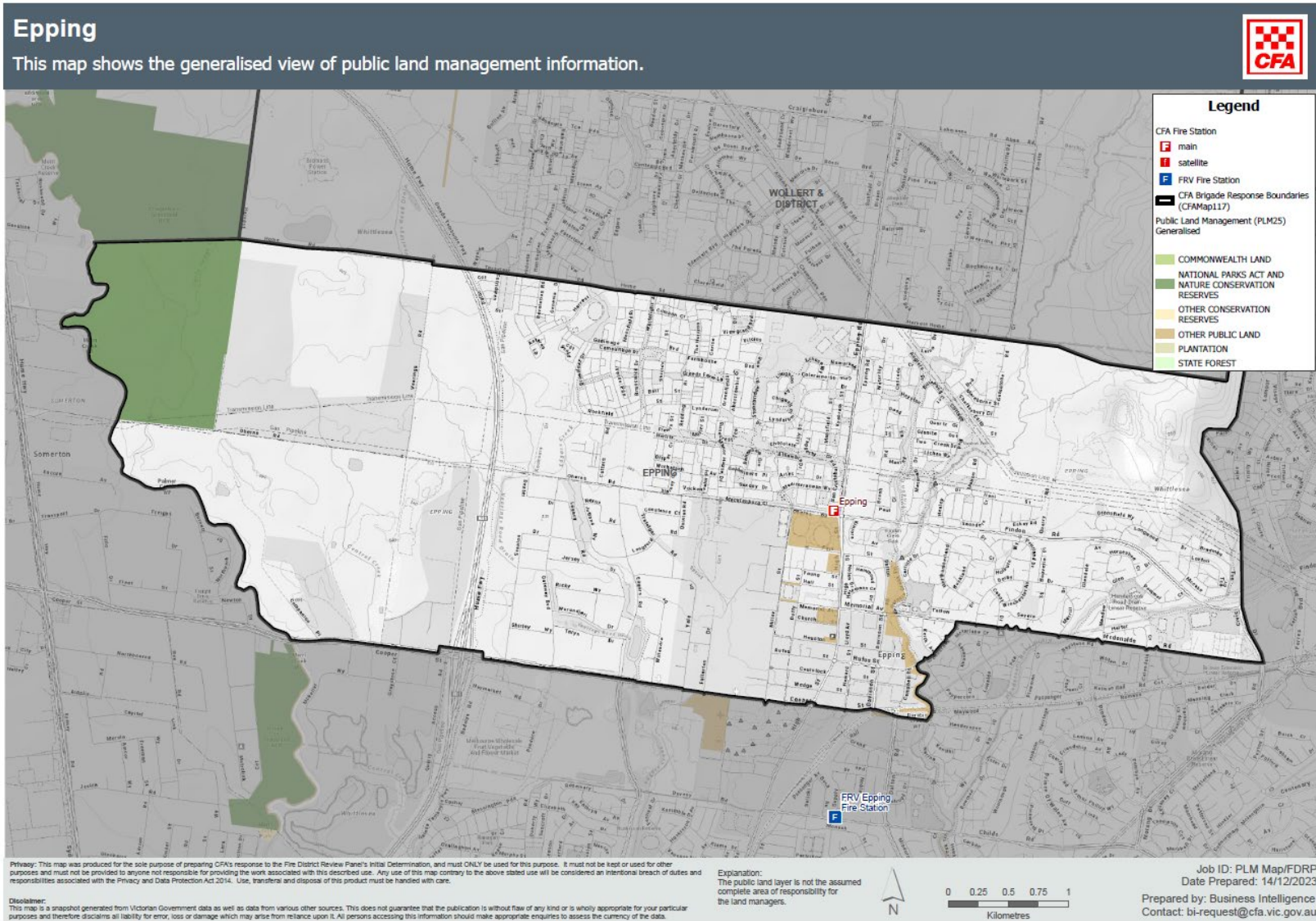


Figure 9: Planned growth zones from the planning scheme for Epping

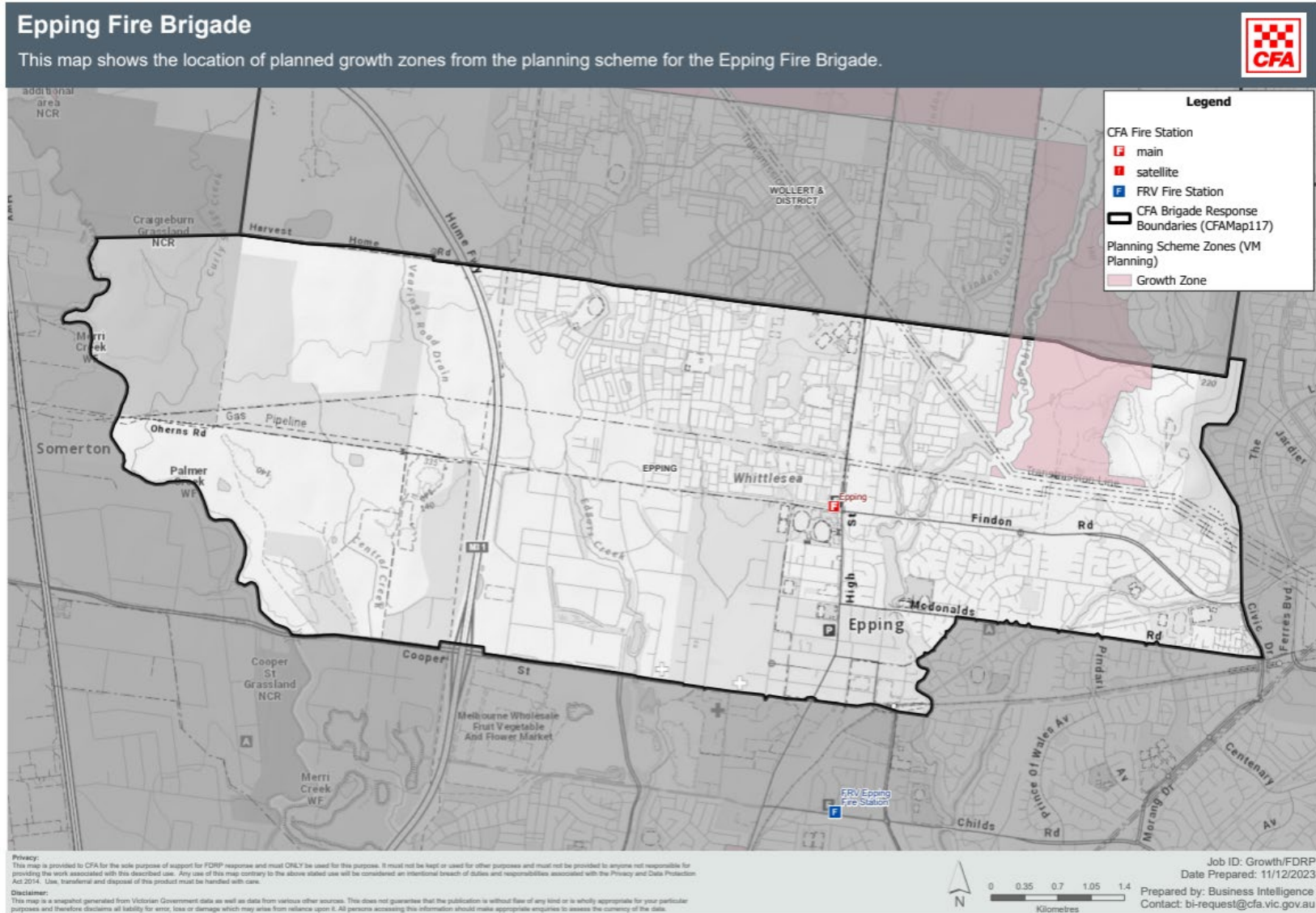


Figure 10: Epping Brigade incident count by type 1 January 2010 - 18 December 2023

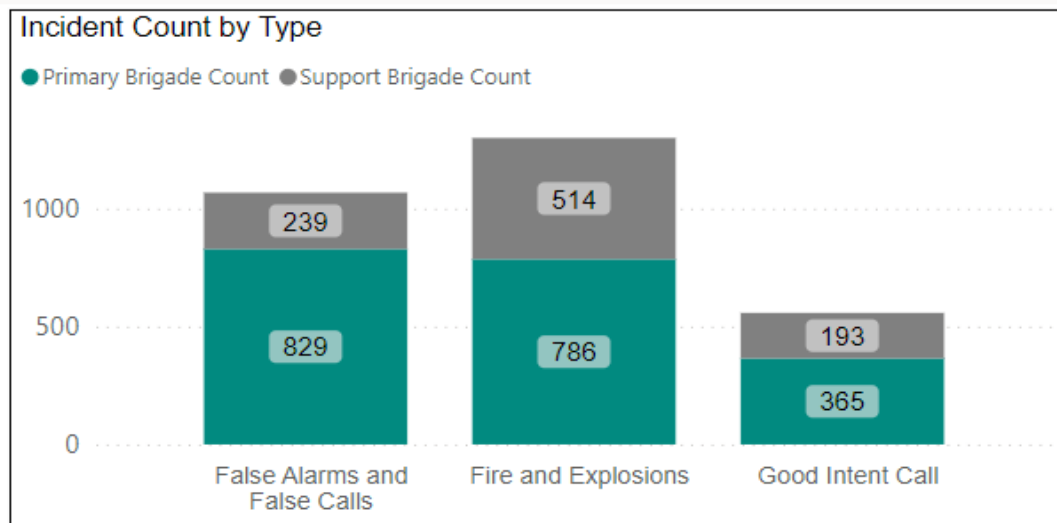


Figure 11: Epping Brigade incident count by month 1 January 2010 - 18 December 2023

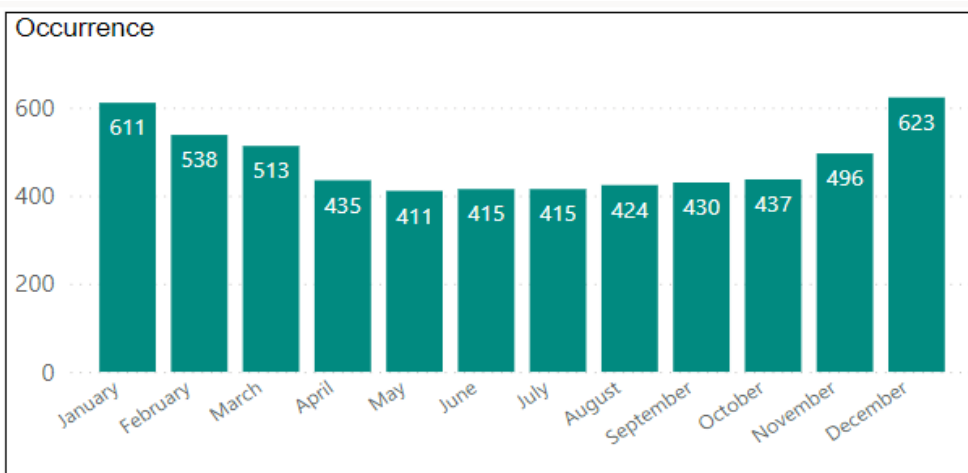


Figure 12: Epping Brigade incident count by type by year 2010 - 2023

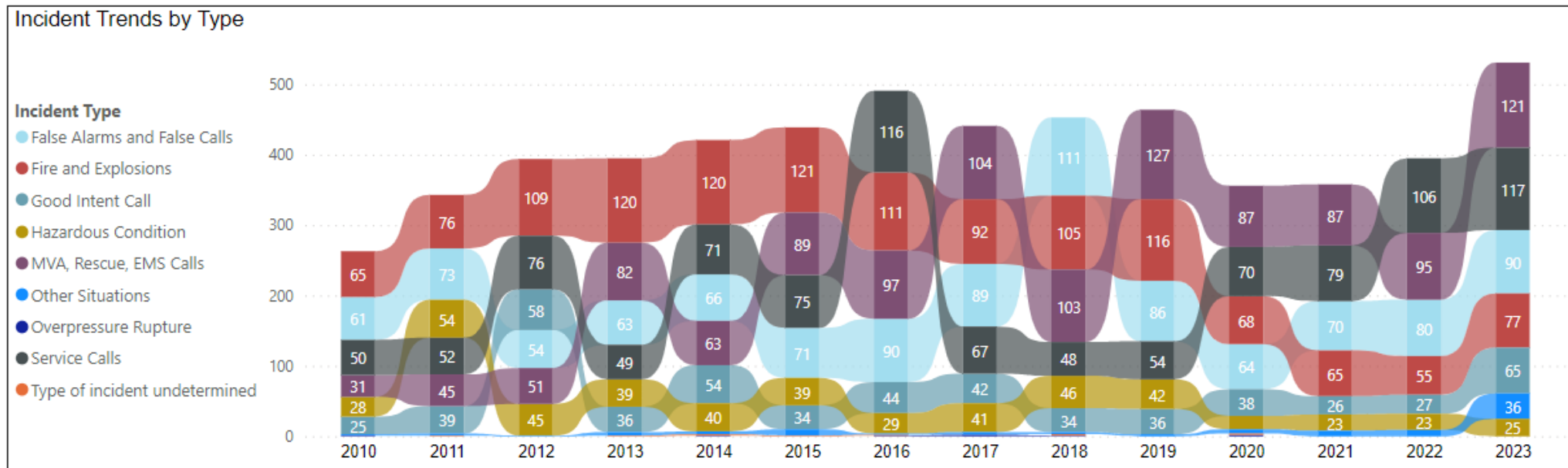


Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes

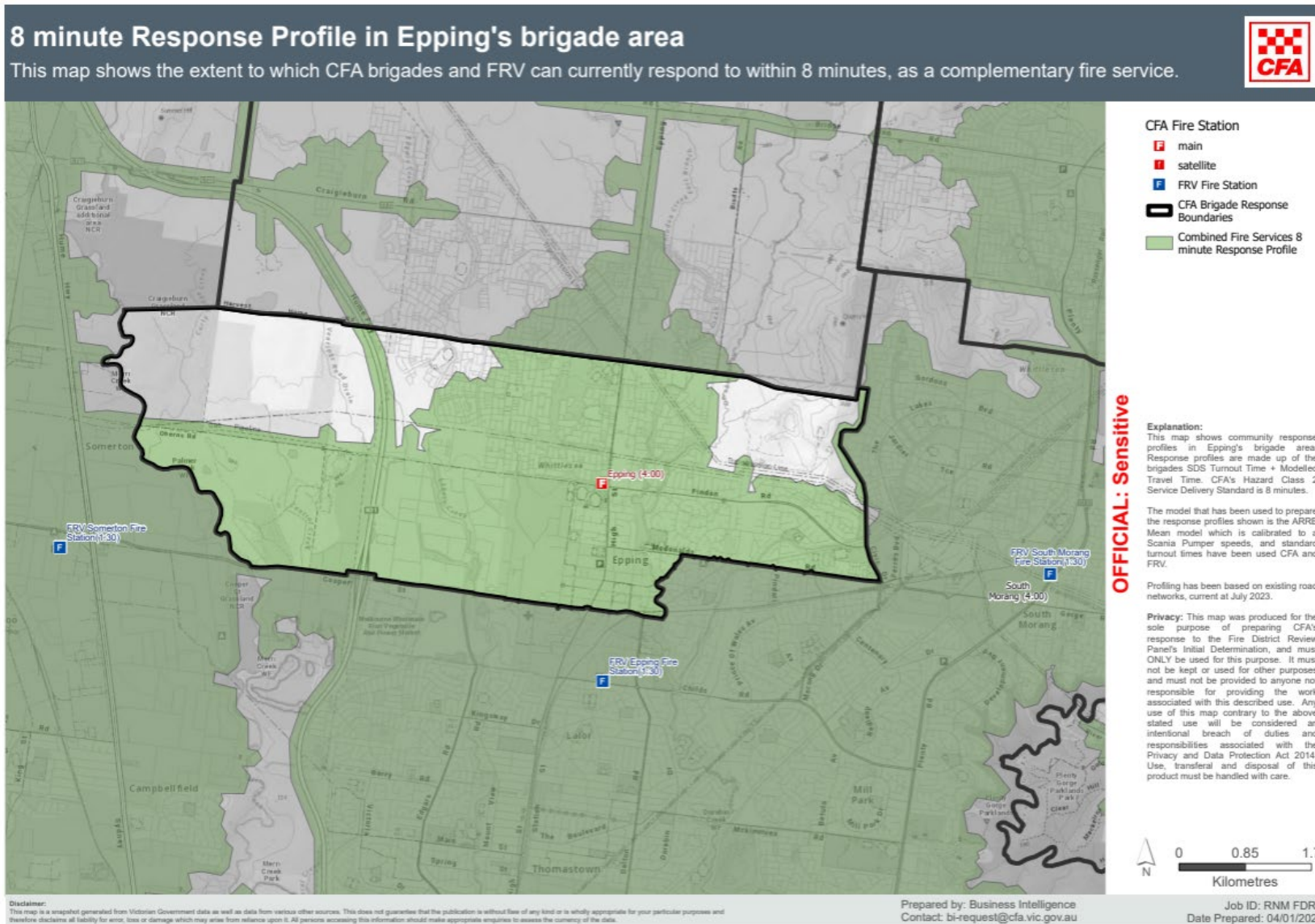
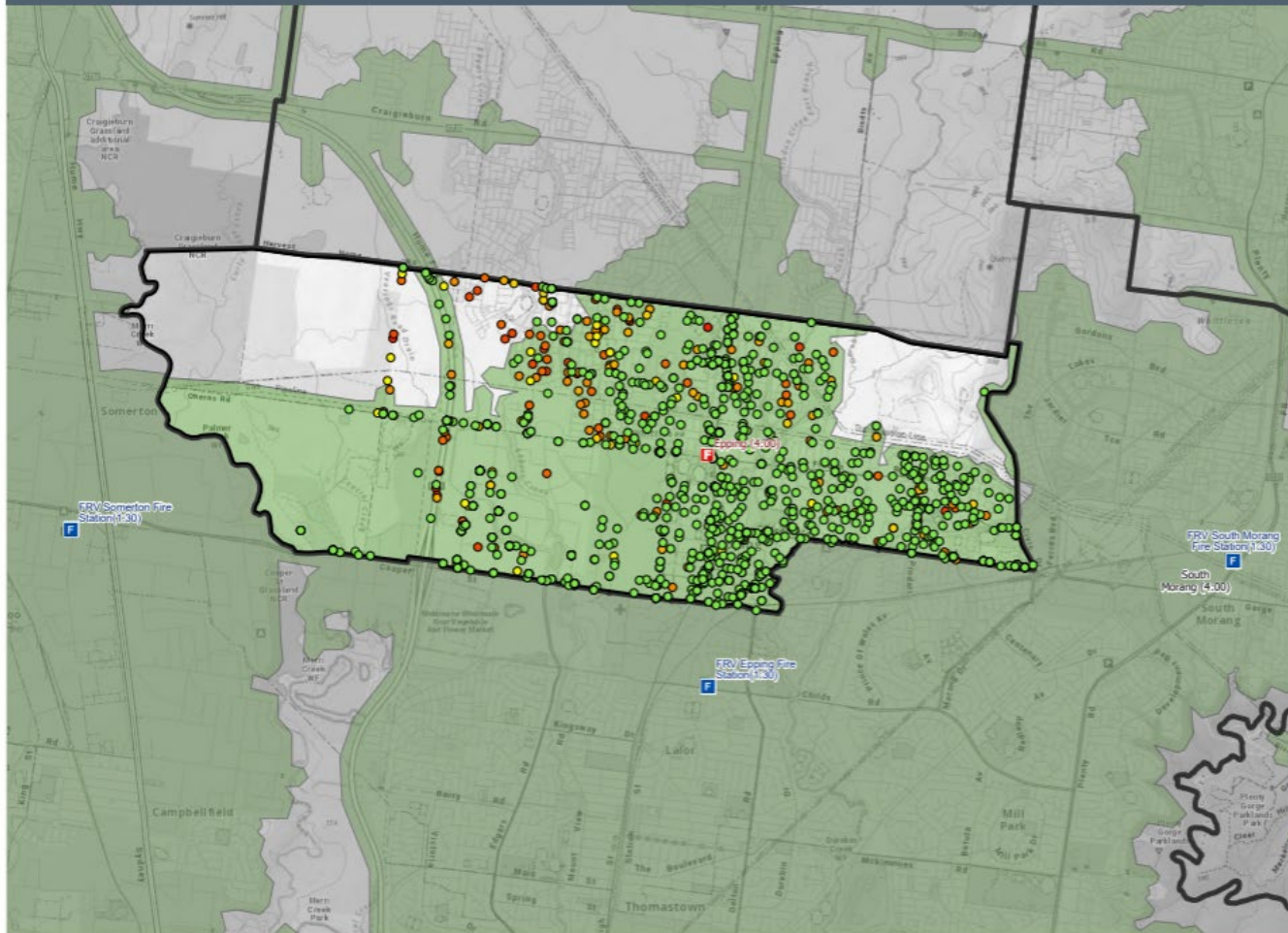


Figure 14: SDS compliance for the Epping Brigade SDA 2010 - 2019

8 minute Response Profile and Emergency Incidents in Epping's brigade area

This map shows the extent to which CFA brigades and FRV can currently respond to within 8 minutes, as a complementary fire service. It also shows the location of emergency incidents from 2010 to 2019, where the time target was met or not met by either fire service.



- CFA Fire Station
 - main
 - satellite
- FRV Fire Station
- Emergency Incidents (2010-19)
 - Community SDS pass
- Community SDS missed by
 - 0:01-0:15
 - 0:15-0:30
 - 0:30-1:00
 - 1:01-2:00
 - 2:01-3:00
 - 3:01-6:00
 - 6:01-10:00
 - >10:00
- CFA Brigade Response Boundaries
- Combined Fire Services 8 minute Response Profile

Explanation:
This map shows community response profiles in Epping's brigade area. Response profiles are made up of the brigade's SDS Turnout Time + Modelled Travel Time. CFA's Hazard Class 2 Service Delivery Standard is 8 minutes.

The model that has been used to prepare the response profiles shown is the ARRB Mean model which is calibrated to a Scania Pumper speeds, and standard turnout times have been used CFA and FRV.

Profiling has been based on existing road networks, current as July 2023.

Incidents are from 1/1/2010 to 31/12/2019, and are filter by the CFA's public reporting rules.

Privacy: This map was produced for the sole purpose of preparing CFA's response to the Fire District Review Panel's Initial Determination, and must ONLY be used for this purpose. It must not be kept or used for other purposes and must not be provided to anyone not responsible for providing the work associated with this described use. Any use of this map contrary to the above stated use will be considered an intentional breach of duties and responsibilities associated with the Privacy and Data Protection Act 2014. Use, transfer and disposal of this product must be handled with care.



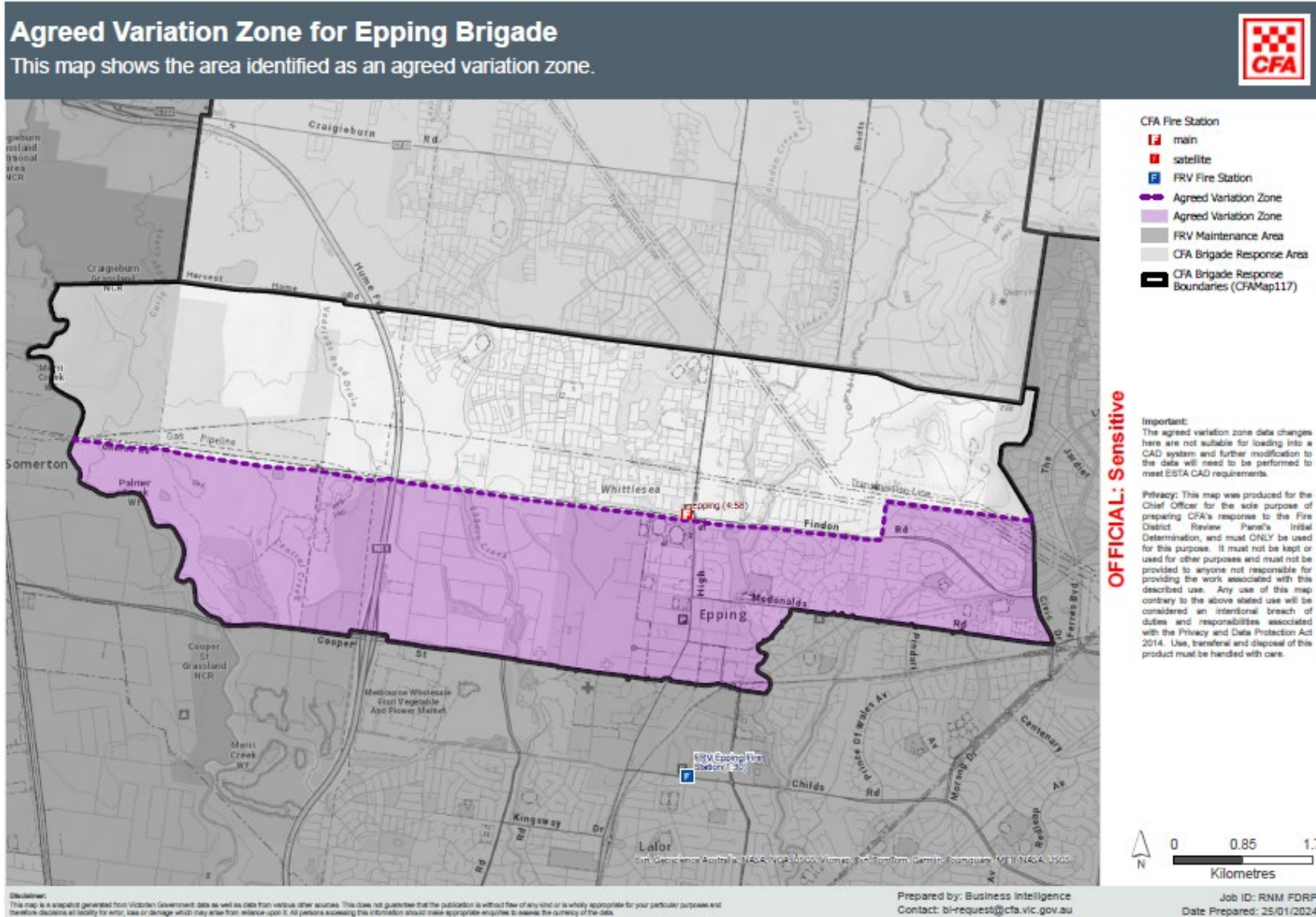
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Disclaimer: This map is a snapshot generated from Victorian Government data as well as data from various other sources. This does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for errors, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Prepared by: Business Intelligence
Contact: bi-request@cfa.vic.gov.au

Job ID: RNM FDRP
Date Prepared: 04/01/2024

Figure 14: Agreed variation zone



Kangaroo Flat Fire Brigade

1. About the Brigade

The Kangaroo Flat Fire Brigade is a Class 4 Brigade within the Fortuna Group located in District 2 of the North West Region. The Kangaroo Flat Fire Brigade has a total membership of 80 volunteers (as at 31 December 2023), including an active cohort of junior members.

1.1 History

Established in 1873, the Kangaroo Flat Brigade very proudly celebrated its 150th year of service to the community in 2023.

Community has always been at the centre of everything the Brigade does, with the formation of the Brigade beginning at a community meeting. History recounts a significant meeting held on 20 June 1873 at the Stevenson Hotel in Kangaroo Flat. Concerned residents planned to lobby for additional police resources following two recent murders in the town but there were concerns about general public safety and the Kangaroo Flat Fire Brigade was created.

The Brigade began with a hose cart reel that could be hitched to a horse drawn cab, however these cabs were often hard to find, which made the process of firefighting very physically demanding as the alternative was for the brigade members themselves to run the cart to the fire. The Brigade went on to receive its first motorised appliance, a 1926 Dodge hose carrier with a 1939 Worthington Simpson trailer pump, on 22 February 1946, less than a year after CFA itself was established.

The fire station in Station Street, Kangaroo Flat was the Brigade's second official station. It was home to the Brigade for 59 years and was much loved by the Brigade and the community. The station accommodated badminton courts and hosted local weddings and other functions.

Christmas is a very exciting time for the Kangaroo Flat community and the Brigade. It is thought that Santa first decided to ride with the Brigade back in 1952, before the practice took off across the state. This tradition has continued to grow along with the community as several crews and Santa's helpers, are now needed to spread the magic of Christmas to all areas of Kangaroo Flat.

The Brigade proudly moved into its current station on Helm Street, Kangaroo Flat, in October 2015 after outgrowing the previous station. The new station has specialised facilities to support a contemporary fire brigade, but is a historical treasure trove, lined with an array of photographs, honour rolls and competition trophies, capturing the strong history and recent achievements of the Brigade.

1.2 Context

The risk environment of the Kangaroo Flat SDA includes notable urban rural interface, commercial and industrial premises, major rail and transport routes. Major and critical infrastructure within Kangaroo Flat's SDA includes:

- Bendigo's major water treatment plant
- aged care facilities and nursing homes
- retail infrastructure
- large solar fed lithium battery storage facility attached to a major retail complex
- Telstra exchange
- railway lines
- Calder Highway
- pine plantation and forest areas.

Understanding the local risk environment enables the Brigade to proactively contribute to fire prevention and preparedness works and strong relationships and collaboration with other CFA brigades and agencies including FRV and FFMV and provide a complementary fire service to the community.

Relationships with local government and other service providers have also supported collaborative work in vegetation management through defining and prioritising high-risk areas, such as the Big Hill growth corridor that houses critical infrastructure such as power, water, and major transportation routes.

Community engagement and education is significant in the operation of the Brigade. For decades, the Brigade has developed close working relationships with local groups, sporting and service clubs, community groups and other educational settings to empower residents to create a safer community. The Brigade is currently extending its educational portfolio and delivery of traditional fire safety programs such as Fire Safe Kids Program and Fire Safety Essentials and is training to deliver the Smoke Alarm Installation Program.

The Brigade has a strong leadership team and effective processes and systems in place to ensure it remains a capable and sustainable fire brigade into the future. The Brigade has a planned approach to member training and currently undertaking training for gas monitoring equipment.

Government funding of a new CFA Golden Square station, located immediately adjacent to the Kangaroo Flat SDA, will further support the complementary fire service in the area and will provide modern facilities for CFA volunteer firefighters. Funded in 2020-21, construction is underway and is expected to be complete in April 2025.

2. Brigade Capability Snapshot

2.1 Membership

The Kangaroo Flat Fire Brigade has a total membership of 80 members (25 females and 55 males). The Brigade has a good range of experienced and newer members with most members (including most operational firefighters) under 40 years of age.

2.2 Fire appliances, other vehicles and specialist equipment

The Kangaroo Flat Fire Brigade has four appliances and other vehicles to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Kangaroo Flat Brigade alone.

Table 1: Fire appliances and vehicles available to the Kangaroo Flat Brigade

Vehicle	Type	Age
Pumper	Isuzu	26 years
Tanker	Iveco	6 years
Field Command Vehicle	Nissan Patrol	12 years
Big fill	Toyota	11 years
Petroleum Response/Hybrid HAZMAT Support Trailer	Medium dual axle box trailer	25 years

Table 2: Vehicle specification

Pumper	Carrying five firefighters, 1,200 litres of water and a 3,800 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage, monitors, foam equipment, Safe Working at Heights kit and a defibrillator.
Tanker	Carrying five firefighters 4,000 litres of water, 1,200 lpm pump, electronic BA sets, hoses and adaptors, chainsaw, foam equipment and defibrillator.
Field Command Vehicle	A small transport vehicle designed for fireground operations for management personnel. The vehicle also carries a defibrillator.
Big Fill	A small manoeuvrable vehicle designed to assist with tanker refilling from static water supplies. The vehicle also carries a defibrillator.
Petroleum Response/Hybrid HAZMAT Support Trailer	A large dual-axle trailer, containing significant quantities of equipment and material for Fuel or HAZMAT Incidents, including large and small drums for chemical containment, bunting for containment, hand tools, tarps, decontamination materials and absorbents. This trailer can be towed by both the Brigade's FCV and Big Fill.

2.3 Station Location

The station is centrally located within the most populated area at 27-31 Helm Street, Kangaroo Flat. The purpose-built station has four drive through motor room bays and includes a four bay external shed.

The location of a fire station is an important element in the successful operation of a volunteer fire brigade. Siting must strike a balance between being located to address service delivery needs and also being readily accessible to and from for emergency responders.

The day of week and time of that day for traffic congestion analysis for the Kangaroo Flat Brigade has been determined by the day of the week that there are the most incidents and what time of that day that the most incidents occur. For some brigades there are multiple times for the one day. Analysis of the Kangaroo Flat Fire Brigades peak activity within its primary SDA shows that the two peak times for the Brigade dispatches is 19:00 and 10:00.

Figure 1: Typical traffic 19:00

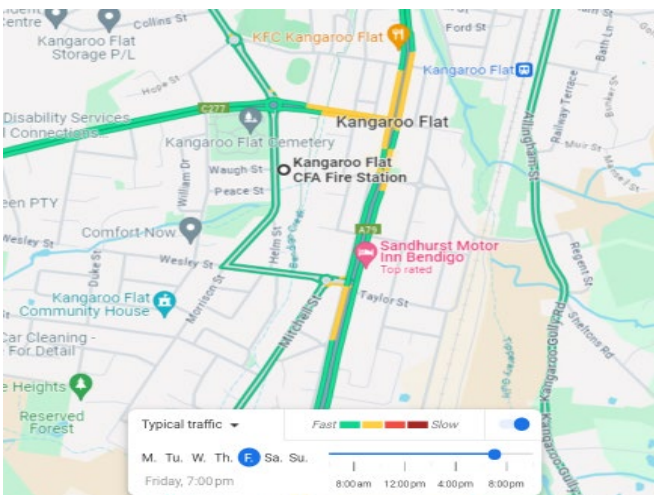
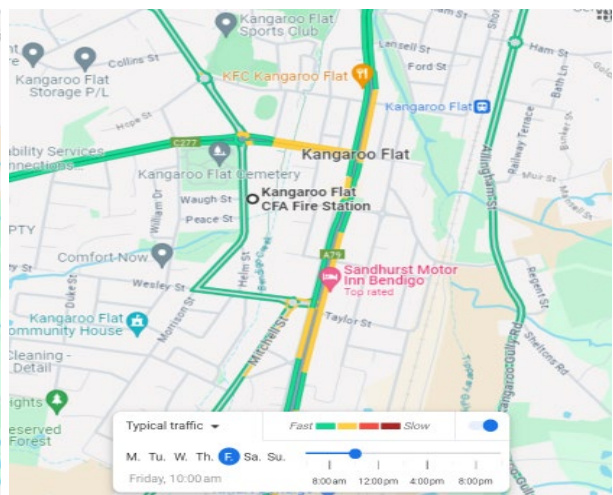


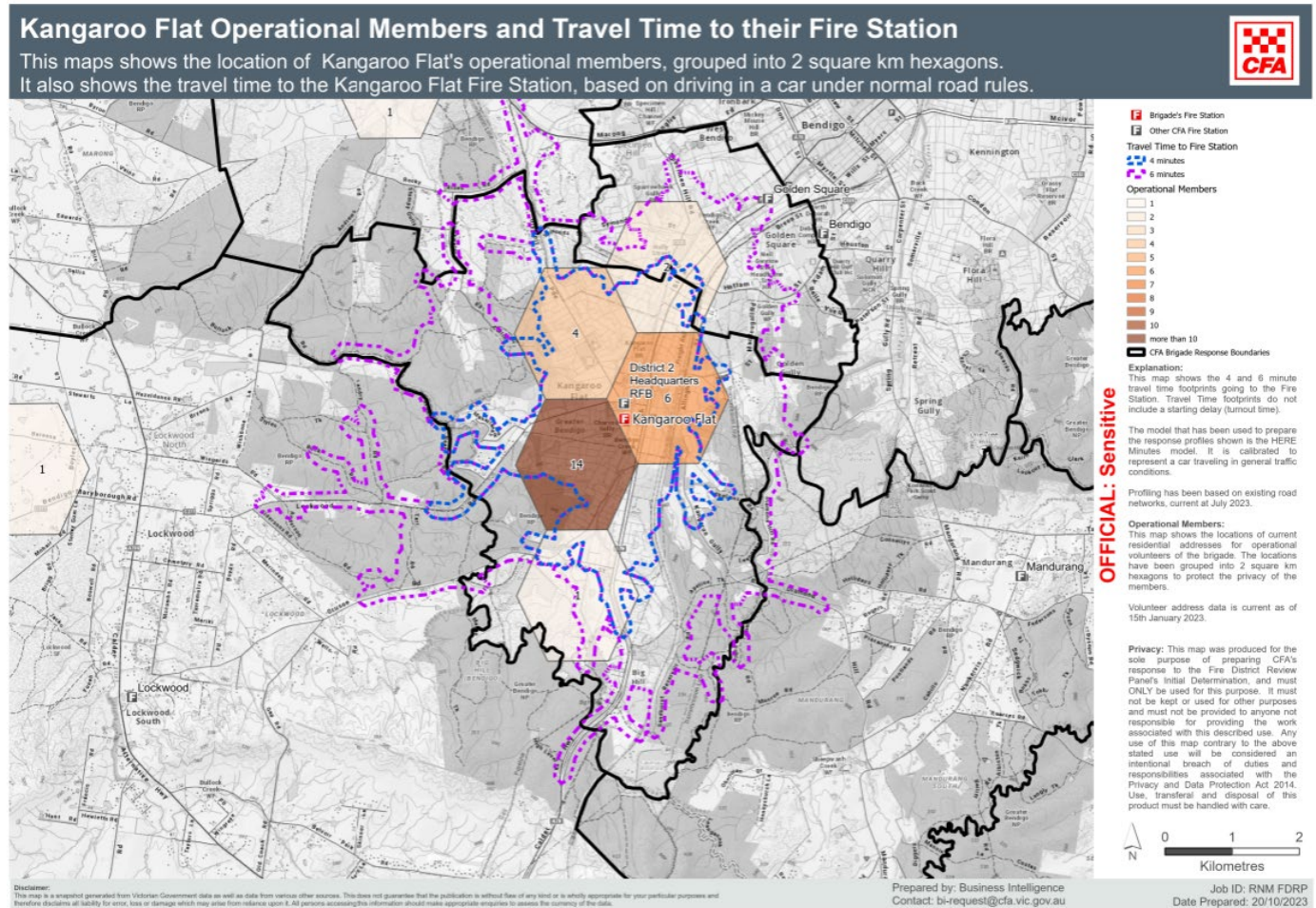
Figure 2: Typical traffic 10:00



It is evident that a level of traffic congestion along the Midland Highway has the potential to contribute to timely access to and from the current Kangaroo Flat Fire Station site.

Analysis of the home location of responding Kangaroo Flat Fire Brigade Members within a four minute and six minute travel time however (under normal road conditions) indicates sufficient resources to ensure the rapid mobilisation of volunteers to station upon activation (Figure 3).

Figure 3: Operational members location and travel times



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only has use across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state's resources in both the CAoV and the FRV Fire District. In particular for Kangaroo Flat surge and support capacity is provided through short and long-haul strike teams, including:

- participation as one of the first interstate strike teams into New South Wales
- involvement in the Black Saturday 2009 fires, as part of a strike team to Redesdale and the Bendigo, Bracewell Street fires
- involvement in the first strike team deployed to Mallacoota and other communities during Black Summer 2019-20
- providing strike teams for the flood response in Echuca in 2022. During this response, brigade members not only continued to meet the emergency needs of the Kangaroo Flat community but also made themselves available to crew a tanker (including crewing 90% of the daily needs for the Brigade's Big Fill that was deployed to Echuca for a period of two months).

2.5 Assistance to Fire Rescue Victoria

FRV is dispatched to support CFA with fire and emergency calls in the Kangaroo Flat SDA, ensuring complementary delivery of service to the community. The below graph shows the total count of incidents (primary and support) that Kangaroo Flat attended in the FRV Fire District for each calendar year.

Figure 4: Incident count and type of support provided in the FRV Fire District

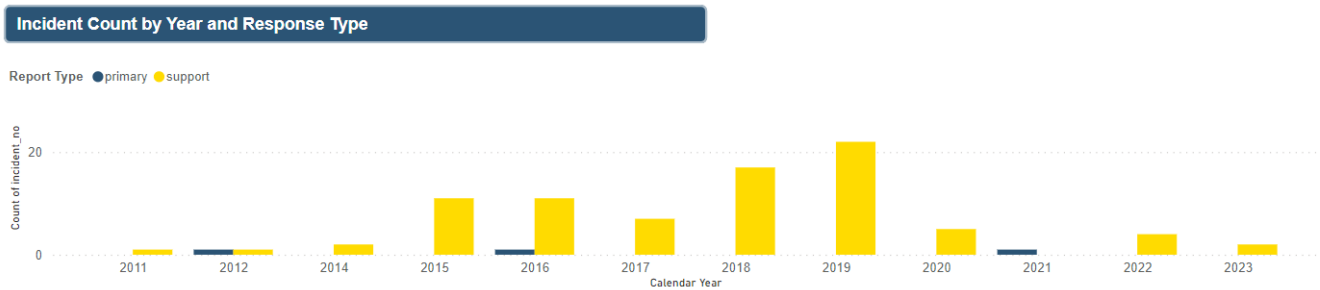
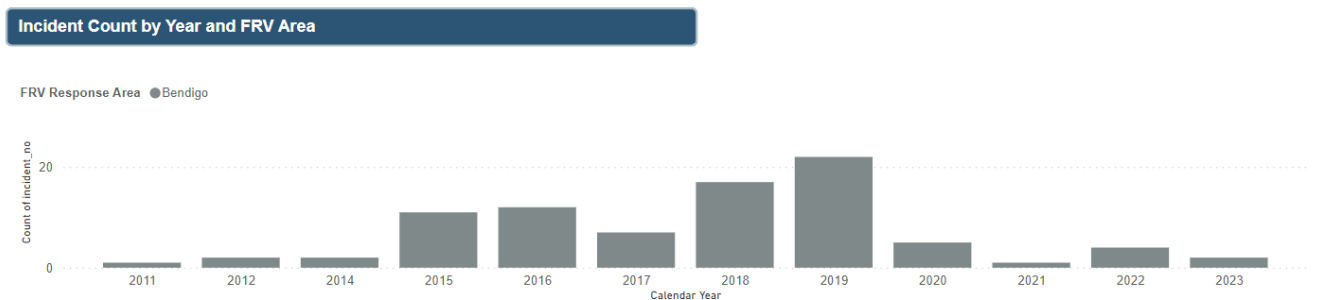


Figure 5: Incident count and type of support provided in the FRV Station footprint



Kangaroo Flat Brigade provides specialist capability into the FRV Bendigo footprint area for fire and other incidents, particularly the bush blocks in the FRV footprint which require the specialist appliances, equipment and grass/scrub and bushfire capability of CFA.

The Brigade also provides significant support to other neighboring CFA brigades and undertakes joint business and operations with FFMV consistent with the Local Mutual Aid Plan.

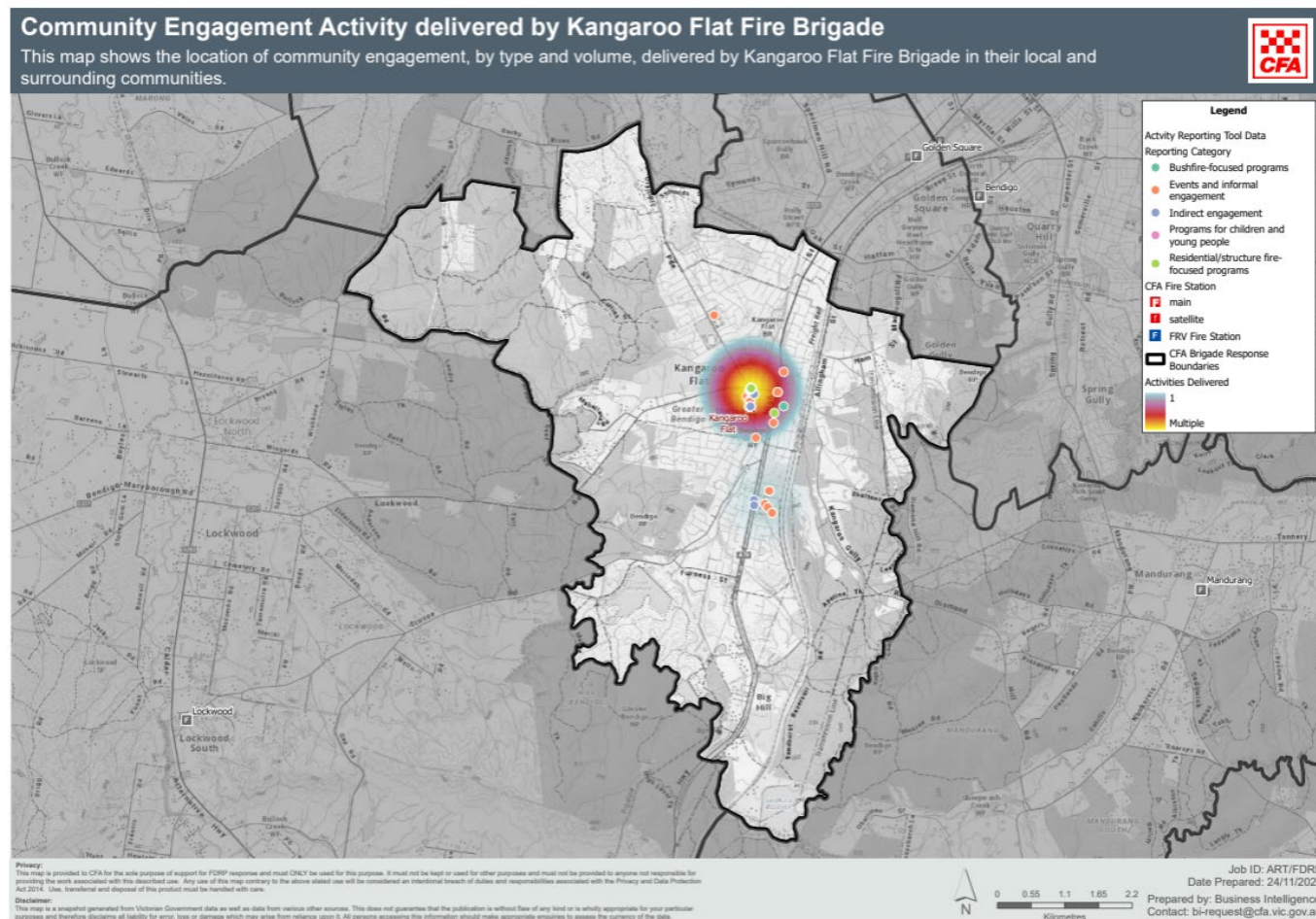
2.6 Community engagement activity

The Kangaroo Flat Brigade works directly with the community to support regular prevention and preparedness activities including community fire safety messaging, school visits and direct intervention programs.

The Brigade’s engagement and educational priorities include the urban-rural interface residents, elderly residents and other vulnerable people, local business and industries, home fire safety and tourists at caravan parks.

CFA in 2022 implemented a new platform to allow brigades to centrally record community engagement activities undertaken by brigades to allow better understanding of community fire safety interventions. Previously brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of interventions. Figure 6 below shows community safety interventions undertaken by the Kangaroo Flat Fire Brigade as recorded in the ART system.

Figure 6: Community safety and intervention programs



In person activities are complemented by the Brigade’s social and print media reach. For example, attendance at pre-summer ‘street corner’ preparedness sessions held in the community has complementary messaging released through social media, local print media and school newsletters. The Brigade’s Facebook page shares brigade news, member contributions and fire safety information, such as awareness of fire danger ratings, the need to service and clean heaters, check smoke alarms and change batteries, cooking and BBQ safety, and pre-summer preparedness information. Messages are seasonal, with a different safety topic added monthly relevant to the conditions and local issues. The Brigade’s Facebook page has 3,300 likes and 3,500 followers. The Brigade is currently considering installation of an LED messaging board to an external wall of the fire station to further enhance community engagement and messaging.

The Brigade has built strong working relationships with the North West Region Vegetation Management Team, has members who are trained Planned Burns Operations Officers and is proactively planning risk-based treatments (operational and non-operational). Relationships with local government and other service providers have enabled an opportunity to work together in vegetation management by defining and prioritising higher risk areas, such as the Big Hill growth corridor that includes critical infrastructure (power, water, and major transportation routes). The Brigade is also enhancing its practical skills and reach of vegetation management by supporting the delivery of planned burns across the Eppalock Group.

Fire Equipment Maintenance is another fire prevention and community engagement service. The Brigade has 30 clients. Some of this work is conducted by a qualified sub-contractor, with the remaining work being completed by trained brigade members. This critical work helps to build relationships, ensure preparedness, checking that portable fire equipment is serviced on a regular basis and is in good working order in the event of an emergency incident. The revenue obtained through the completion of this critical work is used to purchase additional resources for the Brigade to enhance the service provided to the community.

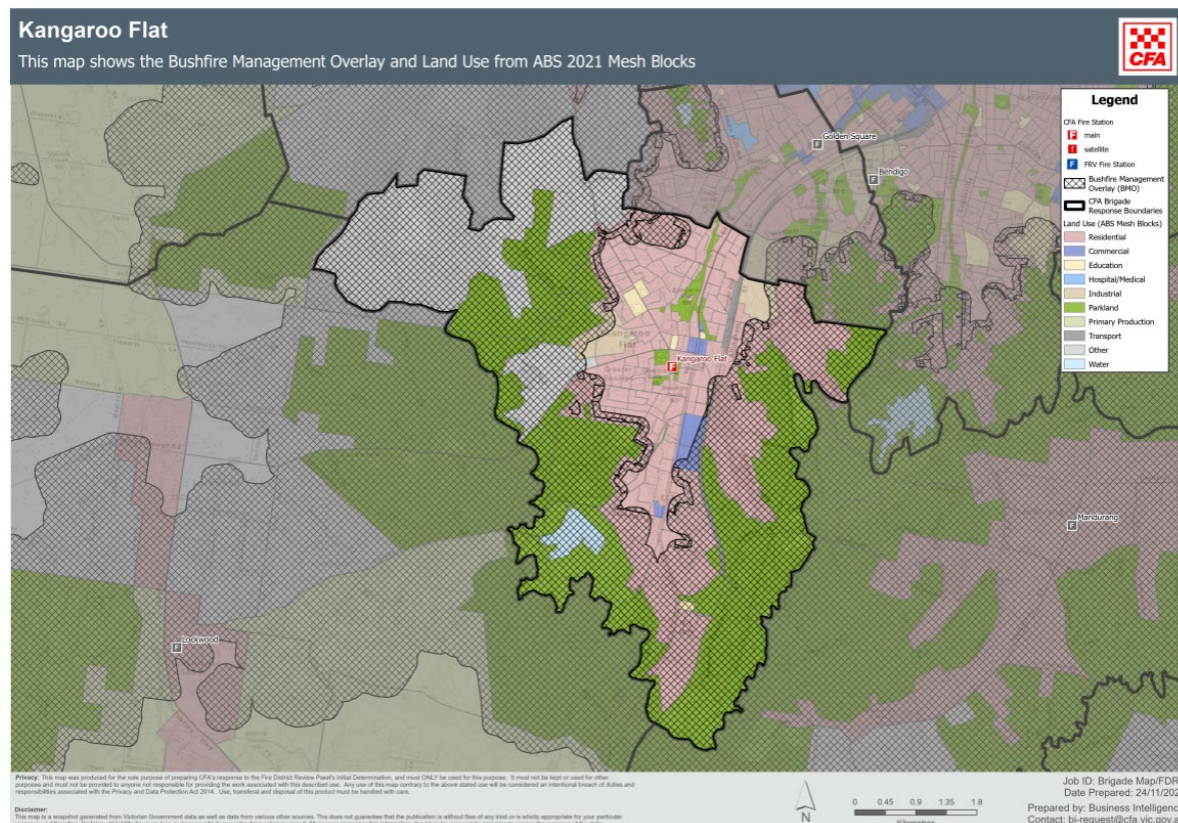
3. Service Delivery Area Profile

The Kangaroo Flat Fire Brigade SDA has a total area of 3,455.9 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses (Figure 7).

Table 3: Kangaroo Flat land use planning areas

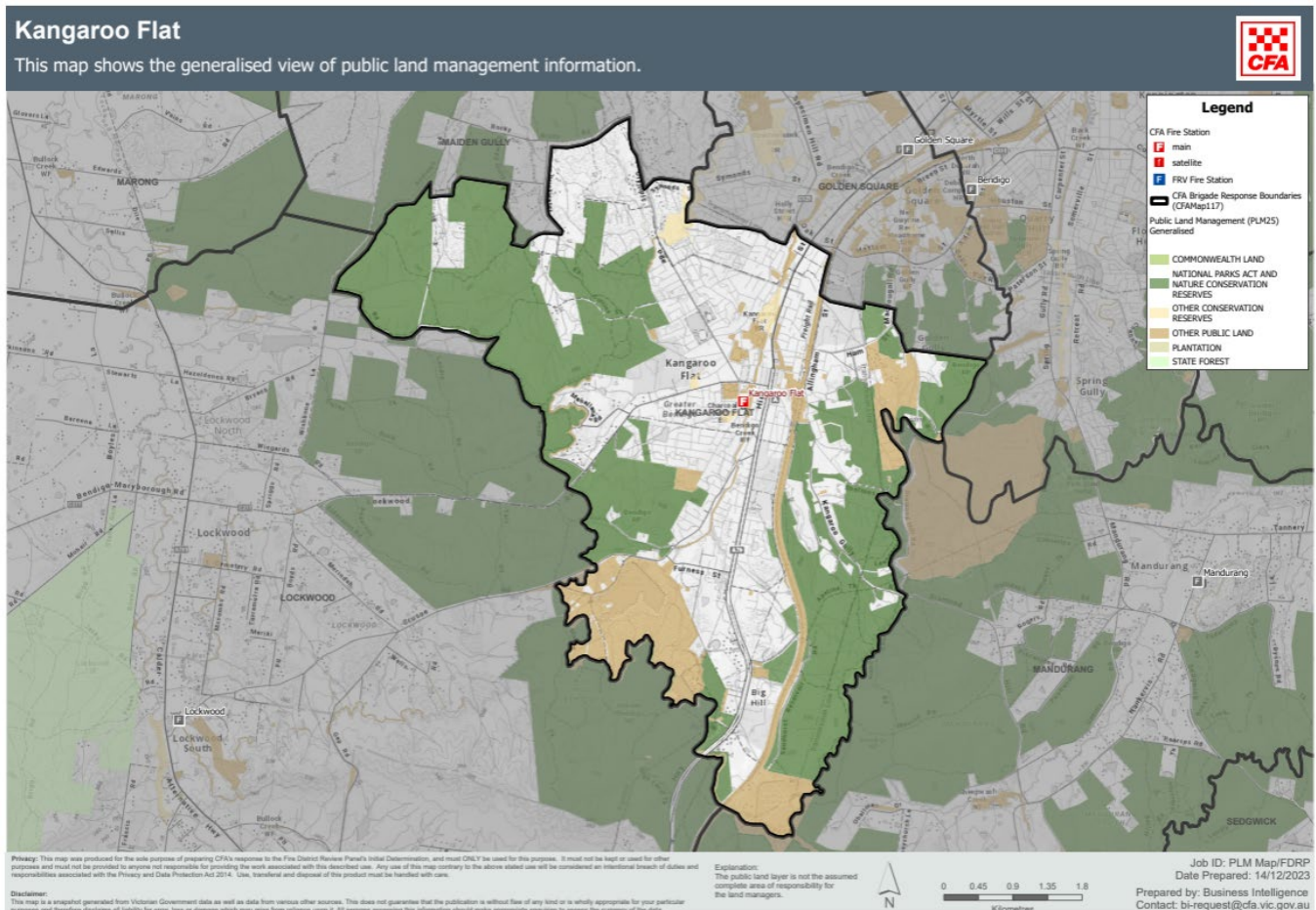
Land use	Hectares	Percentage of Brigade SDA
Commercial	38.3	1.1%
Education	18.5	0.5%
Industrial	71.0	2.1%
Other	716.1	20.7%
Parkland	1,353.7	39.2%
Primary Production	0	0%
Residential	1,197.8	34.7%
Transport	24.0	0.7%
Water	36.5	1.1%

Figure 7: ABS land use areas and BMO



As demonstrated in Figure 8 below, a substantial proportion of the SDA is public land. FFMV is the control agency and legislatively responsible for bushfire risk reduction and fire response in state forest, national parks and protected public land. Public and protected lands are not part of the CAoV. CFA supports the FFMV response in state forest, national parks and protected public lands to achieve an effective complementary fire service for the community.

Figure 8: Public land management information



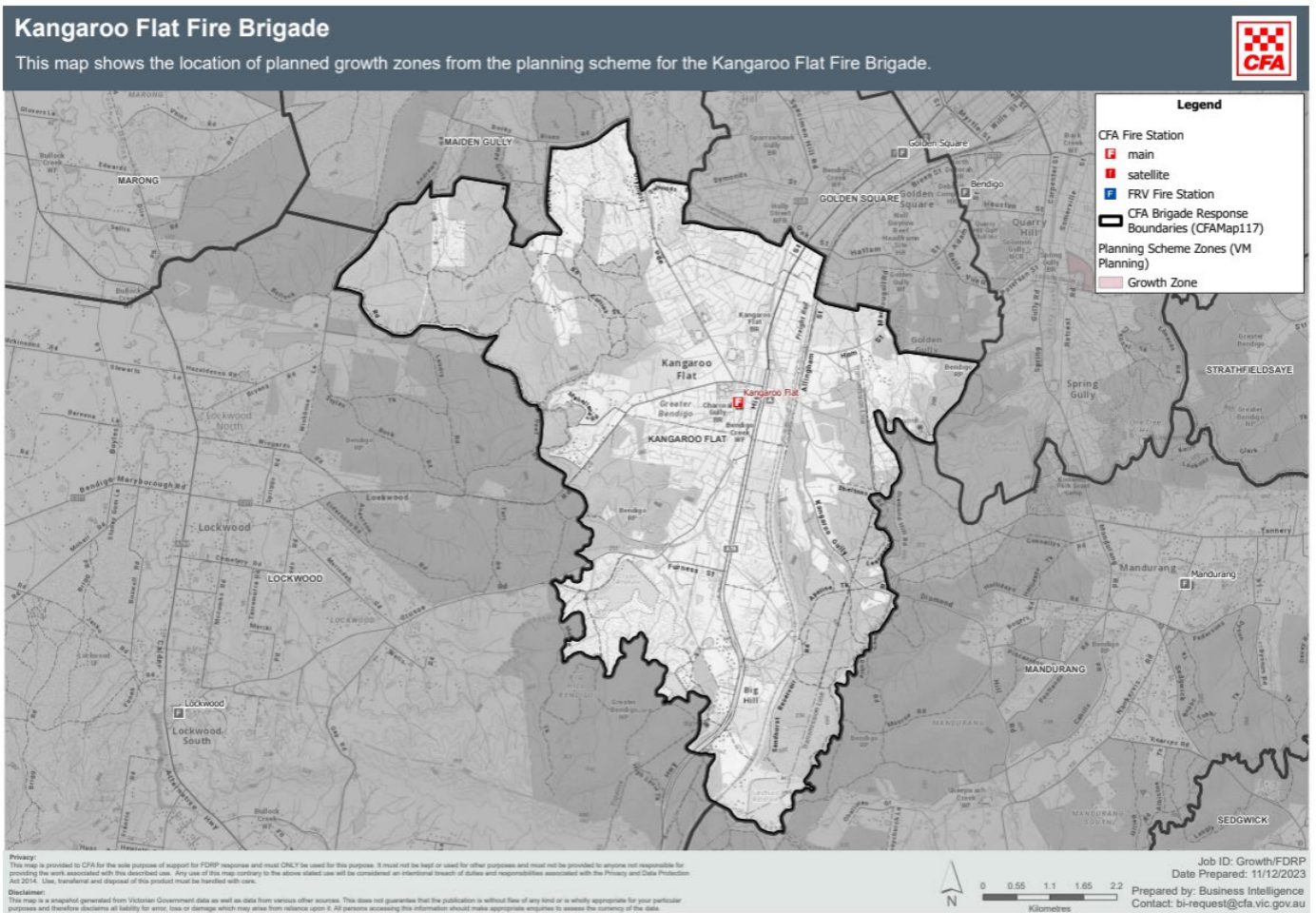
3.1 Growth zones

While the SDA has historically experienced a level of growth and development, an analysis of VicPlan, the official mapping platform of the Department of Transport and Planning shows there are no current residential or industrial growth zones within the Kangaroo Flat SDA (Figure 9). Any further growth is expected to be predominantly infill of the area rather than expansion. This is largely due to the landlock of residential development areas by public protected lands.

Table 4: Urban growth areas

Total Brigade Area (Hectares)	Area (hectares) covered by Industrial Zones	Area (hectares) covered by Growth Zones	% covered by Industrial Zones	% covered by Growth Zones
3456	98.99	0.00	2.86	0.00

Figure 9: Planned growth zones from the planning scheme for Kangaroo Flat



Risk Evaluation:

While the SDA has historically experienced a level of growth and development, there are no current residential or industrial Growth Zones within the Kangaroo Flat SDA. Any further growth is expected to be predominantly infill of the area rather than expansion. This is largely due to the landlock of residential development areas by public protected lands.

Risk Mitigation:

Kangaroo Flat Fire Brigade resource capability of a pumper and tanker combined with the long-established protocol of joint response from FRV, FFMV and surrounding brigades as a response network, delivers the complementary fire services model and is considered sufficient to treat the current residential and industrial risk noting that there is no planned residential growth zones and development is at current capacity.

The upgrade of the Kangaroo Flat pumper from the 26-year-old ISUZU to a modern Scania pumper will provide better response acceleration and equipment to allow for facilitation of continued improved service delivery.

3.2 Bushfire Management Overlay

As shown in Figure 7 (above), the Kangaroo Flat Fire Brigade SDA has areas of 2,794.5 hectares defined as BMO (80% of the SDA). The BMO applies to land that may be significantly affected by extreme bushfires. A planning permit is required for some types of development to ensure bushfire risk is considered and passive bushfire protection measures are in place to ensure resilience of the development without the intervention of fire services.

The BMO in the Kangaroo Flat Brigade SDA includes significant parkland. Much of the land covered by the BMO is public land, for which FFMV is the control agency for response to fire.

Risk Evaluation:

A complementary fire service is provided to the community by CFA and FFMV for much of the land covered by BMO in the Kangaroo Flat SDA. The majority of BMO area is public land, for which FFMV is the control agency for response to fire. The combined capabilities of the Kangaroo Flat Brigade, FFMV and FRV is sufficient to meet the risk associated with response to risk. This is also supported by the requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones.

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population change of 1,116 (8%) (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells).

The local government area (City of Greater Bendigo) forecast seven-year population change (from 2021 census) is an increase of 13% or 14,809. Significantly slower growth is forecast year on year for the Kangaroo Flat SDA²¹

The ABS Index of Relative Socio-economic Disadvantage (2021) shows the Kangaroo Flat Statistical Area Level 1 to be at SEIFA decile 2, Quintile 1 representing a higher level of socio-economic disadvantage.

ABS census data (2021) shows that there are 5,466 dwellings in the Kangaroo Flat Brigade SDA. Of these dwellings, 28% are rental houses (17% of which are state owned). As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair.

The population also includes those at higher risk, including people living with a disability, and those with a culturally and linguistically diverse (CALD) background. It is noteworthy that 33% of the population are not in the workforce and 26% of the community are 65 years or older.

CFA and FRV have collaborated to create the Prevent – Detect – Escape Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability. There have been 12 community members undertake the Prevent – Detect – Escape Program in the Kangaroo Fire Brigade SDA and increasing this number is an area of future focus.

²¹ Population summary | City of Greater Bendigo | Population forecast (id.com.au)

Risk Evaluation:

Between 2016 and 2021 there has been an overall population change of 1,116 (8%) (derived from ABS census data applied by CFA to the Brigade SDA as distinct from ABS collection grid cells). While Kangaroo Flat SDA has historically seen growth, the expected forward projection for the Kangaroo Flat SDA shows slowing and significantly lower growth than that projected for the local government area. This in part is largely due to the inability for new residential estates to be created. Community engagement activities undertaken by the Kangaroo Flat Fire Brigade allow for significant mitigation of risk elements identified in both residential fire and social disadvantage risk.

Risk Mitigation Action:

The Kangaroo Flat Brigade has an ongoing focus on targeting high risk groups through community engagement. The Brigade will seek to increase participation in the Prevent – Detect – Escape program, is expanding delivery of traditional fire safety programs such as Fire Safe Kids and Fire Safety Essentials and are completing training to deliver the CFA Smoke Alarm Installation Program.

4. Service Delivery and Service Demand

4.1 Total demand

Figure 10 shows the total number of unique incident numbers attended by the Kangaroo Flat Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response.

Figure 10: Kangaroo Flat Brigade incident count by type 1 January 2010 - 18 December 2023

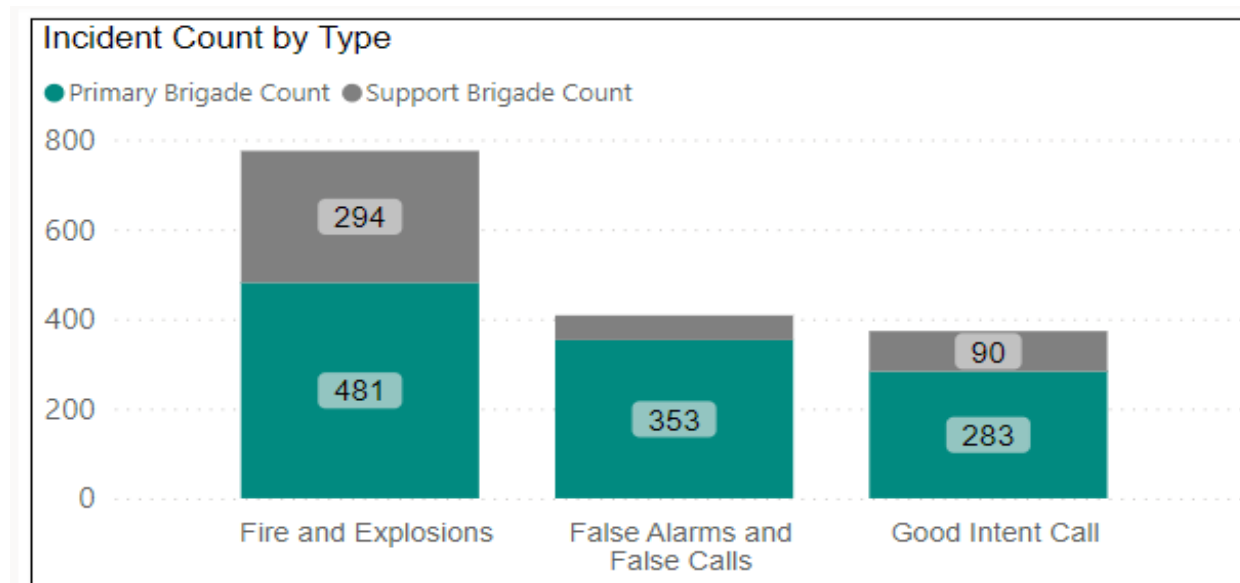


Figure 11 shows a count of the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels in summer and lower periods of activity in the winter months.

Figure 11: Kangaroo Flat Brigade incident count by month 1 January 2010 - 18 December 2023

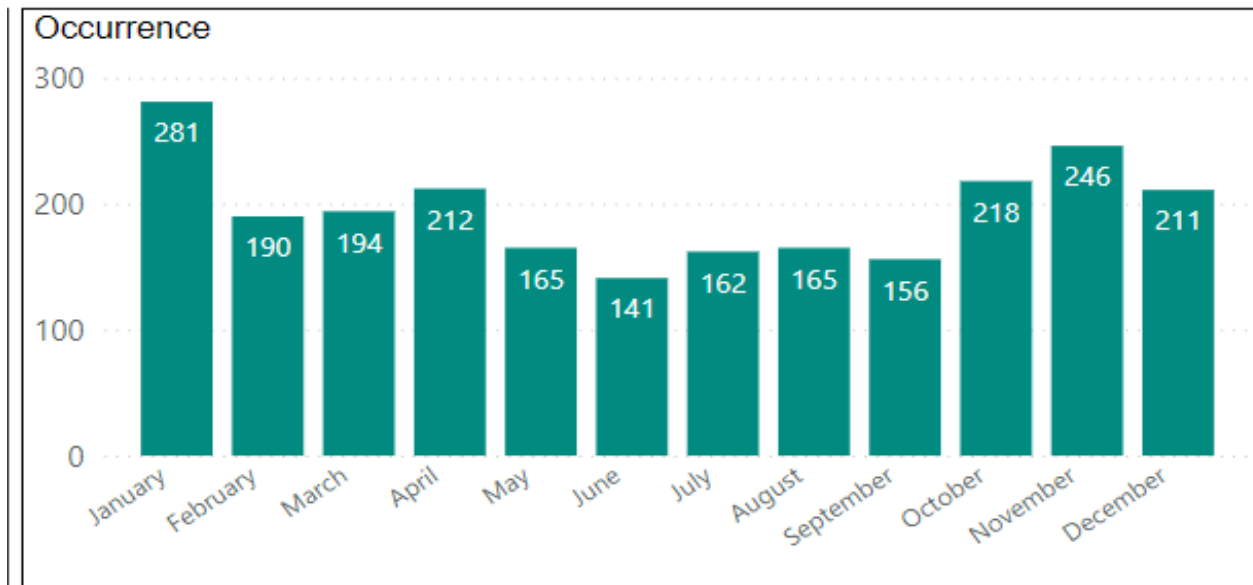
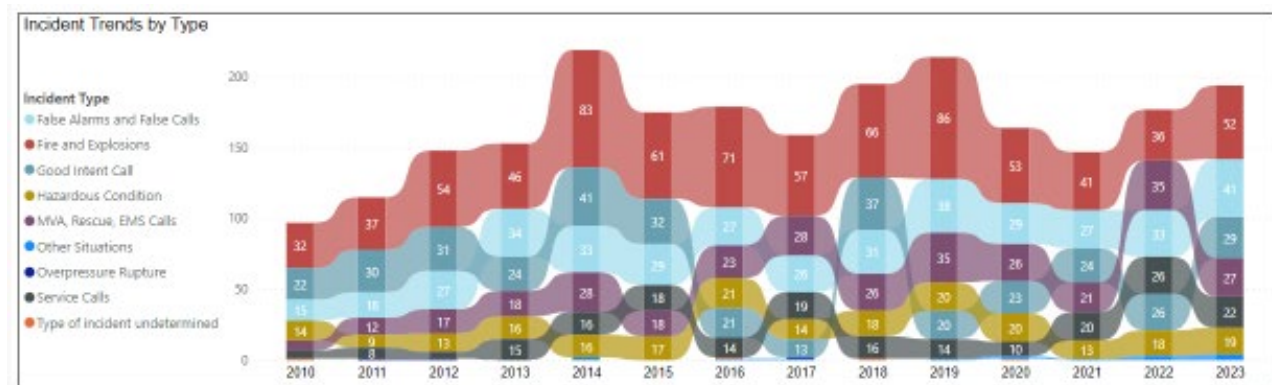


Figure 12 shows a count of all incident types between 1 January 2010 and 18 December 2023. The primary incidents attended are Fire and Explosions.

Figure 12: Kangaroo Flat Brigade incident count by type by year 2010 - 2023



Risk Evaluation:

The primary incident types for the Brigade are Fire and Explosion calls. This has remained relatively consistent over time. Kangaroo Flat Brigade has the appropriate capability and capacity for all incident types within the SDA, and with FFMV and FRV providing an effective and efficient complementary fire service to the community.

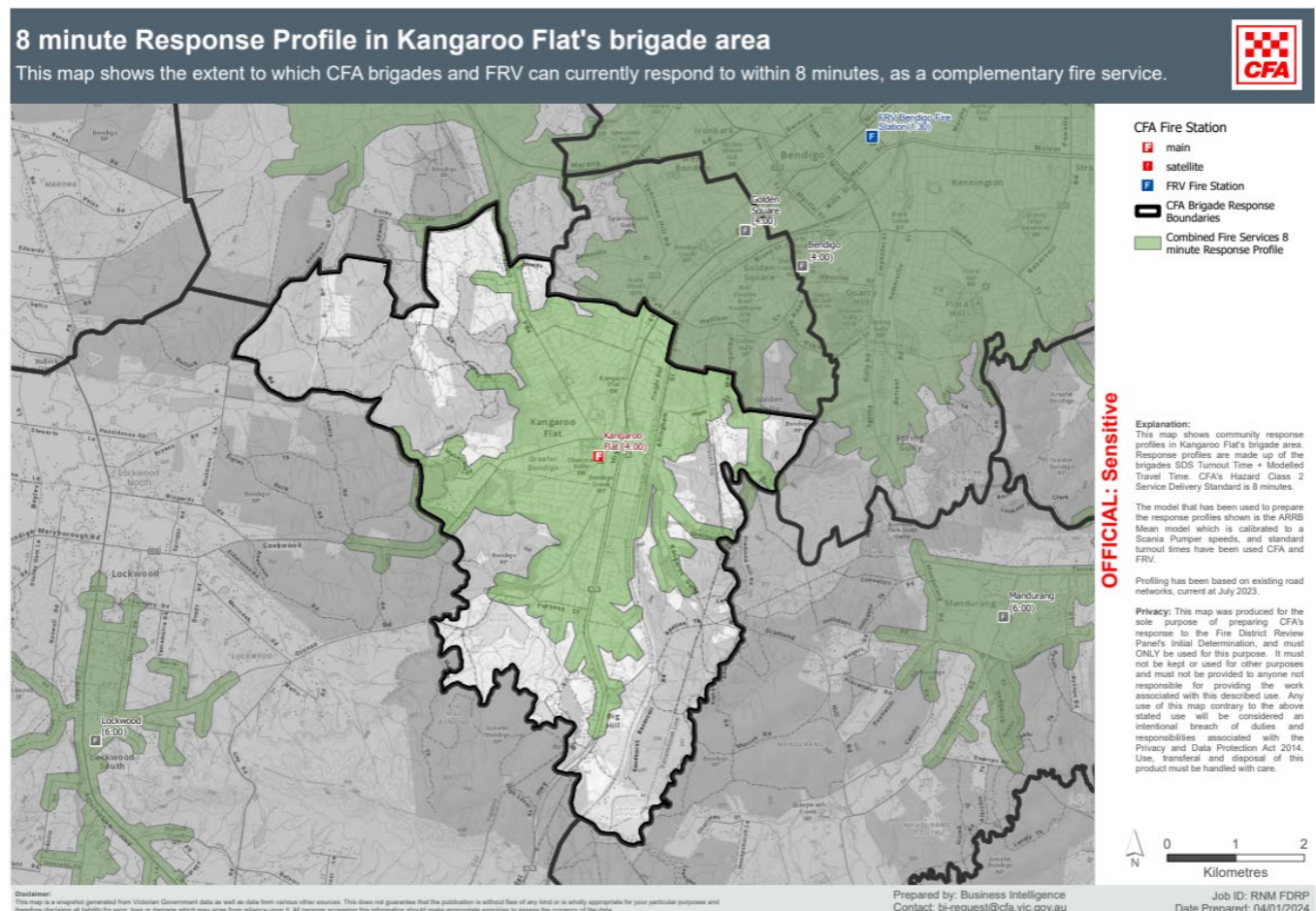
Risk Mitigation Action:

There has not been significant change in response activity of the Kangaroo Flat Brigade over the long term. This and the complementary fire service model supports the sustainability of the volunteer brigade servicing the Kangaroo Flat SDA. An upgrade of the Kangaroo Flat Brigade's pumper will further enhance capability and the service provided to the community.

4.2 Service delivery standard

Figure 13 shows the percentage of road within the land use that can be serviced within eight minutes by the existing (CFA/FRV) complementary fire service. It should be noted that Figure 13 shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the eight minute to scene standard.

Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 96.93% of the road network in the Residential land use
- 100% of the road network in the Commercial land use
- 100% of the road network in the Industrial land use
- 100% of the road network in the Education land use

- 50.49% of the road network in the Parkland land use
- 47.43% of the road network in the Other land use
- 87.61% of the road network in the Transport land use
- 0% of the road network in the Water land use

The Water land use comprises a very small proportion (1.06%) of the SDA.

An analysis of the Kangaroo Flat Brigade with established SDS against the respective hazard classes shows:

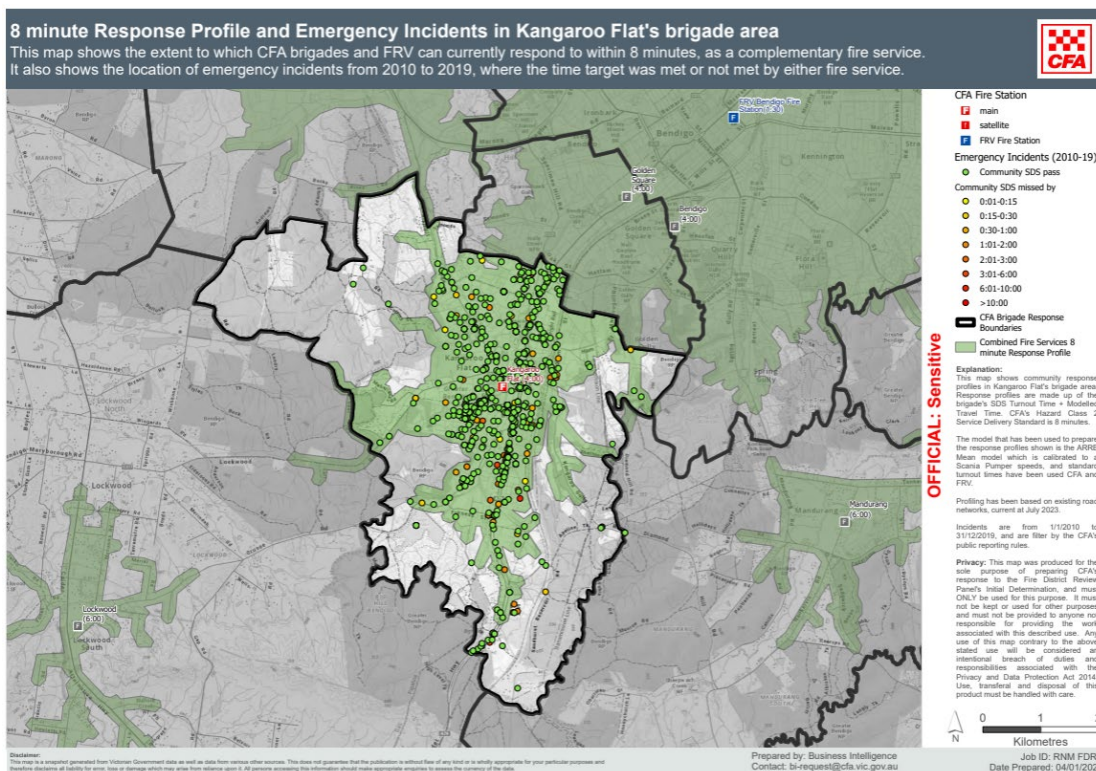
- from 1 January 2010 to 31 December 2019 there were 888 emergency incidents within the Kangaroo Flat Brigade SDA
- fire services response to emergency incidents was 87.16% compliant with SDS
- for the 114 incidents where SDS was not met over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (62%) were missed by less than 60 seconds.

Table 5: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
23 (20.18%)	18 (15.79%)	30 (26.32%)	30 (26.32%)	7 (6.14%)	5 (4.39%)	0 (0%)	1 (0.88%)

Figure 14 shows graphically the ability for fire services to meet established SDS across the Kangaroo Flat SDA.

Figure 14: SDS compliance for the Kangaroo Flat Brigade SDA 2010 - 2019



From 1 January 2020 to 30 November 2023:

- there were 358 emergency incidents within the Kangaroo Flat Brigade SDA
- fire services response to emergency incidents was 88.5% compliant with the SDS – a 1.53% improvement on SDS performance compared to the FDRP data reference period
- for the 41 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (66%) were missed by less than 60 seconds.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
6 (14.63%)	7 (17.07%)	14 (34.15%)	8 (19.51%)	3 (7.32%)	2 (4.88%)	0 (0%)	1 (2.44%)

Risk evaluation:

The Kangaroo Flat Fire Brigade consistently achieves high SDS results (87.16% - 88.5%), with the majority of incidents that miss the standard doing so by only a very small margin. SDS performance has improved since the FDRP data reference period and risk is also mitigated by the support of other CFA brigades and by FRV as a complementary fire service. Traffic impediments at specific points, radio congestion and some member availability, singular or in combination are the main contributors to SDS misses.

The Brigade has operational response pre-plans in place for 12 premises. All plans are reviewed by the Brigade at least annually, with members attending premises for familiarisation purposes. Pre-plans are also exercised as part of ongoing training.

Risk mitigation:

To ensure the ongoing ability to provide a timely response, and ongoing maintenance of appropriate SDS an active recruitment campaign (focussing on availability of people who live within four to six minutes from the station) and a training campaign (for additional drivers and BA operators) are being undertaken.

The Brigade is reviewing fire reports to ensure accuracy as data analysis indicates some historical incidents were reported incorrectly as Hazard Class 2 rather than Hazard Class 3 which impacted SDS.

To further enable the Brigade to enhance its capability to meet the needs of Kangaroo Flat and surrounding communities there will be an upgrade of the pumper. Benefits include an increased road presence, nett power and torque to combat the hills and other road conditions in and out of the Brigade area, therefore supporting an enhanced response time.

4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Kangaroo Flat Brigade SDA from 2010 to 2023 has had a total of 78 building/structure fires requiring extinguishment.

Table 7: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
7	4	4	4	2	5	8	4	11	12	2	3	9	3	78

Analysis relating to these building/structure fires has identified no fire fatalities (preventable or non-preventable) since 2010.

Risk Evaluation:

The Kangaroo Flat Brigade SDA had no fire fatalities (preventable or non-preventable) relating to building/structure fires since 2010. The ranking of the Kangaroo Flat Brigade in the BCTC ratio may be a data error.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.

Table 8: Kangaroo Flat fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	13 of 13	<p>The Kangaroo Flat Fire Brigade consistently achieves high SDS results, with the majority of incidents that miss the standard doing so by less than 60 seconds. SDS has improved since the FDRP data reference period.</p>	<p>A member recruitment campaign is underway (focussing on availability of people who live within four to six minutes from the station) and a training campaign (for additional drivers and BA operators).</p> <p>The Brigade is reviewing fire reports to ensure accuracy particularly in relation the hazard class.</p> <p>The Kangaroo Flat pumper will be upgraded to a Scania appliance. Benefits include increased road presence, net power and torque to combat the hills and other road conditions in and out of the Brigade area, therefore supporting an enhanced response time.</p>
Bushfire Management Overlay %	1 of 13	<p>The majority of BMO area is public land, for which FFMV is the control agency for response to fire. A complementary fire service is provided to the community by CFA and FFMV for much of the land covered by BMO in the Kangaroo Flat SDA. This is also supported by the requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones.</p> <p>The Brigade undertakes targeted community engagement (including property advice visits) to mitigate bushfire risks across the SDA.</p>	
Total Demand	13 of 13	<p>The primary incident types for the Brigade are fire and explosion related calls. This has remained constant over time.</p> <p>Kangaroo Flat Brigade has the capability and</p>	

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		capacity for all incident types within the SDA, and with FFMV and FRV capability and capacity provide an effective and efficient complementary fire service to the community.	
Victorian Planning Authority %	1 of 13	<p>Kangaroo Flat Fire Brigade is well equipped (with specialist capability and capacity) for fire risk of the SDA, including significant area classified as parkland and the bushland urban interface.</p> <p>CFA, FFMV and FRV capability and capacity provide an effective and efficient complementary fire service to the community.</p> <p>There are no current residential or industrial growth zones within the Kangaroo Flat SDA and historical growth does not present any new risk.</p>	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio	6 of 13	See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.	
Building fire casualty to total building fire ratio	2 of 13	The Kangaroo Flat Brigade SDA had no fire fatalities (preventable or non-preventable) since 2010. The ranking of the Kangaroo Flat Brigade on this ratio may be a data error.	
Population projections	10 of 13	<p>While Kangaroo Flat SDA has historically seen significant growth, the expected forward projection for the Kangaroo Flat SDA shows slowing and significantly lower growth than that projected for the local government area.</p> <p>Community engagement activities undertaken</p>	The Brigade will seek to increase participation in the Prevent – Detect – Escape program, is expanding delivery of traditional fire safety programs such as Fire Safe Kids Program and Fire Safety Essentials and are completing training to deliver the Smoke Alarm Installation

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		by the Kangaroo Flat Fire Brigade allow for significant mitigation of risk elements identified in both residential fire and social disadvantage risk.	Program.

Table 9: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Kangaroo Flat	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Typical traffic 19:00

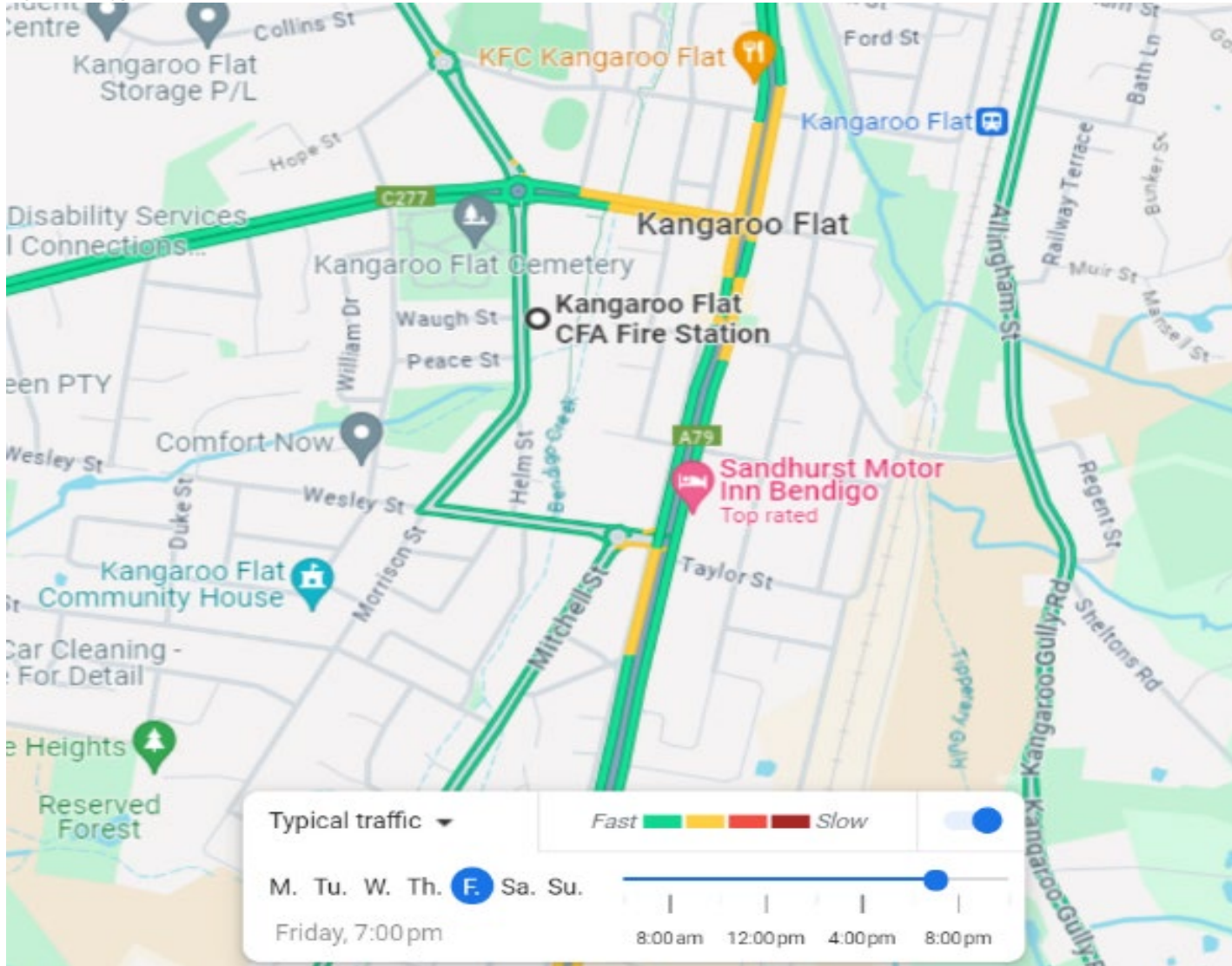


Figure 2: Typical traffic 10:00

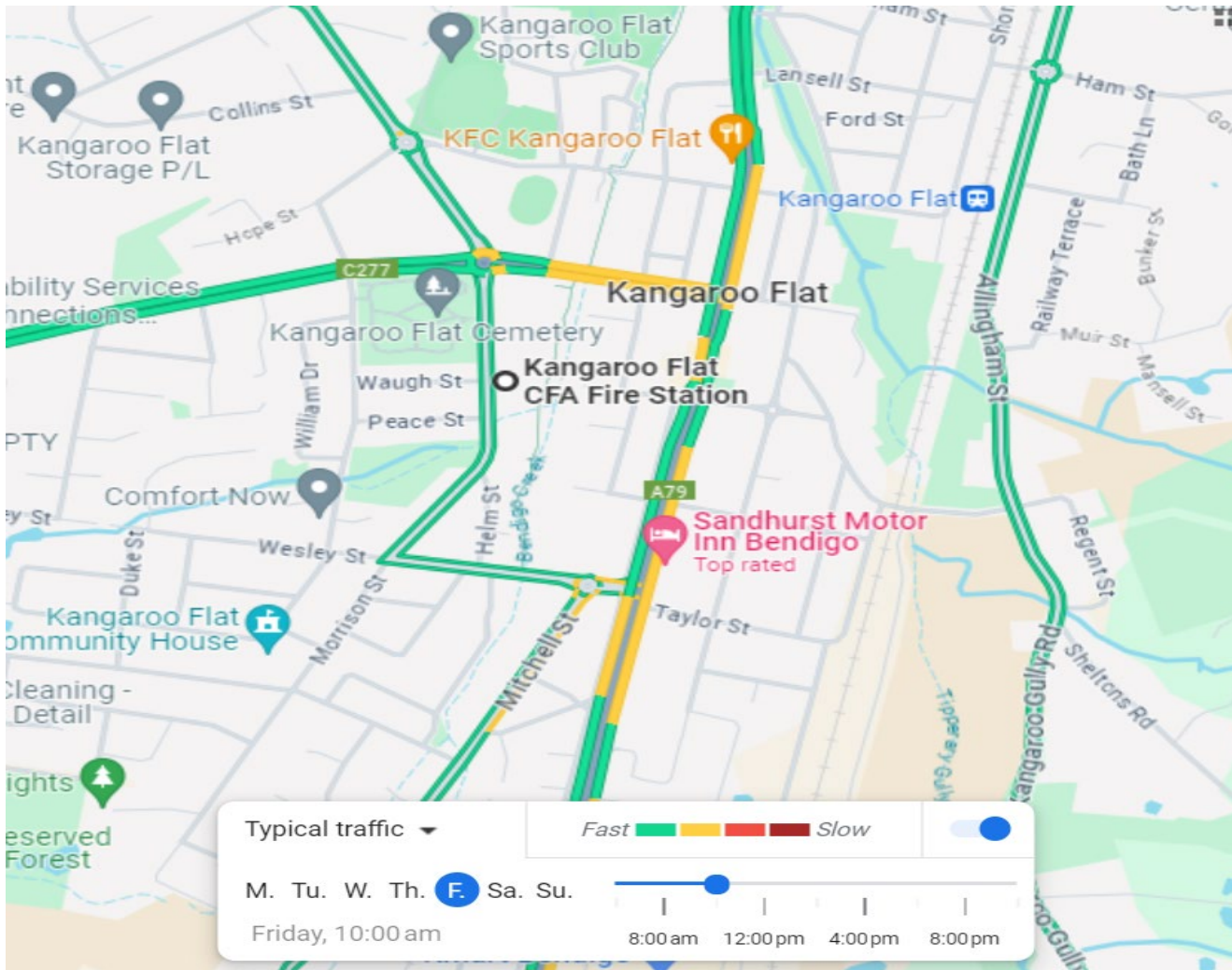
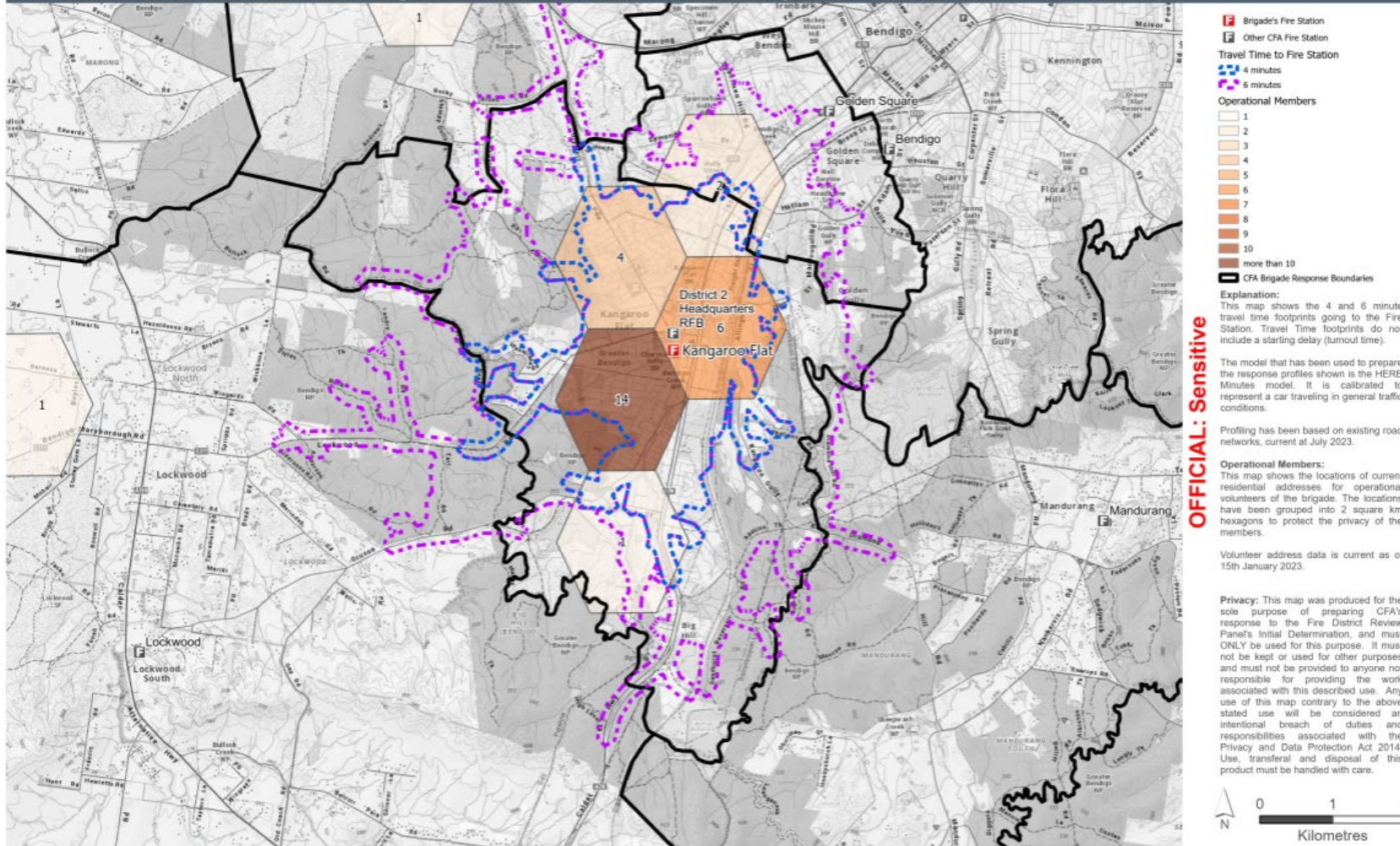


Figure 3: Operational members location and travel times

Kangaroo Flat Operational Members and Travel Time to their Fire Station

This map shows the location of Kangaroo Flat's operational members, grouped into 2 square km hexagons. It also shows the travel time to the Kangaroo Flat Fire Station, based on driving in a car under normal road rules.



