



CITY OF KALAMUNDA
PICKERING BROOK VOLUNTEER BUSH
FIRE BRIGADE & FIRE STATION SITE –
FEASIBILITY STUDY

JUNE 2021
FINAL

*The aim of the project is to undertake an investigation
into the feasibility of the establishment of the Pickering
Brook Volunteer BFB and Pickering Brook Fire Station*

E.R.S.

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1. Glossary

Table 1 Terms and definitions

Term	Description
3.4 Tanker	Rural 3.4 Tanker (4WD / 300Litres (Dual Cab))
CESM/CBFCO	Community Emergency Services Manager – Chief Bush Fire Control Officer
KAL	City of Kalamunda
DFES	Department of Fire & Emergency Services
DPAW	Department of Parks and Wildlife
ERS	Executive Risk Solutions
ESL	Emergency Services Levy
LGGS	Local Government Grant Scheme
LT	Light Tanker (4WD / 500Litres)
PBVFBF	Pickering Brook Volunteer Bush Fire Brigade

Thanks, and disclaimer

Executive Risk Solutions (ERS) wishes to acknowledge the open and frank manner in which the City of Kalamunda staff, and other participants who contributed to areas for improvement and provided supporting information to ERS during the project period.

While every effort has been made to present the most accurate information and assessment, ERS expressly disclaims all liability or responsibility to any person, organisation or government using the information or advice.

Craig Hynes AFSM

2. Executive Summary

This report has been prepared for the City of Kalamunda (KAL) in order to present the findings of a recommendation analysing the feasibility of creating a Pickering Brook Volunteer Bush Fire Brigade (PBVBFB) and associated volunteer fire station.

While there are numerous options for setting up a new Brigade, conceptually the KAL proposal aims for a Brigade that will eventually have two fire appliances being housed in a small local fire station staffed by approximately 30 dedicated volunteers.

Ultimately, there will be no need to recreate existing training and bush fire mitigation reduction processes for the new Brigade as it is anticipated that the Kalamunda Volunteer Bush Fire Brigade (KVBFB) and PBVBFB will work closely together and share these functions in an ongoing basis. It is also anticipated that several current KVBFB members who reside in Pickering Brook or in close proximity will form the initial foundation of PBVBFB membership increasing over the ensuing years.

The report includes:

1. Stakeholder/community engagement meetings outcomes;
2. Conduct a formal strength, weaknesses, opportunities, and threat (SWOT) analysis for a new brigade and proposed fire station location;
3. Verifying the suitability of the identified location of the proposed PBVBFB station; and
4. Any identified issues, safety concerns that may impact the proposal by the KAL.

Key Project Observations

"The establishment of new a Bush Fire Brigade and station within the Pickering Brook area remains a key City of Kalamunda initiative aligned with the Government of Western Australia endorsement of the Pickering Brook future planning blueprint of a modest but meaningful expansion of the existing townsite and to increase tourism opportunities for the Perth Hills."

Proposed Pickering Brook Fire Station Briefing Note

The establishment and location of a Pickering Brook Volunteer Bush Fire Brigade and fire station that can provide support to the local community and additional response / mutual aid to out of district responses is a "no-brainer".

**Community member comment;
Pickering Sports Club
information session 1 June 2021.**

3. Summary of Findings and Recommendations

The following recommendations (R) and findings (F) are listed in the tables below with respect to the feasibility study.

Table 1 Recommendations

No	Recommendations
R1	A Pickering Brook Volunteer Bush Fire Brigade Fire Station should be established within the local community area.
R2	The Pickering Brook Volunteer Bush Fire Brigade Fire Station should be developed on the George Spriggs Reserve, specifically on the unutilised tennis court area.
R3	The Pickering Brook Volunteer Bush Fire Brigade Fire Station should be a 2-bay DFES Standard Country Facility designed for a Bush Fire Brigade.
R4	The KAL should further consult with stakeholders to ensure that any proposed changes/redevelopment to the Allan Fernie site do not inhibit the viability of the proposed Pickering Brook Volunteer Bush Fire Brigade and Fire Station.