OFFICIAL: Sensitive

Disclaimer:
This map is a snapshot generated from Victorian Government data as well as data from various other sources. This does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Prepared by: Business Intelligence
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Job ID: RNM FDRP
Date Prepared: 20/10/2023

Figure 4: Incident count and type of support provided in the FRV Fire District

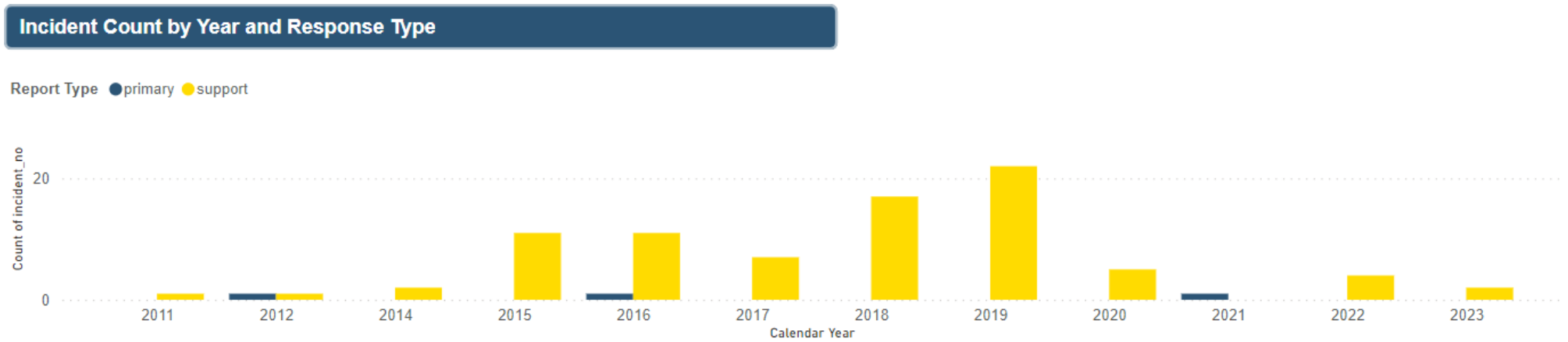


Figure 5: Incident count and type of support provided in the FRV Station footprint

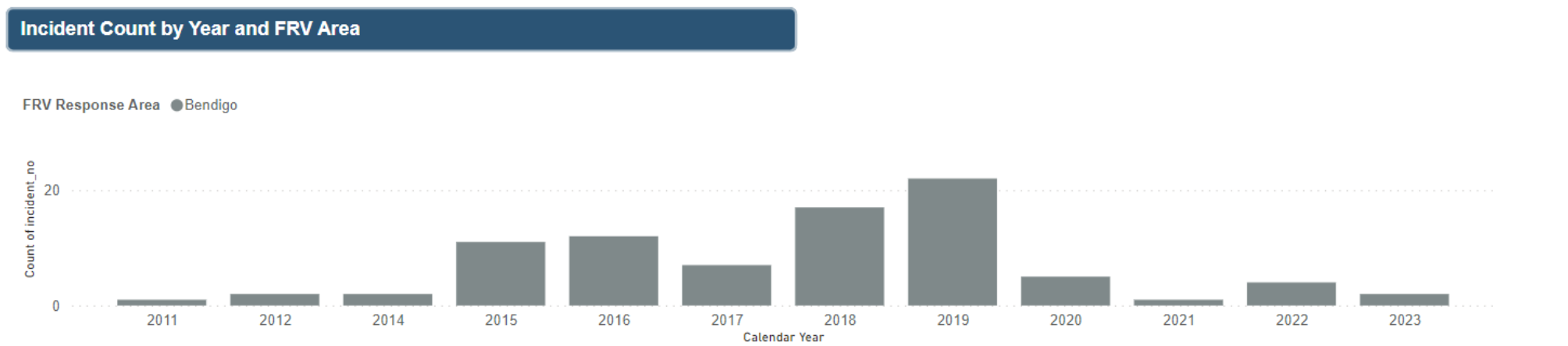


Figure 6: Community safety and intervention programs

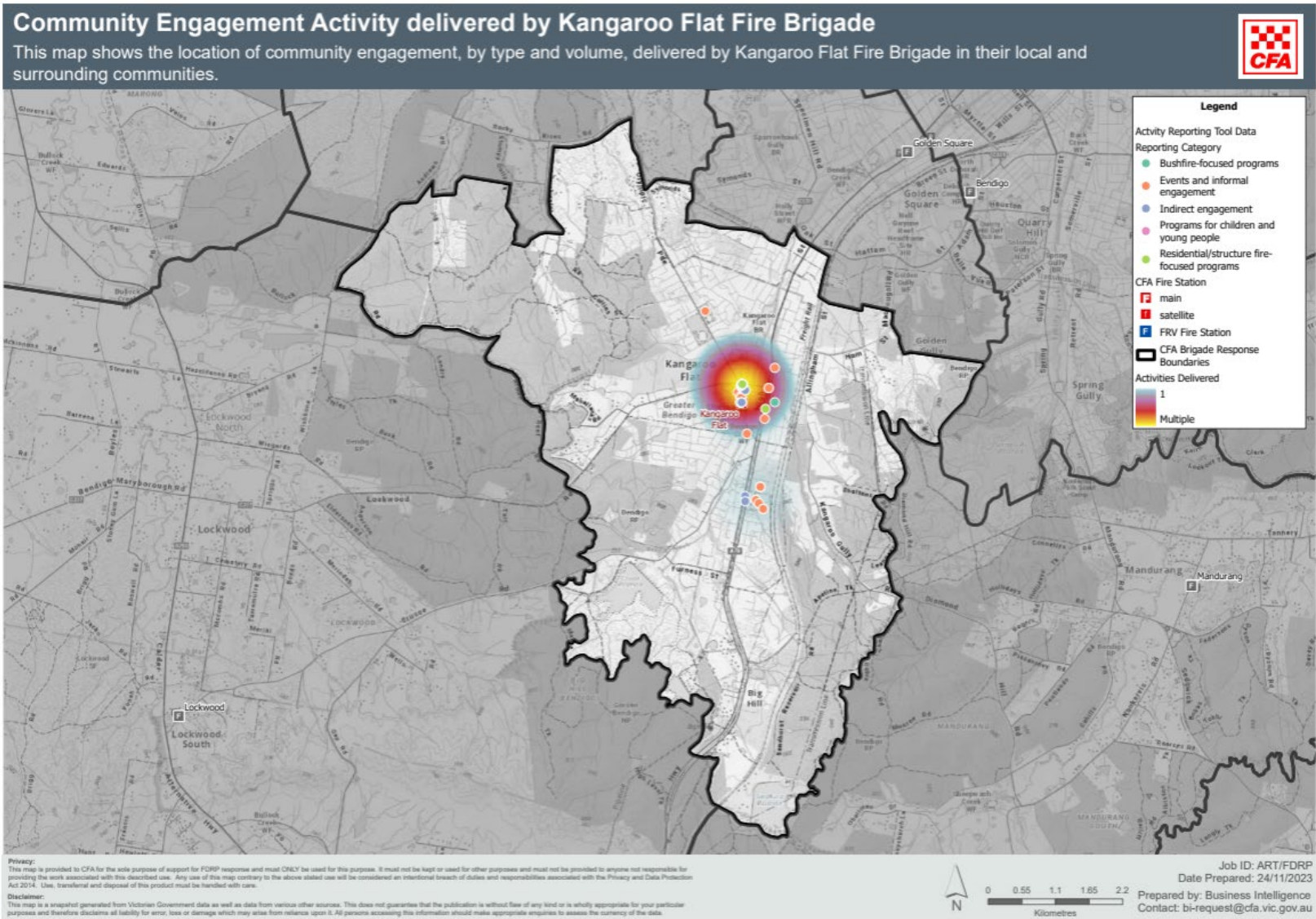


Figure 7: ABS land use areas and BMO

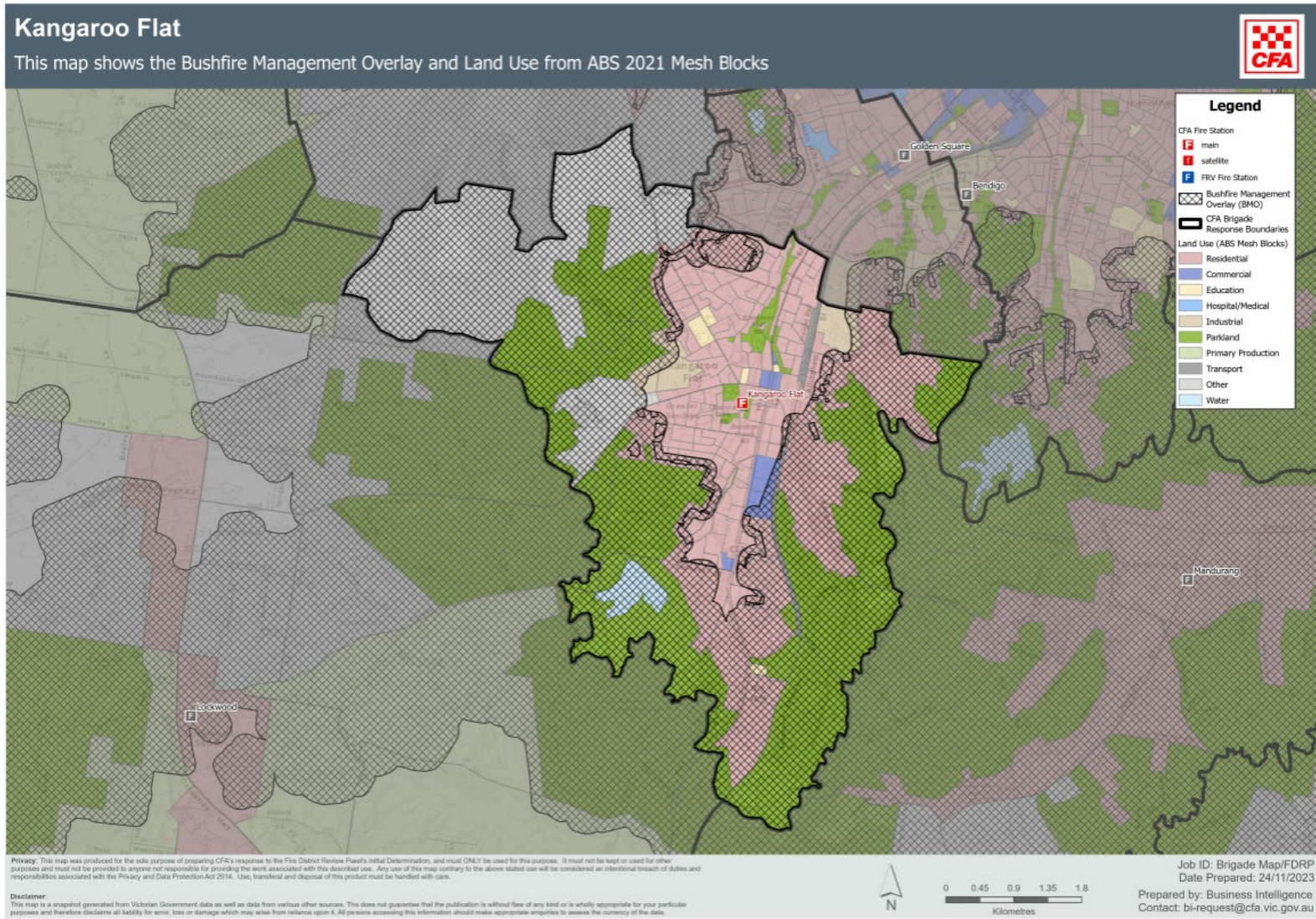


Figure 8: Public land management information

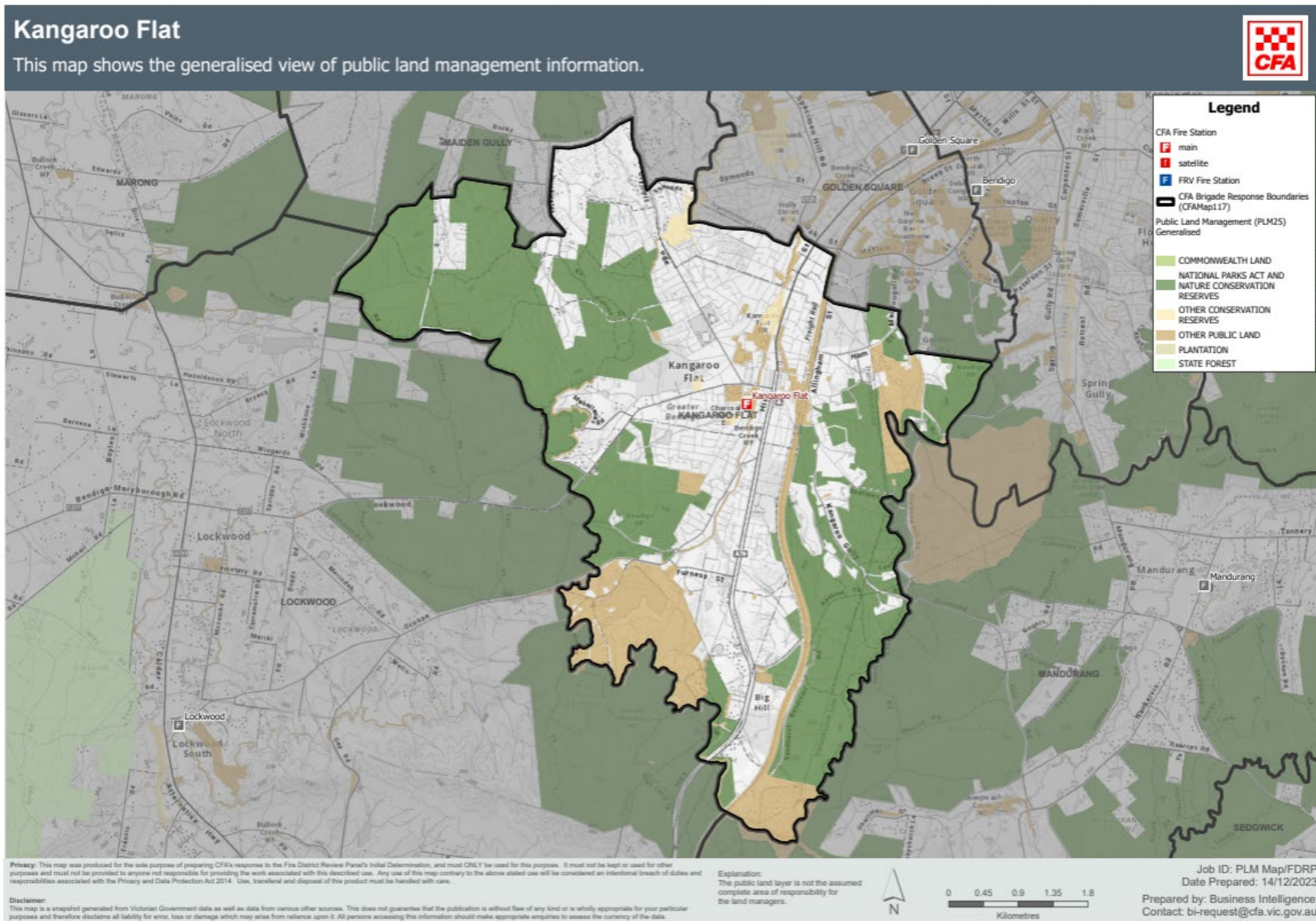


Figure 9: Planned growth zones from the planning scheme for Kangaroo Flat

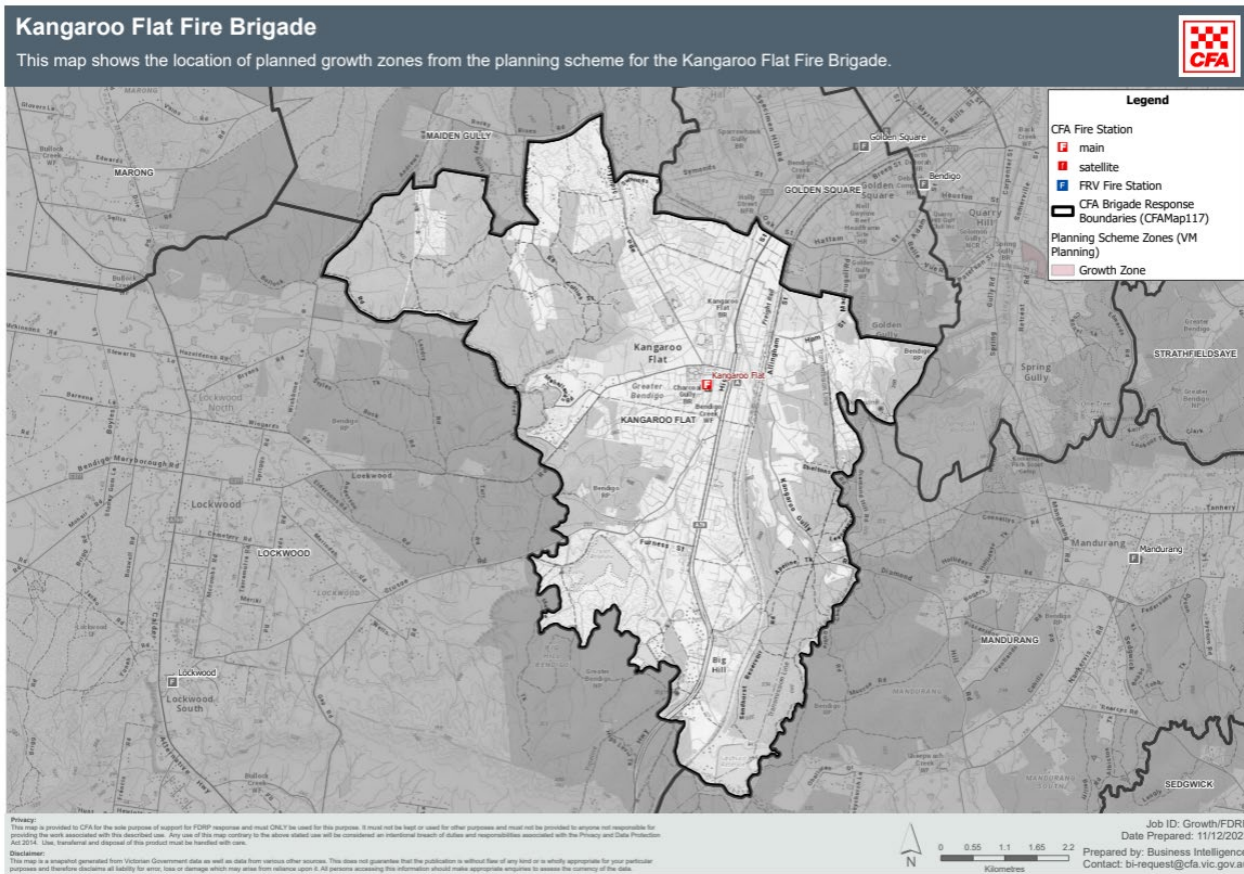


Figure 10: Kangaroo Flat Brigade incident count by type 1 January 2010 - 18 December 2023

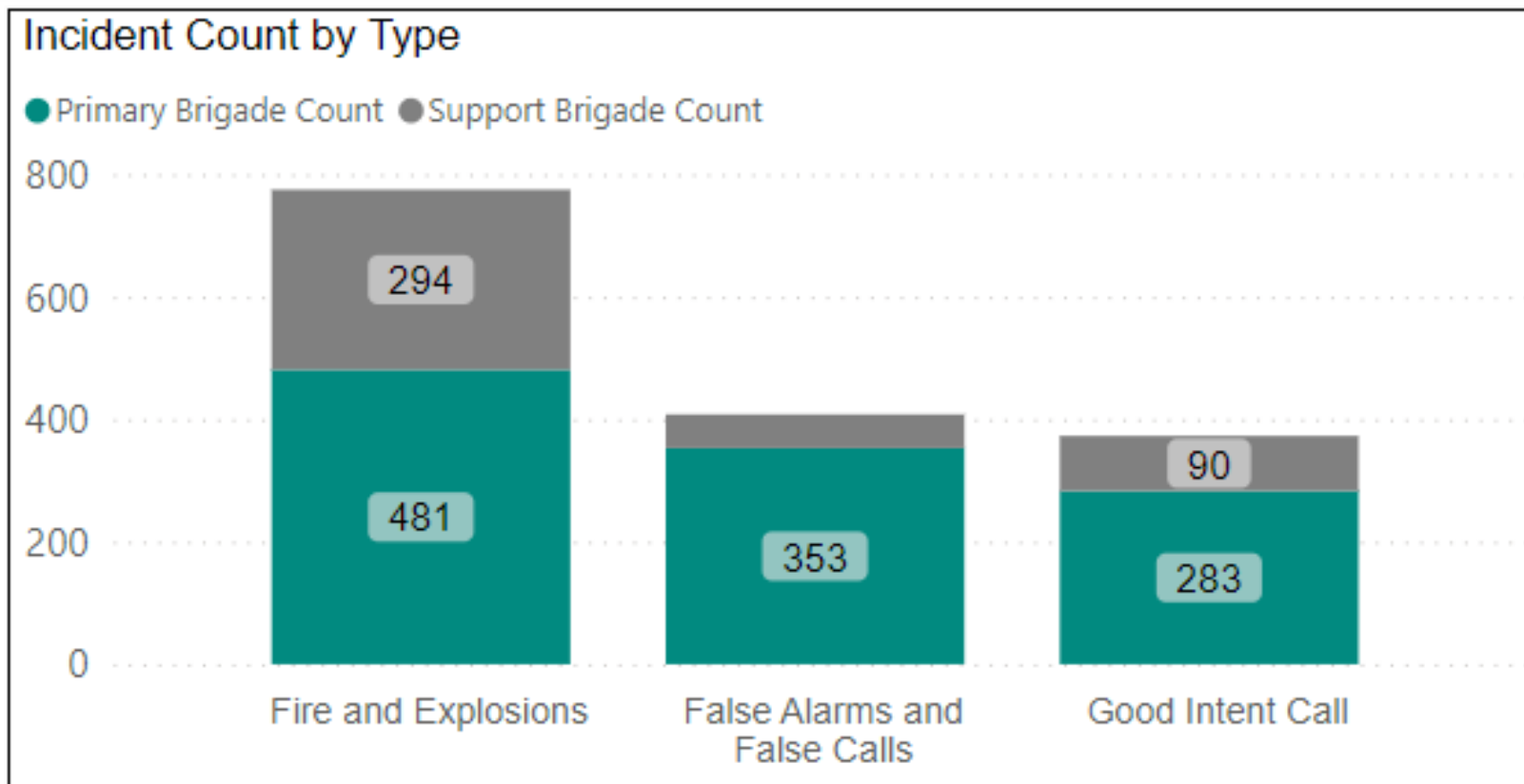


Figure 11: Kangaroo Flat Brigade incident count by month 1 January 2010 - 18 December 2023

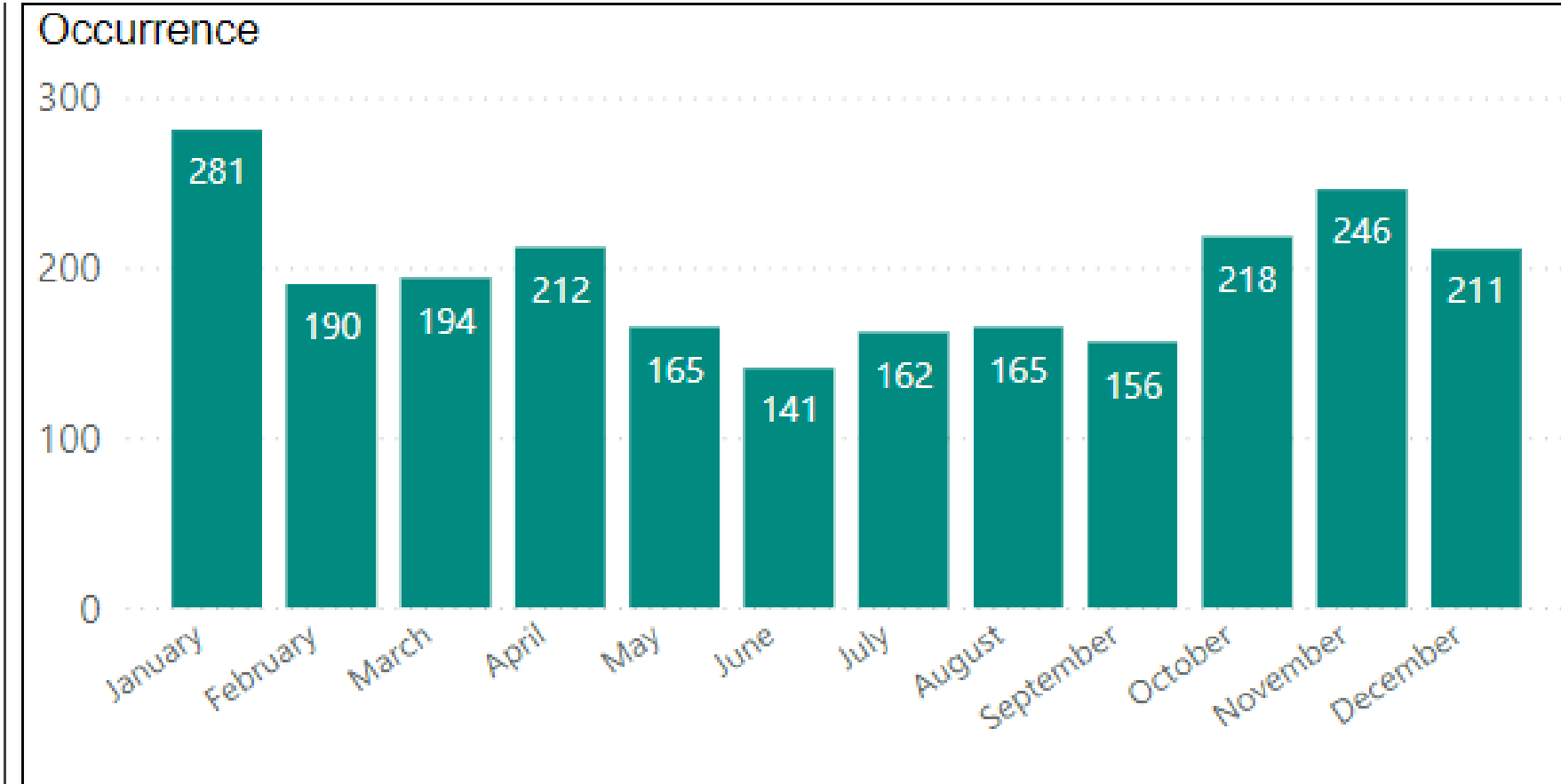


Figure 12: Kangaroo Flat Brigade incident count by type by year 2010 - 2023

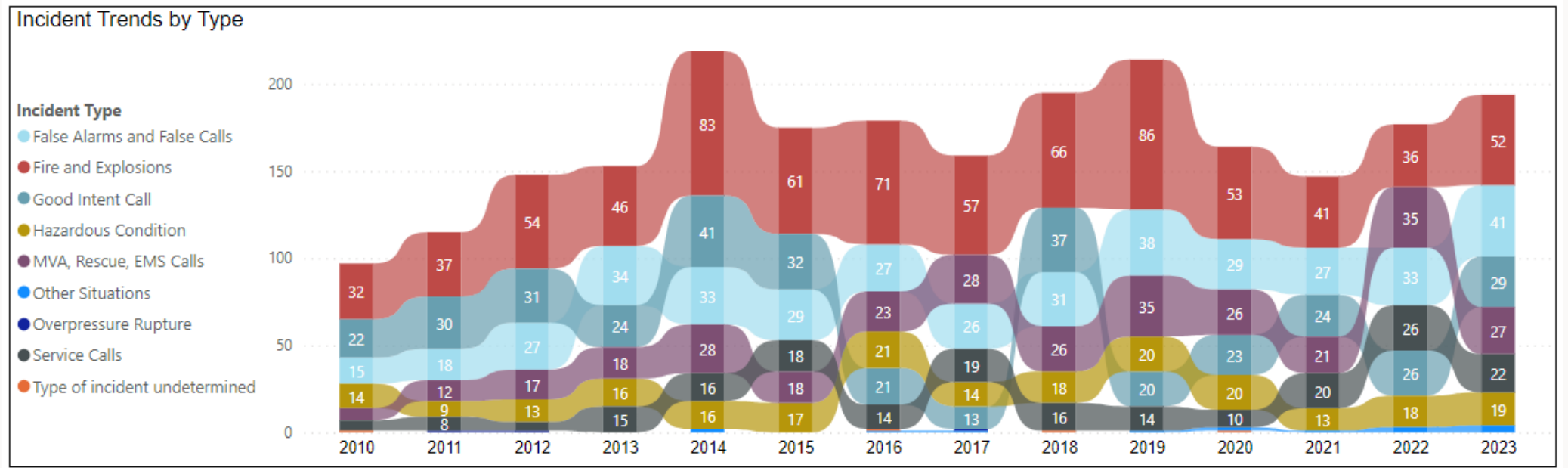


Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes

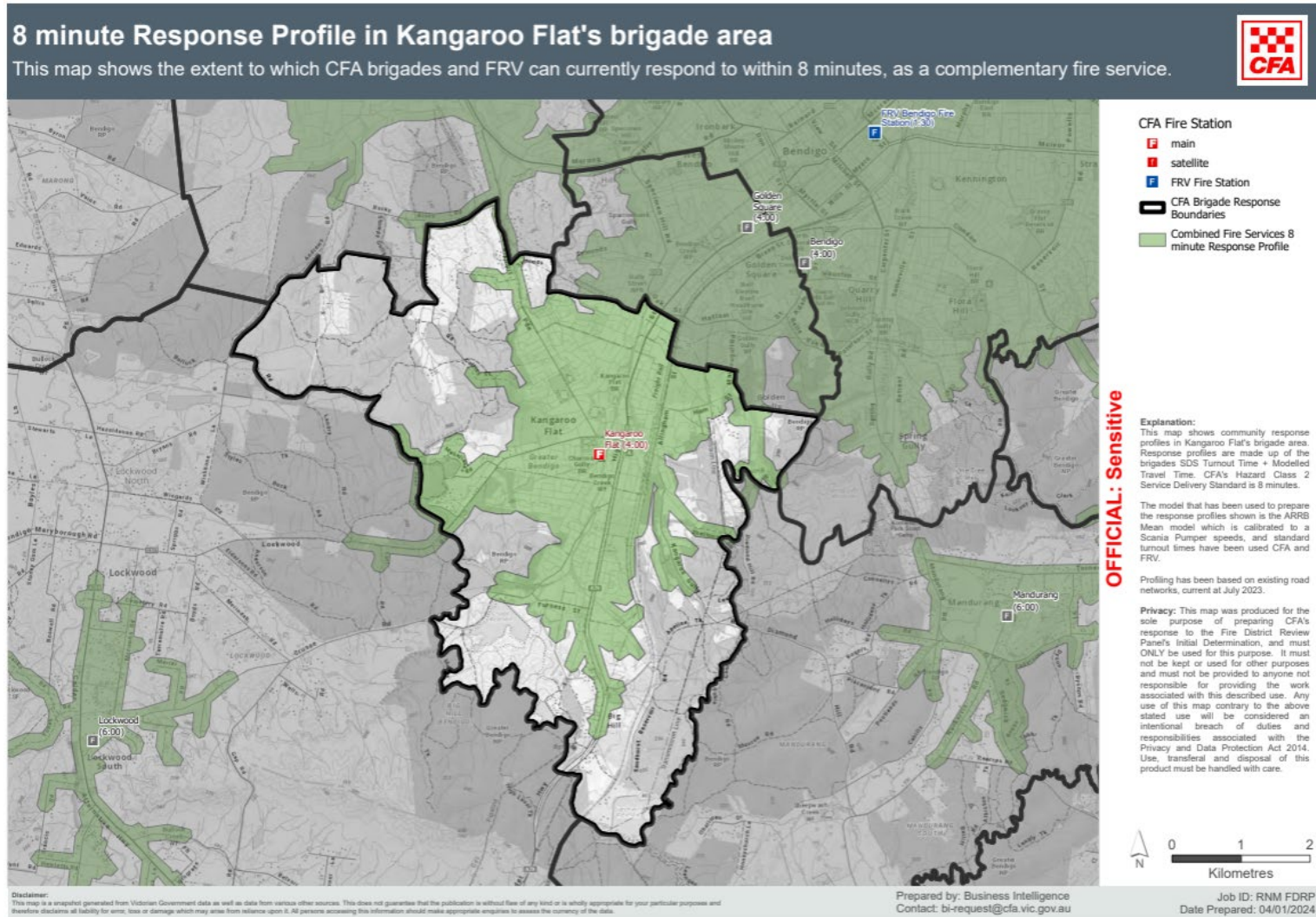
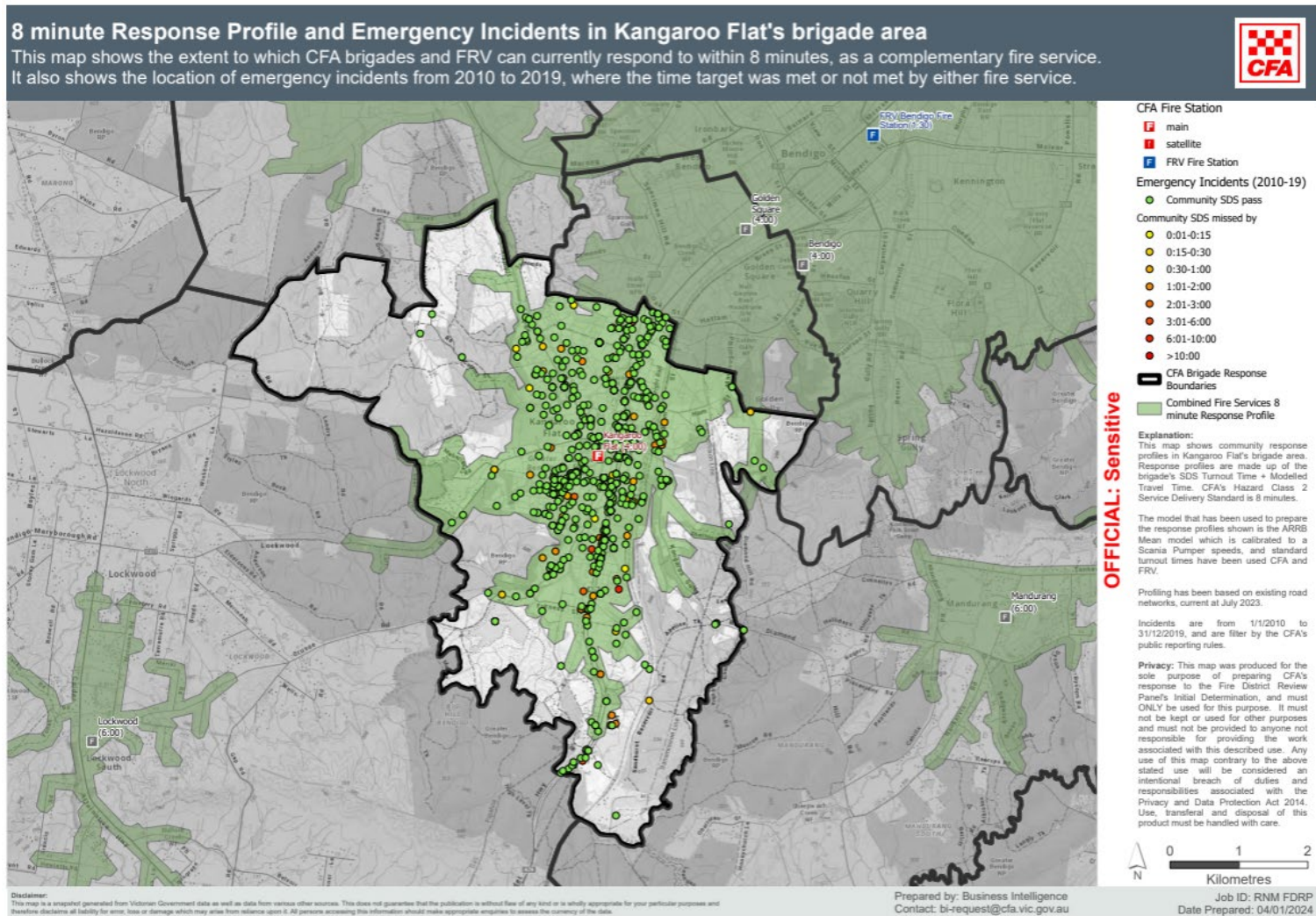


Figure 14: SDS compliance for the Kangaroo Flat Brigade SDA 2010 - 2019



Werribee Fire Brigade

1. About the Brigade

Established in 1915 the Werribee Fire Brigade is a Class 5 Brigade within the Mt Cottrell Group located in District 14 of the North West Region. The Werribee Fire Brigade has a total membership of 112 volunteers (as at 31 December 2023) which includes a Junior Volunteer Development Program that promotes and delivers youth fire brigades and a busy auxiliary team which supports the Brigade in a diverse range of activities. The Werribee Fire Brigade is Road Crash Rescue (RCR) accredited by Emergency Management Commissioner.

1.1 History

Werribee Fire Brigade was formed in 1913 after a large fire had destroyed the Werribee Farmers' Cooperative Store. With no fire brigade and an inadequate water supply, the local people were unable to save the store. In 1914 the town residents were advised they would soon receive a reliable, reticulated water supply and the residents rallied for the establishment of the Werribee Fire Brigade, which came into operation on 1 January 1915. A month after the establishment of the Brigade, a bell was installed at the shire hall for the public to ring in case of fire. The bell served the Brigade until 1950 when an electric siren was installed. The bell is now preserved in the station courtyard as a reminder of the proud history and service to the community.

For nine years after being established, the Brigade operated from gifted land on the corner of Synott Street and Wedge Street in a shed built by members with donated timber and iron. Supported by fundraising and local donations, the Brigade moved into a purpose-built station on the north side of Watton Street. During the 1990's a new fire station was approved for the Brigade to help cater for the rapid growth and development of the suburb and surrounding grasslands.

The Werribee Fire Brigade has been instrumental in the establishment of a number of neighboring CFA Brigades such as Mossfiel (now Hoppers Crossing), Point Cook, Wyndham Vale and Werribee Coast Guard.

1.2 Context

Werribee Fire Brigade primarily services the suburb of Werribee and has a high number of support calls to assist CFA Wyndham Vale Fire Brigade and FRV's Tarnait Station in the FRV Fire District. The Brigade responds to a range of emergency events including structural fires (residential and industrial), bushfires and grassfires, incidents at alarmed premises, hazardous materials calls, and motor vehicle accidents. The Brigade responds to an average of 800 incidents per year.

The Brigade are leaders in RCR response which was instigated by the Brigade in 1969 in collaboration with local police and ambulance services, with a rescue unit brought into service in 1972. It was one of the founding CFA brigades to provide these specialist services. There are currently 29 qualified members in the RCR Team. With the significant number of accredited members, the Brigade can often provide up to ten operators across the two rescue appliances to better support incidents. Accredited members train weekly with endorsed instructors to ensure a high standard of competency and capability to better support local communities. The Team is a member of the Australasian Road Crash Rescue Organisation and regularly participates, with great success, in national challenges that assess teamwork, efficiency and techniques across a range of different rescue scenarios.

The Brigade has a response area that is structural urban and rural interfacing and has many RCR response requirements. In recent years, the growth in the area has seen the development of multi-story buildings in the Werribee business district. The Werribee SDA contains well-known tourist precincts including the Werribee Open Range Zoo, Werribee Park and Werribee Historic Mansion. The Brigade has been adaptive and responsive to address local needs and manage the risks presented by community growth and has been proactive in expanding

training and resourcing to better serve the local community. The Brigade used its own initiative to create two custom-built applications (ERMA and WerribeeFIRE) that assist the Brigade Management Team to view operational member availability at all times and to monitor and track member participation in training, meetings, station attendance and night roster participation.

Werribee Fire Brigade has an active Community Engagement Plan in place and has meaningful and ongoing engagement with members of the community. In 2009, the Brigade established an Operational Readiness and Community Engagement Team, colloquially known as the 'Wednesday Morning Crew' which engages with the community through various activities, including visits to nursing homes, aged care facilities, social housing complexes, hospitals, university complexes, kindergartens, industrial and commercial facilities and residential apartments. The focus is on targeted, risk-based education and information regarding fire safety and overall community fire safety. The Brigade has an active social media presence for community engagement and posts CFA and local community safety messaging and information. The Brigade works extensively with local businesses to promote fire messages and has been invited to speak at various groups regarding general fire safety and awareness.

Werribee Fire Brigade is part of the Mt Cottrell Group of brigades located in District 14, which comprises 11 other brigades. Together these members provide a network of fire services to Werribee and surrounding areas, working alongside their FRV colleagues at Station 57 and Station 58.

Although CFA brigades are treated as individual entities by the review panel process, it is important to note that CFA Fire Brigades, organised as they are in a group structure, are able to work readily together to effectively and efficiently form strike teams and support response across their district, region and the State.

Werribee is a viable, fully functioning urban fire brigade with a strong and reliable membership base and a proud tradition of dedicated, voluntary service. The Brigade has consistent responder numbers which allows for concurrent responses to separate incidents when required. The Werribee Fire Brigade members are united in giving their time and sharing their skills to protect life and property in support of their community.

It is important to note that the geographical area that is today identified as Wyndham Vale SDA, once formed part of Werribee SDA. Emergency incidents that occurred between 1 July 2010 and 1 July 2011, within the geographical area that is now identified as the Wyndham Vale SDA, have been included in Werribee Fire Brigade analysis, as they were its responsibility at the time. Emergency incidents that occurred from 1 July 2011 onwards have been included in Wyndham Vale Brigade's analysis, as this is the date the Wyndham Vale Fire Brigade was officially registered.

2. Brigade Capability Snapshot

2.1 Membership

The Werribee Fire Brigade has a total membership of 112 members (27 females and 85 males). The Brigade has a healthy age profile with the average member age being 43 years.

2.2 Fire Appliances, other vehicles and specialist equipment

The Werribee Fire Brigade has five firefighting and rescue vehicles and one transport vehicle (Table 1) to meet the risk and needs of the SDA and wider community. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Werribee Fire Brigade alone.

Table 1: Fire appliances and vehicles available to the Werribee Fire Brigade

Vehicle Type	Vehicle Make	Age
Pumper	Scania	14 years
Tanker	Hino	19 years
Rescue (Heavy)	Mercedes Benz	18 years
Rescue Support	Toyota Hilux	6 years
Field Command Vehicle	Toyota Landcruiser	6 years
Bus		

Table 2: Vehicle specification

Pumper	Carrying five fire fighters, 2,000 litres of water and 4,000 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, gas suits, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage equipment, gas detector, advanced resuscitation equipment, fire extinguishers, rapid intervention equipment, water monitors and fire fighting foam producing equipment.
Tanker	Carrying five firefighters 3,750 litres of water, 900 lpm pump, BA, hoses and adaptors, chainsaw, thermal imaging camera and firefighting foam producing equipment .
Rescue	A heavy rescue with capability to provide road crash rescue, heavy transport rescue, steep angle rescue, industrial and domestic rescue.
Field Command Vehicle	A small fireground command vehicle designed and utilised for fireground operations and incident command and control. These vehicles have the capability to operate in remote locations off grid. Includes Radio and communications systems and equipment.
Rescue Support	Crew cab vehicle for personnel transport and can operate as an FCV and carry additional specialised rescue equipment.
Bus	A 22 seater bus used to assist surge capacity transport and brigade activities.

2.3 Station Location

The station is located at 32 Gibbons Street, Werribee. Constructed in 1993, the station is located within the Werribee central business district just off the main thoroughfare of the Princes Highway which runs through the center of the township. The station has four motor room bays to house appliances. The station also provides meeting facilities, communications room, and rear shed, but has no dedicated turnout area. The station requires an updated and dedicated contemporary turnout facility and vehicle stowage area. The Brigade is in a strong financial position and has actively sought funding through a range of initiatives/grants that have contributed to enhancements to the station such as touchdown workstations, automated station rear gate and a new audio-visual system.

The location of a fire station is an important element in the successful operation of a volunteer fire brigade. Site location must strike a balance between being located to address service delivery needs but also be readily accessible to and from for emergency responders. Traffic congestion is one of the leading causes of urban fire brigades not meeting established service delivery standards.

Analysis of the Werribee Fire Brigades peak traffic activity within the primary SDA shows that the peak time for traffic congestion is on Fridays at 17:00 (Figure 1).

Figure 1: Typical traffic Friday 17:00

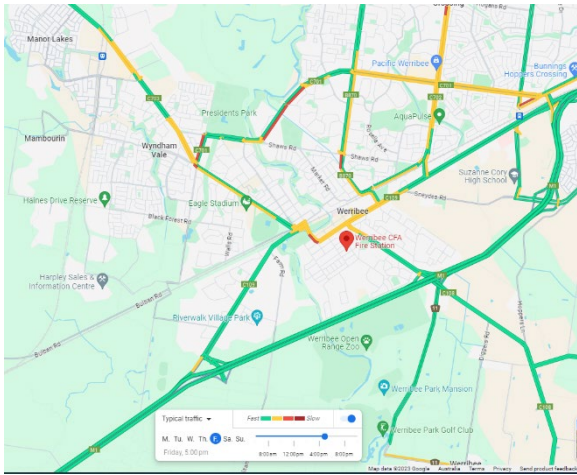
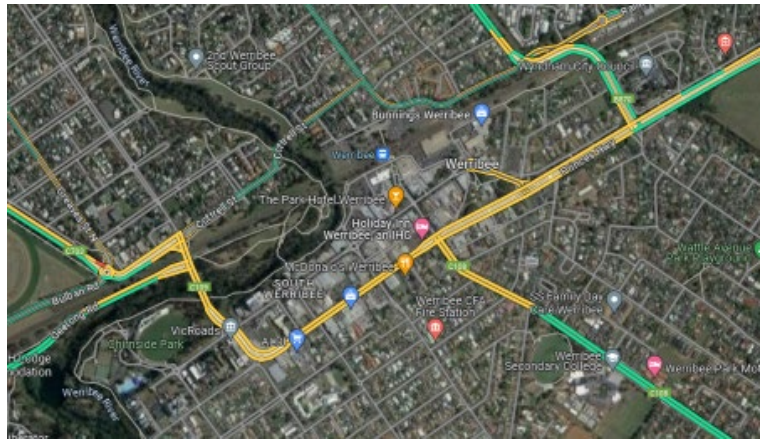


Figure 2: Peak traffic congestion area (Werribee CBD)

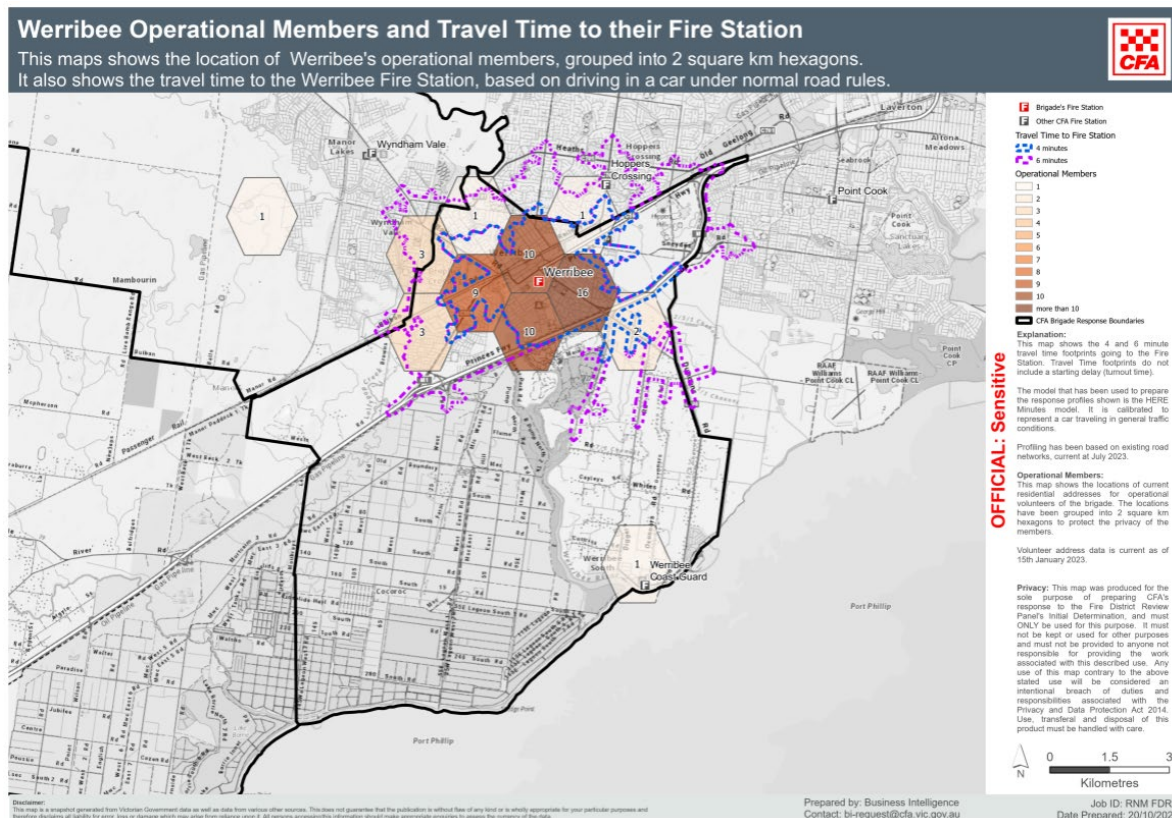


An analysis of total all traffic congestion across the seven-day week shows a constant congestion point of Werribee CBD at most times of the day (Figure 2).

Traffic congestion along the Princes Highway, and at the T-intersection with Duncan's Road is an area of note. This traffic congestion point is likely to cause delays in response and impact on volunteer access to and from the Werribee Fire Station. Alternative routes are available with little traffic congestion, however, these are mostly through suburban streets.

Further analysis of the home locations of responding Werribee Fire Brigade members within a four and six minute travel time (under normal road conditions) (Figure 3) indicates that an overwhelming majority of operational members live within the four minute travel time footprint to the station, with many operational members residing south or southeast of the fire station. The Werribee Fire Brigade has sufficient personnel to ensure the rapid mobilisation of volunteers to station upon activation.

Figure 3: Operational members location and travel times



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only provides support across the state of Victoria in a bushfire and other significant natural emergencies context, but also extends to the urban environment ensuring the efficient and economic use of the state's resources in both the CAoV and the FRV Fire Districts. In particular for Werribee, surge and support capacity is provided in the following ways:

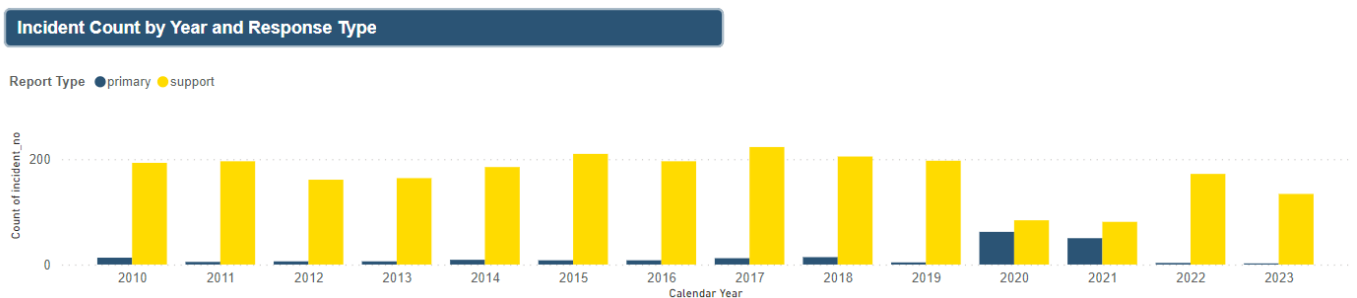
- Werribee Fire Brigade regularly provides support to adjoining CFA brigades and FRV districts
- the Brigade participates in short haul and long-haul strike teams to support other communities in need
- in 2019-20 during black summer Brigade members and appliances were deployed to Gippsland, New South Wales, and Queensland
- Werribee Fire Brigade supported the flood affected communities of Victoria in 2022.

2.5 Assistance to Fire Rescue Victoria

The Werribee Fire Brigade regularly responds in support of FRV within the FRV Fire District in a complementary fire services approach to delivering services to the wider community. In 2023, the Brigade was dispatched in support of FRV to 134 incidents within the FRV Fire District, which is a reduction to the 172 support calls in 2022, and more than 150 calls from 2010 to 2019.

This reduction of Werribee Fire Brigade from responses into the FRV Fire District has reduced demand for services on the Werribee Fire Brigade and dropped the overall call service rate addressing the total demand aspect of the risk identified by the FDRP. Although Werribee is still providing some support into the FRV Fire District. Figure 4 and Figure 5 show the reduction in service demand.

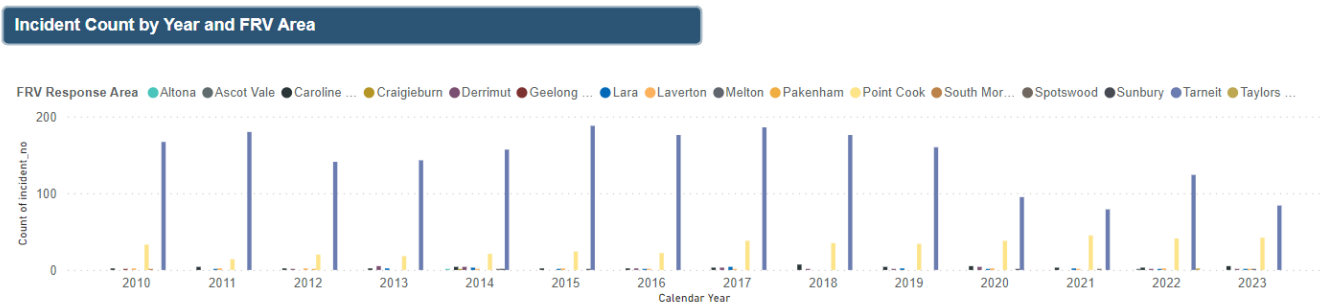
Figure 4: Incident count and type of support provided in the FRV Fire District



Notably, with the exception of 2022, since Fire Services Reform there has been a significant reduction in the demand of services from the Werribee Fire Brigade from FRV for responses in the FRV Fire District. The Brigade's responses into the FRV Fire District are primarily to provide RCR services.

Figure 5 shows the count of incidents that the Werribee Fire Brigade attended in the FRV Fire District by station area. The majority of the support was to FRV's Tarnet Fire Station (Station 57).

Figure 5: Incident count and type of support provided in the FRV station footprint



2.6 Fire Rescue Victoria assistance to Werribee Fire Brigade

FRV is currently dispatched in support of the Werribee Fire Brigade across all responses within the Brigade’s SDA. This ensures that a complementary approach to fire service delivery is provided and also allows mitigating service demand management in the event that the Werribee Fire Brigade is called upon concurrently or a further call is received when already engaged. Data analysis shows that while FRV is dispatched in support of the Werribee Fire Brigade to all incidents, on only a small percentage of occasions are FRV the first emergency service on scene.

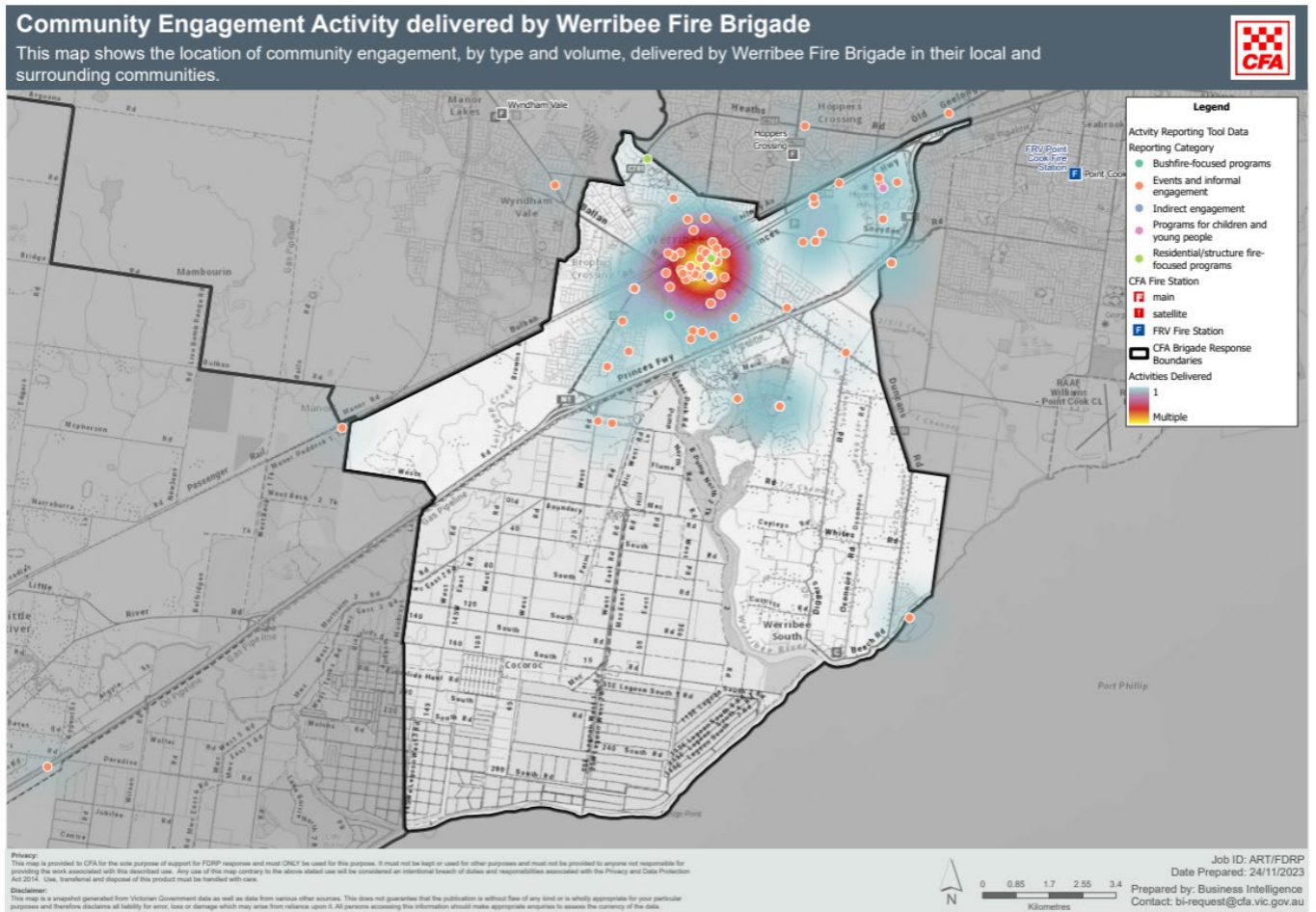
2.7 Community engagement activities

The Werribee Fire Brigade values community engagement as an opportunity to prevent and/or prepare the community for fires. The Brigade has a Community Engagement Plan which outlines weekly activities to support regular prevention and preparedness activities including community fire safety messaging, aged care facilities visits, kindergarten and school visits, residential apartments, industrial and commercial visits and direct intervention programs. The focus of these activities is on targeted, risk-based education and informational messaging regarding fire safety and overall community safety. As an example, the Brigade collaborated with neighboring brigades in community engagement activities with large scale audiences in July and August 2022 (Camp Pacific Werribee, Wyndham Walkaway and Wyndham Children’s Week Picnic) which provided the opportunity for members to engage with community members on a range of fire safety topics and share information, including a multi-agency exercise to promote the practice of walking two streets back in the event of a grassfire. The Children’s Week Picnic was an excellent engagement event with over 1,000 community members of all ages in attendance. The Werribee Fire Brigade has increased its community engagement activities with 45 activities recorded in 2023 up until 9 August 2023, compared to 51 activities for the full 2022 calendar year.

Operating smoke alarms are the key driver to survivability of persons within a structure at time of fire ignition. A targeted campaign to significantly increase the installation and verify smoke alarm installation across the Werribee Fire Brigade SDA is planned and will assist to mitigate against preventable fire fatalities and maintain the ongoing low occurrence of fire fatalities.

CFA in 2022 implemented a new platform to allow brigades to centrally record community engagement activities undertaken by brigades to allow better understanding of community fire safety interventions. Previously Brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of interventions. Figure 6 below shows community safety interventions undertaken by the Werribee Fire Brigade as recorded in the ART system.

Figure 6: Community safety and intervention programs



2.8 Prevention and preparedness activities

The Werribee Fire Brigade SDA has 65 protected premises of which all have pre-plans in place and are regularly checked by experienced brigade members. Pre-plans are also in place for other high-risk premises across the SDA. The Brigade is instrumental in rolling out training for staff working in protected premises and high-risk industries and has a process in place when multiple false alarms occur to engage with premise alarm management. These processes aim to reduce preventable false alarms and enable early identification and management of fire.

3. Service Delivery Area Profile

The Werribee Fire Brigade SDA has a total area of 10,739 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses.

Table 3: Werribee land use planning areas

Land use	Hectares	Percentage of Brigade Area
Commercial	250.4	2.3%
Education	379.2	3.5%
Medical / Hospital	12.9	0.1%
Industrial	72.5	0.7%
Other	0	0%
Parkland	5,669.5	52.8%
Primary Production	1,908.7	17.8%
Residential	2,426.7	22.6%
Transport	0	0%
Water	19.2	0.2%

A map showing the current land use planning uses and applicable mesh block is shown in Figure 7 below.

Figure 7: ABS land use areas and BMO

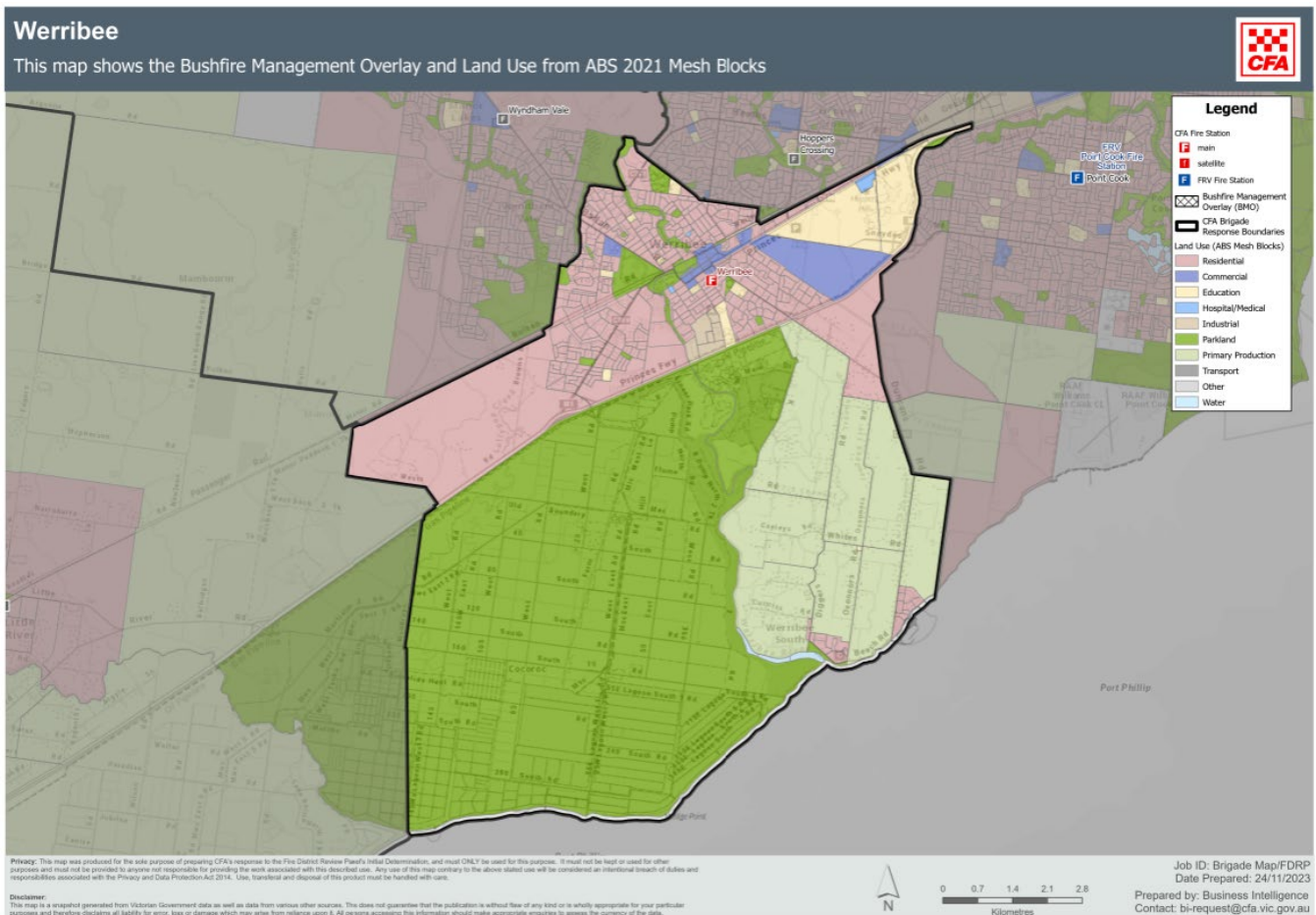
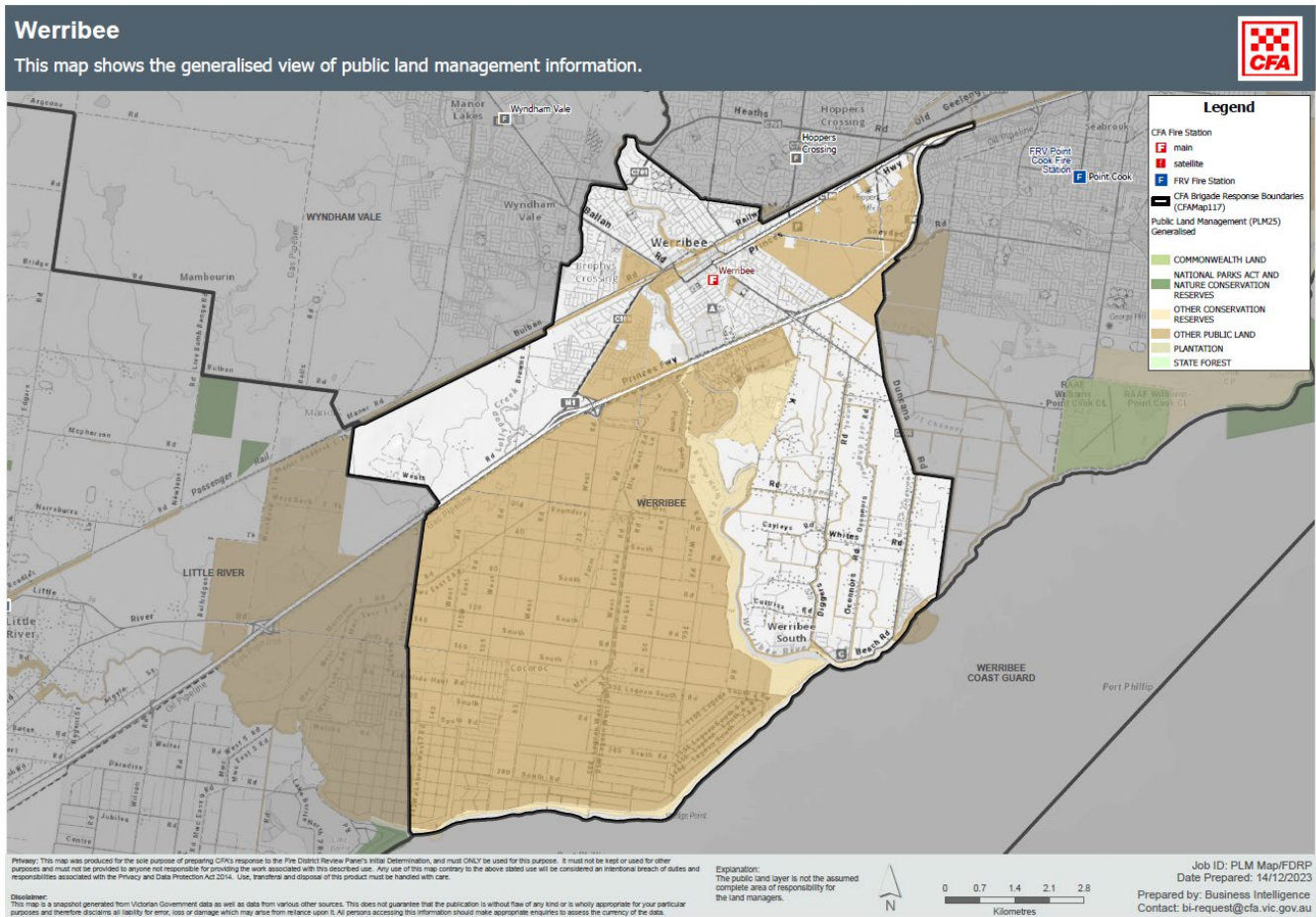


Figure 8: Public land management information



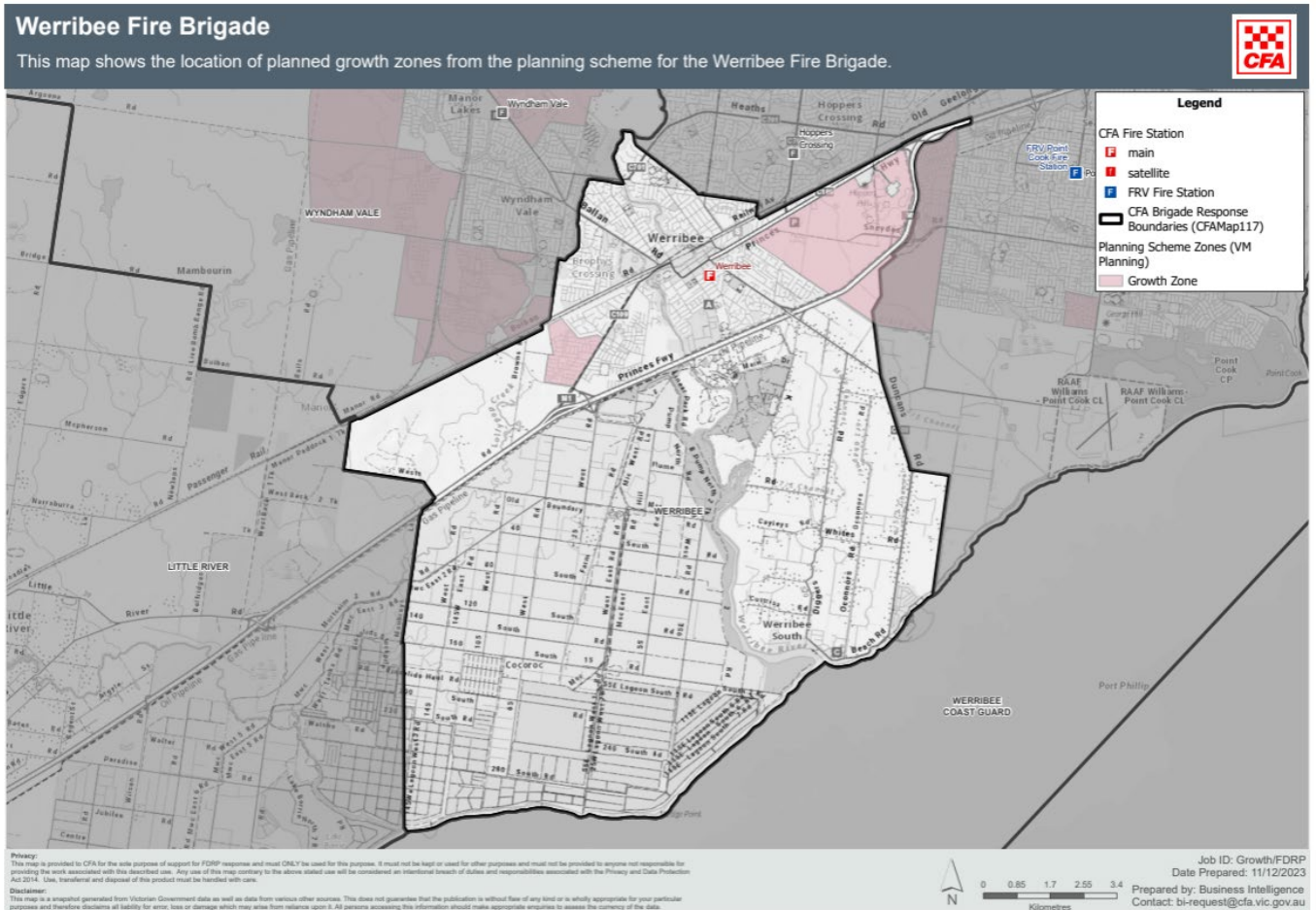
3.1 Growth zones

An analysis of VicPlan, the official mapping platform of the Department of Transport and Planning shows development is at near capacity with all current residential zones developed other than a small parcel of residential area along the Princess Highway. These undeveloped areas are currently farmland and market gardens. Further expansion of residential development is most likely to be found in a designated Residential Growth Zone (RGZ). There are two areas within the Werribee Fire Brigade SDA that are zoned RGZ comprising an area of 605.25 hectares (5.57% of the SDA).

The RGZ to the west of the Werribee Fire Station is currently developed with existing residential housing. The second RGZ east of the station is currently the site of the Hospital and University Precinct. The RGZ is considered a substantial change area where medium density housing growth and diversity of housing types is encouraged, for example townhouses and apartments around activity centers and close to train stations. There are also a limited range of non-residential uses allowed to serve local community needs. The Parkland indicated in Figure 7, includes the water treatment plan which makes up a large portion of this area, and assists to reduce the grass fire risk within the southern parts of the SDA.

Figure 9 below shows planned growth and industrial zones from the planning scheme for the Werribee Fire Brigade SDA.

Figure 9: Planned growth zones from the planning scheme for Werribee



Risk Evaluation:

The Werribee Fire Brigade resource capability of a pumper and tanker combined with the long-established protocol of assistance from FRV and neighbouring network of CFA brigades delivers the complementary fire services model, coupled with the total demand reduction of responses into the FRV Fire District, is considered sufficient to meet the current residential and industrial risk including the proposed growth zone.

Risk Mitigation Action:

CFA proposes transition of the Werribee Hospital and University Precinct to the FRV Fire District to assist with sustaining and improving the Werribee Fire Brigade’s SDS, reduce the False Alarm/False Call incidents on the Brigade (and total demand). The Brigade will continue to support FRV following transition. This is further discussed below.

3.2 Bushfire Management Overlay

The Werribee Fire Brigade service delivery area has no identified BMO areas as shown in Figure 7. The Werribee SDA does have areas of grass fire risk that is mitigated by the operation of a tanker by the Werribee Fire Brigade and surrounding CFA Brigades.

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population increase of 4,431 or 16% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS SA1 collection grid cells).

ABS Index of Relative Socio-economic Disadvantage (2021) shows the Werribee Statistical Area Level 1 to be at Socio-Economic Index for Areas (SEIFA) decile 8 and Quintile of 4. This data demonstrates that the Werribee Fire Brigade SDA is of a better than average socio-economic advantage. The population across the SDA has low instances of those that may be at higher risk, including people living with a disability, and those with a CALD background. Aside from Australian and English backgrounds persons of Indian heritage is the next largest cultural community.

ABS census data (2021) shows that there are 11,797 dwellings in the Werribee Brigade SDA. Of these dwellings, 32% are rental houses. The rental housing stock includes a small proportion (5.18%) that is state owned. As outlined in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair²².

CFA and FRV have collaborated to create the Prevent – Detect – Escape Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability. There have been 162 community members undertake the Prevent – Detect – Escape Program in the Werribee SDA.

Risk Evaluation:

Having regard to fire safety interventions, there is a large number of the population within rented properties (32%). The level of rental housing has led to proliferation of mandated working (checked) smoke alarms which is anticipated to have contributed to the significantly low number of fire fatalities. In addition to the proliferation of smoke alarms the Werribee Brigade through its Community Engagement Plan, weekly interventions coupled with the overall higher SEIFA score also assists in the mitigation of fire fatalities across the Brigade SDA.

²² <https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/keeping-the-property-safe/smoke-alarms-and-fire-safety#:~:text=The%20rental%20provider%20must%20ensure%20smoke%20alarms%3A%201,are%20repaired%20or%20replaced%20as%20an%20urgent%20repair.>

Risk Mitigation Action:

The Werribee Fire Brigade has an active community engagement plan in place and conducts ongoing and meaningful community engagement practices including the establishment of the 'Wednesday Morning Crew' who actively lead community engagement activities on a weekly basis. Additionally, the Brigade actively uses social media for community engagement, where it posts CFA and locally targeted community safety messaging and information and are regularly involved with large scale engagement activities such as Camp Pacific Werribee and Wyndham Walkaway which provide the opportunity for engagement and sharing of information on residential fire safety and local risks. The Werribee Fire Brigade has increased its community engagement activities in recent times with 45 activities recorded in 2023 up until 9 August 2023, compared to 51 activities for the full 2022 calendar year.

A targeted campaign to significantly increase the installation and verification of smoke alarm installation across the Werribee Fire Brigade SDA will assist to mitigate against preventable fire fatalities and maintain the ongoing low occurrence of fire fatalities.

4. Service Delivery and Service Demand

4.1 Total demand

Figure 10 below shows the total number of unique incident numbers attended by the Werribee Fire Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response. The number of fire related incidents and false alarms are almost split evenly with False Alarm calls being slightly higher overall. The higher number of False Alarm/False Calls is as a result of the high number of these calls eventuating from the Werribee Hospital Precinct.

Figure 10: Werribee Brigade incident count by type 1 January 2010 - 18 December 2023

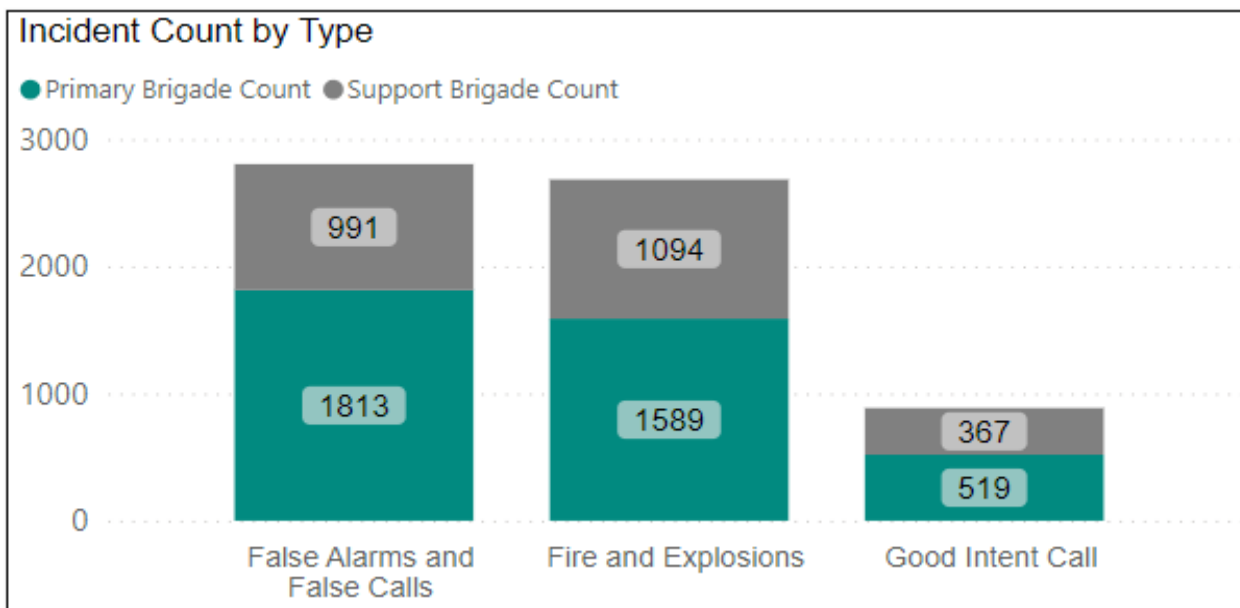


Figure 11 below shows a count of the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels from October through to March inclusive, with lower periods of activity in the winter months. The higher rates of summer activity are indicative of the Werribee Fire Brigade's capacity and ability to support bushfire operations statewide.

Figure 11: Werribee Brigade incident count by month 1 January 2010 - 18 December 2023

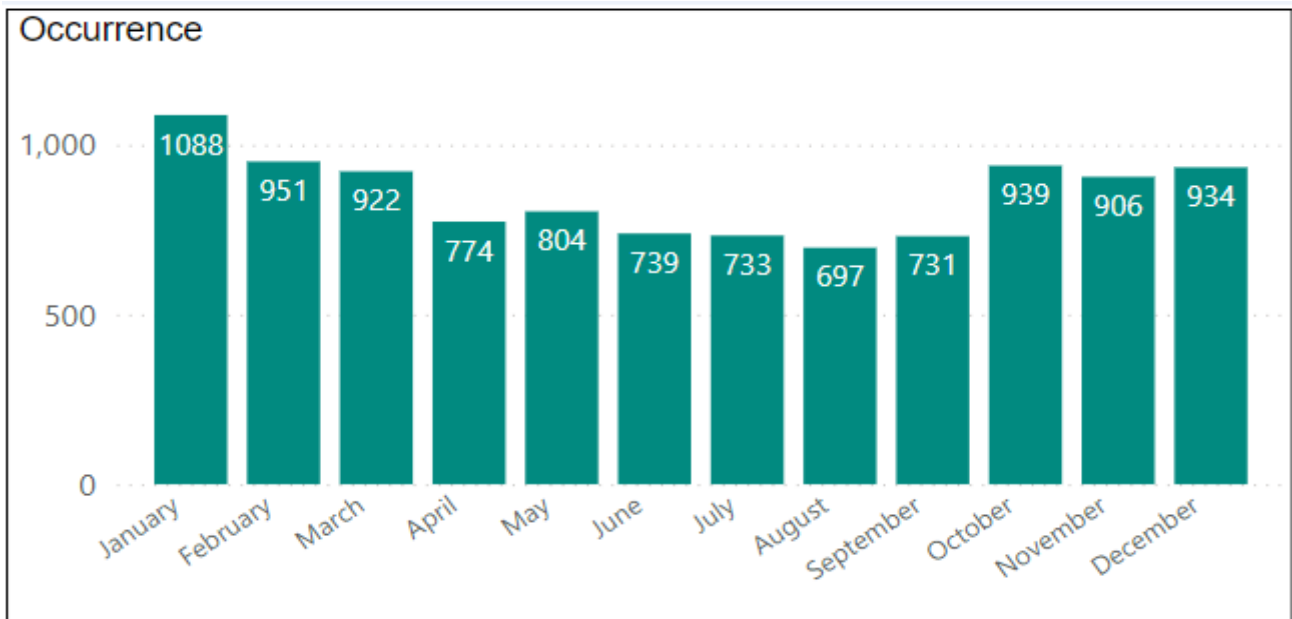
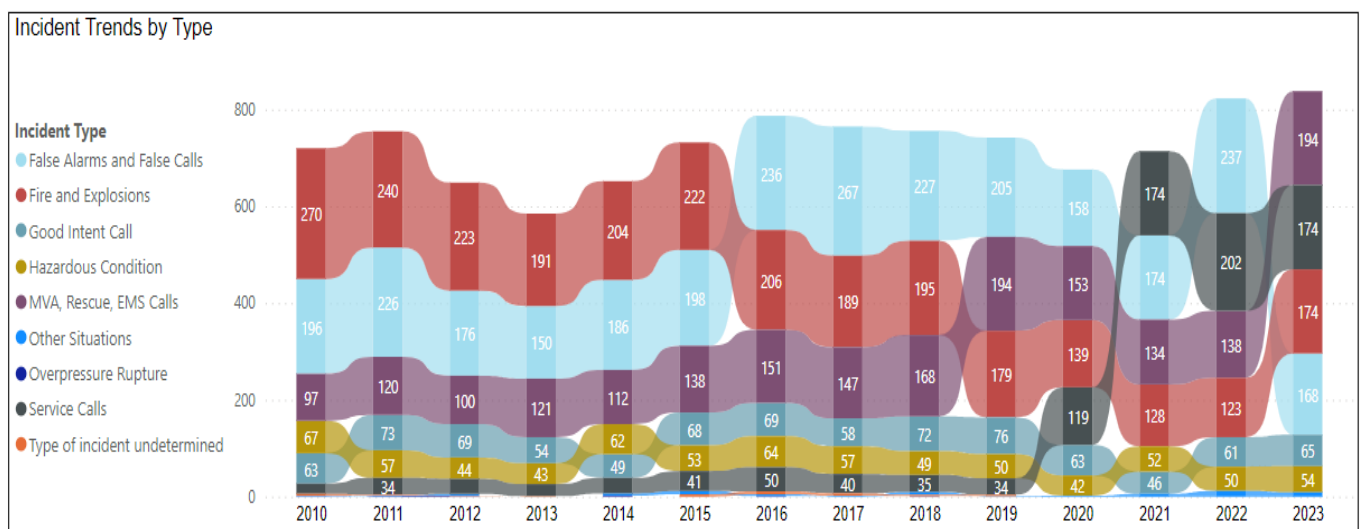


Figure 12 shows a count of all incident types between 1 January 2010 and 18 December 2023. The most prevalent incident types for the Brigade from 2010 to 2015 were Fire and Explosion related calls, and False Alarms and False Calls. Since 2016 False Alarm and False Calls has remained a key feature of the Brigade responses. Motor Vehicle Accident (MVA)/Rescue incident types became more prevalent from 2019, with MVA/Rescue incident types currently the most prevalent in 2023, closely followed by Service Calls and Fire and Explosions.

The Werribee Fire Brigade is well placed to address and respond to the increased number of MVA, Rescue and Emergency Medical Service (EMS) calls within the current fleet of appliances and volunteer member capability in this space.

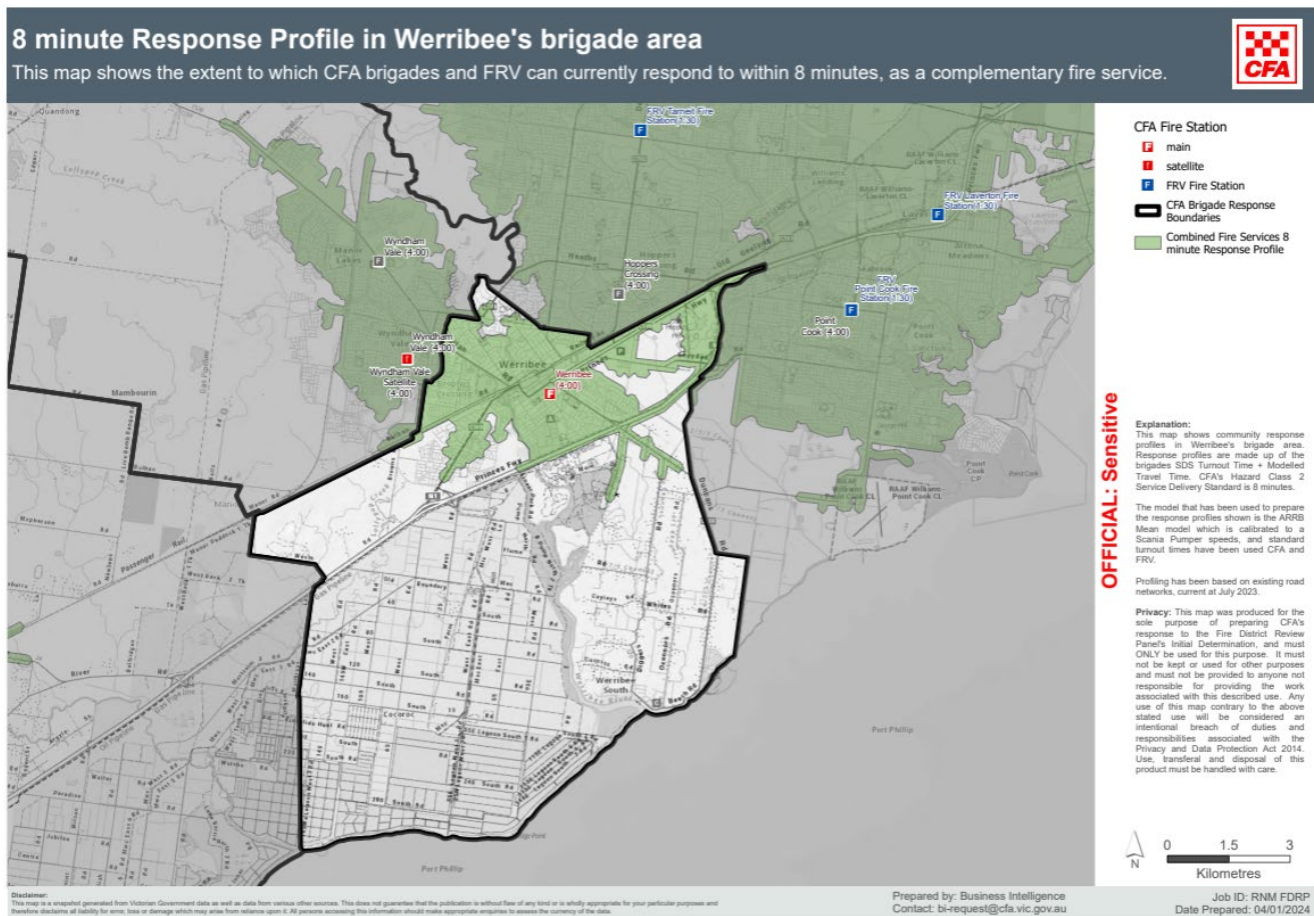
Figure 12: Werribee Brigade incident count by type by year 2010 - 2023



4.2 Service Delivery Standard

Figure 13 shows the area within the land use that can be serviced within eight minutes by the existing complementary fire service model. It should be noted that the figure below shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade area within the 8 minute to scene standard.

Figure 13: Area covered by both CFA and FRV based on HC2 8 Minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 72.6% of the road network in the Residential land use
- 95.61% of the road network in the Commercial land use
- 99.4% of the road network in the Hospital/Medical land use
- 100% of the road network in the Industrial land use
- 96.6% of the road network in the Education land use
- 13.16% of the road network in the Parkland land use
- 10.4% of the road network in the Primary Production land use

- 0% of the road network in the Water land use.

The Water land use comprises a very small proportion (0.18%) of the SDA.

An analysis of the Werribee Fire Brigade with established SDS against respective hazard classes shows:

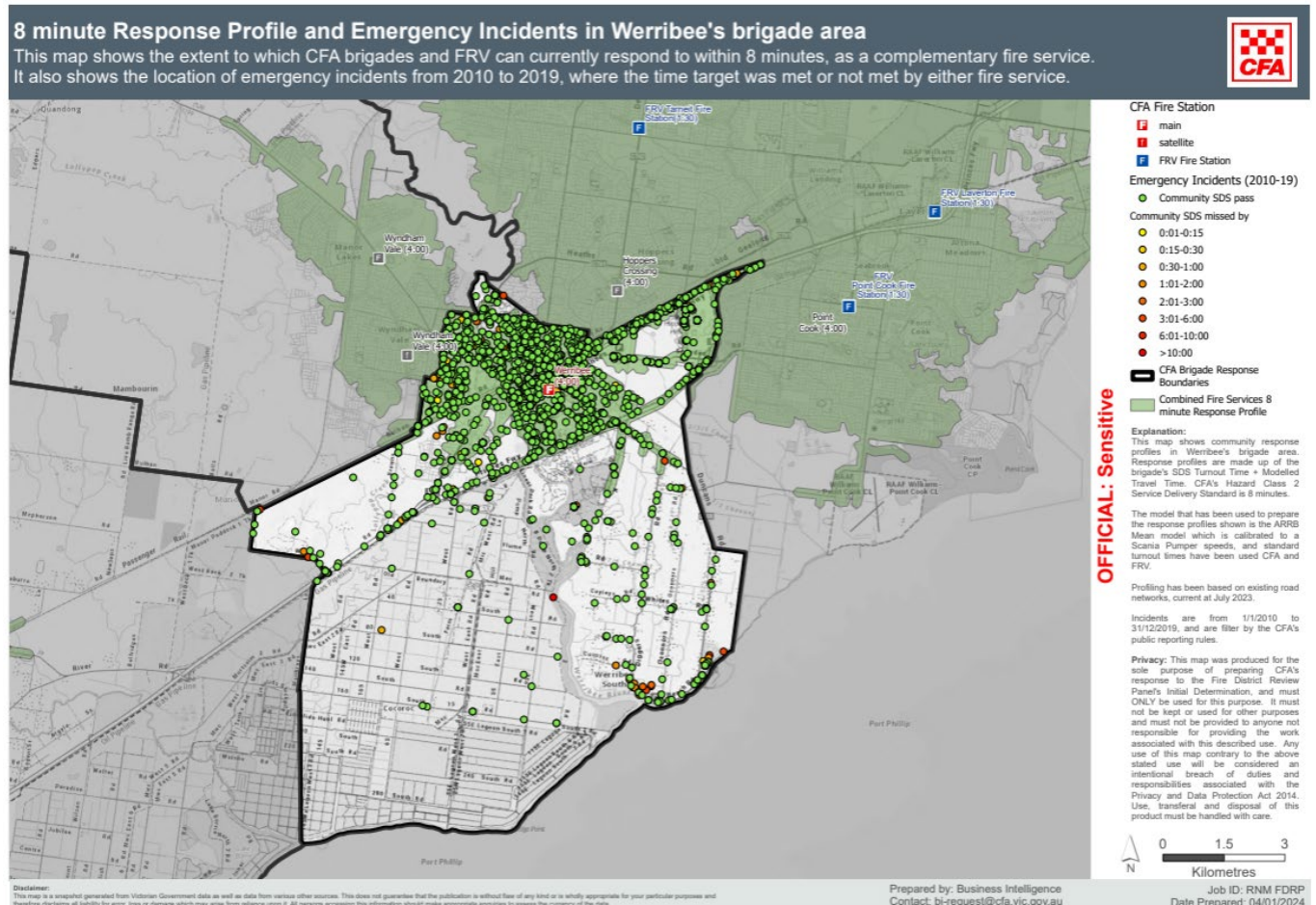
- from 1 January 2010 to 31 December 2019 there were 3,149 emergency incidents within the Werribee Fire Brigade SDA
- fire services response to emergency incidents was 94.7% compliant with SDS, above the 90% target
- for the 167 incidents where SDS was missed over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (53%) were missed by less than 60 seconds.

Table 5: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3-6 minutes	6-10 minutes	More than 10 minutes
27 (16.17%)	26 (15.57%)	36 (21.56%)	42 (25.15%)	12 (7.19%)	19 (11.38%)	1 (0.60%)	4 (2.40%)

Figure 14 shows graphically the ability for fire services to meet established SDS across the Werribee SDA. The areas of SDS non-compliance are the areas northeast of Sneydes Road (the Werribee Hospital and University Precinct), north of the Princes Highway, and south of the SDA in the Werribee Harbour Precinct.

Figure 14: SDS compliance for the Werribee Brigade SDA 2010 - 2019



From 1 January 2020 to 31 November 2023:

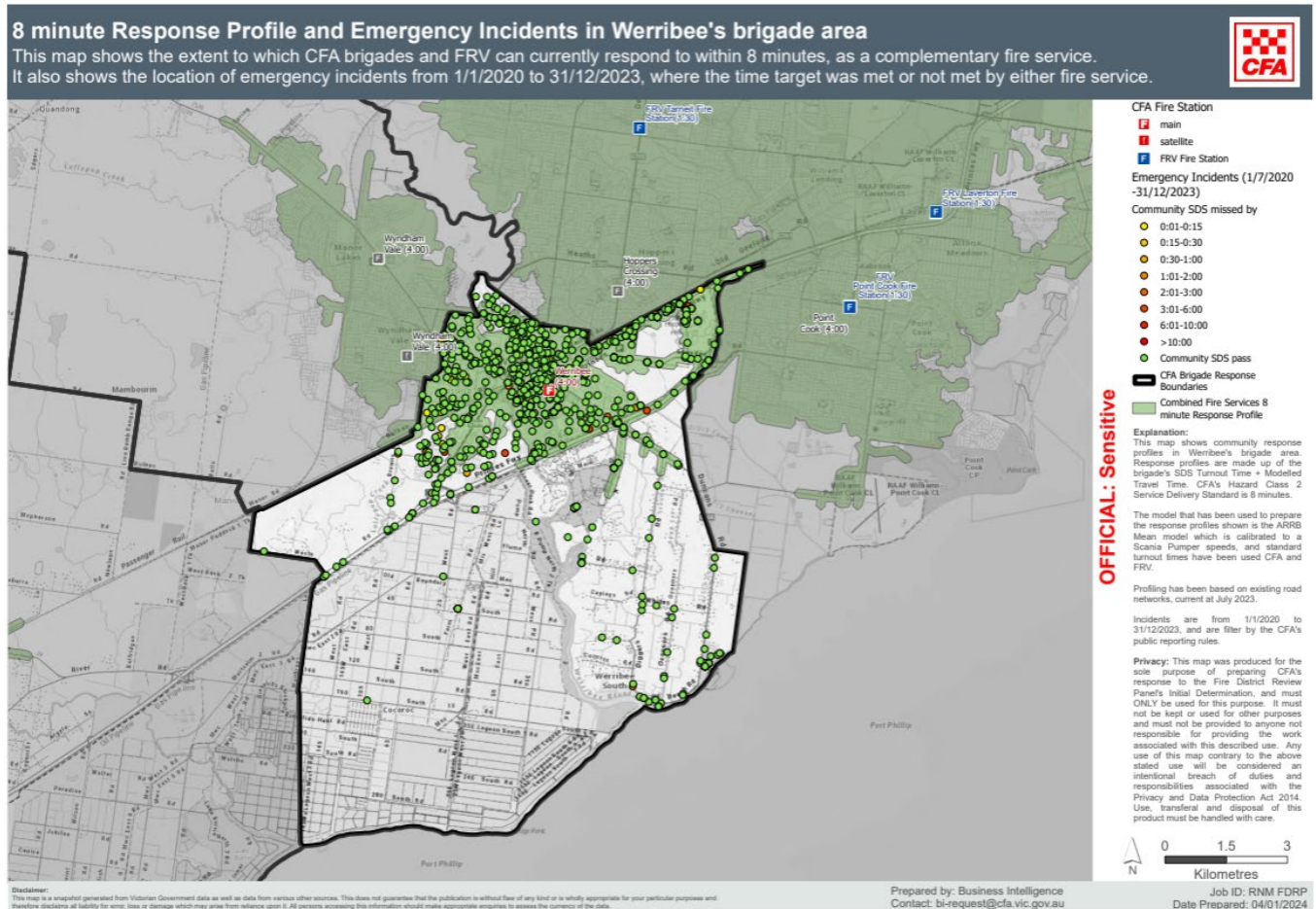
- there were 1,284 emergency incidents within the Werribee SDA
- fire services response to emergency incidents was 89.4% compliant with SDS
- for the 136 incidents where SDS was not met the following table indicates the numbers of emergency incidents and the time that SDS was missed. Of these, the majority (72.8%) were missed by less than 60 seconds.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

More than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
47 (34.56%)	30 (22.06%)	22 (16.18%)	27 (19.85%)	1 (0.74%)	9 (6.62%)	0	0

Figure 15 shows graphically the ability for fire services (complementary approach) to meet established SDS across the Werribee Fire Brigade SDA since Reform. There is improvement in meeting community SDS north of the Princes Freeway, and the Werribee Harbour Precinct, however data indicates a significant reduction in meeting community SDS in the areas northeast of Sneydes Road (Werribee Hospital and University Precinct).

Figure 15: SDS compliance for the Werribee Brigade SDA 2020 - 2023



Risk Evaluation:

Werribee Fire Brigade and the surrounding network of brigades consistently achieve high success in meeting, and exceeding SDS requirements within the Werribee SDA with those incidents that miss the standard doing so by small margins (1 to 60 seconds). There is a trend of SDS non-compliance within the Werribee Hospital and University Precinct, which is contributed to by traffic congestion along the Princes Highway.

While SDS has improved in the Werribee Harbour Precinct, road network modelling indicates timely response to incidents within this area will remain a challenge.

Risk Mitigation Action:

CFA proposes transition of the Werribee Hospital and University Precinct to the FRV Fire District to assist with sustaining and improving the Werribee Fire Brigade's SDS, reduce the False Alarm/False Call incidents on the Brigade (and total demand). The Brigade will continue to support FRV following transition.

CFA will monitor and review activity levels and SDS compliance within the Werribee Harbour Precinct. Consideration will be given to the establishment of a satellite fire station in this Precinct should the analysis determine this is needed.

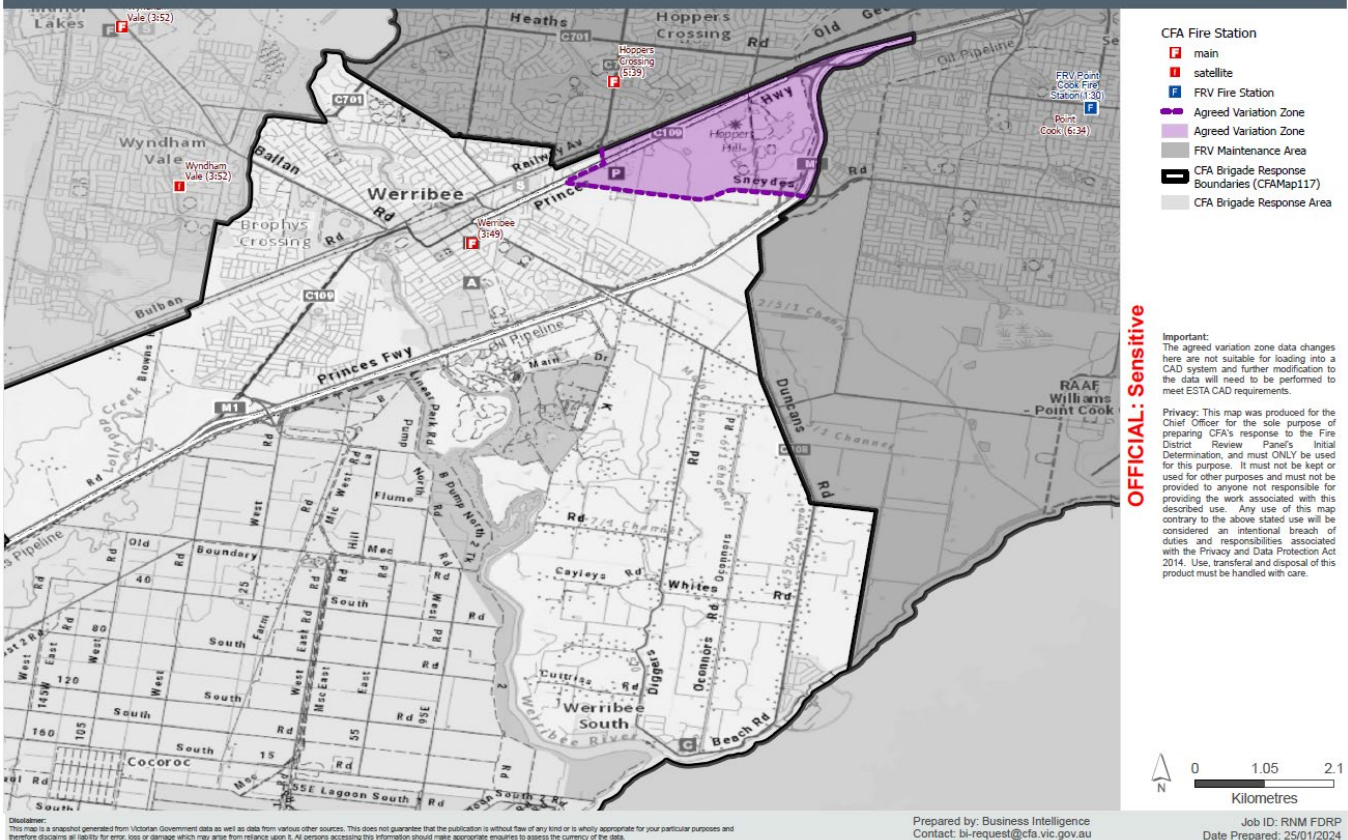
Agreed Variation Zone:

CFA considers it appropriate that the area northeast of Sneydes Road (Werribee Hospital and University Precinct) in the Werribee SDA can be agreed as a variation zone, with immediate effect (Figure 16).

Figure 16: Agreed variation zone

Agreed Variation Zone for Werribee

This map shows the area identified as an agreed variation zone.



4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Werribee Fire Brigade SDA from 2010 to 2023 has had a total of 200 building/structure fires requiring extinguishment. An analysis of preventable fire fatalities associated with these fires has identified six preventable fatalities at two separate incidents in 2021 and 2022 (after the FDRP data reference period). The Werribee Fire Brigade was first on scene to both incidents with response times being seven minutes, 26 seconds and seven minutes, 58 seconds respectively (both meeting SDS). After investigation it was found that for the 2021 incident the presence of a smoke alarm presence at the property was undetermined, and for the 2022 incident that a smoke alarm was present and operated, but that the occupants failed to respond to the alarm.

Table 7: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
22	17	18	16	12	8	11	22	10	12	11	15	18	8	200

In the Werribee Fire Brigade SDA the following non-preventable fatalities (homicides, suicides, deliberate) were identified and were the result of motor vehicle accidents. As a primary provider of RCR services across the Werribee and surrounding areas it is not unexpected that some fatalities associated with the rescue category would be found.

Table 8: Non-preventable fatalities 2010 to 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
1	1	-	-	-	-	-	-	-	-	-	-	-	-	2

Risk Evaluation:

The Werribee Fire Brigade SDA has had six preventable structure/building fire fatalities, relating to two separate fire incidents, since 2010. The Brigade met SDS in both instances.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate. The Werribee Fire Brigade as a rescue provider to the Emergency Management Commissioner exceeds the target for performance (90%) with a rescue SDS of 100%.

Table 9: Werribee fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	8 of 13	<p>SDS of 94.7% was achieved for the FDRP data reference period, exceeding target by 4.7%. The majority of SDS misses (53%) were by between 1 and 60 seconds.</p> <p>Werribee Fire Brigade and the surrounding network of brigades consistently achieves high success in meeting, and exceeding SDS requirements within the Werribee SDA with those incidents that miss the standard doing so by small margins (one and 60 Seconds).</p> <p>CFA notes a trend with non-compliance to meeting SDS within the Werribee Hospital and University Precinct, which is contributed to traffic congestion along the Princes Freeway.</p> <p>Although SDS has improved significantly in the Werribee Harbour Precinct, road network modelling indicates timely response to incidents within this area will remain a challenge.</p>	<p>Agreed Variation Zone: CFA considers it appropriate that the area northeast of Sneydes Road (Werribee Hospital and University Precinct) in the Werribee SDA can be agreed as a variation zone, with immediate effect.</p> <p>This will assist with sustaining and improving the Werribee Fire Brigades SDS, reduce the False Alarm/False Call incidents on the Brigade (and total demand). Werribee Fire Brigade will continue to support for FRV following transition.</p> <p>CFA will monitor and review activity levels and SDS compliance within the Werribee Harbour Precinct. Consideration will be given to the establishment of a satellite fire station in this Precinct should the analysis determine this is needed.</p>
Bushfire Management Overlay %	No value	There is no BMO within the Werribee Fire Brigades SDA.	
Total Demand	1 of 13	For the FDRP data reference period, the majority of incident types were for Fire and Explosions and False Alarms and False Calls, with the Werribee Fire Brigade exceeded SDS target throughout this period.	<p>CFA considers it appropriate that the Werribee Hospital and University Precinct in the Werribee SDA can be agreed as a variation zone, with immediate effect.</p> <p>This will assist with sustaining and improving the Werribee Fire Brigades SDS, reduce the False Alarm/False Call incidents on</p>

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		<p>Since Fire Services Reform, the primary incident types have changed, with MVA/Rescue calls now being the most prevalent incident type in 2023, with the Werribee Fire Brigade having appropriately trained and qualified firefighters to respond to these event types in a purpose-built appliance.</p>	<p>the Brigade (and total demand). Werribee Fire Brigade will continue to support for FRV following transition.</p>
Victorian Planning Authority %	7 of 13	<p>There are only two areas within the Werribee Fire Brigade SDA that are identified as growth zones, equating to (5.57%) of the SDA.</p> <p>VicPlan shows development is at capacity with all residential zones developed or in the final stages of completion. This indicates that further expansion of residential development is not likely unless a new residential growth zone is indicated.</p> <p>Werribee Fire Brigade resource capability of a pumper and anker combined with the long-established protocol of assistance from FRV delivers the complementary fire services model and is considered sufficient to treat the current residential and industrial risk including the proposed growth zone.</p>	<p>CFA considers it appropriate that the Werribee Hospital and University Precinct in the Werribee SDA can be agreed as a variation zone, with immediate effect.</p>
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio (VCTC)	1 of 13	<p>See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.</p> <p>Werribee Fire Brigade is a primary service provider for RCR and it is not unexpected that the Brigade should record higher attendances to motor vehicle collisions.</p>	

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Building fire casualty to total building fire ratio (BCTC)	5 of 13	<p>Werribee Fire Brigade SDA had no preventable structure/building fire fatalities during FDRP data reference period. Since then there have been six preventable fatalities as a result of two separate fire incidents.</p>	<p>The Werribee Fire Brigade has an active community engagement plan in place and conduct ongoing and meaningful community engagement practices to foster fire safety.</p> <p>A targeted campaign to significantly increase the installation of home smoke alarms across the Werribee Fire Brigade SDA will assist to mitigate against preventable fire fatalities and maintain the ongoing low occurrence of fire fatalities.</p>
Population projections	6 of 13	<p>Between 2016 and 2021 there has been an overall population change of 4,431 or 16% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells).</p> <p>VicPlan shows development is at capacity with all residential zones developed or in the final stages of completion. This indicates that further expansion of residential development is not likely unless a new residential growth zone is indicated. The areas identified as growth zones are not expected to result in a significant increase in population within the Werribee Fire Brigade SDA.</p> <p>Werribee Fire Brigades resource capability of a Pumper (equivalent to FRV Pumper) and Tanker combined with the long-established protocol of joint response from FRV and surrounding brigades as a response network, delivers the complementary fire services model and is considered sufficient to treat any potential residential (population) growth risk.</p>	<p>The additional proposal to transition the area northeast of Sneydes Road (Werribee Hospital and University Precinct) will additionally help to mitigate the growth zone within this area.</p>

Table 10: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Wendouree	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Typical traffic Friday 17:00

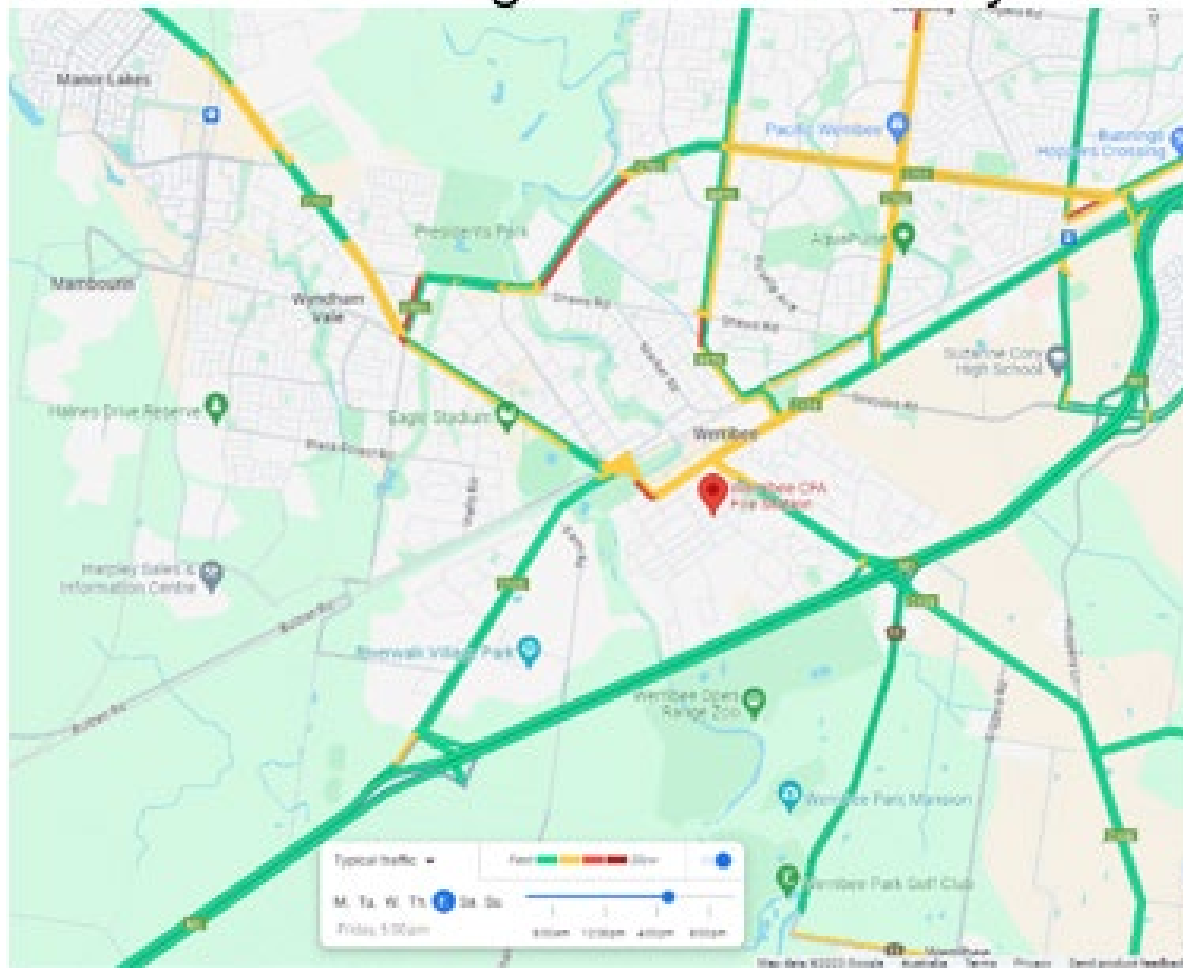


Figure 2: Peak traffic congestion area (Werribee CBD)

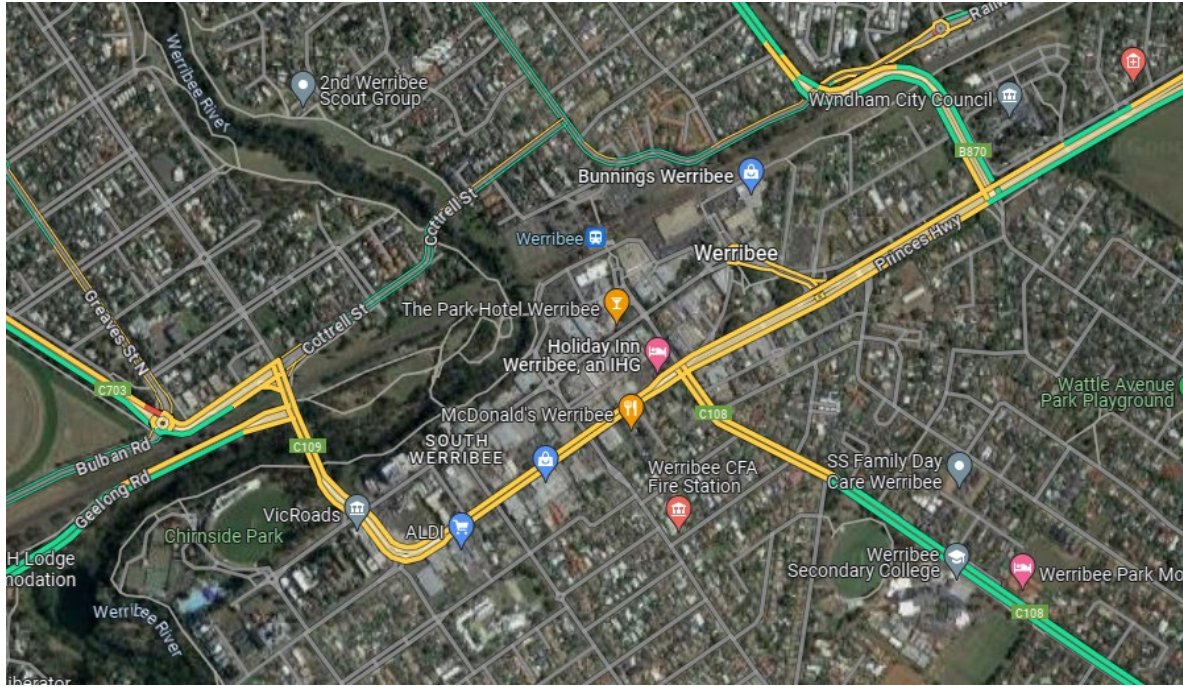


Figure 3: Operational members location and travel times

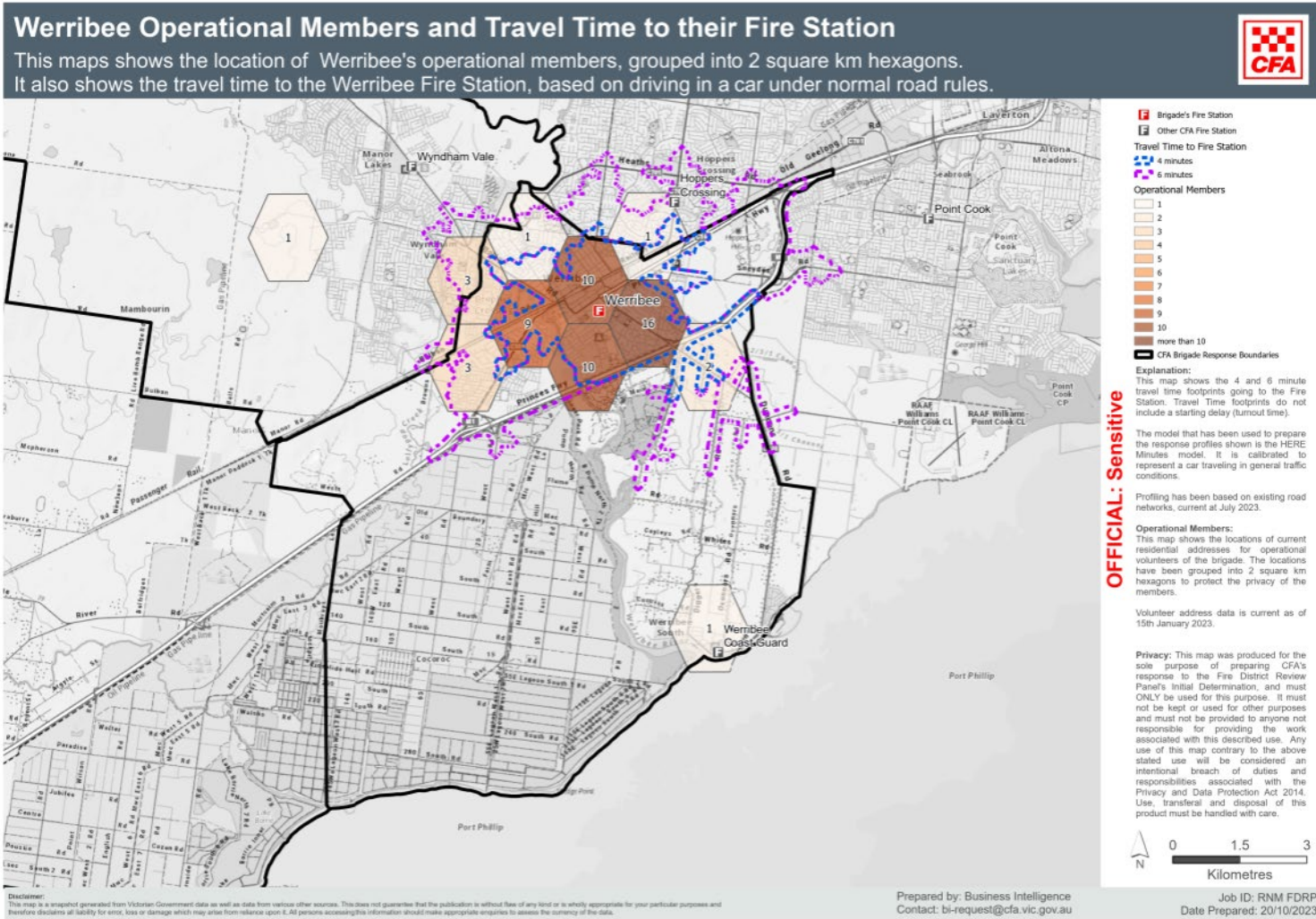


Figure 4: Incident count and type of support provided in the FRV Fire District

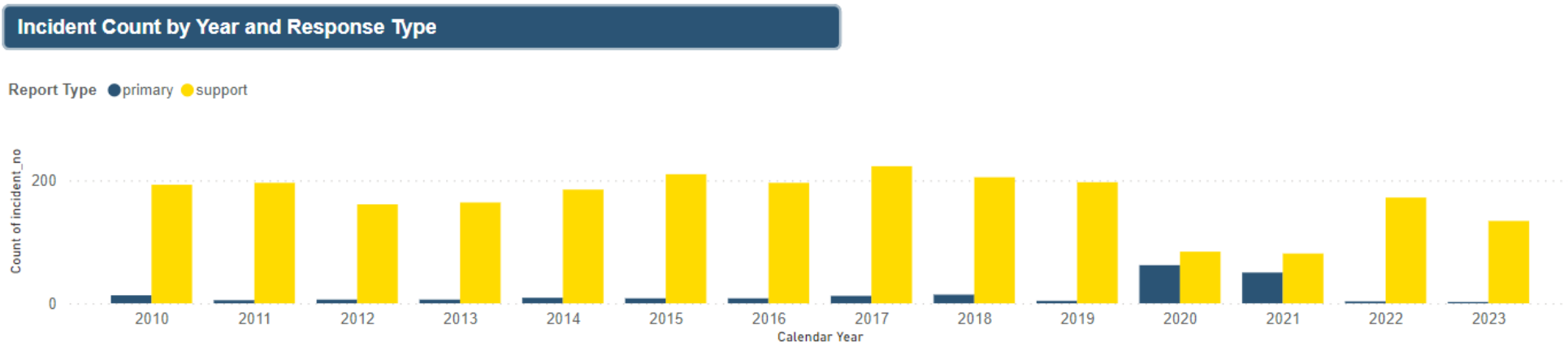


Figure 5: Incident count and type of support provided in the FRV station footprint