Table 2 Findings

No	ToR	Findings
F1	N/A	The type of fire appliance for the proposed Pickering Brook Volunteer Bush Fire Brigade initially should be reviewed with the view of providing a greater response capability for attending potential large-scale fires.
F2	1	There is community support (94.7%) of those surveyed (refer section 6.1.2) for the establishment of a Pickering Brook Fire Station.
F3	2	There is community support (89.4%) of those surveyed (refer section 6.1.2) for the construction of the Pickering Brook Fire Station on the George Spriggs Reserve.
F4	3	There is community support for a 2-bay fire station and associated administration building to be constructed on the existing (unutilised) tennis court area of the George Spriggs Reserve.
F5	3	The alternate location of the proposed Pickering Brook Fire Station as identified by the KAL is not supported due to potential increased risk interactions between vehicles, pedestrians, and local traffic in the vicinity of the Primary School.
F6	N/A	The lack of formalised pedestrian crossings, cycling facilities, and shoulder width along the alternate location would increase the risk to those users.
F7	N/A	The Allan Fernie building next to the proposed fire station site was identified as being subject to a separate feasibility study. This study was commissioned by the Pickering Brook Sport Club. The current study has identified various options that does (in-part) compliment the overall location of the Pickering Brook Volunteer Bush Fire Brigade Fire Station with .

Note: N/A – Not part of the Terms of Reference but provided as a finding.

4. Introduction

4.1. Background

Fire response in the eastern parts of the KAL has always been the province of bush fire brigades. In 1940, the Darling Range Roads Board gazetted a bush fire brigade at Heidelberg (now Carmel) which covered the Pickering Brook area¹. In 1972, the then Shire of Kalamunda officially recognised three bushfire brigades, (Kalamunda East, South and West Brigades) of which the Kalamunda East Brigade had responsibility for fighting bushfires in the Pickering Brook area, while the Kalamunda South Brigade had responsibility for Canning Mills. In 1992, the Shire amalgamated the Kalamunda East and Kalamunda South brigades to form the Kalamunda Volunteer Bushfire Brigade (KVBBF), which exists as the single bush fire brigade in the KAL to this day. The KVBBF is based at its fire station at Raymond Road, Walliston and has responsibility for primary fire response of all types in the Pickering Brook area.

Current Situation

The central location of the KVBBF has permitted an equal response to all bushfire risk areas within the KAL. The centrally located station permitted accessibility for members from the local population and surrounding areas.

However, with increased urbanisation, the proposed expansion of the Pickering Brook townsite, State Government and local government strategic direction to diversify the economy through tourism, the associated increase in response times was also evident to the outer areas of the KAL. This includes areas such as Paull's Valley, Canning Mills and Pickering Brook – particularly east of the Pickering Brook townsite.

A number of Preparedness Audits have been undertaken between 2001 and 2012 in respect to response times and it was found that the response times were becoming extended particular in the direction of Pickering Brook. During these audits, it was identified that given the size of the existing population and assets in the area at the time, it was considered less of a risk².

The fundamental problem of response times remains as of this paper and despite the generally low fuel loads in forests surrounding Pickering Brook as a result of the Perth Hills Fire (2005) and subsequent Department of Parks and Wildlife (DPAW) burning activities, has resulted in only a small number of low intensity bushfires occurring in the area over the past decade. However, any cessation or break in the DPAW hazard reduction program would increase the bushfire risk to Pickering Brook and further increasing that risk particularly as a result of climate change³.

The below is the current indicative response times⁴ from the Kalamunda VBFB station:

¹ *The West Australian* 21/11/1940

² Proposed Pickering Brook Fire Station, pg. 1, undated

³ Climate Change and Bushfire Risk Planning for the City of Kalamunda, Winter, 2020

⁴ Proposed Pickering Brook Fire Station, pg. 8, undated

Finish Location	Duration
Cnr Pickering Brook Road and Canning Mills Road	8-minutes
Pickering Brook Primary School	10-minutes 30-seconds
Pickering Brook Road and Woodbine Road	13-minutes
Cnr Canning Mills Road	11-minutes 30-seconds
Cnr Mundaring Weir Road and Paull's valley Road	8-minutes 30-seconds

To address the current and future requirements to protect the community of Pickering Brook and the hinterland from an emergency, and in particular bush fires, there is a need for a volunteer bush fire brigade and station in Pickering Brook. The establishment of a fire station in Pickering Brook was also highlighted in the Bushfire Management Plan for the Pickering Brook and Surrounding Bushfire Risk Assessment completed by Emerge Associates.

4.2. Project Background

The KAL has contracted Executive Risk Solutions (ERS), to provide the KAL with consulting services related to feasibility studies and investigations into the establishment of a potential bush fire brigade and fire station in Pickering Brook.

4.3. Terms of Reference

In broad terms, ERS would:

1. Conduct a further feasibility studies and investigations into the establishment of the Pickering Brook Volunteer Bush Fire Brigade and Pickering Brook Fire Station;
2. Conduct a further feasibility studies and investigations being undertaken into a potential station to be located at the George Spriggs Reserve; and
3. Undertaking engagement with the Pickering Sports Club on the potential for a station at the George Spriggs Reserve.