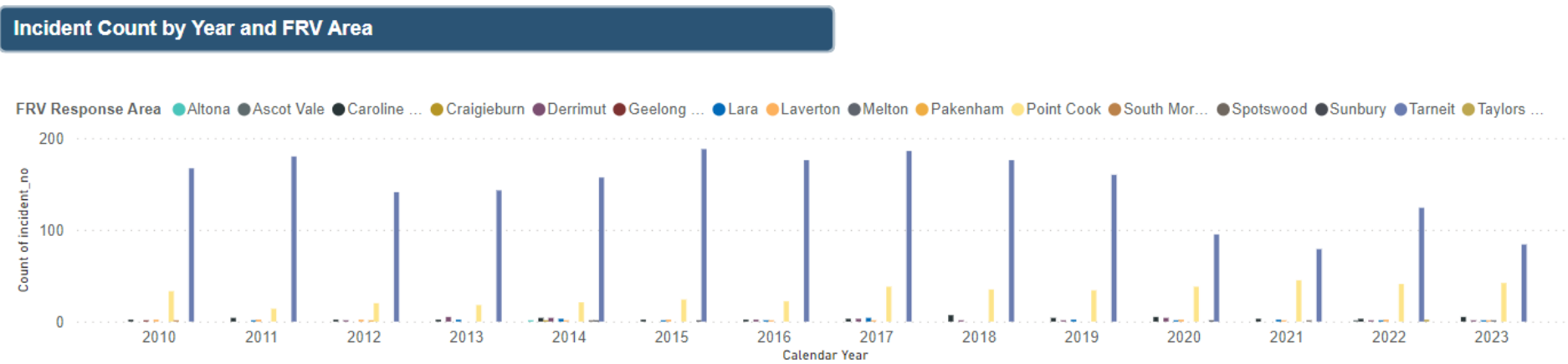


Figure 6: Community safety and intervention programs

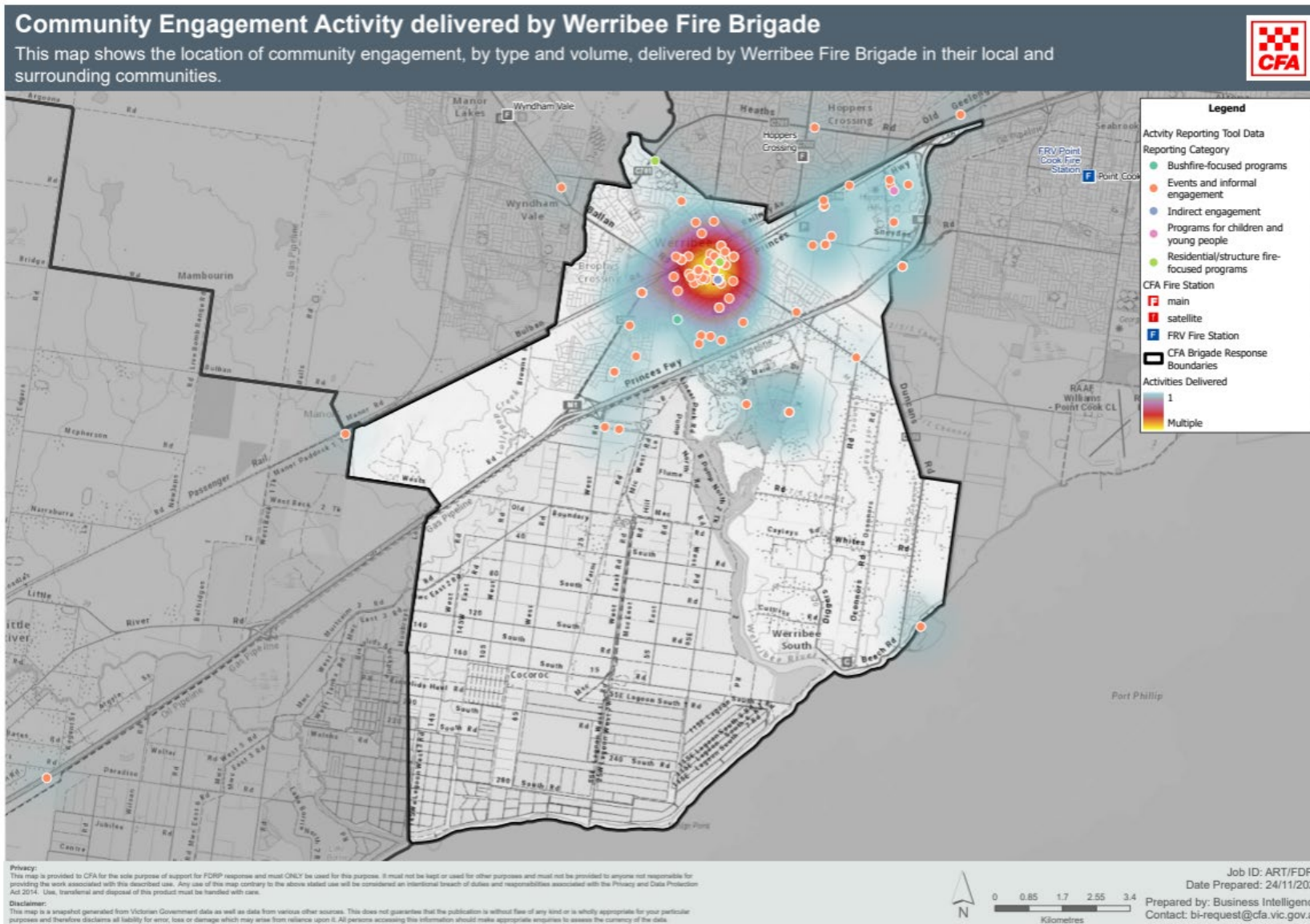


Figure 7: ABS land use areas and BMO

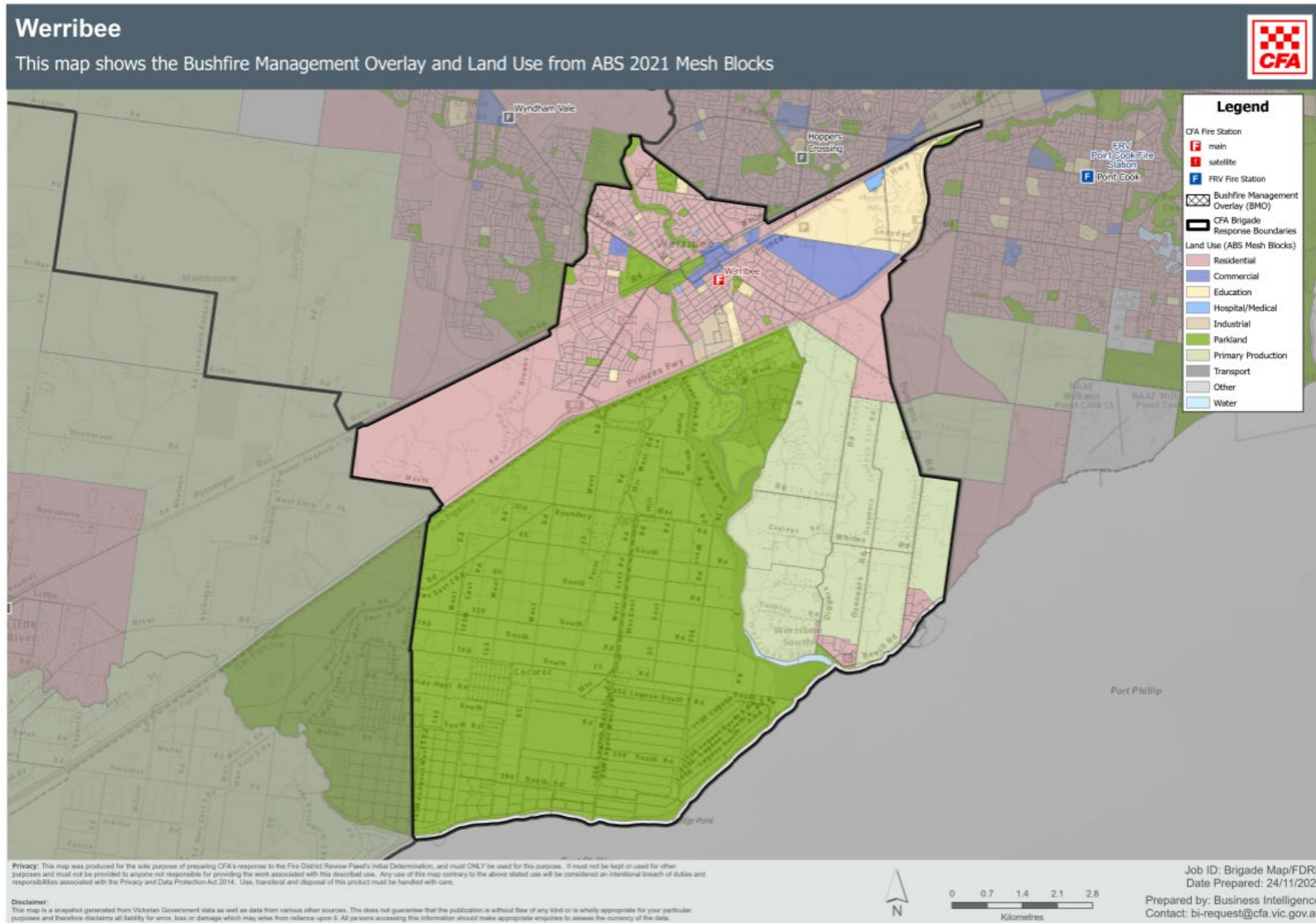


Figure 8: Public land management information

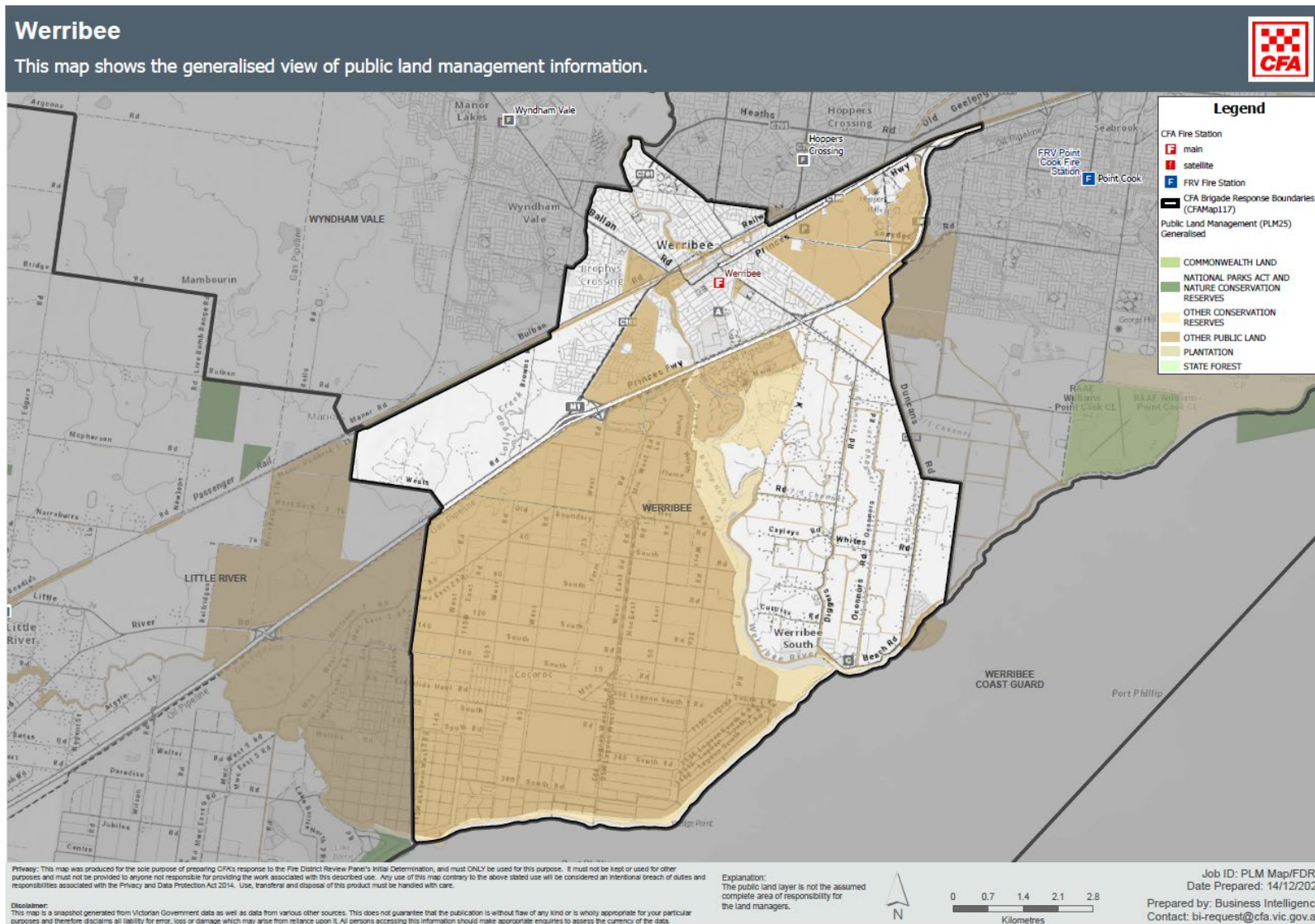


Figure 9: Planned growth zones from the planning scheme for Werribee

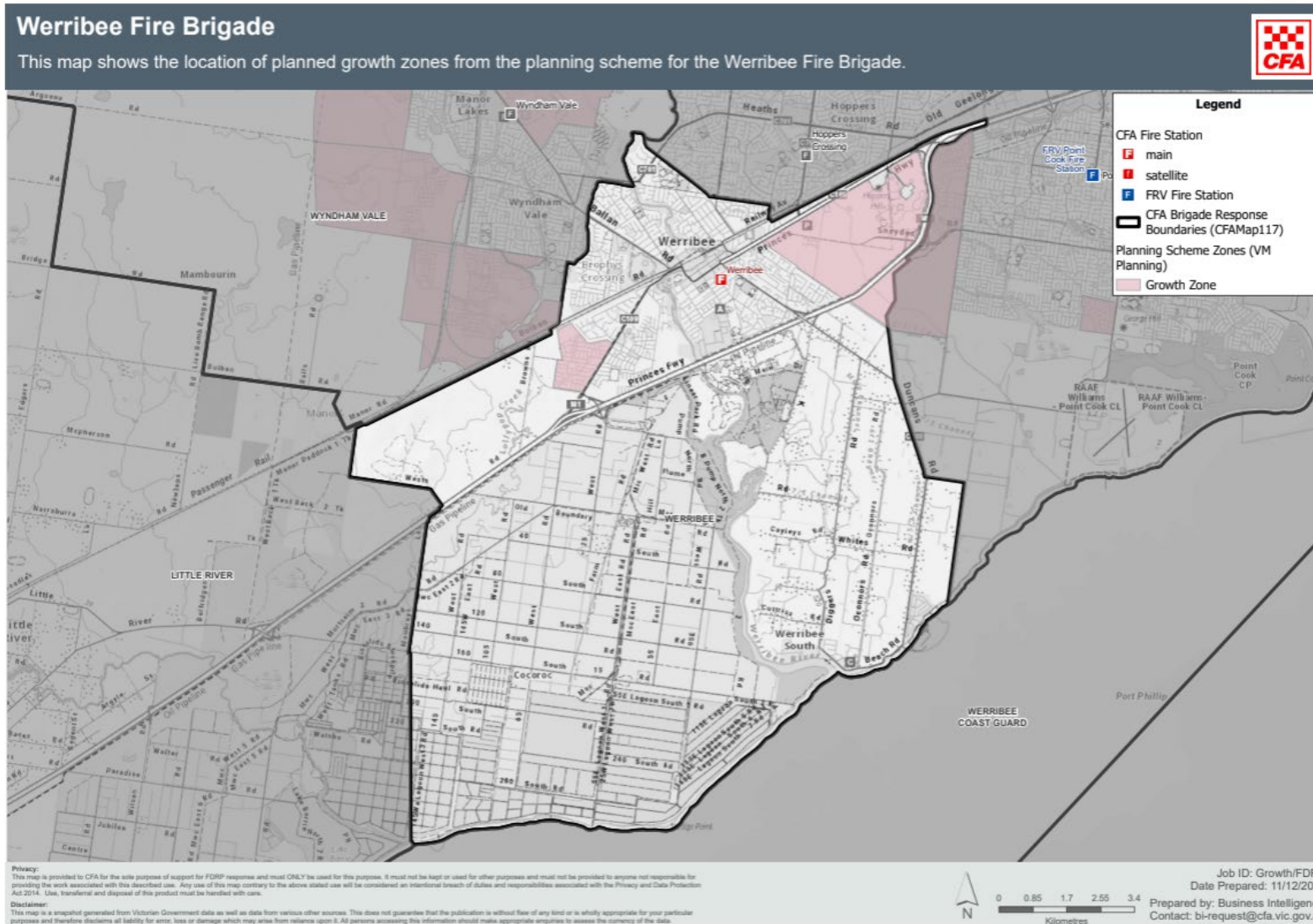


Figure 10: Werribee Brigade incident count by type 1 January 2010 - 18 December 2023

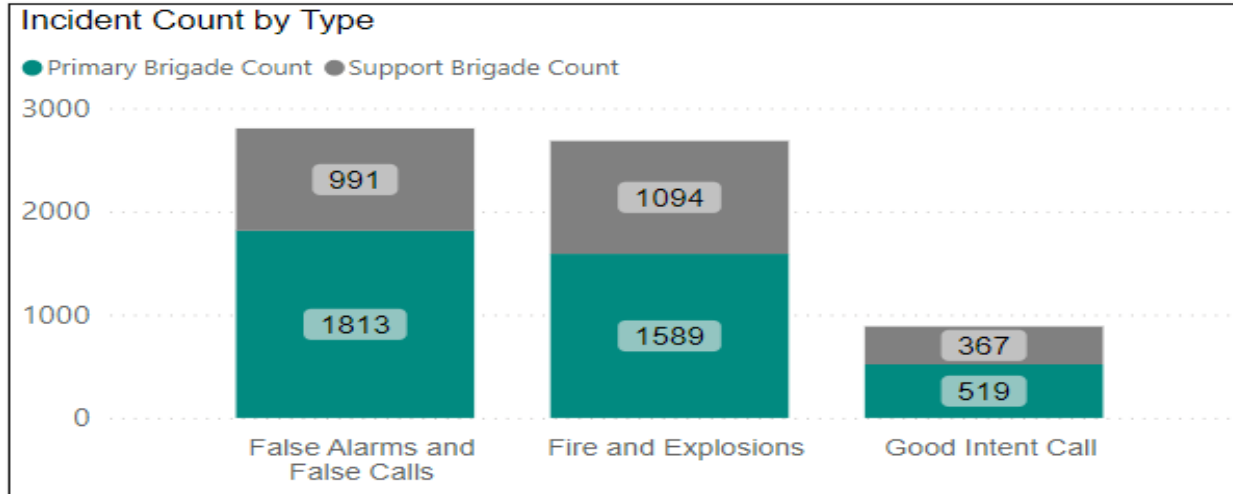


Figure 11: Werribee Brigade incident count by month 1 January 2010 - 18 December 2023

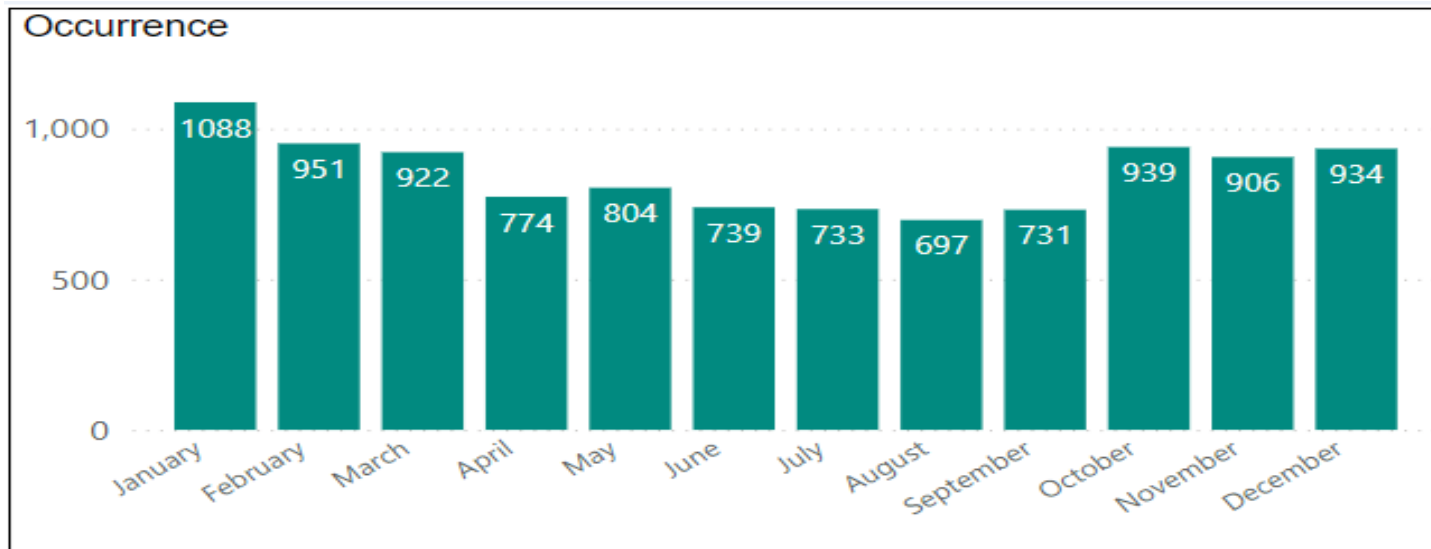


Figure 12: Werribee Brigade incident count by type by year 2010 - 2023

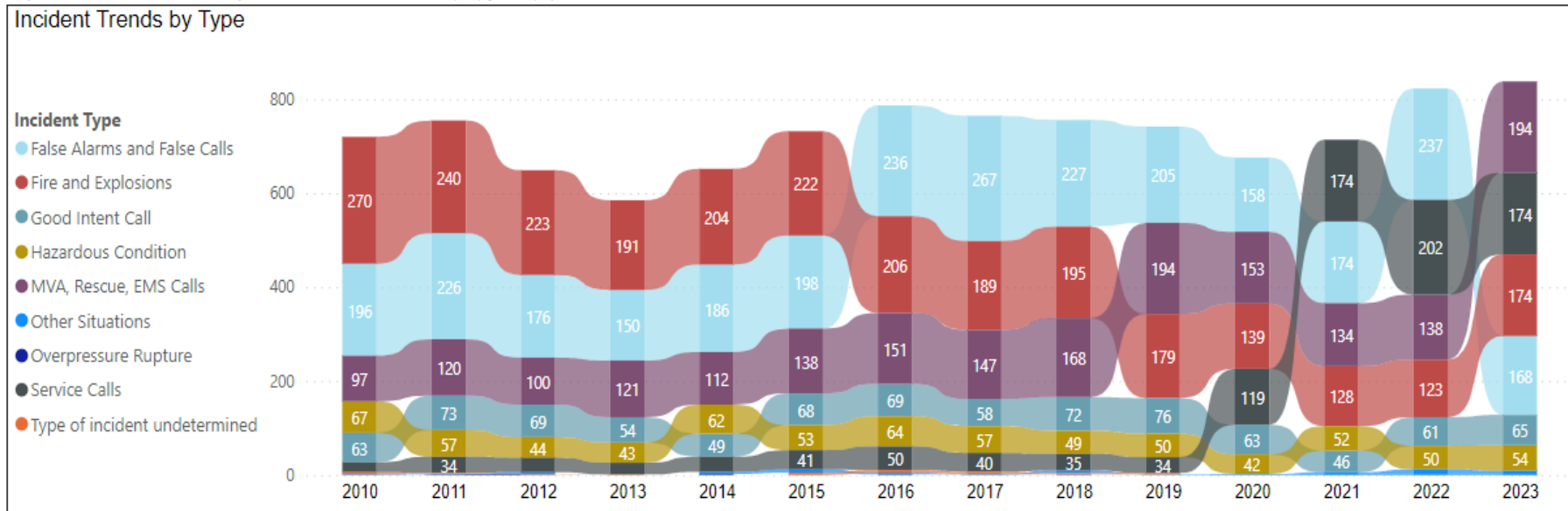


Figure 13: Area covered by both CFA and FRV based on HC2 8 Minutes

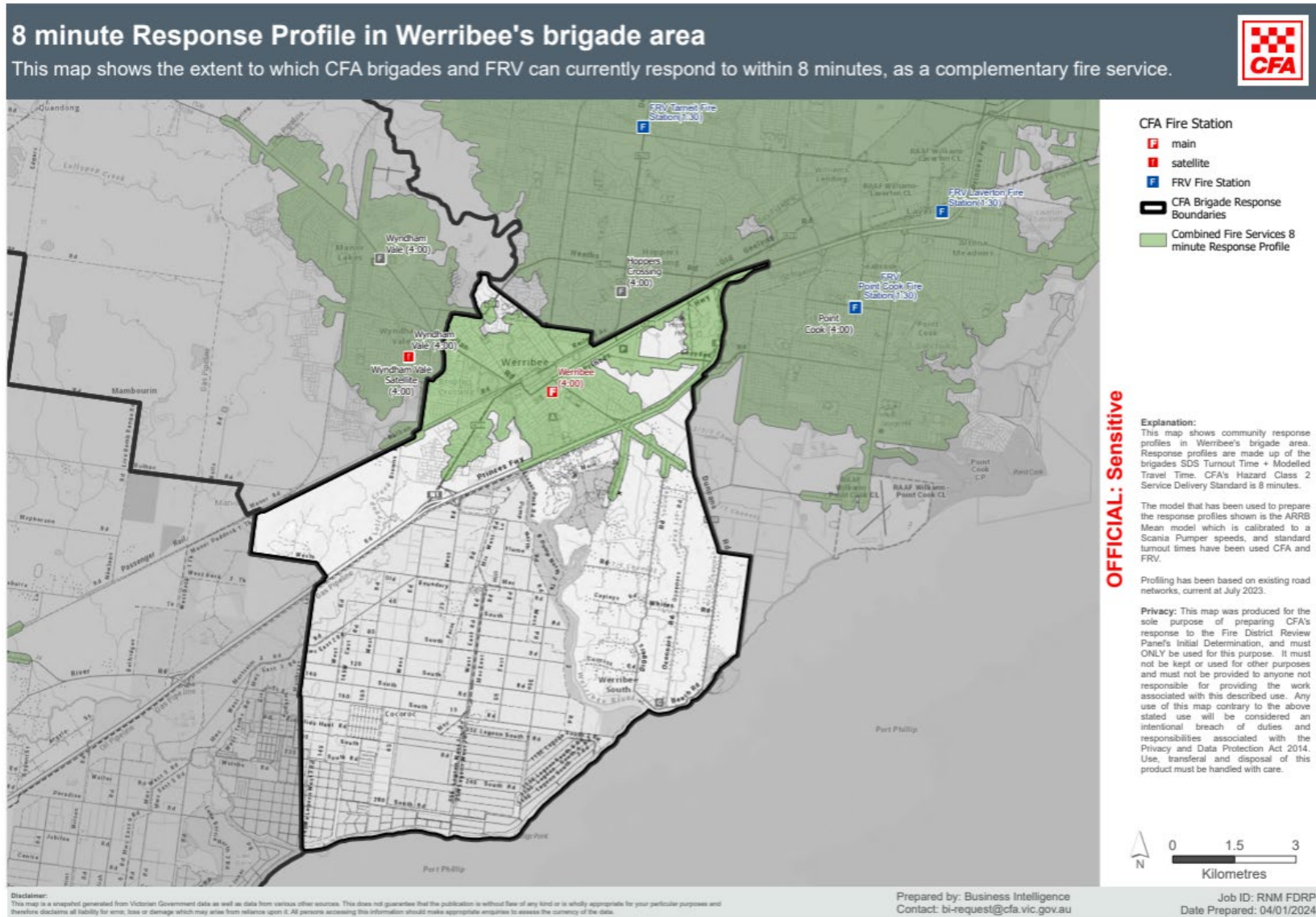


Figure 14: SDS compliance for the Werribee Brigade SDA 2010 - 2019

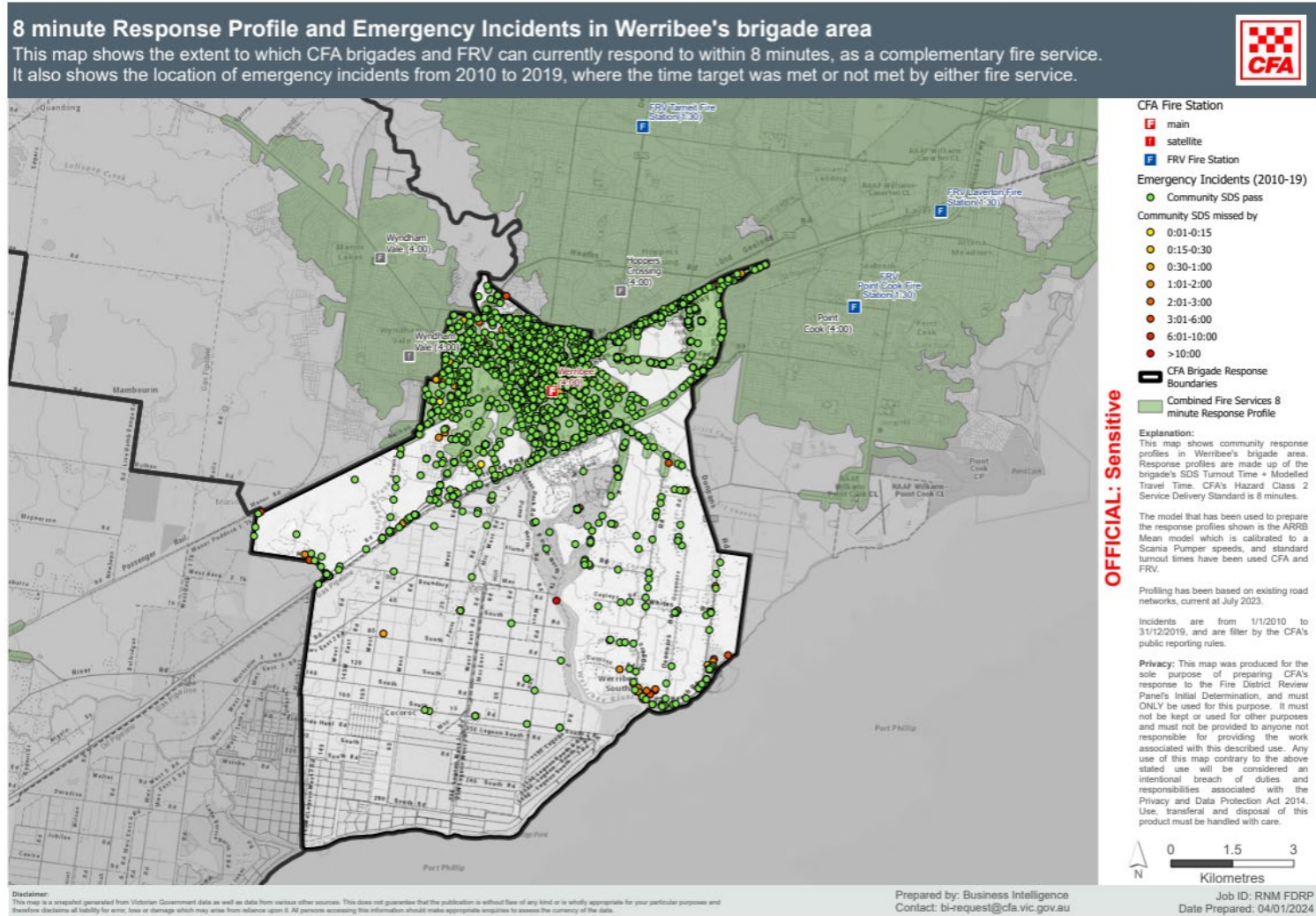


Figure 15: SDS compliance for the Werribee Brigade SDA 2020 - 2023

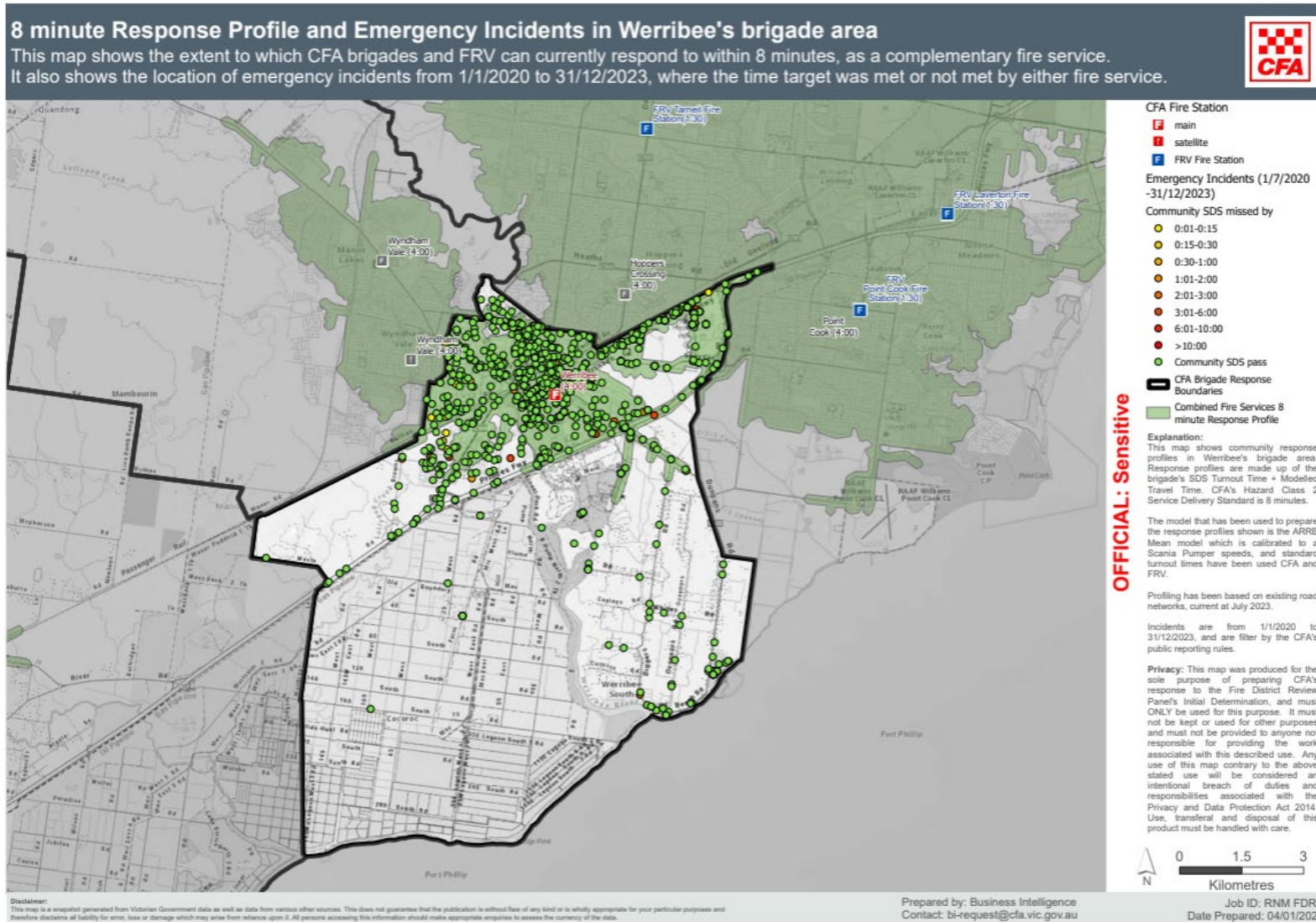
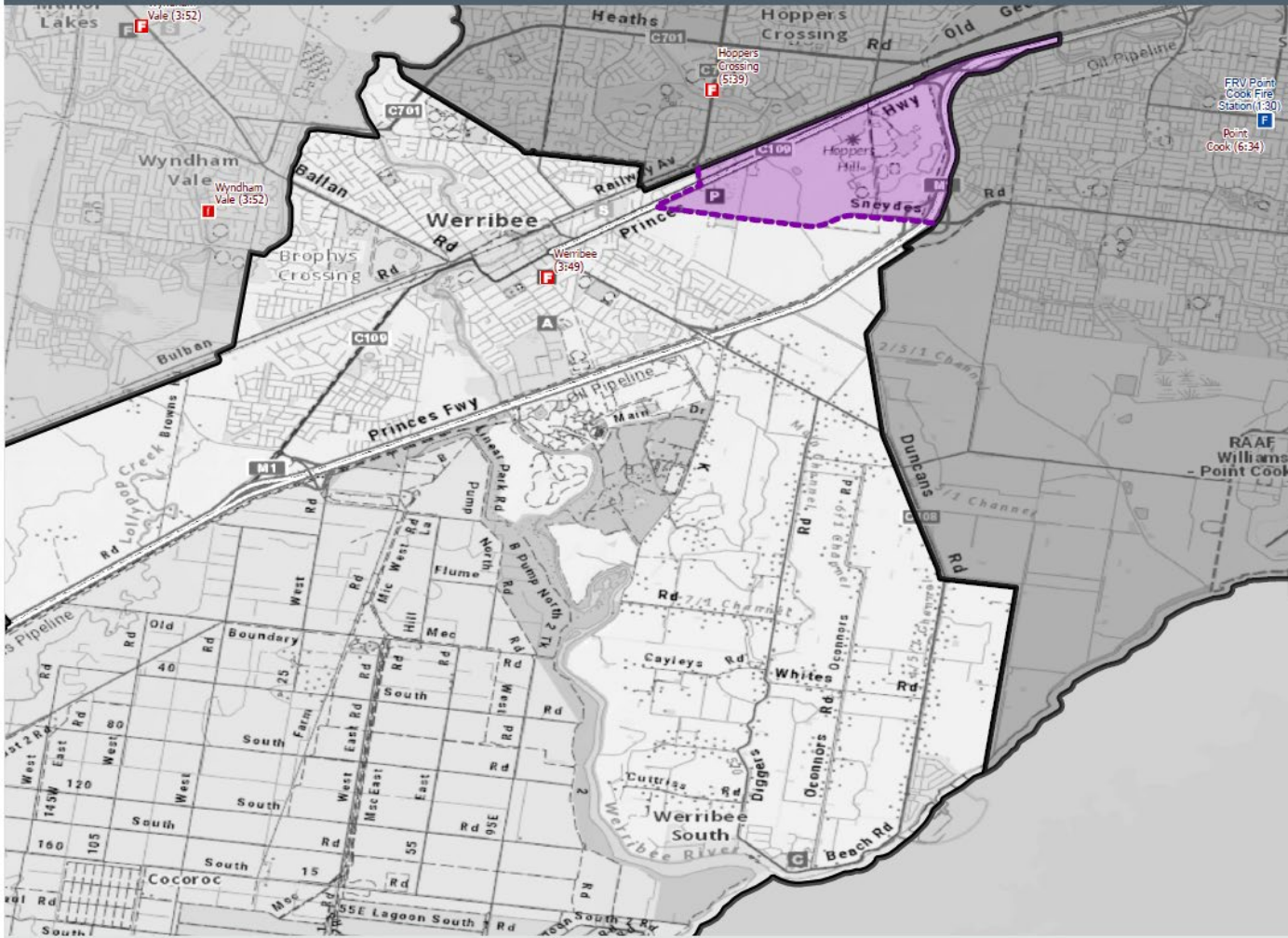


Figure 16: Agreed variation zone

Agreed Variation Zone for Werribee

This map shows the area identified as an agreed variation zone.

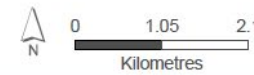


- CFA Fire Station
 - main
 - satellite
 - FRV Fire Station
- Agreed Variation Zone
- Agreed Variation Zone
- FRV Maintenance Area
- CFA Brigade Response Boundaries (CFAMap117)
- CFA Brigade Response Area

OFFICIAL: Sensitive

Important:
The agreed variation zone data changes here are not suitable for loading into a CAD system and further modification to the data will need to be performed to meet ESTA CAD requirements.

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Prepared by: Business Intelligence
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Job ID: RNM FDRP
Date Prepared: 25/01/2024

Wyndham Vale Fire Brigade

1. About the Brigade

Established in 2011 the Wyndham Vale Fire Brigade is a Class 5 Brigade within the Mt Cottrell Group located in District 14 of the North West Region. The Wyndham Vale Fire Brigade has a total membership of 54 volunteers (as at 31 December 2023).

1.1 History

Wyndham Vale Fire Brigade has proudly supported its community for the past 26 years. Commencing as a satellite station of the Werribee Fire Brigade in 1997, the Brigade operated from a single shed satellite station at 68 Honour Avenue, Wyndham Vale. In response to substantial growth within the area, a second temporary-leased purpose-built fire station was constructed in 2006 at 475 Ballan Road, Manor Lakes where the Brigade remains today.

On 1 July 2011, in response to continued community growth and additional development in the area, Wyndham Vale Fire Brigade was officially registered as a stand-alone CFA Fire Brigade. With significant growth projections for the Wyndham Vale SDA, extensive work was conducted by the Brigade and CFA to successfully secure government funding for the acquisition of land and construction of a new purpose-built fire station to suit the needs of the growing Wyndham Vale community. The new fire station is currently in the planning stage.

1.2 Context

Wyndham Vale Fire Brigade's primarily response area covers approximately 13,000 hectares and provides response to the suburbs of Wyndham Vale, Manor Lakes, Mambourin, Quandong while also providing additional support into parts of Werribee, Eynesbury, Parwan and Little River.

The Brigade responds to a range of emergency events including structural fires (residential and commercial), bushfires and grassfires, incidents at alarmed premises, hazardous materials calls, and motor vehicle accidents.

Wyndham Vale Fire Brigade's response area covers the urban and rural interface. The Brigade's SDA has seen a significant amount of residential development resulting in an increase in the population. In recent years this accelerated urban response has required the Brigade to adapt and expand its training and resources.

The Wyndham Vale Brigade undertakes familiarisation area training to assist members to understand the local risk environment and better serve the community. The SDA has everything from low-density housing, commercial shopping centres, increasing numbers of education facilities and nursing homes, an internationally recognised stock-feed exporter, two large bluestone quarries, rural farmland and grasslands that are undulating and very rocky with several deep gullies, river and creek systems, with protected native flora and western grasslands reserves.

CFA members have a unique ability to support communities and empower them to be fire ready. As well as being a trusted authority on fire safety, members are part of the communities they serve. Members of the Wyndham Vale Fire Brigade are very experienced in prevention and preparedness activities, including community education and engagement. They work closely with the Vegetation Management Team to assist with local planned burns and play lead roles such as Planned Burn Operations Officers while also being involved with the planning, delivery and evaluation of community education and engagement activities. The Brigade has an elected Community Safety Coordinator who has proactively implemented a Community Engagement Plan. This Plan guides the Brigades work to support and inform vulnerable people. A key initiative of the Brigade was partnering with the Wyndham City Council on Café Connect, which saw brigade members participating in conversations with residents (over a coffee) helping them to learn how to better prepare for emergencies and improve their home fire safety.

Wyndham Vale Fire Brigade is part of the Mt Cottrell Group of brigades located in District 14, which also comprises

11 other brigades. Together these brigades provide a collective fire service to Wyndham Vale and surrounding areas, including the Little River Fire Brigade, working alongside their FRV colleagues from Tarneit (Station 57).

Although CFA brigades are treated as individual entities by the review panel process, it is important to note that CFA Fire Brigades, organised as they are in a group structure, are able to work readily together to effectively and efficiently form strike teams and support response across their district, region and the state.

Wyndham Vale is a viable, fully functioning fire brigade with a strong and reliable membership base who are passionate and proud to support their community. Members of the Wyndham Fire Brigade live and work in their community are connected, aware, and adaptive to the changing risk environment and community growth.

The emergency incident data that has been analysed and is presented for Wyndham Vale commences from 1 July 2011, the date the Brigade was registered. Emergency incidents that occurred between 1 July 2010 and 1 July 2011 within the geographical area that is now identified as the Wyndham Vale SDA, were the time they occurred, the responsibility of Werribee Fire Brigade and have been included in the Werribee analysis.

2. Brigade Capability Snapshot

2.1 Membership

The Wyndham Vale Fire Brigade has a total membership of 54 members (15 females and 39 males). The Brigade has a healthy age profile with the average member age being 38 years.

2.2 Fire appliances, other vehicles and specialist equipment

The Wyndham Vale Fire Brigade has three appliances to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Wyndham Vale Fire Brigade alone.

Table 1: Fire appliances and vehicles available to the Wyndham Vale Brigade

Vehicle Type	Vehicle Make	Age
Pumper	Scania	7 years
Tanker	Hino	17 years
Field Command Vehicle	Ford Ranger	9 years

Table 2 below shows vehicle specification details of appliances available to Wyndham Vale Fire Brigade.

Table 2: Vehicle specifications

Pumper	Carrying five firefighters, 2,500 litres of water and 4,000 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage, monitors and foam equipment.
Tanker	Carrying five firefighters 3,750 litres of water, 900 lpm pump, BA, hoses and adaptors, chainsaw and fire fighting foam producing equipment.
Field Command Vehicle	Fire Ground Command vehicle with capability to operate in remote locations off grid. Includes Radio and Telephony communications systems, IT equipment including computers and multi-function printer/scanner.

2.3 Station Location

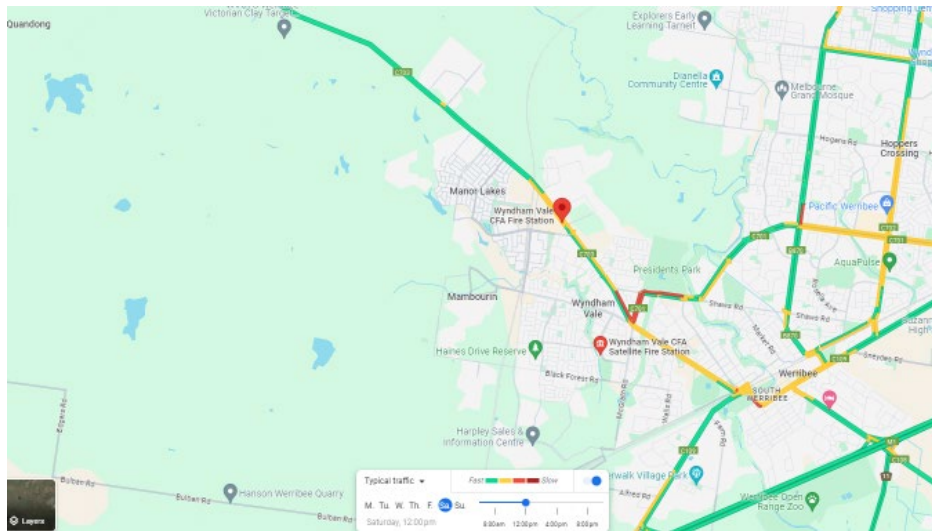
The current Wyndham Vale Fire Station is located at 475 Ballan Road, Manor Lakes which is a purpose-built station in the centre of the town that was constructed in 2006 as a result of population growth and expansion of the township. The Brigade moved to this location from the previous single shed station located on Honour Avenue which was operational from 1997. The Brigade has retained the station at Honour Avenue as a satellite station, with a brigade appliance still housed and responding from that location to underpin an efficient and appropriate response to the community.

The current primary station location is in the middle of a busy shopping precinct and is no longer suitable due to the substantial growth of the township and the growing needs of the Brigade. The Victorian Government committed funding in 2018-19 for a new modern, well equipped, purpose-built, three motor room bay facility to improve firefighting capability, incident response and cater to the current and future needs of the Brigade and the community, whilst also relieving pressure on surrounding brigades. Land is currently being acquired (due to be completed in early 2024) on Armstrong Road, Manor Lakes and CFA is working with the Community Safety Building Authority on the station design based on the agreed station typology that meets CFA's service delivery requirements. Construction is expected to be complete in March 2025.

The location of a fire station is an important element in the successful operation of a volunteer fire brigade. Site location must strike a balance between being appropriately located to address service delivery needs and being readily accessible for volunteers responding to and from for emergency responders. Traffic congestion is one of the leading causes of urban fire brigades not meeting established service delivery standards.

Analysis of the Wyndham Vale Fire Brigades peak traffic activity within the primary SDA shows that peak time for traffic congestion is on Saturdays at 12:00 (midday).

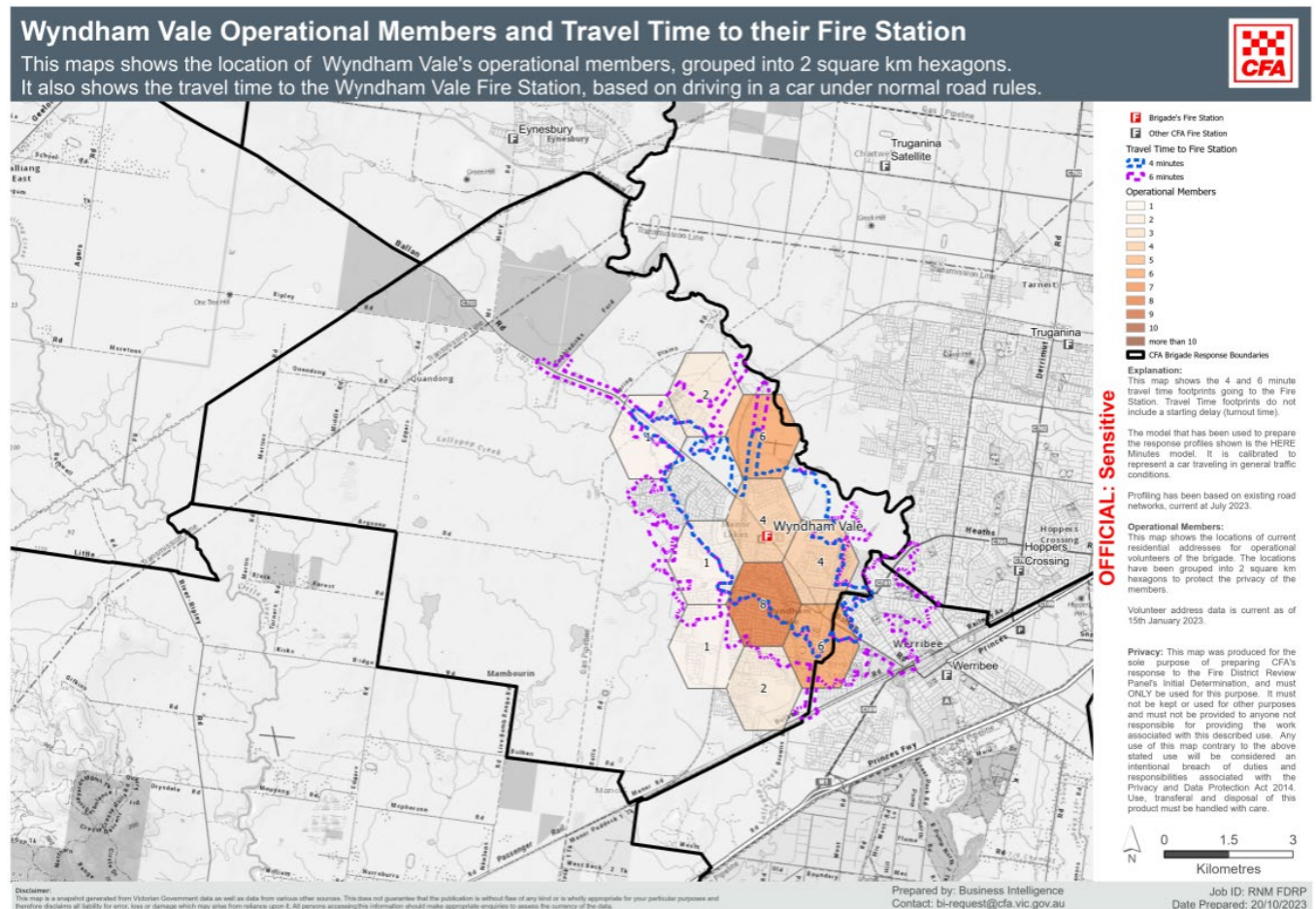
Figure.1: Typical traffic Saturday 12:00



It is evident that there is major traffic congestion for a considerable distance along Ballan Road which is likely to cause delays in response and impact on volunteers access to and from the main Wyndham Vale Fire Station.

Further analysis of the home locations of Wyndham Vale Fire Brigade operational members within a four to six minute travel time (under normal road conditions) (Figure 2) shows sufficient resources to ensure the rapid mobilisation of volunteers to both the main and satellite station upon activation.

Figure 2: Operational members location and travel times



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only provides support across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the State's resources in both the CAoV and the FRV Fire District. The Wyndham Vale Fire Brigade has a long and proud history of participating in strike team deployments across Victoria and interstate for fires, floods, and other emergencies including:

- in 2019-2020 many members were deployed interstate to NSW and to Gippsland in Victoria
- in 2022 support was provided by members to the flood affected areas of Victoria
- in 2023 members from Wyndham Vale Fire Brigade travelled to support the fire response of Queensland Fire and Emergency Service.

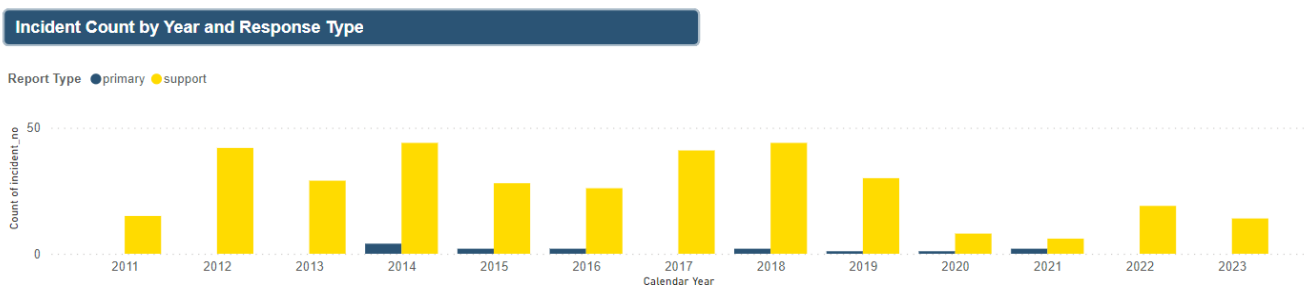
2.5 Assistance to Fire Rescue Victoria

FRV is dispatched to support CFA in the Wyndham Vale Fire Brigade SDA, ensuring complementary delivery of service to the community, and ensuring that the community already benefits from both fire services. On 1 July 2020, FRV reduced CFA Brigade response into FRV's primary area and amended long standing support arrangements put in place by CFA pre-reform. The Wyndham Vale Fire Brigade responds in support of FRV within the FRV Fire District in a complementary fire services model.

In 2023 the Wyndham Vale Fire Brigade was dispatched in support of FRV to only 14 incidents and 19 the previous year. This reduction of Wyndham Vale Fire Brigade responses into the FRV Fire District has reduced demand for services on the SDA and dropped the overall call service rate addressing the demand aspect or the risk identified by the FDRP.

Figure 3 below shows the total count of incidents (split into primary and support) that the Wyndham Vale Fire Brigade attended in the FRV Fire District for each calendar year.

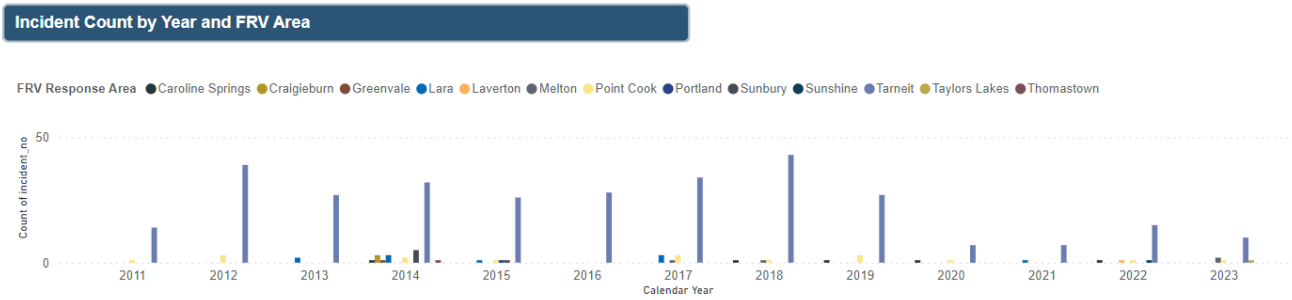
Figure 3: Incident count and type of support provided in the FRV Fire District



With the exception of 2022, since Fire Services Reform there has been a significant reduction in the demand for services of the Wyndham Vale Fire Brigade from FRV for responses in the FRV Fire District.

Figure 4 below shows the count of incidents that Wyndham Vale Fire Brigade attended in FRV fire Districts split by specific FRV SDAs, of which the majority of the support provided was to FRV Tameit (Fire Station 57).

Figure 4: Incident count and type of support provided in the FRV station footprint

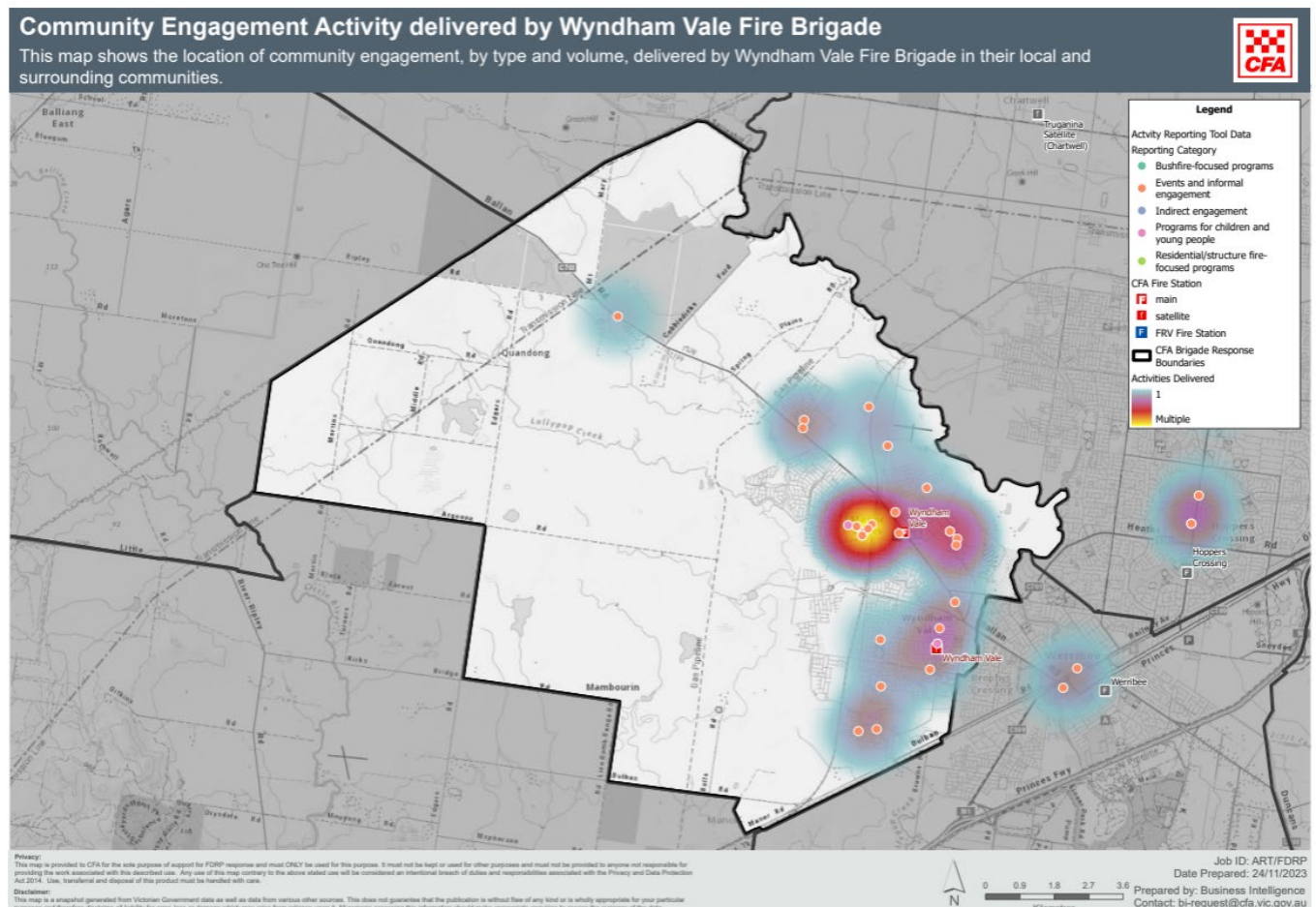


2.7 Community engagement Activities

The Wyndham Vale Fire Brigade is well respected and very experienced in prevention and preparedness activities, including community education and engagement. Members of the Wyndham Vale Fire Brigade actively plan and deliver a range of timely and targeted activities to engage with the local community. The Brigade has also developed a Community Engagement Plan to address risk with a particular focus on support of vulnerable persons.

CFA in 2022 implemented a new platform to allow brigades to centrally record community engagement activities undertaken to allow better understanding of community fire safety interventions. Prior to the implementation of ART, Brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of interventions. Figure 5 below shows community safety interventions undertaken by the Wyndham Vale Fire Brigade as recorded in the ART system.

Figure 5: Community safety and intervention programs



2.8 Prevention and preparedness activities

The Wyndham Vale Fire Brigade SDA has 22 protected premises, 12 of which are alarmed. Each of these premises has pre-plans in place to ensure all members are familiar with the premise and understand their local risk and response. The pre-plans are reviewed and updated annually and exercised as part of ongoing brigade training. The Brigade has completed a significant amount of work to maintain and review all operational response pre-plans, highlighting new risks that have emerged within the SDA. Wyndham Vale Fire Brigade members work closely with protected premises to assist in reducing preventable false alarms, enabling early identification and management of fire. Additionally, the Wyndham Vale Fire Brigade work closely with the Northwest Regions Vegetation Management Team to assist with local planned burns and vegetation management activities. Since the establishment of the Joint Fuel Management Plan.

3. Service Delivery Area Profile

The Wyndham Vale Fire Brigade SDA has a total area of 13,141 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses:

Table 3: Wyndham Vale land use planning areas

Land Use	Hectares	Percentage of Brigade Area
Commercial	41.9	0.3%
Education	27.2	0.2%
Industrial	0	0%
Other	829.3	6.3%
Parkland	388.9	3.0%
Primary Production	8,640.2	65.7%
Residential	3,214.0	24.5%
Transport	0	0%

A map showing the current land use planning areas and applicable mesh block is shown in Figure 6 below. There has been further development in Wyndham Vale Fire Brigade SDA since the 2021 Census.

Figure 6: ABS land use areas and BMO

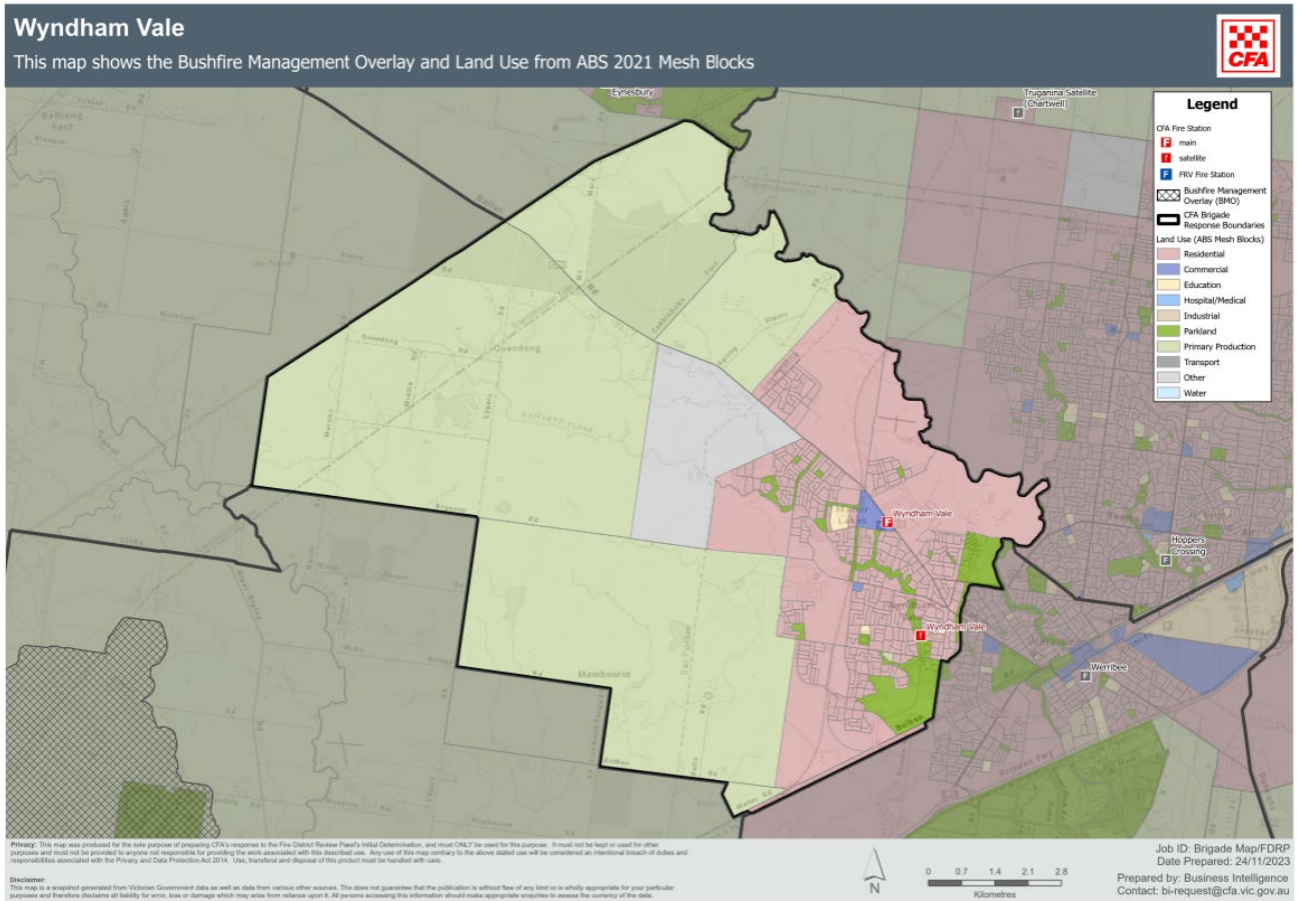
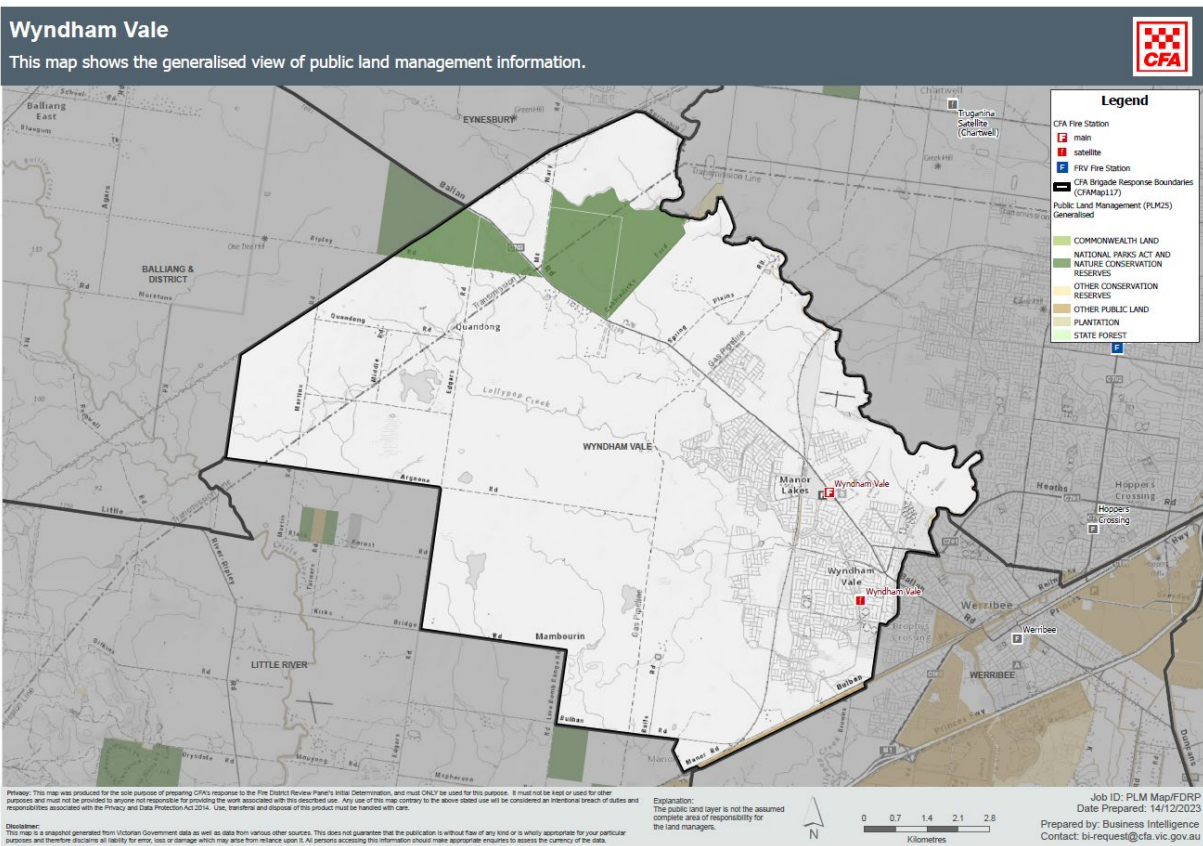


Figure 7: Public land management information

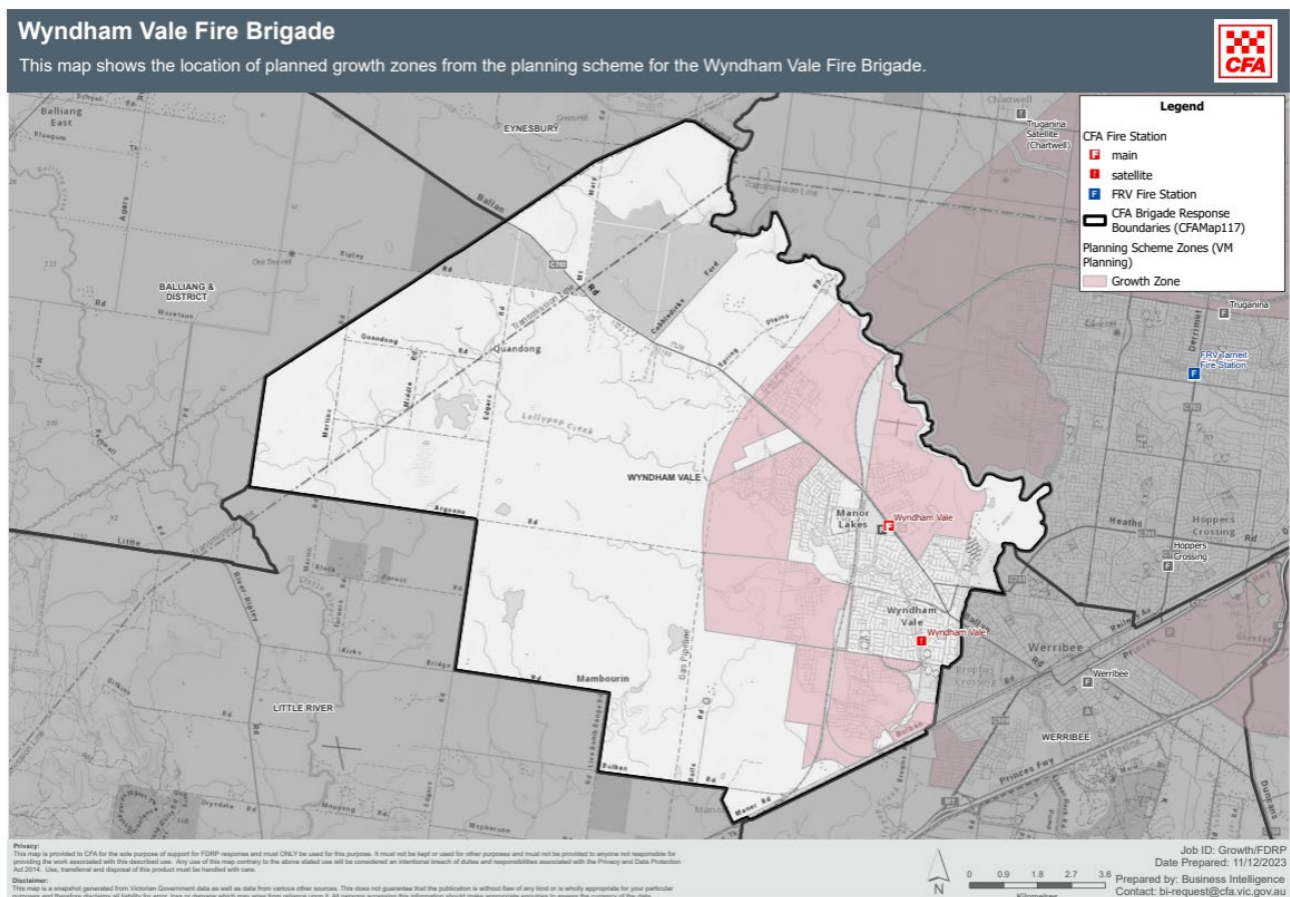


3.1 Growth zones

There are several areas within the Wyndham Vale Fire Brigade SDA that are identified as growth zones. These growth zones comprise an area of 2,453.79 hectares which equates to 18.67% of the Wyndham Vale SDA. There is expected to be large residential growth in the Wyndham Vale locality over the next 10 to 15 years, with a substantial increase (42.7%) in the total number of dwellings. Similarly, the Manor Lakes locality (also within the Wyndham Vale Fire Brigade SDA) is forecast to have an increase in the total number of dwellings of 86.6%.

Figure 8 shows planning industrial and growth zones from the planning scheme for the Wyndham Vale Fire Brigade SDA. It is expected that the majority of the growth zone identified will be residential growth with development of housing estates already underway and more in the planning process. It is expected this growth will result in a notable increase to the population, and subsequently an increase in urban type incidents and responses.

Figure 8: Planned growth zones from the planning scheme for Wyndham Vale



Risk Evaluation:

RGZs within Wyndham Vale Fire Brigade SDA span the western outer regions of the existing residential developed areas. These growth zones comprise an area of 2,453.79 hectares (or 18.67% of the SDA).

The Wyndham Vale Fire Brigade resource capability of a pumper and a tanker combined with the long-established protocol of assistance from FRV and adjoining CFA Brigades delivers a complementary fire services model and is considered sufficient to treat the current residential risk and forecast five year growth within the SDA.

Traffic congestion has the potential to cause some delays with response to and from the current primary station location, but it is expected that this will be mitigated when the new Wyndham Vale Fire Station on Armstrong Road, Manor Lakes is completed.

Risk Mitigation:

The construction of the new purpose build three bay motor room fire station in Armstrong Road, Manor Lakes will enhance the Wyndham Vale Brigade response capabilities and reach within the road network modelling profile, further extending the Brigade's response into the new residential housing estates to the West of the current fire station.

The continued response from the current and soon to be constructed new main station, in addition to the satellite station on Honour Avenue, will continue to see the current forecast five-year residential development risk mitigated. CFA will closely monitor development progress of the RGZ to plan and consider further satellite facilities (if modelling justifies) to further address the five to ten year development outlook.

3.2 Bushfire Management Overlay

The Wyndham Vale Fire Brigade SDA has no identified BMO area as identified from the ABS2021 mesh bocks (Figure 6). The Wyndham Vale SDA does contain large areas of grassland and agricultural operations that are suitably mitigated by the tanker allocated to the Wyndham Vale SDA and adjoining CFA Brigade resources.

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population increase of 16,343 or 40% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells). The local government area of the City of Wyndham has a forecast seven-year population increase of 31%. It is projected that a large portion of this will be within the Wyndham Vale SDA.

ABS Index of Relative Socio-economic Disadvantage (2021) shows the Wyndham Vale SA1 across the SDA to encompass the entire spread of Quintile from 1 (most disadvantaged) to 5 (most advantaged). To allow for some meaningful analysis to the area constituting the majority of the SDA a review of the IRSAD (SEIFA) to the SA2 level was undertaken. The majority of the Wyndham Vale SDA is decile 5 and Quintile 3 (average), with a sizeable area of Quintile 4 and a smaller pocket of Quintile 2 over the oldest portions of residential development in the SDA.

ABS census data (2021) shows that there are 12,419 dwellings in the Wyndham Vale Brigade SDA. Noting that the majority of dwellings are modern, newly constructed dwellings which comply with Australian Standards and National Construction Code requirements, including hard wired smoke detectors. Of the dwellings within the Wyndham Vale Fire Brigades SDA, 30% are rental houses. As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair²³.

The population also includes those at higher risk, including people living with a disability, and those with a Culturally and Linguistically Diverse (CALD) background, including a high number of community members with English as a second language. This is expected to increase as a result of significant residential growth and is a focus of the Brigade's community engagement activities.

CFA and FRV have collaborated to create the Prevent – Detect – Escape Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected, and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability. There have been 191 community members undertake the Prevent – Detect – Escape Program in the Wyndham Vale Fire Brigade SDA.

²³ <https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/keeping-the-property-safe/smoke-alarms-and-fire-safety#:~:text=The%20rental%20provider%20must%20ensure%20smoke%20alarms%3A%201,are%20repaired%20or%20replaced%20as%20an%20urgent%20repair.>

Risk Evaluation:

Having regard to fire safety interventions, there is a large number of the population within rented properties (30%). The level of rental housing has led to proliferation of mandated working (checked) smoke alarms which is anticipated to have contributed to the significantly low number of fire fatalities.

Increased residential growth and a high number of the population considered to be high risk underpins the importance of targeted community engagement activities (including smoke alarms) that will be paramount to protect the community.

Risk Mitigation Action:

To continue to maintain a zero count of fire fatalities within the Wyndham Vale Fire Brigade SDA and giving consideration to a potential growth in number of the population likely to be at a higher risk, focus will be placed on increasing the participation of community members in the joint FRV/CFA Prevent-Detect-Escape Program.

Operating smoke alarms are key to survivability of persons within a structure at time of fire ignition. A targeted program to significantly increase the installation and checking of smoke alarm installations will continue to mitigate the risk.

4. Service Delivery and Service Demand

4.1 Total demand

Figure 9 shows the total number of unique incident numbers attended by the Wyndham Vale Fire Brigade between 1 July 2011 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response. The number of fire related incidents (Fire and Explosions) are the dominating call types within the Wyndham Vale Fire Brigade SDA and are almost split evenly between primary and support calls.

Figure 9: Wyndham Brigade incident count by type 1 July 2011 - 18 December 2023

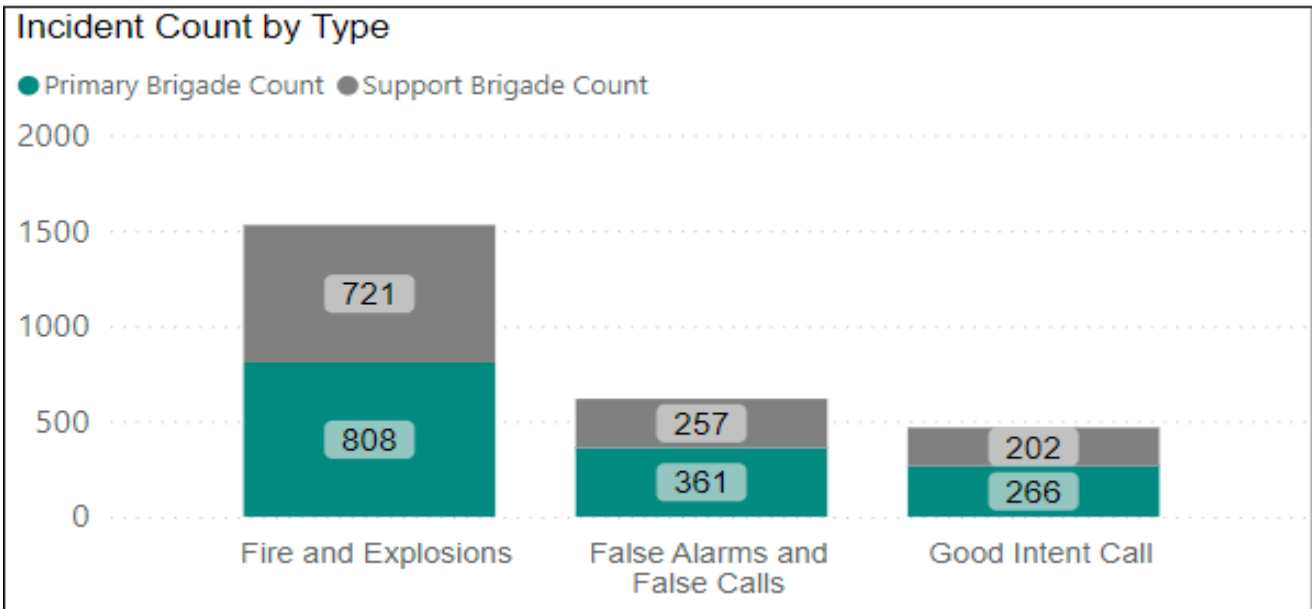


Figure 10 shows a count of the total number of incidents occurring between 1 July 2011 and 18 December 2023. This shows slightly higher average activity levels in summer months, particularly in December and January and lower periods of activity in the winter months. The higher rates of activity in December and January are conducive of the Wyndham Vale Fire Brigades capacity and ability to support bushfire operations statewide.

Figure 10: Wyndham Brigade incident count by month 1 July 2011 - 18 December 2023

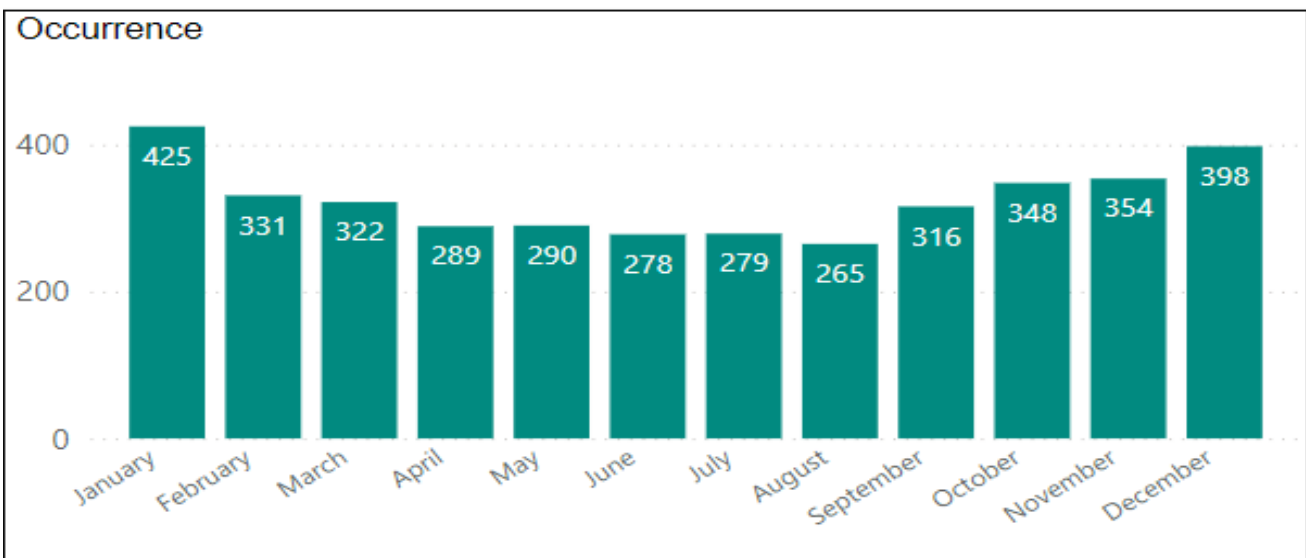
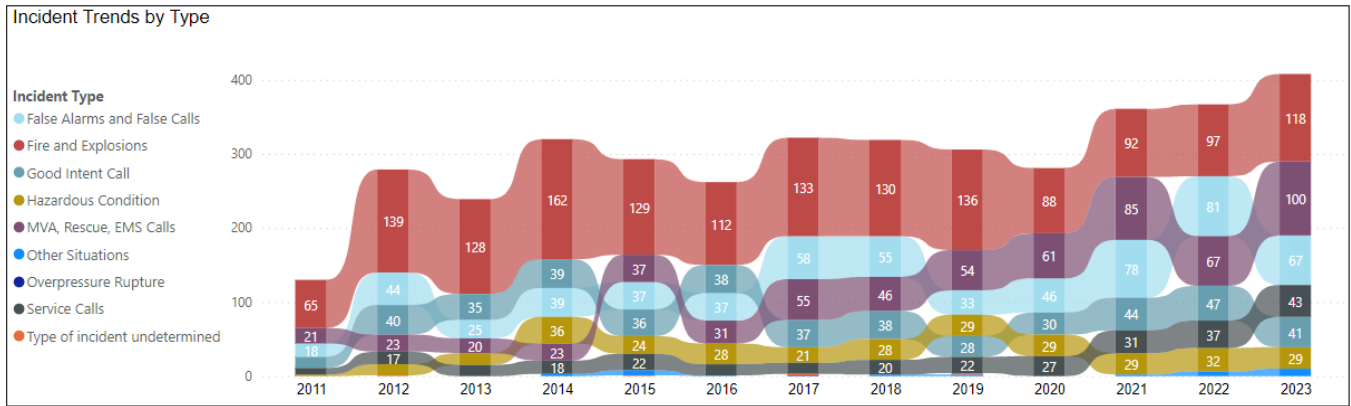


Figure 11 shows a count of all incident types between 1 July 2011 and 18 December 2023. The primary incident types for the Brigade are Fire and Explosions which is consistent across the 12 years of data. The number of Motor Vehicle Accident (MVA)/Rescue calls has significantly increased since 2011, with False Alarm/False calls remaining steady and consistent throughout the data period analysed. There has been an increase in the number of Service Calls which is likely a result of the changes to the support arrangements after the establishment of FRV.

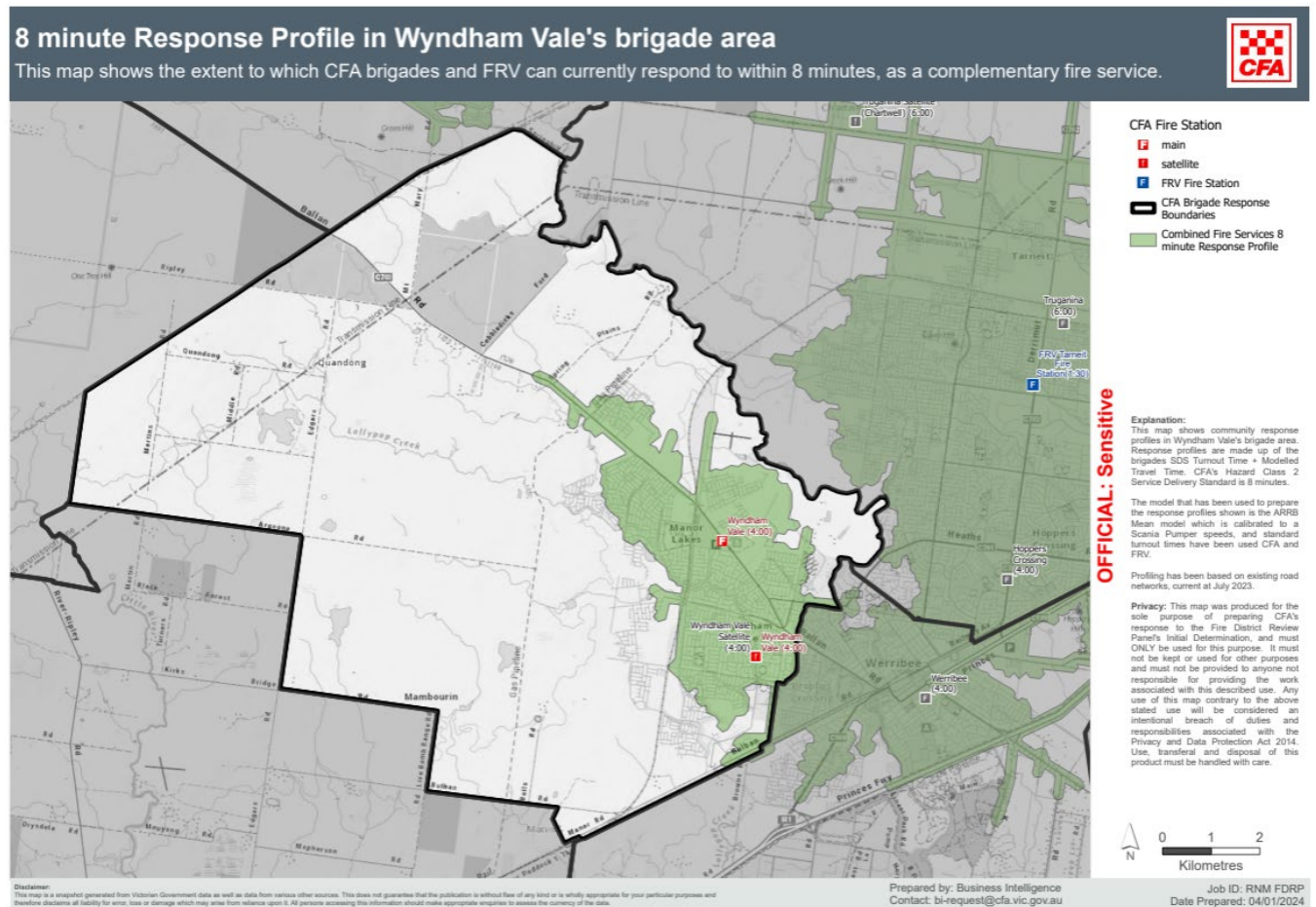
Figure 11: Wyndham Brigade incident count by type by year 2011 - 2023



4.2 Service delivery standard

Figure 12 shows the area within the land use that can be serviced within eight minutes by the existing complementary fire service model. It should be noted that the figure below shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the 8 minute to scene standard.

Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 68.94% of the road network in the Residential land use
- 100% of the road network in the Commercial land use
- 100% of the road network in the Education land use
- 83.93% of the road network in the Parkland land use
- 44.9% of the road network in the Other land use
- 3.55 of the road network in the Primary Production

An analysis of the Wyndham Vale Fire Brigade SDA with established SDS against respective hazard classes shows:

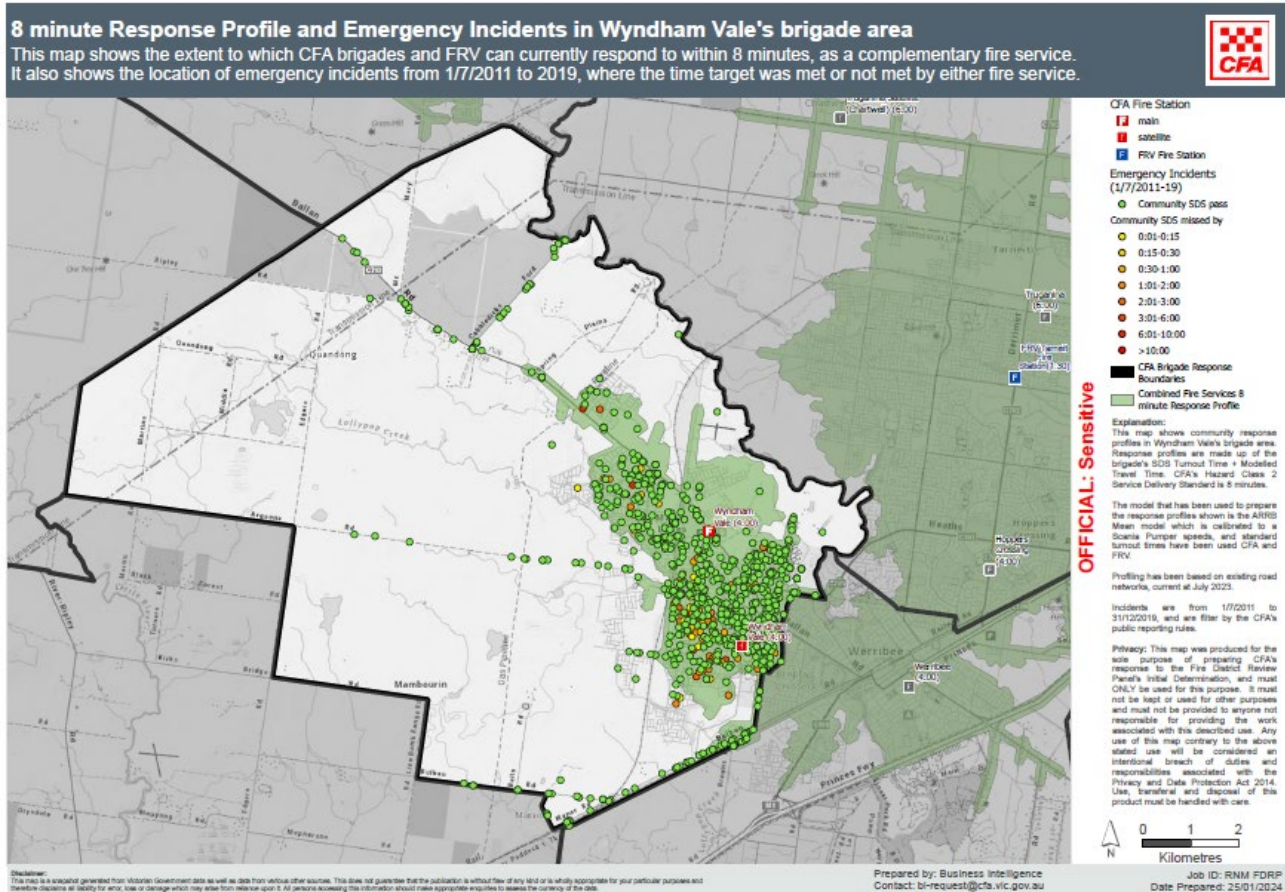
- from 1 July 2011 to 31 December 2019 there were 1,061 emergency incidents within the Wyndham Vale SDA:
- fire services response to emergency incidents was 88.03% compliant with SDS
- for the 127 incidents where SDS was not met over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (66.9%) were missed by less than 60 seconds.

Table 5: Number of emergency incidents and the time SDS was missed 1 July 2011 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
21 (16.54%)	22 (17.32%)	42 (33.07%)	23 (18.11%)	12 (9.45%)	4 (3.15%)	2 (1.57%)	1 (0.79%)

Figure 12 shows graphically the ability for fire services (complementary approach) to meet established SDS across the Wyndham Vale Fire Brigade SDA. Areas of concern where SDS is typically missed are west and northwest of the satellite station and northwest of the primary station. These SDS misses are often the result of traffic congestion, radio traffic congestion and the location of the primary station location. Despite these concerns, the Wyndham Vale SDA has SDS compliance rate of 88.03% during the FDRP data reference period, which is only slightly (1.97%) below the target of 90%.

Figure 13: SDS compliance for the Wyndham Brigade SDA 2011 - 2019



From 1 January 2020 to 31 November 2023:

- there were 664 emergency incidents within the Wyndham Vale Brigade SDA
- fire services response to emergency incidents was 90.2% compliant with SDS, 0.2% above the target. Wyndham Vale Fire Brigade has improved SDS performance since the implementation of Fire Services Reform
- for the 65 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (61.5%) were missed by less than 60 seconds.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
14 (21.54%)	8 (12.31%)	18 (27.69%)	13 (20%)	11 (16.92%)	0 (0%)	1 (1.54%)	0 (0%)

Risk Evaluation:

SDS performance has improved since the FDRP data reference period and has been above the 90% for incidents since January 2020. The majority of misses are by less than 60 seconds. Areas where SDS is typically missed are west and northwest of the satellite fire station and northwest of the primary fire station. These SDS misses are often the result of traffic congestion and the current location of the primary station location within the shopping precinct.

Risk Mitigation Action:

Construction of the funded new purpose-built Wyndham Vale Fire Station will assist to mitigate the traffic congestion to and from the current primary fire station location. Additionally, the maintenance of the satellite station in Honour Avenue will further assist in responses to the growth areas of the SDA.

4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Wyndham Vale Fire Brigade SDA from 2011 to 2023 has had a total of 96 building/structure fires requiring extinguishment. The Wyndham Vale Fire Brigade SDA has had no preventable fatalities as a result of structural fires since 2011. There have been no non-preventable fire fatalities (homicides, suicides, deliberate) reported. All non-preventable fatalities within the SDA were as a result of motor vehicle accidents (four) or one passenger vehicle fire.

Table 7: Building/structure fires requiring extinguishment 2011 - 2023

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
3	4	9	15	8	8	6	4	7	7	5	9	11	96

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA (VCTC)

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.

Table 9: Wyndham Vale fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	6 of 13	<p>The data provided to the FDRP on Community SDS shows a compliance rate of 88.03%, narrowly missing the Government target of 90%. The majority (66.93%) of these SDS misses were between one and 60 seconds, often due to station location and traffic congestion to and from the station.</p> <p>The Wyndham Vale Fire has improved SDS since the FDRP data reference period and it is now meeting target (has 90.2).</p> <p>Victorian Government committed funding for the acquisition of land and construction of new purpose-built primary fire station for the Wyndham Vale Fire Brigade to further enhance service delivery to the community. Construction is expected to commence in early 2024. CFA expects further SDS improvement once the Brigade can operate from the new station location.</p>	<p>Explore feasibility of upgrading/modifying current satellite station to ensure facility is sufficient, functional and viable for years to come to better service the expanding community.</p> <p>Explore feasibility and budget for acquiring an additional pumper to the fleet which would be permanently housed at the satellite station and increase urban response capability and capacity.</p>
Bushfire Management Overlay %	No value	No BMO within the Wyndham Vale SDA. The panel has derived no value for this metric.	
Total Demand	6 of 13	<p>CFA and FRV have a complementary fire services approach to response within the Wyndham Vale Fire Brigades SDA with FRV's Tarneit (Station 57) responded to all calls in support of the Wyndham Vale Fire Brigade.</p> <p>The primary incident type for Wyndham Vale Fire Brigade is Fire and Explosions related calls which remains consistent over time.</p> <p>Demand for all incident types has increased over time significantly from approximately 140 incidents in 2011 to 400 incidents in 2023.</p>	Conduct a targeted recruitment campaign within the Wyndham Vale SDA to further enhance the Brigade's capacity to meet the needs of the expanding community.

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		<p>Since Fire Services Reform, the Wyndham Vale Fire Brigade has improved SDS and are currently meeting the target of 90% for emergency incidents within the SDA.</p> <p>Victorian Government committed funding for the acquisition of land and construction of new purpose-built primary fire station for the Wyndham Vale Fire Brigade to further enhance service delivery to the community. Construction is expected to commence in early 2024 and be completed in March 2025.</p>	
Victorian Planning Authority %	5 of 13	<p>Significant residential development is expected within the Wyndham Vale Fire Brigade SDA.</p> <p>Victorian Government committed funding for the acquisition of land and construction of new purpose-built primary fire station for the Wyndham Vale Fire Brigade to further enhance service delivery to the community. Construction is expected to commence in early 2024 and completed in March 2025.</p>	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio (VCTC)	4 of 13	See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.	
Building fire casualty to total building fire ratio (BCTC)	3 of 13	Wyndham Vale has had no preventable structure/building fire fatalities or non-preventable (deliberate) fire fatalities recorded.	
Population projections	1 of 13	<p>Wyndham is the fastest growing region in Victoria and Australia.</p> <p>There is a significant amount of residential grown within Wyndham Vale Fire Brigades SDA which will result in increased population and urban response types. The Brigade has a pumper and tanker to support responses to both the structural and bushfire risk.</p>	

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		<p>Victorian Government committed funding for the acquisition of land and construction of new purpose-built primary fire station for the Wyndham Vale Fire Brigade to further enhance service delivery to the community. Construction is expected to commence in early 2024 with completion due in March 2025.</p> <p>CFA and FRV have a complementary fire services approach to response within the Wyndham Vale Fire Brigades SDA with FRV's Tarneit (Station 57) responded to all calls in support of the Wyndham Vale Fire Brigade.</p>	

Table 10: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Wendouree	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Typical traffic Saturday 12:00

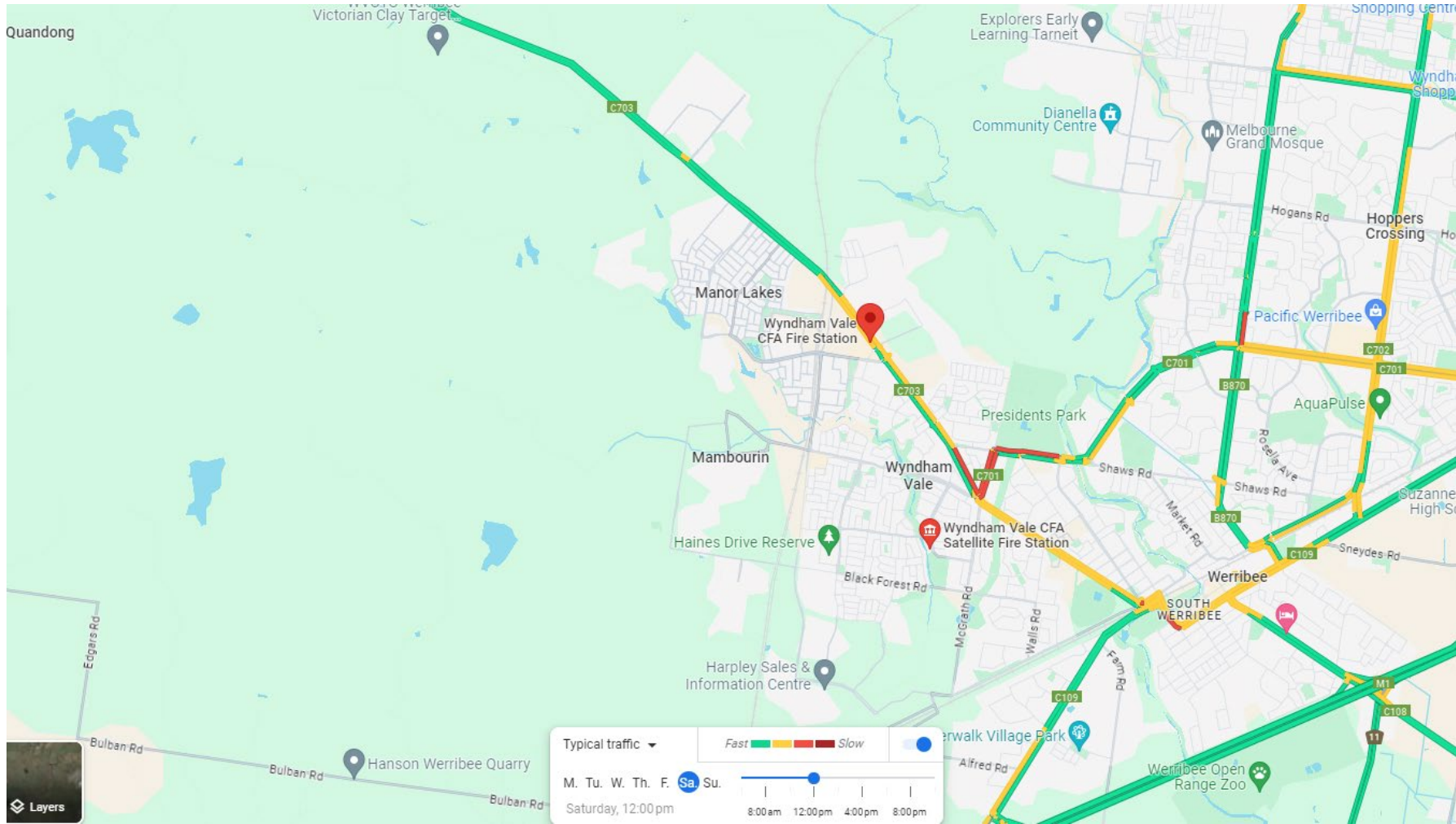
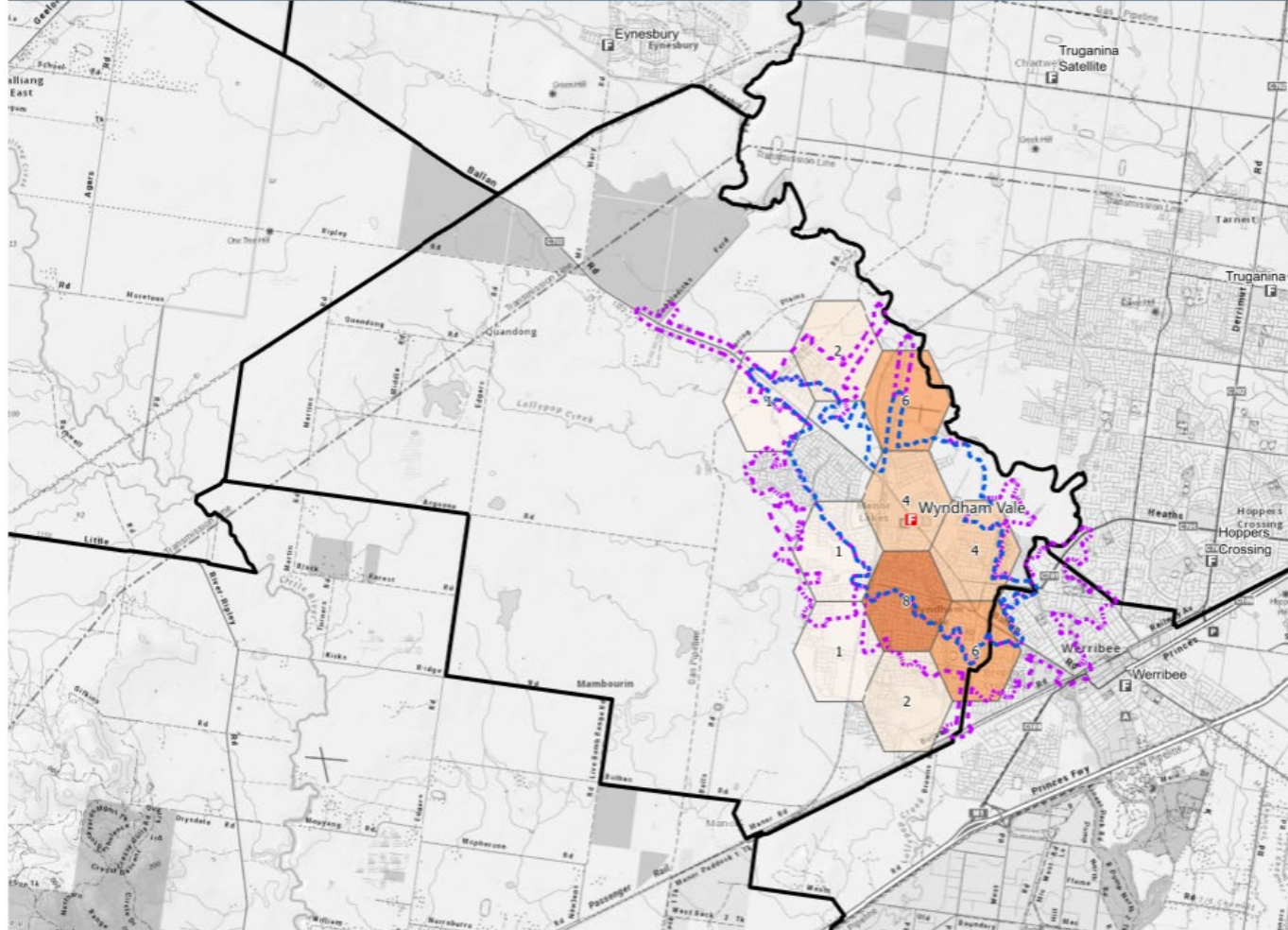


Figure 2: Operational members location and travel times

Wyndham Vale Operational Members and Travel Time to their Fire Station

This map shows the location of Wyndham Vale's operational members, grouped into 2 square km hexagons. It also shows the travel time to the Wyndham Vale Fire Station, based on driving in a car under normal road rules.



- Brigade's Fire Station
- Other CFA Fire Station
- Travel Time to Fire Station**
- 4 minutes
- 6 minutes
- Operational Members**
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- more than 10
- CFA Brigade Response Boundaries

Explanation:
This map shows the 4 and 6 minute travel time footprints going to the Fire Station. Travel Time footprints do not include a starting delay (turnout time).

The model that has been used to prepare the response profiles shown is the HERE Minutes model. It is calibrated to represent a car traveling in general traffic conditions.

Profiling has been based on existing road networks, current at July 2023.

Operational Members:
This map shows the locations of current residential addresses for operational volunteers of the brigade. The locations have been grouped into 2 square km hexagons to protect the privacy of the members.

Volunteer address data is current as of 15th January 2023.

Privacy: This map was produced for the sole purpose of preparing CFA's response to the Fire District Review Panel's Initial Determination, and must ONLY be used for this purpose. It must not be kept or used for other purposes and must not be provided to anyone not responsible for providing the work associated with this described use. Any use of this map contrary to the above stated use will be considered an intentional breach of duties and responsibilities associated with the Privacy and Data Protection Act 2014. Use, transfer and disposal of this product must be handled with care.



OFFICIAL: Sensitive

Disclaimer:
This map is a snapshot generated from Victorian Government data as well as data from various other sources. This does not guarantee that the publication is without flaw or is wholly appropriate for your particular purpose and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Prepared by: Business Intelligence
Contact: bi-request@cfa.vic.gov.au

Job ID: RNM FDRP
Date Prepared: 20/10/2023

Figure 3: Incident count and type of support provided in the FRV Fire District

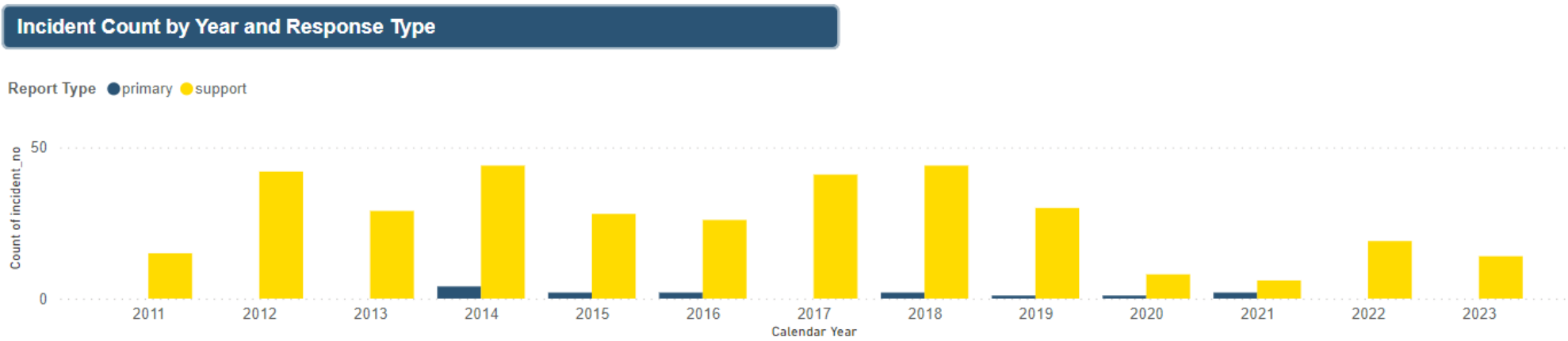


Figure 4: Incident count and type of support provided in the FRV station footprint

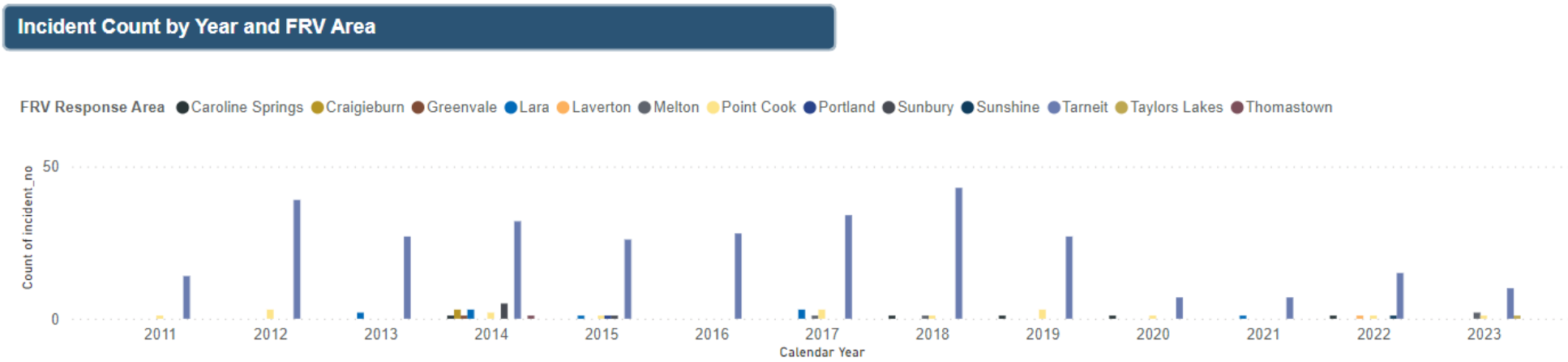


Figure 5: Community safety and intervention programs

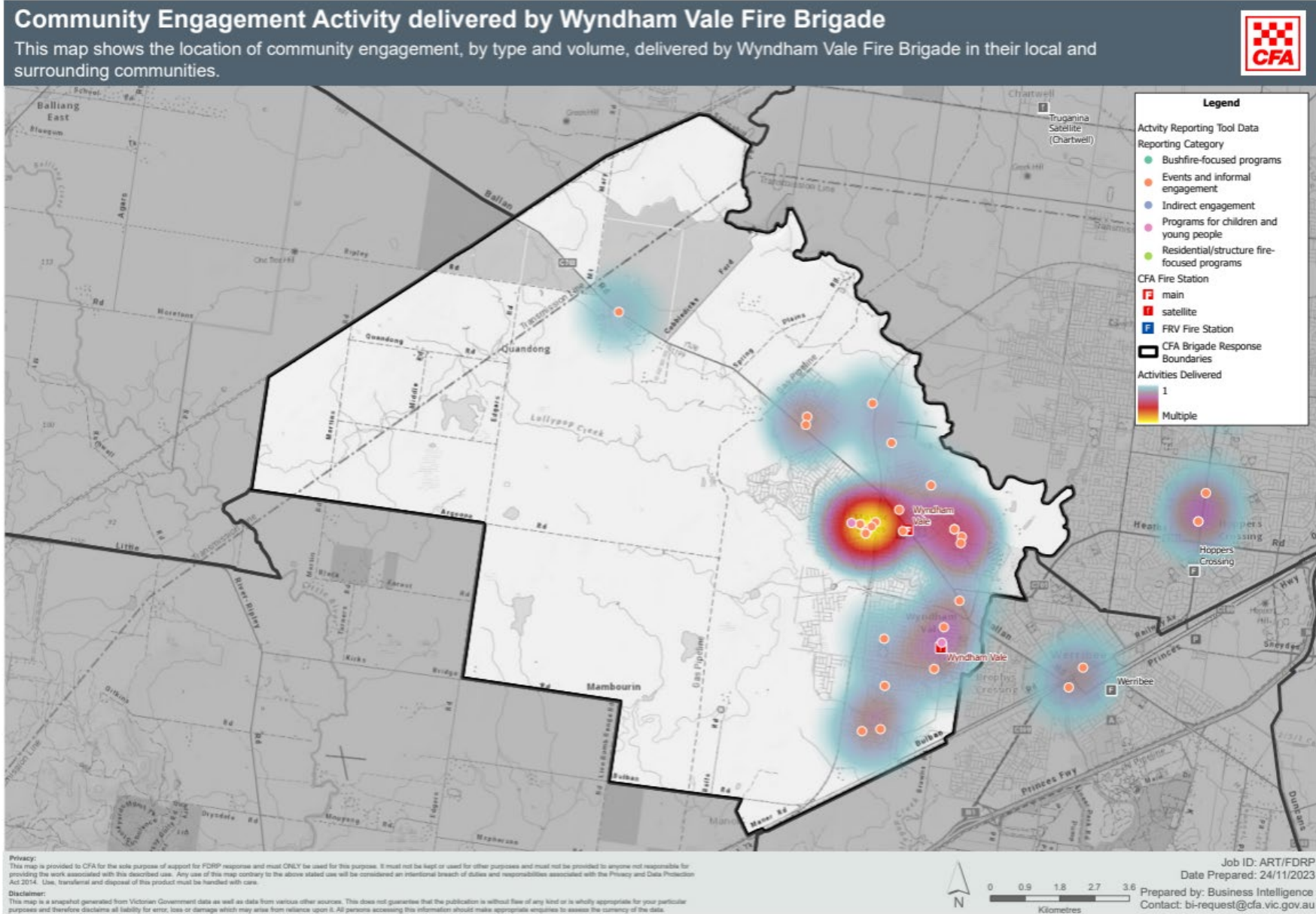


Figure 6: ABS land use areas and BMO

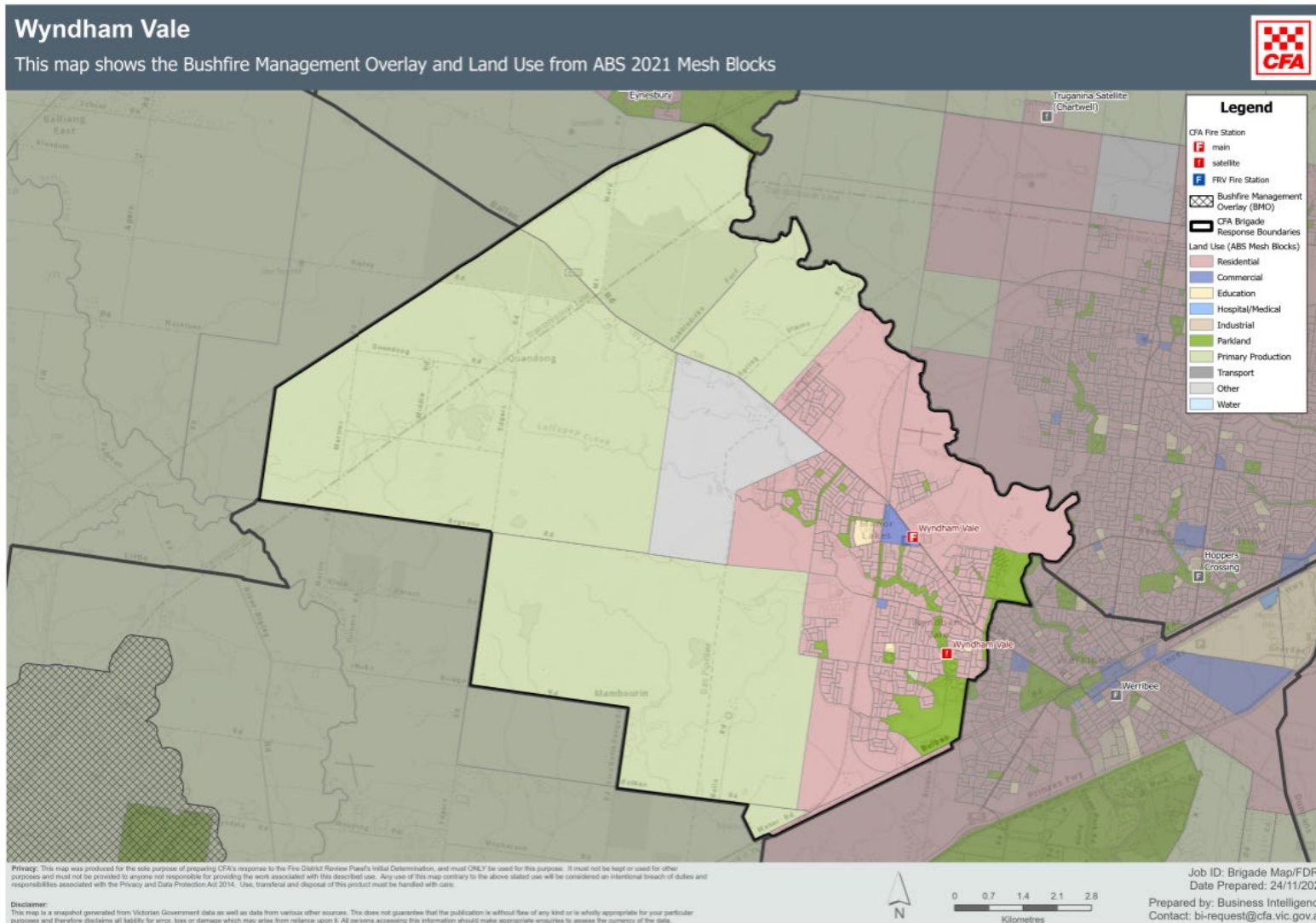


Figure 7: Public land management information

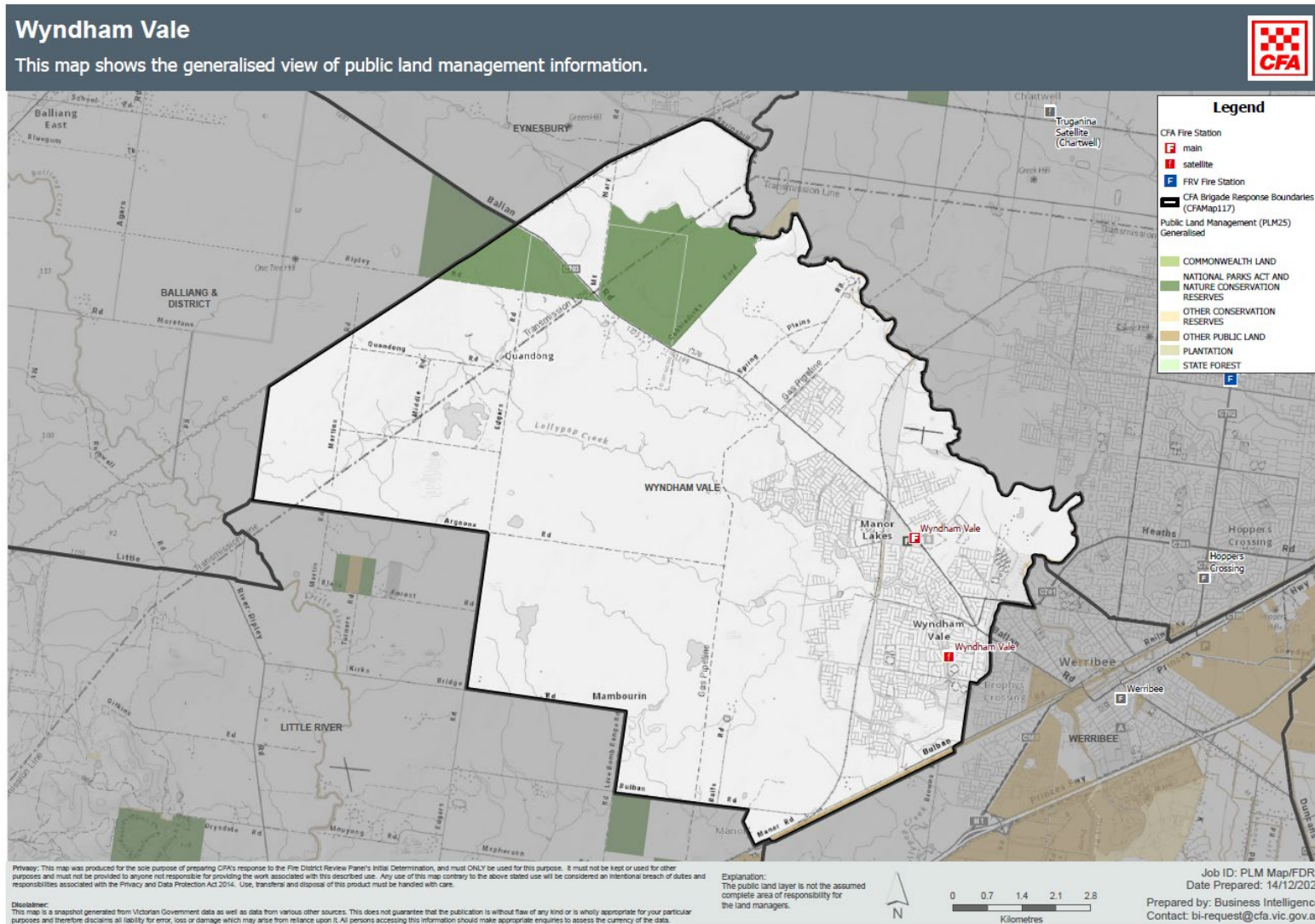


Figure 8: Planned growth zones from the planning scheme for Wyndham Vale

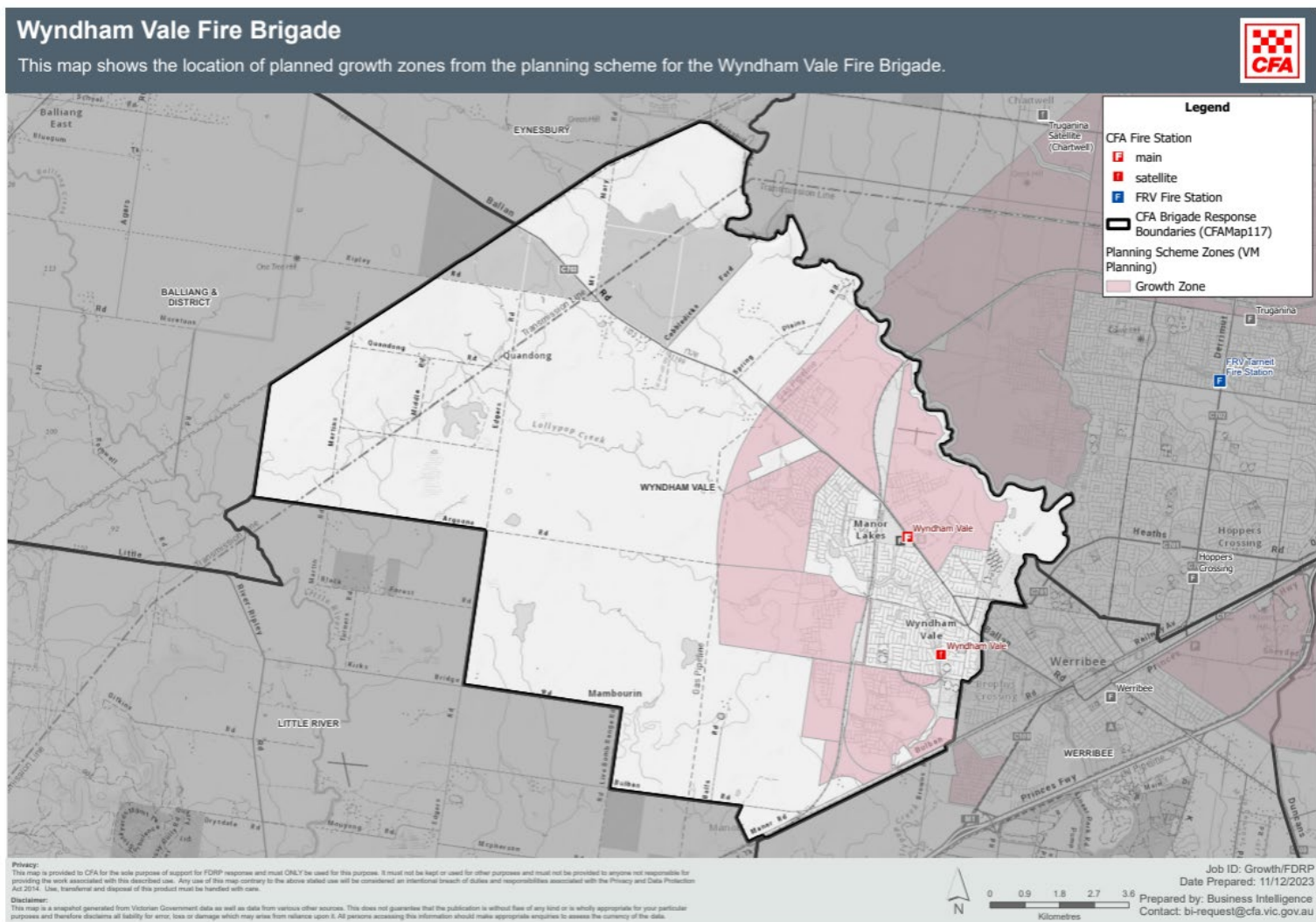


Figure 9: Wyndham Brigade incident count by type 1 July 2011 - 18 December 2023

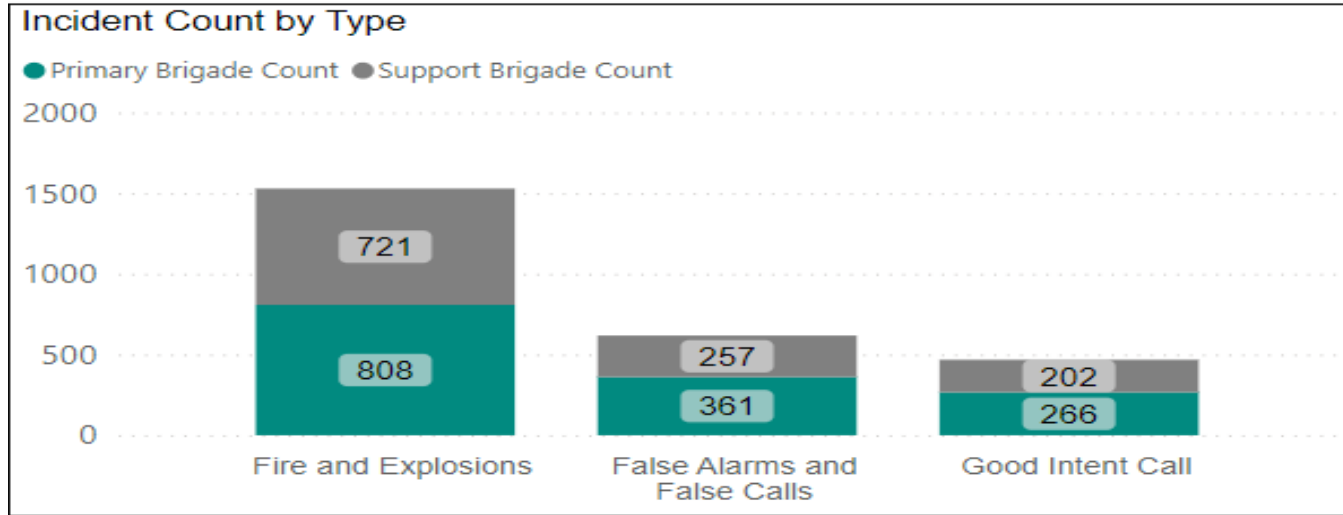


Figure 10: Wyndham Brigade incident count by month 1 July 2011 - 18 December 2023

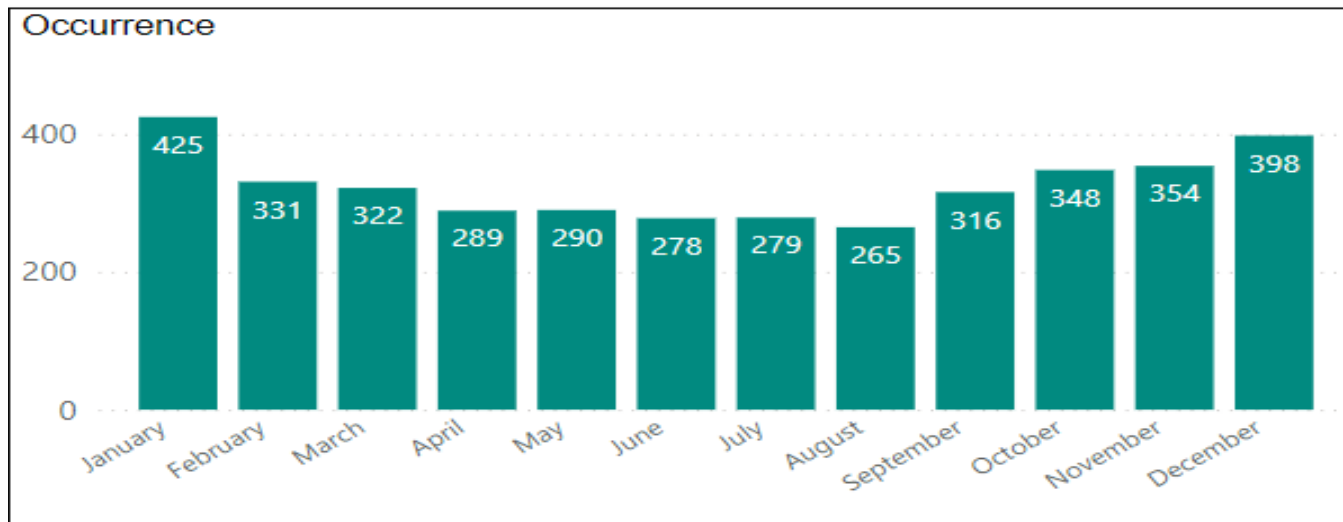


Figure 11: Wyndham Brigade incident count by type by year 2011 - 2023

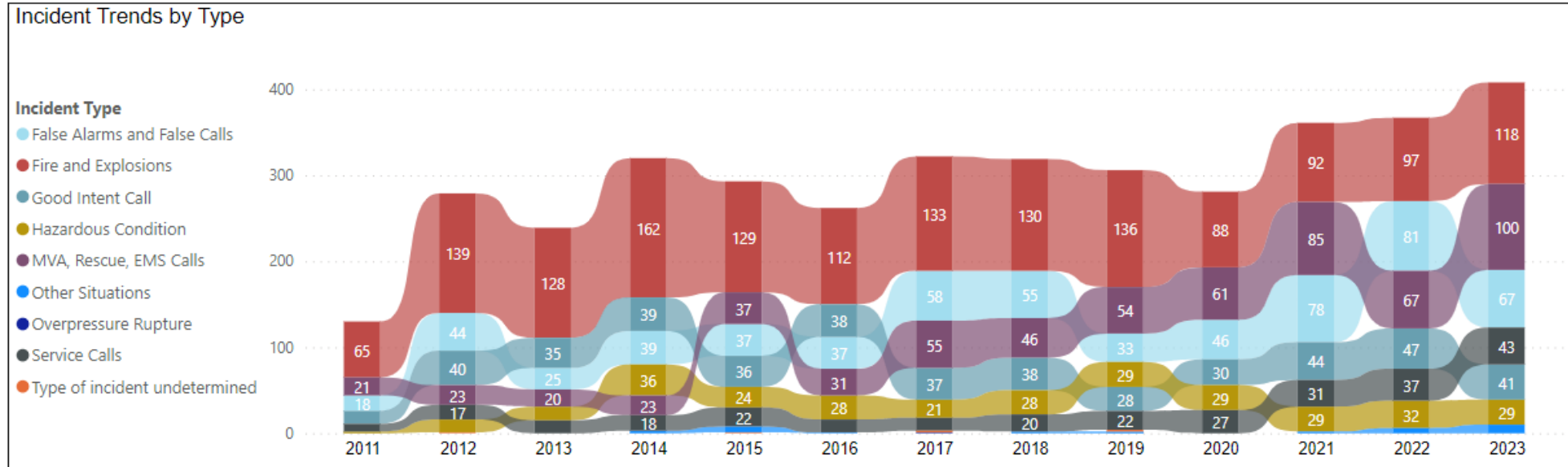


Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes

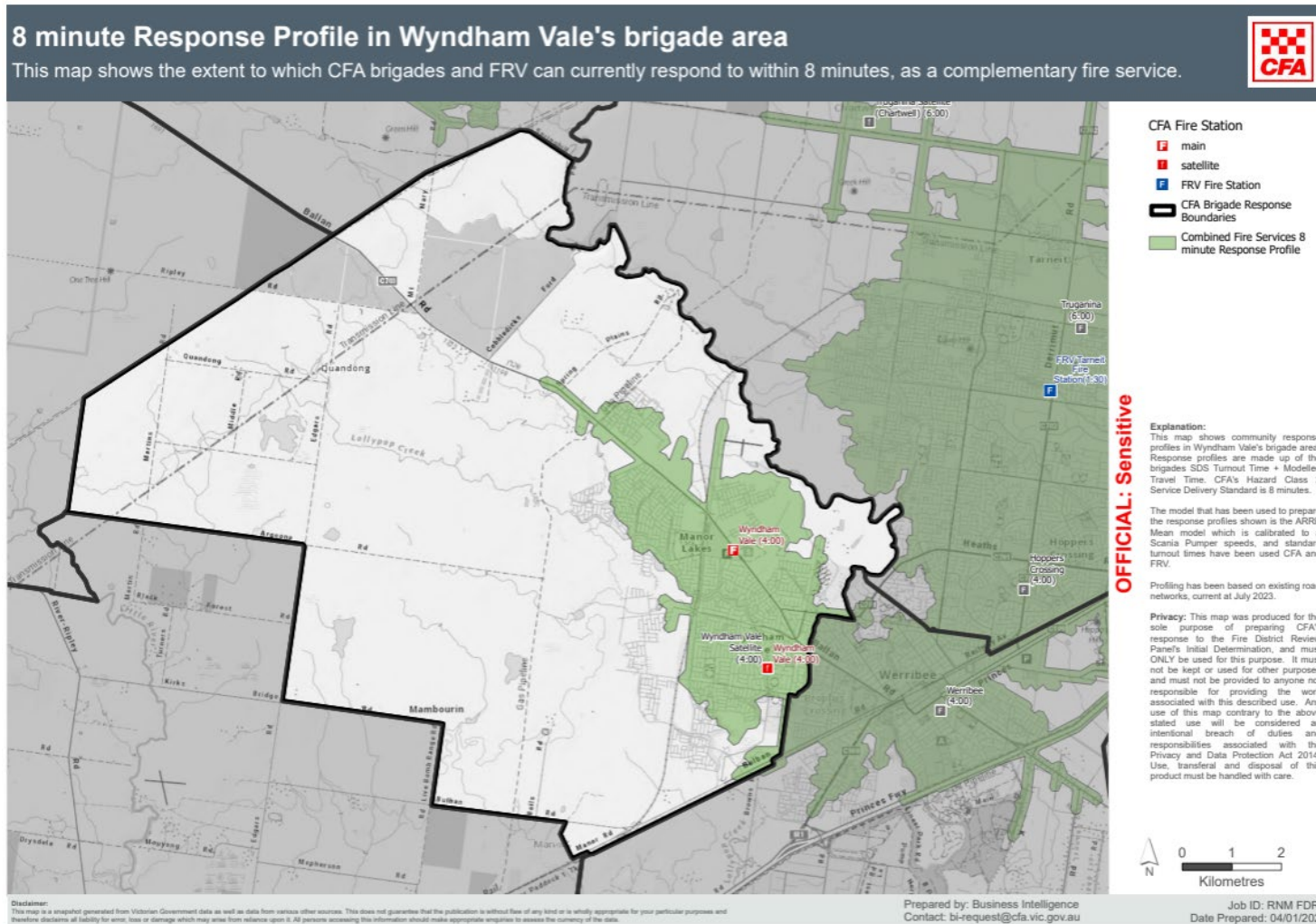
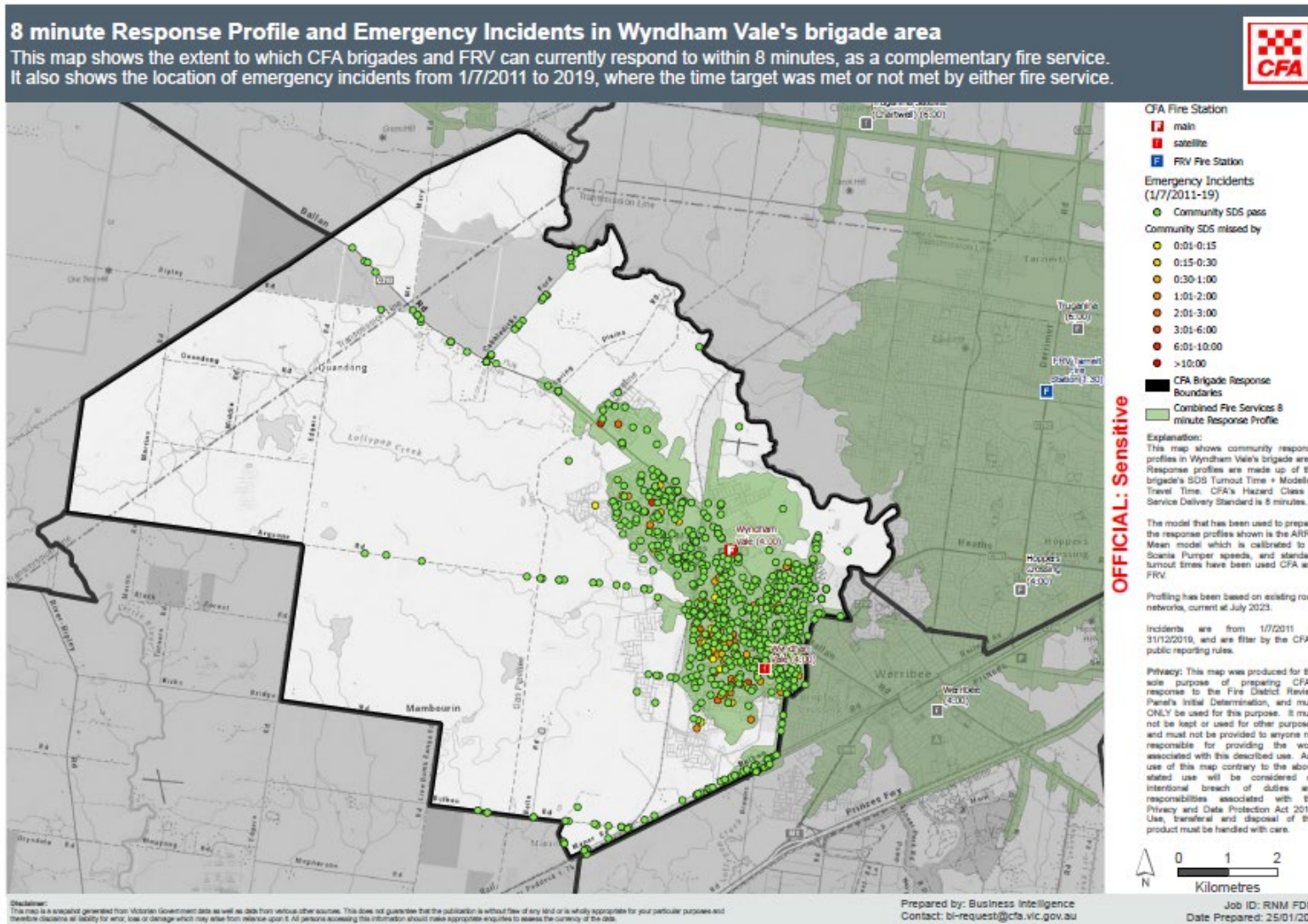


Figure 13: SDS compliance for the Wyndham Brigade SDA 2011 - 2019



Berwick Fire Brigade

1. About the Brigade

Established in 1925, the Berwick Fire Brigade is a Class 5 Brigade within the Casey Group located in District 8 of the South East Region. The Berwick Fire Brigade has a total membership of 49 volunteers (as at 31 December 2023).

1.1 History

Having started as a small group of passionate individuals, the Berwick Fire Brigade has grown significantly over the years. The dedicated team is committed to the mission of safeguarding its community and is well-equipped to tackle emergencies of various kinds. A noteworthy aspect of the Berwick Fire Brigade is its adaptability to the demands of modern times. Recognising the importance of daytime coverage, the Brigade introduced a business hub at the fire station which enables members to complete their paid work from the station during the day and be available for immediate turnout. The Brigade's proud legacy is one of selflessness, resilience, and an unyielding commitment to safeguarding lives and property.

1.2 Context

The Berwick Fire Brigade operates in an urban environment, intersected by major arterial roads. In the 2022-23 financial year it responded to 609 emergencies. Of these incidents many (164) related to providing support to Victoria Police in its role as the control agency for motor vehicle accidents. The other major categories were 155 False Alarm calls, 76 Fires and Explosions and 33 Hazardous Materials calls. When fires and other emergency events occur, the Brigade meets SDS in excess of 95% of the time (5% above target). The Brigade is accredited to provide Emergency Medical Response (EMR) – a joint program between CFA and AV aimed at increasing potentially life-saving medical assistance at the scene of emergency medical incidents.

The Brigade is actively involved in community engagement, predominantly through the Fire Safe Kids Program. It has a substantial online presence, and the Brigade actively engages with the community, spreading awareness about fire safety and emergency preparedness. The Brigade has a strong Community Engagement Plan, and an area of future focus is an increase in targeted work with at-risk and vulnerable community members.

2. Brigade Capability Snapshot

2.1 Membership

The Berwick Fire Brigade has a total membership of 49 members (10 females and 39 males). The Brigade has a good range of experienced and newer brigade members with the majority of the membership aged 50 years or younger. The proportion of the Berwick population that participates in community volunteering is 19%, on par with the Victorian state average (21%). This indicates an ongoing willingness of the community to volunteer, providing a good source of future volunteers for the Brigade.

2.2 Fire Appliances, other vehicles and specialist equipment

The Berwick Fire Brigade has four appliances and other vehicles (Table 1) to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Berwick Brigade alone.

Table 1: Fire appliances and vehicles available to the Berwick Brigade

Vehicle	Vehicle	Age
Pumper	Scania	12 years
Heavy Tanker	Hino	17 years
Field Command Vehicle	Ford	8 years
Passenger Car	Ford	5 years

Table 2: Vehicle specification

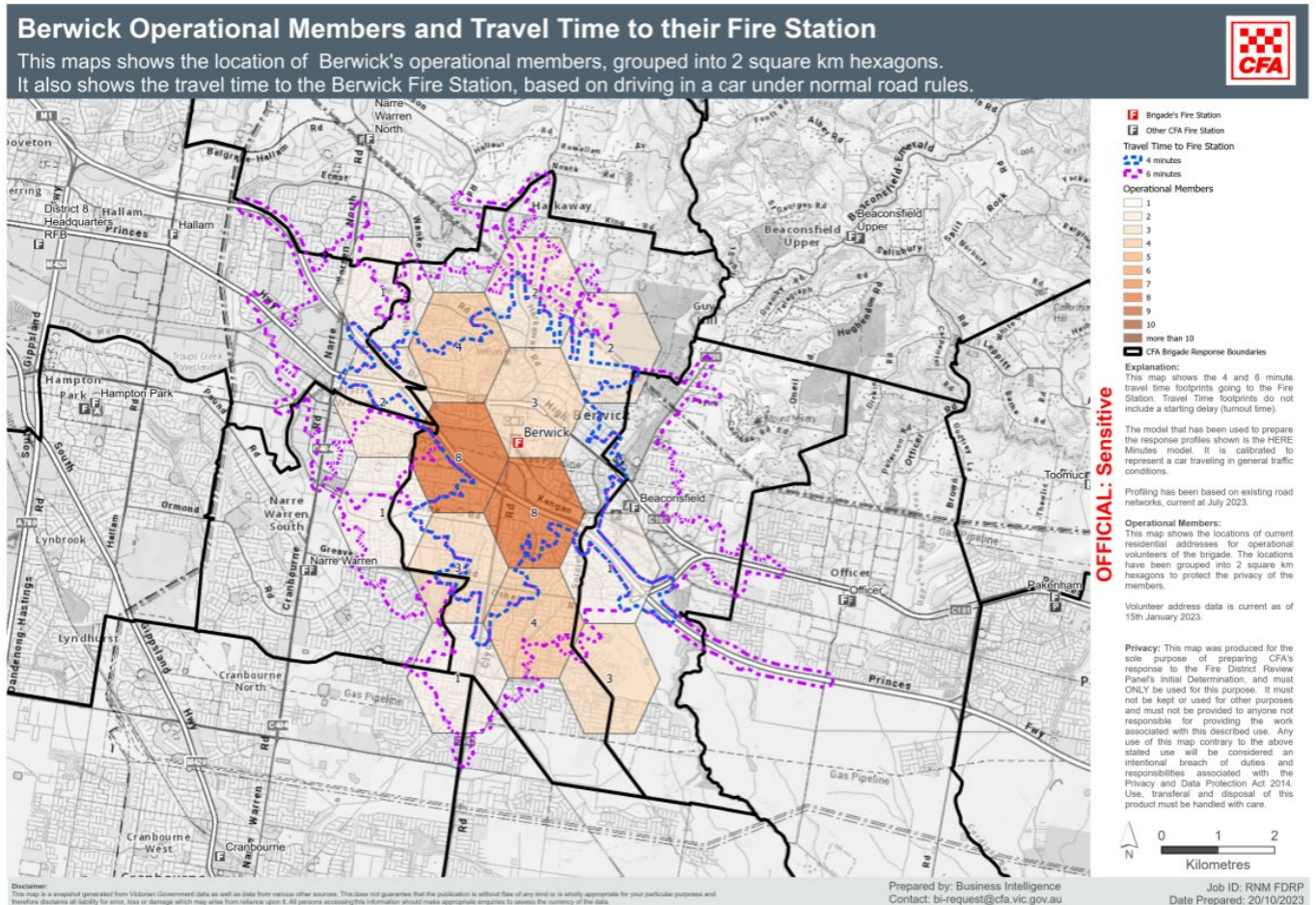
Pumper	Carrying five firefighters, 2,500 litres of water and 4,000 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, a portable gas detector, splash suit, EMR response equipment (including a defibrillator), fuse removal and electrical safety equipment, hoses and adaptors, salvage, monitors and foam equipment. Equipment to support safe working at heights is also carried.
Heavy Tanker	Carrying five firefighters 4,000 litres of water, 1,200 lpm pump, BA, hoses and adaptors, chainsaw and foam equipment.
Field Command Vehicle	A small transport vehicle designed for fireground operations for management personnel.

2.3 Station location

The station is located at Reserve St, Berwick. It was constructed in 1984 and renovated in 2011 to provide three single motor room bays. The station features a business hub facility enabling swifter response times and good co-ordination during emergencies.

Figure 1 shows the home location of operational members and the distance to travel to the fire station. This shows that the majority of operational members can reach the station within four minutes, which is a major contributing factor to the Brigade's operational performance exceeding service delivery standards.

Figure 1: Operational members location and travel times

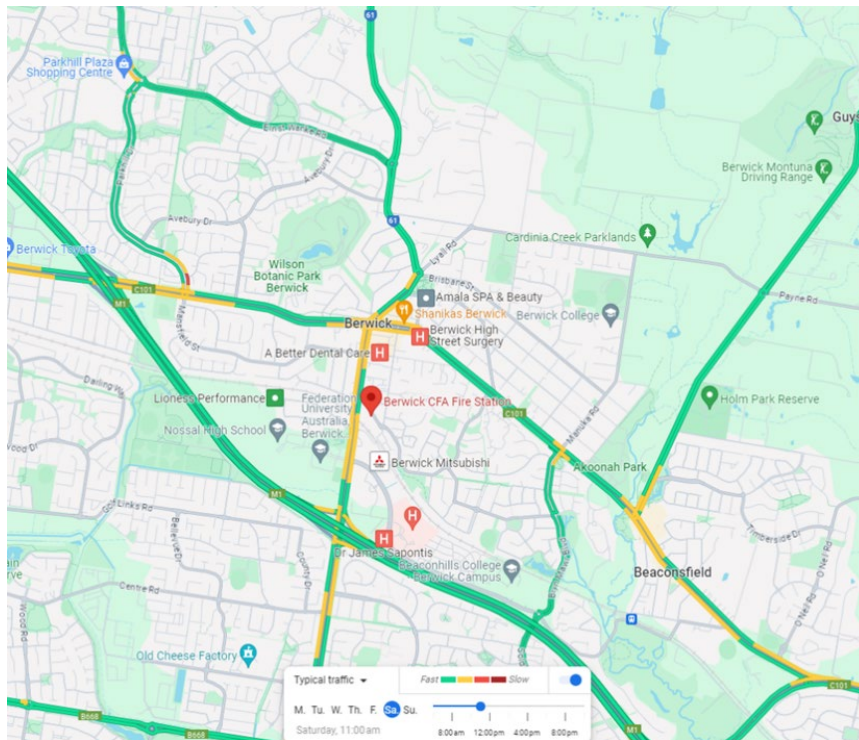


There is a small portion of the Berwick Fire Brigade SDA for which achievement of SDS is challenging, due to the station location and traffic conditions. The Berwick Brigade can maintain a high level of SDS into the future by reducing the response area to offset the impacts of changes in road networks, increased distances and increased traffic congestion that impede response times. This matter is discussed further below.

The location of a fire station is an important element in the successful operation of a volunteer fire brigade. Siting must strike a balance between being located to address service delivery needs but also being readily accessible for emergency responders.

An analysis has been undertaken of the day of week and the time of that day that most incidents for the Berwick Brigade occur (i.e., Saturdays at 11:00). As shown in Figure 2 below, the traffic flow at that time of day is good.

Figure 2: Typical traffic Saturdays 11:00am

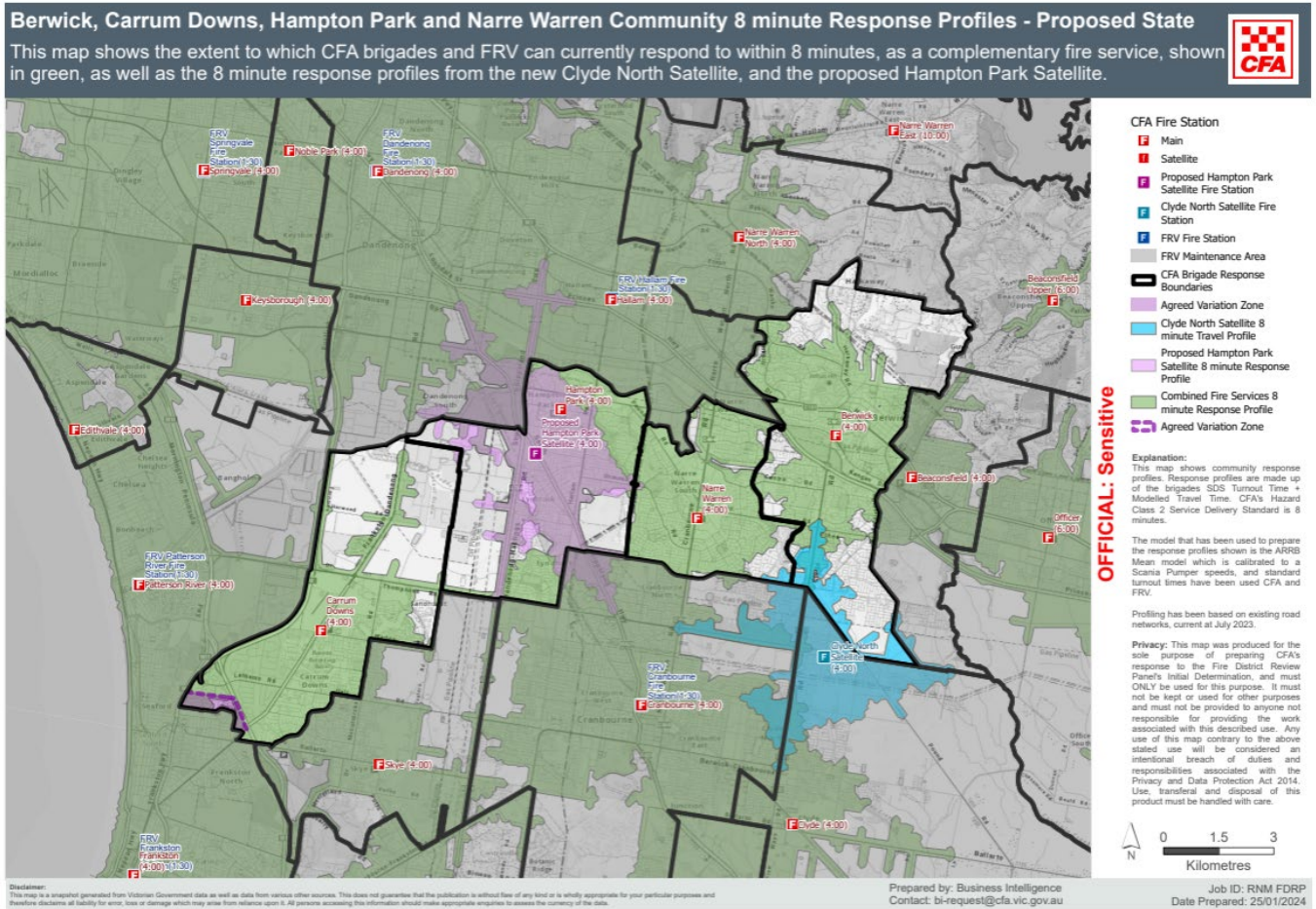


Clyde North

The area of Clyde North is an acknowledged service delivery gap and prior to Fire Services Reform CFA had planned and budgeted for the establishment of an integrated CFA volunteer and career fire station to address this and provide supplementary support to the surrounding CFA brigades. As part of the Reform process funding for this new station was transferred to FRV on 1 July 2020. The timeframe for the construction and operation of this proposed FRV fire station is to be determined. The area of response for this new station will need to be considered in the next FDRP review. There is growing interest from current CFA volunteers and residents in the Clyde North area in establishing a potential new CFA brigade. If deemed viable this would allow government and FRV to consider how best to re-allocate the proposed station funding within the FRV Fire District.

In recognition of the continued service delivery gap and the area remaining within the CAoV, arrangements have been made for volunteer service provision. Since late 2023 CFA's Clyde Fire Brigade operates from a Clyde North satellite fire station at 25 Gower Place, Clyde North. A tanker suitable for both urban and bushfire operations (and equipped with BA) responds from this location. It is anticipated that responses from this facility will mitigate SDS issues in the southern portion of the Berwick Brigade SDA and address a service delivery gap in Clyde North. The response profile of the satellite station is shown in Figure 3.

Figure 3: Response profile of Clyde North satellite station (shown in blue)



Risk Evaluation:

The Berwick Brigade can continue to maintain a high level of SDS into the future demonstrated by the ongoing exceedance of established SDS targets and introduction of business hub within the fire station. The small area in the southernmost portion of the SDA is a challenge for the Brigade due to the distance from the existing fire station.

Risk Mitigation Action:

CFA will maintain the satellite fire station operated by the Clyde Fire Brigade at Clyde North to mitigate SDS challenges to the southernmost portion of the Berwick SDA.

Agreed Variation Zone:

CFA recognises the proximity of the proposed Clyde North FRV Station and the potential ability for this proposed new FRV station to service the southernmost portion of the Berwick SDA. CFA considers a portion of the Berwick SDA can be agreed as a variation zone upon meeting of an appropriate trigger – the operation of the proposed FRV Clyde North Station (Figure 14). There is growing interest from current CFA volunteers and residents in the Clyde North area in establishing a potential new CFA brigade. If deemed viable this would allow government and FRV to consider how best to re-allocate the proposed station funding within the FRV Fire District.

2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only has use across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state's resources in both the CAoV and the FRV District.

The Safer Together Planned Burn Taskforce project is a statewide recruitment program which deploys available CFA volunteers to planned burns in need of personnel. Volunteers register with the Planned Burn Taskforce Program and are deployed to assist with planned burning when requested. They can come from a number of Districts to form up a single Taskforce for deployment. There is one member of the Berwick Fire Brigade who has opted to form part of the Taskforce.

2.5 Assistance to Fire Rescue Victoria

Figure 4 shows the total count of incidents (primary and support) that Berwick Fire Brigade attended in the FRV Fire District for each calendar year from 2010 to 2023. The Brigade has provided a notably increased level of support to FRV in the FRV Fire District since Reform.

Figure 4: Incident count and type of support provided in the FRV Fire District

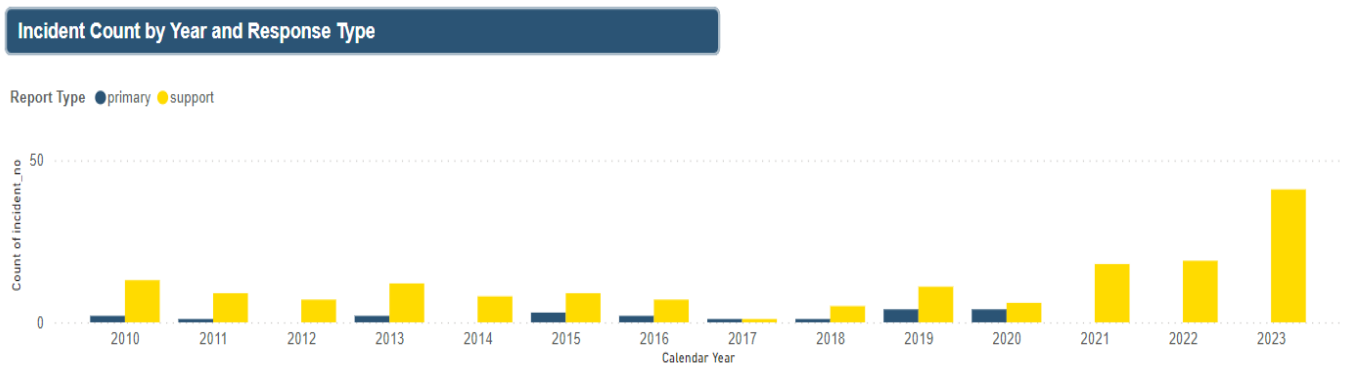
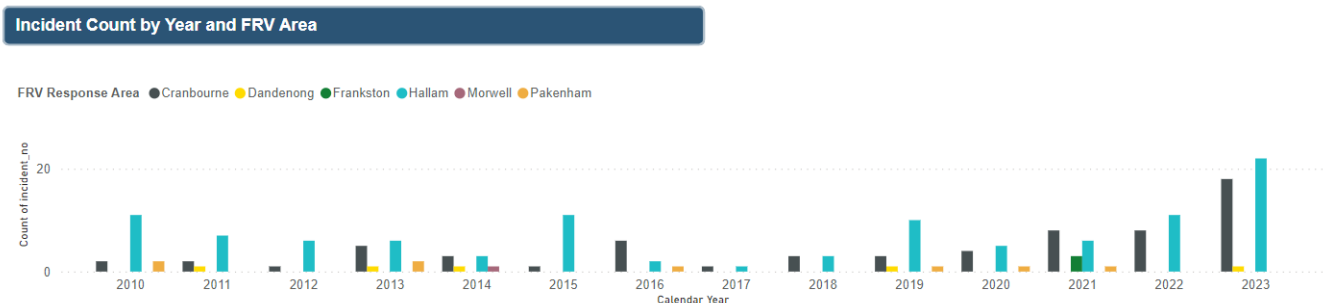


Figure 5 shows the count of incidents that Berwick Fire Brigade attended in the FRV Fire District. In the last two years, the majority of support provided was to FRV Hallam and Cranbourne.

Figure 5: Incident count and type of support provided in the FRV station footprint

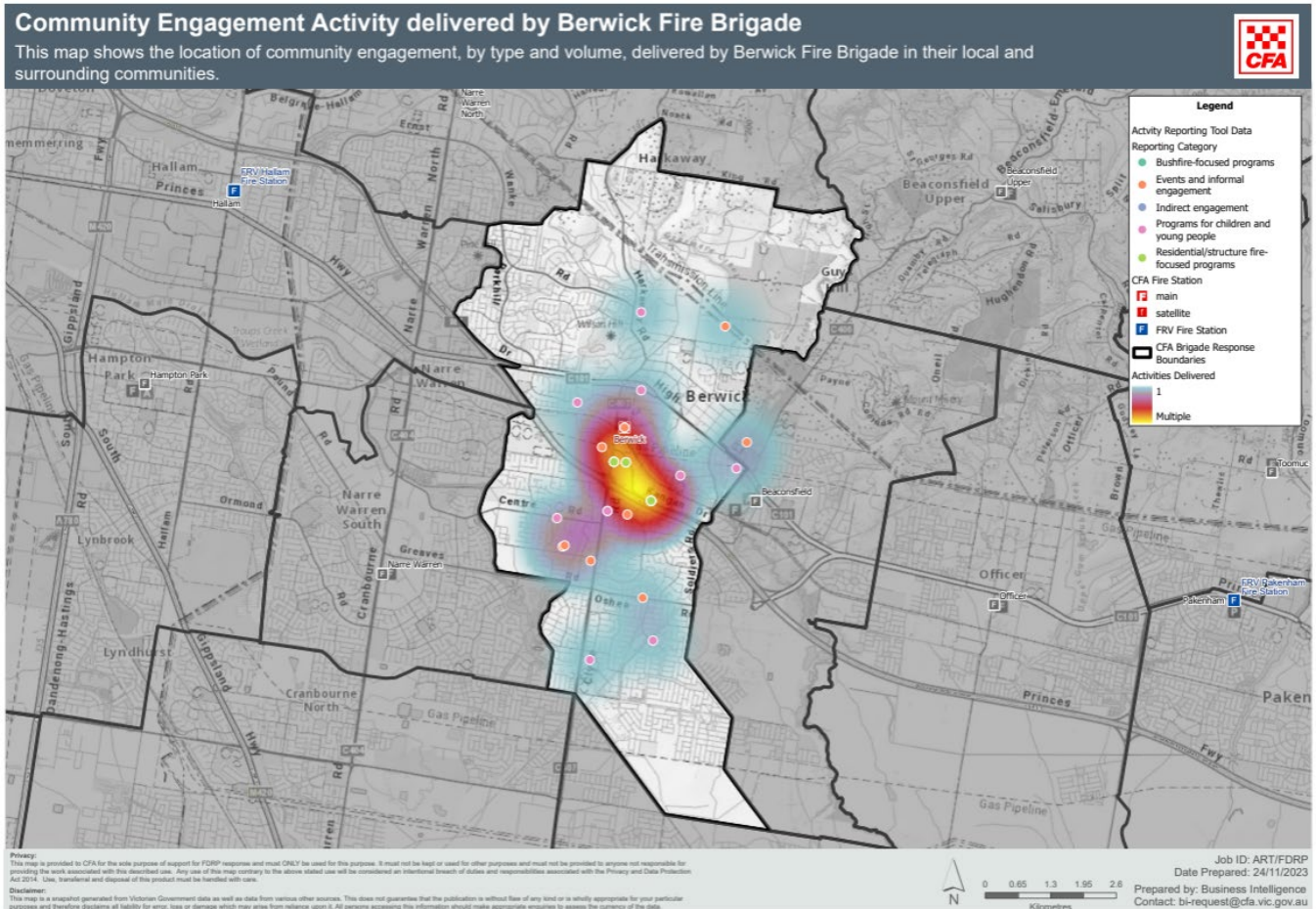


2.6 Community engagement activities

The Berwick Brigade works directly with the community to support regular prevention and preparedness activities including community fire safety messaging, school visits and direct intervention programs. This includes the Fire Safe Kids Program which is CFA's flagship education program for primary and pre-primary students.

In 2022, CFA implemented a new platform to allow brigades to centrally record community engagement activities undertaken by brigades to allow better understanding of community fire safety interventions. Brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of interventions. Figure 5 shows community safety interventions undertaken by the Berwick Fire Brigade as recorded in the ART system.

Figure 6: Community safety and intervention programs



3. Service Delivery Area Profile

The Berwick Fire Brigade SDA has a total area of 3,443.9 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the land uses as shown in Table 3.

Table 3: Berwick land use planning areas

Land use	Hectares	Percentage of Brigade Area
Commercial	63	1.8%
Education	194.9	5.7%
Hospital/Medical	17.1	0.5%
Industrial	16.9	0.5%
Other	471.6	13.7%
Parkland	222.2	6.5%
Primary Production	127.4	3.7%
Residential	2,299.9	66.8%
Transport	30.8	0.9%

While the FDRP supplementary report states “there are large areas of parkland and rural lifestyle properties in the north of the SRA”, parkland comprises only 6.5% of the Brigade SDA and primary production only 3.7%. A map showing the current land use planning uses and applicable mesh block is shown in Figure 7.

Figure 7: ABS land use areas and Bushfire Management Overlay

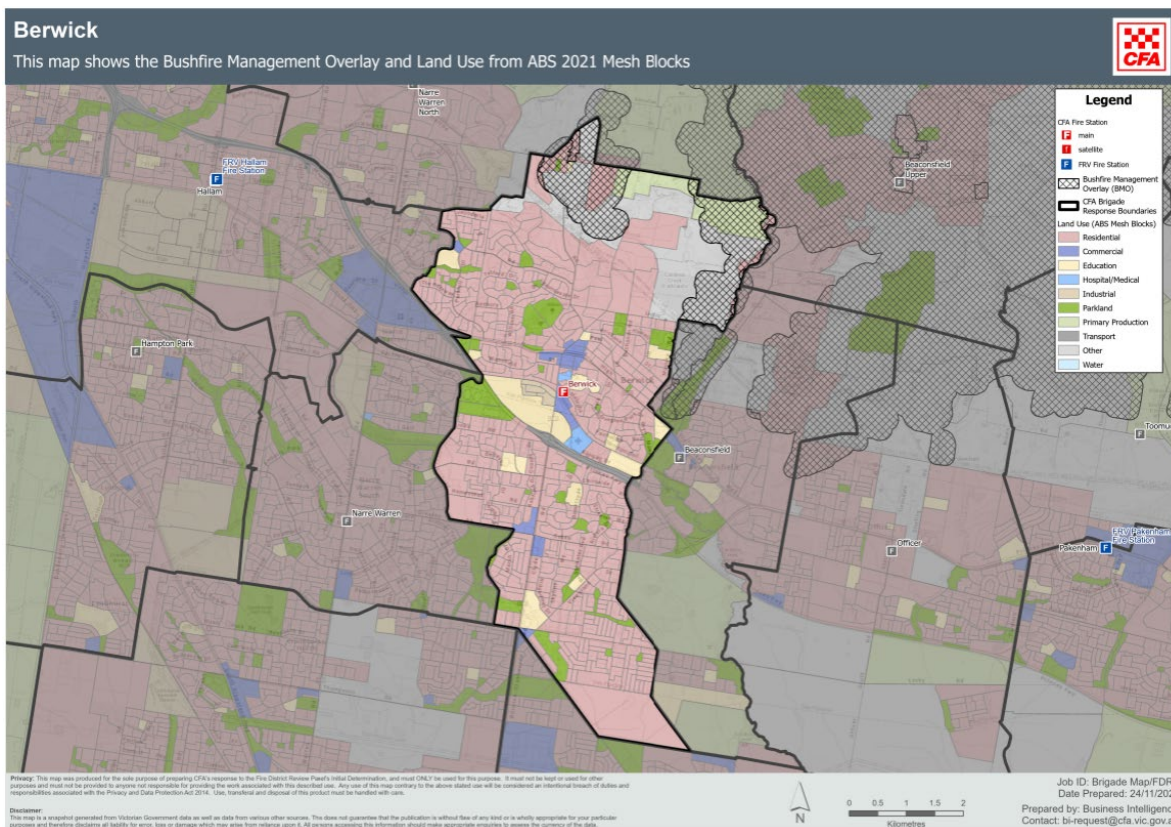
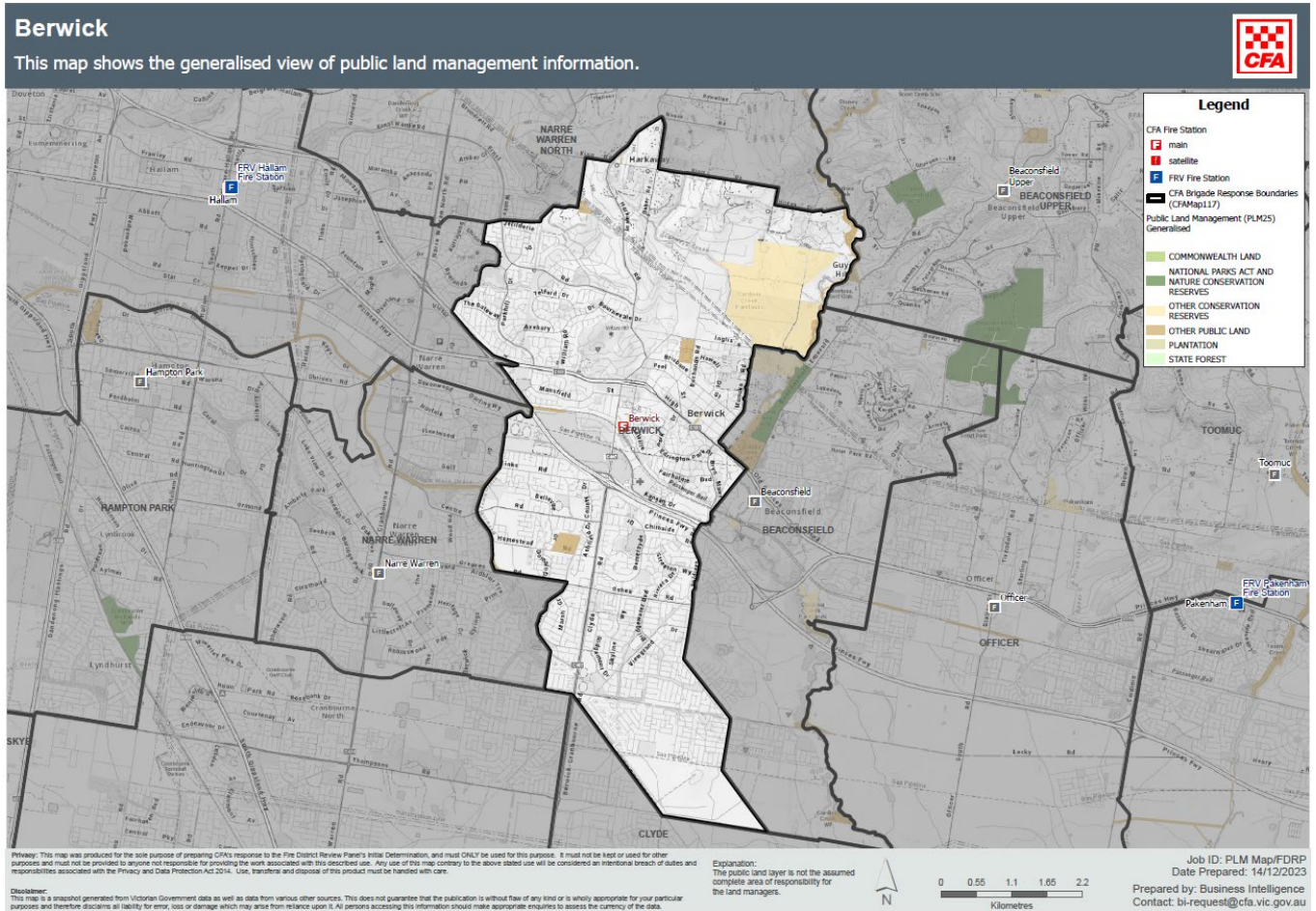


Figure 8: Public land management information



3.1 Growth zones

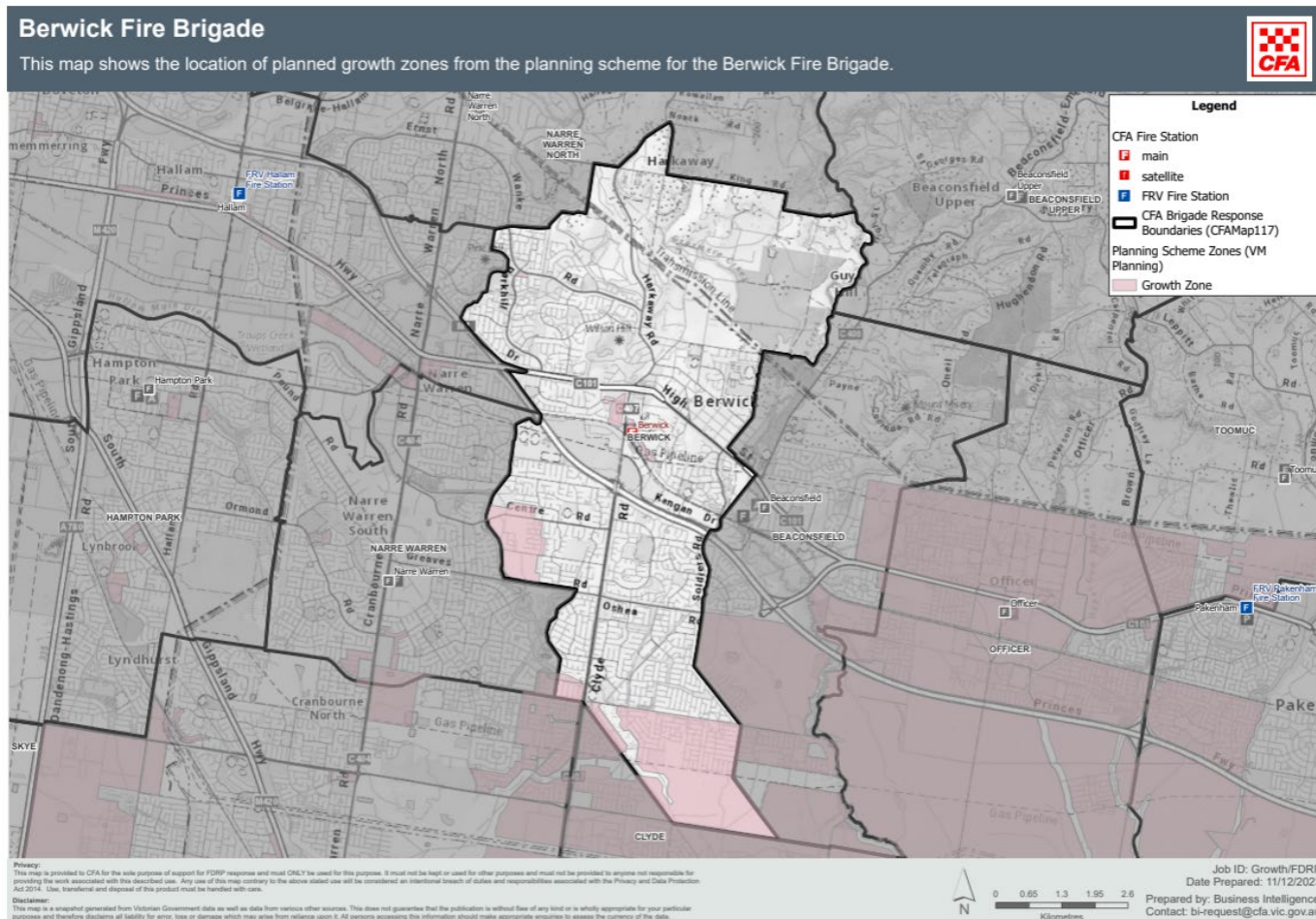
The Victorian Department of Transport and Planning’s planning scheme relevant to the Berwick Fire Brigade SDA has the following profile of planned growth and industrial growth zones.

Table 4: Urban growth areas

Total Brigade Area (Hectares)	Area (hectares) covered by Industrial Zones	Percentage covered by Industrial Zones	Area (hectares) covered by Growth Zones	Percentage covered by Growth Zones
3443	0	0%	395.42	11.48%

The planning scheme map is shown in Figure 8.

Figure 9: Planned growth zones from the planning scheme for Berwick



Risk Evaluation:

The Berwick Fire Brigade resource capability of a pumper and heavy tanker is considered sufficient to treat the current residential and industrial risk across the SDA.

Risk Mitigation Action:

As above, CFA will continue to operate the satellite station at Clyde North (CFA Clyde Brigade).

3.2 Bushfire Management Overlay

The Berwick Fire Brigade SDA has areas totaling 400.1 hectares (or 11.62%) defined as BMO (see Figure 7). The BMO applies to land that may be significantly affected by extreme bushfires. A planning permit is required for some types of development to ensure bushfire risk is considered and passive bushfire protection measures are in place to ensure resilience of the development without the intervention of fire services. The Berwick Brigade is well equipped to manage the risk presented by the BMO in its SDA given its equipment and trained personnel.

Risk Evaluation:

The bushfire response capability of the Berwick Fire Brigade, and the requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones mean that the BMO risk is sufficiently mitigated.

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population change of 5,489 or 10% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells).

For the total local government area (City of Casey) the forecast seven year population change is an increase of 79,547 or 23%.

ABS census data (2021) shows that there are 17,242 dwellings in the Berwick Brigade SDA. Of these dwellings, 22% are rental houses. As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair²⁴.

CFA and FRV have collaborated to create the Prevent – Detect – Escape Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people with a disability. There have been 135 community members undertake the Prevent – Detect – Escape Program in the Berwick Fire Brigade SDA.

Risk Evaluation:

There is a large proportion of the population within the Berwick Brigade SDA living in rented properties (22%). The mandated requirement for working (and verified) smoke alarms is anticipated to have contributed to the significantly low number of fire fatalities. Community engagement activities undertaken by the Berwick Fire Brigade allow for significant mitigation of risk elements identified in both residential fire and social disadvantage risk.

4. Service Delivery and Service Demand

4.1 Total demand

Figure 10 shows the total number of unique incident numbers attended by the Berwick Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response.

²⁴ <https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/keeping-the-property-safe/smoke-alarms-and-fire-safety#:~:text=The%20rental%20provider%20must%20ensure%20smoke%20alarms%3A%201,are%20repaired%20or%20replaced%20as%20an%20urgent%20repair.>

Figure 10: Berwick Brigade incident count by type 1 January 2010 - 18 December 2023

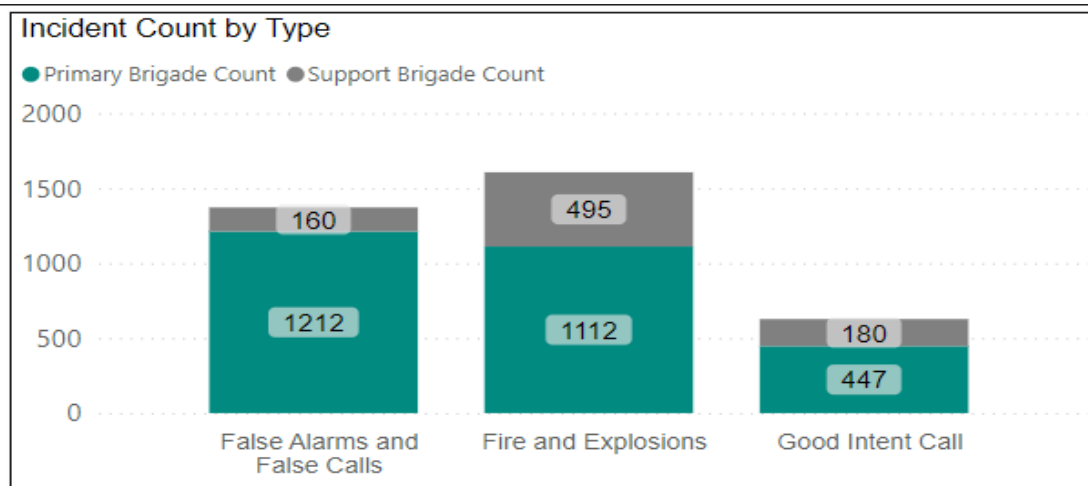


Figure 11 shows a count of the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels in summer and lower periods of activity in the winter months.

Figure 11: Berwick Brigade incident count by month 1 January 2010 - 18 December 2023

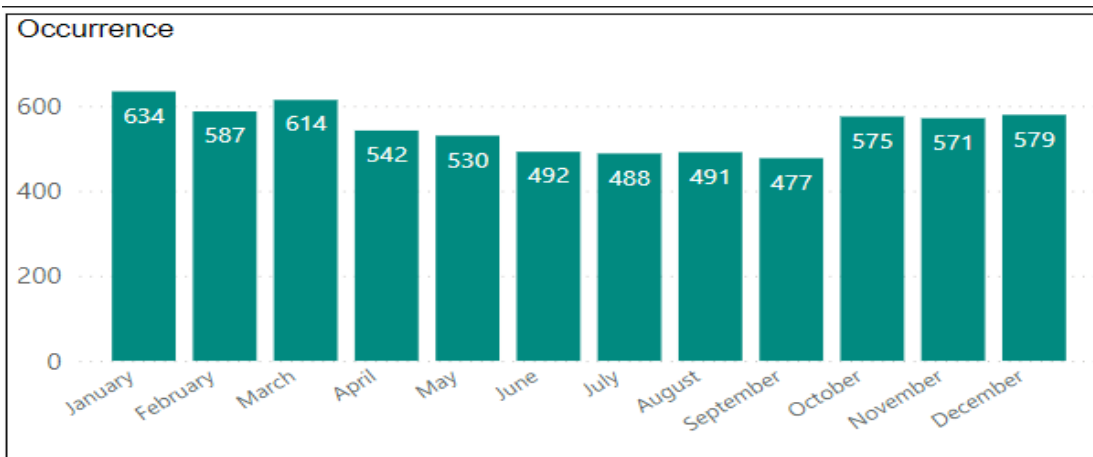
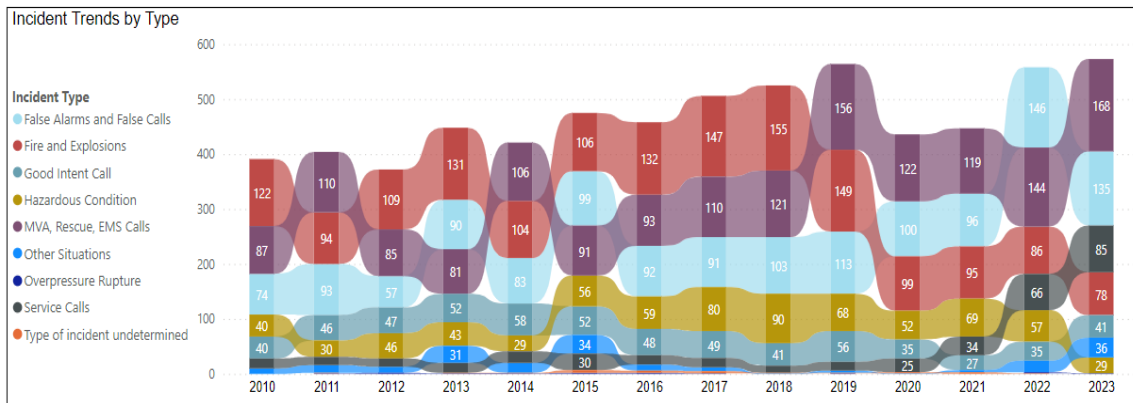


Figure 12 shows a count of all incident types between 1 January 2010 and 18 December 2023. It shows the drop in fire-related incidents and increase in Service Calls (support to other agencies) resulting from Fire Services Reform changes. An increase in False Alarms is observed in 2022 and an increase in Motor Vehicle Accident (MVA), Rescue and Emergency Medical Services (EMS) calls is observed in 2023.

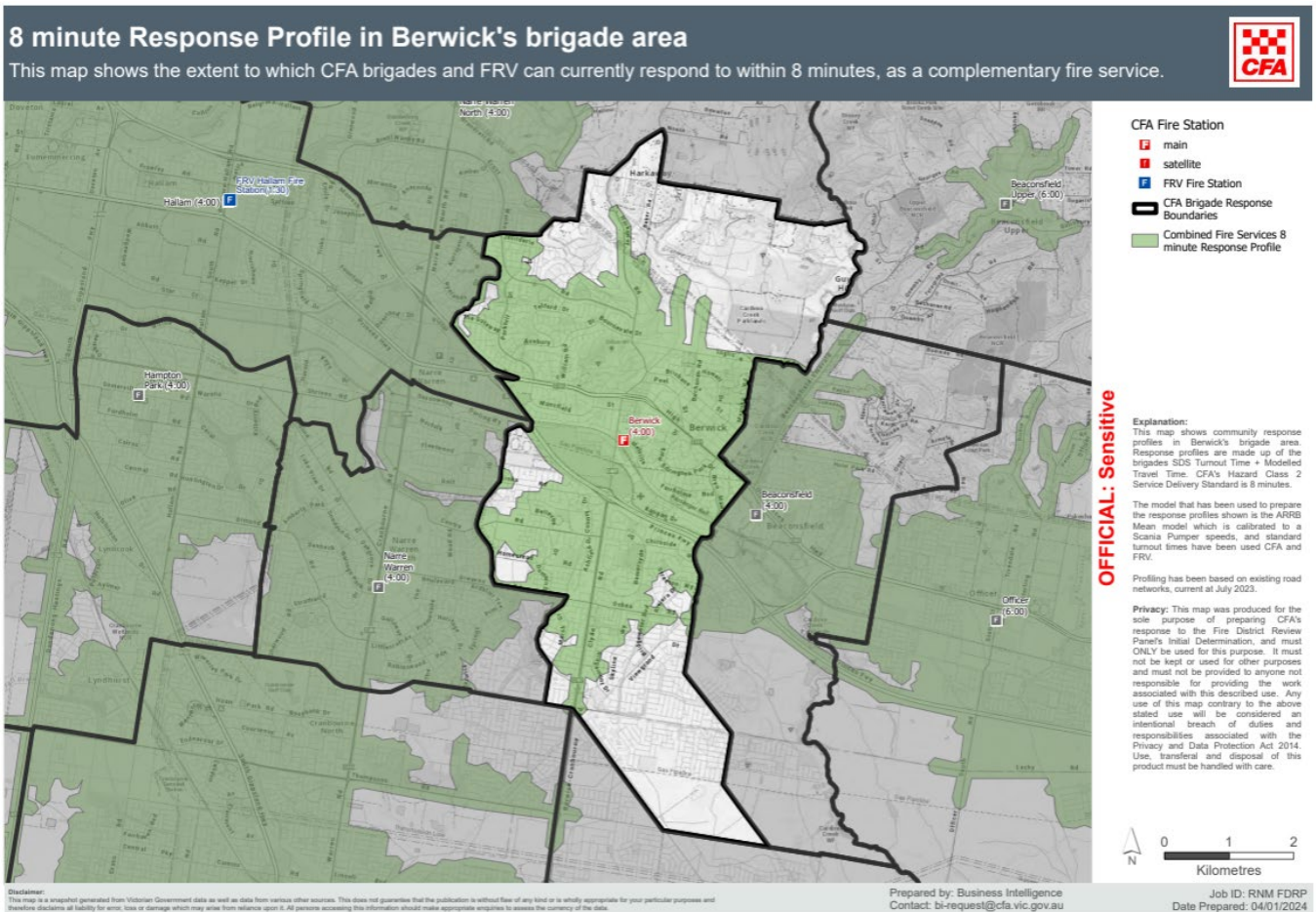
Figure 12: Berwick Brigade incident count by type by year 2010 - 2023



4.2 Service delivery standard

Figure 13 shows the percentage of road within the land use that can be serviced within eight minutes by the existing (CFA/FRV) complementary fire service. This shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the 8 minute to scene standard.

Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 71.69% of the road network in the Residential land use
- 100% of the road network in the Hospital/Medical land use
- 99.7% of the road network in the Commercial land use
- 100% of the road network in the Industrial land
- 89.25% of the road network in the Education land use
- 57.58% of the road network in the Parkland land use
- 32.41% of the road network in the Other land use
- 100% of the road network in the Transport land use
- 0% of the road network in the Primary Production land use.

The primary production land comprises a very small proportion (3.7%) of the SDA.

Table 5 shows the historical SDS compliance for the Berwick Brigade. In terms of the data set upon which the Panel’s initial determination was based:

- from 1 January 2010 to 31 December 2019 there were 2,219 emergency incidents within the Berwick Brigade SDA
- fire services response to emergency incidents was 95.18% compliant with SDS, above the target of 90%
- for the 107 incidents where SDS was not met over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (51%) were missed by 60 seconds or less.

Table 5: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
14 (13.08%)	16 (14.95%)	25 (23.36%)	29 (27.10%)	14 (13.08%)	6 (5.61%)	1 (0.93%)	2 (1.87%)

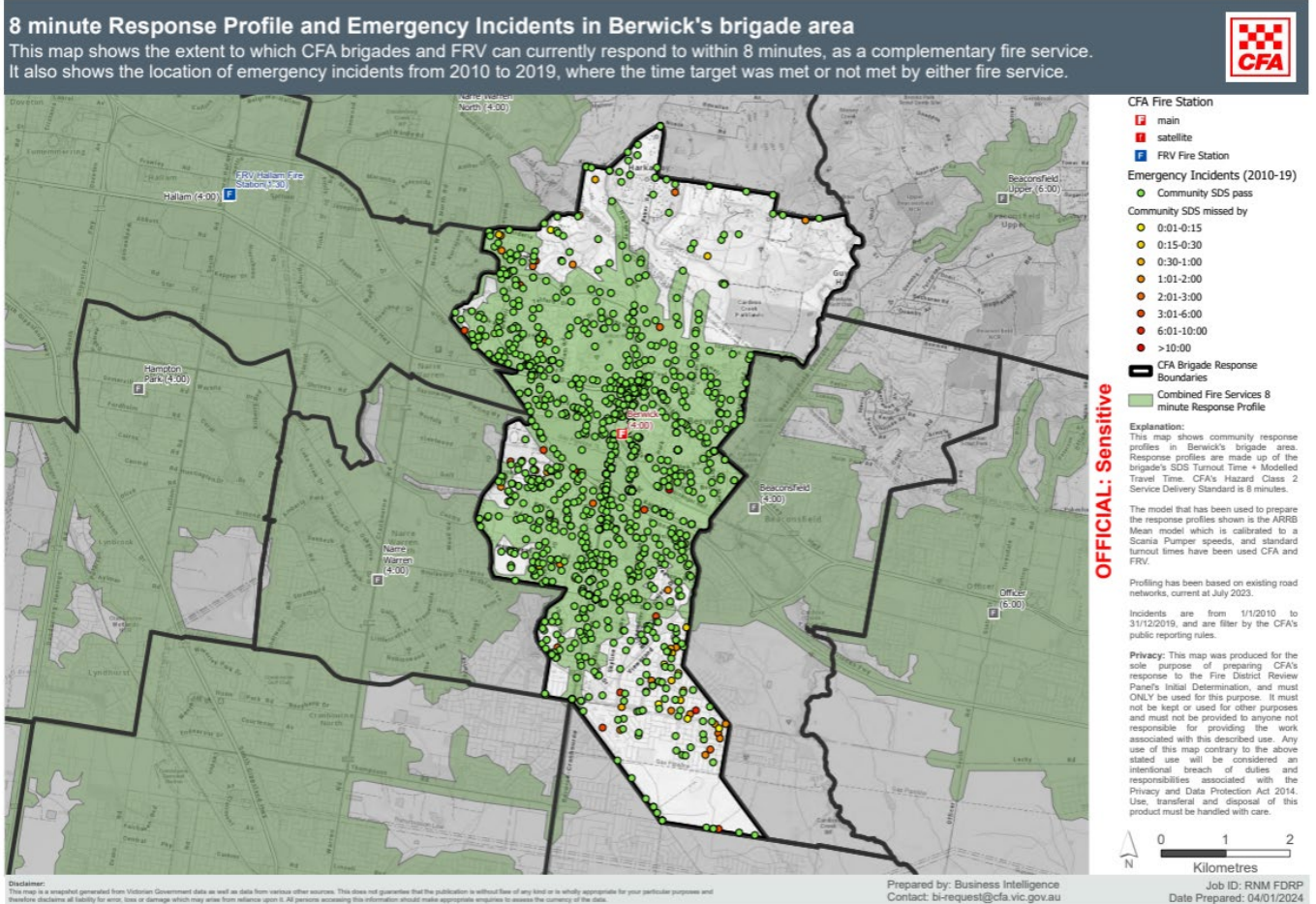
More recent SDS compliance data for the Berwick Fire Brigade shows:

- from 1 January 2020 to 30 November 2023 there were 857 emergency incidents within the Berwick Brigade SDA
- fire services response to emergency incidents was 96.3% compliant with SDS, above the target of 90% and an improvement from the FDRP data reference period
- for the 32 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that SDS was missed. Many (41%) were missed by 60 seconds or less.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
4 (12.50%)	4 (12.50%)	5 (15.63%)	11 (34.38%)	4 (12.50%)	3 (9.38%)	0 (0%)	1 (3.13%)

Figure 14: SDS compliance for the Berwick Brigade SDA 2010 - 2019



Risk Evaluation:

The Berwick Fire Brigade meets the Service Delivery Standard in excess of 96% of the time, providing a high quality service to the community. The Berwick Brigade has improved its SDS performance since the FDRP data reference period. The small area in the southernmost portion of the SDA is a challenge for the Brigade due to the distance from the existing fire station.

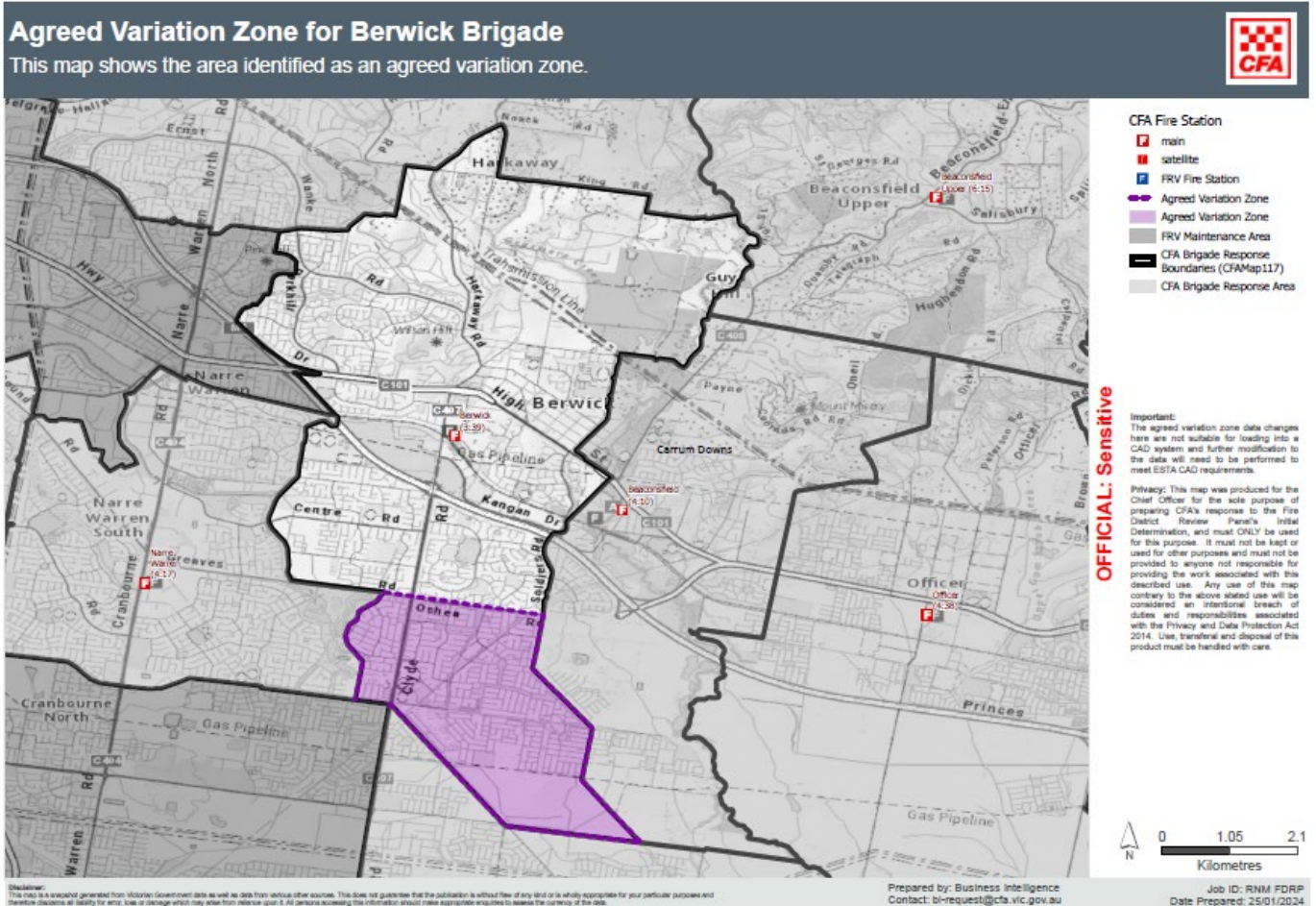
Risk Mitigation Action:

CFA will maintain the satellite fire station operated by the Clyde Fire Brigade at Clyde North to mitigate SDS challenges to the southernmost portion of the Berwick SDA.

Agreed Variation Zone:

CFA recognises the proximity of the proposed Clyde North FRV Station and the potential ability for this proposed new FRV station to service the southernmost portion of the Berwick SDA. CFA considers a portion of the Berwick SDA can be agreed as a variation zone upon meeting of an appropriate trigger – the operation of the proposed FRV Clyde North Station (Figure 14). There is growing interest from current CFA volunteers and residents in the Clyde North area in establishing a potential new CFA brigade. If deemed viable this would allow government and FRV to consider how best to re-allocate the proposed station funding within the FRV Fire District.

Figure 15: Agreed variation zone



4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Berwick SDA from 2010 to 2023 has had a total of building/structure fires requiring extinguishment.

Table 7: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
13	10	7	13	6	5	14	20	14	8	9	6	14	5	144

An analysis of preventable fire fatalities associated with these 144 building/structure fires has identified only one preventable fatality (in 2012). The Berwick Brigade met SDS for this incident, responding in less than eight minutes. The structure (a garage) was 60% involved by the fire on the Brigade's arrival. A smoke alarm was reported to be fitted but it was undetermined whether it was operational.

In the Berwick Brigade SDA there has been no non-preventable fire fatalities (homicides, suicides, deliberate) since 2010.

Table 8: Non-preventable fatalities 2010 to 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The Berwick Brigade responded to one non-preventable fatality that was the result of a medical incident (in 2010) and one fatality as a result of a motor vehicle accident (in 2017).

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.

Risk Evaluation:

CFA is committed to protecting life and property and aspires to have no casualties or fatalities as a result of fire within its jurisdiction. The incident that tragically led to one fire fatality that met the definition of a preventable death in the Berwick Fire Brigade SDA in 2012 was attended to within SDS.

Table 9: Berwick fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	11 of 13	The Berwick Fire Brigade meets the SDS in excess of the 90% target, providing a high quality service to the community. Berwick Fire Brigade has improved its SDS performance since the FDRP data reference period. The small area in the southernmost portion of the SDA is a challenge for the Brigade due to the distance from the existing fire station	Continue to operate the satellite station at Clyde North (CFA Clyde Brigade). Agreed Variation Zone: CFA recognises the proximity of the proposed Clyde North FRV Station and the potential ability for this proposed FRV station to service the southernmost portion of the Berwick SDA. CFA considers it appropriate that a portion of the Berwick SDA can be agreed as a variation zone upon meeting of an appropriate trigger (Figure 14). The operation of the proposed FRV Clyde North Station is considered the most appropriate trigger.
Bushfire Management Overlay %	5 of 13	The bushfire response capability of the Berwick Fire Brigade, and the requirement for mandated passive bushfire protection measures for developed assets within the BMO and buffer zones mean that the BMO risk is sufficiently mitigated.	
Total Demand	4 of 13	The trend in demand is relatively stable, with slightly higher activity levels in summer and lower periods of activity in the winter months. The Berwick Fire Brigade meets the SDS in excess of 96% of the time, providing a high quality service to the community.	

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Victorian Planning Authority %	6 of 13	The Berwick Fire Brigade resource capability of a pumper and heavy tanker is considered sufficient to treat the current residential and industrial risk across the SDA.	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio (VCTC)	11 of 13	See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.	
Building fire casualty to total building fire ratio (BCTC)	12 of 13	The one preventable fatality that resulted from a structure fire incident was tragic. The Berwick Brigade attended the incident within SDS. It is undetermined whether the property had an operational smoke alarm.	CFA will continue with its community education programs including fire safety messaging, targeted work with vulnerable people and the Smoke Alarm Installation Program.
Population projections	2 of 13	The City of Casey's forecast seven year population change is an increase of 79,547 or 23%. This growth could necessitate the need to consider a different service model for this SDA in the future.	

Table 10: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Wendouree	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Operational members location and travel times

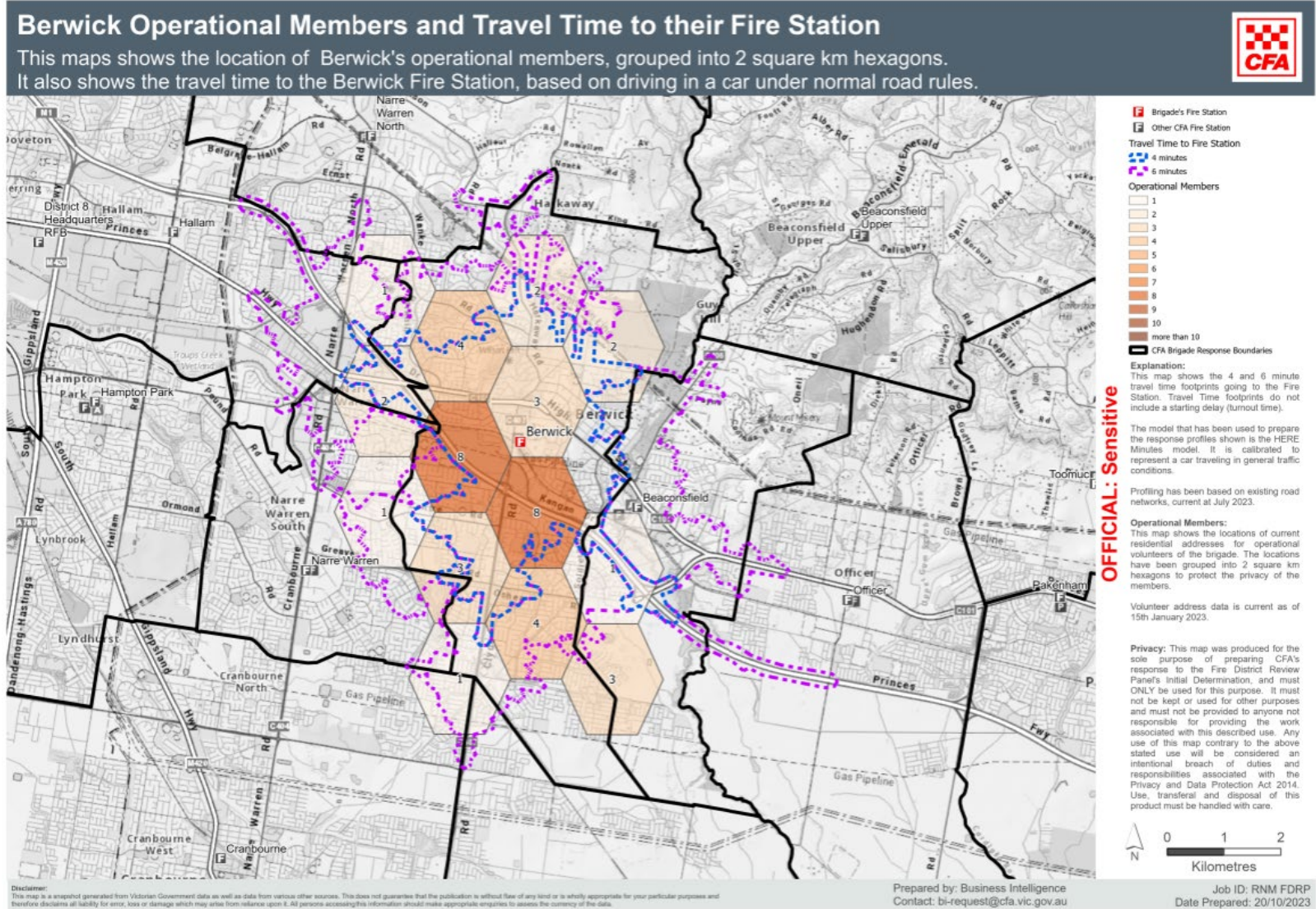


Figure 2: Typical traffic Saturdays 11:00am

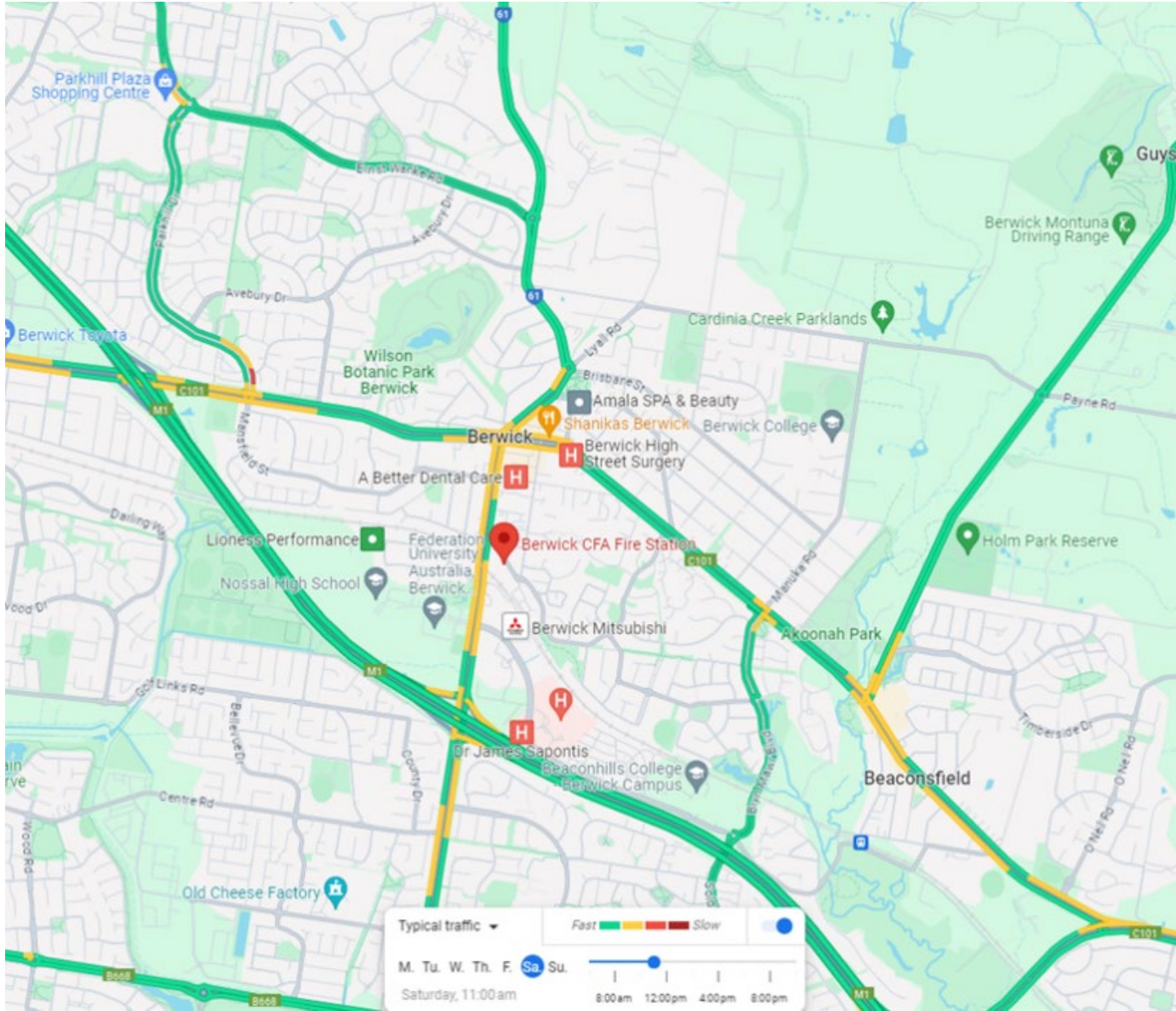


Figure 3: Response profile of Clyde North satellite station (shown in blue)

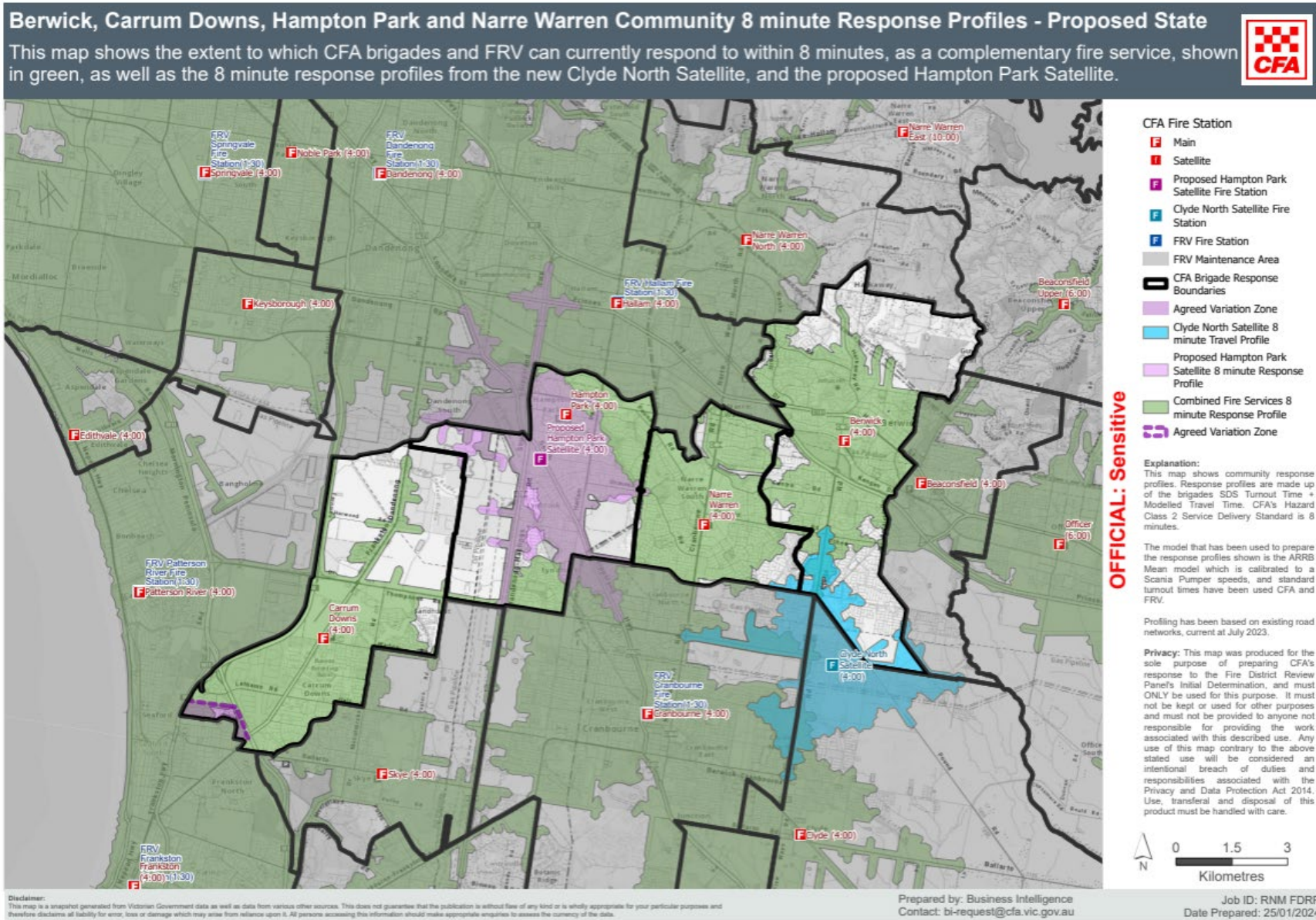


Figure 4: Incident count and type of support provided in the FRV Fire District

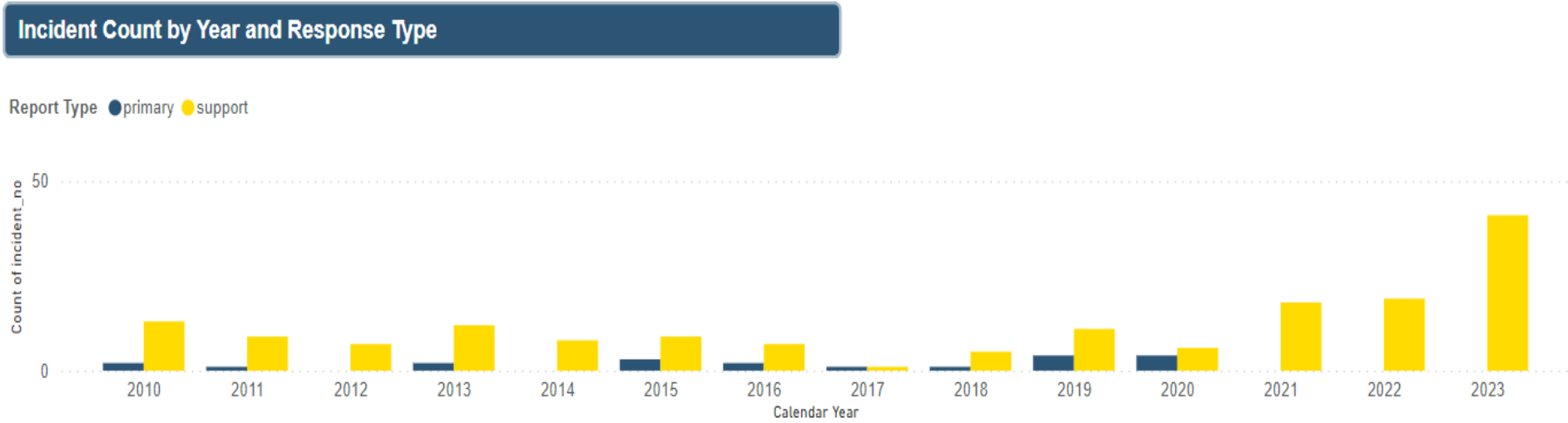


Figure 5: Incident count and type of support provided in the FRV station footprint

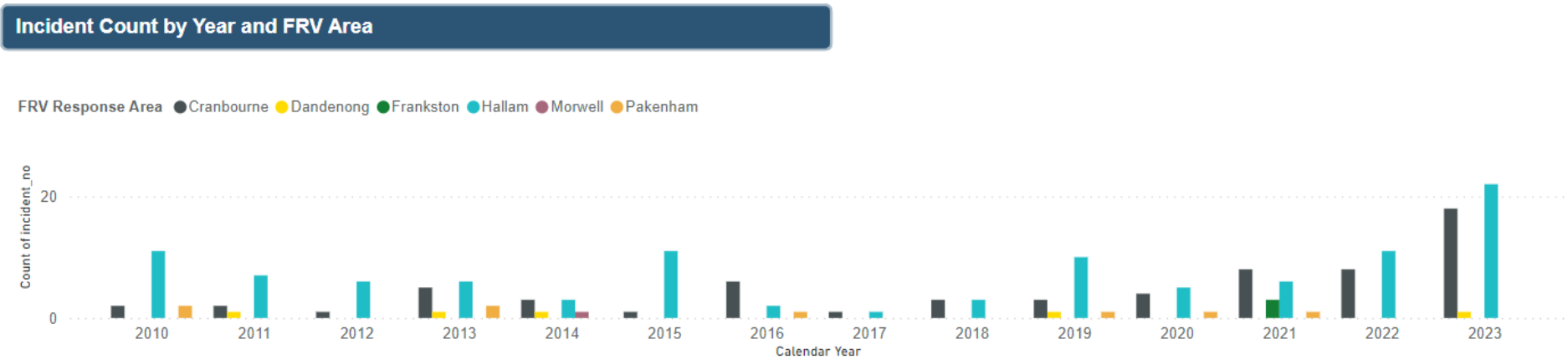


Figure 6: Community safety and intervention programs

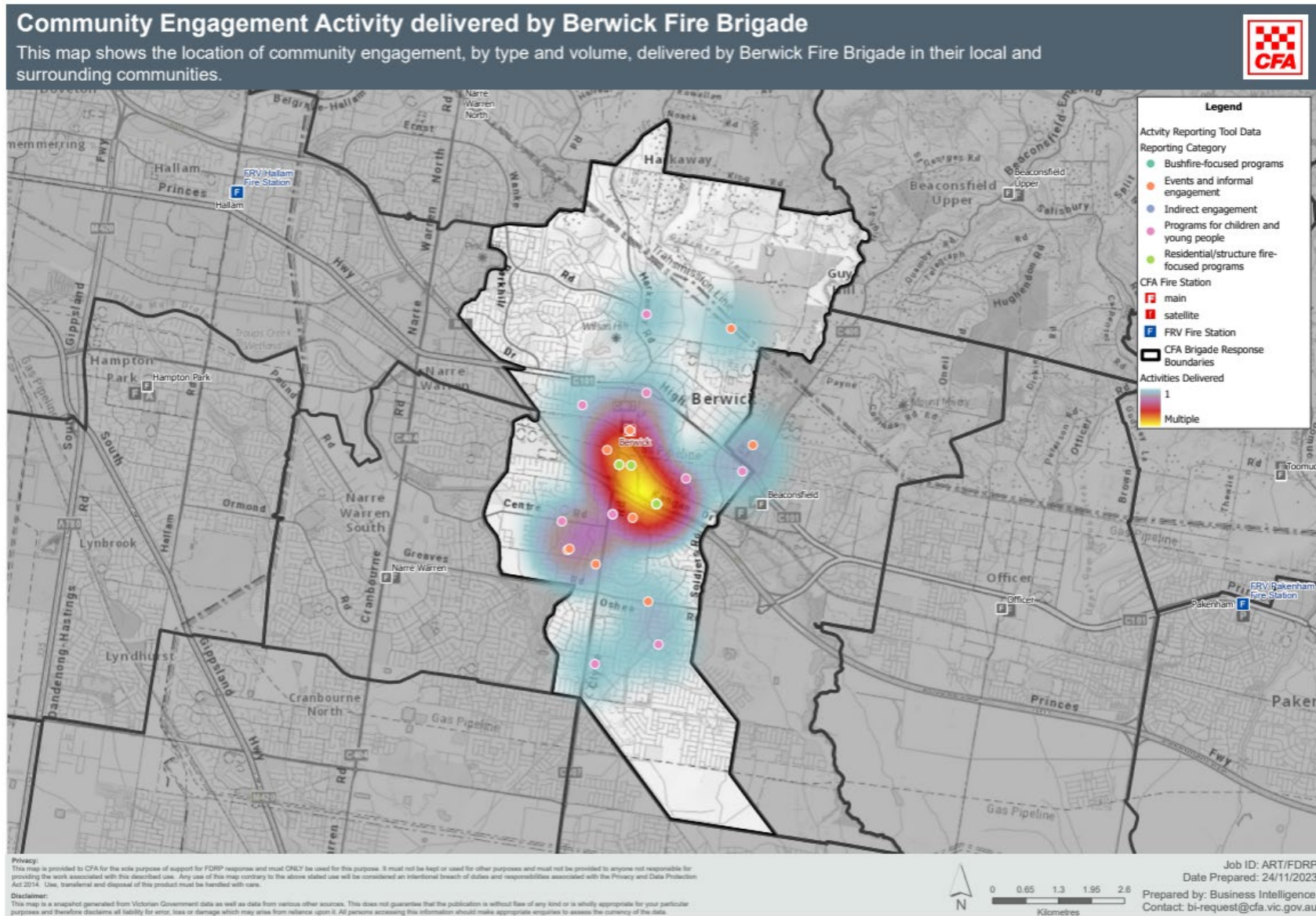


Figure 7: ABS land use areas and BMO

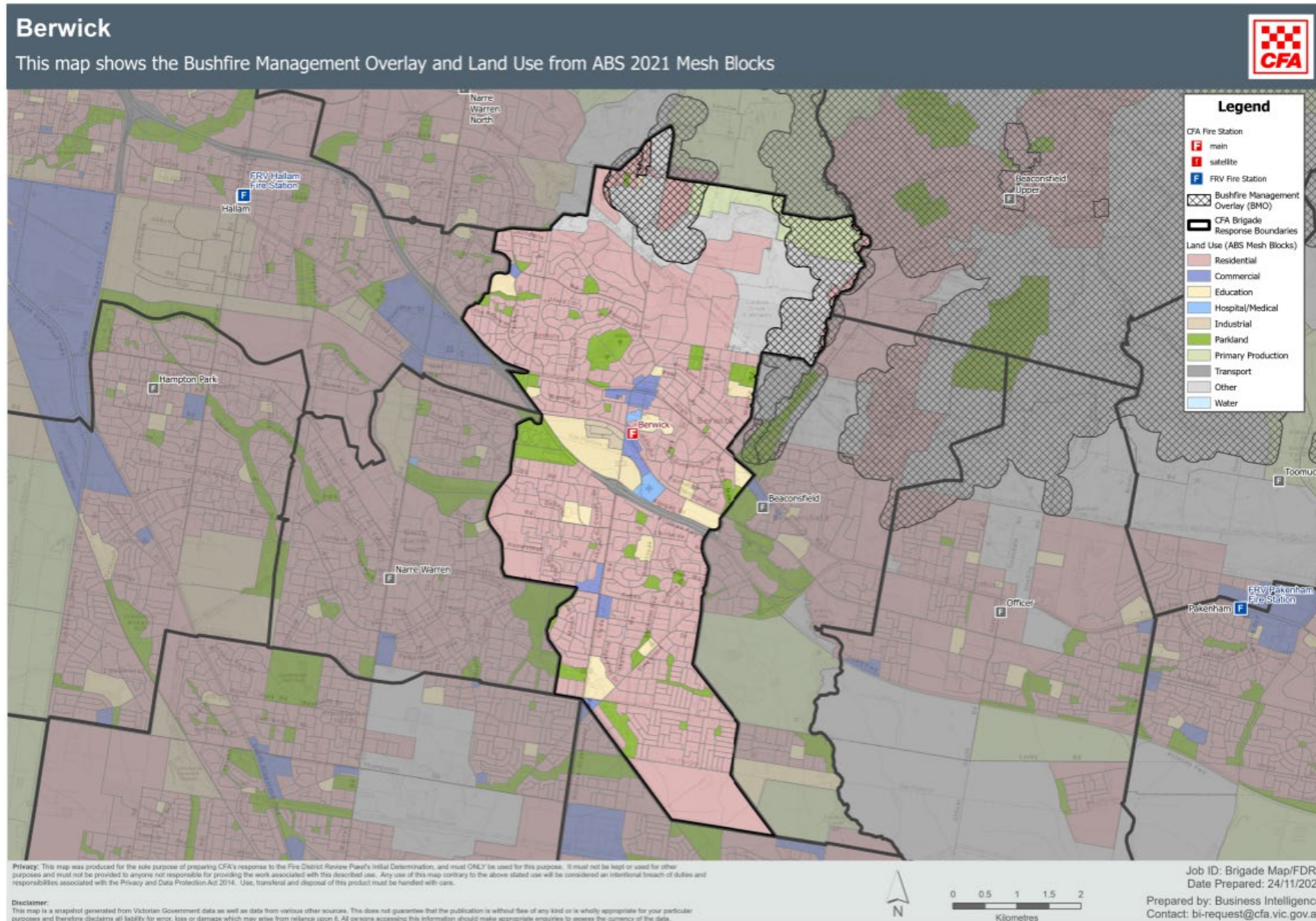
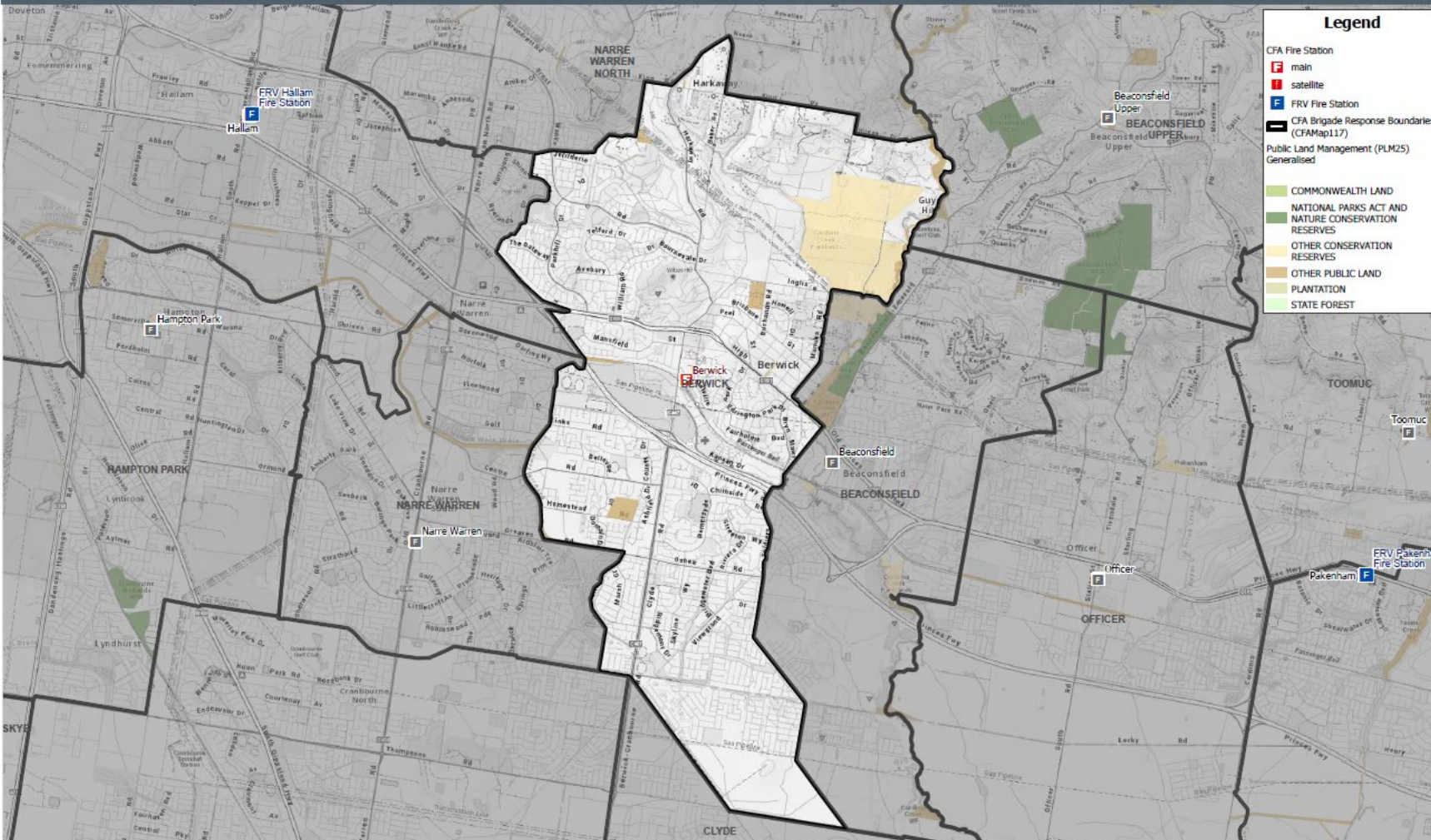


Figure 8: Public land management information

Berwick

This map shows the generalised view of public land management information.



Legend

- CFA Fire Station
 - main
 - satellite
- FRV Fire Station
- CFA Brigade Response Boundaries (CFAMap117)
- Public Land Management (PLM25) Generalised
 - COMMONWEALTH LAND
 - NATIONAL PARKS ACT AND NATURE CONSERVATION RESERVES
 - OTHER CONSERVATION RESERVES
 - OTHER PUBLIC LAND
 - PLANTATION
 - STATE FOREST

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Explanation: The public land layer is not the assumed complete area of responsibility for the land managers.



Job ID: PLM Map/FDRP
 Date Prepared: 14/12/2023
 Prepared by: Business Intelligence
 Contact: bi-request@cfa.vic.gov.au

Figure 9: Planned growth zones from the planning scheme for Berwick

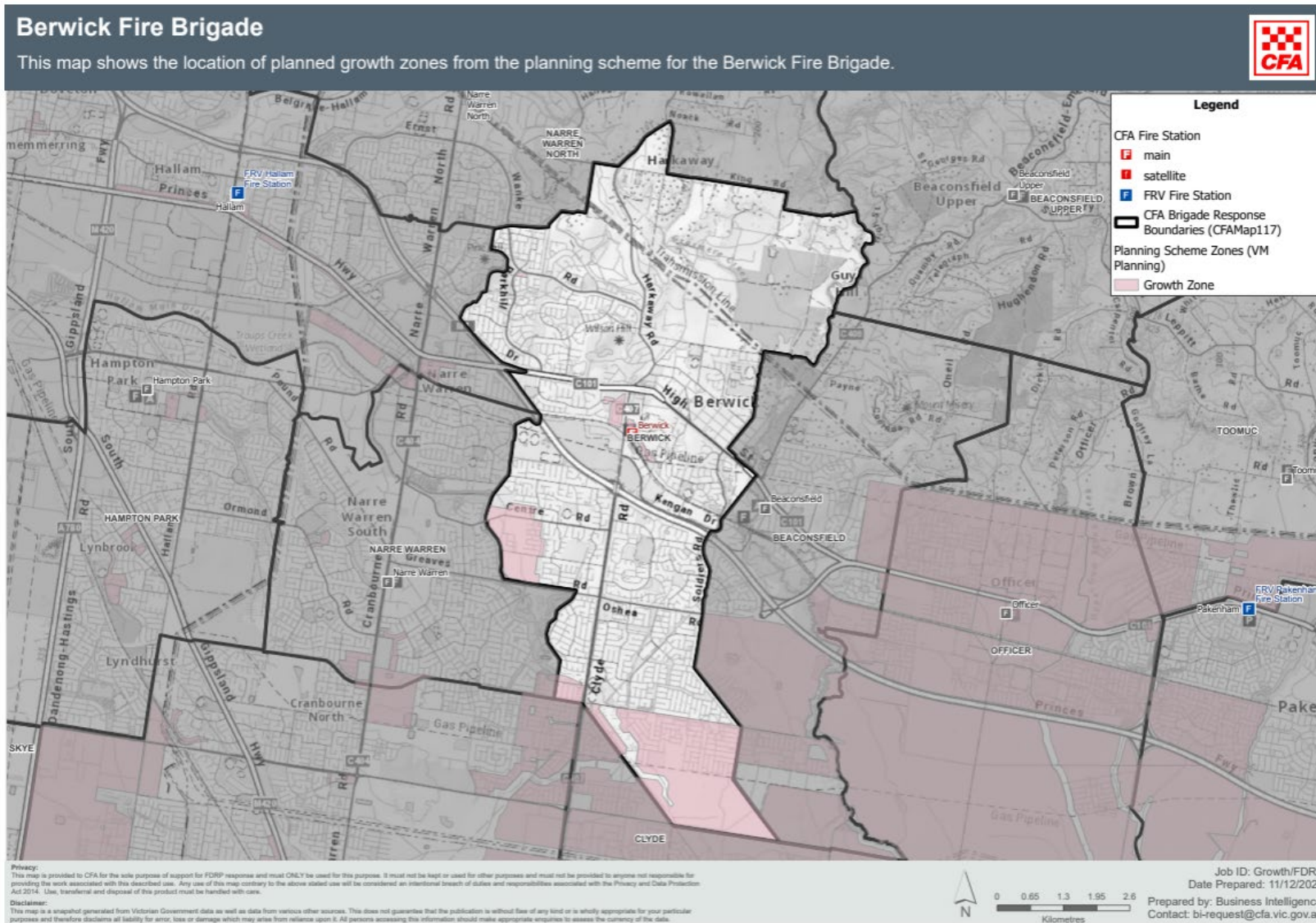


Figure 10: Berwick Brigade incident count by type 1 January 2010 - 18 December 2023

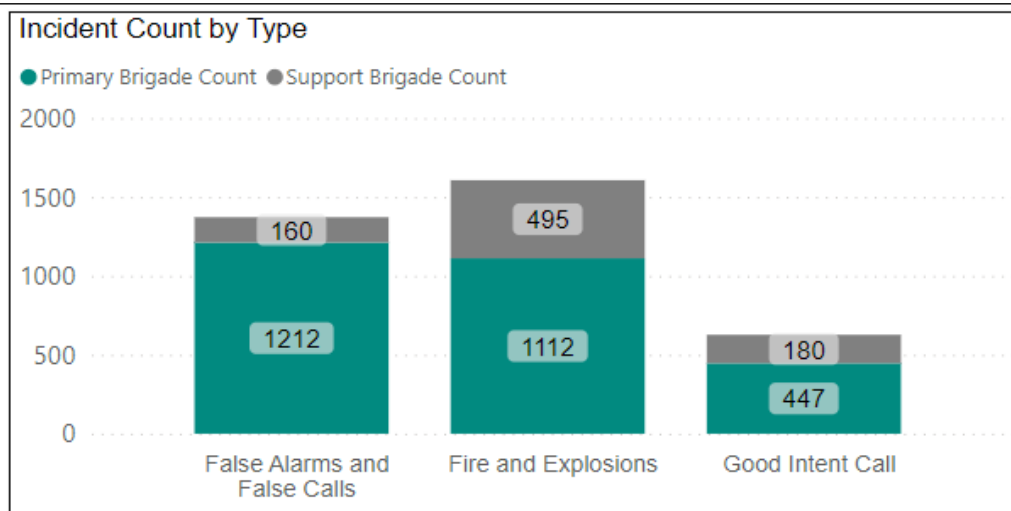


Figure 11: Berwick Brigade incident count by month 1 January 2010 - 18 December 2023

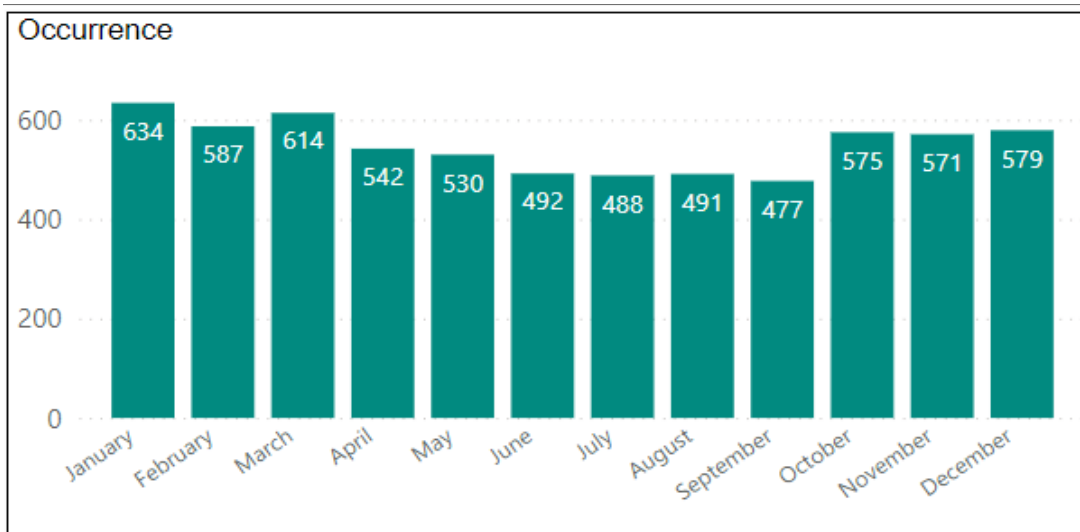


Figure 12: Berwick Brigade incident count by type by year 2010 - 2023

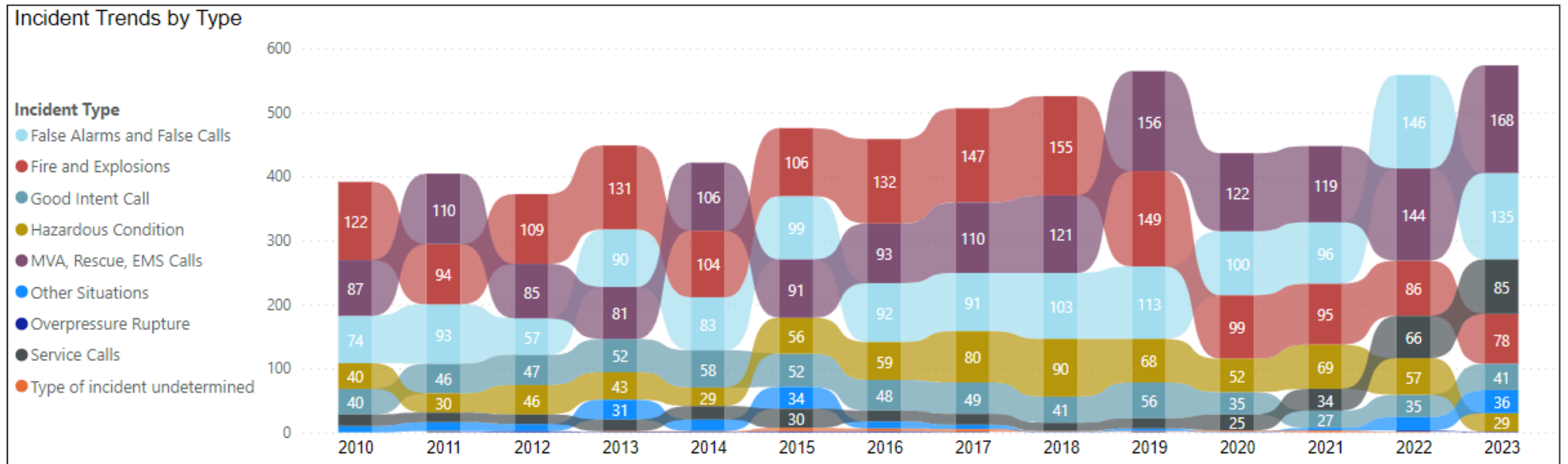


Figure 13: Area covered by both CFA and FRV based on HC2 8 minutes

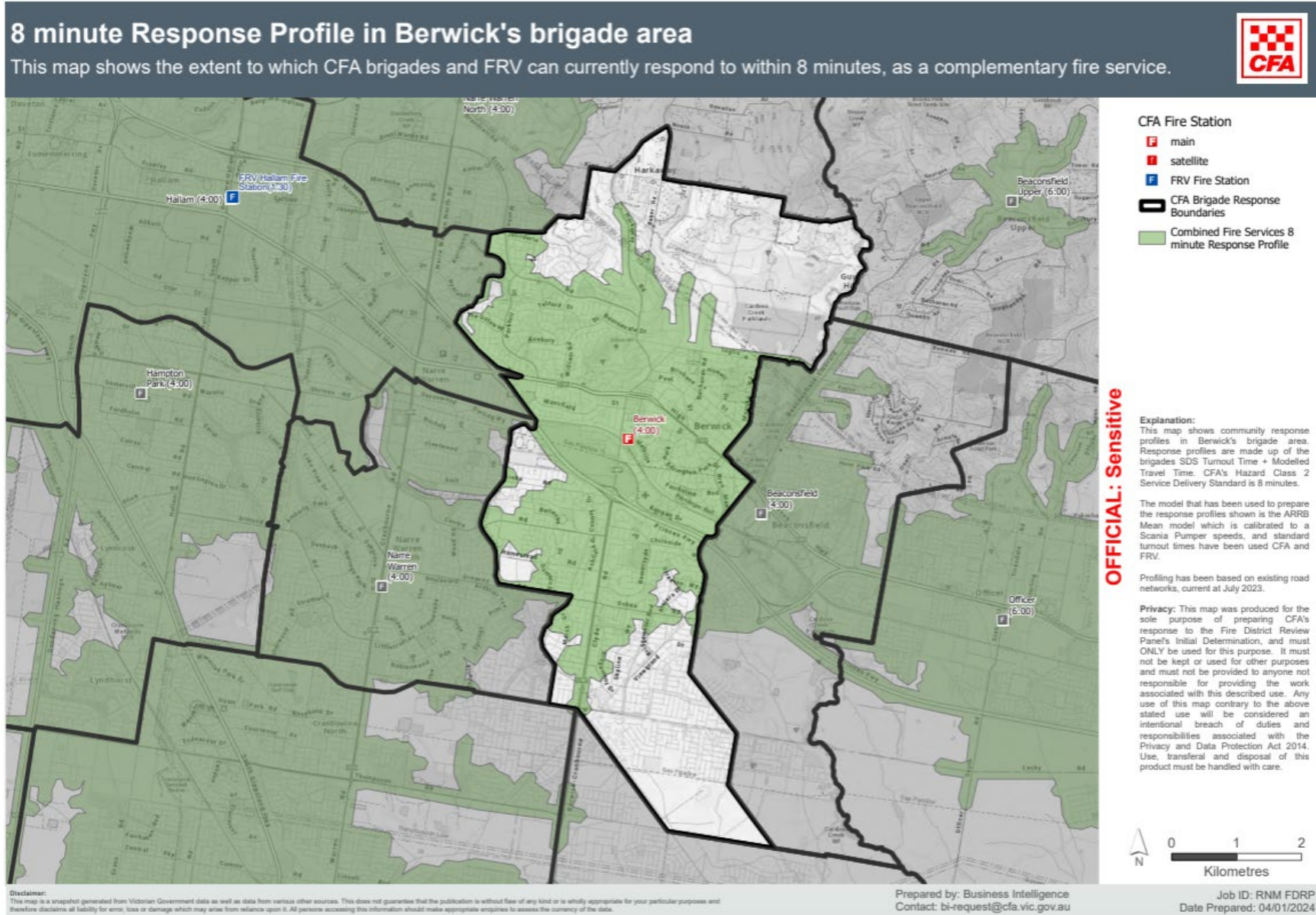


Figure 14: SDS compliance for the Berwick Brigade SDA 2010 – 2019

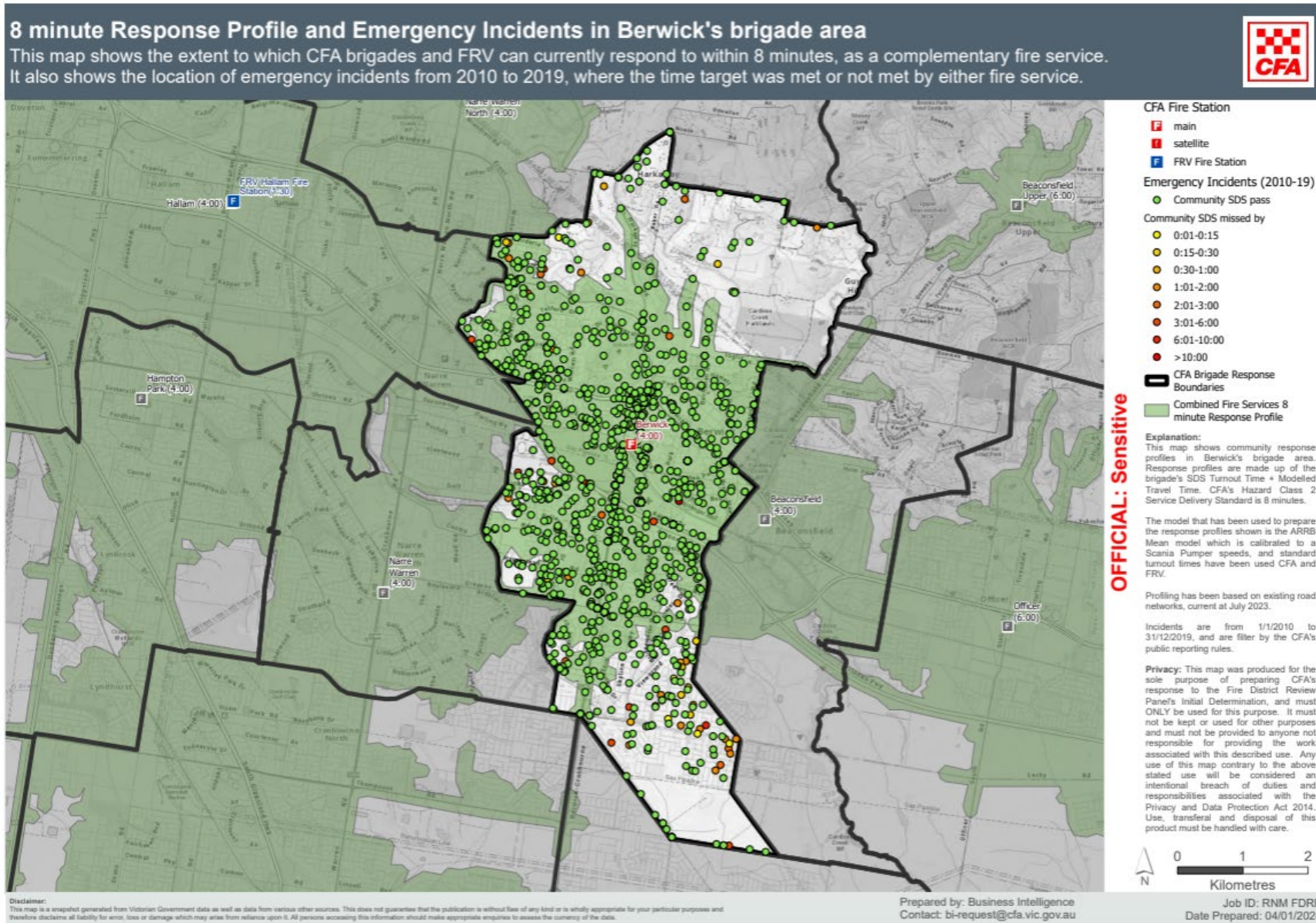
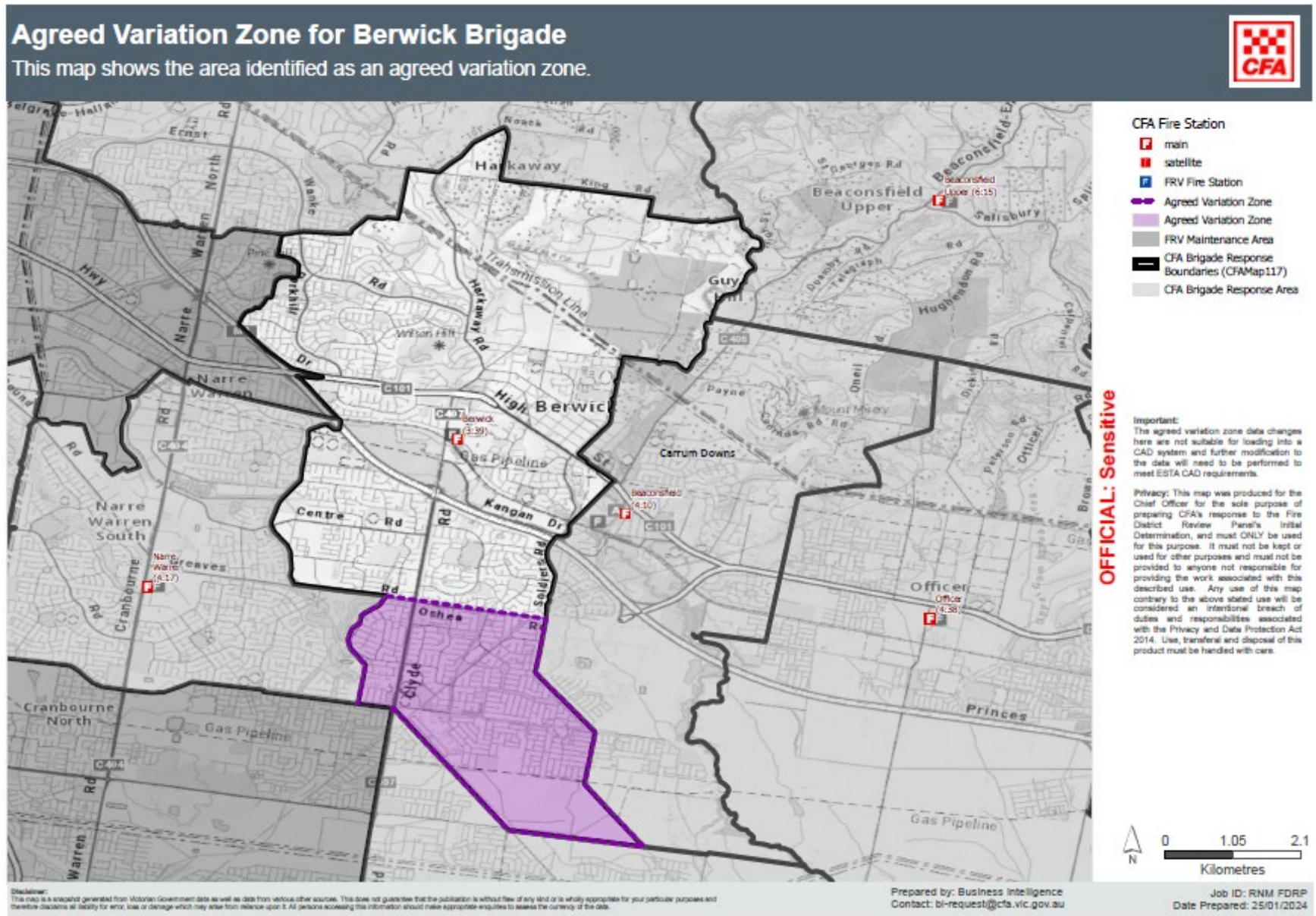


Figure 15: Agreed variation zone



Carrum Downs Fire Brigade

1. About the Brigade

Established in 1944 the Carrum Downs Fire Brigade is a Class 5 Brigade in the South East Group located in District 8 of the South East Region. The Carrum Downs Fire Brigade has a total membership of 59 volunteers (as at 31 December 2023).

1.1 History

The Carrum Downs Fire Brigade will celebrate its 80th Anniversary in March 2024, having been officially established as a CFA Fire Brigade in 1944. The Brigade operated for many years from a very small station on the corner of Bawden Street and Frankston-Dandenong Rd before moving to 658 Frankston-Dandenong Rd. Consideration of the increasing residential risk in Carrum Downs and nearby commercial and industrial activities in Dandenong South heavily influenced the relocation of Carrum Downs Fire Station to the current site at Wedge Road. This modern facility was officially opened in 2018 with three engine bays, a large meeting room, enhanced amenities and brigade administration and management offices.

1.2 Context

The Carrum Downs Fire Brigade operates in an urban environment, intersected by major arterial roads and servicing a community of just over 21,000 people.

Carrum Downs Fire Brigade has a strong presence both operationally and within the community. The dedicated team of members provide vital services to protect their community. Carrum Downs serves as a linchpin in safeguarding the expansive industrial areas of Frankston and Dandenong South. The Brigade's volunteer roster, coupled with specialised training, reflects its preparedness for industrial risks. It is notable that almost 30 members are qualified in Compressed Air Breathing Apparatus (CABA) Search and Rescue. In recognition of specific local risks, the Brigade exhibits a high level of preparedness through pre-incident plans. These are developed using the Chief Officer's Standard Operating Procedures, and the Brigade consistently reviews and tests these plans. By actively managing the portfolio of pre-incident plans and incorporating regular training and site visits, the Brigade ensures readiness to respond effectively to the unique challenges within the response area.

In terms of operational response, the Brigade does experience some challenges and has been meeting SDS less than 85% of the time. To bolster this performance, the Brigade uses local knowledge to identify trends, and pinpoint potential causes and solutions. One area of focus is targeted member recruitment and re-engagement. An encouraging upward trend is evident due to the addition of new members and some existing members relocating closer to the station. The Brigade showcases commendable active responder strength, achieving a balanced and equitable member turnout over the past year. By continually reviewing membership and seeking assistance from Catchment Support Teams the Brigade maintains a robust responder pool. This strategic approach supports operational readiness but also enhances the overall capacity to deliver effective firefighting services. In addition, the Brigade takes pride in fostering a collaborative relationship with neighbouring career stations and volunteer brigades – bringing mutual benefit to colleagues and to the community.

Carrum Downs Fire Brigade is deeply engaged with its community and its comprehensive Community Engagement Plan provides focus for these activities which are varied including preschool visits, Fire Safe Kids Program, disseminating fire safety tips, active participation in community events, and frequent open days aimed at proactive prevention initiatives. An area of future focus is more targeted work with vulnerable communities and with caravan park operators. The Brigade has an active social media presence with close to 6,000 Facebook followers.

2. Brigade Capability Snapshot

2.1 Membership

The Carrum Downs Fire Brigade has a total membership of 59 members (14 females and 45 males). The Brigade has a good range of experienced and newer brigade members with the majority of the membership aged 45 years or younger.

2.2 Fire Appliances, other vehicles and specialist equipment

The Carrum Downs Fire Brigade has three appliances and other vehicles to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Carrum Downs Brigade.

Table 1: Fire appliances and vehicles available to the Carrum Downs Brigade

Vehicle	Vehicle make	Age
Pumper	Scania	17 years
Heavy Tanker	Iveco	7 years
Field Command Vehicle	Ford	4 years
Trailer		

Table 2: Vehicle specification

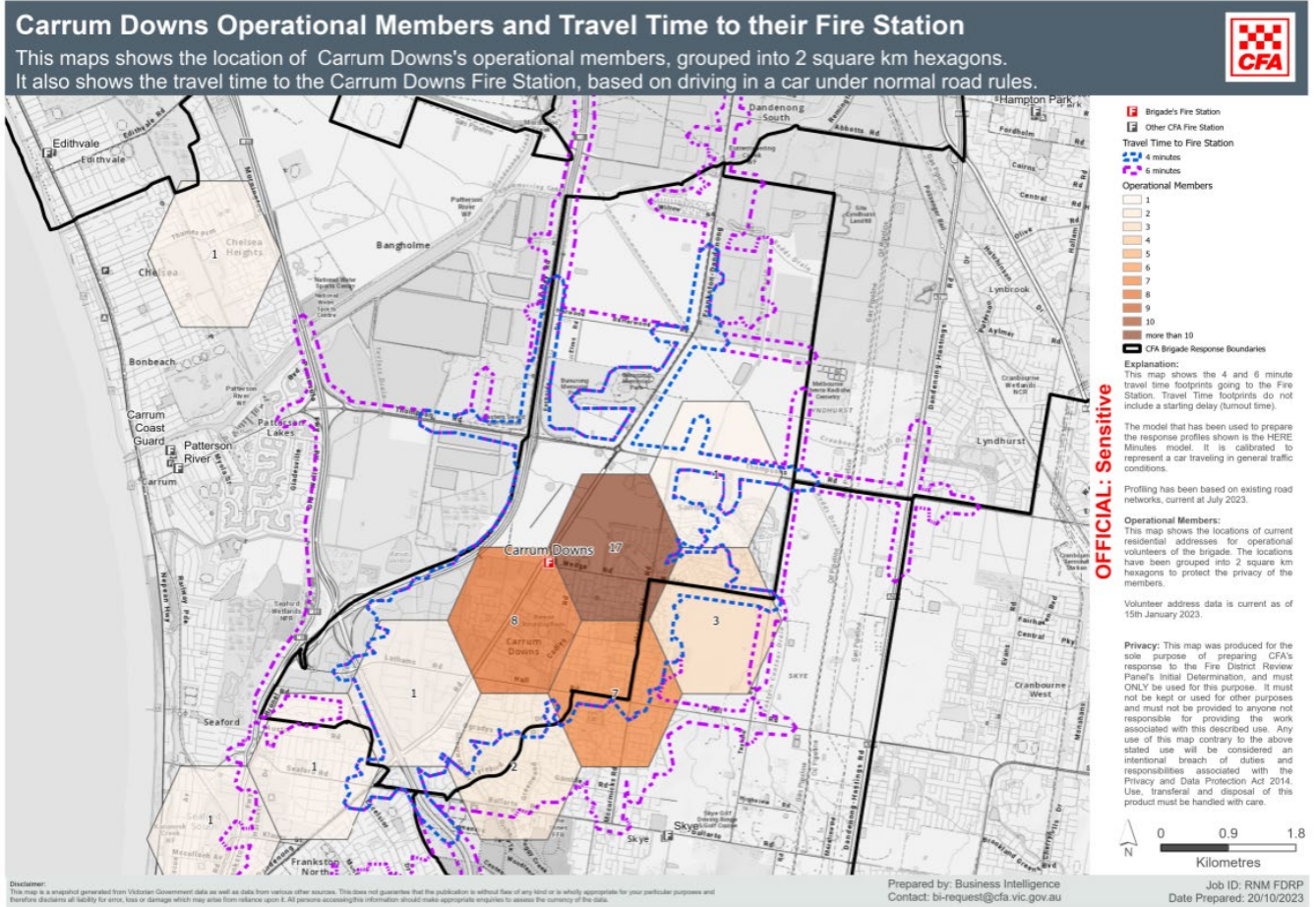
Pumper	Carrying five firefighters, 1,800 litres of water and 4,000 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, gas detector, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage, monitors and foam equipment.
Heavy Tanker	Carrying five firefighters, 4,000 litres of water, 1,200 lpm pump, BA, hoses and adaptors, thermal imaging camera, chainsaw and foam equipment.
Field Command Vehicle	A small transport vehicle designed for fireground operations for management personnel. Vehicle carries a thermal imaging camera.

2.3 Station location

The station is located at 15 Wedge Road, Carrum Downs, VIC 3201. Constructed in 2017, the station has three drive-through motor room bays. The fire station was designed to service the current and future demands of the Carrum Downs community. In 2019, the South East Group of Fire Brigades - Local Command Facility was opened to manage operations personnel during major incidents within the South East Group/Catchment area, including the management of Group resources (strike teams response) during times of emergency.

Figure 1 shows the home location of operational members and the distance to travel to the fire station. This shows that the majority of operational members can reach the station within four minutes.

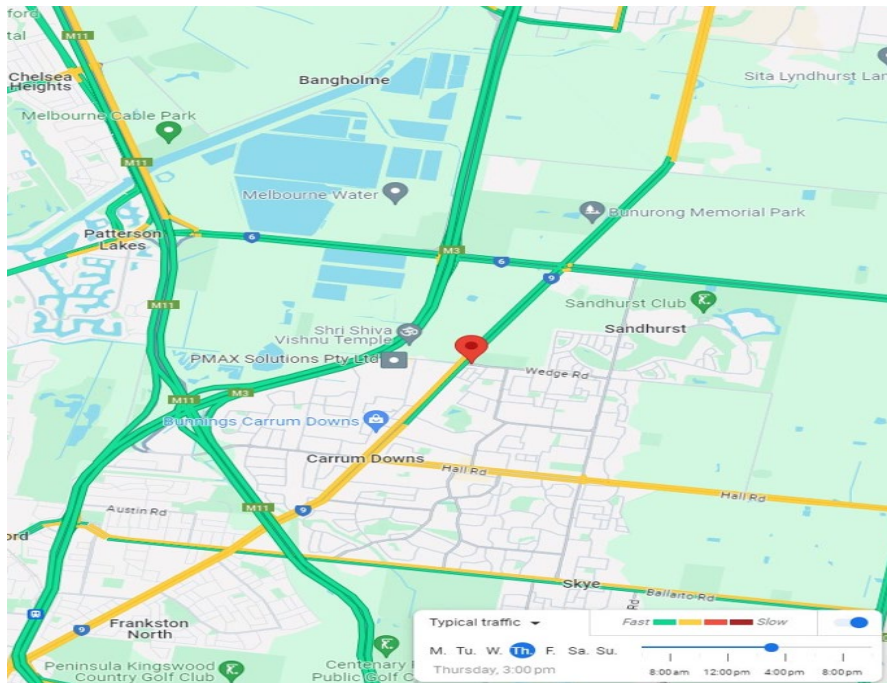
Figure 1: Operational members location and travel times



The location of a fire station is an important element in the successful operation of a volunteer fire brigade. Siting must strike a balance between being located to address service delivery needs but also being readily accessible to and from for emergency responders.

Analysis of the Carrum Downs Fire Brigades peak activity within the primary SDA shows that Thursdays at 15:00 is the peak time for brigade dispatch and the typical traffic flow at that time is good.

Figure 2: Typical traffic Thursday 15:00



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only has use across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state’s resources in both the CAoV and the FRV Fire District.

Maintaining CFA’s presence through the Carrum Downs Brigade helps to prevent the erosion of CFA volunteer numbers in the outer metropolitan area of Melbourne. This is critical in addressing the states need for CFA volunteer surge capacity from populations that can support it. During the Black Summer fires, Carrum Downs Brigade had 30 members deployed and also had members deployed to Queensland in late 2023.

The Safer Together Planned Burn Taskforce project is a statewide recruitment program which deploys available CFA volunteers to planned burns in need of personnel. Volunteers register with the Planned Burn Taskforce Program and are deployed to assist with planned burning when requested. They can come from a number of Districts to form up a single Taskforce for deployment. There are two members of the Carrum Downs Brigade who have elected to be part of the Taskforce.

2.5 Assistance to Fire Rescue Victoria

Figure 3 shows the total count of incidents (primary and support) that Carrum Downs Brigade attended in the FRV Fire District for each calendar year from 2010 to 2023 (year to date).

Figure 3: Incident count and type of support provided in the FRV Fire District

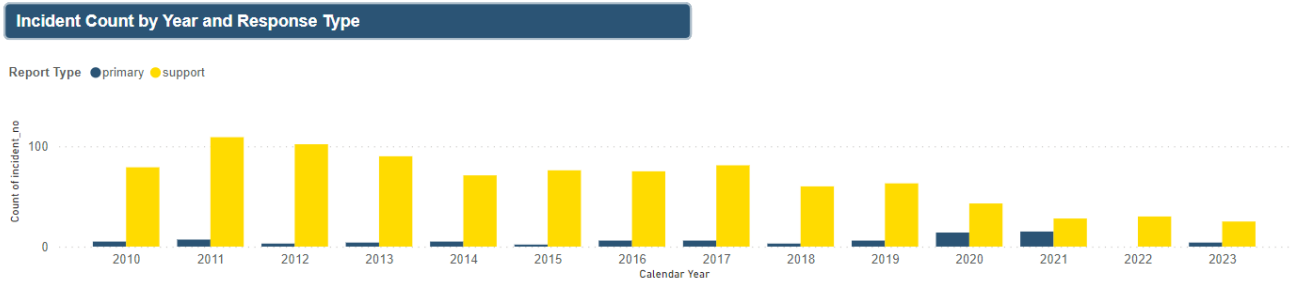
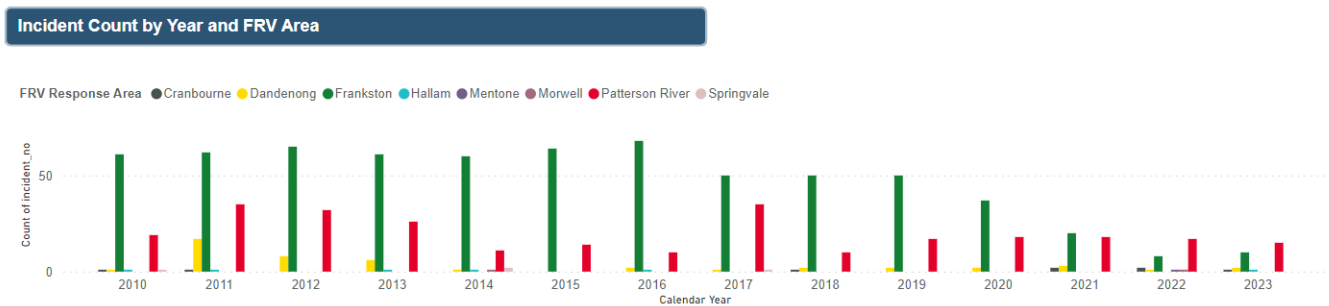


Figure 4 shows the count of incidents that Carrum Downs Brigade attended in the FRV Fire District.

Figure 4: Incident count and type of support provided in the FRV station footprint

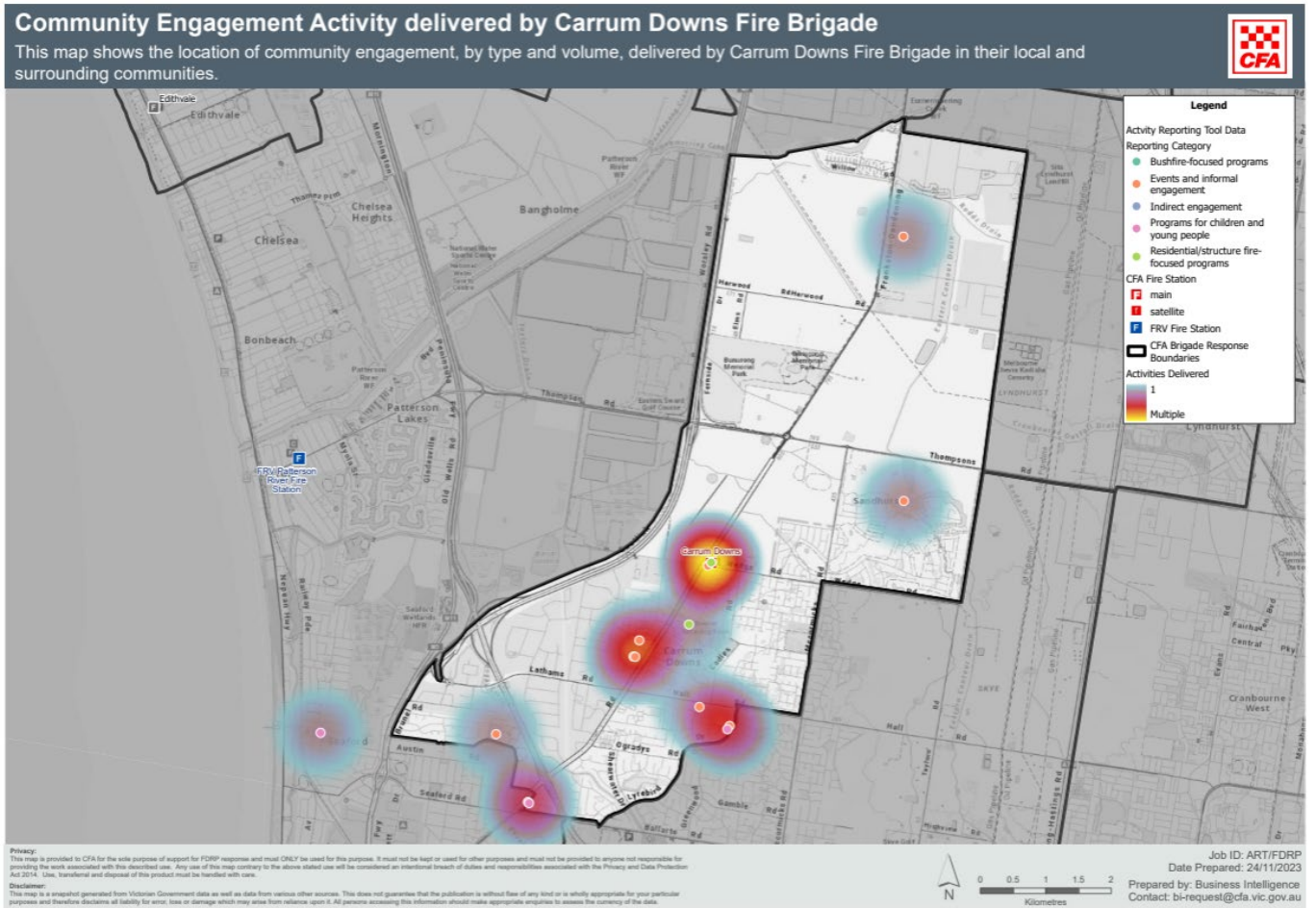


2.6 Community engagement activity

The Carrum Downs Brigade works directly with the community to support regular prevention and preparedness activities including community fire safety messaging, school visits and direct intervention programs. Experienced brigade members roll out training for staff working in protected premises and high-risk industries, reducing preventable false alarms and enabling early identification and management of fire.

CFA in 2022 implemented a new platform to allow brigades to centrally record community engagement activities undertaken by brigades to allow better understanding of community fire safety interventions. Brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of interventions. Figure 5 below shows community safety interventions undertaken by the Carrum Downs Fire Brigade as recorded in the ART system.

Figure 5: Community safety and intervention programs



3. Service Delivery Area Profile

The Carrum Downs Fire Brigade SDA has a total area of 2,962.7 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses.

Table 3: Carrum Downs land use planning areas

Land use	Hectares	Percentage of Brigade Area
Commercial	16.2	0.5%
Education	22.8	0.8%
Industrial	447.7	15.1%
Other	722.1	24.4%
Parkland	194.6	6.6%
Primary Production	826.8	27.9%
Residential	732.4	24.7%
Transport	0	0

A map showing the current land use planning uses and applicable mesh block is shown in Figure 6. There has been further development in Carrum Downs Fire Brigade SDA since the 2021 Census.

Figure 6: ABS land use areas and BMO

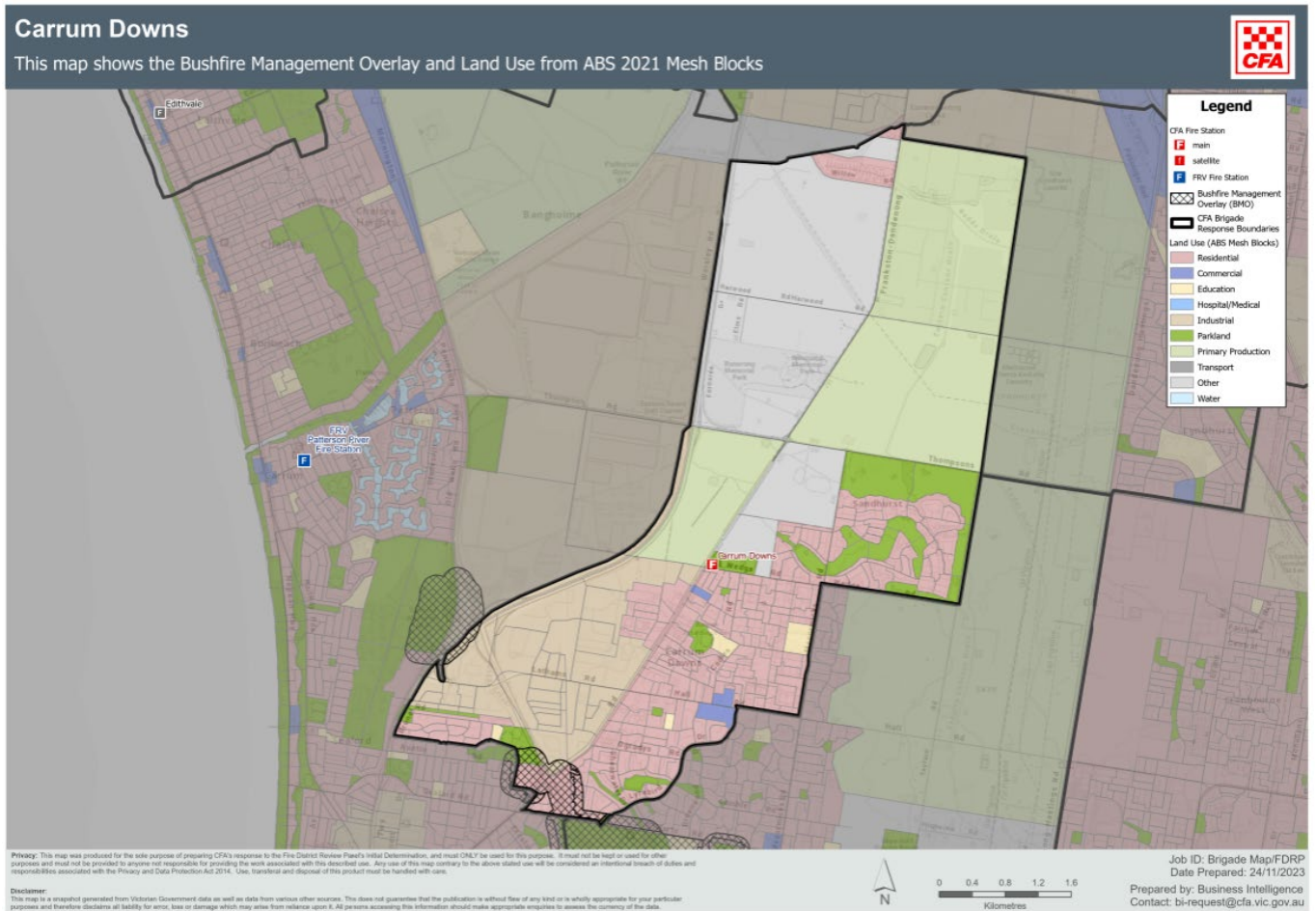
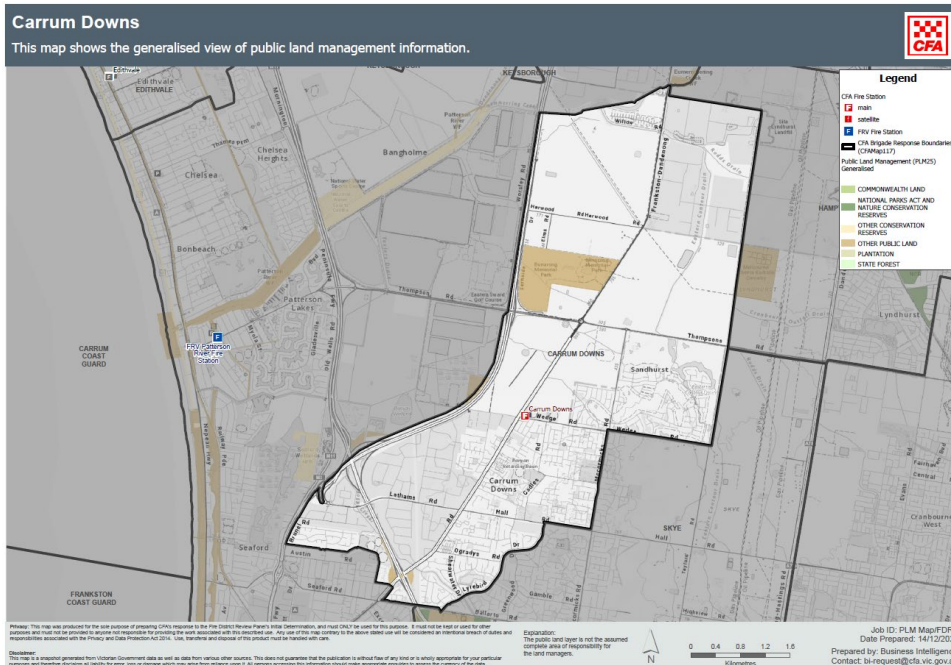


Figure 7: Public land management information



3.1 Growth zones

The FDRP initial determination derived no value for %VPA. An analysis of VicPlan, the official mapping platform of the Department of Transport and Planning shows there are no current growth zones within the Carrum Downs SDA.

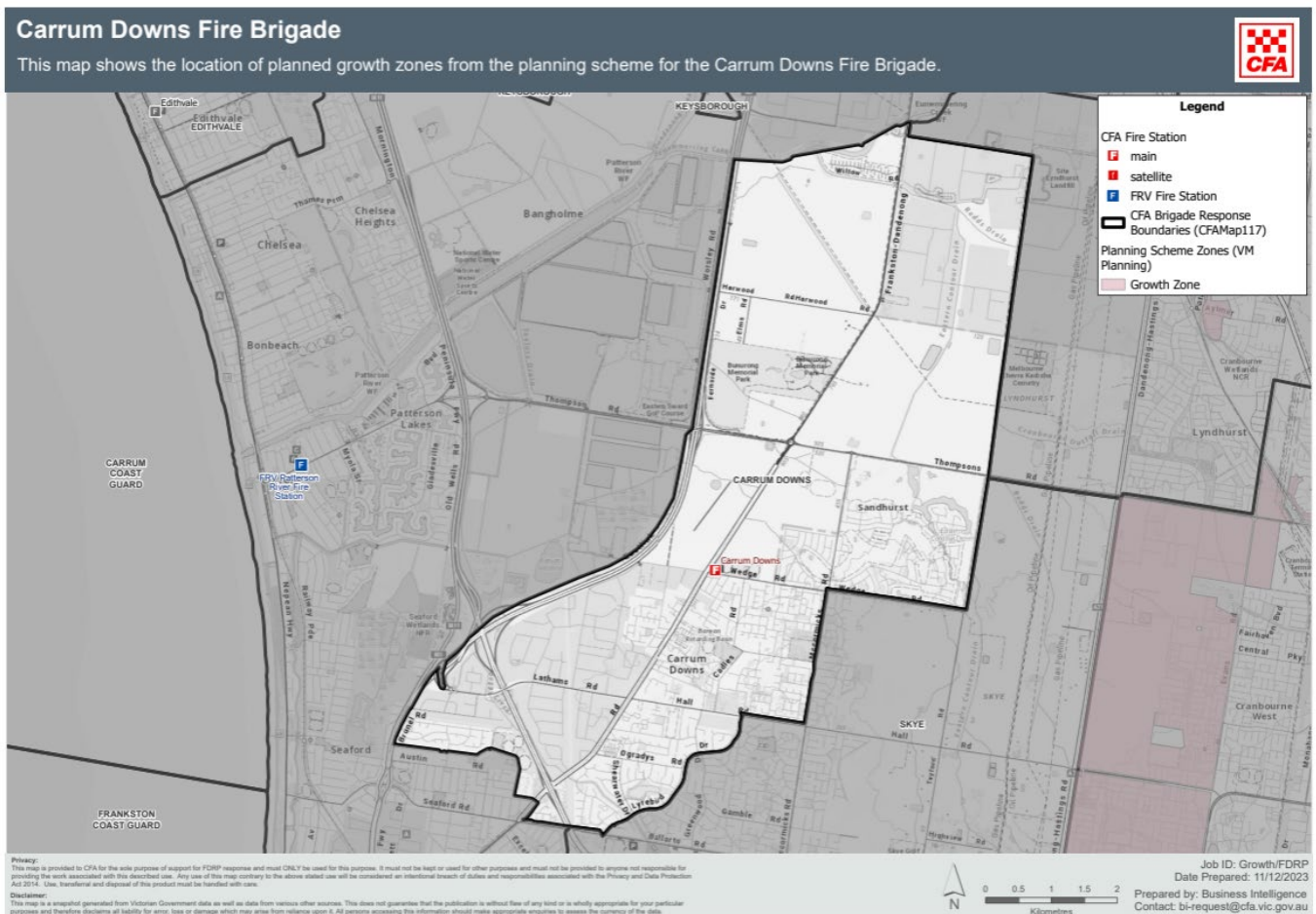
Table 4: Urban growth areas

Total Brigade Area (Hectares)	Area (hectares) covered by Industrial Zones	Percentage covered by Industrial Zones	Area (hectares) covered by Growth Zones	Percentage covered by Growth Zones
2,963	630.19	21.27%	0	0

Risk Evaluation:

The Carrum Downs resource capability of a pumper and tanker combined with the long-established protocol of joint response from FRV and surrounding brigades as a response network, delivers the complementary fire services model to treat the current residential and industrial risk.

Figure 8: Planned growth zones from the planning scheme for Carrum Downs



3.2 Bushfire Management Overlay

The Carrum Downs Fire Brigade SDA has an area of 55.8 hectares (or 1.88%) defined as BMO. The BMO applies to land that may be significantly affected by extreme bushfires. A planning permit is required for some types of development to ensure bushfire risk is considered and passive bushfire protection measures are in place to ensure resilience of the development without the intervention of fire services.

As shown in Figure 6 (above), there is only a small area of BMO and 99.8% of the road network in the Parkland land use within the Brigade's area is able to be serviced within eight minutes.

Risk Evaluation:

The specialist capability of the Carrum Downs Fire Brigade is able to readily mitigate the risk presented by the BMO within its area, which equates to only 1.88% of the total area.

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population change of 1,649 or 7% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells). The local government area forecast seven year population change is an increase of 8,698 or 6%.

ABS census data (2021) shows that there are 8,428 dwellings in the Carrum Downs Brigade SDA. Of these dwellings, 25% are rental houses. As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair²⁵.

CFA and FRV have collaborated to create the 'Prevent – Detect – Escape' Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability. There have been 136 community members undertake the Prevent – Detect – Escape Program in the Carrum Downs Fire Brigade SDA.

Risk Evaluation:

With regard to fire safety interventions, there is a large proportion of the population within the Carrum Downs Brigade SDA living in rented properties (25%). The mandated requirement for working (and verified) smoke alarms is anticipated to have contributed to the significantly low number of fire fatalities. Community engagement activities undertaken by the Carrum Downs Fire Brigade allow for mitigation of risk elements identified in both residential fire and social disadvantage risk.

²⁵ <https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/keeping-the-property-safe/smoke-alarms-and-fire-safety#:~:text=The%20rental%20provider%20must%20ensure%20smoke%20alarms%3A%201,are%20repaired%20or%20replaced%20as%20an%20urgent%20repair.>

4. Service Delivery and Service Demand

4.1 Total demand

Figure 9 shows the total number of unique incident numbers attended by the Carrum Downs Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response.

Figure 9: Carrum Downs Brigade incident count by type 1 January 2010 - 18 December 2023

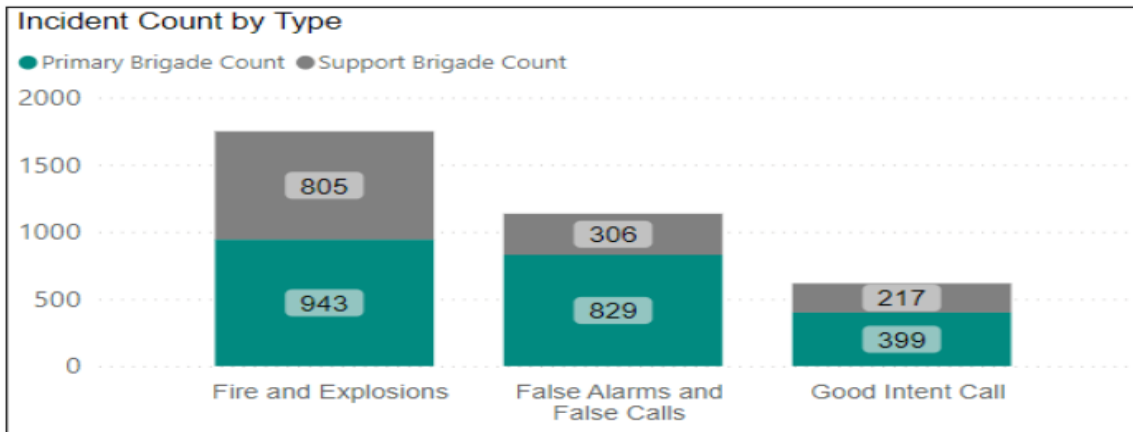


Figure 10 shows a count of the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels in summer and lower periods of activity in the winter months.

Figure 10 Carrum Downs Brigade incident count by month 1 January 2010 - 18 December 2023

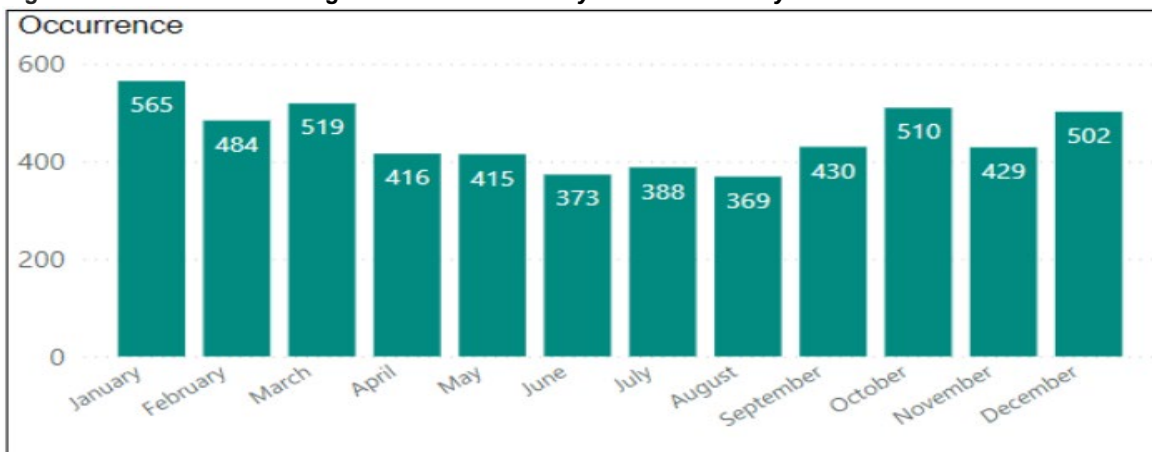
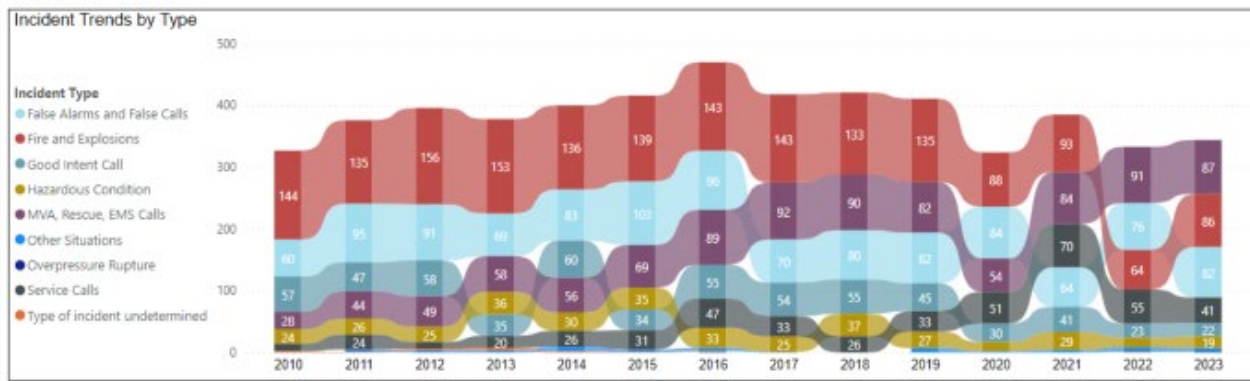


Figure 11 shows a count of all incident types between 1 January 2010 and 18 December 2023. The primary incidents attended across 2022 and 2023 were Motor Vehicle Accidents (MAV), and Rescue calls.

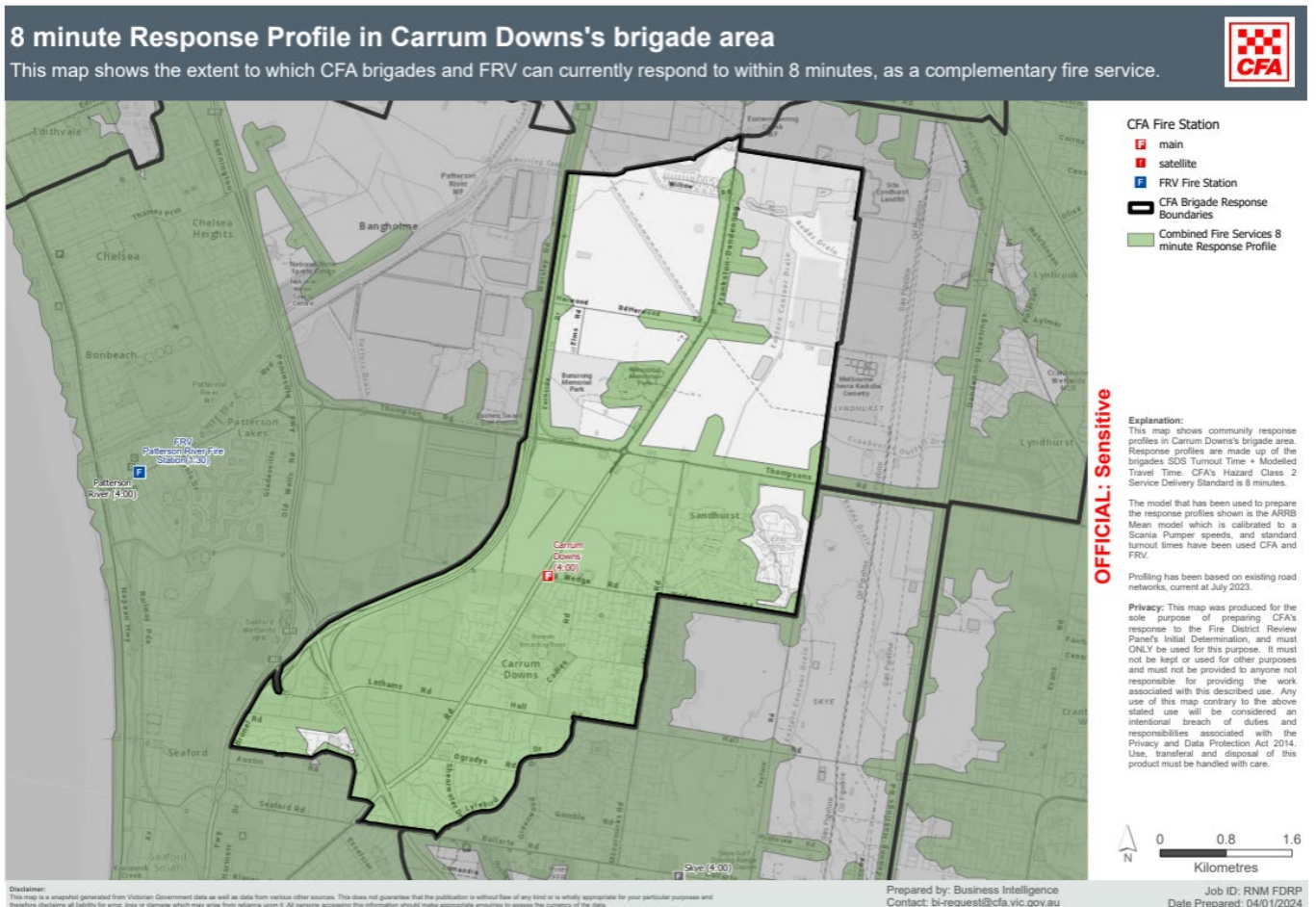
Figure 11: Carrum Downs Brigade incident count by type by year 2010 - 2023



4.2 Service delivery standard

Figure 12 shows the road within the land use that can be serviced within eight minutes by the existing (CFA/FRV) complementary fire service. This shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the 8 minute to scene standard.

Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 91.53% of the road network in the Residential land use
- 100% of the road network in the Commercial land use
- 99.03% of the road network in the Industrial land use
- 81.64% of the road network in the Education land use
- 100% of the road network in the Parkland land use
- 93.45% of the road network in the Other land use
- 60.81% of the road network in the Primary Production land use

Table 5 shows the SDS compliance for the Carrum Downs Brigade:

- from 1 January 2010 to 31 December 2019 there were 1,731 emergency incidents within the Carrum Downs Brigade SDA
- fire services response to emergency incidents was 87.81% compliant with SDS
- for the 211 incidents where SDS was not met over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (55%) were missed by 60 seconds or less.

Table 5: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
38 (18.01%)	36 (17.06%)	43 (20.38%)	58 (27.49%)	17 (8.06%)	16 (7.58%)	3 (1.42%)	0 (0%)

From 1 January 2020 to 30 November 2023:

- there were 760 emergency incidents within the Carrum Downs Brigade SDA
- fire services response to emergency incidents was 77.1% compliant with SDS
- for the 174 incidents where SDS were not met, Table 6 indicates the numbers of emergency incidents and the time that SDS was missed. The majority (55%) were missed by 60 seconds or less.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2020 to 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
33 (18.97%)	19 (10.92%)	43 (24.71%)	21 (12.07%)	45 (25.86%)	12 (6.90%)	1 (0.57%)	0 (0%)

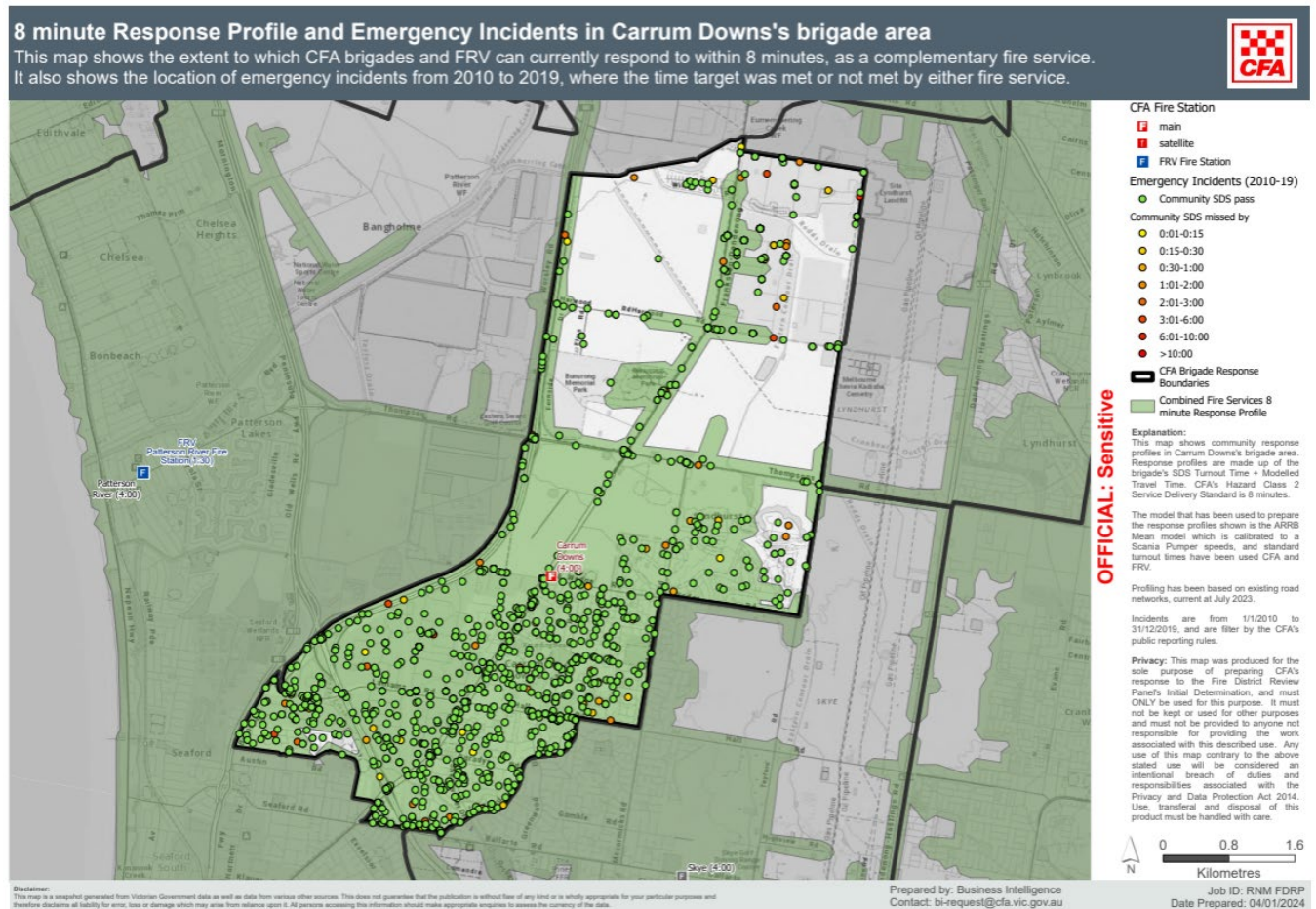
The top of the Carrum Downs SDA is an industrial precinct. From 1 July 2020 to 19 December 2023 there have been 114 emergency incidents in this area (assignment area CADW5). Of the 114 emergency incidents, 71% (81 emergency incidents) were False Alarms, 14% (16 emergency incidents) were Fire and Explosions and the remaining 15% (17 emergency incidents) were Good Intent Call, Hazardous Conditions, MVA/Rescue/EMS Call and Service Calls.

Table 7: Carrum Down Incidents by type 1 July 2020 to 19 December 2023

Incident Type	Number of Incidents	Percentage of total Incidents
False Alarms and False Calls	81	71%
Fire and Explosions	16	14%
Good Intent Call	1	1%
Hazardous Condition	3	3%
MVA, Rescue, EMS Calls	9	8%
Service Calls	4	4%

Of the 81 emergency incidents that were False Alarms, 21% occurred on a Friday (17 False Alarms). There is no pattern for time of day that these are occurring. Most of these false alarms are occurring at three properties.

Figure 13: SDS compliance for the Carrum Downs Brigade SDA 2010 - 2019



Risk Evaluation:

It is evident that the Carrum Downs Fire Brigade is, despite best efforts, unable to reach the extremities of its SDA within a timely fashion – due to both distance and road congestion. The majority of incidents occurring in the SDA are in the south of the response area. Redrawing the boundary in this area will reduce the demand and workload on volunteers.

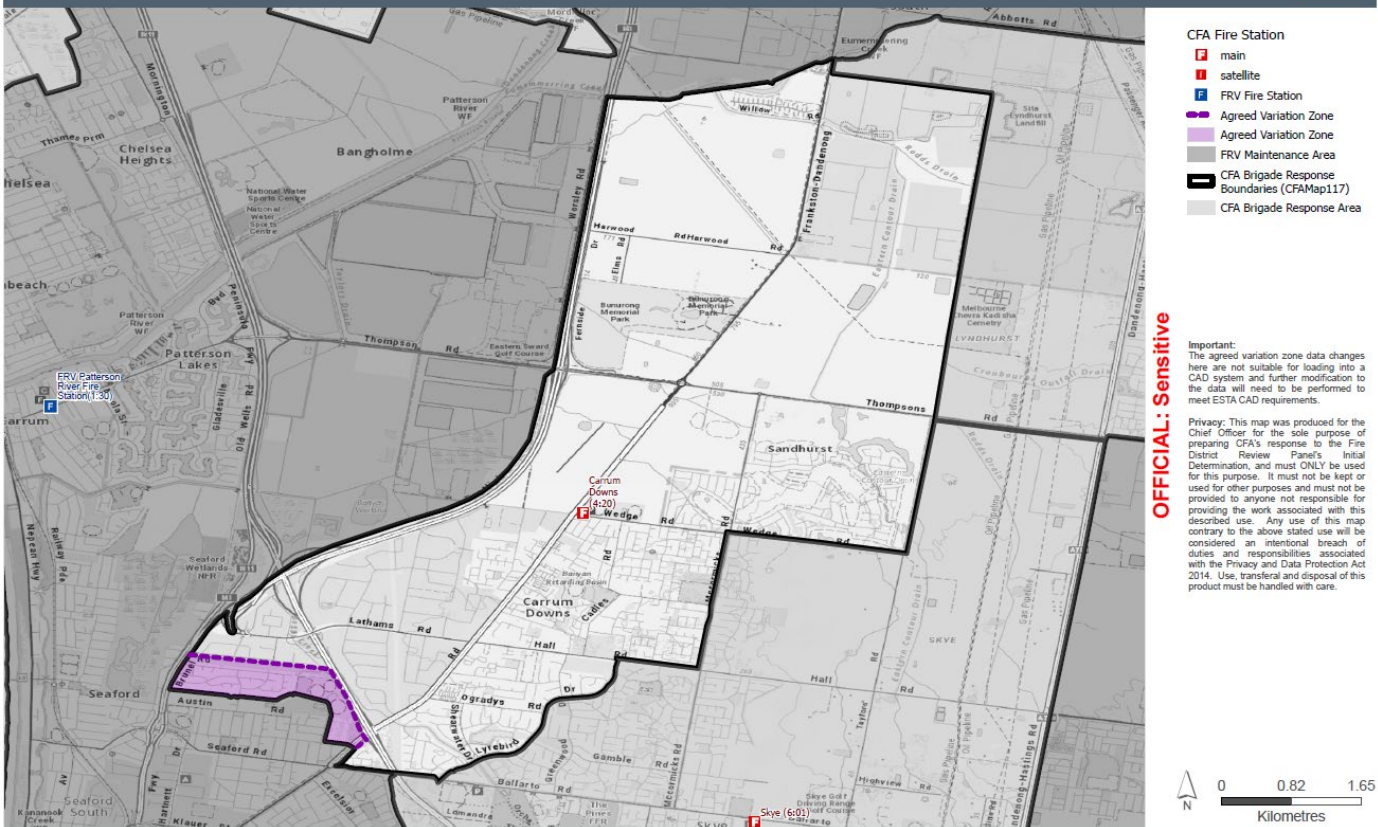
Agreed Variation Zone (AVZ):

CFA considers it is appropriate that a southern portion of the Carrum Downs SDA can be agreed as a variation zone. This area is a fully developed residential area that will readily be able to be serviced by the existing FRV station at Patterson River, with volunteers from Carrum Downs continuing to provide support to FRV when needed. This change can occur with immediate effect (Figure 14).

Figure 14: Agreed variation zone

Agreed Variation Zone for Carrum Downs Brigade

This map shows the area identified as an agreed variation zone.



Important:
The agreed variation zone data changes here are not suitable for loading into a CAD system and further modification to the data will need to be performed to meet ESTA CAD requirements.

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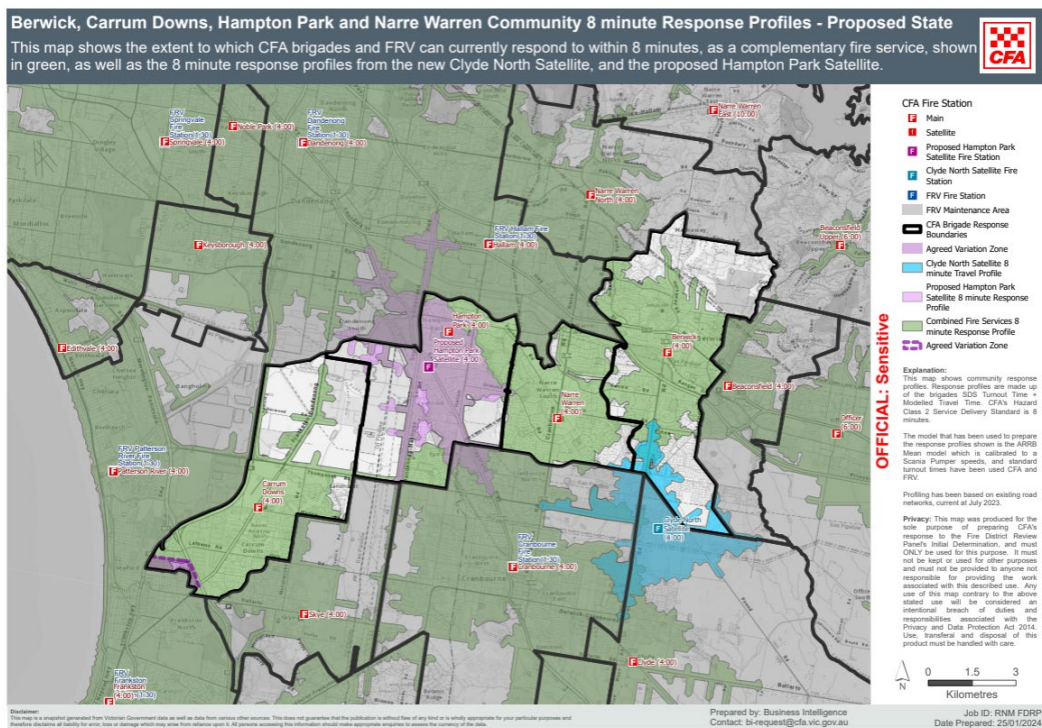
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Job ID: RNM FDRP
Date Prepared: 25/01/2024

Figure 15 shows the eight minute response profile in the proposed state.

Figure 15: Response profile of proposed state



4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Carrum Downs SDA from 2010 to 2023 has had a total of building/structure fires requiring extinguishment.

Table 8: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
5	5	8	10	5	8	8	15	8	11	11	12	9	13	128

An analysis of preventable fire fatalities associated with these 128 building/structure fires has identified only one preventable fatality in 2022 (after the FDRP data reference period). This fatality was investigated with the presence of a smoke alarm unable to be determined.

In the Carrum Downs Brigade SDA there have been six non-preventable fatalities (homicides, suicides, deliberate) since 2010 relating to a medical incident, a vehicle fire and four motor vehicle accidents.

Table 9: Non-preventable fatalities 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
2	-	1	-	-	2	1	-	-	-	-	-	-	-	6

Risk Evaluation:

The Carrum Downs Brigade SDA has had one preventable structure/building fire fatality since 2010.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.

Table 9: Carrum Downs fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	9 of 13	It is evident that the Carrum Downs Fire Brigade is, despite best efforts, unable to reach the extremities of its SDA within a timely fashion – due to both distance and road congestion. The majority of incidents occurring in the SDA are in the south of the response area. Redrawing the boundary in this area will reduce the demand and workload on volunteers.	Agreed Variation Zone: CFA considers it is appropriate that a southern portion of the Carrum Downs SDA can be agreed as a variation zone. This area is a fully developed residential area that will readily be able to be serviced by the existing FRV station at Patterson River, with volunteers from Carrum Downs continuing to provide support to FRV when needed. This change can occur with immediate effect.
Bushfire Management Overlay %	7 of 13	The specialist capability of the Carrum Downs Fire Brigade is able to readily mitigate the risk presented by the BMO within its area, which equates to only 1.88% of the total area.	
Total Demand	5 of 13	The trend in total demand is relatively stable, with slightly higher activity levels in summer and lower periods of activity in the winter months.	
Victorian Planning Authority %	No value	There are no current growth zones within the Carrum Downs SDA.	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio (VCTC)	3 of 13	See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.	

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Building fire casualty to total building fire ratio (BCTC)	4 of 13	There were no preventable fire fatalities in the Carrum Downs SDA in the period January 2010 to December 2019.	
Population projections	7 of 13	The local government area forecast seven year population change is an increase of 8,698 or 6%.	

Table 10: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Wendouree	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Operational members location and travel times

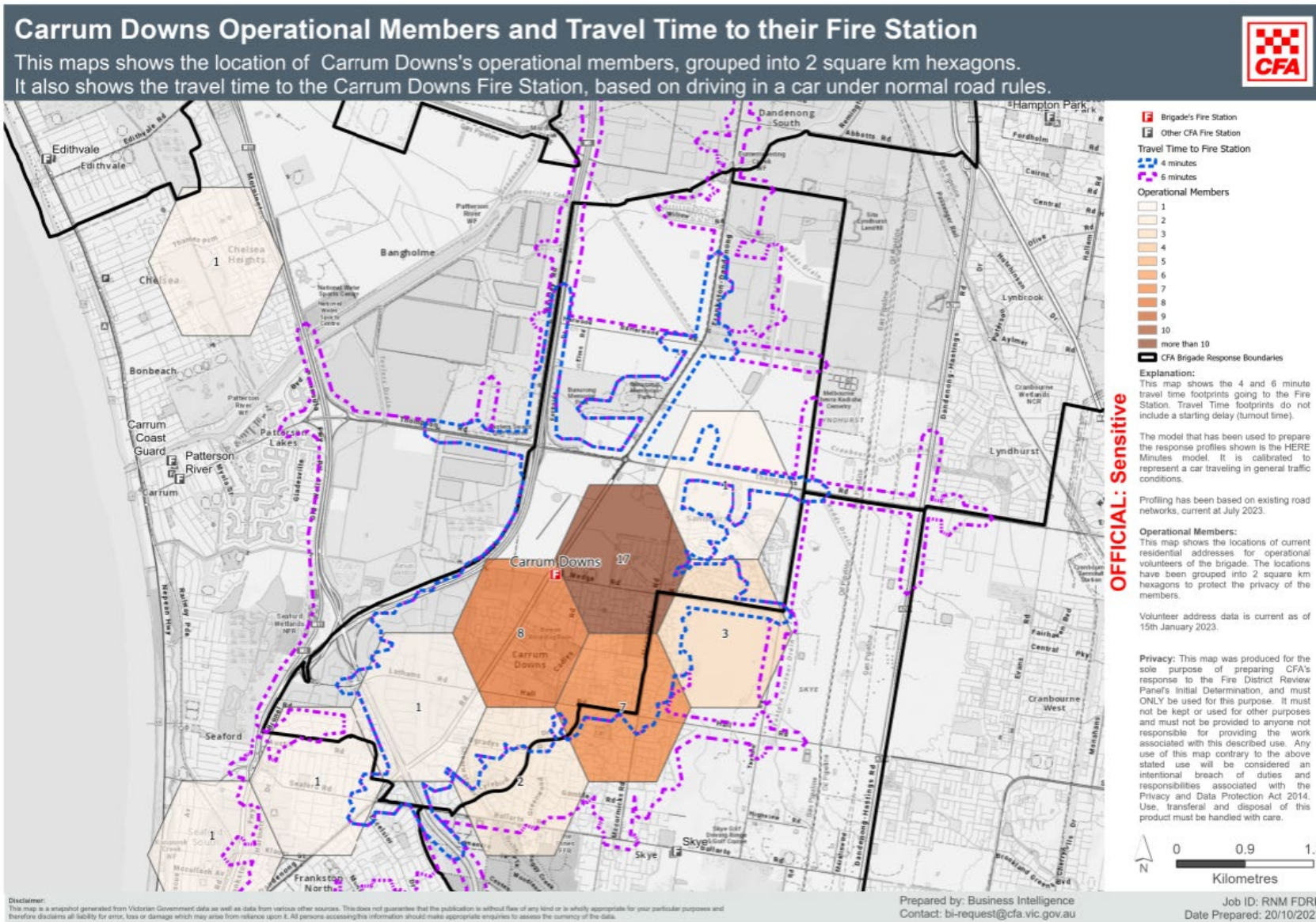


Figure 2: Typical traffic Thursday 15:00

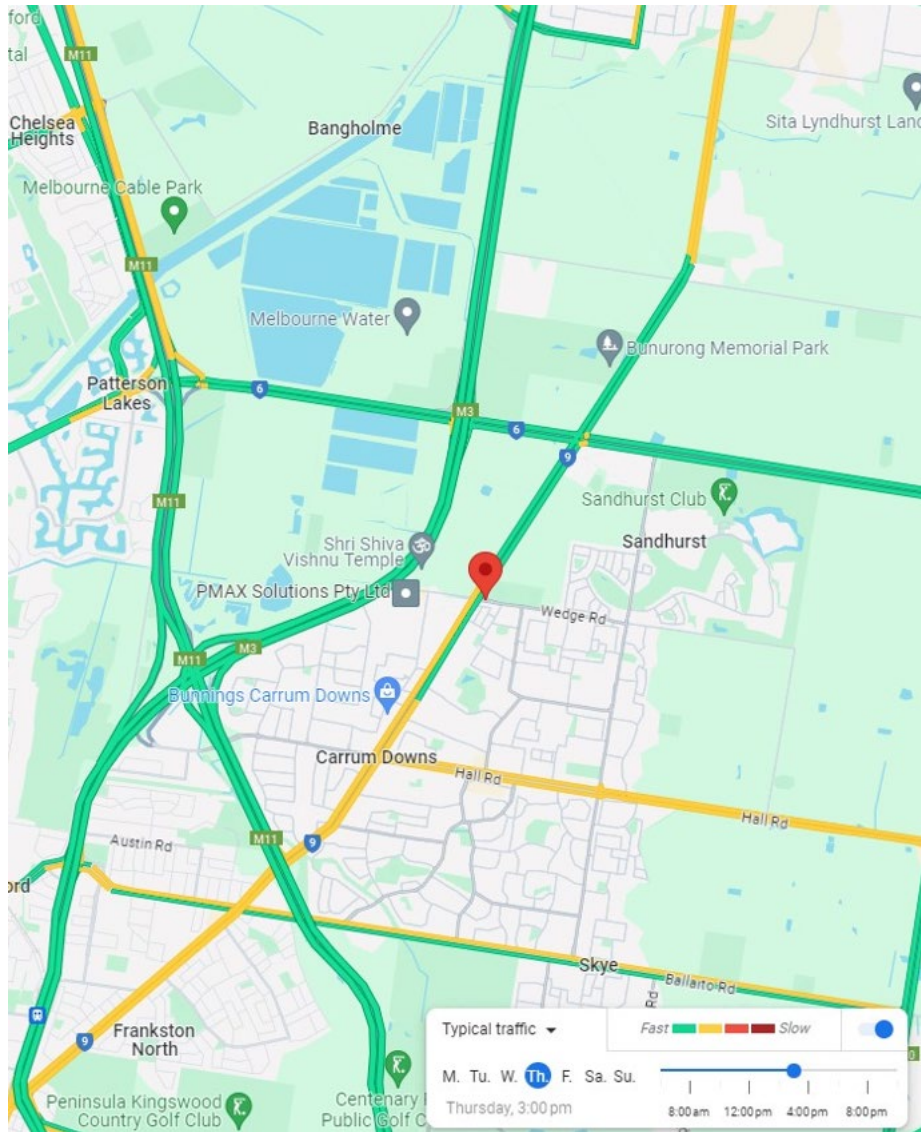


Figure 3: Incident count and type of support provided in the FRV Fire District

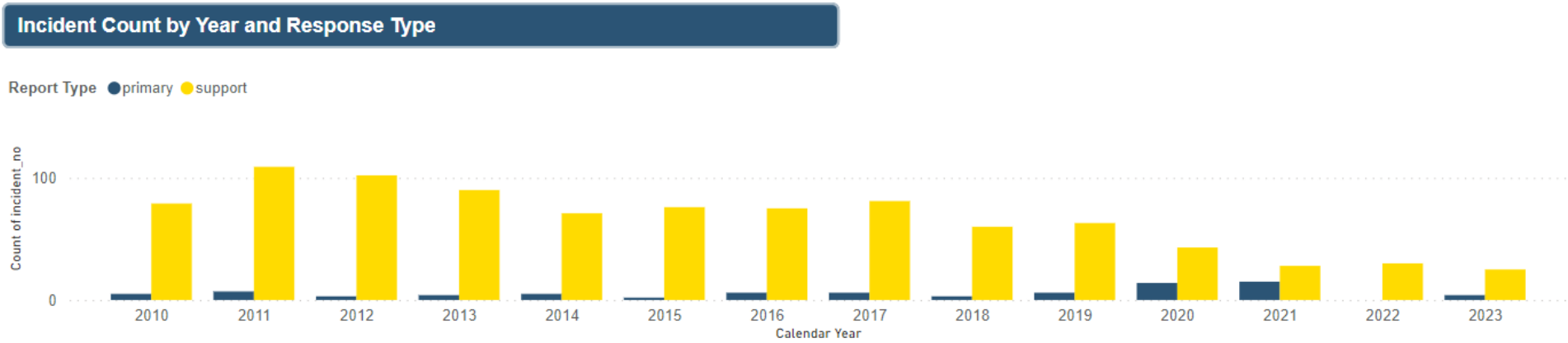


Figure 4: Incident count and type of support provided in the FRV station footprint

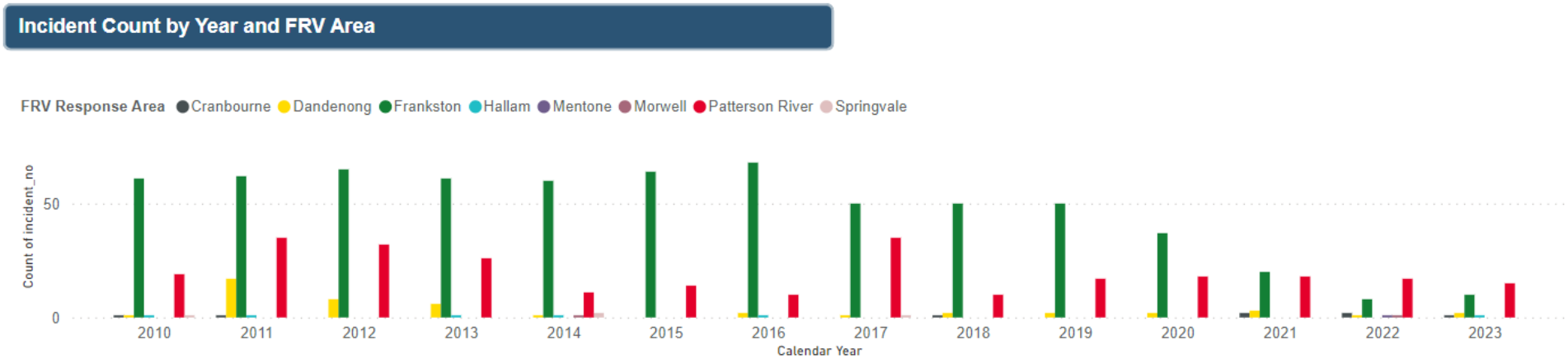


Figure 5: Community safety and intervention programs

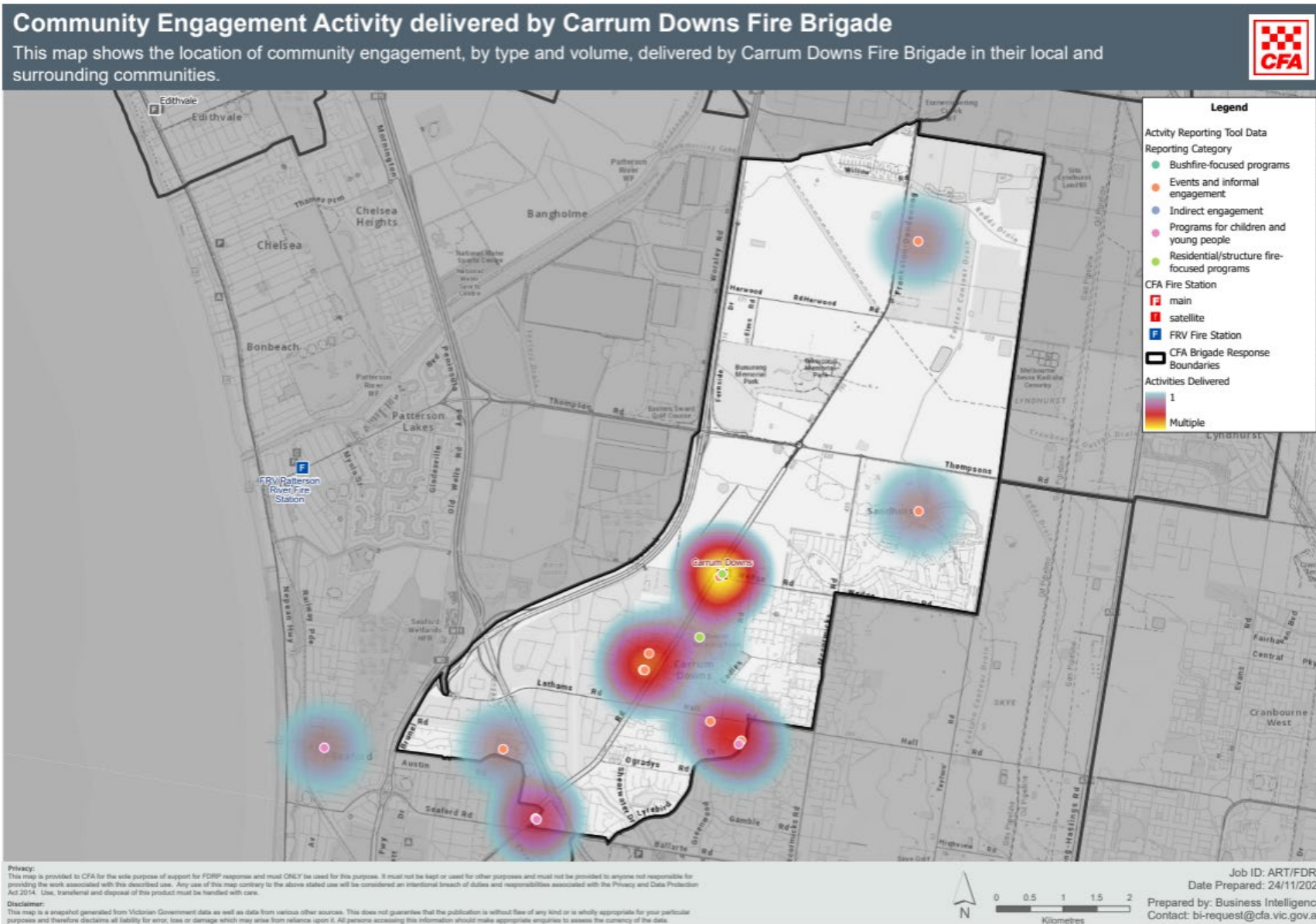


Figure 6: ABS land use areas and BMO

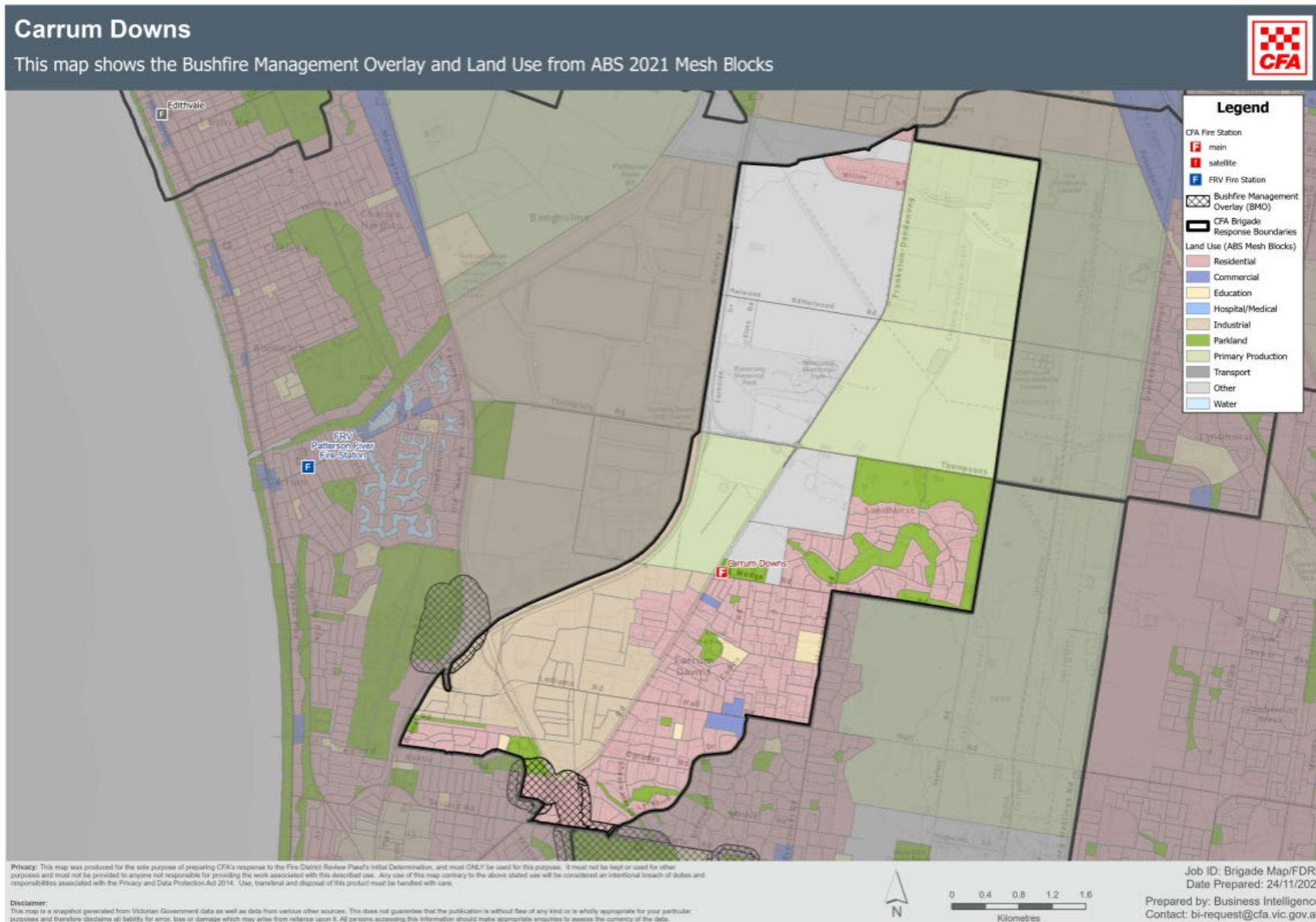
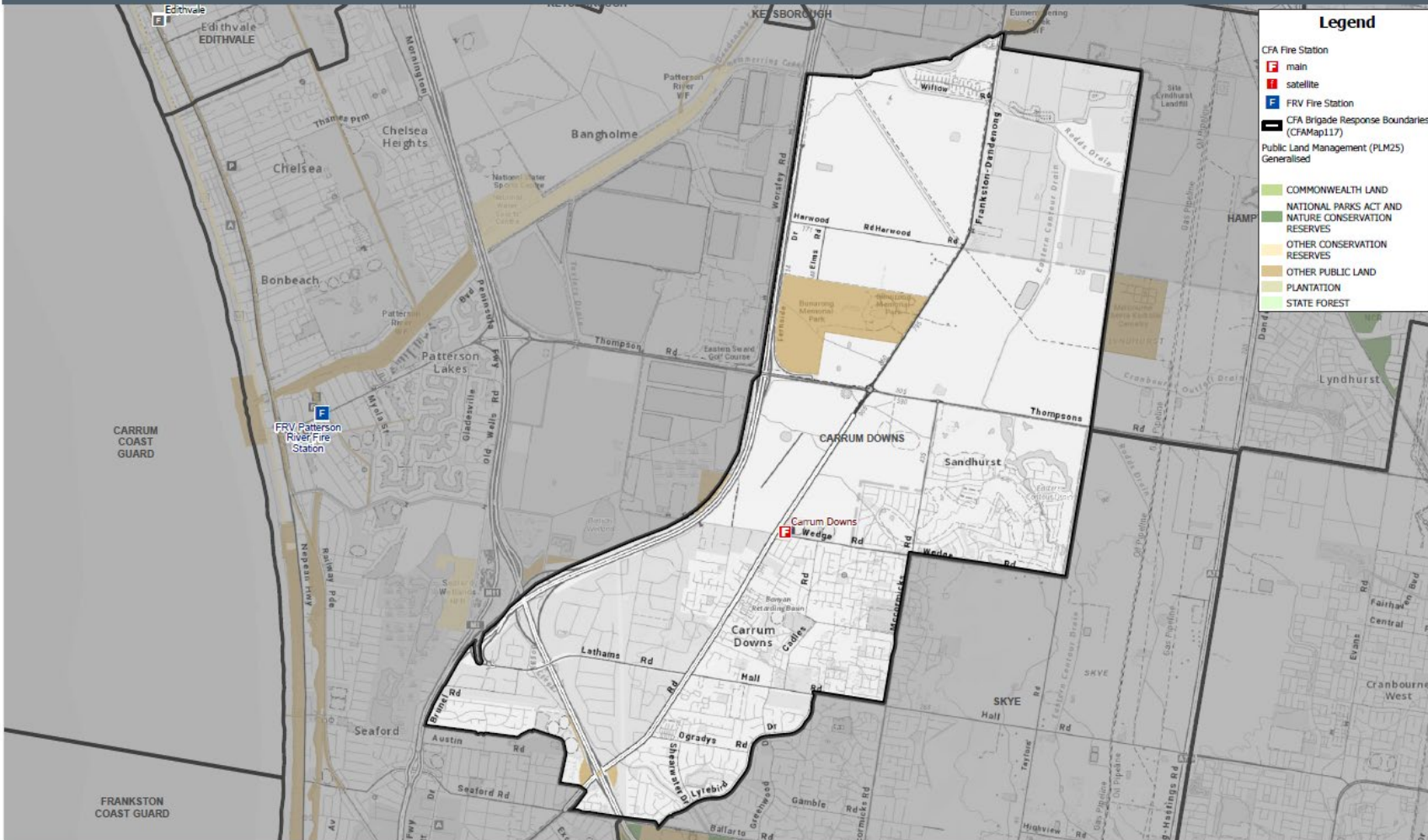


Figure 7: Public land management information

Carrum Downs

This map shows the generalised view of public land management information.



Legend

- CFA Fire Station
 - main
 - satellite
- FRV Fire Station
- CFA Brigade Response Boundaries (CFAMap117)
- Public Land Management (PLM25) Generalised
 - COMMONWEALTH LAND
 - NATIONAL PARKS ACT AND NATURE CONSERVATION RESERVES
 - OTHER CONSERVATION RESERVES
 - OTHER PUBLIC LAND
 - PLANTATION
 - STATE FOREST

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Explanation: The public land layer is not the assumed complete area of responsibility for the land managers.



Job ID: PLM Map/FDRP
 Date Prepared: 14/12/2023
 Prepared by: Business Intelligence
 Contact: bi-request@cfa.vic.gov.au

Figure 9: Carrum Downs Brigade incident count by type 1 January 2010 - 18 December 2023

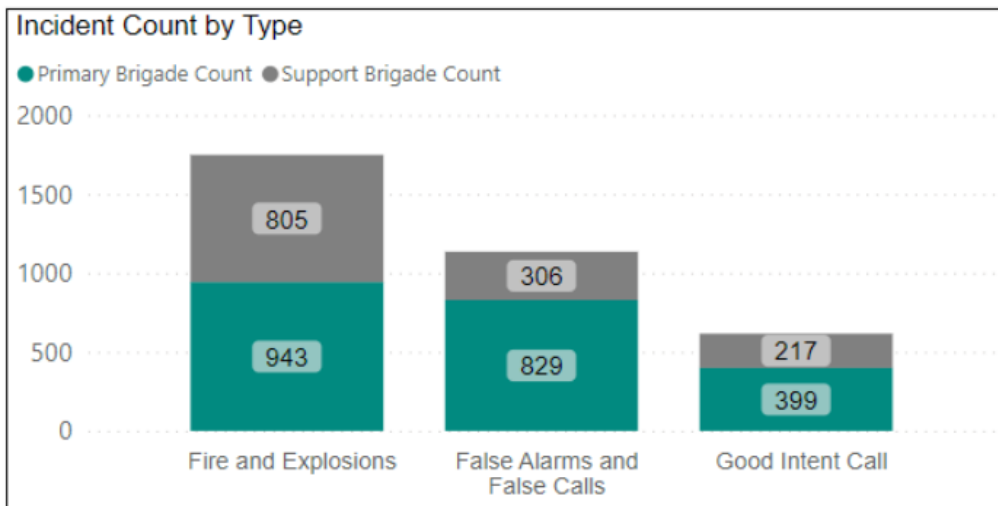


Figure 10: Carrum Downs Brigade incident count by month 1 January 2010 - 18 December 2023

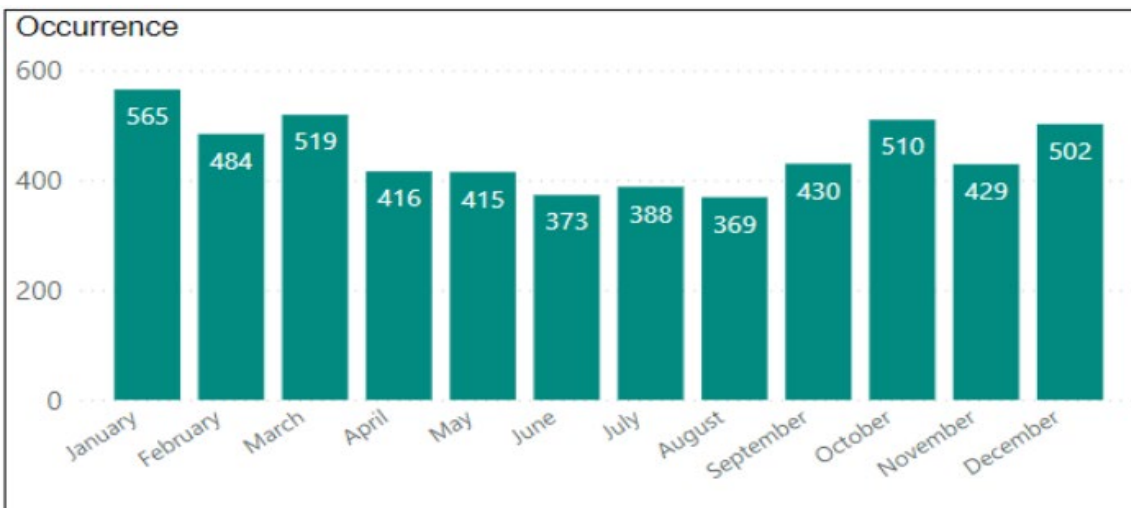


Figure 11: Carrum Downs Brigade incident count by type by year 2010 - 2023

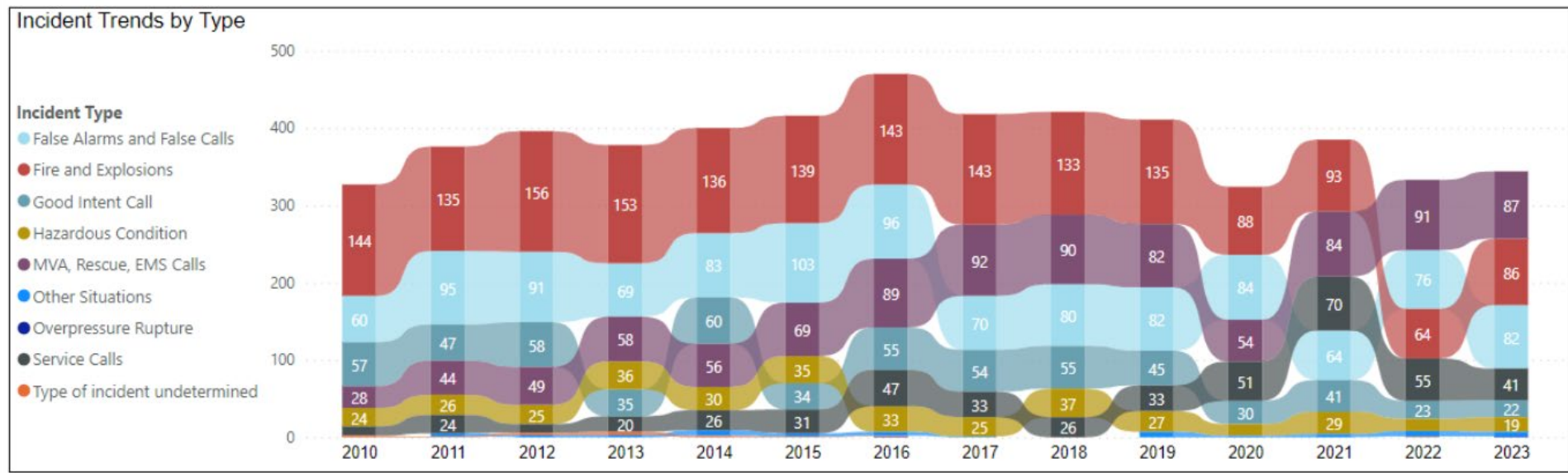


Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes

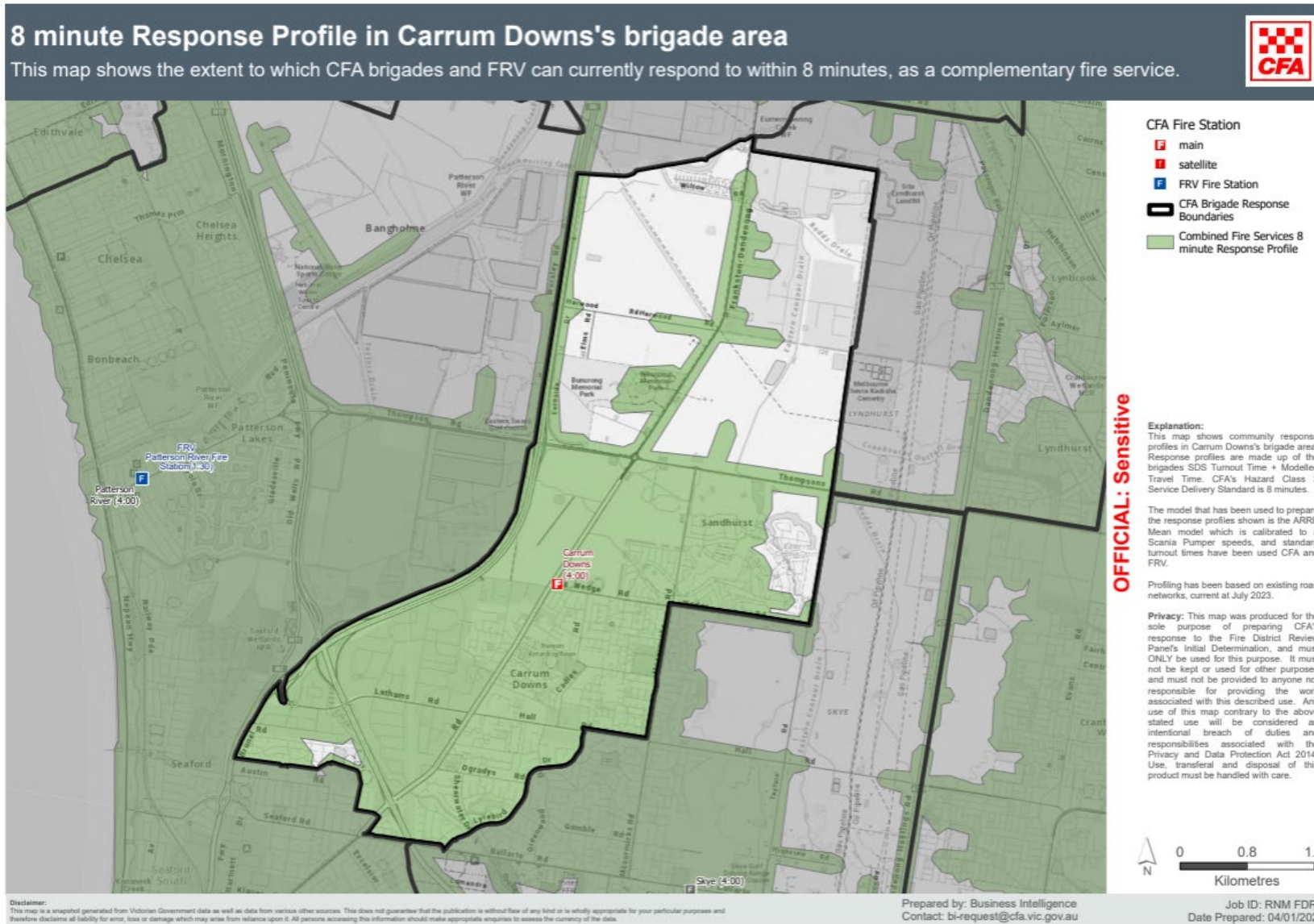
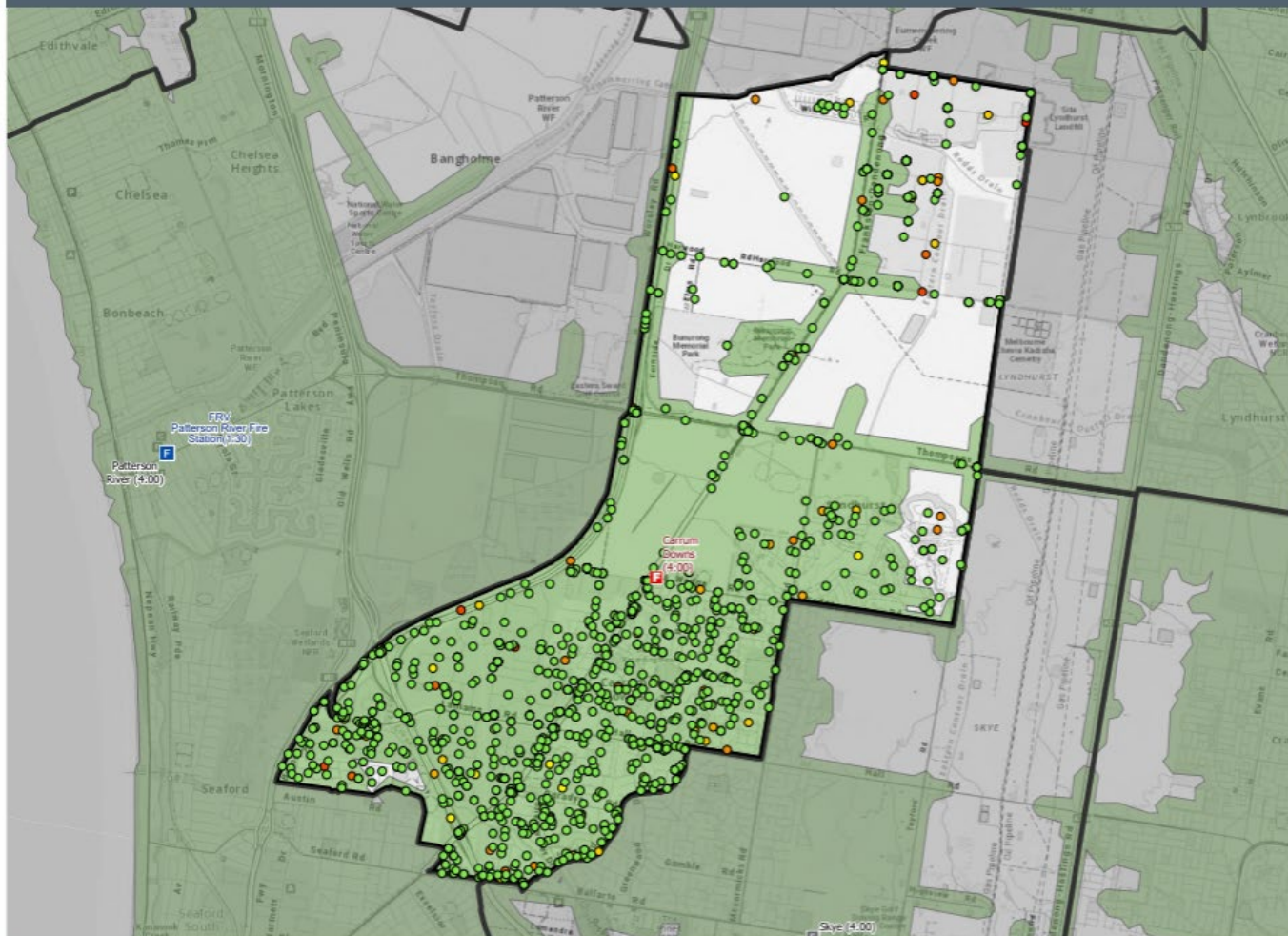


Figure 13: SDS compliance for the Carrum Downs Brigade SDA 2010 – 2019

8 minute Response Profile and Emergency Incidents in Carrum Downs's brigade area

This map shows the extent to which CFA brigades and FRV can currently respond to within 8 minutes, as a complementary fire service. It also shows the location of emergency incidents from 2010 to 2019, where the time target was met or not met by either fire service.



- CFA Fire Station
 - main
 - satellite
- FRV Fire Station
- Emergency Incidents (2010-19)
 - Community SDS pass
- Community SDS missed by
 - 0:01-0:15
 - 0:15-0:30
 - 0:30-1:00
 - 1:01-2:00
 - 2:01-3:00
 - 3:01-6:00
 - 6:01-10:00
 - >10:00
- CFA Brigade Response Boundaries
- Combined Fire Services 8 minute Response Profile

OFFICIAL: Sensitive

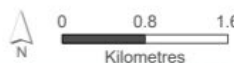
Explanation:
This map shows community response profiles in Carrum Downs's brigade area. Response profiles are made up of the brigade's SDS Turnout Time + Modelled Travel Time. CFA's Hazard Class 2 Service Delivery Standard is 8 minutes.

The model that has been used to prepare the response profiles shown is the ARRB Mean model which is calibrated to a Scania Pumper speeds, and standard turnout times have been used CFA and FRV.

Profiling has been based on existing road networks, current at July 2023.

Incidents are from 1/1/2010 to 31/12/2019, and are filter by the CFA's public reporting rules.

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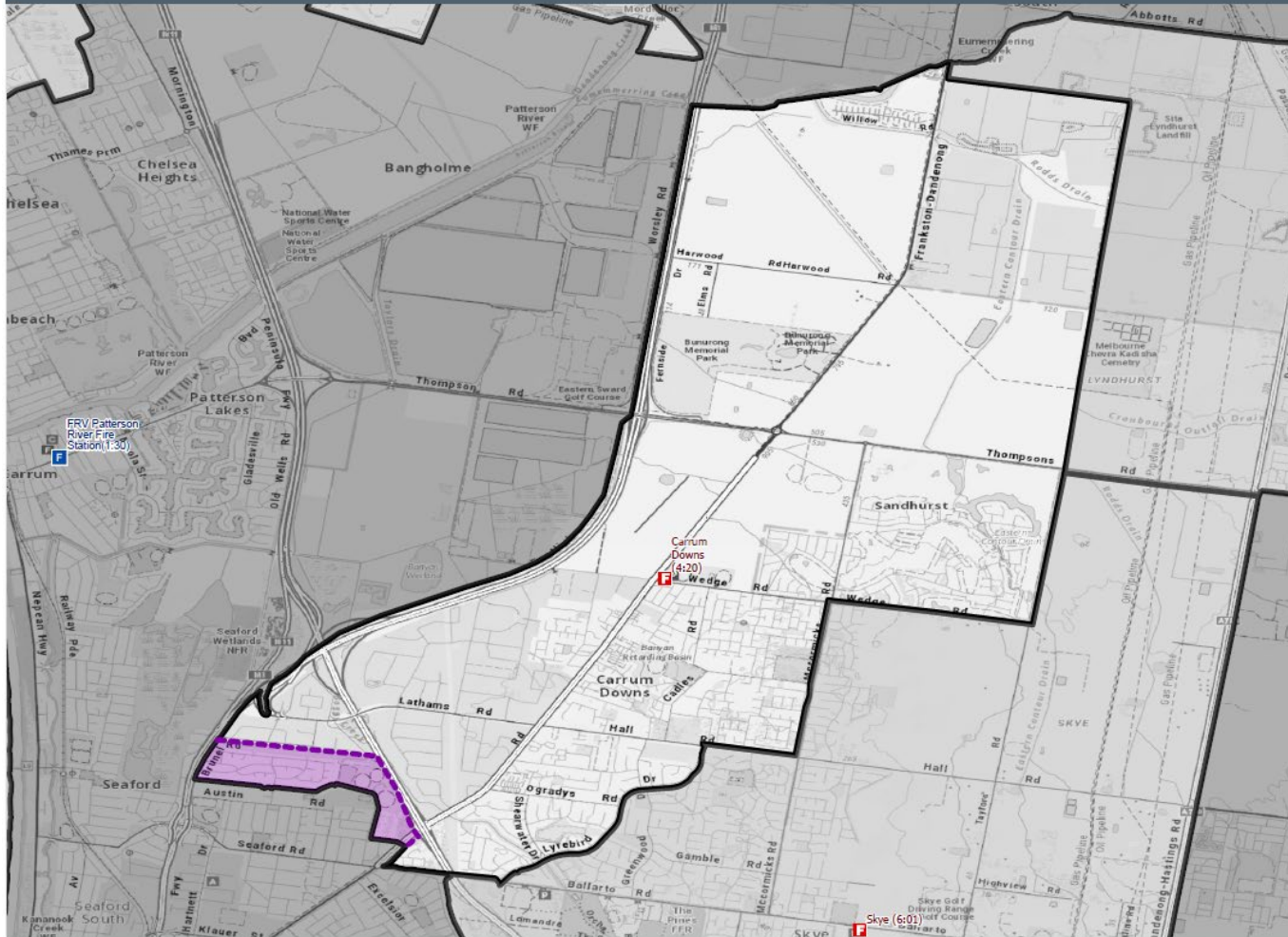
Prepared by: Business Intelligence
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Job ID: RNM FDRP
Date Prepared: 04/01/2024

Figure 14: Agreed variation zone

Agreed Variation Zone for Carrum Downs Brigade

This map shows the area identified as an agreed variation zone.

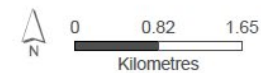


- CFA Fire Station
 - main
 - satellite
 - FRV Fire Station
- Agreed Variation Zone
- Agreed Variation Area
- FRV Maintenance Area
- CFA Brigade Response Boundaries (CFAMap17)
- CFA Brigade Response Area

OFFICIAL: Sensitive

Important:
The agreed variation zone data changes here are not suitable for loading into a CAD system and further modification to the data will need to be performed to meet ESTA CAD requirements.

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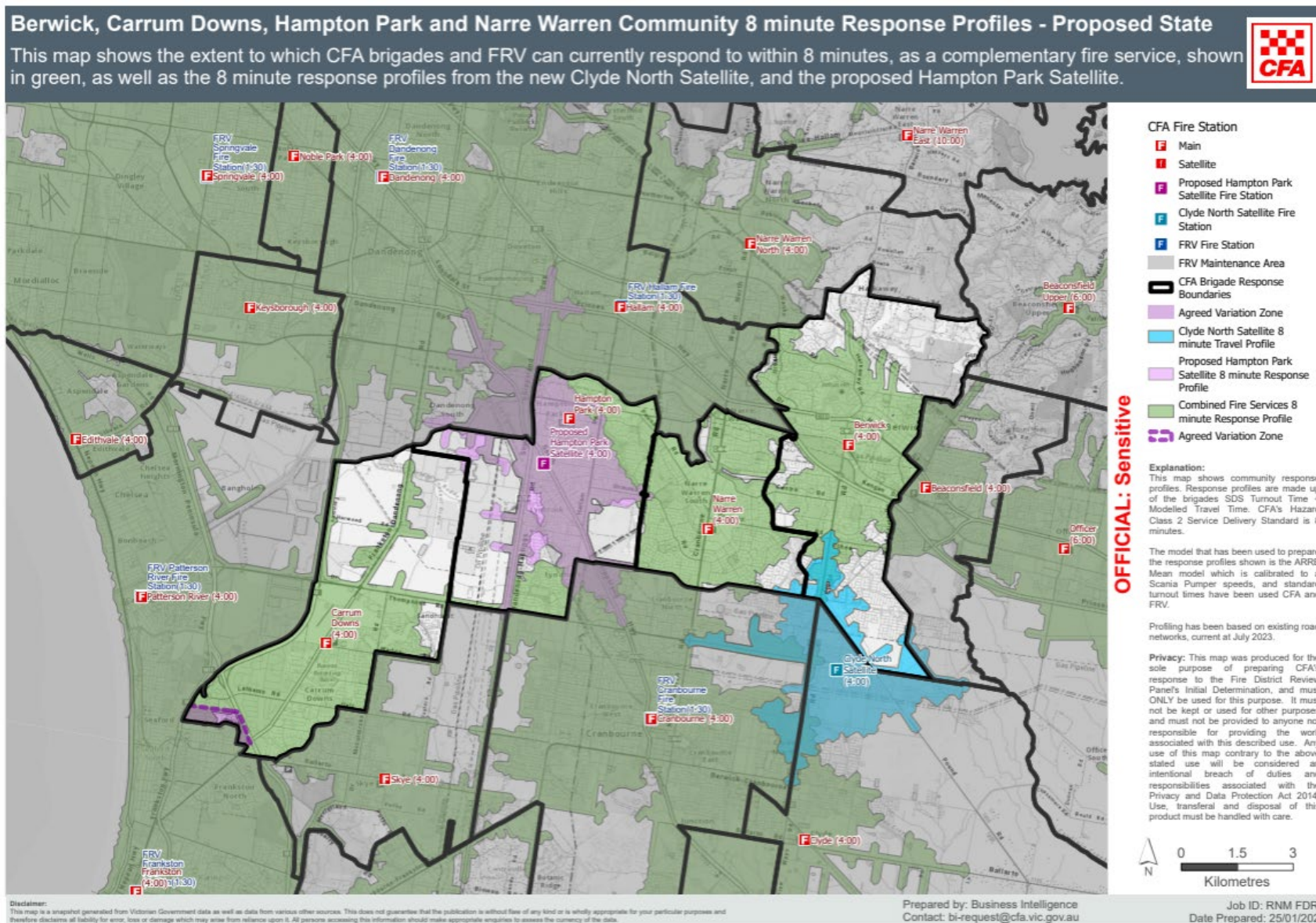


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Job ID: RNM FDRP
Date Prepared: 25/01/2024

Figure 15: Response profile of Clyde North satellite station (shown in blue)



Edithvale Fire Brigade

1. About the Brigade

Established in 1925 the Edithvale Fire Brigade is a Class 5 Brigade within the South East Group located in District 8 of the South East Region. The Edithvale Fire Brigade has a total membership of 128 volunteers (as at 31 December 2023) which includes a Junior Volunteer Development Program that promotes and delivers youth fire programs.

1.1 History

Edithvale Fire Brigade was first established in 1925 when nine community members formed the area's first brigade. In the early years, the members prided themselves on being self-directed and community-based, working with their local community to fund and build their first station, a 30ft x 14ft shed next to the town's railway line.

In 1967, recognising the growth of the area and committed to maintaining the fire service, the community and local council rallied to raise funds for a new fit for purpose station. The new station, built in Station Street, was officially opened in 1969. In 2017, a new state of the art fire station was opened on this site. The fit for purpose station provides sufficient motor room bays for brigade appliances, meeting room and administrative facilities, purpose-built business hub and a community meeting room that is available to volunteers and community members all year round.

The Edithvale Fire Brigade has continued to grow and evolve to meet the growing needs of the community it serves.

1.2 Context

The Edithvale Fire Brigade services the suburbs of Edithvale, Aspendale, Aspendale Gardens and parts of Chelsea Heights and provides support to neighboring CFA Brigades (Carrum Downs, Keysborough, Langwarrin) and FRV stations in Patterson River (Station 90), Mentone (Station 33), Springvale (Station 89). The Brigade responds to a range of emergency events including structural fires (residential and industrial), bushfires and grassfires, incidents at alarmed premises, hazardous materials calls, Emergency Medical Response (EMR) and motor vehicle accidents. The Brigade responds to approximately 300 incidents per year, with a high number being support calls.

Since the implementation of Fire Services Reform, there has been an observed decrease in the number of incidents attended by the Edithvale Fire Brigade with the number of calls to Fire and Explosion incident types reducing significantly, and the number of Service Calls increasing to the extent that this is now the predominant incident type attended by the Brigade.

The Edithvale Fire Brigade is an EMR Brigade in support of AV. The Edithvale Fire Brigade was one of the first CFA brigades to take part in the program which was established in 2009 and sees the CFA brigade simultaneously dispatched to a subset of medical calls alongside AV. The Brigade has 25 members as qualified EMR responders and regularly attends medical calls within the Brigade SDA.

While the new station was being constructed, the Edithvale Fire Brigade responded from a temporary station located in Chelsea Heights, outside of its own service area. During this two year period, the Brigade's ability to meet service delivery performance was hampered. The Victorian Government Rail Crossing Removal Program also significantly affected the Brigade's ability to access and egress the station during removal of a nearby level crossing, particularly when it was operating from the temporary station site. Although these disruptions had a negative effect on the Brigade's SDS, performance has returned to high levels.

CFA members have a unique ability to support communities and empower them to be fire ready. As well as being a trusted authority on fire safety, members are part of the communities they serve. The Edithvale Fire Brigade is currently in the process of developing a comprehensive community engagement plan to better support community education and engagement activities within the SDA.

The Edithvale Fire Brigade is part of the South East Group of brigades located in District 8, which comprises nine

other brigades. Together these brigades provide a collective fire service to Edithvale and the Bayside area, whilst working alongside their FRV colleagues from Station 33, Station 89 and Station 90.

Although CFA brigades are treated as individual entities by the review panel process, it is important to note that CFA brigades, organised as they are in a group structure, are able to work readily together to effectively and efficiently form strike teams and support response across their district, region and the state.

Edithvale is a viable, fully functioning urban fire brigade with a strong and reliable membership base and a proud tradition of dedicated, voluntary service.

2. Brigade Capability Snapshot

2.1 Membership

The Edithvale Fire Brigade has a total membership of 128 members (30 females and 98 males). The Brigade has a healthy age profile with the average member age being 41 years.

2.2 Fire appliances, other vehicles and specialist equipment

The Edithvale Fire Brigade has four response vehicles and one transport vehicle to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Edithvale Brigade alone.

Table 1: Fire appliances and vehicles available to the Edithvale Brigade

Vehicle Type	Vehicle Make	Age
Pumper	Scania	7 years
Tanker	Iveco	3 years
Mobile communications van	Iveco van	8 years
EMR vehicle	Ford Territory	11 years
Bus	Toyota Hiace	2 years

Table 2: Vehicle specification

Pumper	Carrying five firefighters, 2,500 litres of water and 4,000 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, gas suits, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage, monitors and foam equipment.
Tanker	Carrying five firefighters 4,000 litres of water, 1,200 lpm pump, BA, hoses and adaptors, chainsaw and foam equipment
Mobile Communications Van	Mobile command centre with capability to operate in remote locations off grid. Includes radio and telephony communications systems, IT equipment including computers and multi-function printer/scanner.
EMR Vehicle	Crew cab vehicle for personnel transport and fire ground support. Edithvale Fire Brigade utilises this vehicle solely for the purpose of EMR response.
Bus	Transport vehicle used to bulk transport crews to and from incidents/strike teams as required.

2.3 Station Location

The station is located at 206 Station Street, Edithvale. Constructed in 2018, the station is just off the main thoroughfare of the Nepean Highway which provides for great access to all areas of the township. The Edithvale Fire Brigade was heavily involved in the design and construction of the multi-level fire station which comprises four motor room bays, of which three are drive through vehicle motor room bays. It also contains meeting facilities, communications room and computers/office equipment to enable members to provide day time coverage efficiently.

The location of a fire station is an important element in the successful operation of a volunteer fire brigade. Siting must strike a balance between being located to address service delivery needs but also being readily accessible to and from for emergency responders. As above, the Brigade's interim location during station construction resulted in a higher than usual proportion of SDS misses, compounded by the impact of removal of a nearby rail level crossing. Although these disruptions had a negative effect on the Brigade's SDS, performance has returned to high levels.

Analysis of almost five years of incident data (January 2019 to November 2023) shows Edithvale Fire Brigade has three peak times for brigade dispatches which are on Fridays at 11:00, 19:00 and 22:00 as shown by the figures below.

Figure 1: Typical traffic Friday 11:00

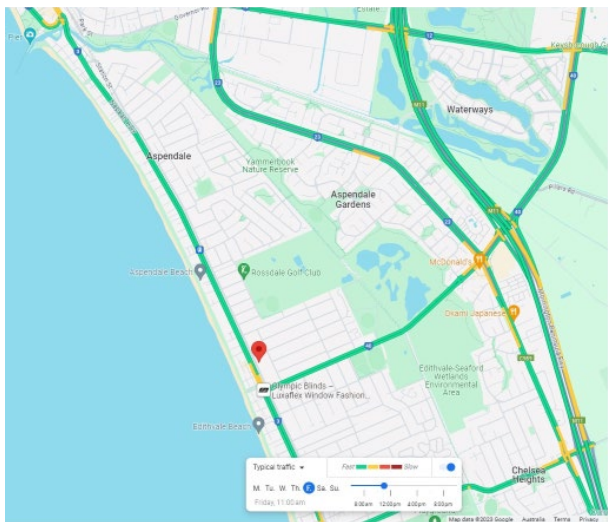


Figure 2: Typical traffic Friday 19:00

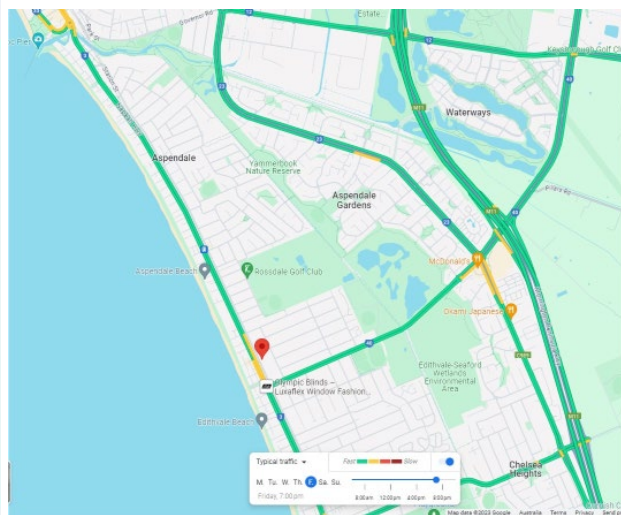
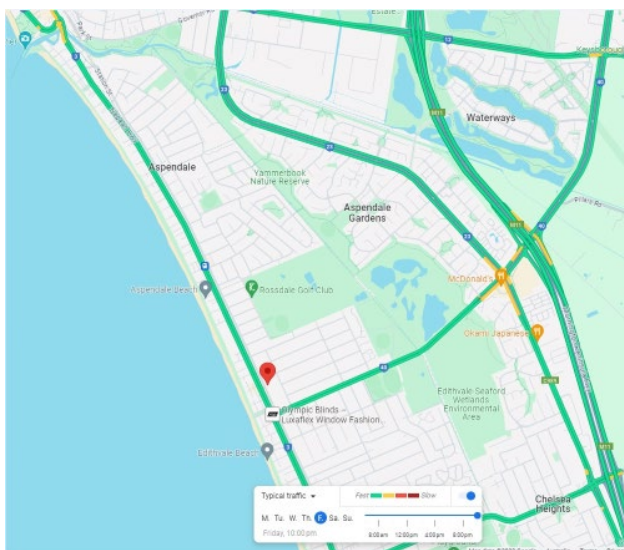


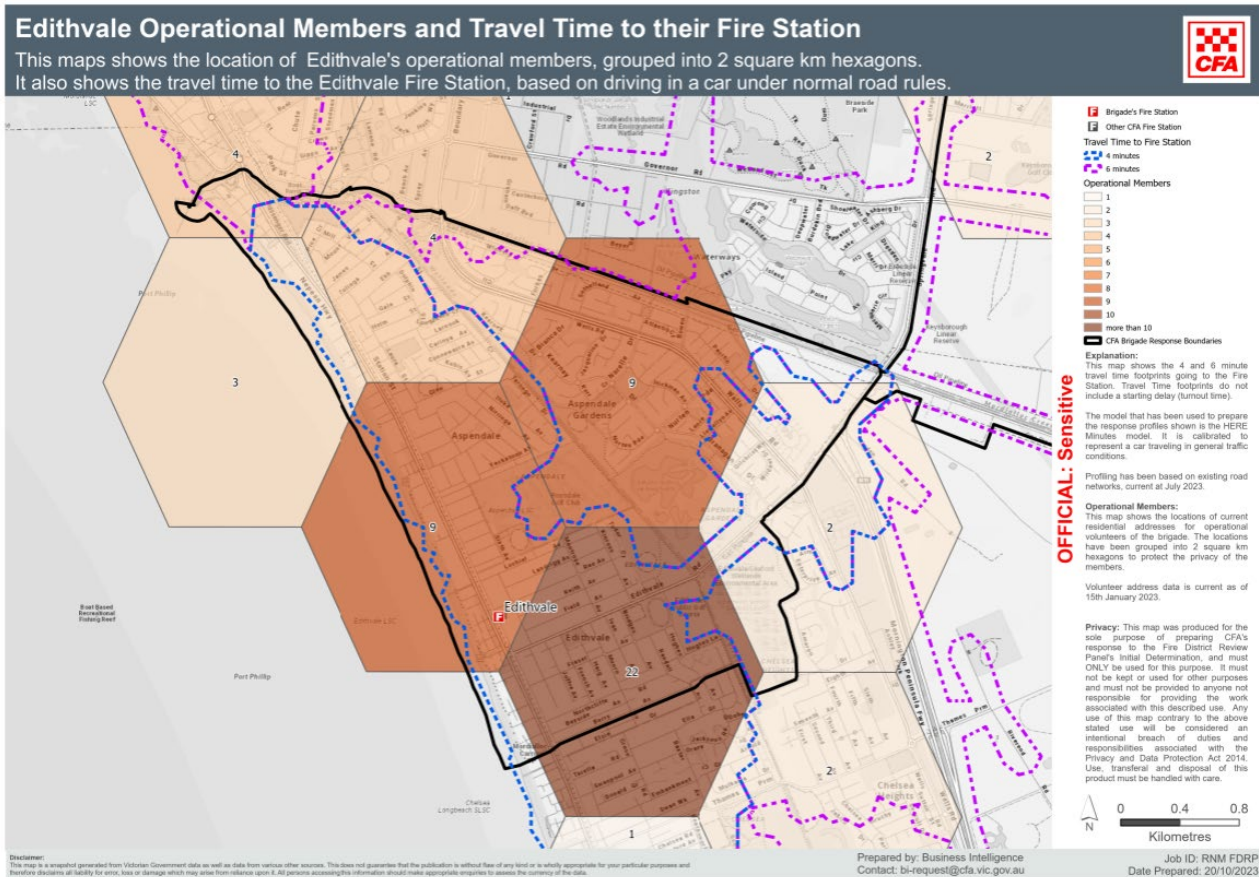
Figure 3: Typical traffic Friday 22:00



It is evident that while there is some traffic congestion on the Mornington Peninsula Freeway, and at times at the intersection of Wells Road and Edithvale Road, traffic still moves relatively quickly in these areas and it is not expected to impede the Brigade's ability to respond to and from the station in a timely manner.

Further analysis of the home location of Edithvale Fire Brigade Operational Members within a four minute and six-minute travel time (under normal road conditions) (Figure 4) indicates that a considerable number of operational members live within the four-minute travel time footprint to the station. This, along with SDS performance data, highlights that the Edithvale Fire Brigade has sufficient resources to ensure the rapid mobilization of volunteers to station upon activation.

Figure 4: Operational members location and travel times



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only has use across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state's resources in both the CAoV and the FRV Fire District. In particular the Edithvale Fire Brigade provides surge and support capacity in the following ways:

- Edithvale Fire Brigade regularly provides support to adjoining CFA brigades and FRV stations
- the Brigade provided support to the 2019-20 Black Saturday fires with the pumper being deployed
- Brigade members were deployed to the recent emergency flood and fire events in support of Queensland Fire and Emergency Services
- Edithvale Brigade supported the District 10 Briagalong and Loch Sport fires in October 2023
- the Brigade supported the Victorian flood response in 2022-23.

2.5 Assistance to Fire Rescue Victoria

The Edithvale Fire Brigade regularly responds in support of FRV within the FRV Fire District providing a complementary fire service to the wider community. Throughout the 2023 calendar year the Edithvale Fire Brigade was dispatched in support of FRV to 120 incidents. Figure 5 shows the total count of incidents (split into primary and support) that the Edithvale Fire Brigade attended in the FRV Fire District for each calendar year.

Figure 5: Incident count and type of support provided in the FRV Fire District

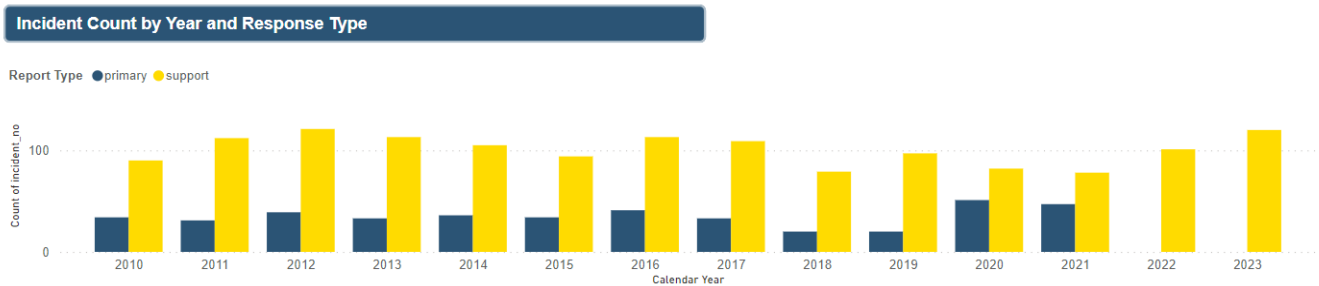
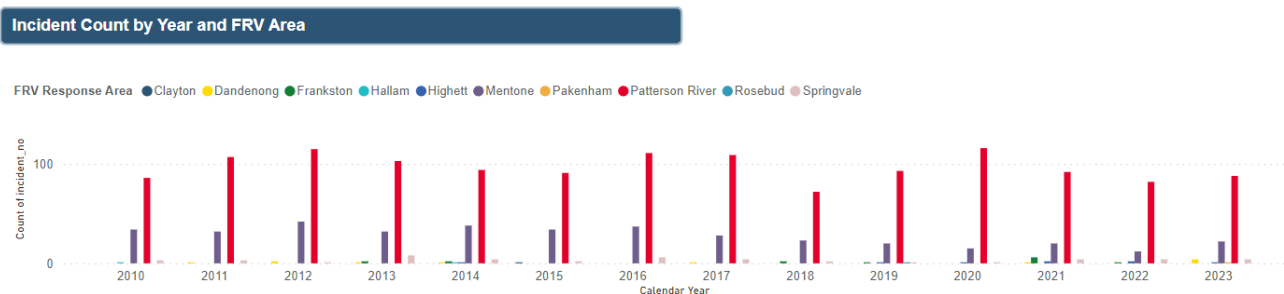


Figure 6 shows the count of incidents that the Edithvale Fire Brigade attended in FRV Fire Districts split by specific FRV stations, of which the majority of support provided was to FRV Patterson River (Station 90).

Figure 6: Incident count and type of support provided in the FRV station footprint



2.6 Assistance from Fire Rescue Victoria

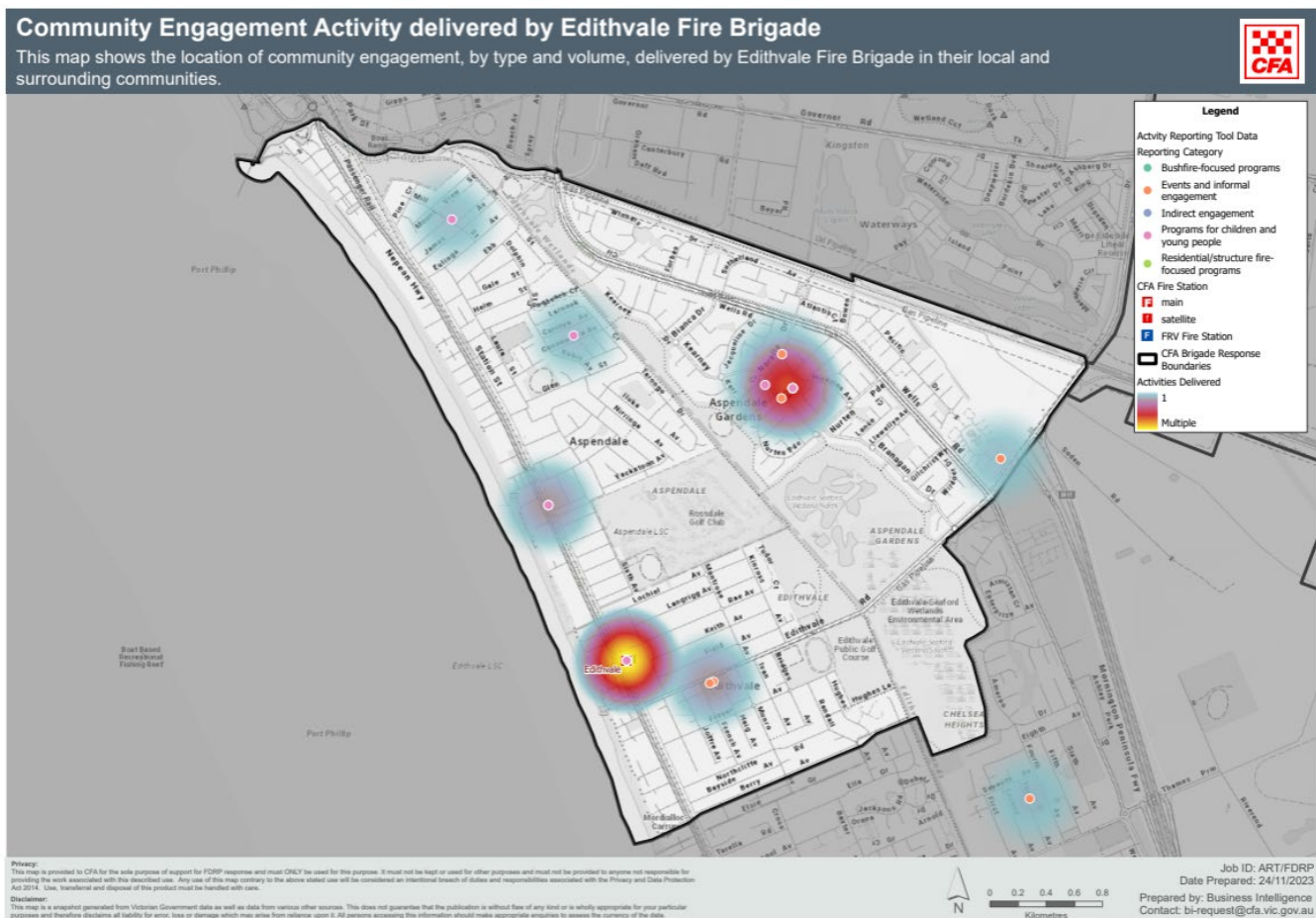
FRV is currently dispatched in support of the Edithvale Fire Brigade across all code 1 responses within the Edithvale Fire Brigade’s SDA. This ensures a complementary approach to fire service delivery and also allows mitigating service demand management in the event that the Edithvale Fire Brigade is called upon concurrently or a further call is received whilst already engaged. Data analysis shows that whilst FRV is dispatched in support of the Edithvale Fire Brigade to all incidents, FRV is the first emergency service on scene to incidents in the Edithvale Fire Brigade’s SDA on a very small percentage of occasions (less than 2%).

2.7 Community engagement activities

The Edithvale Fire Brigade is currently in the process of developing a community engagement plan to enhance the community engagement and education activities conducted within the community.

CFA in 2022 implemented a new platform to allow brigades to centrally record community engagement activities undertaken by brigades to allow better understanding of community fire safety interventions. Brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of interventions. Figure 7 below shows community safety interventions undertaken by the Edithvale Fire Brigade as recorded in the ART system.

Figure 7: Community safety and intervention programs



2.8 Prevention and preparedness activities

Experienced brigade members deliver training to staff working in protected premises and high-risk industries, reducing preventable false alarms and building community resilience in the early identification and management of fire. The Edithvale Fire Brigade is committed to ensuring risks are identified and assessed within the Brigade’s SDA, which has resulted in the development of 18 pre-incident plans to ensure a comprehensive planned approach to response at high-risk premises.

Additionally, the Edithvale Fire Brigade works closely with the City of Kingston Vegetation Management team and participates periodically in fuel reduction advice and work to manage the wetlands and foreshore coastal scrub within the SDA. Members are also deployed as part of the Statewide Planned Burning Taskforce, predominately assisting in planned burns in the South West Region.

3. Service Delivery Area Profile

The Edithvale Fire Brigade SDA has a total area of 883.9 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses.

Table 3: Edithvale land use planning areas

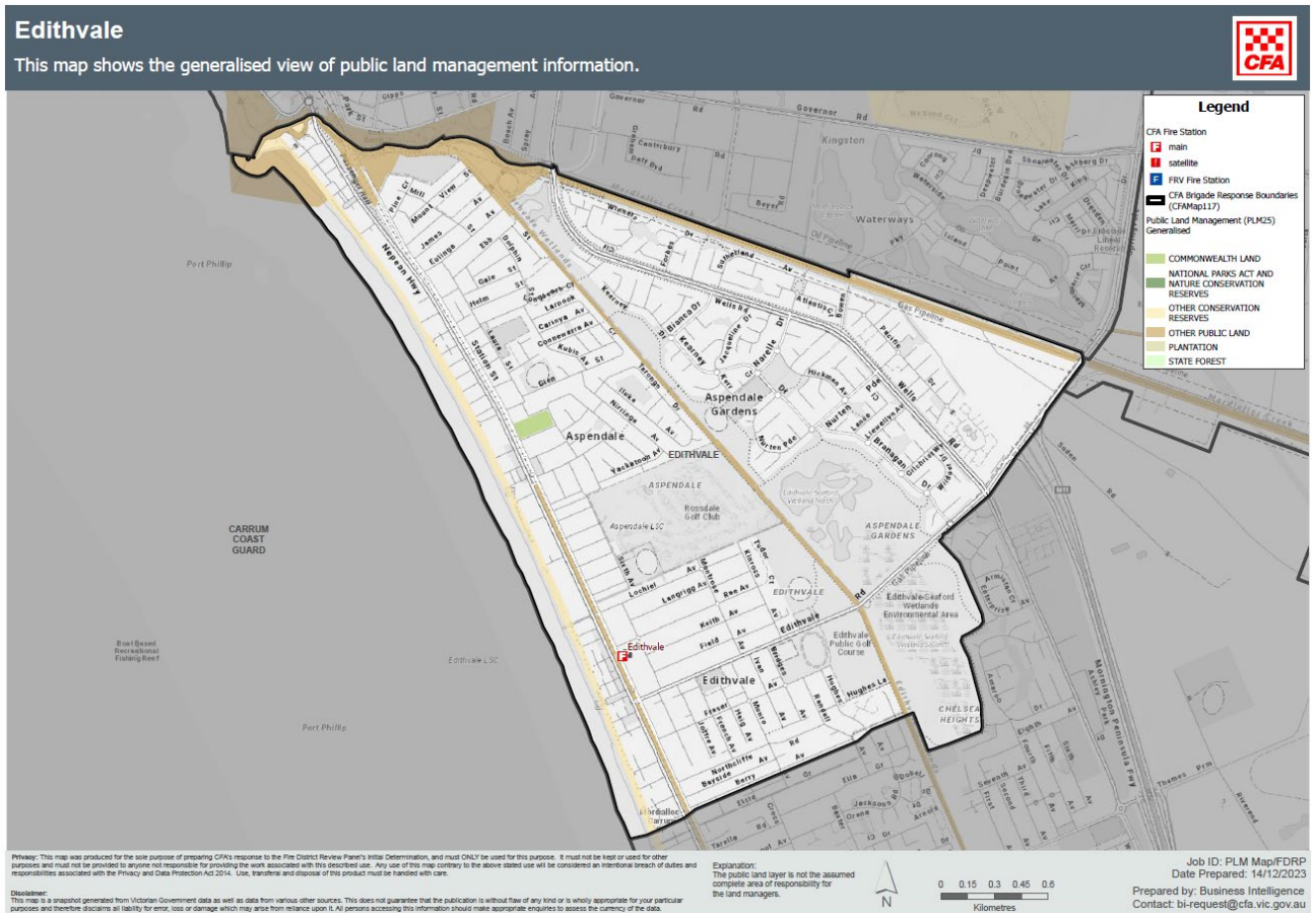
Land use	Hectares	Percentage of Brigade Area
Commercial	10.7	1.2%
Education	20.9	2.4%
Industrial	0.2	0.0%
Other	36.8	4.2%
Parkland	256.7	29%
Primary Production	1.1	0.1%
Residential	557.4	63.1%
Transport	0	0

A map showing the current land use planning uses and applicable mesh block is shown in Figure 8.

Figure 8: ABS land use areas and BMO



Figure 9: Public land management information

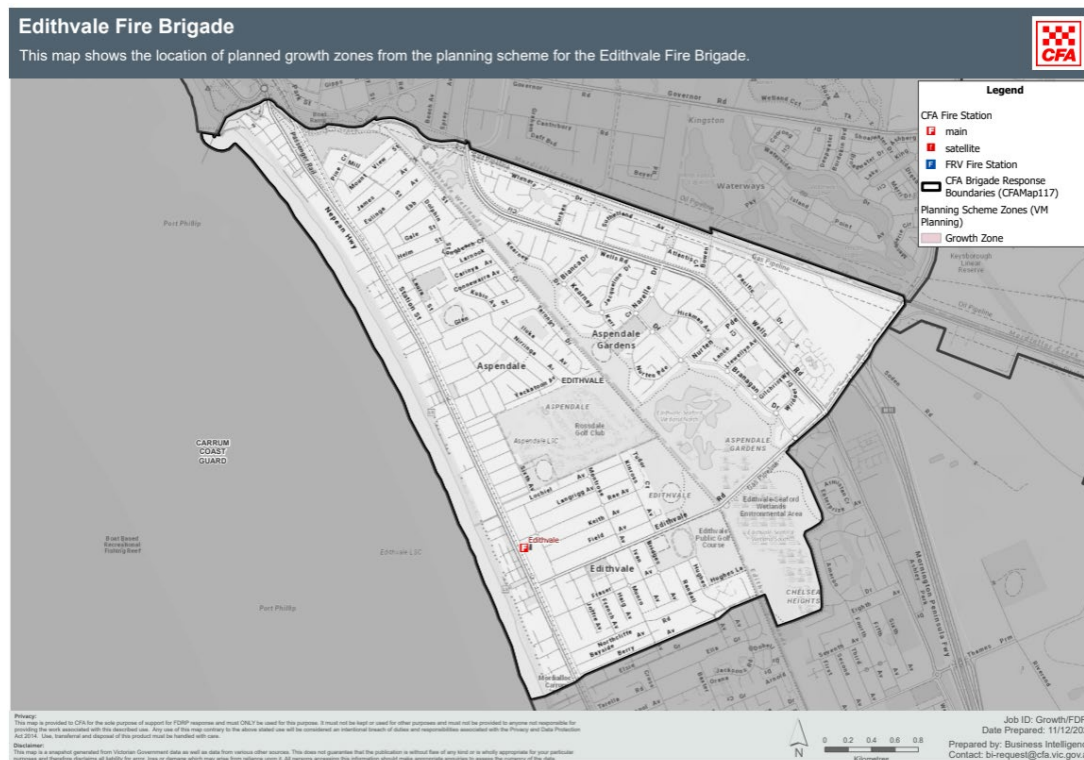


3.1 Growth zones

There are no areas within the Edithvale SDA that are identified as growth zones (Figure 10).

The Edithvale SDA is fully developed with parkland surrounded by predominately residential zones with a small area of commercial premises. The Edithvale Fire Brigade has appropriate appliances to respond to the risk within the SDA.

Figure 10: Planned growth zones from the planning scheme for Edithvale



Risk Evaluation:

The Edithvale Fire Brigade resource capability of a pumper and tanker combined with the long-established protocol of assistance from FRV and neighbouring network of CFA brigades delivers a complementary fire services model and is considered sufficient to meet the current residential and commercial risk. There is no additional growth forecast for the Edithvale SDA with all current planned zoned residential areas fully developed.

3.2 Bushfire Management Overlay

The Edithvale Fire Brigade SDA has no identified BMO areas as identified from the ABS2021 mesh blocks map in Figure 8. The SDA has a grass fire risk within the identified parkland areas that is mitigated by the operation of a tanker by the Edithvale Fire Brigade.

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population increase of 769 or 4% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells). The local government area forecast seven-year population change is an increase of 8% by 2031.

ABS Index of Relative Socio-economic Disadvantage (2021) shows the Edithvale Statistical Area Level 1 to be at SEIFA decile 8 and Quintile ranging from 3 to 5. This data demonstrates that the Edithvale Fire Brigade SDA has an average to better than average socio-economic advantage.

ABS census data (2021) shows that there are 7,149 dwellings in the Edithvale Brigade SDA. Of these dwellings, 17% are rental houses with a small proportion (3.38%) state owned. As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair²⁶.

The Edithvale Fire Brigade and District 8 undertake a fire alarm/smoke detector installation and maintenance program for at-risk and vulnerable residents, with 82 installations in the past five years. This allows for the earlier identification of fire to minimise the consequences of unplanned ignitions and a reduction in loss of life statistics for vulnerable people.

The population across the SDA has a relatively low instances of those that may be at a higher risk, including people living with a disability, and those with a Culturally and Linguistically Diverse (CALD) background. Apart from Australian and English backgrounds, persons of Irish heritage are the next largest cultural community.

CFA and FRV have collaborated to create the Prevent – Detect – Escape Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability. There have been 58 community members undertake the Prevent – Detect – Escape Program in the Edithvale Fire Brigade SDA.

Risk Evaluation:

Having regard to fire safety interventions, there is a moderate number of the population within rented properties (17%). The level of rental housing has led to proliferation of mandated working (checked) smoke alarms and the Edithvale Fire Brigade's participation in the smoke alarm/detector installation and maintenance program is likely a contributing factor to the low number of fire fatalities within the SDA. To date a relatively low number of community members have undertaken the Prevent – Detect – Escape Program and a targeted promotional campaign will be undertaken to increase participation.

Risk Mitigation Action:

The development of a community engagement plan and the active promotion of the Prevent – Detect – Escape Program will greatly assist the Edithvale Fire Brigade to mitigate the risk and ensure a continued low occurrence of fire related fatalities within the residential environment.

²⁶ <https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/keeping-the-property-safe/smoke-alarms-and-fire-safety#:~:text=The%20rental%20provider%20must%20ensure%20smoke%20alarms%3A%201,are%20repaired%20or%20replaced%20as%20an%20urgent%20repair.>

4. Service Delivery and Service Demand

4.1 Total Demand

Figure 11 shows the total number of unique incident numbers attended by the Edithvale Fire Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response. The number of Fire and Explosions and Fire Alarm/False calls are the dominating incident types for the Edithvale Fire Brigade, with the event types almost evenly split between primary and support calls.

Figure 11: Edithvale Brigade incident count by type 1 January 2010 - 18 December 2023

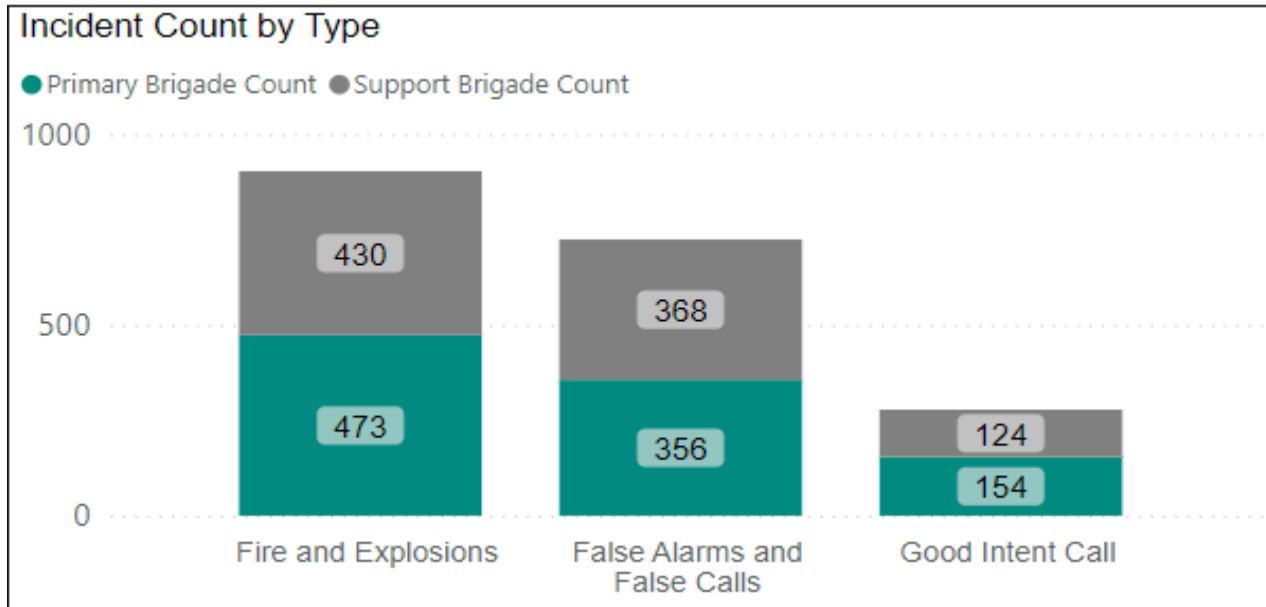


Figure 12 shows a count of the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels in December and January and lower periods of activity in the winter months. The higher rates of activity in December and January are conducive to the Edithvale Fire Brigade's capacity and ability to support bushfire operations statewide.

Figure 12: Edithvale Brigade incident count by month 1 January 2010 - 18 December 2023

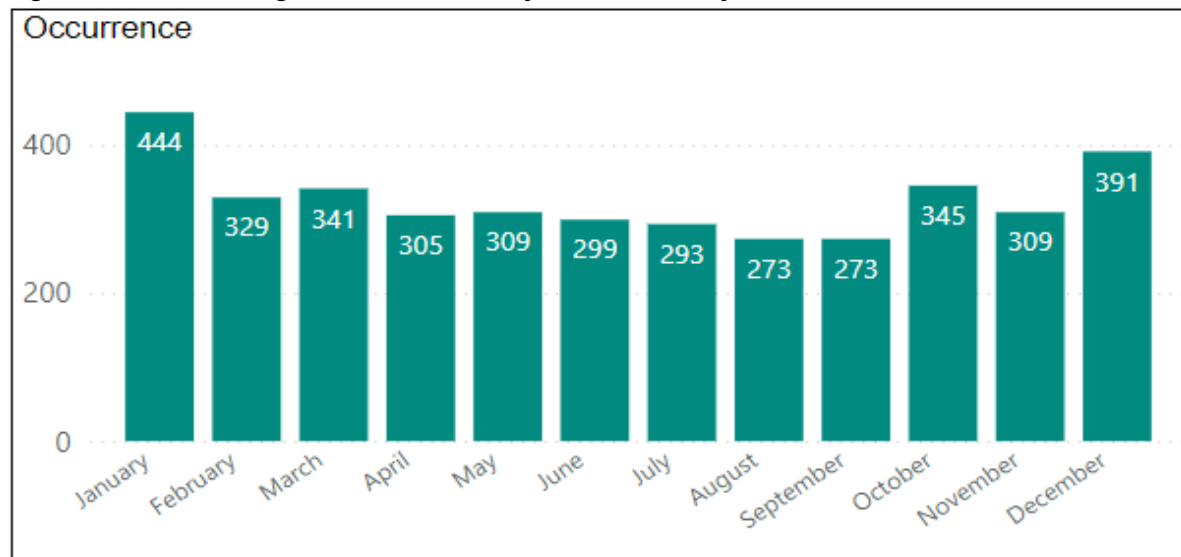
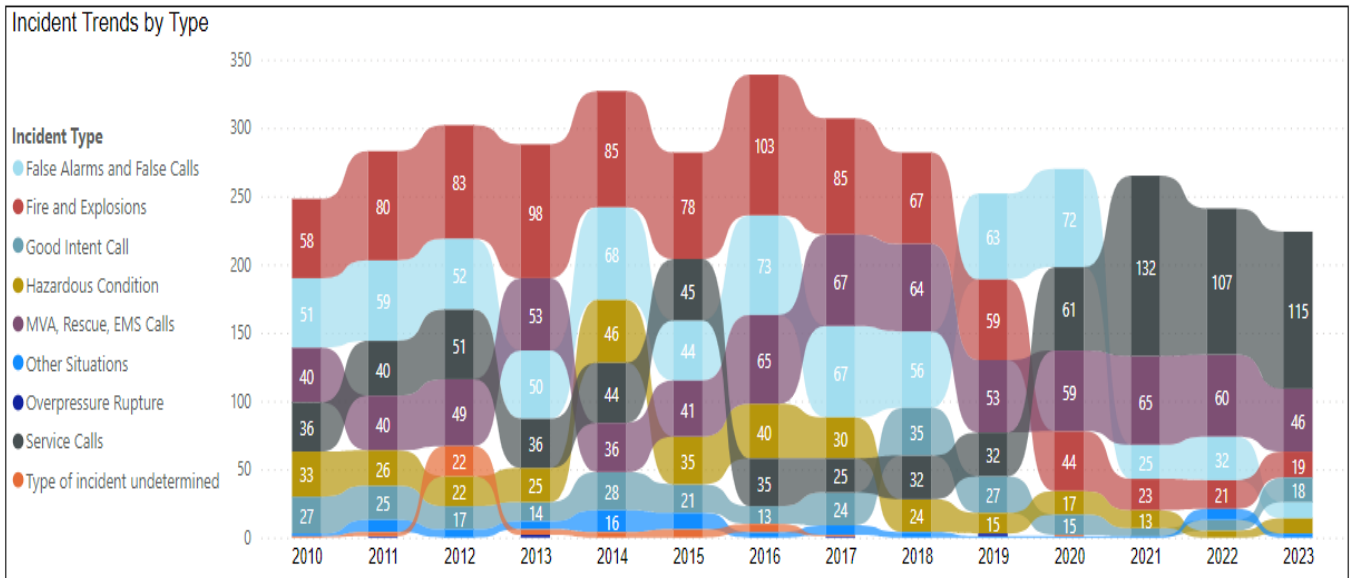


Figure 13 shows a count of all incident types between 1 January 2010 and 18 December 2023. The primary incident type for the Brigade since 2021 is service calls, which is likely as a result of the support arrangements after the establishment of FRV. Prior to Reform, the primary incident type for the Edithvale Fire Brigade was Fire and Explosion type incidents.

The total number of incidents responded to by the Edithvale Fire Brigade has reduced since Fire Services Reform. Overall, the Edithvale SDA has seen a reduction in total demand for services by a significant amount when compared to pre Reform levels.

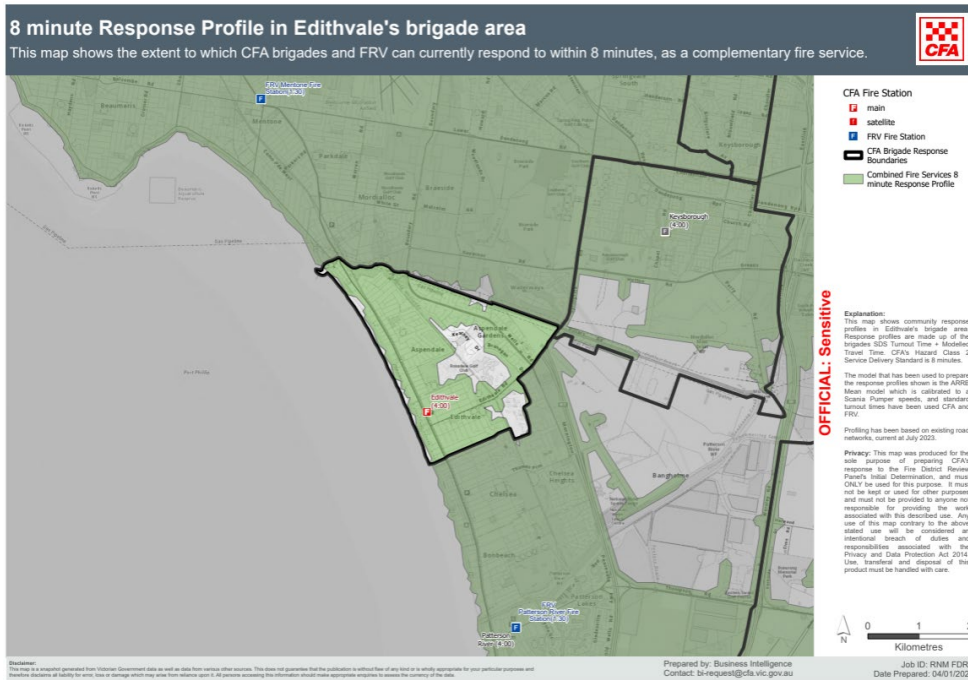
Figure 13: Edithvale Brigade incident count by type by year 2010 - 2023



4.2 Service delivery standard

Figure 14 shows the area within the land use that can be serviced within eight minutes by the existing complementary fire service model. It shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the 8 minute to scene standard.

Figure 14: Area covered by both CFA and FRV based on HC2 8 Minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 95.85% of the road network in the Residential land use
- 79.91% of the road network in the Commercial land use
- 100% of the road network in the Industrial land use
- 86.42% of the road network in the Education land use
- 91.05% of the road network in the Parkland land use
- 100% of the road network in the Other land use
- 100% of the road network in the Primary Production land use.

An analysis of the Edithvale Fire Brigade SDA with established SDS against respective hazard classes shows:

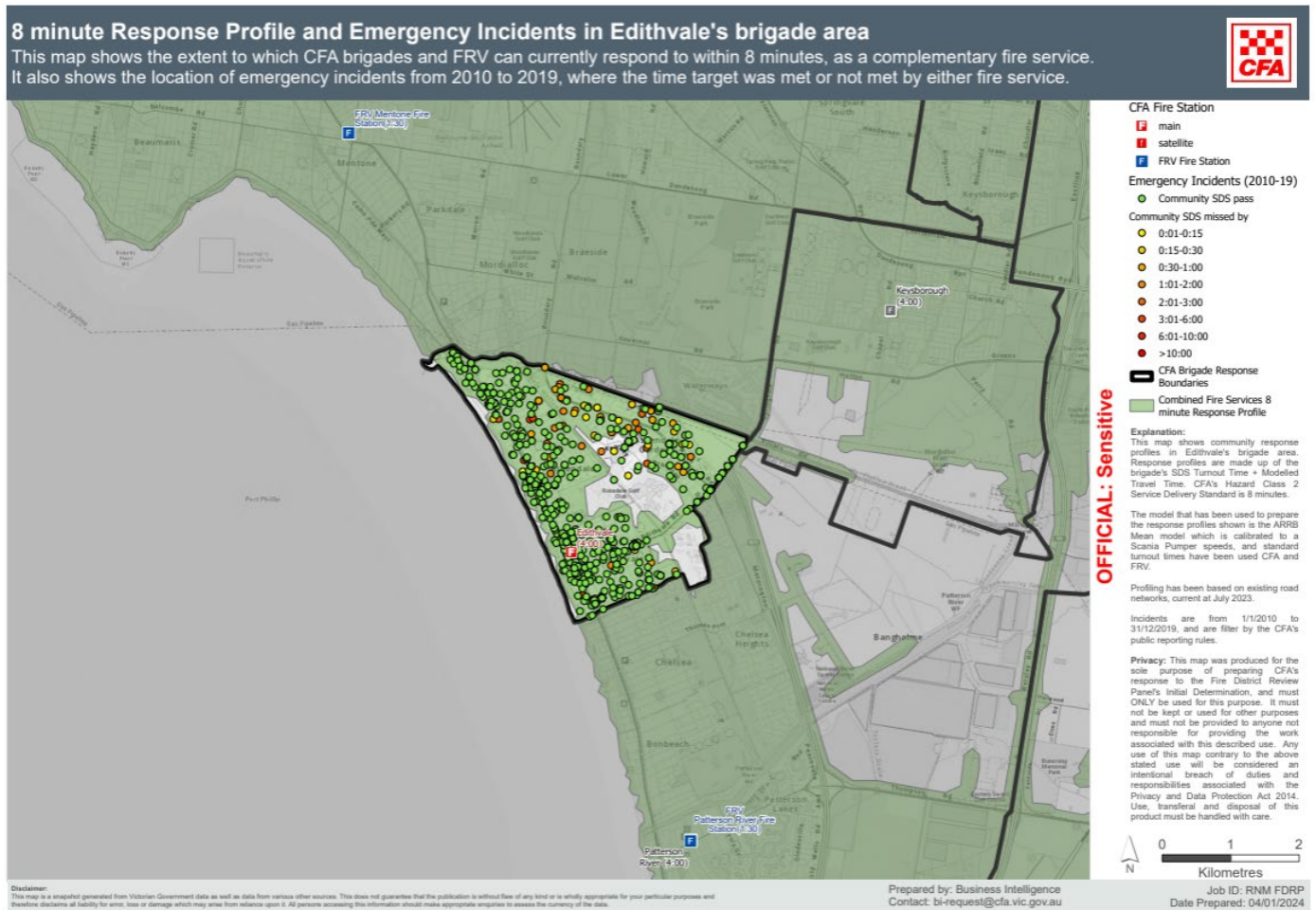
- from 1 January 2010 to 31 December 2019 there were 753 emergency incidents within the Edithvale Fire Brigade SDA
- fire services response to emergency incidents was 85.66% compliant with SDS
- for the 108 incidents where SDS was not met over the 10 years, the following table indicates the numbers of emergency incidents. The majority (55%) were missed by less than 60 seconds.

Table 5: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
16 (14.81%)	12 (11.11%)	31 (28.70%)	26 (24.07%)	14 (12.96%)	7 (6.48%)	2 (1.85%)	0

Figure 15 shows graphically the ability for fire services to meet established SDS across the Edithvale Fire Brigade SDA. The areas of SDS non-compliance are north and northwest of the fire station. These SDS misses are as a result of limited access to a small section in the Aspendale Gardens area on the fringe of the SDA. Although this area is only 3km from the fire station, the Brigade must navigate around the wetlands and storm water drainage to Wells Road or enter via the Edithvale Road end (or further north along Governor Road) which causes unavoidable delays in response travel time.

Figure 15: SDS compliance for the Edithvale Brigade SDA 2010 - 2019



For the period 1 January 2020 to 31 November 2023:

- there were 254 emergency incidents within the Edithvale SDA
- fire services response to emergency incidents was 93.3% compliant with SDS, above the 90% target
- for the 17 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority (88%) were missed by less than 60 seconds.

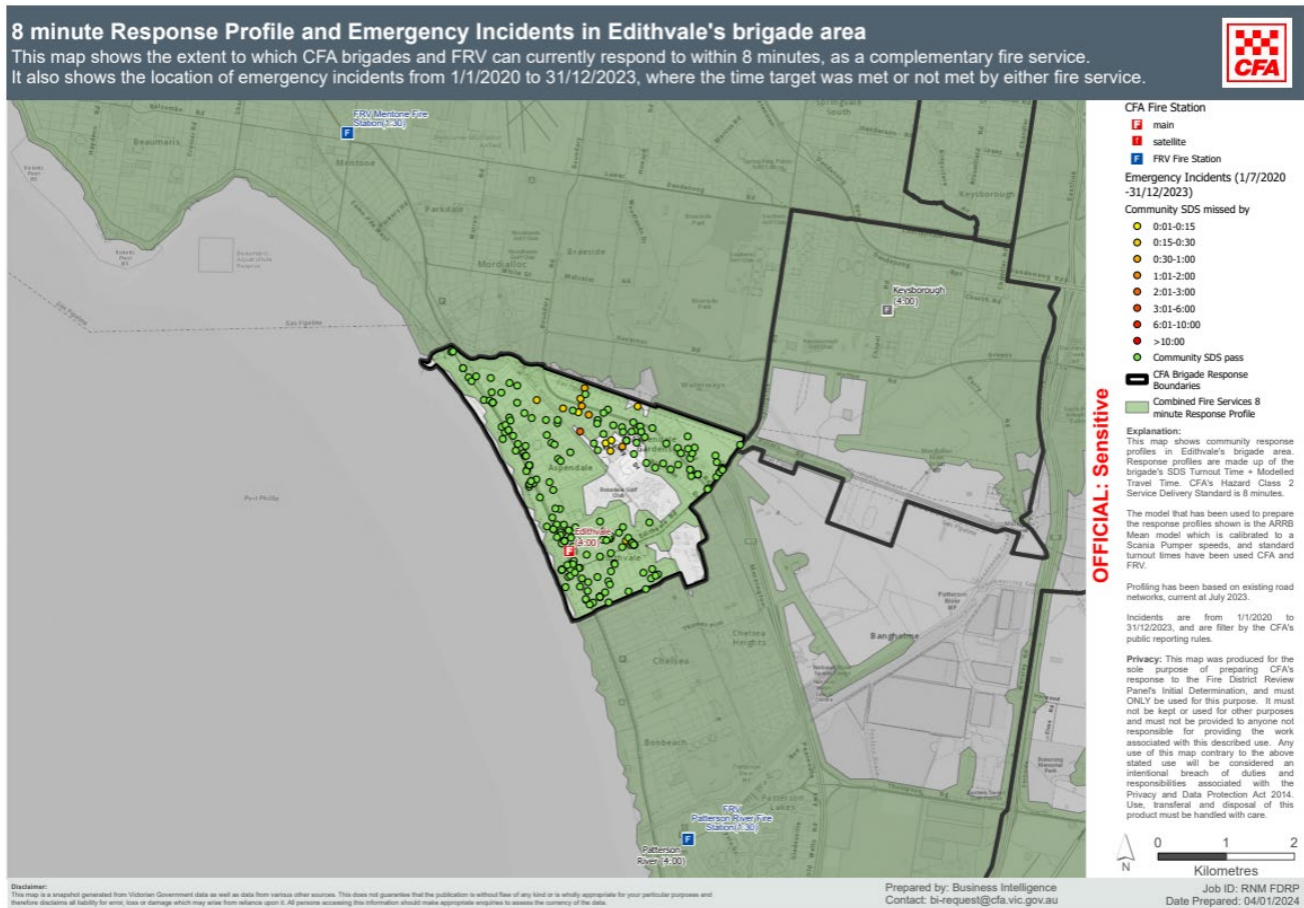
There has been significant improvement meeting community SDS north of the fire station and improvement in the areas northwest of the fire station. Overall SDS compliance has improved 9% on the FDRP data reference period. As discussed above, the improvement is in part due to completion of the fire station.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
5 (29.41%)	6 (35.29%)	4 (23.53%)	0	1 (5.88%)	0	1 (5.88%)	0

Figure 16 shows graphically the ability for fire services to meet established SDS across the Edithvale Fire Brigade SDA since Fire Services Reform.

Figure 16: SDS compliance for the Edithvale Brigade SDA 2020 - 2023



Risk Evaluation:

Service delivery performance was temporarily affected by station construction and the level crossing removal project. SDS performance has improved since the FDRP data reference period and is above the target of 90% indicating that the Edithvale Fire Brigade and surrounding network of brigades are consistently achieving high success in providing services to the community. Some incidents in Hazard Class 3 environments have been incorrectly reported as occurring in Hazard Class 2, with a resultant negative effect on the Brigade's SDS.

Risk Mitigation Action:

CFA will complete a review of the hazard class for incidents within the northwest area of the fire station to ensure correct hazard class classifications to improve accuracy of SDS data.

4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Edithvale Fire Brigade SDA from 2010 to 2023 has had a total of 125 building/structure fires requiring extinguishment.

Table 7: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
7	11	9	14	19	14	11	12	6	7	4	4	4	3	125

An analysis of preventable fire fatalities associated with these 125 building/structure fires has identified one preventable fatality in Aspendale Gardens (part of the Edithvale Fire Brigades SDA) in 2016. The Edithvale Fire Brigade was first on scene with a response time of seven minutes, 16 seconds (SDS compliant). After investigation it was determined that a smoke alarm was present and operating, alerting the occupant. The fire incident report submitted by the Brigade immediately after the incident recorded a casualty. Later information confirmed the outcome was a fatality.

The bulk of the fatality data (non-preventable) associated with the Edithvale Fire Brigade is as a result of the Brigade specialising in EMR activities in support of AV.

Risk Evaluation:

The Edithvale Fire Brigade SDA has had one preventable structure/building fire fatality since 2010. The Brigade attended the incident within SDS.

Risk Mitigation Action:

The Edithvale Fire Brigade is currently in the process of developing a community engagement plan to better support community engagement and education activities across the SDA. Additionally, the Brigade actively conducts a smoke alarm/detector installation and maintenance program to assist with mitigating preventable fatalities as a result of structural fires. The Edithvale Fire Brigade will conduct a targeted promotional campaign of the Prevent – Detect – Escape Program to further enhance the fire safety awareness for people at higher risk.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.

Table 8: Edithvale fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	10 of 13	<p>SDS compliance for the FDRP data reference period was slightly below the target of 90% but has improved to above target since 2010.</p> <p>The area northwest of the fire station continues to be a challenge in meeting community SDS due to the wetlands.</p>	CFA will complete a review of the hazard class for incidents within the northwest area of the fire station to ensure correct hazard class classifications to improve accuracy of service delivery standards.
Bushfire Management Overlay %	No value	<p>There is no BMO within Edithvale service delivery area.</p> <p>The Panel derived no value for this metric.</p>	
Total Demand	12 of 13	<p>Since the implementation of Reform, the total demand on services from the Edithvale Fire Brigade has reduced. The Edithvale Fire Brigade and surrounding brigades have the appropriate capacity and capability to meet the needs of the Edithvale community now and into the future.</p>	
Victorian Planning Authority %	No value	<p>There are no growth zones in the SDA.</p> <p>The Panel has derived no value for this metric.</p>	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio (VCTC)	7 of 13	<p>See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.</p>	
Building fire casualty to total building fire ratio (BCTC)	9 of 13	<p>The Edithvale Fire Brigade SDA has recorded one preventable fatality as a result of structural fire since 2010. The Brigade response to the incident was well within SDS.</p>	<p>The Edithvale Fire Brigade is currently in the process of developing a community engagement plan to better support community engagement and education activities across the SDA. Additionally, the Brigade actively conducts a smoke alarm/detector installation and maintenance program to assist with mitigating preventable fatalities as a result of structural fires.</p>

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
			The Edithvale Fire Brigade will conduct a targeted promotional campaign of the Prevent – Detect – Escape Program to further enhance the fire safety awareness for people at higher risk.
Population projections	8 of 13	<p>The Edithvale Fire Brigade SDA is fully developed and predominantly residential. There is only expected to be a small amount of population growth within the already residential zones.</p> <p>The current resourcing of the Edithvale Fire Brigade and surrounding network of brigades is capable of servicing the existing community and small population increase.</p>	

Table 10: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Wendouree	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Typical traffic Friday 11:00

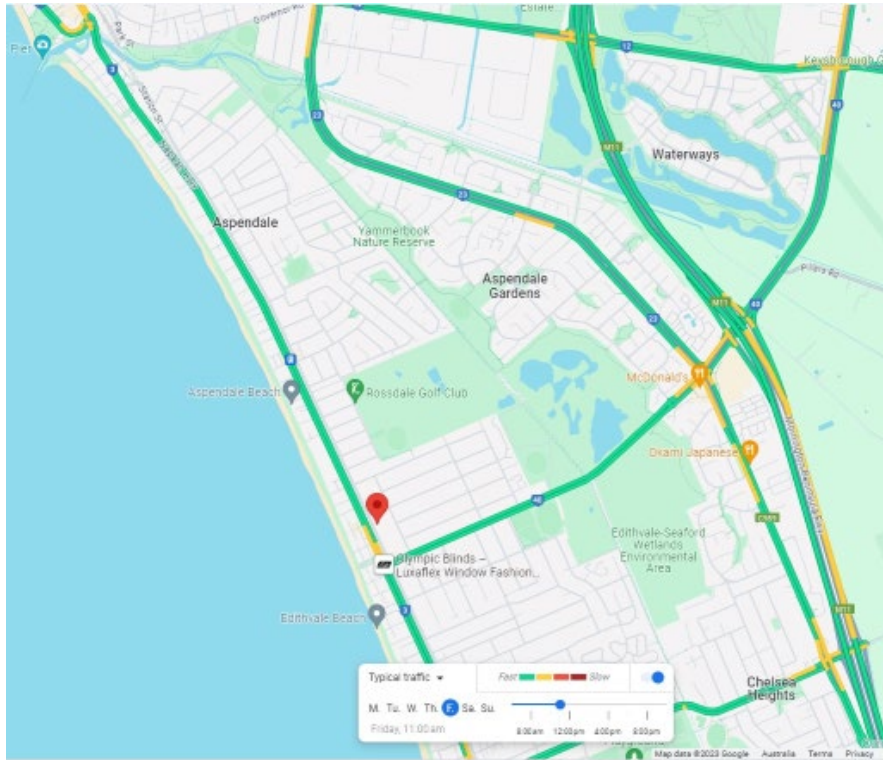


Figure 2: Typical traffic Friday 19:00

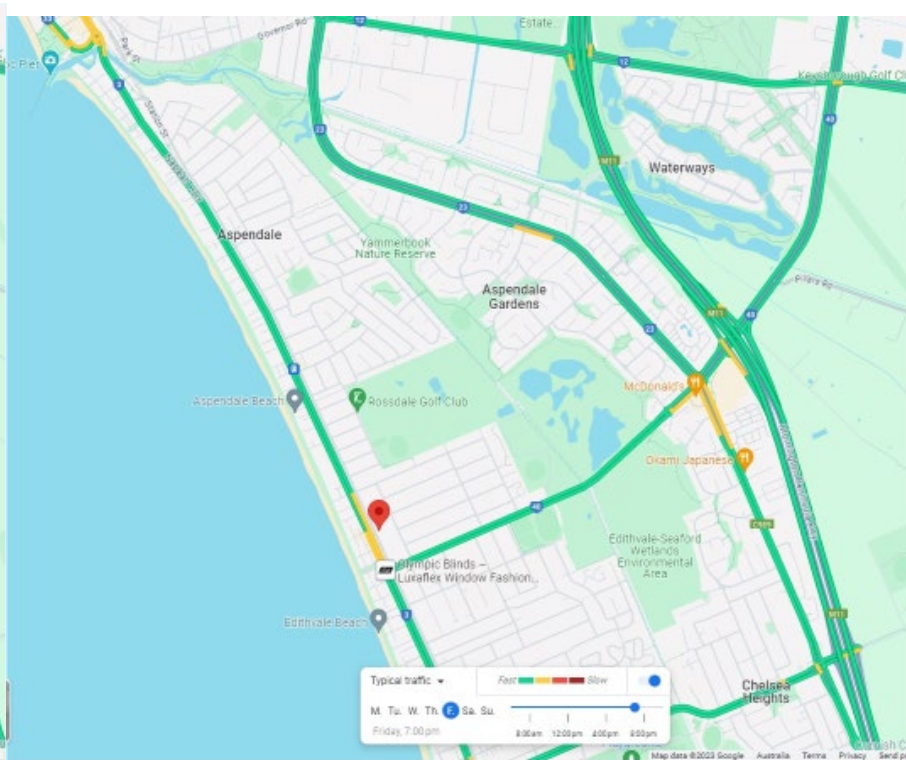


Figure 3: Typical traffic Friday 22:00

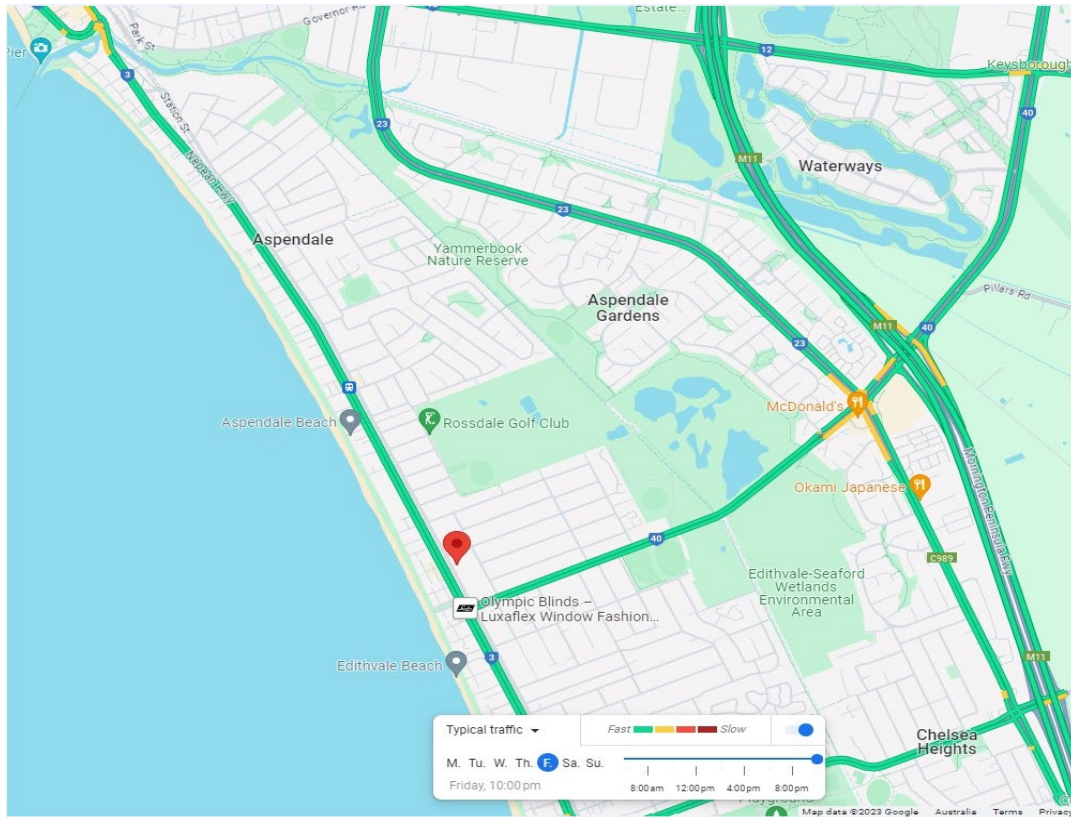


Figure 4: Operational members location and travel times

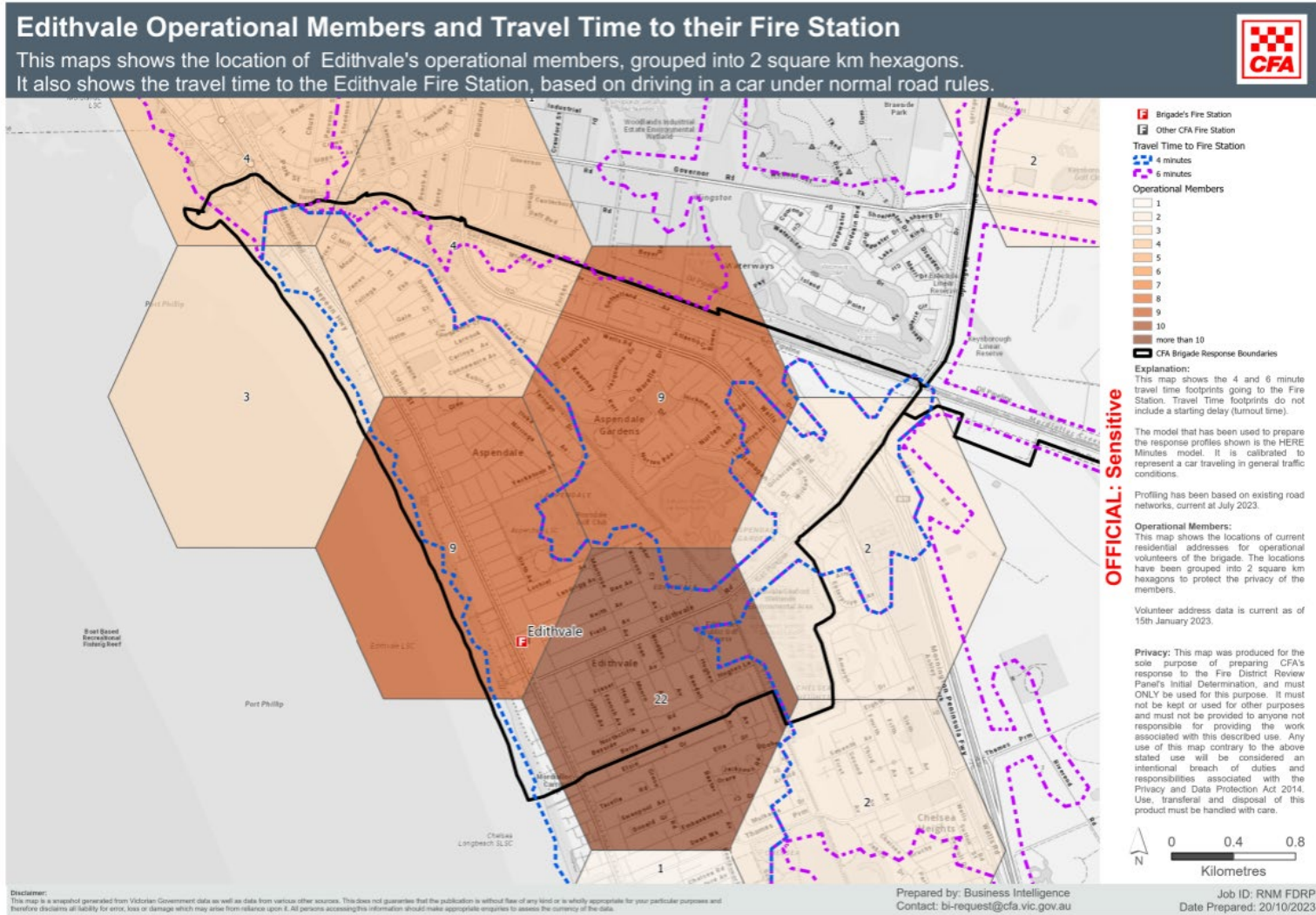


Figure 5: Incident count and type of support provided in the FRV Fire District

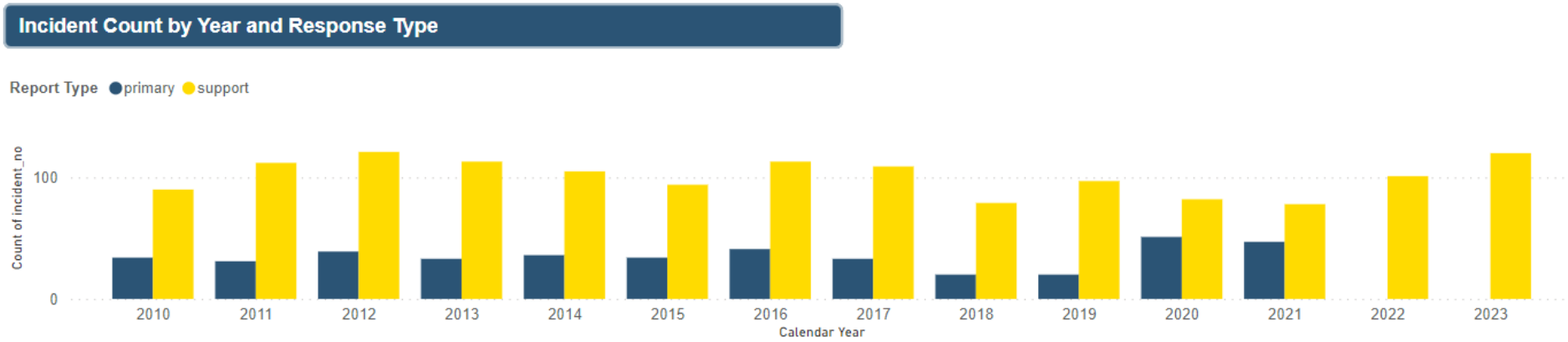


Figure 6: Incident count and type of support provided in the FRV station footprint

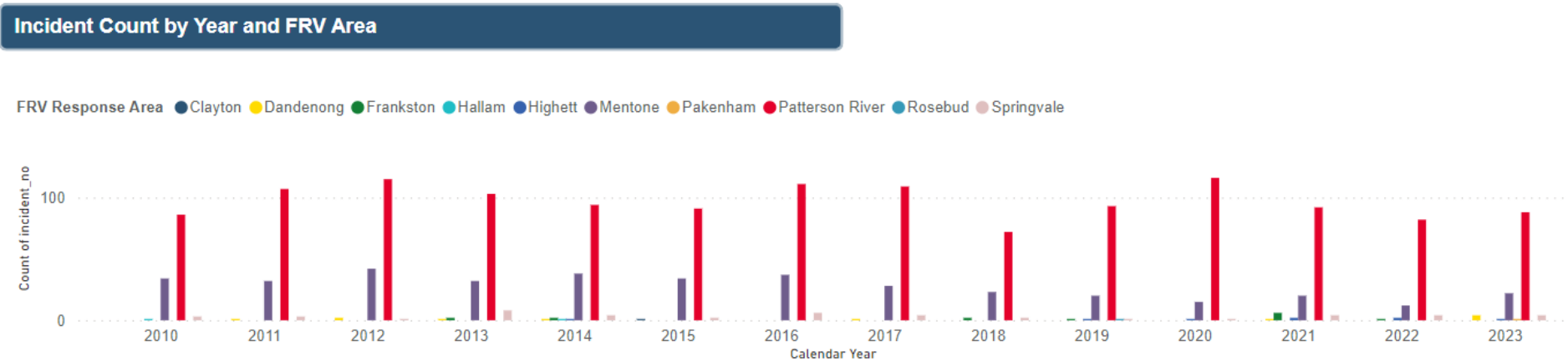


Figure 7: Community safety and intervention program

Community Engagement Activity delivered by Edithvale Fire Brigade

This map shows the location of community engagement, by type and volume, delivered by Edithvale Fire Brigade in their local and surrounding communities.



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Date Prepared: 24/11/2023
Prepared by: Business Intelligence
Contact: bi-request@cfa.vic.gov.au

Figure 8: ABS land use areas and BMO



Figure 9: Public land management information

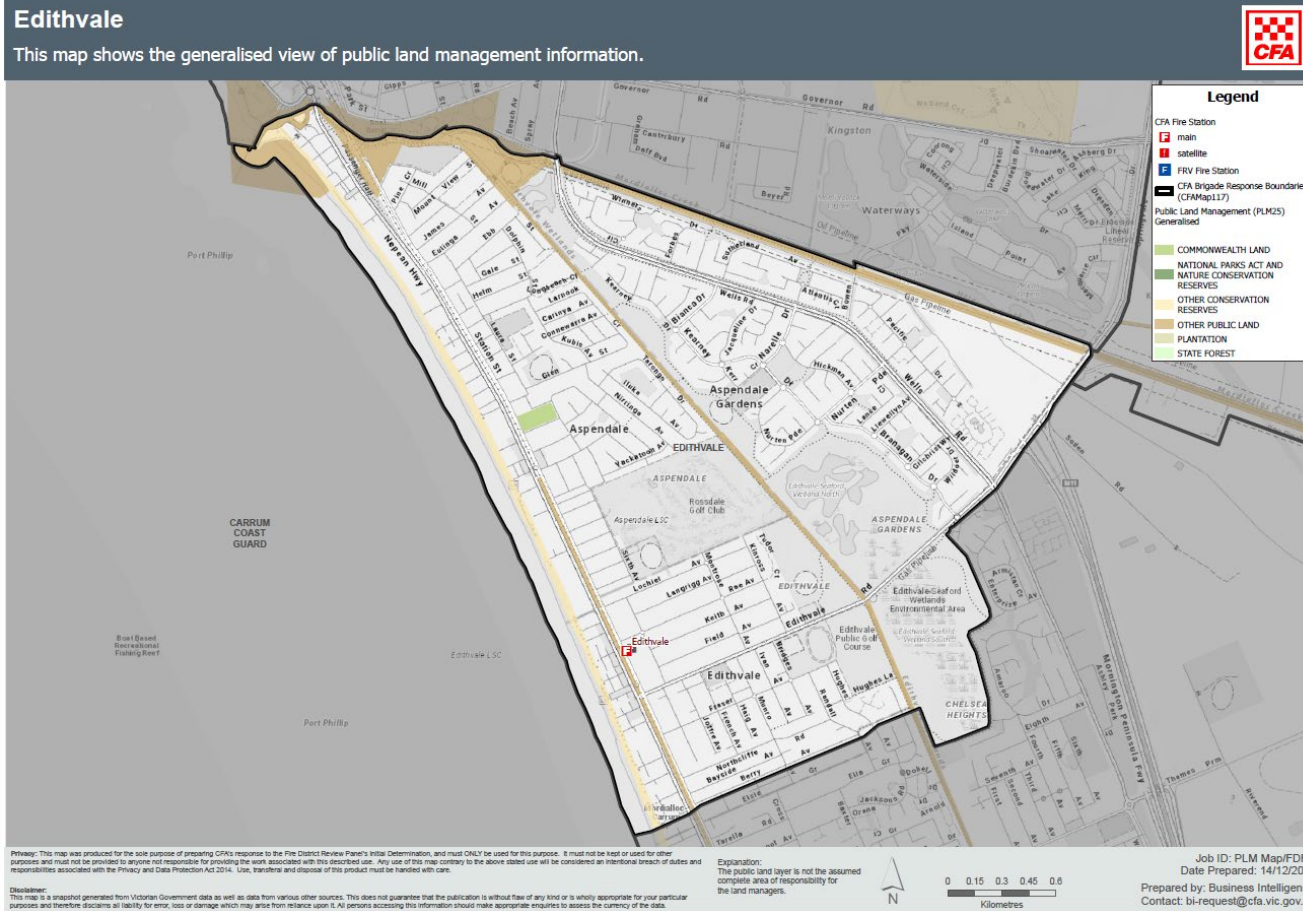


Figure 10: Planned growth zones from the planning scheme for Edithvale

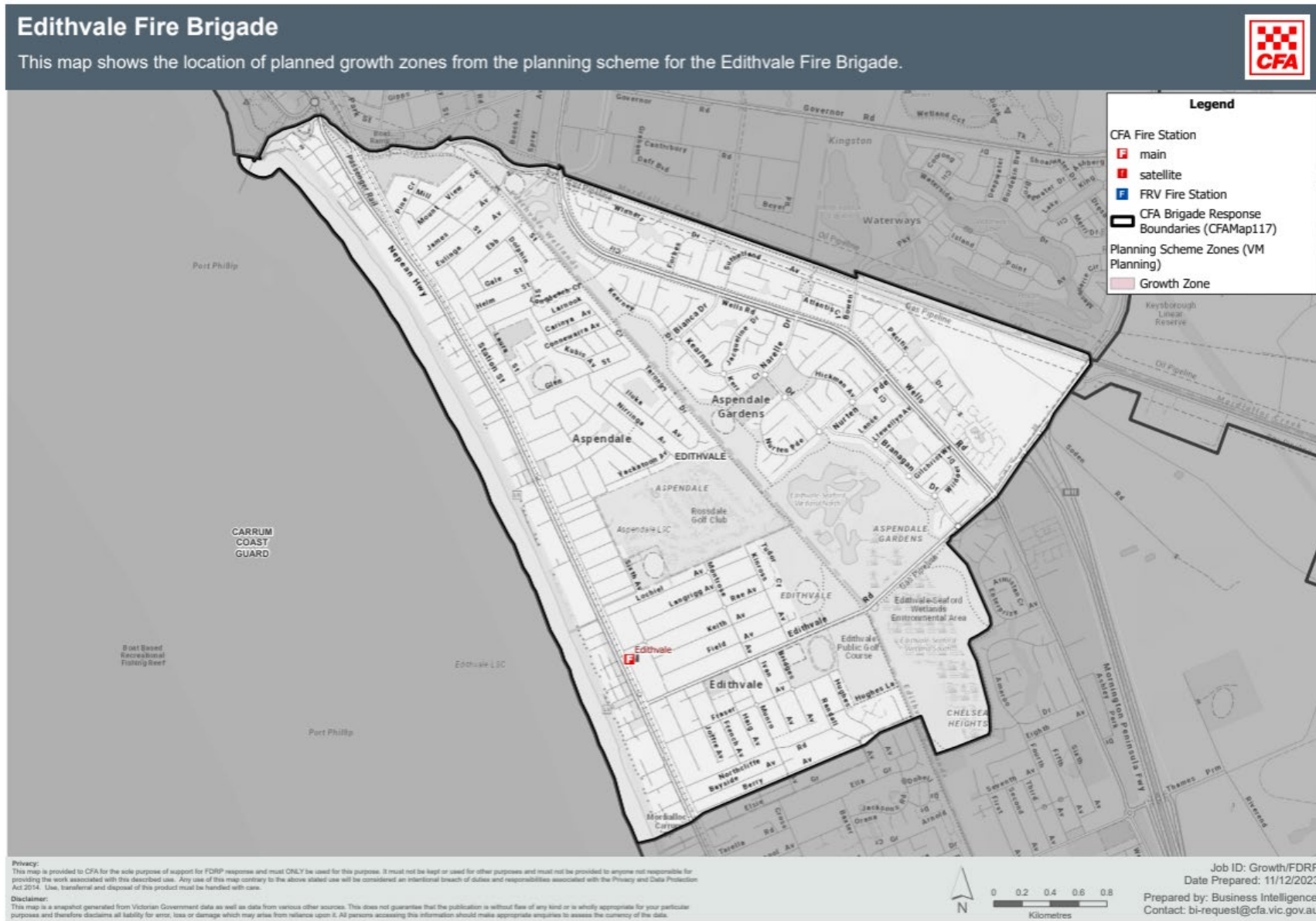


Figure 11: Edithvale Brigade incident count by type 1 January 2010 - 18 December 2023

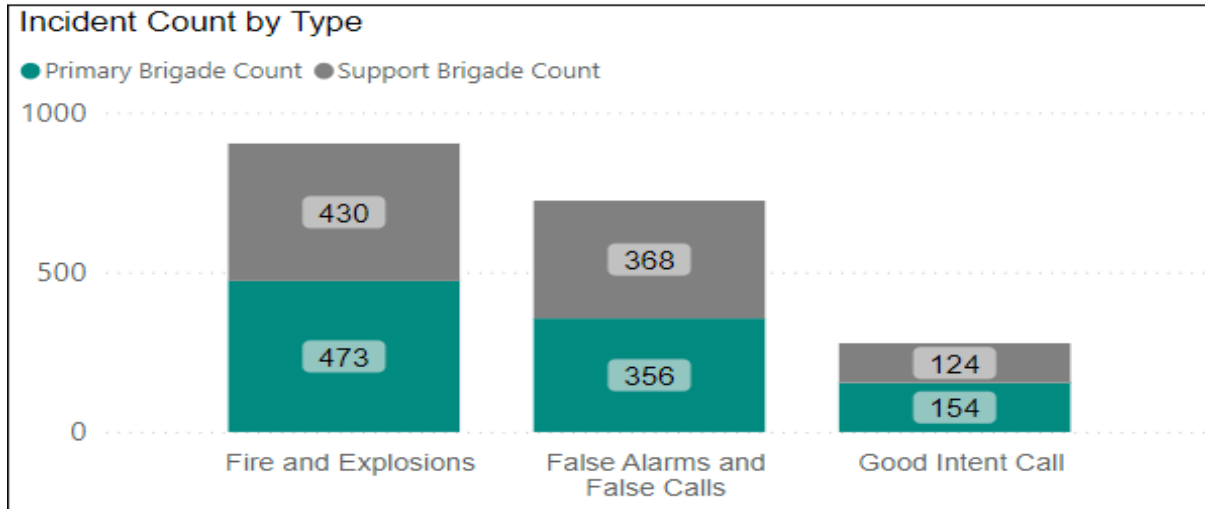


Figure 12: Edithvale Brigade incident count by month 1 January 2010 - 18 December 2023

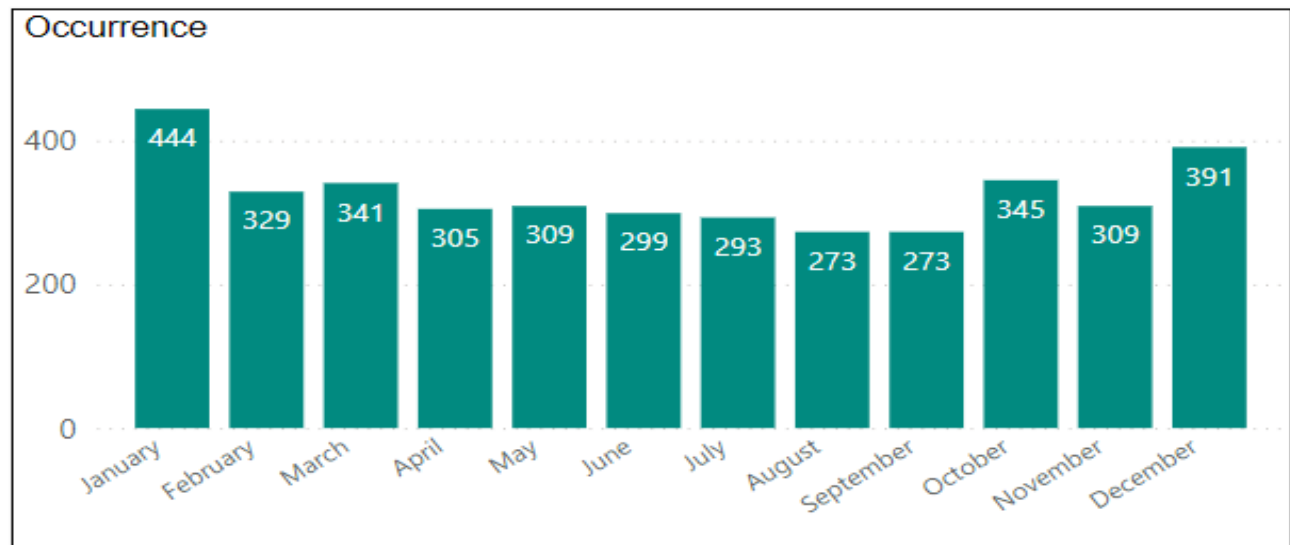


Figure 13: Edithvale Brigade incident count by type by year 2010 - 2023

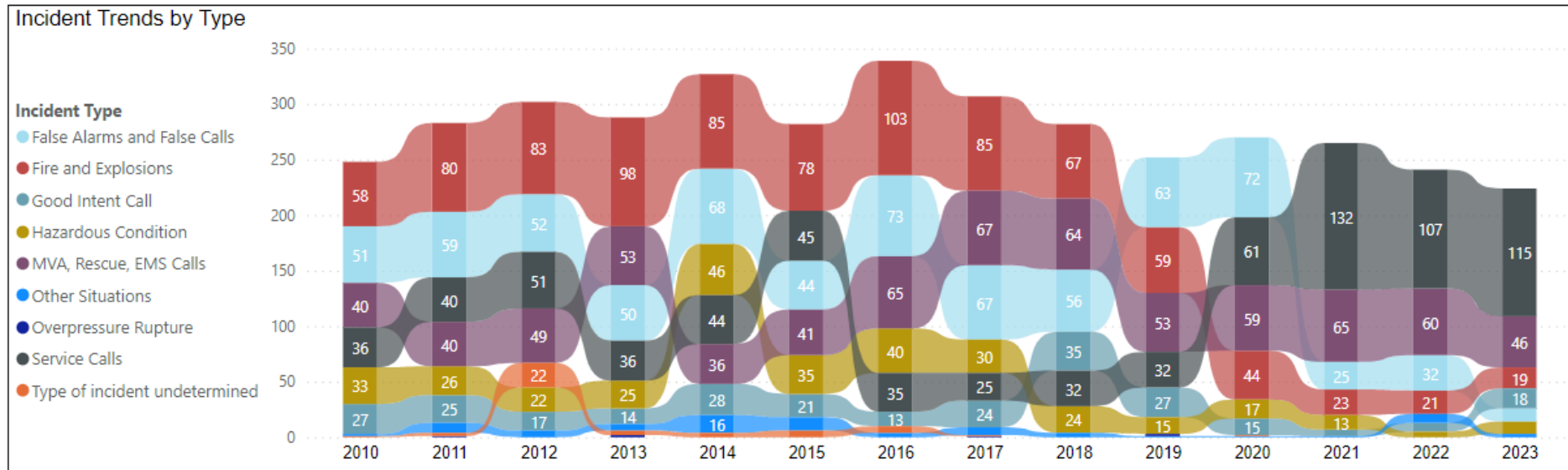
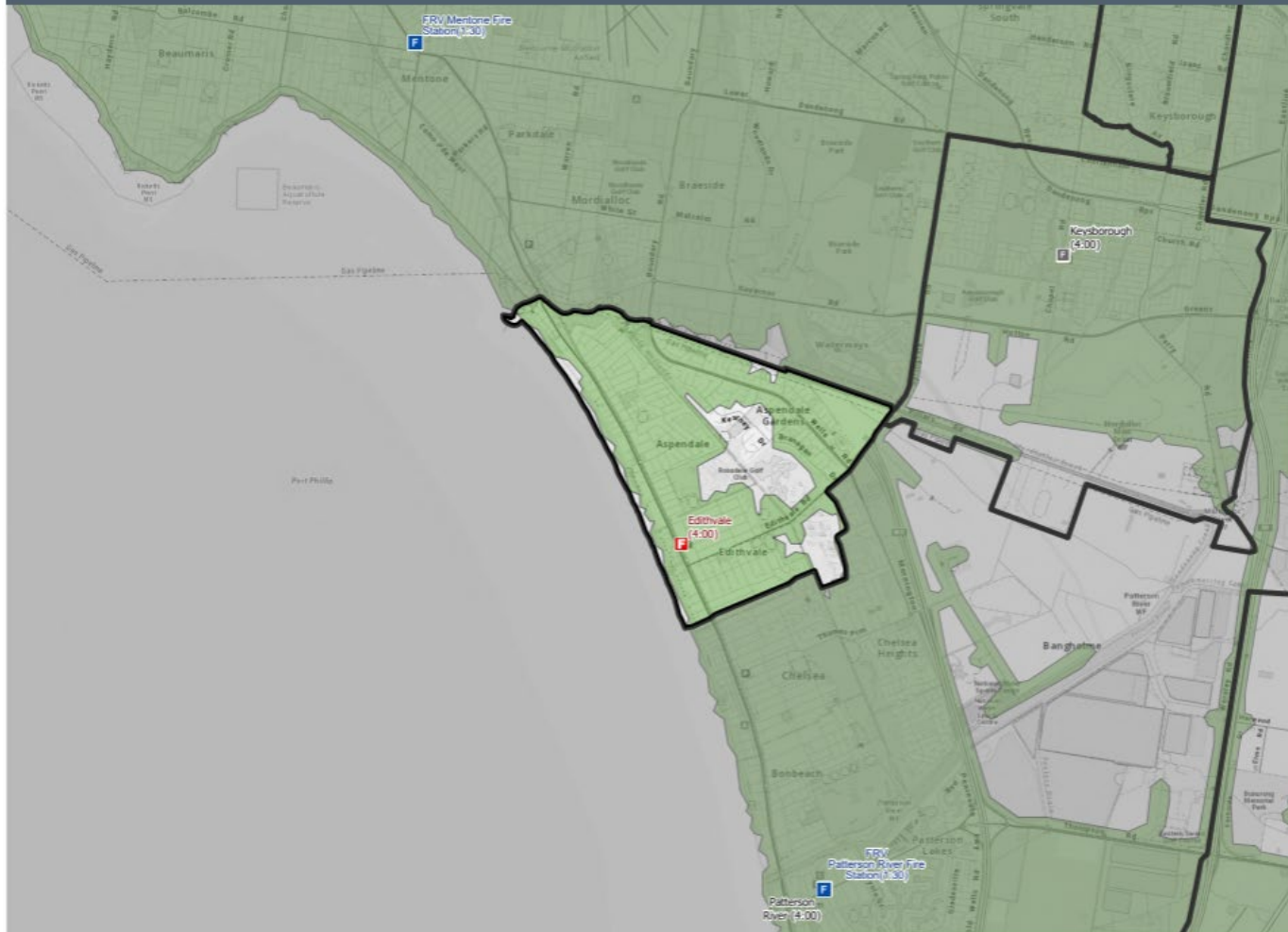


Figure 14: Area covered by both CFA and FRV based on HC2 8 Minutes

8 minute Response Profile in Edithvale's brigade area

This map shows the extent to which CFA brigades and FRV can currently respond to within 8 minutes, as a complementary fire service.



- CFA Fire Station
 - main
 - satellite
 - FRV Fire Station
- CFA Brigade Response Boundaries
- Combined Fire Services 8 minute Response Profile

OFFICIAL: Sensitive

Explanation:
This map shows community response profiles in Edithvale's brigade area. Response profiles are made up of the brigades SDS Turnout Time + Modelled Travel Time. CFA's Hazard Class 2 Service Delivery Standard is 8 minutes.

The model that has been used to prepare the response profiles shown is the ARRB Mean model which is calibrated to a Scania Pumper speeds, and standard turnout times have been used CFA and FRV.

Profiling has been based on existing road networks, current at July 2023.

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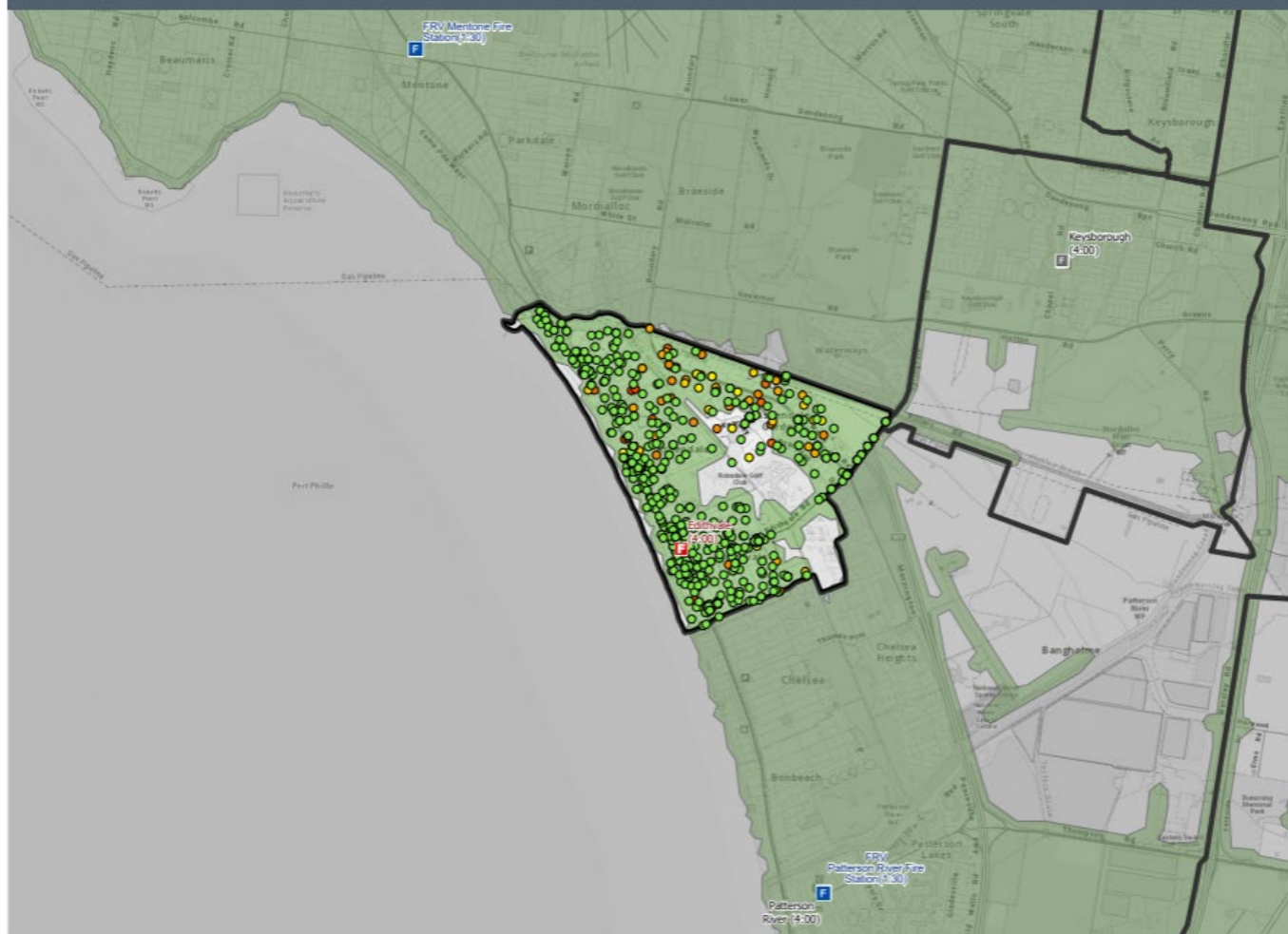
Prepared by: Business Intelligence
Contact: bi-request@cfa.vic.gov.au

Job ID: RNM FDRP
Date Prepared: 04/01/2024

Figure 15: SDS compliance for the Edithvale Brigade SDA 2010 - 2019

8 minute Response Profile and Emergency Incidents in Edithvale's brigade area

This map shows the extent to which CFA brigades and FRV can currently respond to within 8 minutes, as a complementary fire service. It also shows the location of emergency incidents from 2010 to 2019, where the time target was met or not met by either fire service.



- CFA Fire Station
 - main
 - satellite
 - FRV Fire Station
- Emergency Incidents (2010-19)
 - Community SDS pass
- Community SDS missed by
 - 0:01-0:15
 - 0:15-0:30
 - 0:30-1:00
 - 1:01-2:00
 - 2:01-3:00
 - 3:01-6:00
 - 6:01-10:00
 - >10:00
- CFA Brigade Response Boundaries
- Combined Fire Services 8 minute Response Profile

OFFICIAL: Sensitive

Explanation:
This map shows community response profiles in Edithvale's brigade area. Response profiles are made up of the brigade's SDS Turnout Time + Modeled Travel Time. CFA's Hazard Class 2 Service Delivery Standard is 8 minutes.

The model that has been used to prepare the response profiles shown is the ARRB Mean model which is calibrated to a Scania Pumper speeds, and standard turnout times have been used CFA and FRV.

Profiling has been based on existing road networks, current at July 2023.

Incidents are from 1/1/2010 to 31/12/2019, and are filter by the CFA's public reporting rules.

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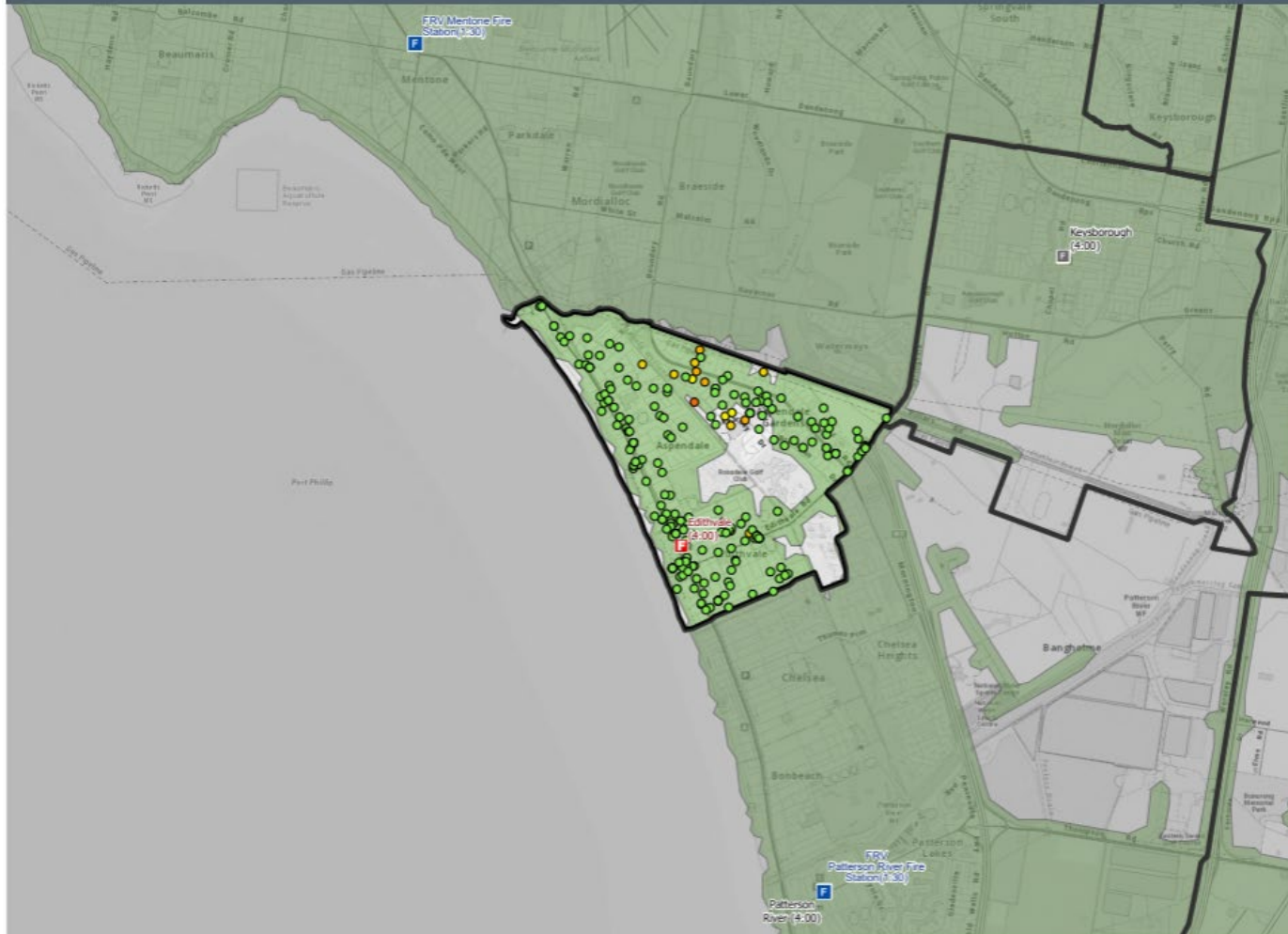
Prepared by: Business Intelligence
Contact: bi-request@cfa.vic.gov.au

Job ID: RNM FDRP
Date Prepared: 04/01/2024

Figure 16: SDS compliance for the Edithvale Brigade SDA 2020 - 2023

8 minute Response Profile and Emergency Incidents in Edithvale's brigade area

This map shows the extent to which CFA brigades and FRV can currently respond to within 8 minutes, as a complementary fire service. It also shows the location of emergency incidents from 1/1/2020 to 31/12/2023, where the time target was met or not met by either fire service.



- CFA Fire Station
 - main
 - satellite
 - FRV Fire Station
- Emergency Incidents (1/7/2020 -31/12/2023)
- Community SDS missed by
 - 0:01-0:15
 - 0:15-0:30
 - 0:30-1:00
 - 1:01-2:00
 - 2:01-3:00
 - 3:01-6:00
 - 6:01-10:00
 - >10:00
 - Community SDS pass
- CFA Brigade Response Boundaries
- Combined Fire Services 8 minute Response Profile

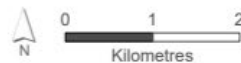
Explanation:
This map shows community response profiles in Edithvale's brigade area. Response profiles are made up of the brigade's SDS Turnout Time + Modelled Travel Time. CFA's Hazard Class 2 Service Delivery Standard is 8 minutes.

The model that has been used to prepare the response profiles shown is the ARRB Mean model which is calibrated to a Scania Pumper speeds, and standard turnout times have been used CFA and FRV.

Profiling has been based on existing road networks, current at July 2023.

Incidents are from 1/1/2020 to 31/12/2023, and are filter by the CFA's public reporting rules.

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Date Prepared: 04/01/2024

Hampton Park Fire Brigade

1. About the Brigade

Established in 1944 the Hampton Park Fire Brigade is a Class 5 Brigade within the Casey Group located in District 8 of the South East Region. The Hampton Park Fire Brigade has a total membership of 36 volunteers (as at 31 December 2023), including a Junior Brigade.

1.1 History

The history of the Hampton Park Fire Brigade dates back definitively to 1944, with some evidence suggesting its active presence possibly earlier. Over the decades, the Brigade has marked significant milestones that underscore its dedicated service to the community and its commitment to firefighting excellence.

One of the most notable achievements was the establishment of the fire station in 1971, a facility that continues to serve as a hub for the Brigade's operations. In that same year, the Brigade introduced the perpetual trophy in honour of Lieutenant "Tubby" Taylor, commemorating his contributions and fostering a culture of camaraderie among its members.

In 1972, the Brigade took a step forward in fostering the next generation of firefighters by forming a Junior Fire Brigade. This initiative contributes to skill development among young members of the community and also reinforces the Brigade's focus on community engagement.

The Hampton Park Brigade is proud of its history and continued commitment to the community.

1.2 Context

The Hampton Park Fire Brigade operates in a high urban environment, intersected by major arterial roads and with notable structural risk throughout the industrial area.

The Brigade has been challenged to meet SDS due to the significant increase in development and activity in the area. The Hampton Park Fire Brigade showcases a mixed performance in operational response delivery, with strengths in member turnout, and specialised skills. Challenges in turnout time standards may be helped by targeted recruitment, however, the location of the station is the more obvious area requiring reconsideration and CFA intends to establish a satellite fire station.

A commitment to safety, adherence to protocols, and collaboration with relevant stakeholders characterise the Hampton Park Fire Brigade as does a commitment to continuous improvement. Special attention is given to understanding community risk, as demonstrated by the comprehensive pre-incident plans for all special risks within the Brigade's SDA. These plans are regularly maintained, consistent with Standard Operating Procedure 7.03 for Premises Pre-Incident Plans. Notable sites include Hampton Park Shopping Centre, Marriott Waters Shopping Centre, and the local Telstra exchange. There are three nursing homes within the SDA.

A well-structured Community Engagement Plan has been developed and is being implemented, tailored to address local community risks. The Brigade has a strong online presence, using social media to connect with and inform the public.

2. Brigade Capability Snapshot

2.1 Membership

The Hampton Park Fire Brigade has a total membership of 36 members (8 females and 28 males). The Brigade has a good range of experienced and newer brigade members with the majority of the membership aged 40 years or younger. Overall member turnout is a strength, with a balanced and equitable distribution over the past year. The Brigade is actively considering its member recruitment and re-engagement strategies.

2.2 Fire appliances, other vehicles and specialist equipment

The Hampton Park Fire Brigade has two appliances and one other vehicle to meet the risk and needs of the Service Delivery Area. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Hampton Park Brigade alone.

Table 1: Fire appliances and vehicles available to the Hampton Park Brigade

Vehicle	Vehicle make	Age
Pumper	Scania	6 years
Tanker	Hino	9 years
Field Command Vehicle	Ford	7 years

Table 2: Vehicle specification

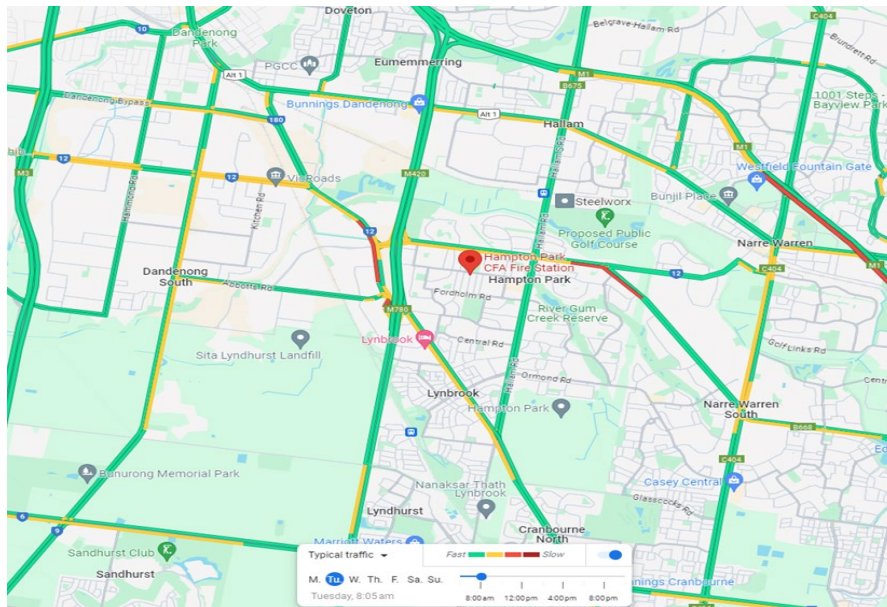
Pumper	Carrying five firefighters, 2,500 litres of water and 4,000 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, gas suits, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage, monitors and foam equipment.
Tanker	Carrying 5 fire fighters 4000 litres of water, 1200 lpm pump, BA, hoses and adaptors, chainsaw and foam equipment.
Field Command Vehicle	A small transport vehicle designed for fireground operations for management personnel.

2.3 Station Location

The station is located at 112 Somerville Rd, Hampton Park. Constructed in 1982 the station has three reverse-in motor room bays.

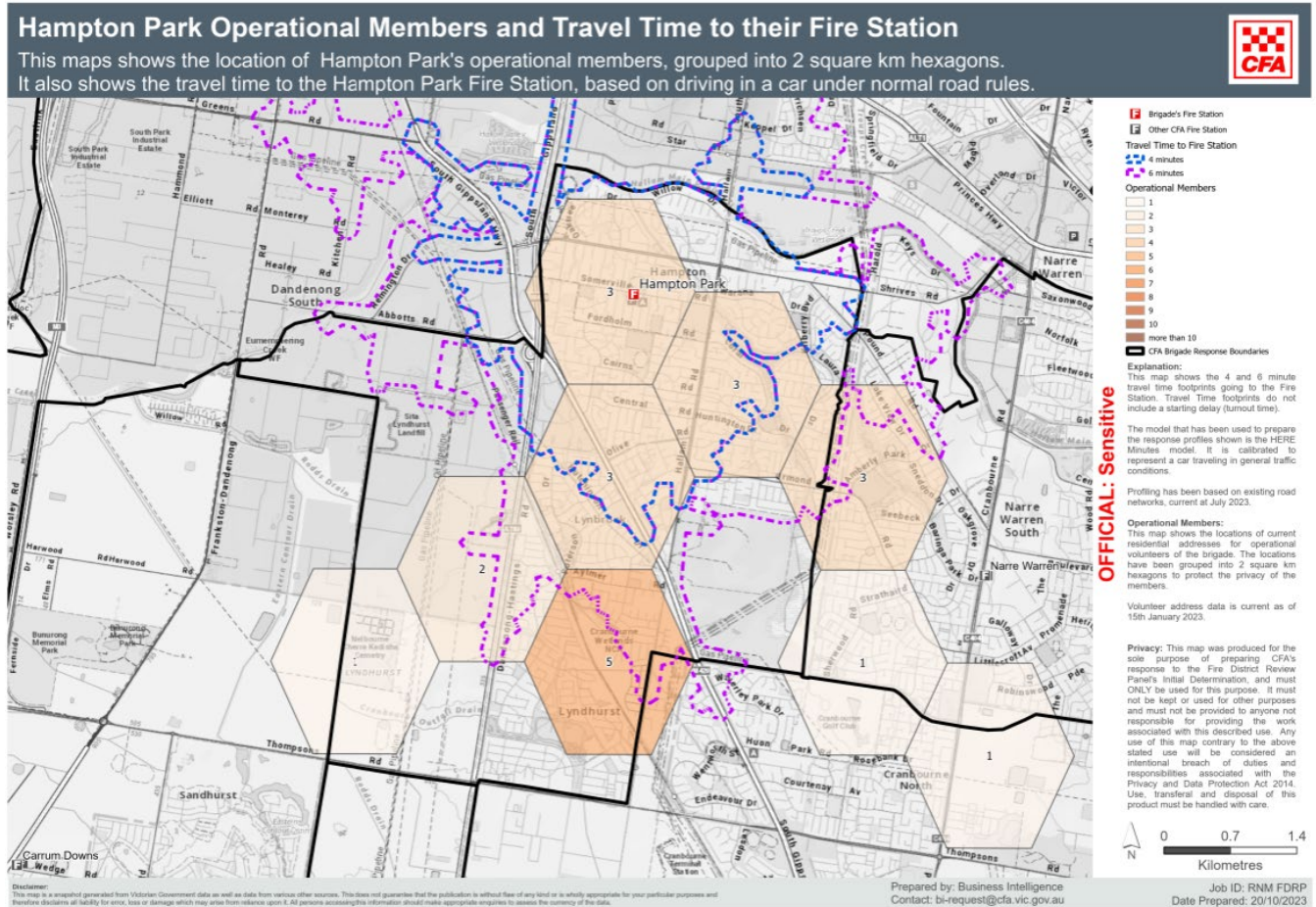
The location of a fire station is an important element in the successful operation of a volunteer fire brigade. Siting must strike a balance between being located to address service delivery needs but also being readily accessible to and from for emergency responders. Analysis of the Hampton Park Fire Brigade's peak activity within their primary SDA shows that the peak times for brigade dispatches are 08:00, 15:00, 17:00 and 21:00. Figure 1 shows the potential for traffic flow to impact travel time to and from the station.

Figure 1: Traffic flow during a peak period



As shown in Figure 2 many members live in Lynbrook and Lyndhurst, leading to response delays across major arterials. Members residing in the more immediate area surrounding the station also experience some challenges responding to turnouts as the station is located within an area with a lot of school traffic and nominated 40km zones. These factors contribute to the Brigade meeting SDS less than 60% of the time. Primary and support turnout percentages, along with some instances of failure to respond, are being tracked closely to inform improvement strategies.

Figure 2: Operational members location and travel times



2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only has use across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state's resources in both the CAoV and the FRV Fire District.

2.5 Assistance to Fire Rescue Victoria

Figure 3 shows the total count of incidents (primary and support) that the Hampton Park Brigade attended in the FRV Fire District for each calendar from 2010 to 2023 (year to date).

Figure 3: Incident count and type of support provided in the FRV Fire District

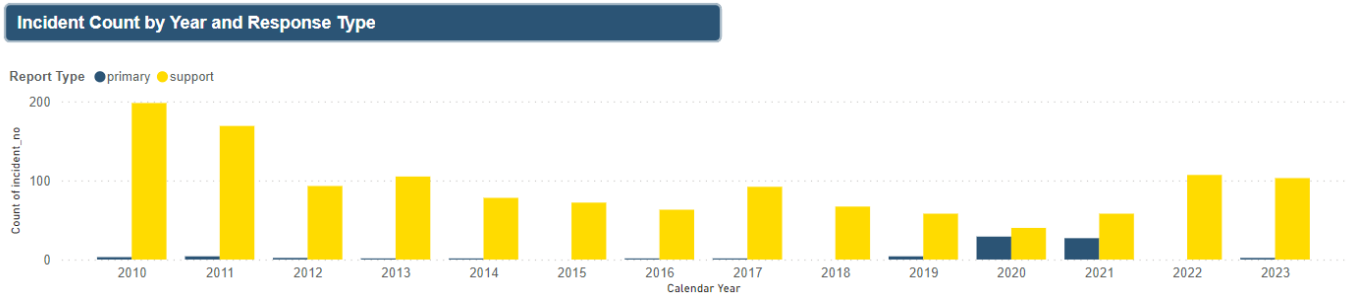
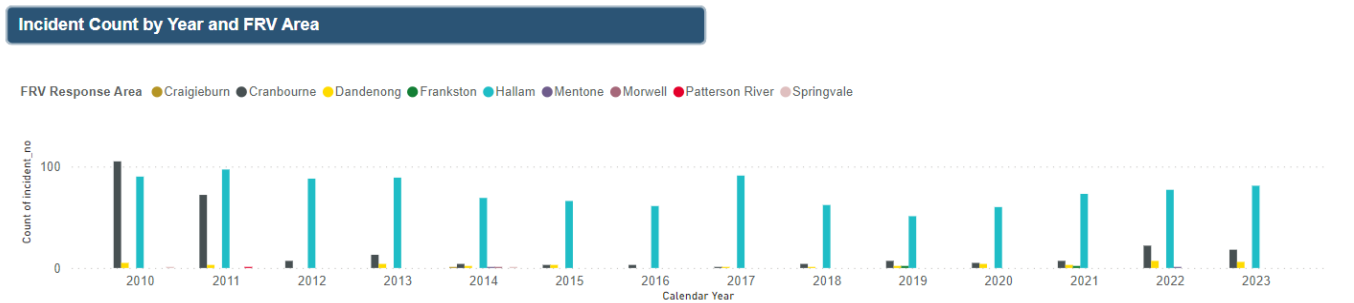


Figure 4 below shows the count of incidents that Hampton Park Brigade attended in FRV Fire District split by the Brigade SDA. The majority of support provided is to FRV's Hallam Station.

Figure 4: Incident count and type of support provided in the FRV station footprint

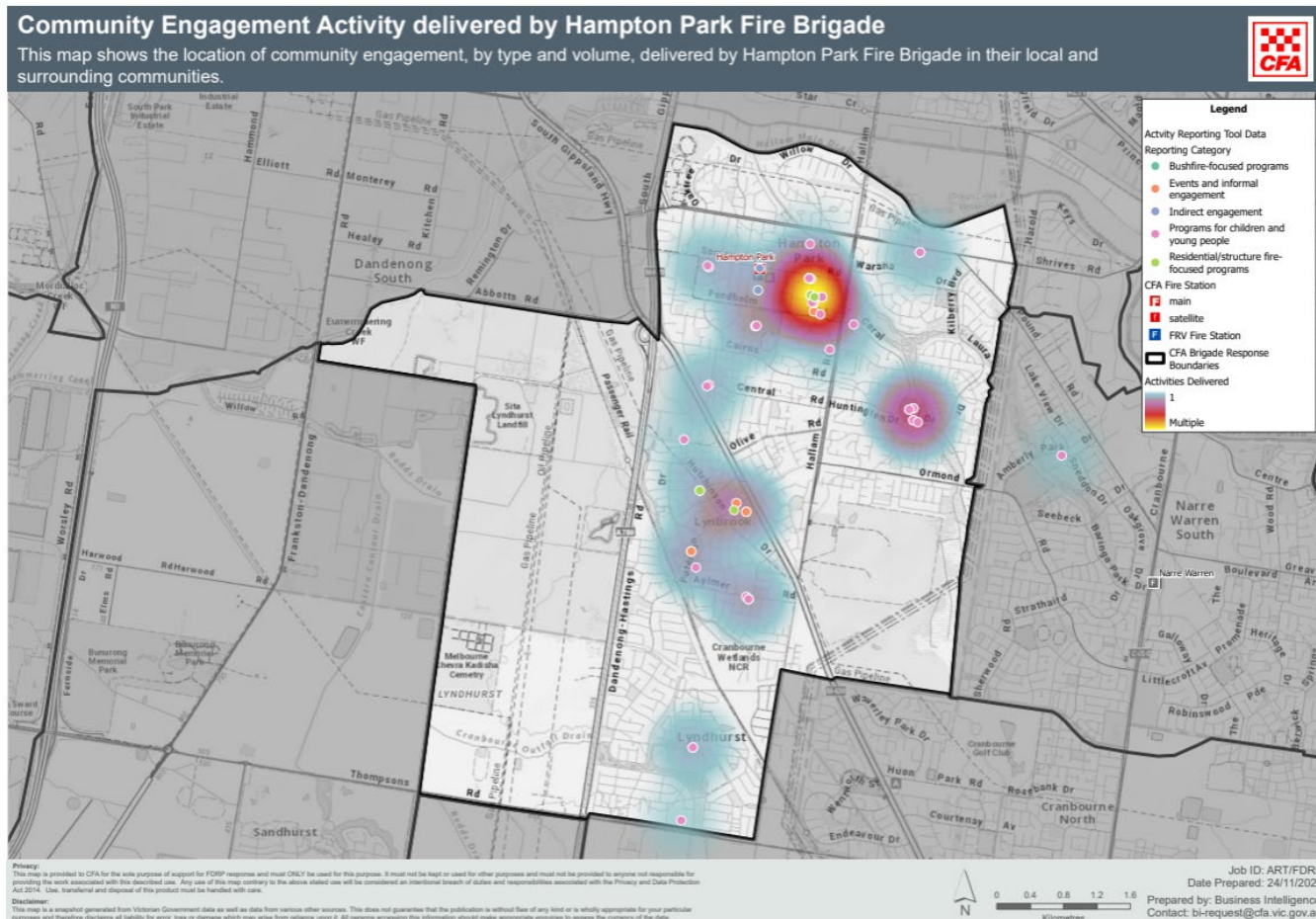


2.6 Community engagement activity

The Hampton Park Brigade works directly with the community to support regular prevention and preparedness activities including community fire safety messaging, school visits and direct intervention programs. It also undertakes community safety activities in neighbouring areas including Narre Warren and Cranbourne. As mentioned above, the Brigade undertakes pre-incident planning for all special risks, including in the industrial areas.

CFA in 2022 implemented a new platform to allow brigades to centrally record community engagement activities undertaken by brigades to allow better understanding of community fire safety interventions. Brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of interventions. Figure 5 below shows community safety interventions undertaken by the Hampton Park Fire Brigade as recorded in the ART system.

Figure 5: Community safety and intervention programs



3. Service Delivery Area Profile

The Hampton Park Fire Brigade SDA has a total area of 2,638.3 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses.

Table 3: Hampton Park land use planning areas

Land Use	Hectares	Percentage of Brigade Area
Commercial	124.5	4.7%
Education	70.2	2.7%
Industrial	363.7	13.8%
Other	0	0%
Parkland	177.1	6.7%
Primary Production	630.8	23.9%
Residential	1,269.7	48.1%
Transport	2.3	0.1%

A map showing the current land use planning uses and applicable mesh block is shown in Figure 6. There has been further development in Hampton Park Fire Brigade SDA since the 2021 Census. A portion of the area identified as Primary Production is now Industrial.

Figure 6: ABS land use areas and BMO

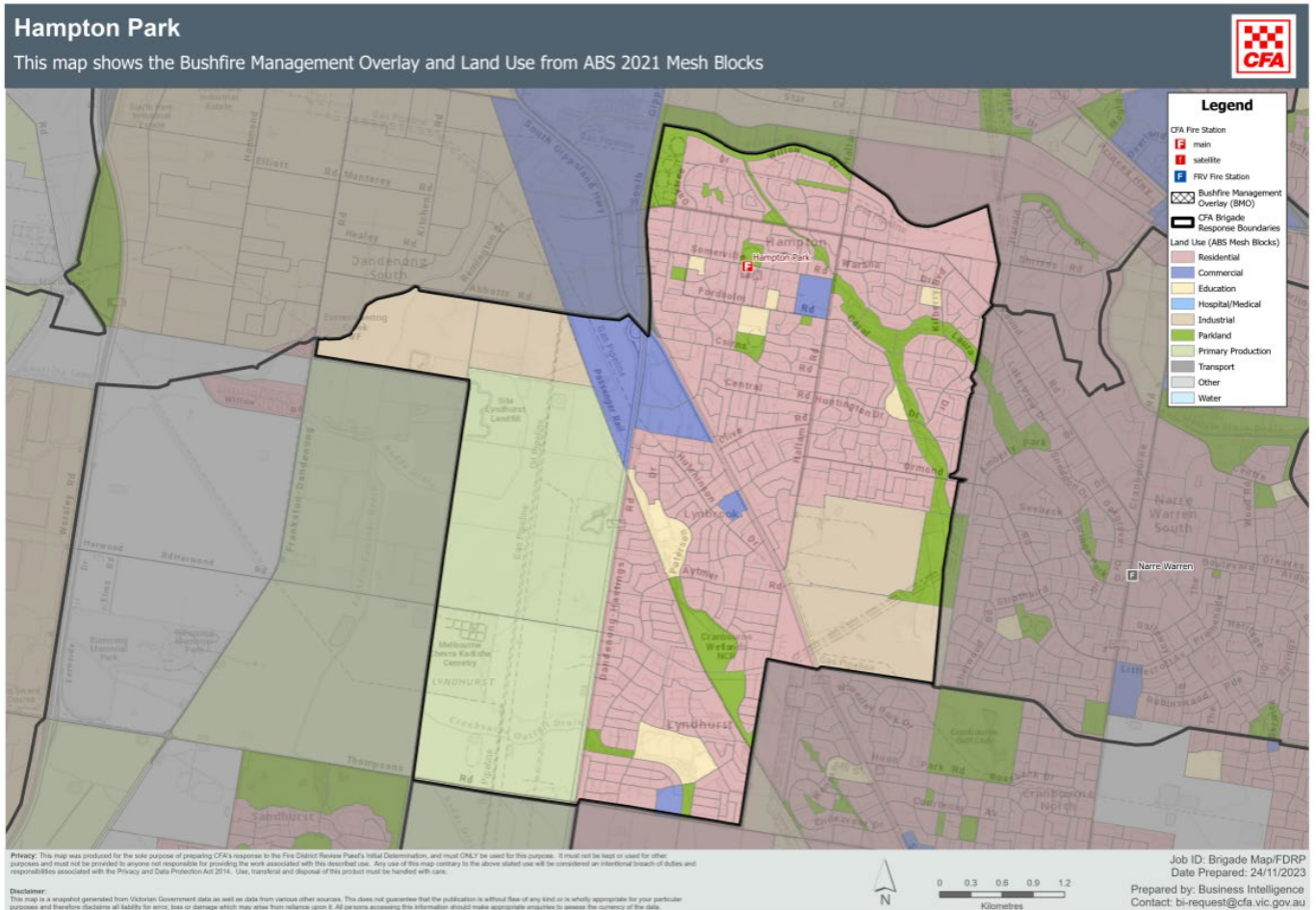
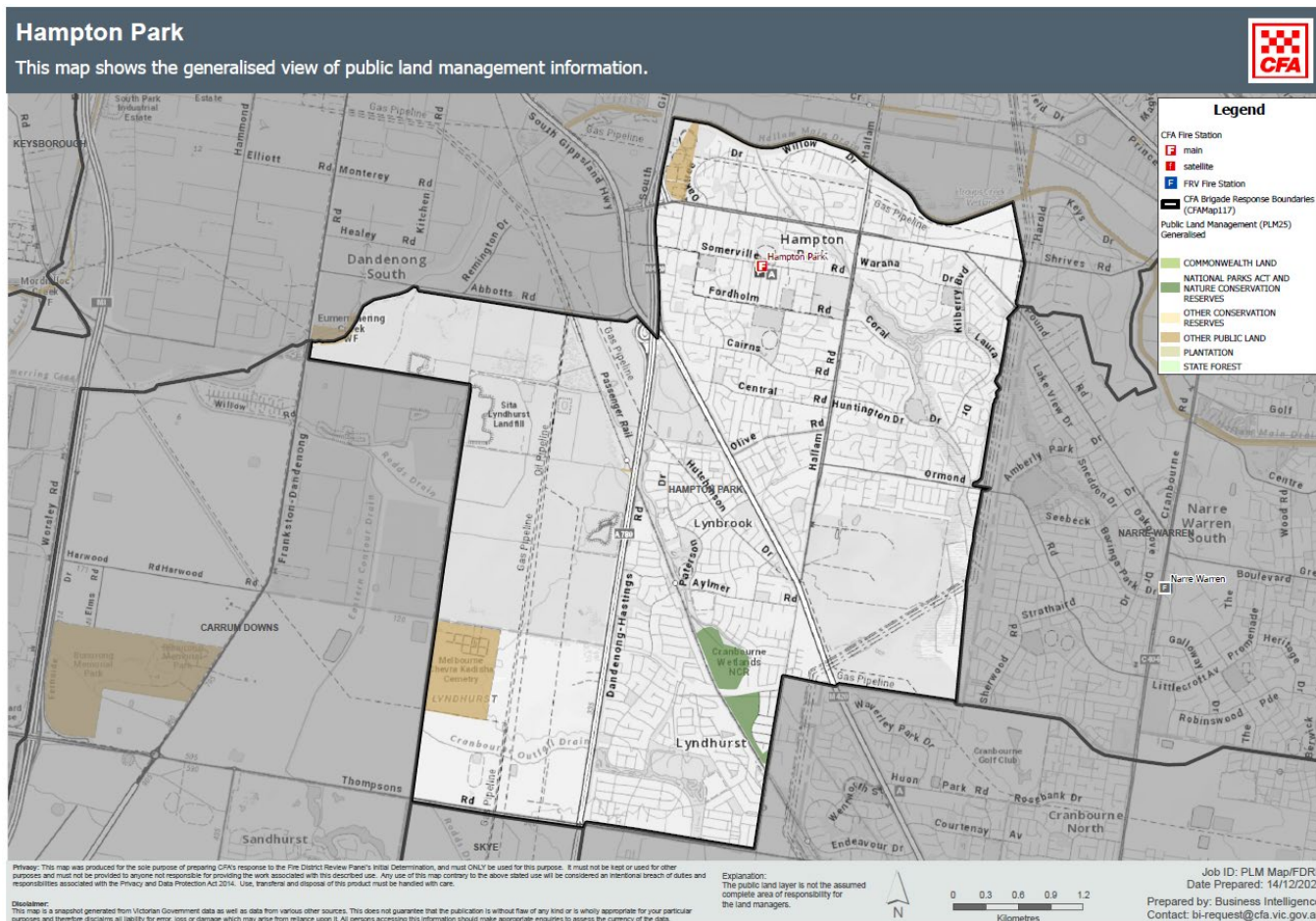


Figure 7: Public land management information



3.1 Growth zones

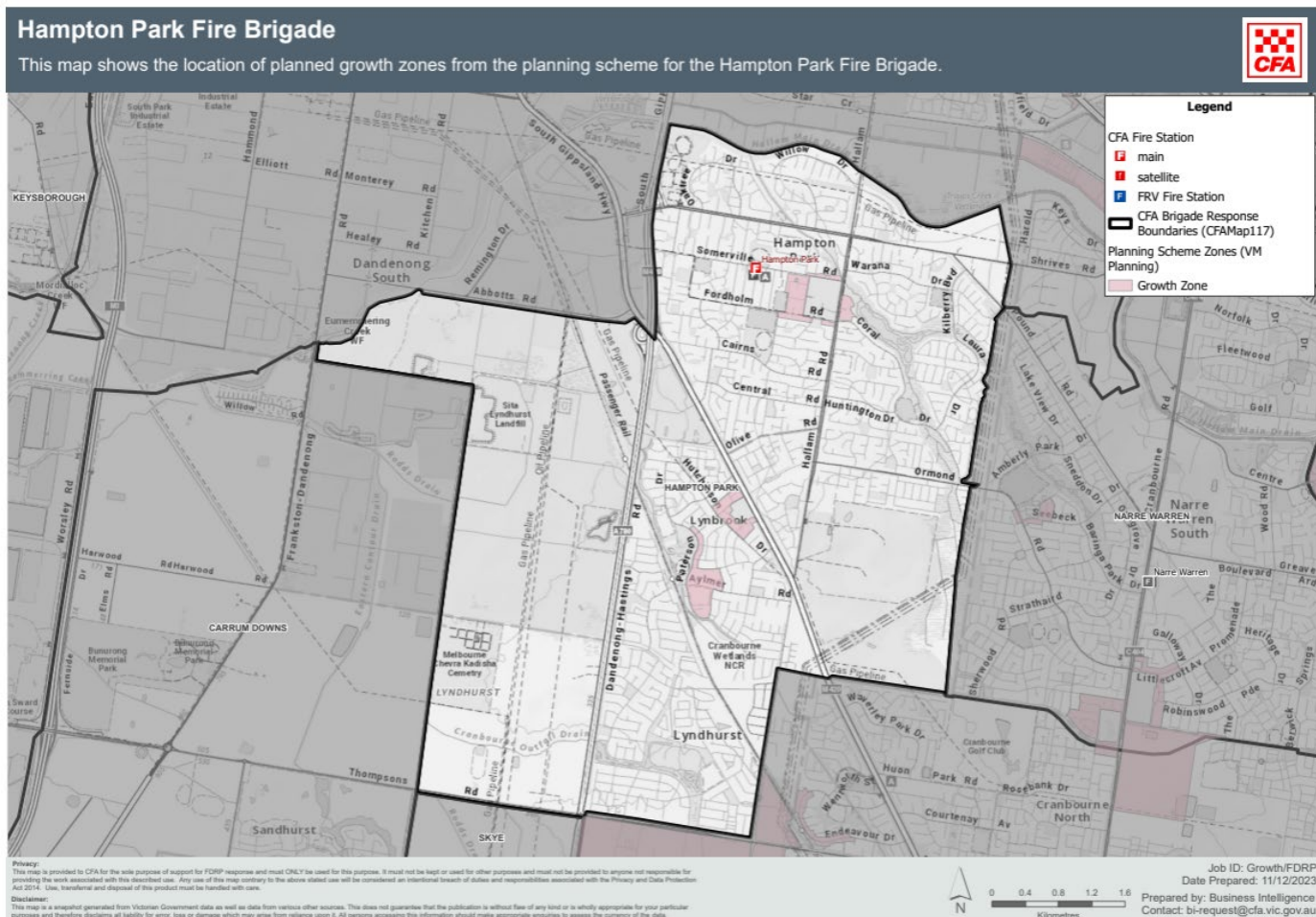
An analysis of VicPlan, the official mapping platform of the Department of Transport and Planning shows the Hampton Park Fire Brigade SDA has the following profile of industrial zones and planned growth zones.

Table 4: Urban growth areas

Total Brigade Area (Hectares)	Area (hectares) covered by Industrial Zones	Percentage covered by Industrial Zones	Area (hectares) covered by Growth Zones	Percentage covered by Growth Zones
2638	471.92	17.89%	34.74	1.32%

As shown in Figure 8, there are small pockets (1.32% of the SDA) that are designated growth zones.

Figure 8: Planned growth zones from the planning scheme for Hampton Park



3.2 Bushfire Management Overlay

FDRP has no value for this metric for Hampton Park. There is no BMO in the Hampton Park SDA (see Figure 6 above).

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population change of 3,248 or 7% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells).

For the local government area in total (City of Casey) the forecast seven year population change is an increase of 79,547 or 23%. The population change for the suburb of Hampton Park between 2024 and 2046 is forecast to be 12.93%.

ABS census data (2021) shows that there are 12,745 dwellings in the Hampton Park Brigade SDA. Of these dwellings, 25% are rental houses. As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer’s instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair²⁷.

²⁷ <https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/keeping-the-property-safe/smoke-alarms-and-fire-safety#:~:text=The%20rental%20provider%20must%20ensure%20smoke%20alarms%3A%201,are%20repaired%20or%20replaced%20as%20an%20urgent%20repair.>

CFA and FRV have collaborated to create the 'Prevent – Detect – Escape' Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability. There have been 117 community members undertake the 'Prevent – Detect – Escape' Program in the Hampton Park Fire Brigade SDA.

Risk Evaluation:

There is a large proportion of the population within the Hampton Park Brigade SDA living in rented properties (25%). The requirement for mandated working (and verified) smoke alarms is anticipated to have contributed to the significantly low number of fire fatalities. Community engagement activities undertaken by the Hampton Park Fire Brigade allow for significant mitigation of risk elements identified in both residential fire and social disadvantage risk.

4. Service Delivery and Service Demand

4.1 Total demand

Figure 9 shows the total number of unique incident numbers attended by the Hampton Park Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response.

Figure 9: Hampton Park Brigade incident count by type 1 January 2010 - 18 December 2023

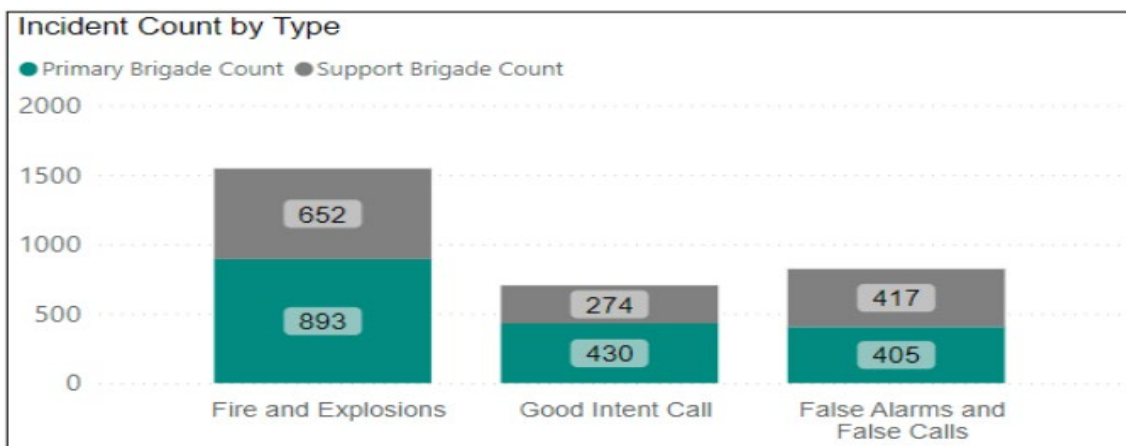


Figure 10 shows a count of the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels in summer and lower periods of activity in the winter months.

Figure 10: Hampton Park Brigade incident count by month 1 January 2010 - 18 December 2023

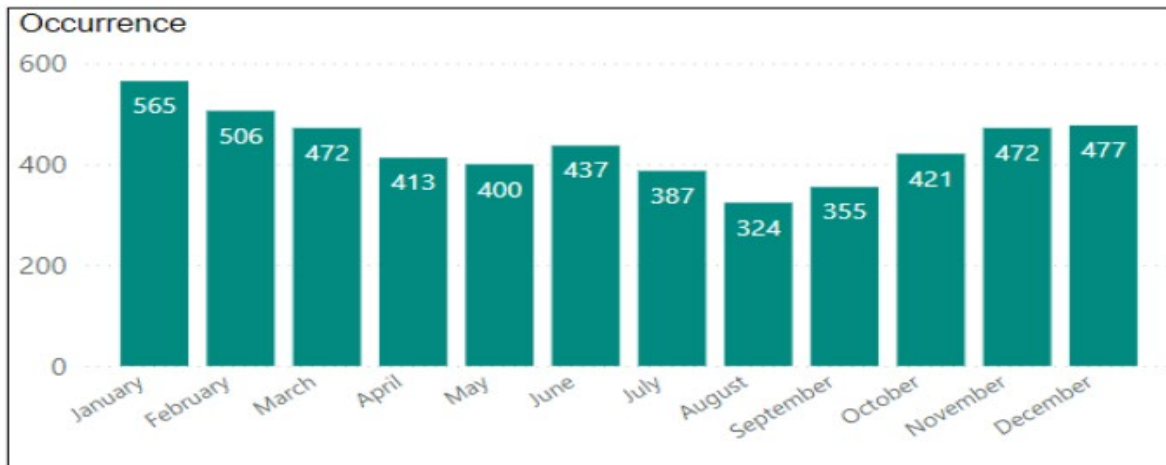
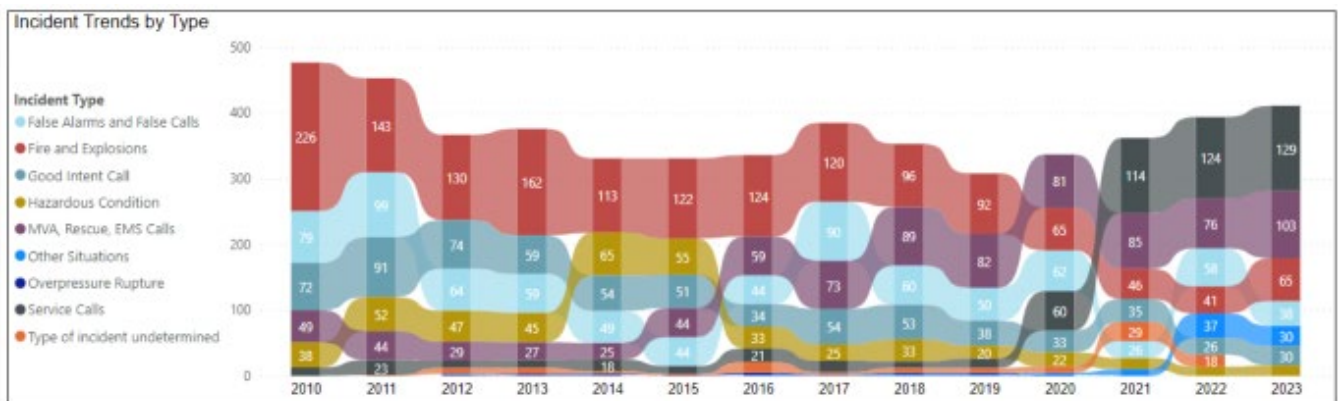


Figure 11 shows a count of all incident types between 1 January 2010 and 18 December 2023. The primary incident types for the Brigade since Fire Services Reform are service calls and Motor Vehicle Accidents (MVA), Rescue and Emergency Medical Service (EMS) calls.

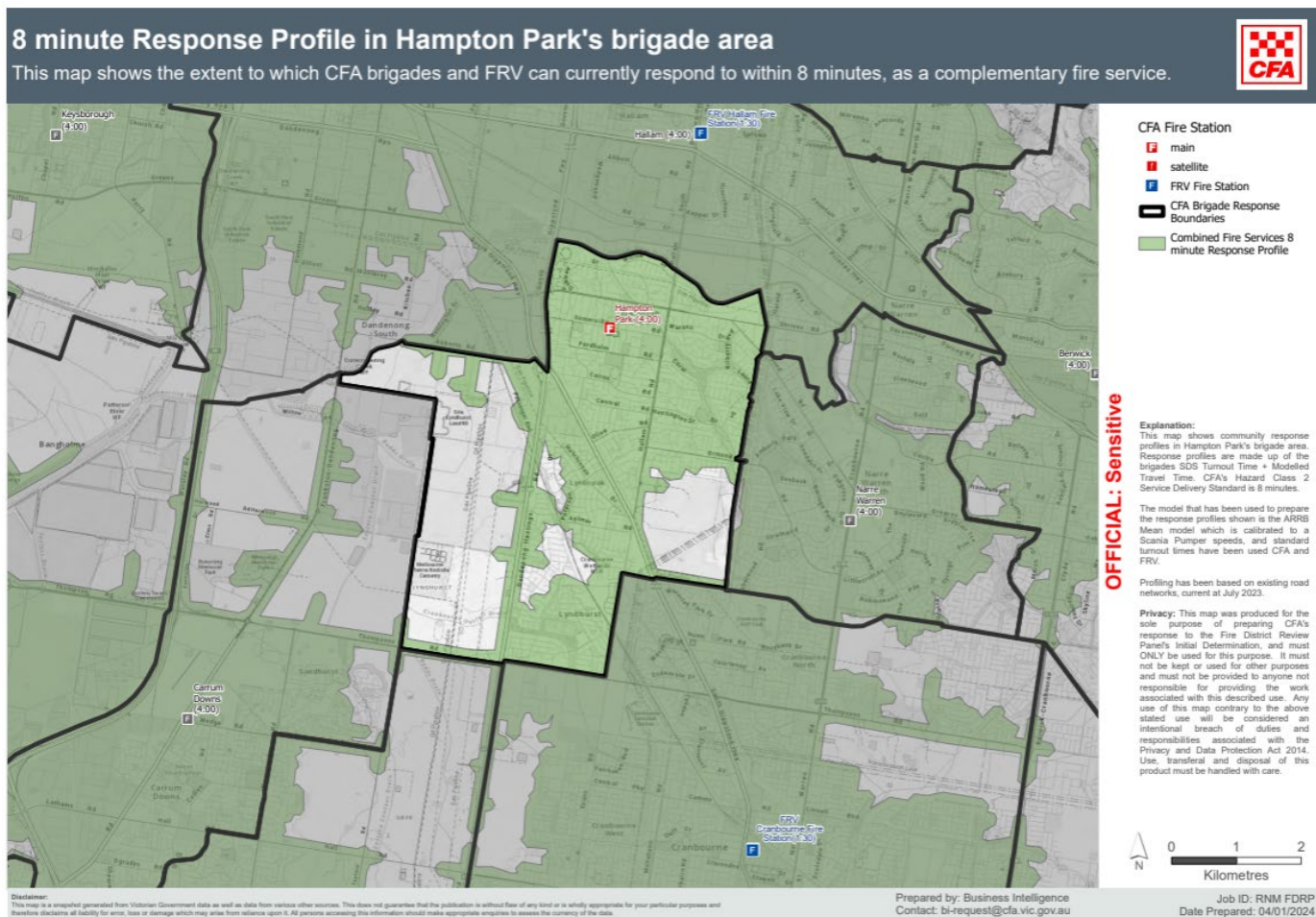
Figure 11: Hampton Park Brigade Incident Count by type by year 2010 - 2023



4.2 Service delivery standard

The Brigade has been challenged meeting SDS for some time due to the increase in development and activity in the area. Figure 12 shows the road within the land use that can be serviced within eight minutes by the existing (CFA/FRV) complementary fire service. This shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the 8 minute to scene standard.

Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 95.85% of the road network in the Residential land use
- 100% of the road network in the Commercial land use
- 82.17% of the road network in the Industrial land use
- 92.52% of the road network in the Education land use
- 99.54% of the road network in the Parkland land use
- 100% of the road network in the Transport land use
- 63.98% of the road network in the Primary Production land use is.

Table 5 (and Figure 13) show the SDS compliance for the Hampton Park brigade:

- from 1 January 2010 to 31 December 2019 there were 1,412 emergency incidents within the Hampton Park Brigade SDA
- fire services response to emergency incidents was 81.02% compliant with SDS
- for the 268 incidents where SDS was not met over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. Of these, 47% were missed by less than 60 seconds.

Table 5: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 –10 minutes	More than 10 minutes
39 (14.55%)	45 (16.79%)	41 (15.30%)	73 (27.24%)	31 (11.57%)	36 (13.43%)	1 (0.37%)	2 (0.75%)

From 1 January 2020 to 30 November 2023:

- there were 687 emergency incidents within the Hampton Park Brigade SDA
- fire services response to emergency incidents was 70.7% compliant with SDS
- for the 201 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that SDS was missed. Of these, 48% were missed by less than 60 seconds.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

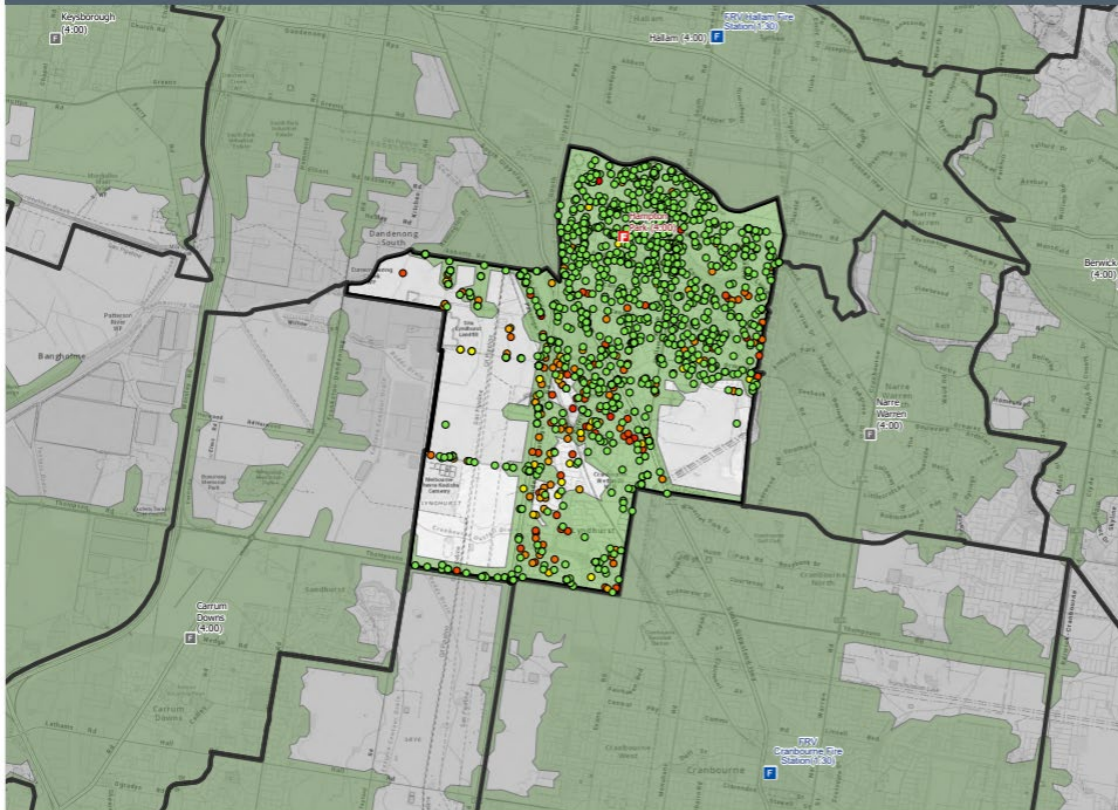
Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 –10 minutes	More than 10 minutes
24 (11.94%)	26 (12.94%)	47 (23.38%)	28 (13.93%)	47 (23.38%)	24 (11.94%)	4 (1.99%)	1 (0.50%)

CFA intends to establish a satellite station which will support strengthened service by the Hampton Park Brigade. Figure 14 shows the location of this satellite and the eight minute response profile.

Figure 13: SDS compliance for the Hampton Park Brigade SDA 2010 to 2019

8 minute Response Profile and Emergency Incidents in Hampton Park's brigade area

This map shows the extent to which CFA brigades and FRV can currently respond to within 8 minutes, as a complementary fire service. It also shows the location of emergency incidents from 2010 to 2019, where the time target was met or not met by either fire service.



- CFA Fire Station**
- main
- satellite
- FRV Fire Station
- Emergency Incidents (2010-19)**
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- 2:01-3:00
- 3:01-6:00
- 6:01-10:00
- >10:00
- CFA Brigade Response
- Combined Fire Services 8 minute Response Profile

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Explanation:
This map shows community response profiles in Hampton Park's brigade area. Response profiles are made up of the brigade's SDS Turnout Time + Modelled Travel Time. CFA's Hazard Class 2 Service Delivery Standard is 8 minutes.

The model that has been used to prepare the response profiles shown is the ARRB Mean model which is calibrated to a Scania Pumper speeds, and standard turnout times have been used CFA and FRV.

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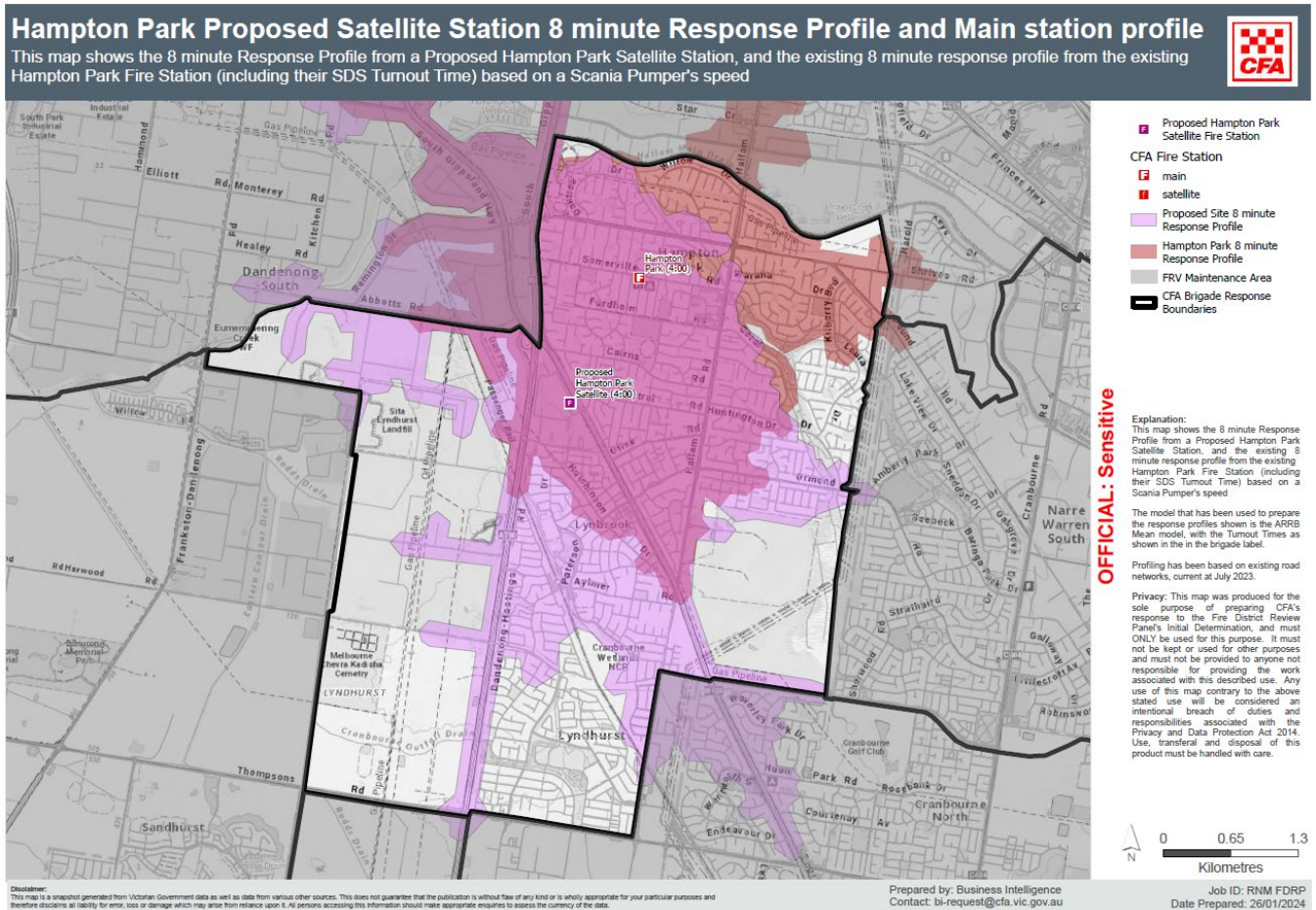
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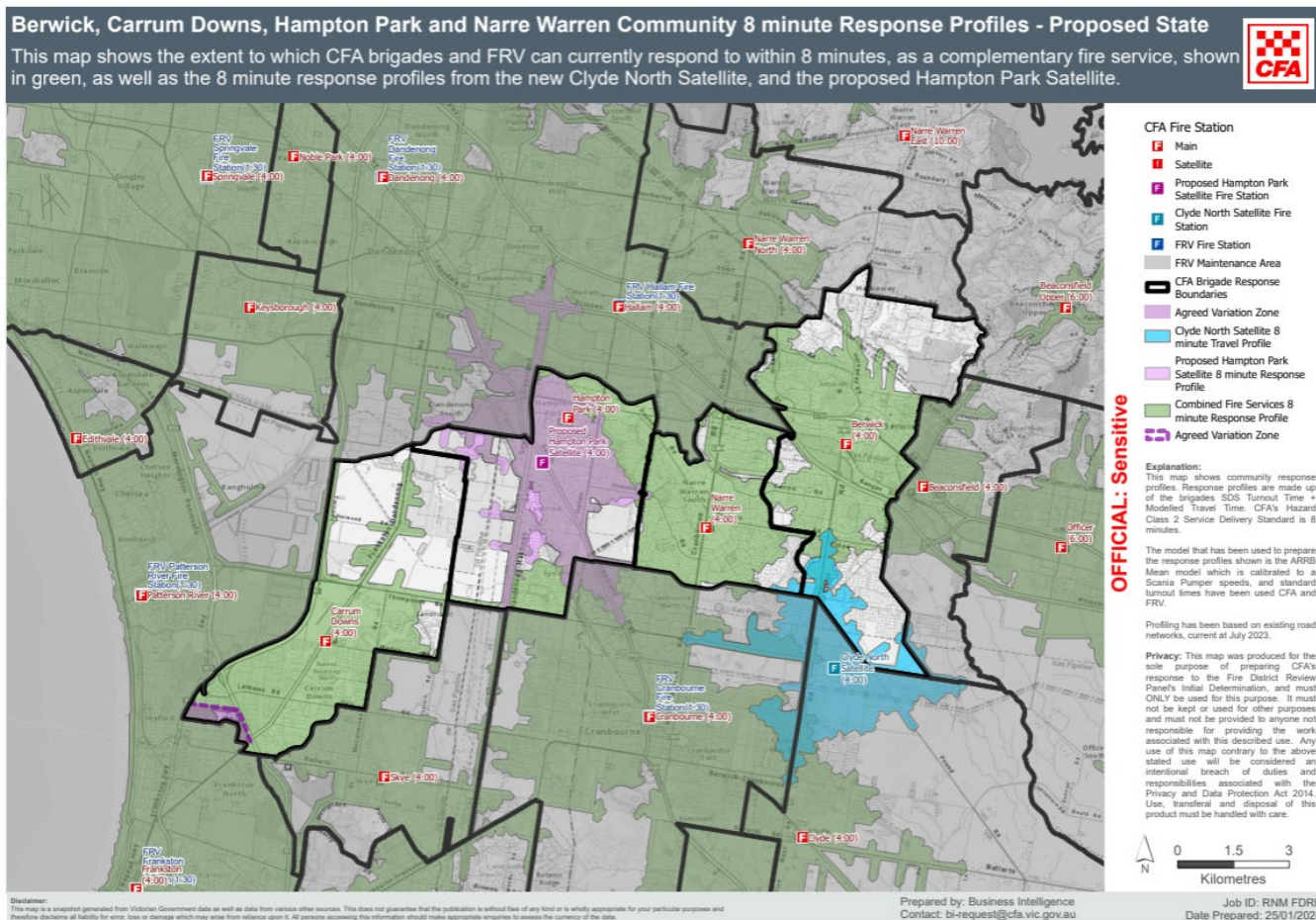
Prepared by: Business Intelligence
Contact: bi-request@cfa.vic.gov.au
Job ID: RNM FDRP
Date Prepared: 04/01/2024

Figure 14: Proposed satellite station location and response profile



The FDRP initial determination identified Berwick, Carrum Downs, Hampton Park and Narre Warren as four of the 13 areas. Figure 15 shows how the satellite to be established at Hampton Park, along with the current satellite station at Clyde North (operated by the Clyde Fire Brigade; response profile marked in blue) provides improved coverage in District 8.

Figure 15: Response profile of proposed state



Risk Evaluation:

Despite best efforts, the Hampton Park Brigade is experiencing challenges in meeting the SDS and although many SDS misses are only by a small margin, the more recent data shows a continuing challenge. It is evident that the increased population in the Brigade SDA and the current location of the fire station are factors affecting this result.

Risk Mitigation Action:

CFA intends to establish a satellite fire station that will provide improved ability to service particularly the southern parts of the SDA. In addition, CFA will continue with targeted member recruitment from those in the community living close to the current Hampton Park fire station and the intended satellite location.

4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Hampton Park Brigade SDA from 2010 to 2023 has had a total of 215 building/structure fires requiring extinguishment.

Table 7: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
32	25	21	24	10	17	12	9	12	10	15	7	11	10	215

An analysis of preventable fire fatalities associated with these 215 building/structure fires has resulted in only one preventable fatality found in 2011. The Hampton Park Brigade met SDS for this incident, responding in less than eight minutes. No smoke alarm was present. In the Hampton Park Brigade SDA, the following non-preventable fatalities (homicides, suicides, deliberate) were reported.

Table 8: Non-preventable fatalities 2010 to 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
-	-	-	-	-	-	1	-	-	2	-	-	-	-	3

Risk Evaluation:

The Hampton Park Brigade SDA has had one preventable structure/building fire fatality since CFA provided data to the FDRP, and three non-preventable (deliberate) fatalities.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.

Table 9: Hampton Park fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	1 of 13	Despite best efforts, the Hampton Park Brigade is experiencing challenges in meeting SDS and although many SDS misses are only by a small margin, the more recent data shows a continuing challenge. It is evident that the increased population in the Brigade's SDA and the current location of the fire station are factors affecting this result.	CFA intends to establish a satellite fire station that will provide improved ability to service particularly the southern parts of the SDA (see Figure 12).
Bushfire Management Overlay %	No value	There is no BMO in the Hampton Park SDA.	
Total Demand	3 of 13	The trend in demand is relatively stable, with slightly higher activity levels in summer and lower periods of activity in the winter months.	
Victorian Planning Authority %	10 of 13	There is only a small percentage of the SDA that is covered by industrial zones or growth zones.	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio (VCTC)	10 of 13	See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.	
Building fire casualty to total building fire ratio (BCTC)	8 of 13	The one preventable fatality that resulted from a structure fire incident was tragic. The Hampton Park Brigade attended the incident within SDS. No smoke alarm was present.	
Population projections	3 of 13	The local government area forecast seven year population change is an increase of 79,547 or 23%. The population change for the suburb of Hampton Park between 2024 and 2046 is forecast to be 12.93%. This growth could necessitate the need to consider a different service model for this area in the future.	

Table 10: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Wendouree	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Traffic flow during a peak period

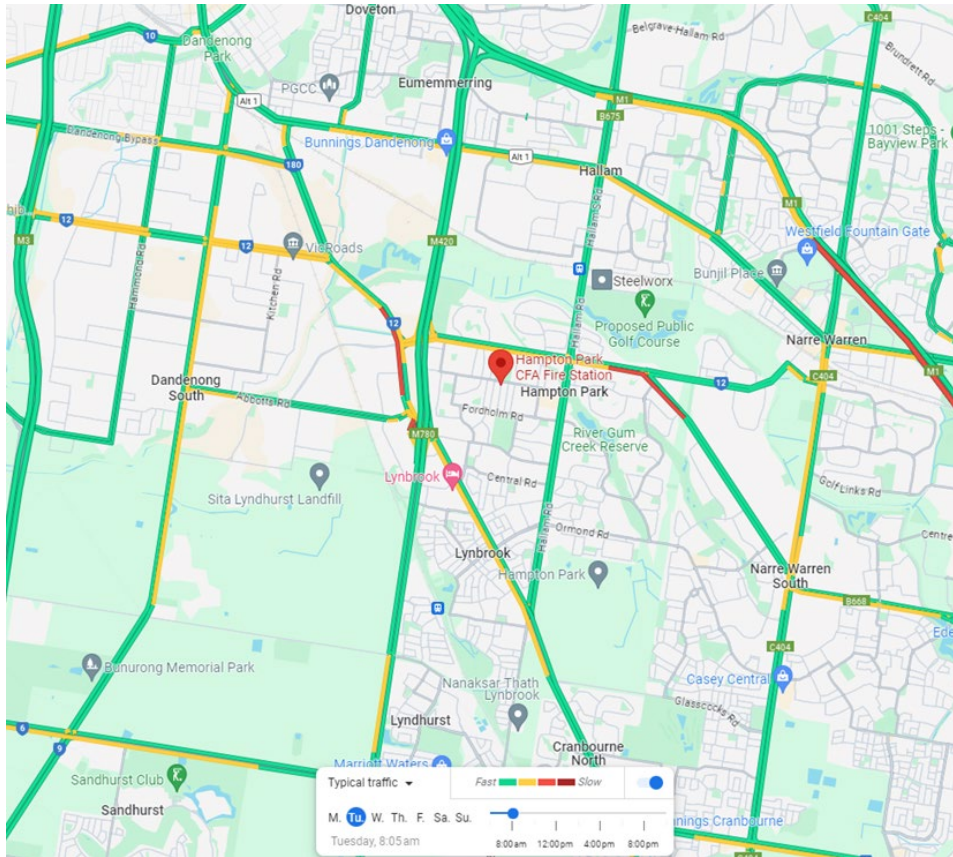


Figure 2: Operational members location and travel times

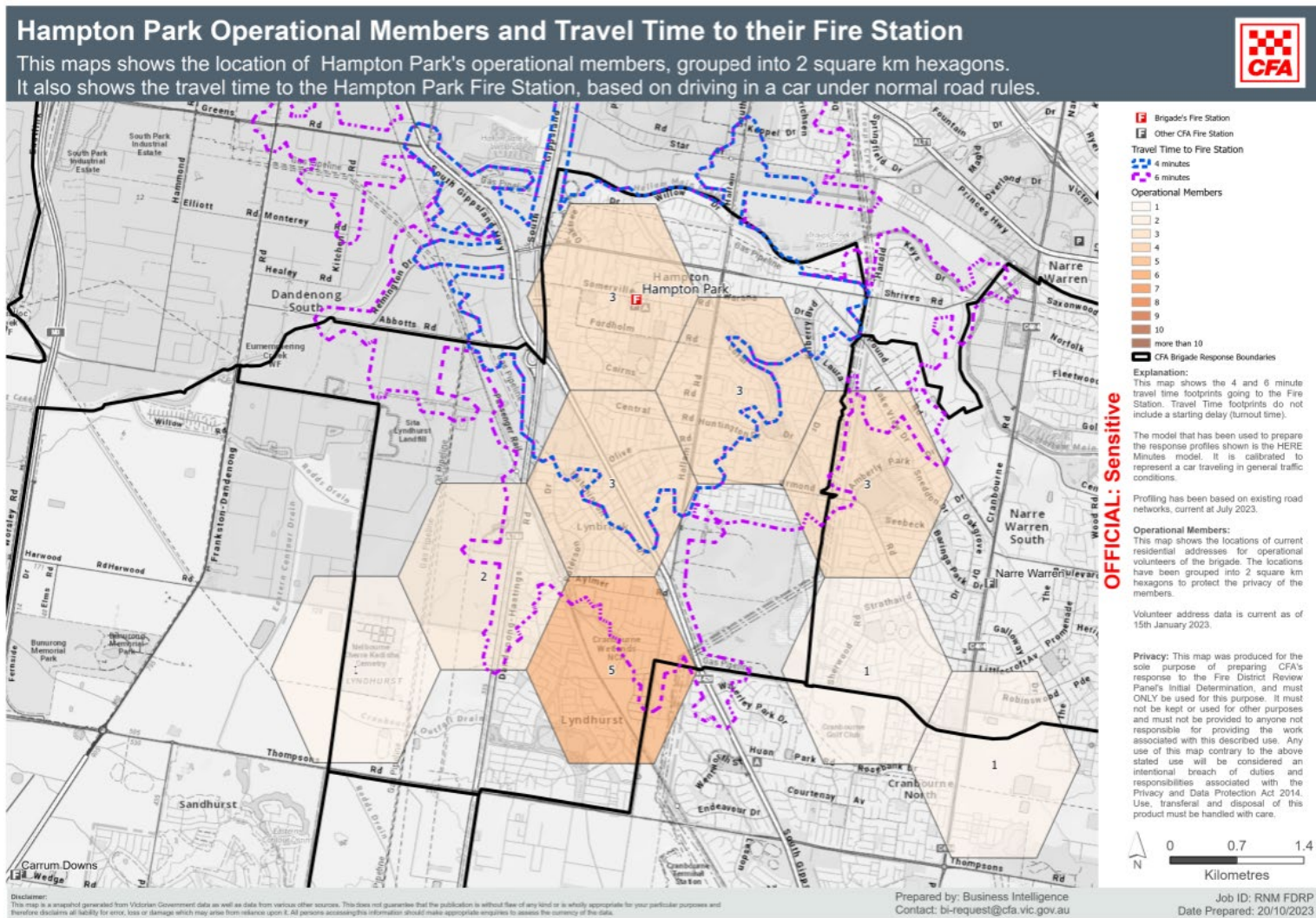


Figure 3: Incident count and type of support provided in the FRV Fire District

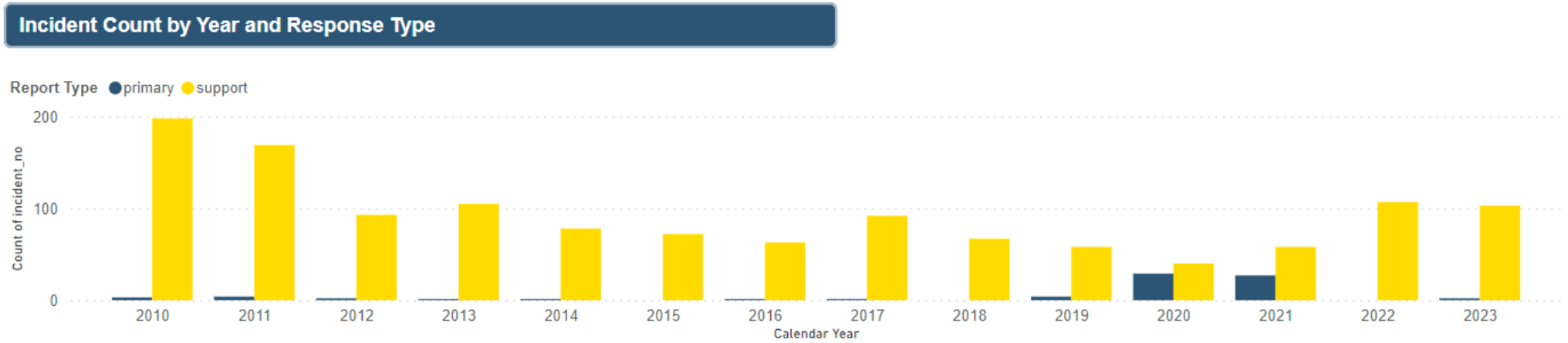


Figure 4: Incident count and type of support provided in the FRV station footprint

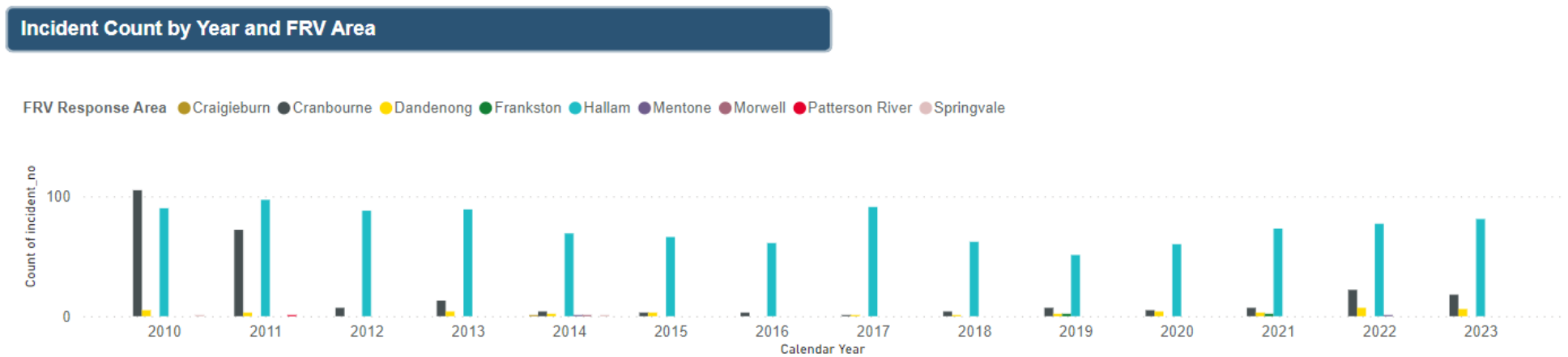


Figure 5: Community safety and intervention programs

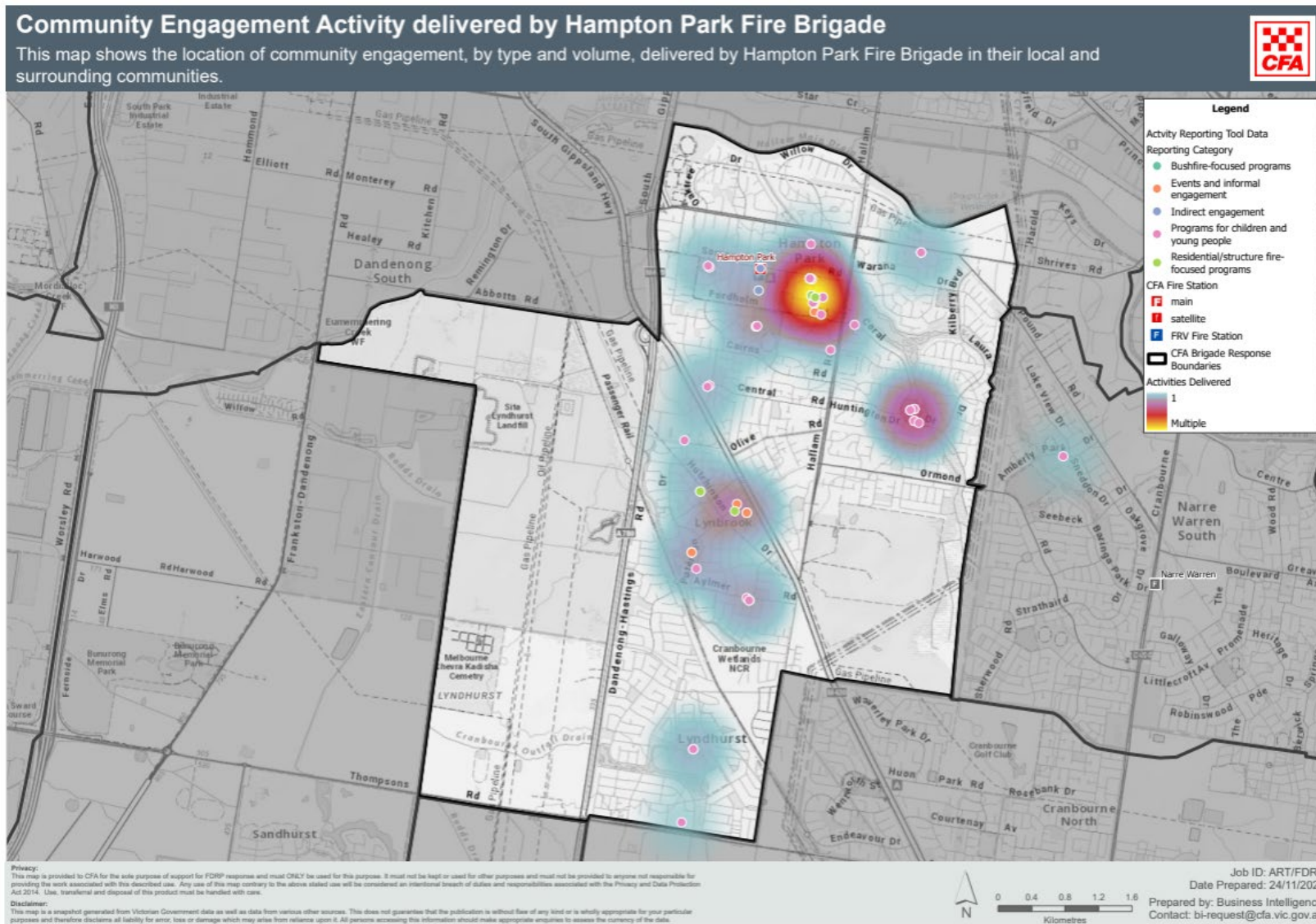


Figure 6: ABS land use areas and BMO

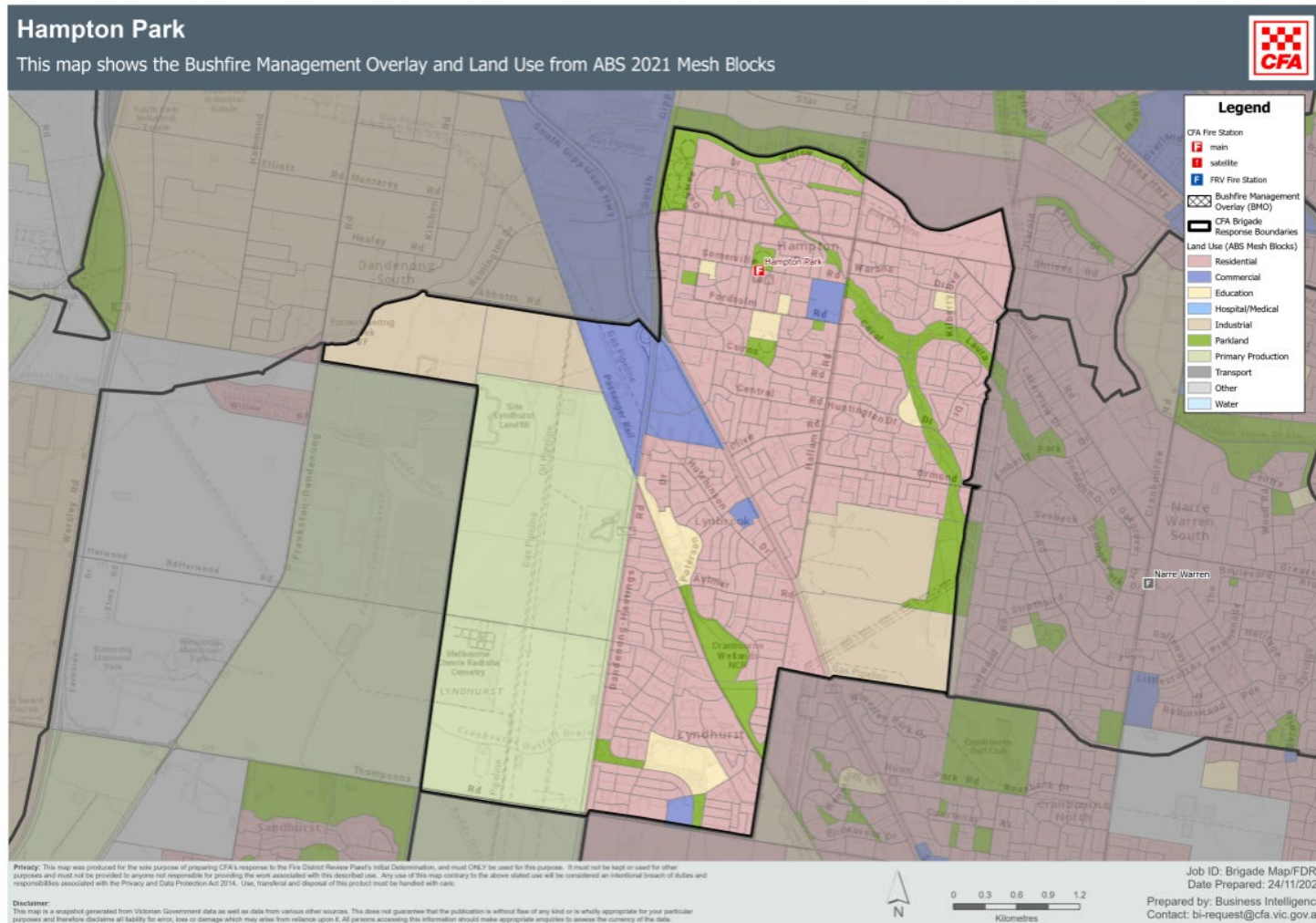
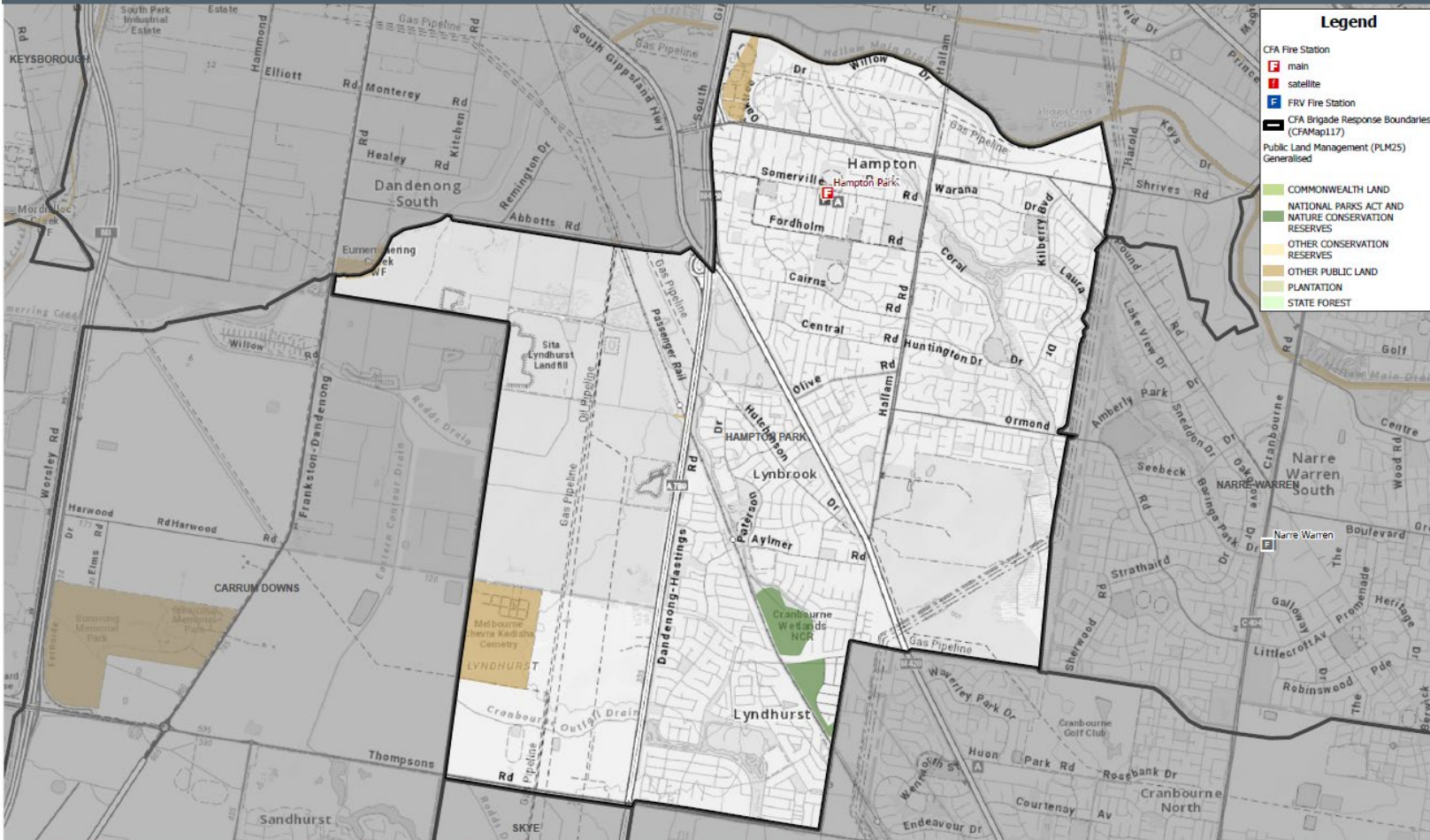


Figure 7: Public land management information

Hampton Park

This map shows the generalised view of public land management information.



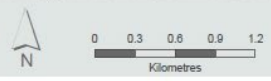
Legend

- CFA Fire Station
 - main
 - satellite
- FRV Fire Station
- CFA Brigade Response Boundaries (CFAMap117)
- Public Land Management (PLM25) Generalised
 - COMMONWEALTH LAND
 - NATIONAL PARKS ACT AND NATURE CONSERVATION RESERVES
 - OTHER CONSERVATION RESERVES
 - OTHER PUBLIC LAND
 - PLANTATION
 - STATE FOREST

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Explanation: The public land layer is not the assumed complete area of responsibility for the land managers.



Job ID: PLM Map/FDRP
 Date Prepared: 14/12/2023
 Prepared by: Business Intelligence
 Contact: bi-request@cfa.vic.gov.au

Figure 8: Planned growth zones from the planning scheme for Hampton Park

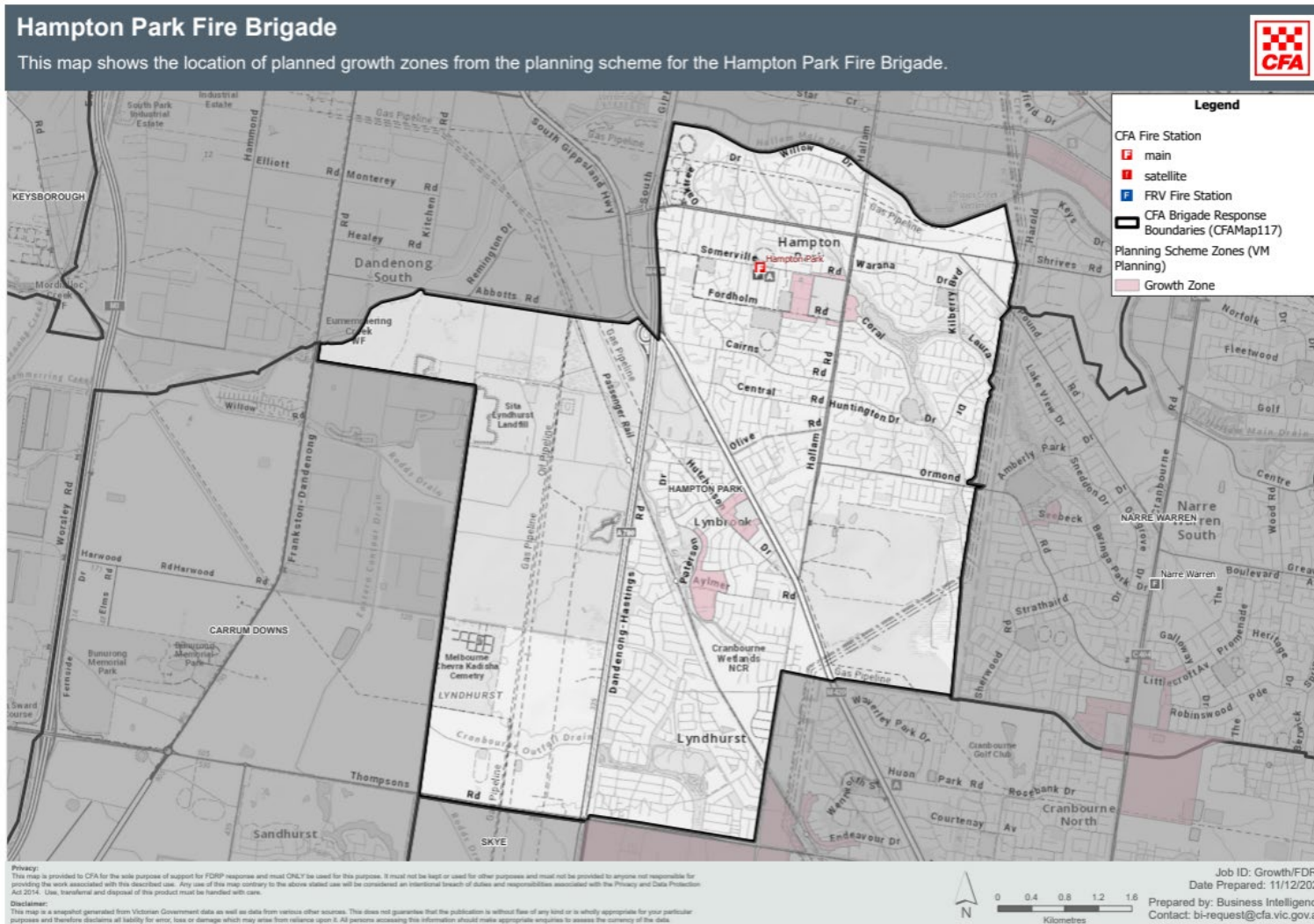


Figure 9: Hampton Park Brigade incident count by type 1 January 2010 - 18 December 2023

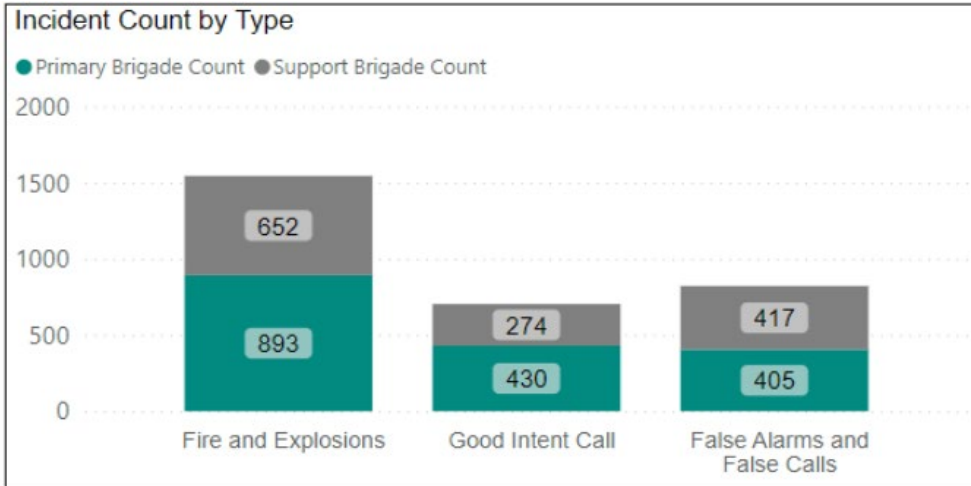


Figure 10: Hampton Park Brigade incident count by month 1 January 2010 - 18 December 2023

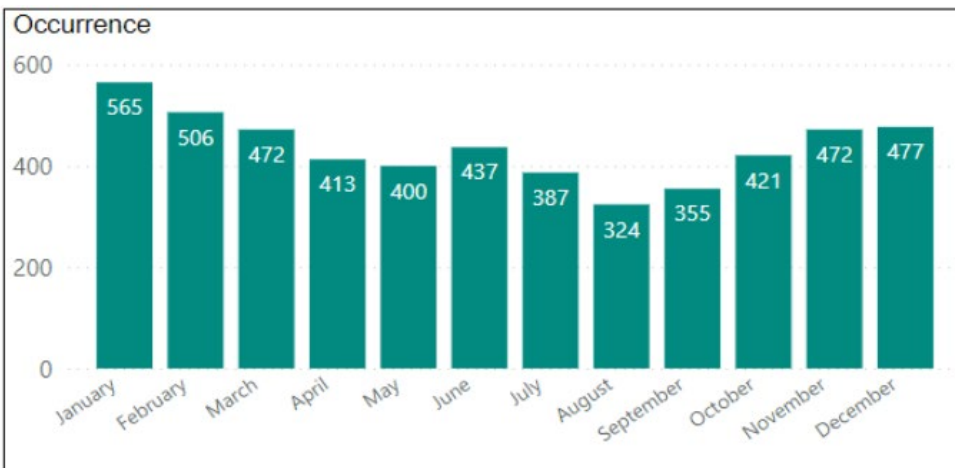


Figure 11: Hampton Park Brigade Incident Count by type by year 2010 - 2023

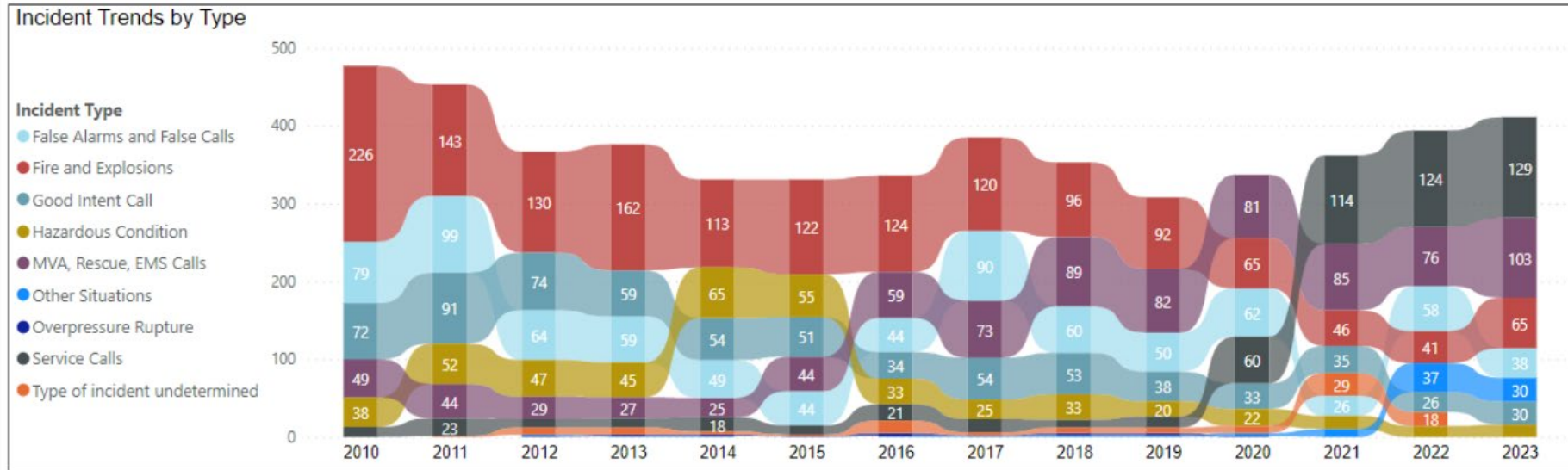


Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes

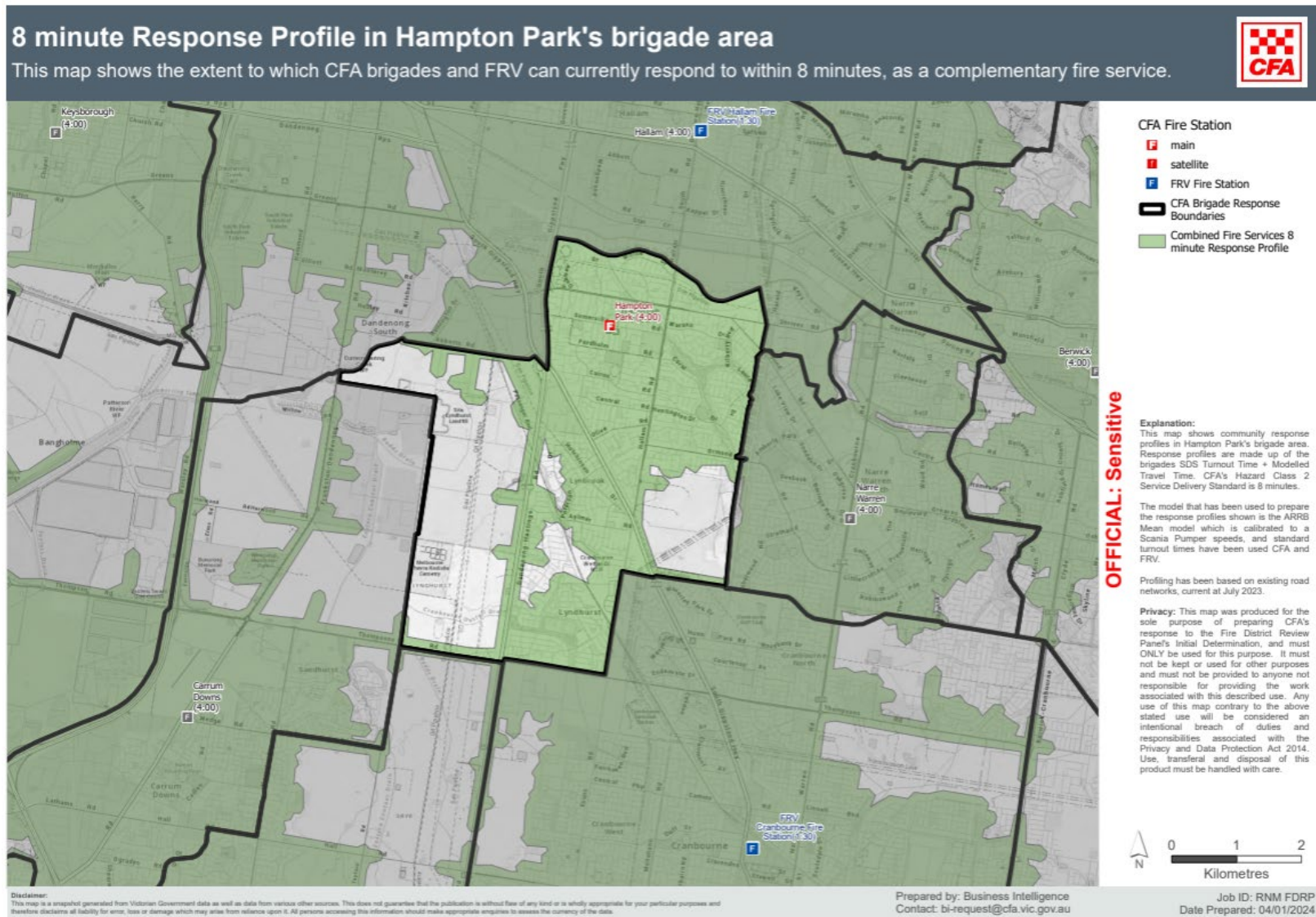


Figure 13: SDS compliance for the Hampton Park Brigade SDA 2010 - 2019

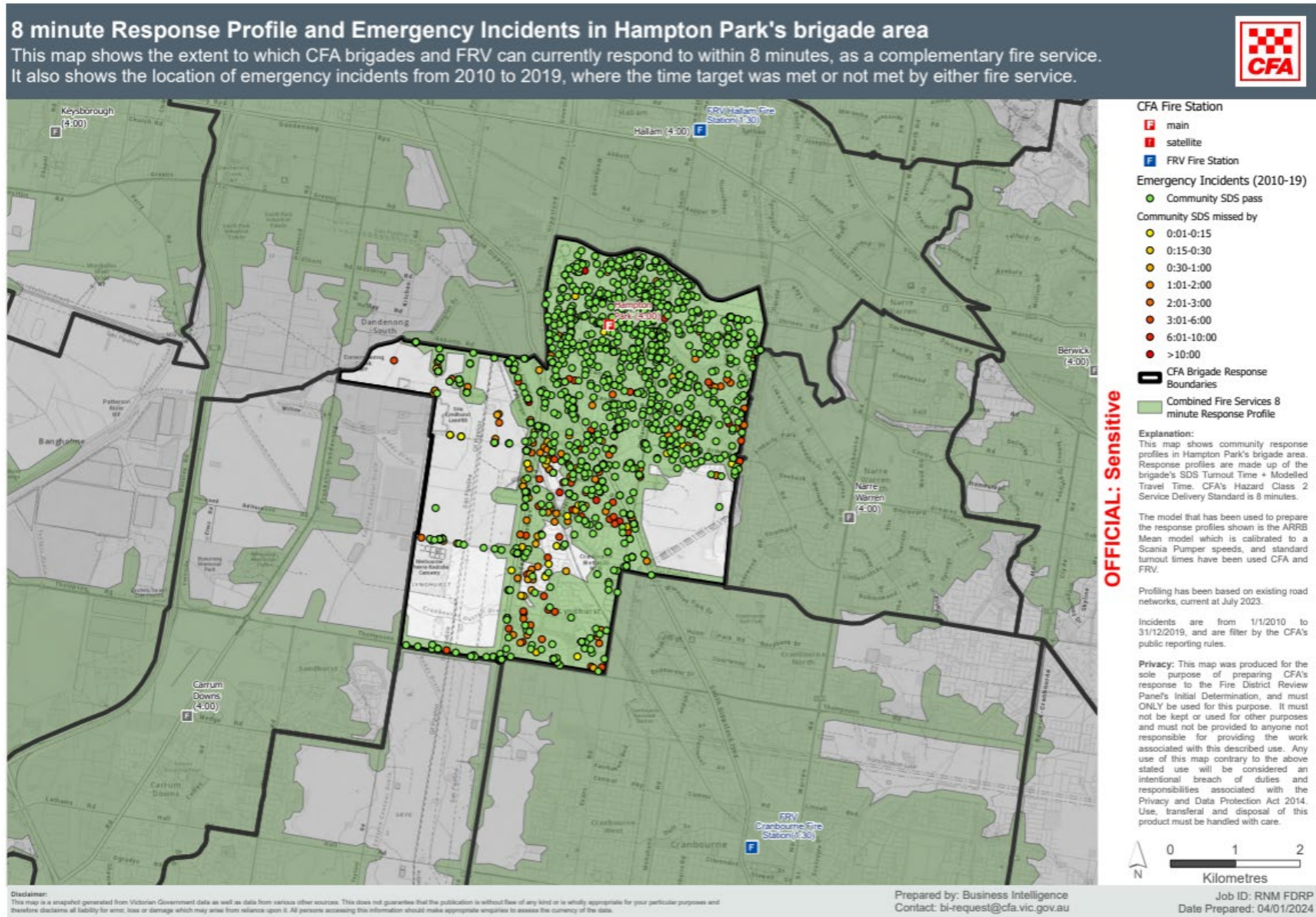
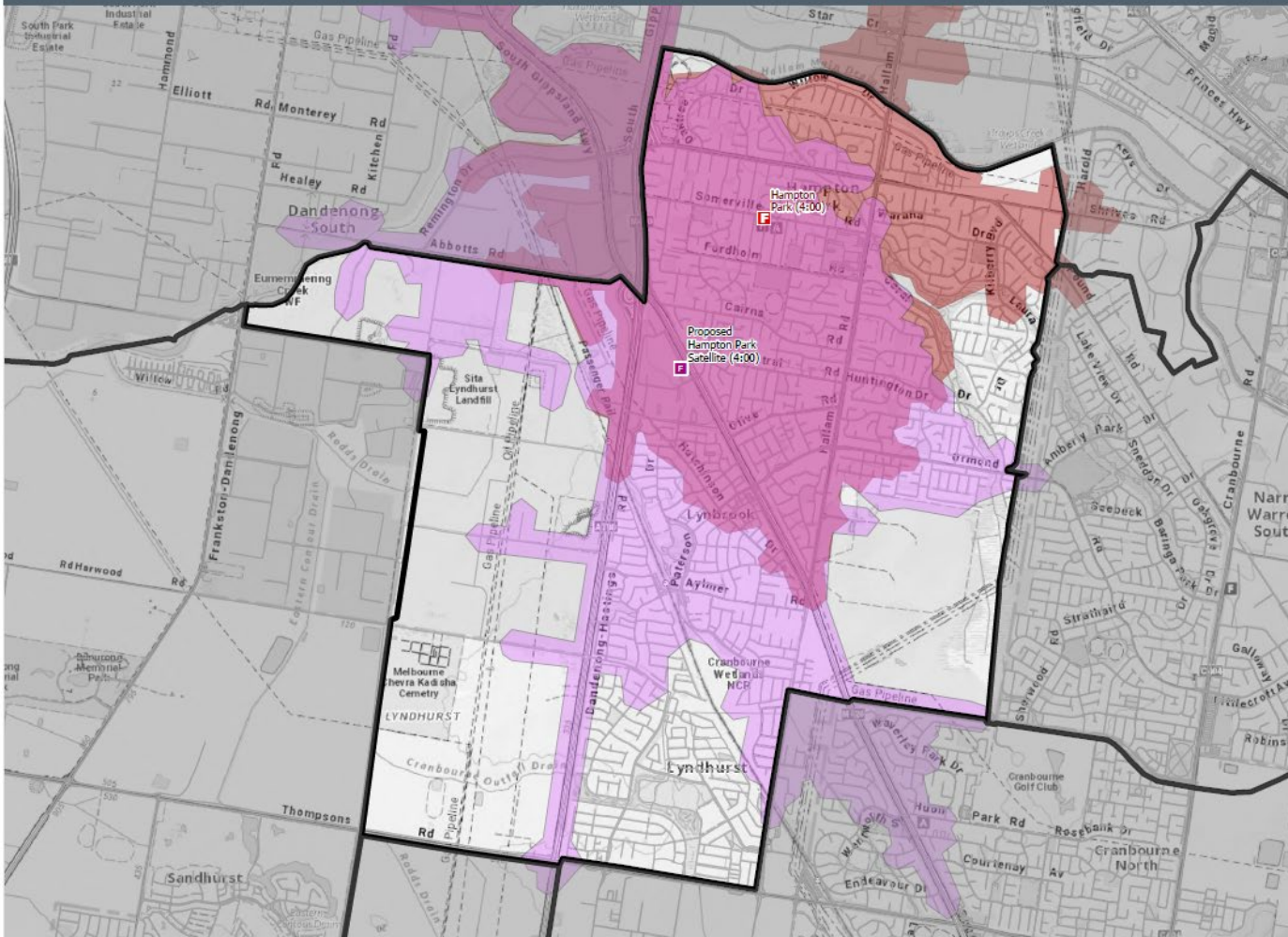


Figure 14: Proposed satellite station location and response profile

Hampton Park Proposed Satellite Station 8 minute Response Profile and Main station profile

This map shows the 8 minute Response Profile from a Proposed Hampton Park Satellite Station, and the existing 8 minute response profile from the existing Hampton Park Fire Station (including their SDS Turnout Time) based on a Scania Pumper's speed



- Proposed Hampton Park Satellite Fire Station
- CFA Fire Station
 - main
 - satellite
- Proposed Site 8 minute Response Profile
- Hampton Park 8 minute Response Profile
- FRV Maintenance Area
- CFA Brigade Response Boundaries

OFFICIAL: Sensitive

Explanation:
This map shows the 8 minute Response Profile from a Proposed Hampton Park Satellite Station, and the existing 8 minute response profile from the existing Hampton Park Fire Station (including their SDS Turnout Time) based on a Scania Pumper's speed

The model that has been used to prepare the response profiles shown is the ARRB Mean model, with the Turnout Times as shown in the in the brigade label.

Profiling has been based on existing road networks, current at July 2023.

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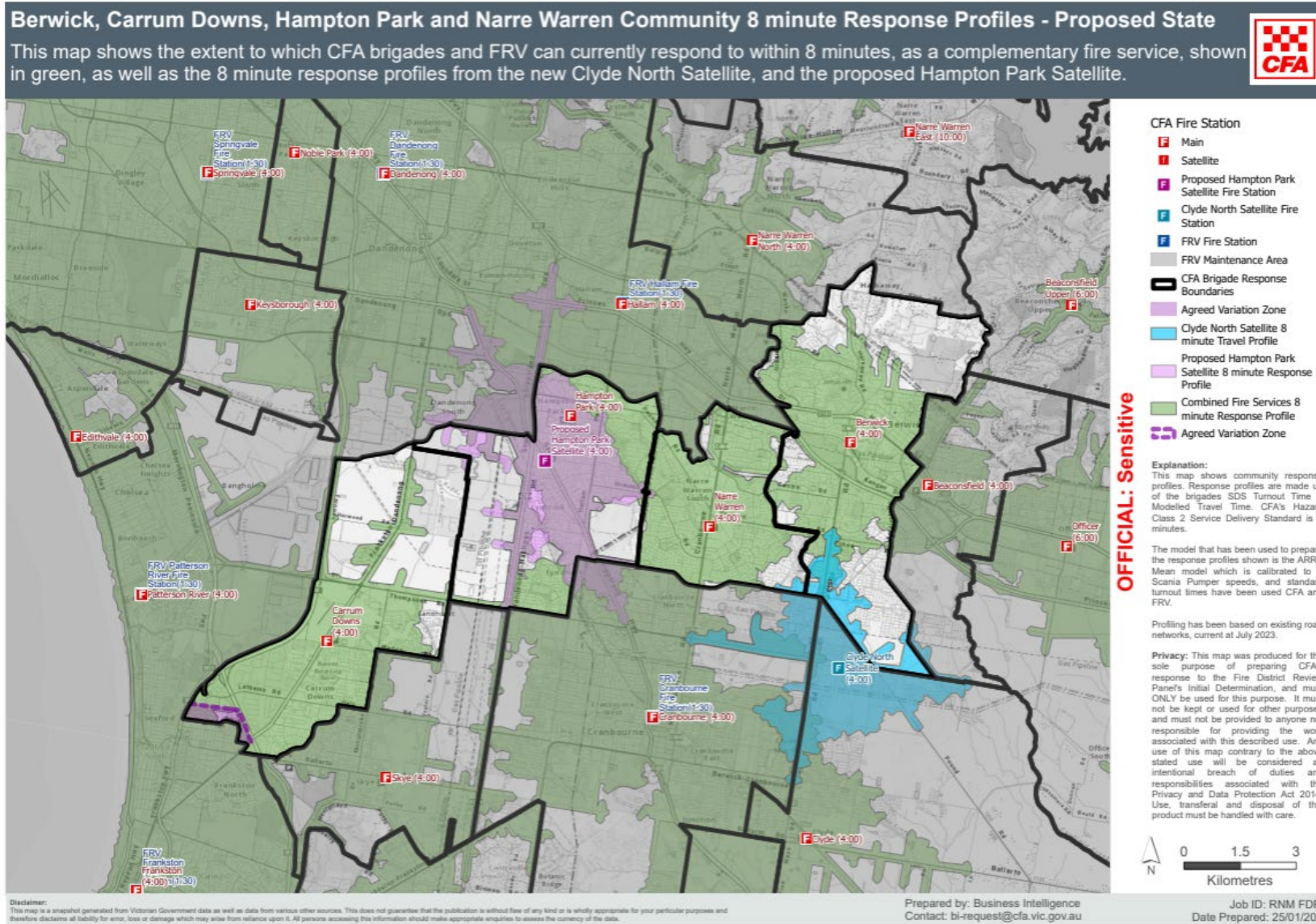


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Job ID: RNM FDRP
Date Prepared: 26/01/2024

Figure 15: Response profile of proposed state



Narre Warren Fire Brigade

1. About the Brigade

Established in 1944 the Narre Warren Fire Brigade is a Class 5 Brigade within the Casey Group located in District 8 of the South East Region. The Narre Warren Fire Brigade has a total membership of 124 volunteers (as at 31 December 2023), including urban and rural firefighters, a specialist catering team and an active Junior Brigade that promotes and delivers youth fire programs.

1.1 History

Established in 1944, the Narre Warren Fire Brigade has a rich history of community service. The Brigade's roots trace back to the Narre Warren Bushfire Brigade, which was formed on 11 February 1944, becoming a part of the then Country Bushfire Brigades Organisation and later the CFA.

Tragically, the Brigade lost seven volunteers during the devastating Ash Wednesday fires in 1983. With 2023 marking the 40th Anniversary of that fateful event, the Brigade gathered at the Upper Beaconsfield site for reflection and remembrance.

In 2010, the Brigade inaugurated a new station which is well sited near to many volunteers' homes and is equipped with modern office facilities, enabling members to work efficiently during the day to ensure continuous coverage. The station location is an important factor contributing to the Brigade's ability to achieve consistently timely response to incidents.

The Narre Warren Fire Brigade stands as a resilient testament to dedicated volunteers who safeguard the community, honouring its past while looking towards a safer future.

1.2 Context

The Narre Warren Fire Brigade demonstrates a strong capacity to deliver operational response effectively in its SDA.

In terms of meeting SDS requirements, the Brigade consistently achieves 90 to 100% success. The Brigade boasts a highly engaged operational member base, maintaining an SDS six-year record over 94%. Active responder strength is notable, with a balanced turnout of members in the past year. The Brigade has implemented a support call roster to ensure members are being evenly responded to calls at night and has also created a daytime firefighter program – specifically recruiting volunteers with daytime availability which ensures a daytime response. These are examples of the Brigade's ability to assess service delivery needs and innovate in its arrangements to meet those needs. The Brigade strategically evaluates membership for recruitment, considering member data for an informed recruitment plan.

The Brigade is involved in community engagement, predominantly through the Fire Safe Kids Program. It has an active social media presence, using this to connect with community members for fire safety messaging. An area of future focus is to increase engagement with vulnerable communities.

2. Brigade Capability Snapshot

2.1 Membership

The Narre Warren Fire Brigade has a total membership of 124 members (38 females and 86 males). The Brigade has a good range of experienced and newer brigade members with the majority of the membership aged 40 years or younger.

2.2 Fire Appliances, other vehicles and specialist equipment

The Narre Warren Fire Brigade has two primary appliances and other vehicles to meet the risk and needs of the SDA. These appliances work with other CFA brigade's assets (and adjoining FRV resources) in a network of resources that can be combined in an escalating fashion where a need or incident complexity requires resourcing beyond the level that can be met by the Narre Warren Brigade alone

Narre Warren Brigade has the Casey Group Breathing Apparatus (BA) filling station which fills and maintains BA cylinders for all brigades in the Casey Group and South East Region.

Table 1: Fire appliances and vehicles available to the Narre Warren Brigade

Vehicle	Vehicle make	Age
Pumper	Scania	6 years
Tanker	Hino	13 years
Field Command Vehicle (Casey Group)	XLT Ford Ranger 4x4	7 years
Passenger car	Nissan	10 years
Catering Trailer		13 years

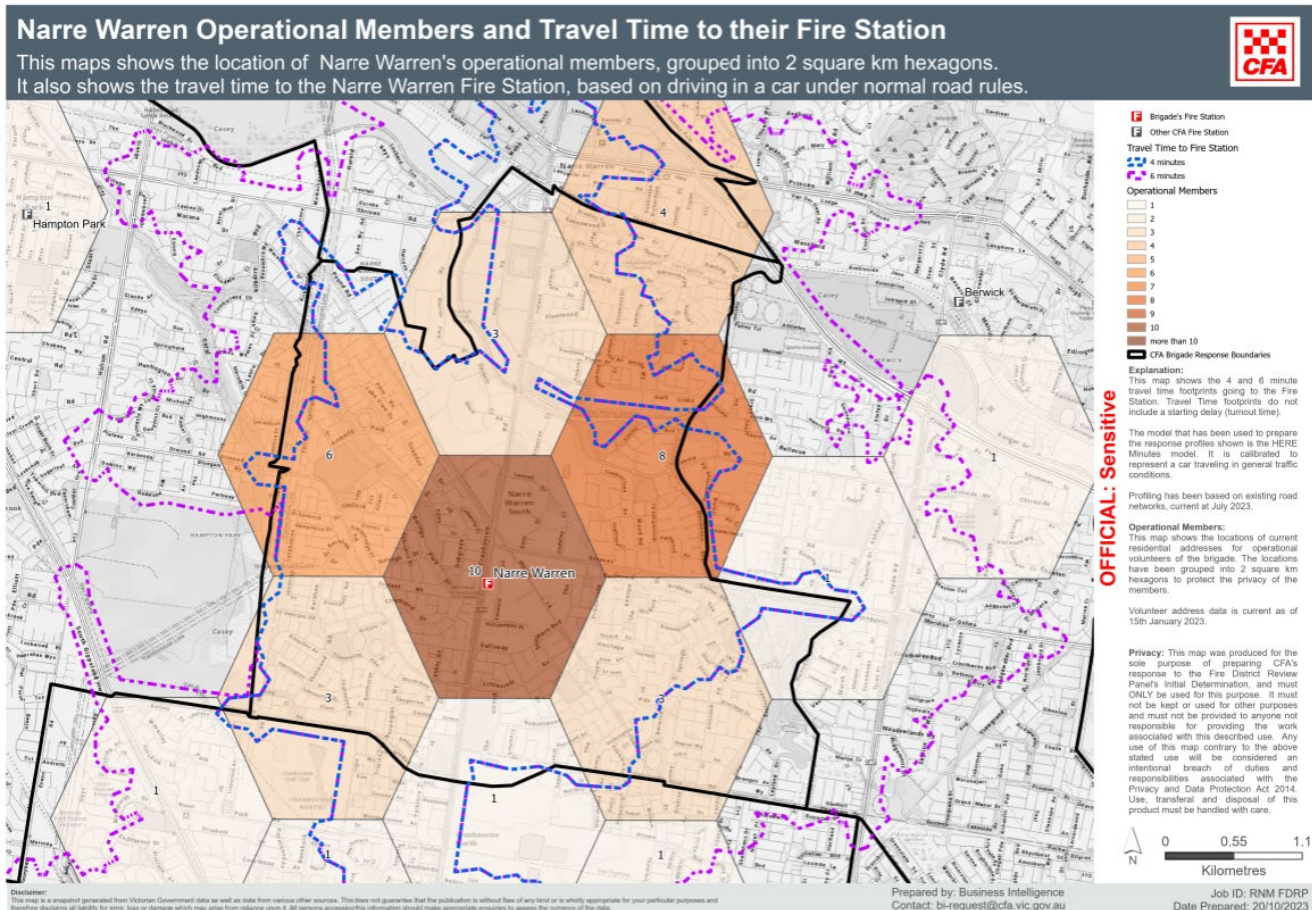
Table 2: Vehicle specification

Pumper	Carrying five firefighters, 2,500 litres of water and 4,000 lpm pump. Contains standard CFA urban stowage including BA, positive pressure fan, thermal imaging camera, forceable entry tools, gas suits, splash suit, defibrillator, fuse removal and electrical safety equipment, hoses and adaptors, salvage, monitors and foam equipment.
Tanker	Carrying five firefighters 3,750 litres of water, 1,200 lpm pump, BA, hoses and adaptors, chainsaw and foam equipment.
Field Command Vehicle	Mobile Command Centre with capability to operate in remote locations off grid. Includes Radio and Telephony communications systems, IT equipment including PC's and multi-function printer / scanner. Vehicle is used for incident management and BA support, providing service not only in the SDA but widely into the southern metropolitan area.
Catering Trailer	Provides an intermediate catering option for firefighters close to the fire ground or at a staging area for short term incidents or support to a sector at larger incidents.

2.3 Station Location

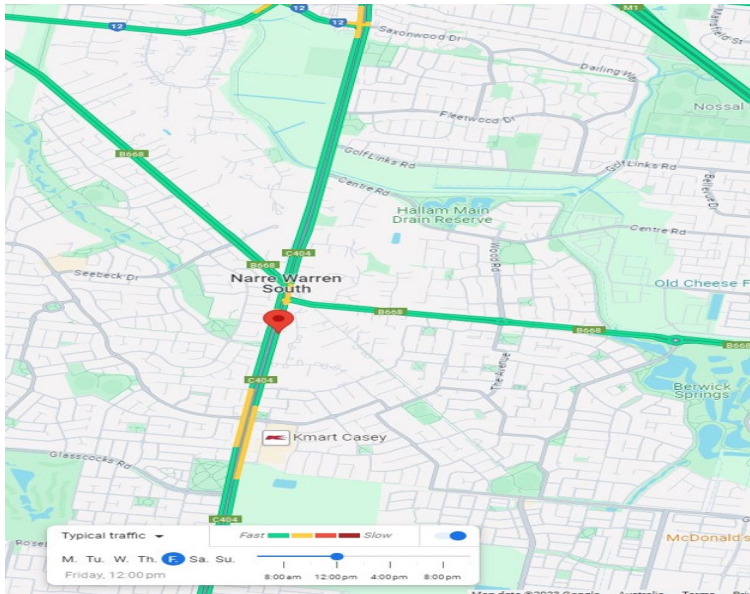
The station is located at 292 Narre Warren-Cranbourne Rd, Narre Warren South. Constructed in 2010, the station has three drive-through motor room bays. The station features a business hub facility that allows members to undertake their paid employment from the station during the day, enabling swifter response times and seamless coordination during emergencies. Figure 1 shows the member home location to station and demonstrates that the members are located in close proximity to the station which enables timely response to reach the station and respond to incidents. The average turnout time for calls in Narre Warren's SDA is 3 minutes 18 seconds (the CFA target is 4 minutes).

Figure 1: Operational members location and travel times



The day of week and time of that day for traffic congestion analysis for the Narre Warren Brigade has been determined by the day of the week that there are the most incidents and what time of that day do the most incidents occur. In the case of Narre Warren this is Friday at 12:00 (Figure 2).

Figure 2: Typical traffic Friday 12:00



CFA's Clyde Brigade operates from a Clyde North satellite fire station from 25 Gower Place, Clyde North. A tanker (equipped with breathing apparatus) responds from this satellite location operated by local members. This is a demonstration of adjustments that are made, as needed, to respond to the changing risk (further discussion of this matter is in the Berwick Fire Brigade analysis).

2.4 Surge capacity and strike teams

CFA operates as a network of brigades ensuring that the collective response meets peak and surge demand when needed. This peak or surge capacity not only has use across the state of Victoria in a bushfire context, but also extends to the urban environment ensuring the efficient and economic use of the state's resources in both the CAoV and the FRV Fire District. To illustrate this, during the 2019-2020 bushfires Narre Warren Brigade was able to continuously maintain service delivery to the SDA whilst providing significant surge capacity with members serving in long haul strike team deployments. More recently, at the factory fire in Dandenong South on 10 December 2023 the Narre Warren Brigade responded its pumper with a full structural crew in two minutes from page and five hours later swapped the crew with fresh structural fire fighters. During this time another CFA brigade (Narre Warren North) stepped into the Narre Warren SDA and responded to four calls including FRV support calls.

2.5 Assistance to Fire Rescue Victoria

Narre Warren Brigade's crews are regularly integrated seamlessly at FRV incidents where members often provide structural firefighters for internal BA firefighting, as well as incident management roles such as Safety Officer and Sector Commander. Figure 3 shows the total count of incidents (primary and support) that Narre Warren Fire Brigade attended in the FRV Fire District for each calendar year from 2010 to 2023. The Brigade provides a notable level of support to FRV in the FRV Fire District.

Figure 3: Incident count and type of support provided in the FRV Fire District

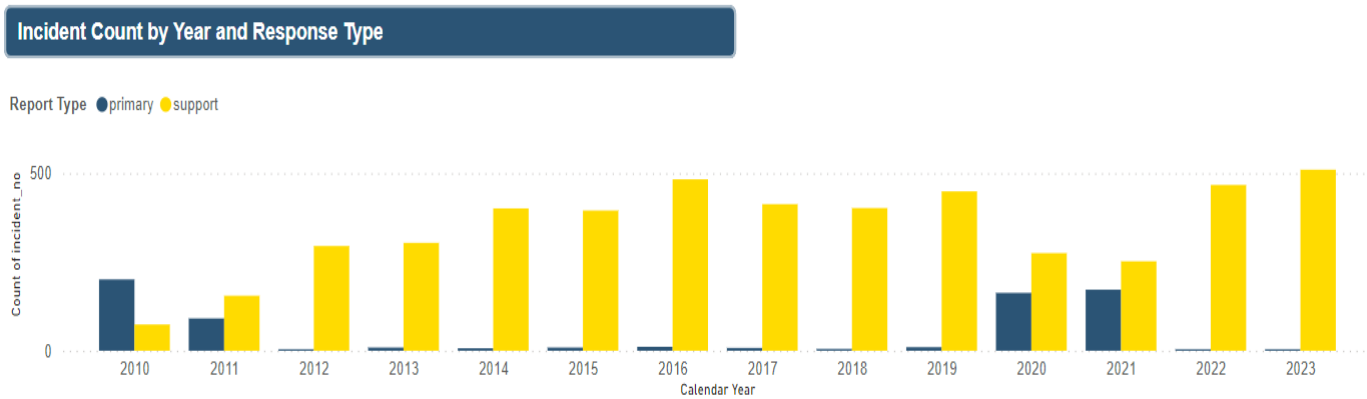
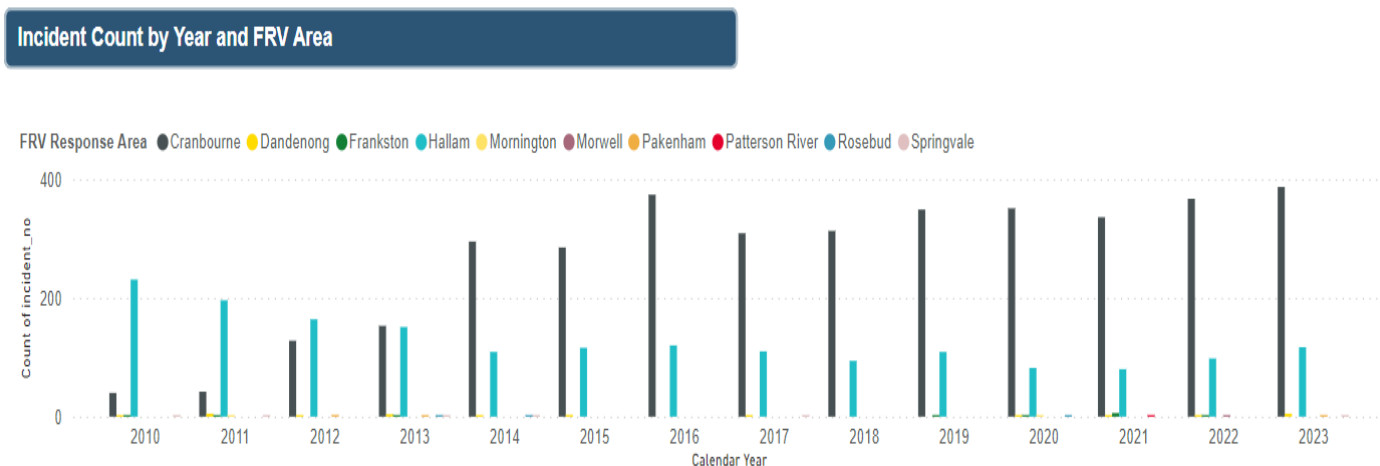


Figure 4 below shows the count of incidents that Narre Warren Fire Brigade attended in the FRV Fire District split by the Brigade SDA. The majority of support provided was to FRV’s stations at Cranbourne and Hallam.

Figure 4: Incident count and type of support provided in the FRV station footprint

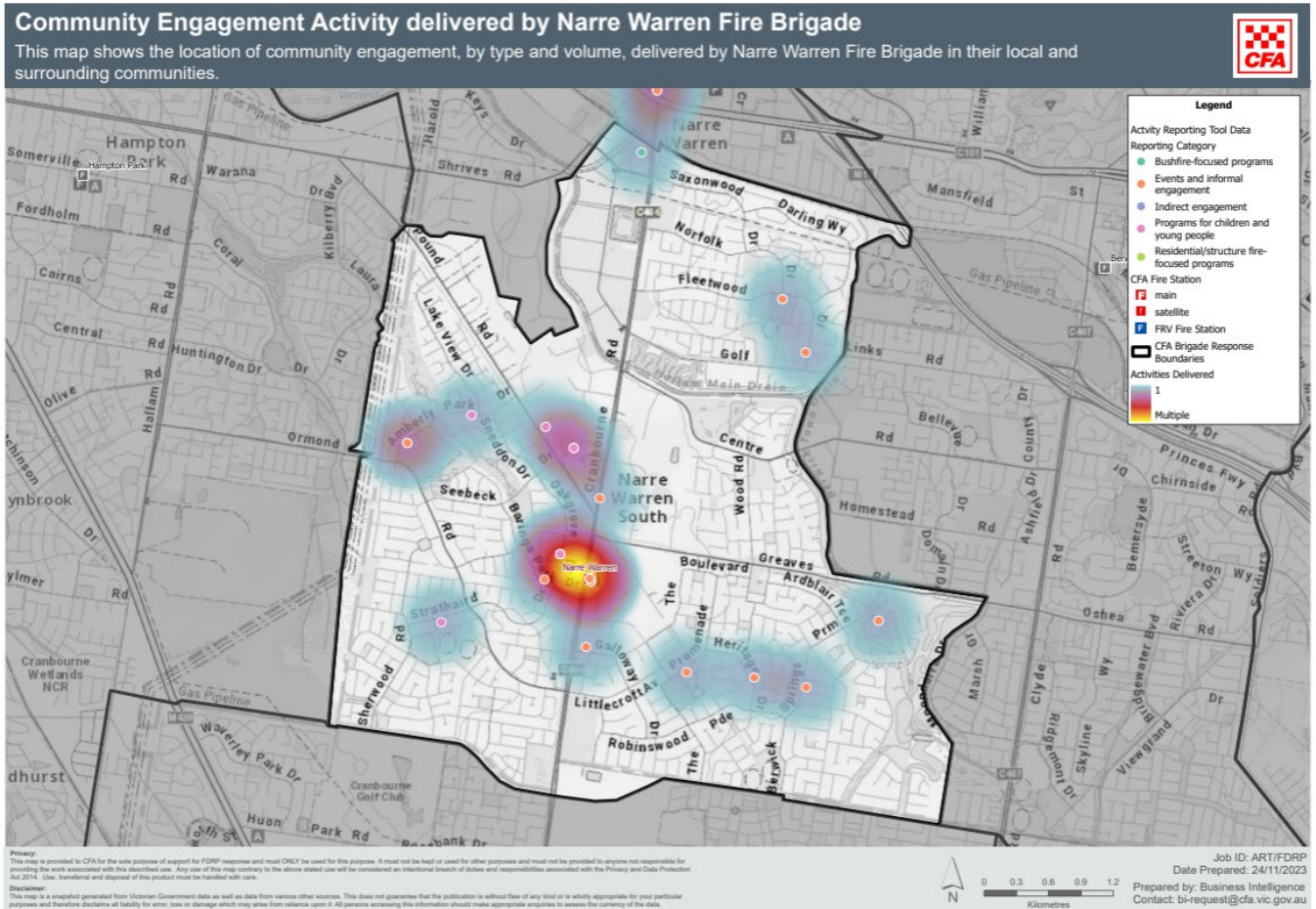


2.6 Community engagement activity

The Narre Warren Brigade works directly with the community to support regular prevention and preparedness activities including community fire safety messaging, school visits and direct intervention programs. The SDA is a multicultural area and the Brigade has been very successful recruiting members from different cultural backgrounds. This not only strengthens the Brigade but has proved very beneficial on the fire ground, for example, being able to provide reassurance and information to community members in their primary language. The Brigade has conducted targeted community engagement sessions with children and their parents ensuring both adults and children are welcomed to learn around fire safety. The Brigade’s long-established community engagement projects and programs contribute to the fact that there have been no preventable fire fatalities in the SDA since 2010. Where opportunities arise, the Brigade contributes to Group and Region planned burn operations with enthusiasm.

CFA in 2022 implemented a new platform to allow brigades to centrally record community engagement activities undertaken by brigades to allow better understanding of community fire safety interventions. Brigades kept records locally and often in a total tally which did not allow for a spatial understanding of the spread of interventions. Figure 5 below shows community safety interventions undertaken by the Narre Warren Fire Brigade as recorded in the ART system.

Figure 5: Community safety and intervention programs



3. Service Delivery Area Profile

The Narre Warren Fire Brigade SDA has a total area of 1,614.6 hectares. Land use planning areas as recorded by ABS mesh blocks has the SDA made up of the following land uses.

Table 3: Narre Warren land use planning areas

Land Use	Hectares	Percentage of Brigade Area
Commercial	14.2	0.9%
Education	12.3	0.8%
Hospital/Medical	1.8	0.1%
Industrial	75.8	4.7%
Other	15.0	0.9%
Parkland	210.9	13.1%
Primary Production	0	0%
Residential	1,284.4	79.6%

A map showing the current land use planning uses and applicable mesh block is shown in Figure 6.

Figure 6: ABS land use areas and BMO

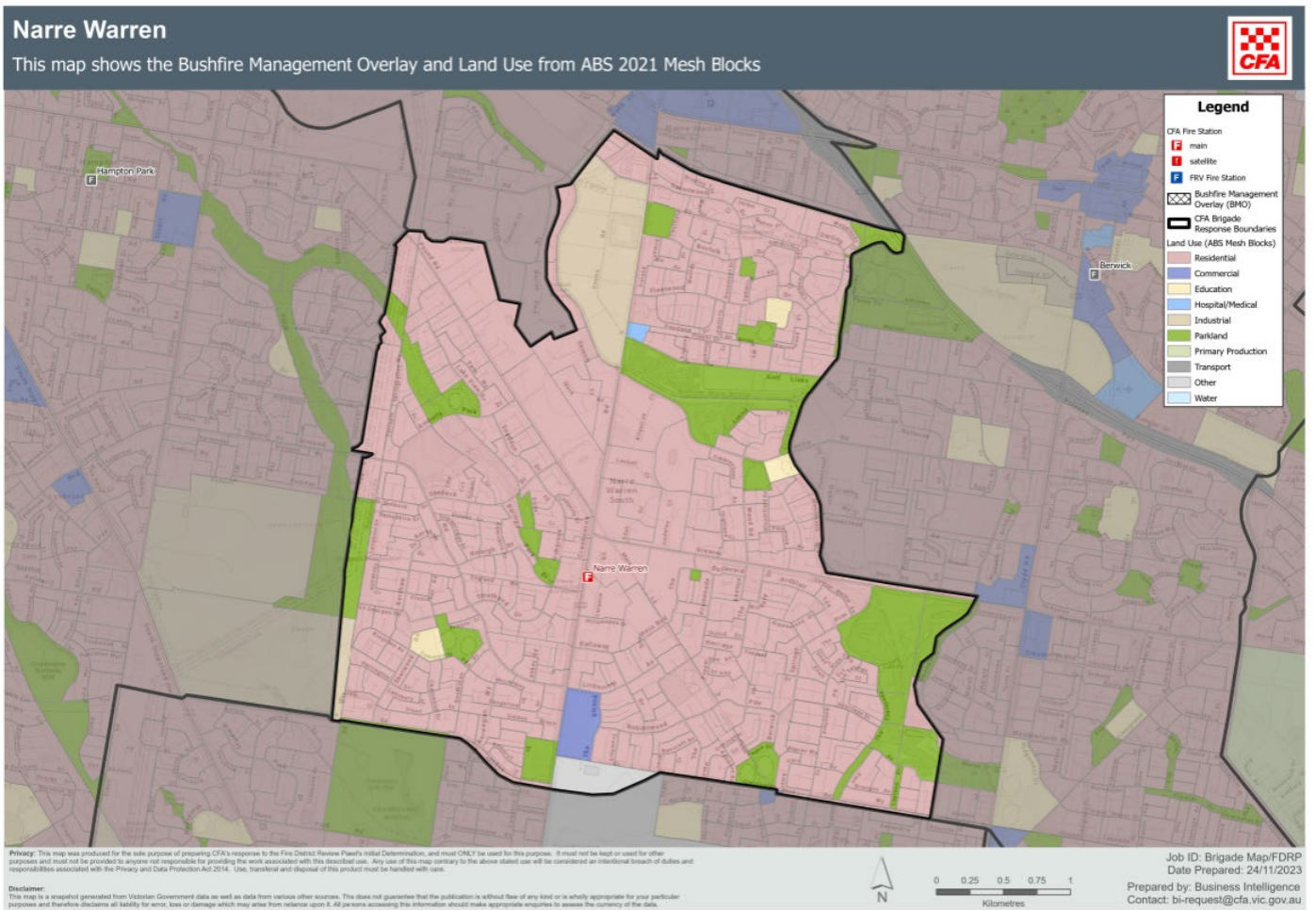
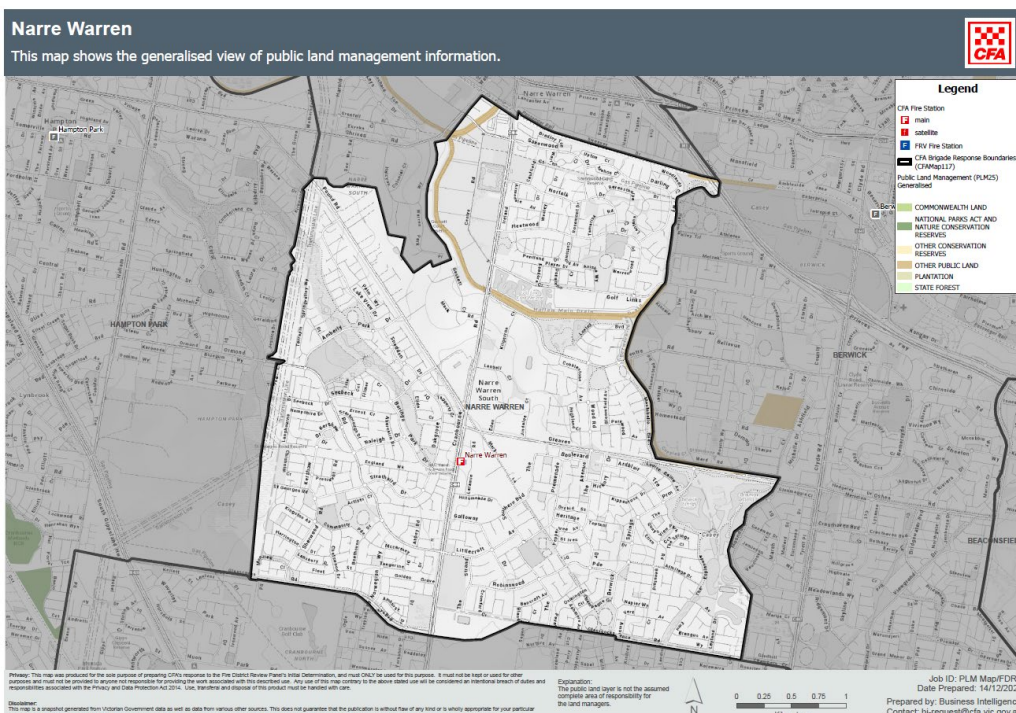


Figure 7: Public land management information



3.1 Growth zones

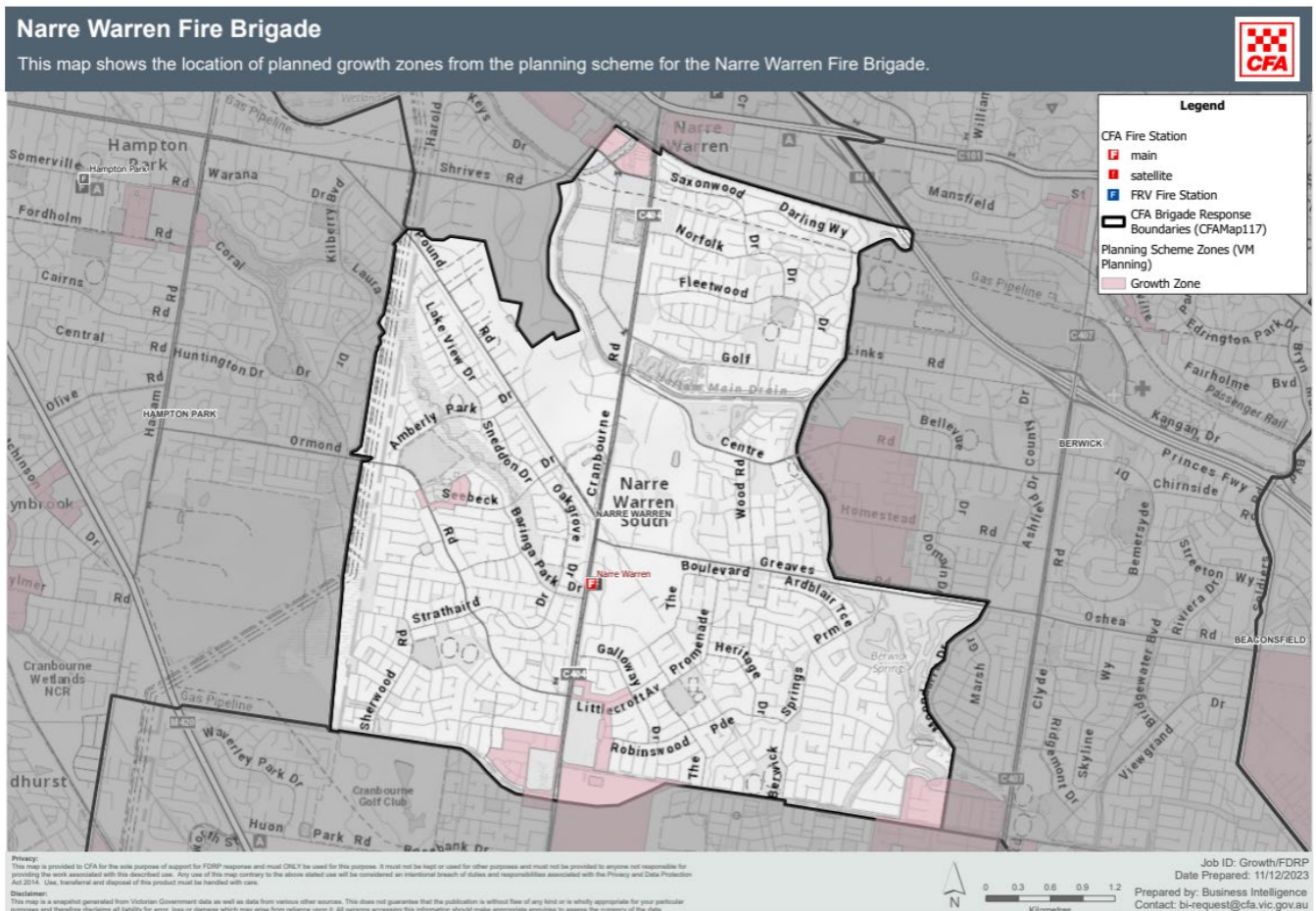
An analysis of VicPlan, the official mapping platform of the Department of Transport and Planning shows the Narre Warren Fire Brigade SDA has the following profile of industrial zones and planned growth zones.

Table 4: Urban growth areas

Total Brigade Area (Hectares)	Area (hectares) covered by Industrial Zones	Percentage covered by Industrial Zones	Area (hectares) covered by Growth Zones	Percentage covered by Growth Zones
1615	3.97	0.25%	61.83	3.83%

As shown in Figure 8, there are small pockets within the SDA (3.83%) that are designated growth zones. While these areas are in the outer reaches of the SDA, they are able to be serviced by the Brigade.

Figure 8: Planned growth zones from the planning scheme for Narre Warren



Risk Evaluation:

There are only very small areas in the Narre Warren SDA designated as growth zone (3.83%). While these areas are in the outer reaches of the SDA, they are able to be serviced by the Brigade. The Brigade’s resource capability of a pumper and tanker is sufficient to treat the current and forecast residential and industrial risk across the SDA.

3.2 Bushfire Management Overlay

FDRP has no value for this metric for the Narre Warren SDA. There is no BMO in the Narre Warren SDA (see Figure 6 above).

3.3 Population projections and social disadvantage

Between 2016 and 2021 there has been an overall population change of 386 or 1% (derived from ABS census data applied by CFA to the Brigade area as distinct from ABS collection grid cells).

For the total local government area (City of Casey) the forecast seven year population change is an increase of 79,546 or 23%. More relevant to the Narre Warren Brigade SDA, the suburb of Narre Warren South's forecast population increase in the next seven years is 625 people or around 0.05% increase.

ABS census data (2021) shows that there are 10,209 dwellings in the Narre Warren Brigade SDA. Of these dwellings, 20% are rental houses, with 5.2% of these being state owned. As discussed more fully in Section 2, a rental provider in Victoria must ensure that smoke alarms are correctly installed and in working order; are tested according to the manufacturer's instructions at least once every 12 months; have their batteries replaced as required and are repaired or replaced as an urgent repair²⁸.

CFA and FRV have collaborated to create the 'Prevent – Detect – Escape' Program. This program covers home fire safety for people at higher risk. It delves into how to prevent fires from starting, how to ensure fires can be detected and how to escape in a house fire. The program includes interactive content, videos and resources to support ongoing learning. It is targeted to those who work in the community and social service sector who deliver in-home care and support services. It is also for carers and people at higher risk. This includes people who are older and people who have a disability. There have been 95 community members undertake the Prevent – Detect – Escape Program in the Narre Warren Fire Brigade SDA.

Risk Evaluation:

With regard to fire safety interventions, there is a significant proportion of the population in the Narre Warren Brigade SDA living in rented properties (20%). The requirement for mandated working (and verified) smoke alarms is anticipated to have contributed to the significantly low number of fire fatalities. Community engagement activities undertaken by the Narre Warren Fire Brigade allow for significant mitigation of risk elements identified in both residential fire and social disadvantage risk.

²⁸ <https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/keeping-the-property-safe/smoke-alarms-and-fire-safety#:~:text=The%20rental%20provider%20must%20ensure%20smoke%20alarms%3A%201,are%20repaired%20or%20replaced%20as%20an%20urgent%20repair.>

4. Service Delivery and Service Demand

4.1 Total demand

Figure 9 shows the total number of unique incident numbers attended by the Narre Warren Brigade between 1 January 2010 and 18 December 2023, split by the type of incident (limited to Fire and Explosions, False Alarms and Good Intent Calls), also whether the incident was a primary or support response.

Figure 9: Narre Warren Brigade incident count by type 1 January 2010 - 18 December 2023

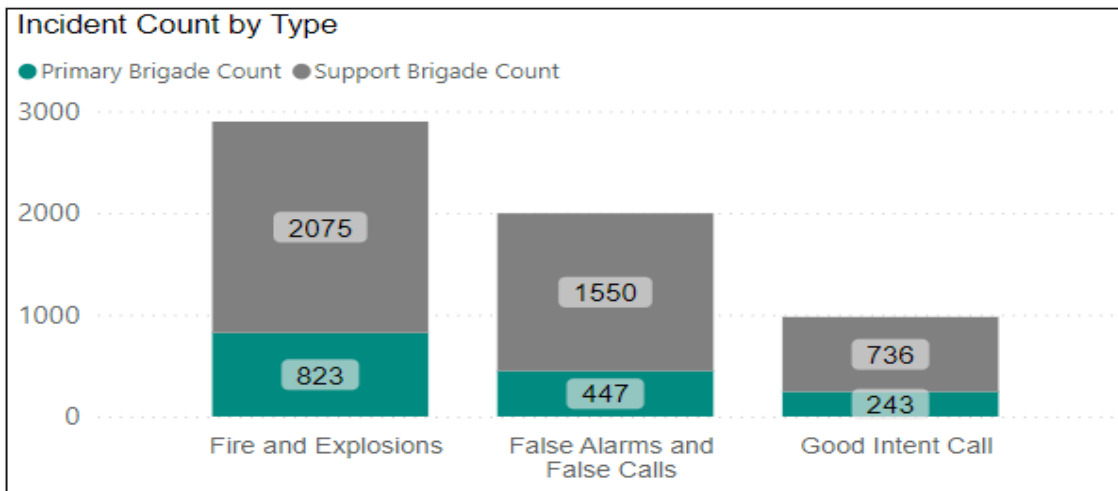


Figure 10 shows a count of the total number of incidents occurring between 1 January 2010 and 18 December 2023. This shows slightly higher average activity levels in summer and lower periods of activity in the winter months.

Figure 10: Narre Warren Brigade incident count by month 1 January 2010 - 18 December 2023

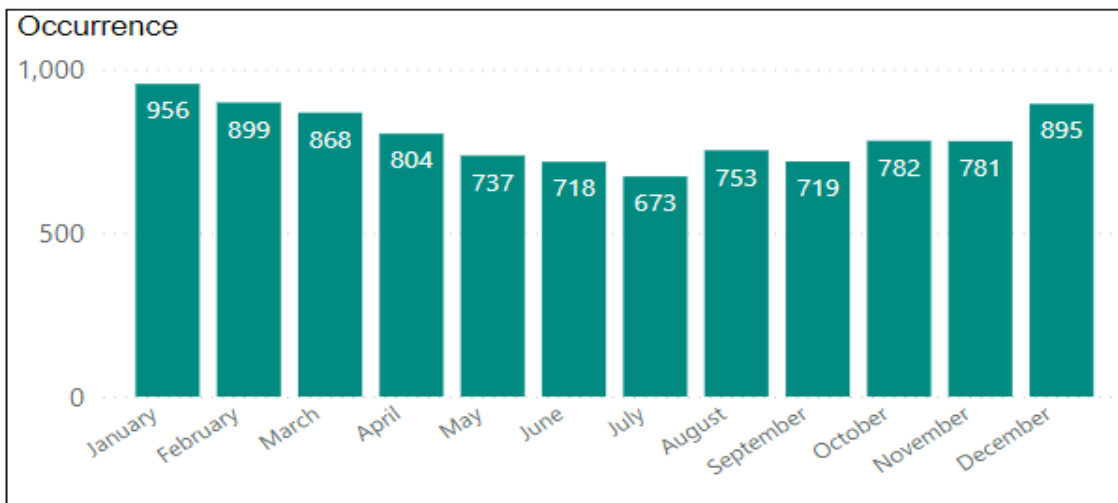
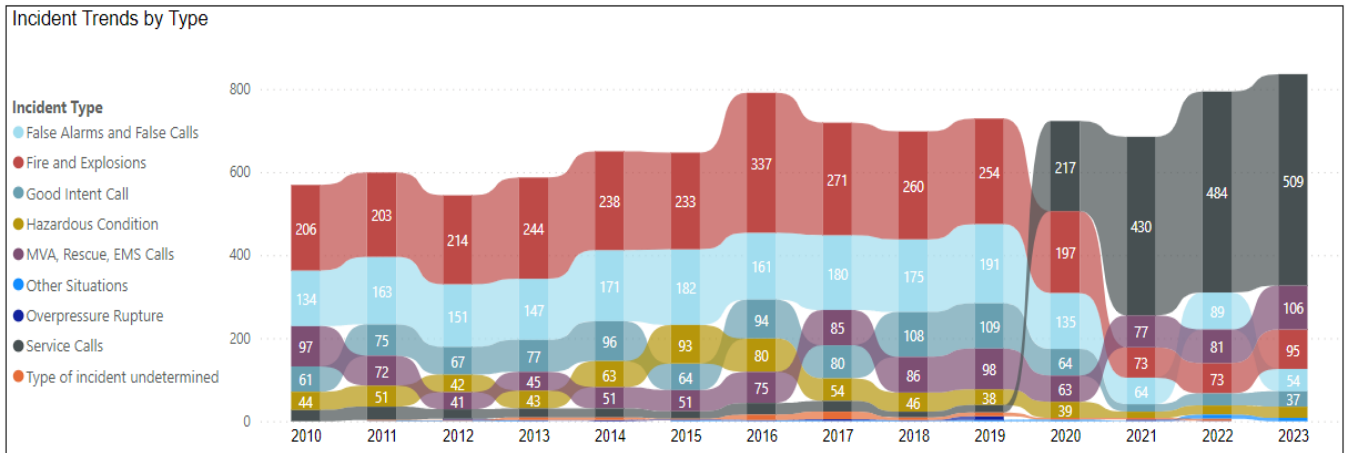


Figure 11 shows a count of all incident types between 1 January 2010 and 18 December 2023. The majority of incidents attended post fire services reform are Service Calls (support to other agencies).

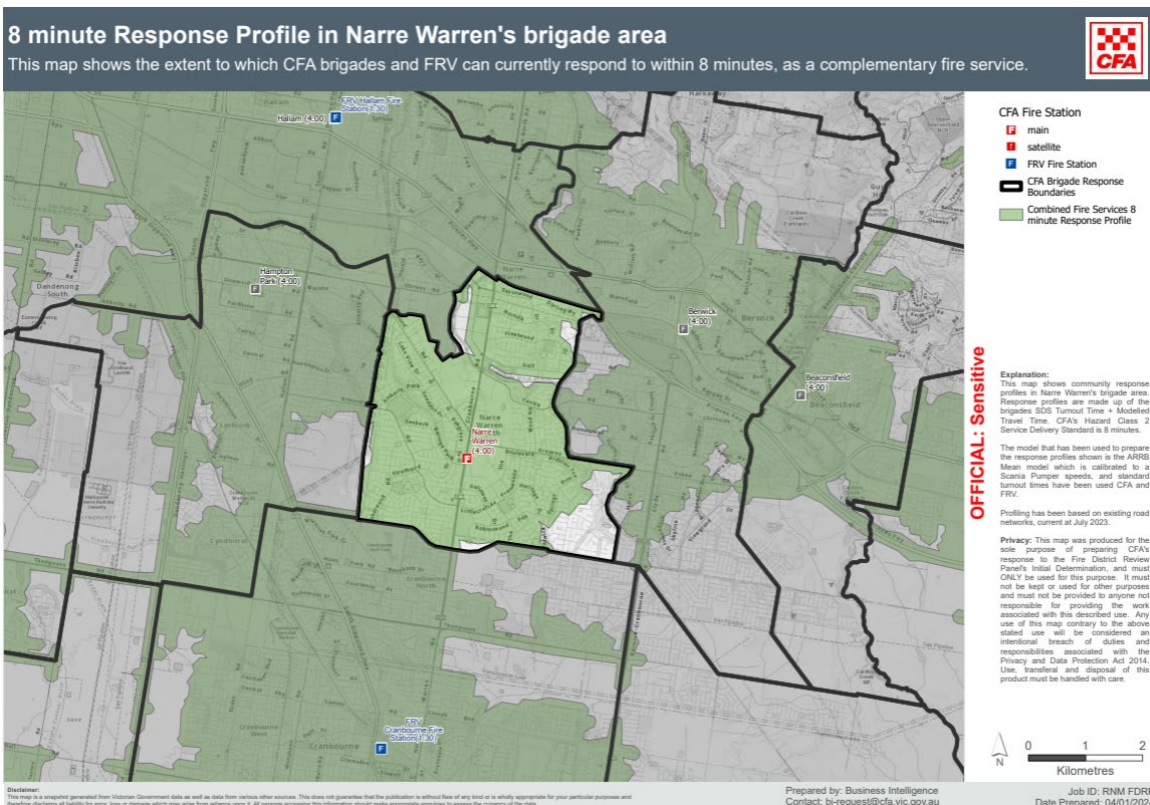
Figure 11: Narre Warren Brigade incident count by type by year 2010 - 2023



4.2 Service delivery standard

Figure 12 shows the percentage of road within the land use that can be serviced within eight minutes by the existing (CFA/FRV) complementary fire service. It should be noted that Figure 12 shows the response according to the highest of the service delivery hazard classes (HC2) and the coverage of the Brigade SDA within the 8 minute to scene standard.

Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes



The percentage of road network for each land use that can be serviced within eight minutes by the existing complementary fire service is:

- 93.64% of the road network in the Residential land use
- 100% of the road network in the Commercial land use
- 81.67% of the road network in the Industrial land use
- 100% of the road network in the Education land use
- 100% of the road network in the Hospital/Medical land use
- 86.63% of the road network in the Parkland land use
- 100% of the road network in the Other land use
- 100% of the road network in the Transport land use.

An analysis of the Narre Warren Fire Brigade SDA with established SDS against respective hazard classes shows:

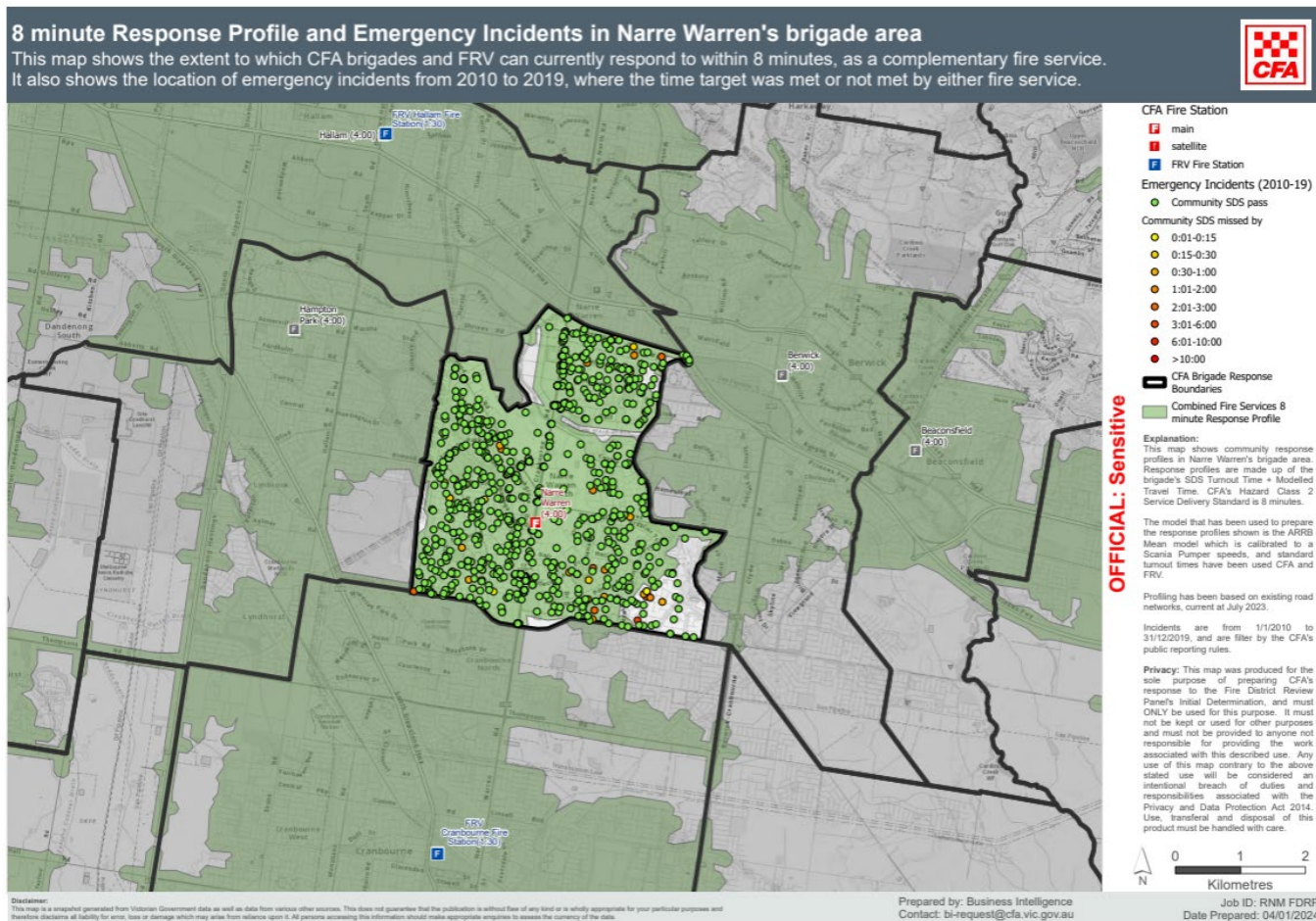
- from 1 January 2010 to 31 December 2019 there were 1,242 emergency incidents within the Narre Warren Brigade SDA
- fire services response to emergency incidents was 93.72% compliant with SDS, above the 90% target
- for the 78 incidents where SDS was not met over the 10 years, the following table indicates the numbers of emergency incidents and the time that SDS was missed. The majority of these calls (51%) were missed by less than 60 seconds.

Table 5: Number of emergency incidents and the time SDS was missed 1 January 2010 - 31 December 2019

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6 – 10 minutes	More than 10 minutes
12 (15.38%)	9 (11.54%)	19 (24.36%)	16 (20.51%)	11 (14.10%)	7 (8.97%)	3 (3.85%)	1 (1.28%)

SDS performance is shown graphically in Figure 13.

Figure 13: SDS compliance for the Narre Warren Brigade SDA 2010 - 2019



From 1 January 2020 to 30 November 2023:

- there were 445 emergency incidents within the Narre Warren Brigade SDA
- fire services response to emergency incidents was 92.4% compliant with SDS, above the 90% target
- for the 34 incidents where SDS was not met, the following table indicates the numbers of emergency incidents and the time that SDS was missed. Half of those calls (50%) were missed by less than 60 seconds.

Table 6: Number of emergency incidents and the time SDS was missed 1 January 2020 - 30 November 2023

Less than 15 seconds	16 – 30 seconds	31 – 60 seconds	61 – 120 seconds	121 – 180 seconds	3 – 6 minutes	6-10 minutes	More than 10 minutes
5 (14.71%)	2 (5.88%)	10 (29.41%)	5 (14.71%)	6 (17.65%)	4 (11.76%)	2 (5.88%)	0

Risk Evaluation:

The Narre Warren Fire Brigade consistently achieves 90 to 100% success in meeting the SDS target of 90%. Misses are mostly by less than 60 seconds.

4.3 Fire Casualty Data

4.3.1 Building fire casualty to total building fire

The Narre Warren Brigade SDA from 2010 to 2023 has had a total of 145 building/structure fires requiring extinguishment.

Table 7: Building/structure fires requiring extinguishment 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
15	21	17	11	5	8	14	10	6	9	8	6	8	7	145

An analysis of preventable fire fatalities associated with these building/structure fires has identified no preventable fatalities. In the Narre Warren Brigade SDA, the following non-preventable fatalities (homicides, suicides, deliberate) were reported, relating to three motor vehicle accidents and one vehicle fire.

Table 8: Non-preventable fatalities 2010 - 2023

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
3	-	1	-	-	-	-	-	-	-	-	-	-	-	4

Risk Evaluation:

The Narre Warren Brigade SDA has had no preventable structure/building fire fatality since 2010, and four non preventable (deliberate) fatalities.

4.3.2 Vehicle fire/MVA casualty to total vehicle fire/MVA

See Section 2 (page 16) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.

Table 9: Narre Warren fire risk treatment summary table

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
Service Delivery Standard	12 of 13	The Brigade consistently achieves 90 to 100% success in SDS, meeting the 90% target. Misses are mostly by less than 60 seconds.	
Bushfire Management Overlay %	No value	There is no BMO in the SDA.	
Total Demand	8 of 13	The trend in demand is relatively stable, with slightly higher activity levels in summer and lower periods of activity in the winter months.	
Victorian Planning Authority %	11 of 13	There are only very small areas in the Narre Warren SDA designated as growth zone (3.83%). While these areas are in the outer reaches of the SDA, they are able to be serviced by the Brigade. The Brigade's resource capability of a pumper and tanker is sufficient to treat the current and forecast residential and industrial risk across the SDA.	
Vehicle fire/MVA casualty to total vehicle fire/MVA ratio (VCTC)	12 of 13	See Section 2 (page 17) for discussion on the VCTC ratio and its limited utility as a measure of fire risk that either CFA or FRV have the ability to control or mitigate.	
Building fire casualty to total building fire ratio (BCTC)	11 of 13	There have been no preventable fire fatalities in the Narre Warren SDA since 2010.	
Population projections	5 of 13	<p>The local government area forecast seven year population change is an increase of 79,546 or 23%. More relevant to the Narre Warren Brigade SDA, the suburb of Narre Warren South's forecast population increase in the next seven years is 625 people or around 0.05% increase.</p> <p>A significant proportion of the population in the Narre Warren Brigade SDA living in rented properties (20%)</p> <p>Community engagement activities undertaken by the Narre Warren Fire Brigade allow for significant</p>	

FDRP risk model drivers of increased fire risk	FDRP risk indices ranking* out of 13	CFA observation	CFA proposed additional actions
		mitigation of risk elements identified in both residential fire and social disadvantage risk.	

Table 10: FDRP's CFA station response area ranking per criteria

Rank*	VCTC ratio	BCTC ratio	Population projections	% BMO	% VPA	Total demand	SDS fail
1	Werribee	Epping	Wyndham Vale	Kangaroo Flat	Kangaroo Flat	Werribee	Hampton Park
2	Ballarat	Kangaroo Flat	Berwick	Eaglehawk	Eaglehawk	Ballarat	Wendouree
3	Carrum Downs	Wyndham Vale	Hampton Park	Ballarat	Sebastopol	Hampton Park	Epping
4	Wyndham Vale	Carrum Downs	Epping	Sebastopol	Epping	Berwick	Ballarat
5	Epping	Werribee	Narre Warren	Berwick	Wyndham Vale	Carrum Downs	Eaglehawk
6	Kangaroo Flat	Ballarat	Werribee	Wendouree	Berwick	Wendouree	Wyndham Vale
7	Edithvale	Sebastopol	Carrum Downs	Carrum Downs	Werribee	Epping	Sebastopol
8	Eaglehawk	Hampton Park	Edithvale	Wyndham Vale	Wendouree	Narre Warren	Werribee
9	Sebastopol	Edithvale	Ballarat	Hampton Park	Ballarat	Wyndham Vale	Carrum Downs
10	Hampton Park	Eaglehawk	Kangaroo Flat	Epping	Hampton Park	Eaglehawk	Edithvale
11	Berwick	Narre Warren	Eaglehawk	Narre Warren	Narre Warren	Sebastopol	Berwick
12	Narre Warren	Berwick	Sebastopol	Werribee	Carrum Downs	Edithvale	Narre Warren
13	Wendouree	Wendouree	Wendouree	Edithvale	Edithvale	Kangaroo Flat	Kangaroo Flat

NOTES

*Rank 1 represents most risk, Rank 10 experiences least risk for a particular variable

	Represents station response area with no value for this metric
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
SDS	Service Delivery Standard
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VPA	Victorian Planning Authority

Consolidated Figures

Figure 1: Operational members location and travel times

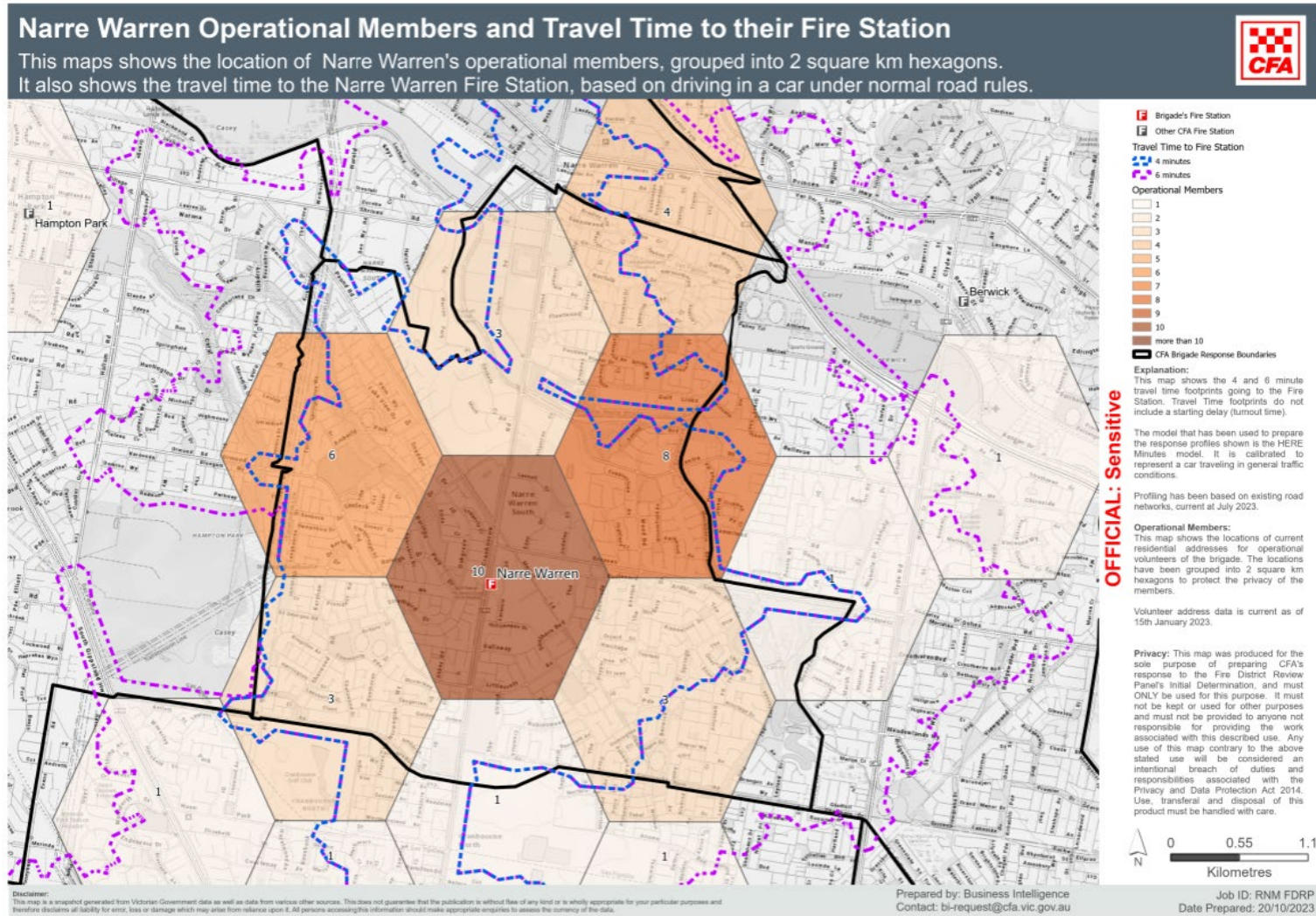


Figure 2: Typical traffic Friday 12:00

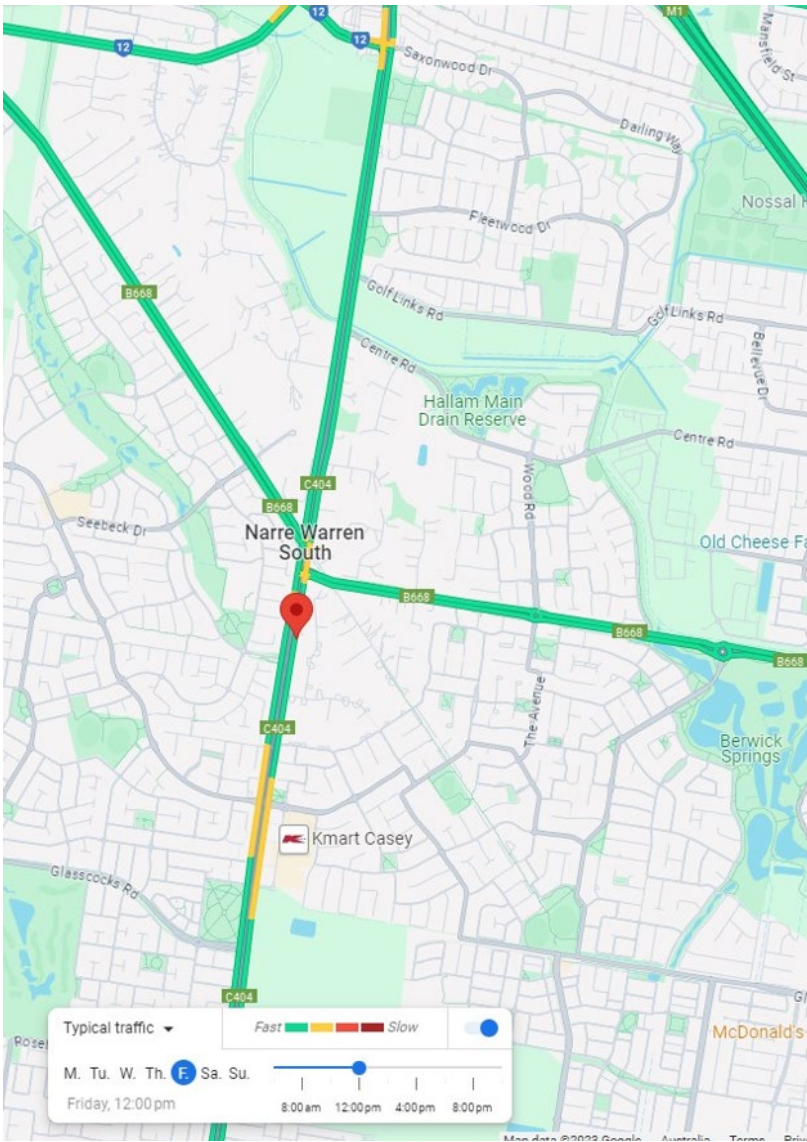


Figure 3: Incident count and type of support provided in the FRV Fire District

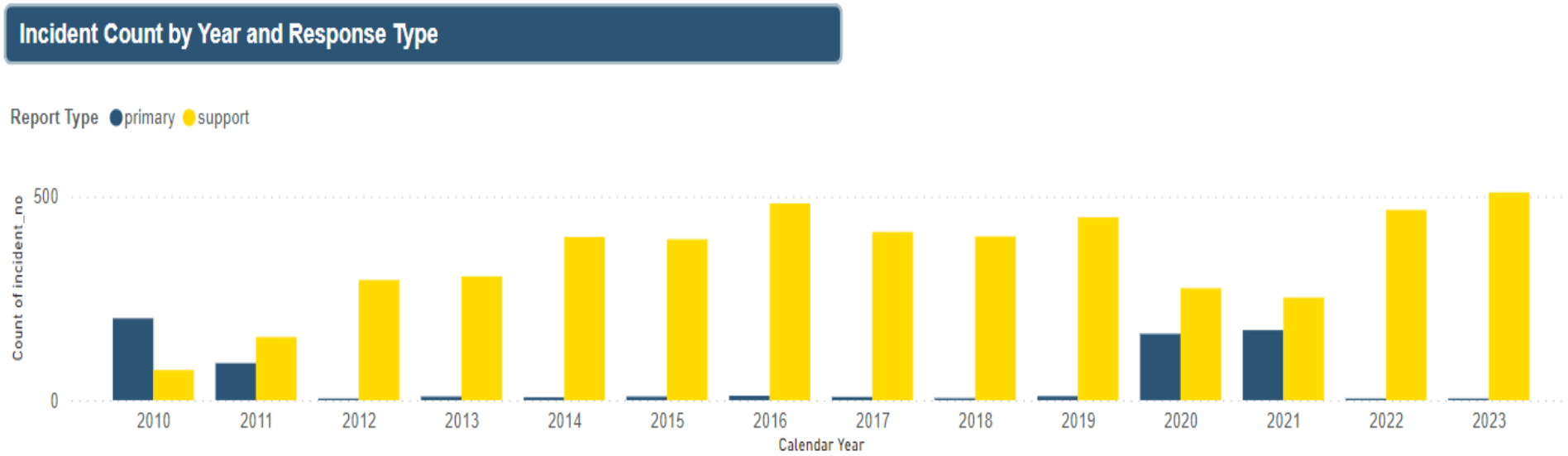


Figure 4: Incident count and type of support provided in the FRV station footprint

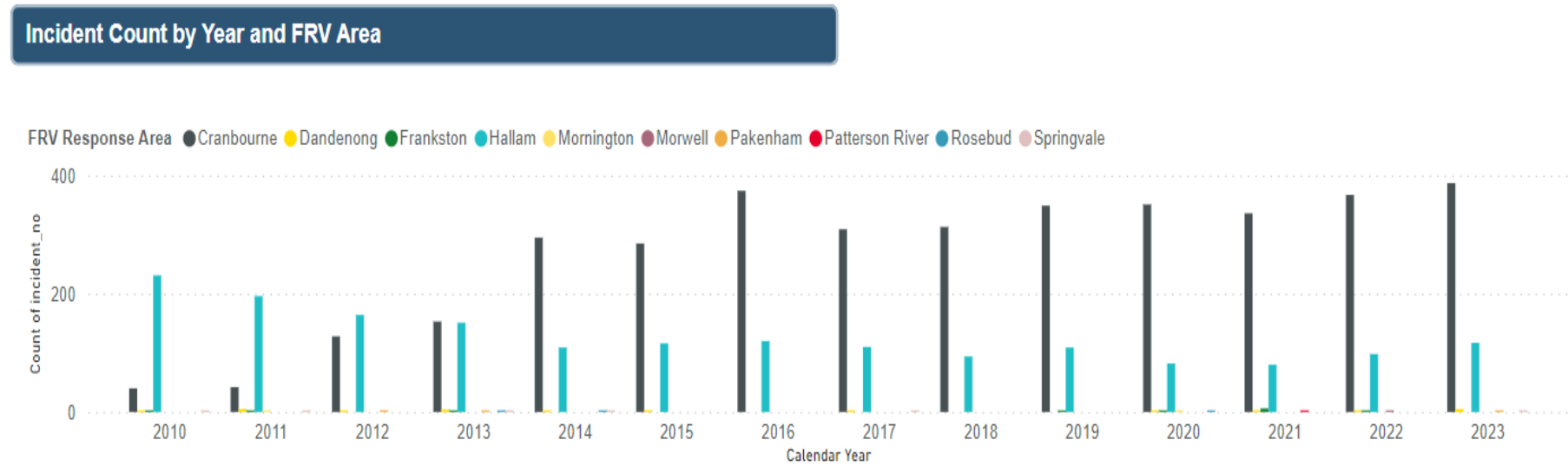


Figure 5: Community safety and intervention programs

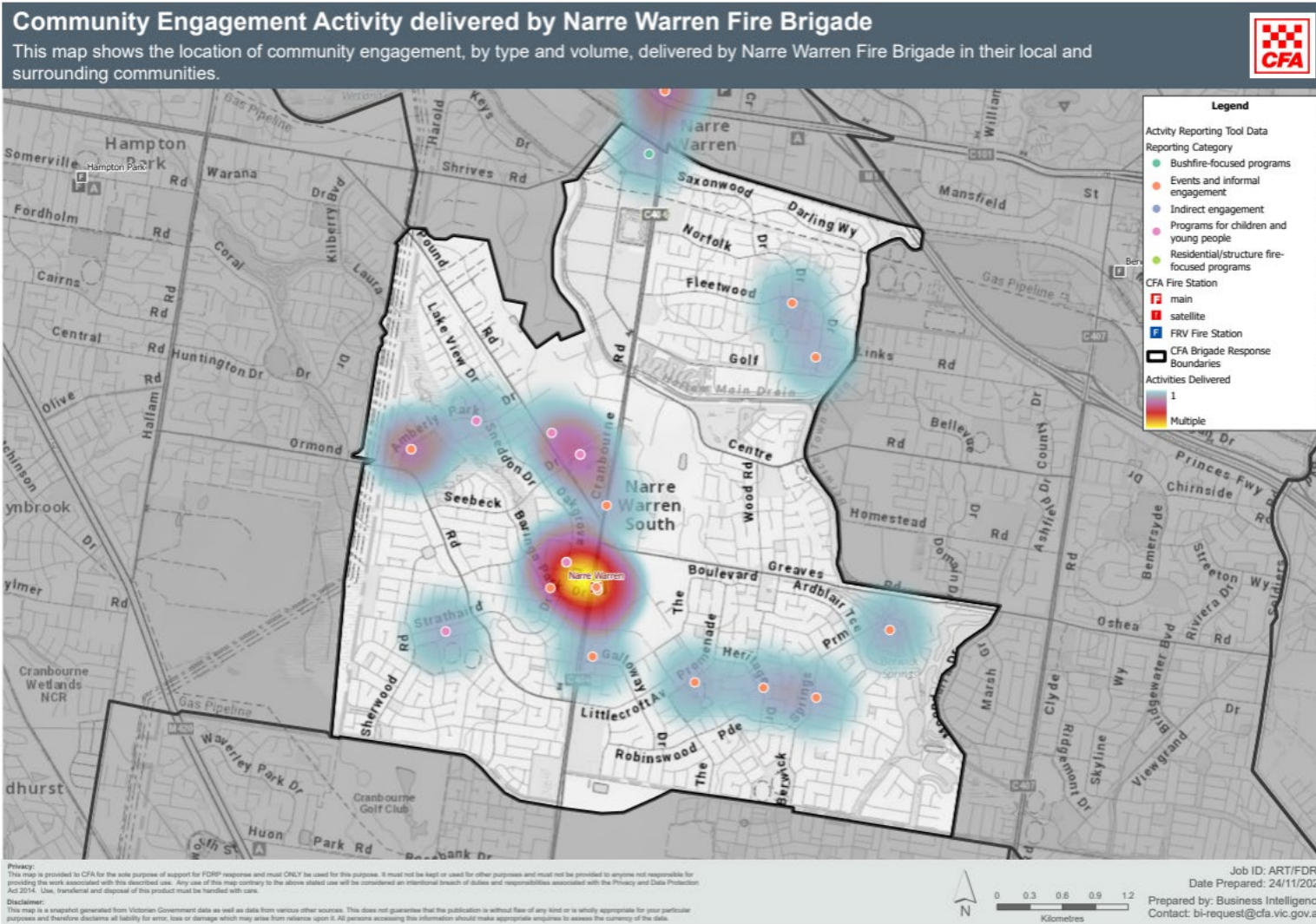


Figure 6: ABS land use areas and BMO

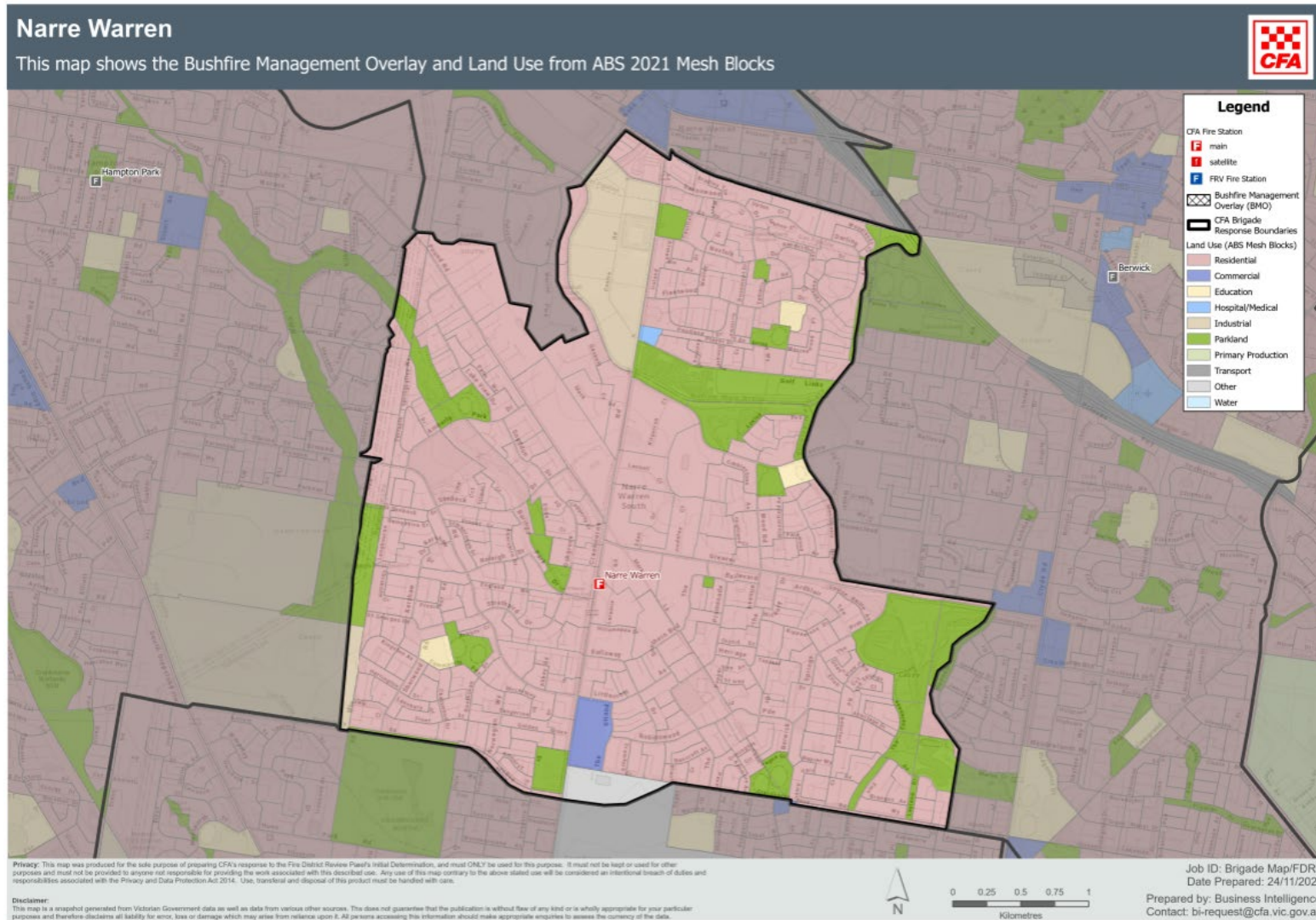


Figure 7: Public land management information

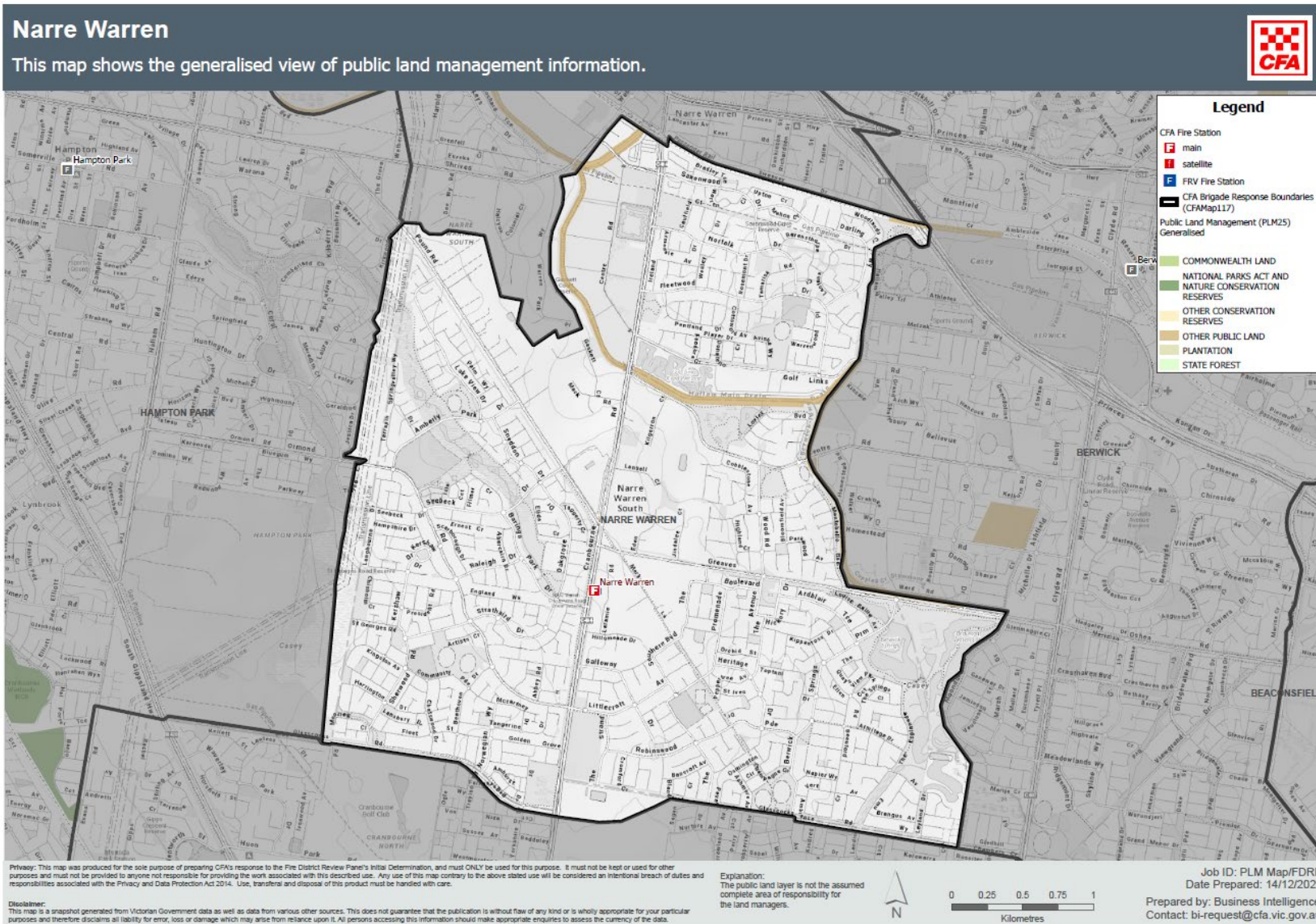


Figure 8: Planned growth zones from the planning scheme for Narre Warren

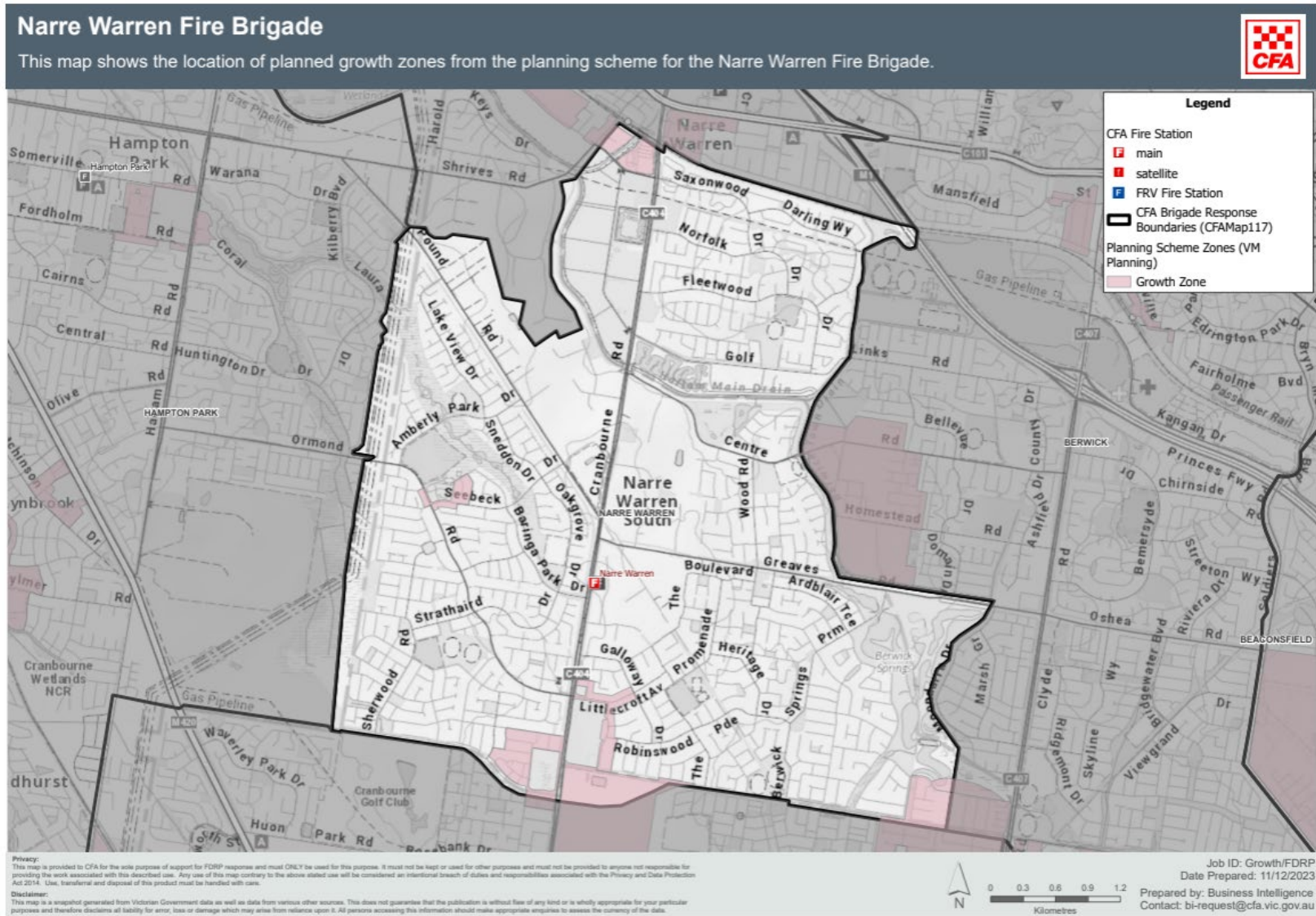


Figure 9: Narre Warren Brigade incident count by type 1 January 2010 - 18 December 2023

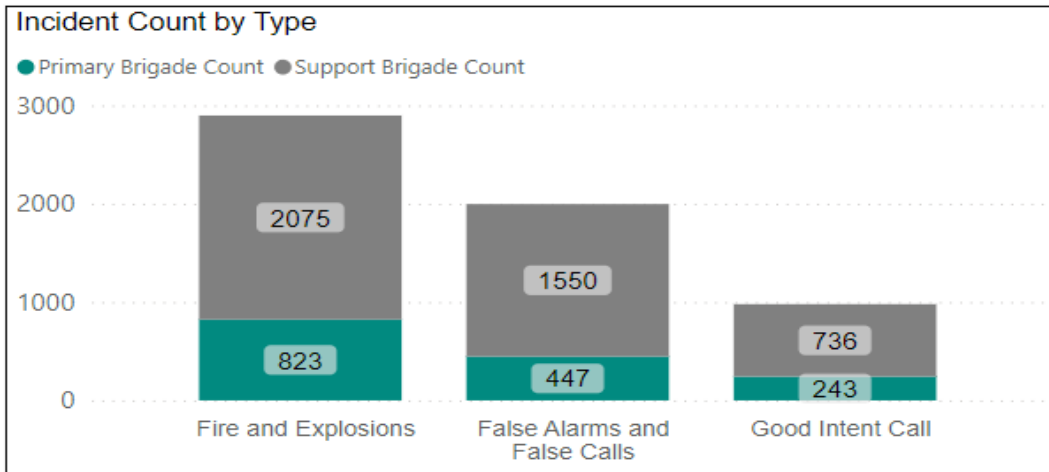


Figure 10: Narre Warren Brigade incident count by month 1 January 2010 - 18 December 2023

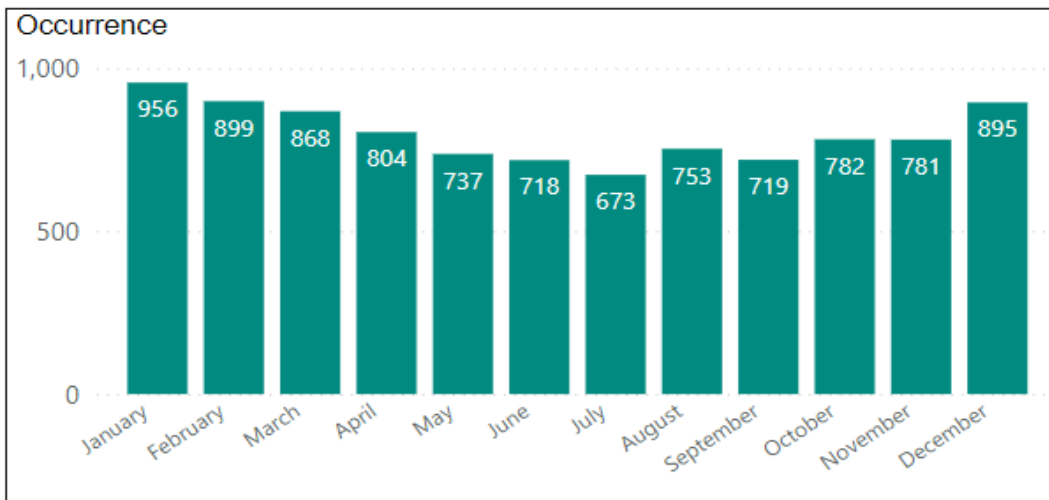


Figure 11: Narre Warren Brigade incident count by type by year 2010 - 2023

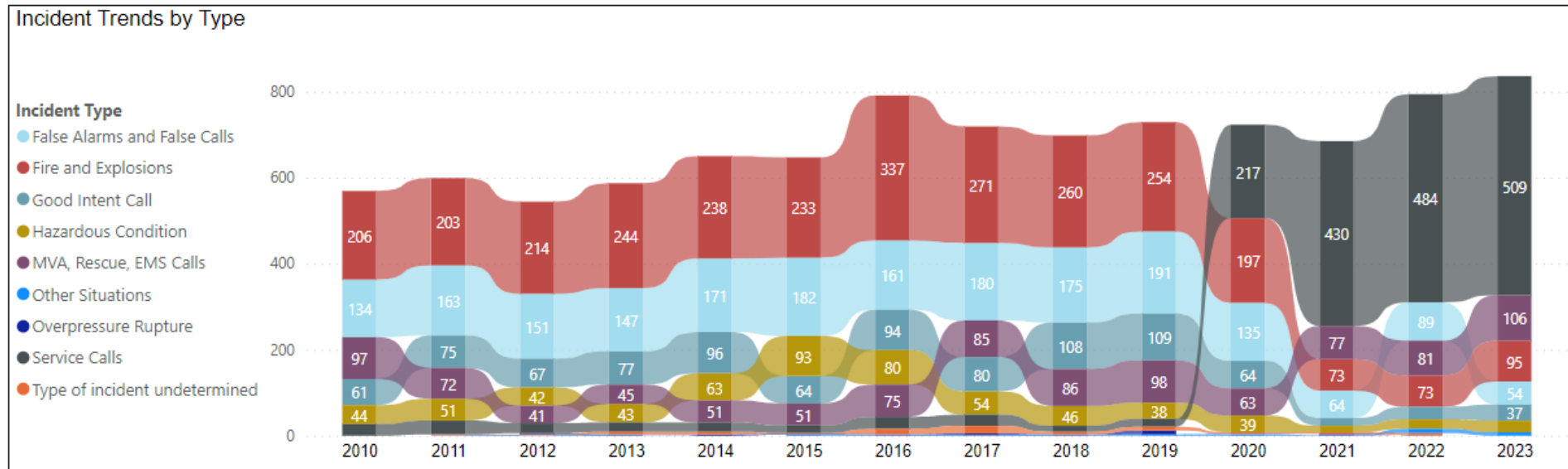
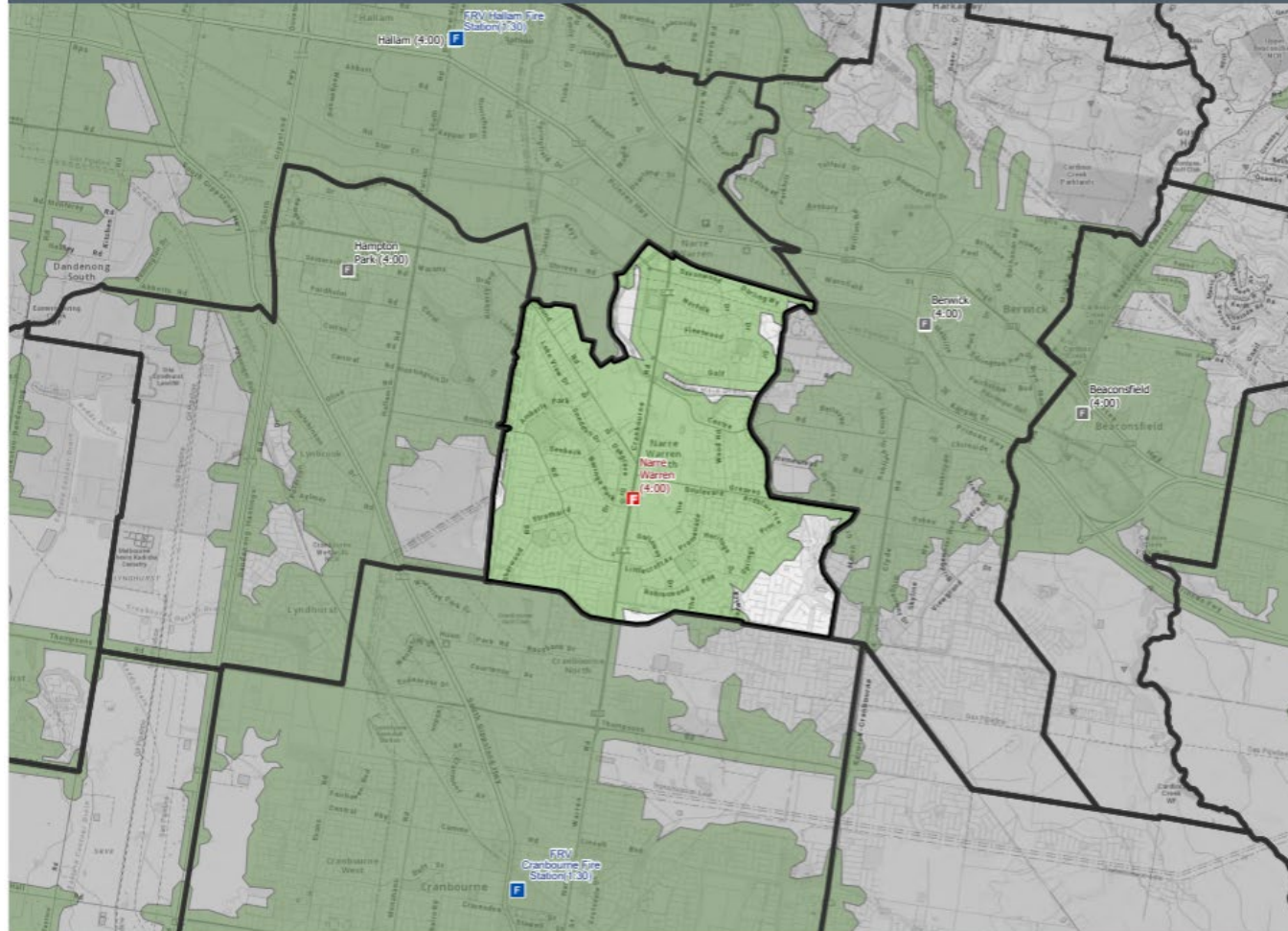


Figure 12: Area covered by both CFA and FRV based on HC2 8 minutes

8 minute Response Profile in Narre Warren's brigade area

This map shows the extent to which CFA brigades and FRV can currently respond to within 8 minutes, as a complementary fire service.



- CFA Fire Station
 - main
 - satellite
 - FRV Fire Station
- CFA Brigade Response Boundaries
- Combined Fire Services 8 minute Response Profile

OFFICIAL: Sensitive

Explanation:
This map shows community response profiles in Narre Warren's brigade area. Response profiles are made up of the brigades SDS Turnout Time + Modelled Travel Time. CFA's Hazard Class 2 Service Delivery Standard is 8 minutes.

The model that has been used to prepare the response profiles shown is the ARRB Mean model which is calibrated to a Scania Pumper speeds, and standard turnout times have been used CFA and FRV.

Profiling has been based on existing road networks, current at July 2023.

Privacy: This map was produced for the sole purpose of preparing CFA's response to the Fire District Review Panel's Initial Determination, and must ONLY be used for this purpose. It must not be kept or used for other purposes and must not be provided to anyone not responsible for providing the work associated with this described use. Any use of this map contrary to the above stated use will be considered an intentional breach of duties and responsibilities associated with the Privacy and Data Protection Act 2014. Use, transfer and disposal of this product must be handled with care.

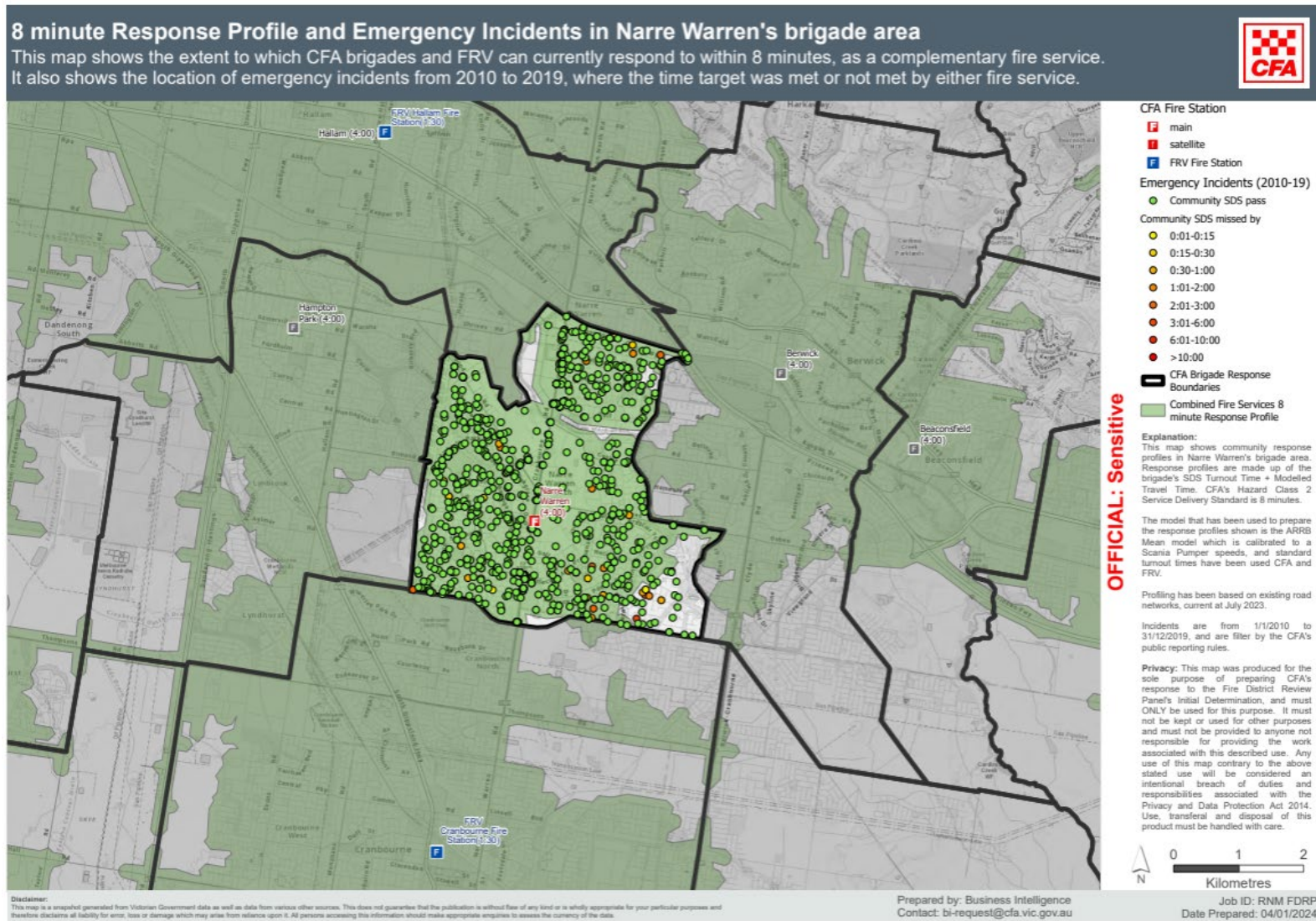


Disclaimer:
This map is a snapshot generated from Victorian Government data as well as data from various other sources. This does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for errors, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Prepared by: Business Intelligence
Contact: bi-request@cfa.vic.gov.au

Job ID: RNM FDRP
Date Prepared: 04/01/2024

Figure 13: SDS compliance for the Narre Warren Brigade SDA 2010 - 2019



Section 4: Planning for the Future Reviews

Changes to the FRV Fire District should be made only when necessary and the following factors are important considerations:

- current and future fire risk
- current and planned risk mitigation measures
- community risk tolerance
- the benefits, costs and risks of a change in the Fire District
- the benefits, costs and risks of alternative risk reduction solutions.

As outlined in Section 2, the FDRP approach currently only considers potential future fire risk and does not consider risk mitigation activities currently being undertaken, nor the costs and benefits of different service delivery models and options. The current method therefore provides an incomplete assessment of whether a change in fire district is necessary.

CFA seeks to ensure that future review cycles are informed by the learnings from the current cycle. The International Organisation for Standardisation Risk Management Standard (ISO31000)²⁹ is a globally accepted risk management standard. CFA has structured its feedback on the current approach and recommendations for future reviews using the following six criteria adapted from this best practice model:

- appropriate consideration of context
- use of an appropriate method
- use of best available data
- opportunities for consultation and input
- a transparent approach to limitations
- opportunities for ongoing evaluation and improvement.

²⁹International Organisation for Standardisation <https://www.iso.org/standard/54224.html>

Table 5: Opportunities for improvement in future review cycles

Criteria	Summary of issue/challenge	Proposed solution for future reviews
Consideration of context	<p>FDRP’s remit does not allow for effective consideration of the context in which both CFA and FRV operate. In particular it does not consider:</p> <ul style="list-style-type: none"> • the practicalities relating to changes in boundaries • the actual operating environment where CFA and FRV are often working together to respond to emergencies, consistent with the complementary fire services model • the specialist capabilities offered by CFA brigades • the important additional value CFA brigades provide to the community including prevention and preparedness activities, community engagement and surge capacity which could be lost due to boundary changes. <p>Failure to consider this context can lead to a focus on changing boundaries regardless of whether a change in boundary would actually address risks and lead to improved community outcomes.</p>	<p>To address this issue, the next FDRP cycle should be undertaken in closer collaboration with the fire agencies and include a more open and transparent process. Additional information and metrics should be included in the risk assessment method (see below).</p>
Appropriate method for risk assessment	<p>The current risk assessment method uses metrics which do not effectively capture future fire risk for the community. There are multiple methods for managing fire risk and it is widely acknowledged that, beyond a certain point, a focus on further reducing response times is not the most effective way to continue reducing risk. The reliance on metrics such as response times limits the effectiveness of the risk assessment being undertaken by the FDRP.</p> <p>The method also does not consider the costs and benefits of changes to a boundary compared to other risk mitigation approaches. This could lead to worse overall outcomes for the community. The method includes some metrics (such as vehicle</p>	<p>FDRP should consider the inclusion of other risk metrics, and a more nuanced assessment of performance rather than ‘SDS fail’. This would create a more robust assessment of risk aligned to achieving improved community outcomes. The method should include an assessment of the costs and benefits of redrawing any boundary and the effectiveness of alternative risk mitigation measures, including consideration of:</p> <ul style="list-style-type: none"> • the costs and timing of transition if a boundary change was to occur • whether career firefighters can actually reduce risk within the area to any greater extent than volunteer firefighters • the risk mitigation activities being undertaken by CFA brigades and their influence on overall community risk • the additional value provided by CFA brigades (such as surge capacity) to the Victorian community.

Criteria	Summary of issue/challenge	Proposed solution for future reviews
	accidents) that are not relevant to an assessment of fire risk (see Section 2, page 17).	
Best available data and information	<p>Cycle 1 has been backward looking, based on 2010-2019 incident data that pre-dates Fire Services Reform. This data has been applied to a purpose that was never envisaged at the time it was collected, limiting its usefulness in the review in some areas (such as analysis of casualty outcomes).</p> <p>CFA continues to improve its data capture systems and processes and strengthen data governance and quality. For example, in recent years CFA has transitioned to enable fire and incident reports to be submitted by brigades online with a strengthened ability to undertake data quality assurance activities. Some data quality issues in the historical years (when data was being manually entered) have become evident to CFA as it has been preparing this submission, further limiting the utility of this historical data for fully informed decisions relating to risk.</p>	<p>Fundamental reconsideration is needed of the risk assessment method and the most appropriate data to support that method. CFA encourages the FDRP to work more collaboratively with it in future cycles to develop a method, informed by its understanding of appropriate metrics and data sources.</p> <p>CFA has been unable to validate the precise findings of the Panel. An increase in transparency in how the data is treated by FDRP's mathematical models, and the assumptions that underpin these models, would improve confidence in the processes for all stakeholders and reduce unnecessary analysis work within the agency.</p>
Consultation and input	<p>CFA and other end users were provided an opportunity to comment on a draft risk assessment method but the ultimate method was minimally changed by the Panel, with no evidence that the Panel had taken account of the many detailed submissions that were developed.</p> <p>It remains of concern to CFA that the Panel's published final method was subsequently amended to include MVAs with minimal rationale and apparently based on an assumption about vehicle accidents and fire that is not supported by the CFA data (see Section 2, page 22).</p> <p>The Victorian Government has agreed to a Volunteer Charter that requires it to consult with volunteers on matters that might or will</p>	<p>A significantly more collaborative approach is needed and can be achieved without comprising the Panel's independence.</p> <p>Greater consultation and discussion of the approach and method with the fire agencies would ensure that CFA has confidence in, and understanding of, the method. It would provide the Panel greater insights into the nuances of the data and ensure that the data provided was the most appropriate for achieving the objectives of the review. CFA and FRV have a wealth of knowledge that could be better used in future.</p> <p>Recognition of the important role volunteer firefighters play in the state's emergency service arrangements is a core element of government policy that needs to be made manifest in the approach to</p>

Criteria	Summary of issue/challenge	Proposed solution for future reviews
	<p>affect them. The CFA has engaged broadly with its member base to help them understand the nature of the FDRP process and very deeply with the 13 brigades affected by the cycle 1 initial determination.</p>	<p>future review cycles. Increased consultation and transparency with CFA in future reviews will support the ability to ensure that volunteers are appropriately consulted on matters that affect them.</p>
<p>Transparency and limitations</p>	<p>There is a lack of transparency in the assumptions and data modelling undertaken by the FDRP with the initial determination and supporting report being minimalist in nature. This has prevented a clear understanding of how the final results have been produced.</p> <p>Limitations of the risk assessment model are also not clearly acknowledged, which prevents understanding the strength of different findings and the key areas of focus.</p>	<p>The method should be provided in more detail, if not publicly then at least to CFA so that it can work with the affected brigades in the formulation of an effective response.</p> <p>The limitations of the method should be clearly and explicitly acknowledged so there is a greater understanding of what can and cannot be reasonably interpreted from the Panel's reports.</p>
<p>Evaluation and improvement:</p>	<p>Opportunities for future improvements and updates are not clearly acknowledged and there has been no apparent consideration given to how learnings from cycle 1 will be used to shape future reviews.</p> <p>The emergency management sector is based on a standard practice of formal after action reviews. The FDRP process requires significant investment of resources to undertake and respond to. Good practice approaches to continuous improvement should be adopted to inform future reviews.</p>	<p>A formal process for evaluation and improvement after each FDRP cycle should become standard practice. This would include:</p> <ul style="list-style-type: none"> • formal independent review of the first cycle, with meaningful opportunities for stakeholder involvement • public reporting on the findings from the evaluation and how the lessons will be addressed.

It is critical that improvements be made to the process and method for future review cycles. Even with these improvements, the FDRP with its current role and remit may not be the best mechanism for managing changing fire risk and determining the operational environment for the fire agencies.

A new approach should be considered that moves away from the current focus on boundaries to consider all aspects of risk. This approach would need to consider how fire risk, overall outcomes for the community, and costs and benefits of fire services are affected by:

- interoperability and current working practices including FRV and CFA joint attendance at emergencies
- FRV's capability to expand into new areas
- the wider role of CFA volunteers and the possible diminishment of these contributions should boundary change lead to a reduction of volunteer willingness to serve
- other risk mitigation measures beyond improving SDS and response times.

CFA is keen to work collaboratively with the Panel and with FRV to develop this new approach. This would support the identification of zones where a change to the fire service provision or a transition from one agency to the other could be planned based on a holistic assessment. This is what CFA has done in this report. The thresholds and triggers for each zone would be quantified, supporting more effective service delivery planning in the two agencies. A more ongoing assessment of changes in risk and possible risk mitigation activities of this nature would better align with the objective for a modern, integrated and sustainable fire services system that keeps Victorians safe.

Appendix

Acronyms

ABS	Australian Bureau of Statistics
ART	Activity Reporting Tool
AV	Ambulance Victoria
BA	Breathing Apparatus
BCTC	Building fire casualty to total building fire
BMO	Bushfire Management Overlay
CABA	Compressed Air Breathing Apparatus
CALD	Culturally and Linguistically Diverse
CAoV	Country Area of Victoria
CBD	Central business district
CFA	Country Fire Authority
DEECA	Department of Energy, Environment and Climate Change
EMR	Emergency Medical Response
EMS	Emergency Medical Services
FCV	Field Command Vehicle
FDRP	Fire District Review Panel
FEM	Fire Equipment Maintenance
FFMV	Forest Fire Management Victoria (in the Department of Energy, Environment and Climate Change)
FIB	Forest Industry Brigade
FIRS	Fire Incident Reporting System
FRNSW	Fire Rescue New South Wales
FRV	Fire Rescue Victoria
FSR	Fire Services Reform
LVFR	Low Voltage Fuse Removal
MVA	Motor vehicle accident
PPC	Personal Protective Clothing
RCR	Road Crash Rescue
RGR	Residential Growth Zone
ROGS	Report on Government Services
SA1	Statistical Area Level 1
SA2	Statistical Area Level 2
SCC	State Control Centre

SDA	Service Delivery Area
SDS	Service Delivery Standard
SEIFA	Socio-Economic Index for Areas
SES	State Emergency Service
SOP	Standard Operating Procedure
SWAH	Safe Working at Heights
TIC	Thermal Imaging Cameras
VCTC	Vehicle fire/MVA casualty to total vehicle fire/MVA
VESEP	Volunteer Emergency Services Equipment Program
VPA	Victorian Planning Authority

14. List of Data Sources

Corporate systems

Country Fire Authority – Fire and Incident Reporting System (FIRS)

Country Fire Authority – Fire Investigation Management System (FIMS)

Country Fire Authority – Resource Management System (RMS)

Country Fire Authority – Learning Management System (LMS)

Country Fire Authority – SAP Fleet Asset Register

Country Fire Authority – Salesforce

Country Fire Authority and Department of Environment, Energy and Climate Action – Fuel Management System

Data

Department of Transport and Planning – Planning Scheme Zones (November 2023)

Department of Transport and Planning – Vicmap Plan Overlay (includes Bushfire Management Overlay BMO)

Department of Environment, Energy and Climate Action – Public Land layer used is Public Land Management is PLM 25 (Generalised) (July 2023)

Country Fire Authority – CFAMap117 Brigade boundaries areas were used for all map products (28 July 2023)

Google Maps – Typical Traffic Patterns

Australian Bureau of Statistics 2021 Census

HERE Road Network data (July 2023)