4.4. Review Methodology

The intended approach to the project will be through research, consultation and subsequently reporting to the City and group of its findings and recommendations. This would include the following elements:

4.1.1. The site analysis, including however not limited to:

- 4.1.1.1. Will the proposed site be fit for purpose?
- 4.1.1.2. Incident statistics – Pickering Brook;
- 4.1.1.3. Turnout statistics (time to mobilise, travel and areas / trends);
- 4.1.1.4. What appliances and capability are considered appropriate based upon the incident statistics;
- 4.1.1.5. DFES modelling for the ESL boundary (current and planned) and is there an expected change in category in coming years; and
- 4.1.1.6. Traffic trends/considerations.

4.1.2. Proposed site and potential risk and address constraints:

- 4.1.2.1. What are the proposed building characteristics;
- 4.1.2.2. Entry/egress issues;
- 4.1.2.3. Roadway conditions; and
- 4.1.2.4. Reported issues and remedies available for the station.

4.1.3. The recommendations shall be based upon:

- 4.1.3.1. Stakeholder feedback (SWOT);
- 4.1.3.2. Facility options – availability of alternative sites;
- 4.1.3.3. Allowance for future capability requirements i.e., increased membership and appliance allocation in future years;
- 4.1.3.4. Community expectations and acceptance;
- 4.1.3.5. Amalgamations or alternative service provision options; and
- 4.1.3.6. Other relevant matters that arise through the course of the consultation process.

5. Consultation Strategy

ERS has in conjunction with the KAL point of contact (POC), identified the appropriate stakeholders to assist in determining the most suitable solution for the terms of reference.

This included, however was not limited to the following:

- The City of Kalamunda Bush Fire Advisory Committee (BFAC);
- DFES (ESL background / planning considerations / views on capability and requirements);
- City officers (relevant personnel with interest in the project);
- Community members (only as required with the support and approval of the city);
- Other emergency services groups (any impacted groups in the operational area);
- Associations (only as required with the support and approval of the city); and
- Others as required.

5.1. Stakeholders

The following individuals assisted with the review:

5.1.1. Department of Fire & Services (DFES)

- Peter Sutton – A/Chief Superintendent, Metropolitan; and
- Michael Ward – Kalamunda CESM and CBFCO.

5.1.2. City of Kalamunda

- Peter Varelis – Director Development Services; and
- James Wickens – Manager Environmental Health & Community Safety.

5.1.3. Executive Risk Solutions

- Craig Hynes – Chief Operations Officer; and
- Phillip Thelwell – General Manager Operations.

5.1.4. Community Members

- Refer Appendix B for attendee details

5.1.5. Other Interested Parties⁵

- Jo Wilkie⁶ – Jo Wilkie Consulting; and
- Christian Della Franca.

⁵ Representing the Pickering Brook Sports Club and Community Reference Group

6. Consultation - Findings and Assessments

6.1. Department of Fire and Emergency Services

The review commenced with a consultation process with the Kalamunda Community Emergency Services Manager / Chief Bush Fire Control Officer (CESM/CBFCO) at the Department of Emergency Services (DFES) Regional Office in Armadale on Monday, 10th May 2020.

The CESM/CBFCO advised that the KAL VBFB participates in key strategies during the bush fire season through the provision of in-district response and out-of-area mutual aid.

As of this paper, no existing VBFB exists within the Pickering Brook area and therefore response to reported fires within Pickering Brook are from KAL VBFB resources located in Walliston.



Figure 1 – Light Tanker (Wildfire Response – Illustration Only)

The establishment of a VBFB in Pickering Brook would benefit the community from the potential impacts of a local bushfire and reduce the need to a potential lengthy response from the current KAL VBFB. The re-deployment of a Light Tanker (L/T) from the KVVBFB to the PBVBFB is considered appropriate (initially) for the current PB VBFB risk profile and reduces the need to request funding/grant from the Emergency Services Levy (ESL).

A/Chief Superintendent Sutton⁷ has advised that there is a benefit to the community in establishing the PBVBFB. It would also assist in closing a possible gap in future response capability both within the community and adjoining districts as depicted in figure 2 below. The current Emergency Services Levy (ESL) Category 3 would remain unchanged.

The type of proposed appliance for the PBVBFB initially should be reconsidered. The initial concept of a L/T being positioned at the proposed location does have limitations i.e., water capacity. A L/T is ideal for immediate response, intelligence role and small, manageable fires only. Potential larger fires would benefit with an appliance such as a 3.4R that will provide an increased operational capability/role. The larger appliance would also provide increased personal protection for responding crews in larger, fast burning wildfires.

⁷ A/Chief Supt Metropolitan, Peter Sutton, 17 June 2021

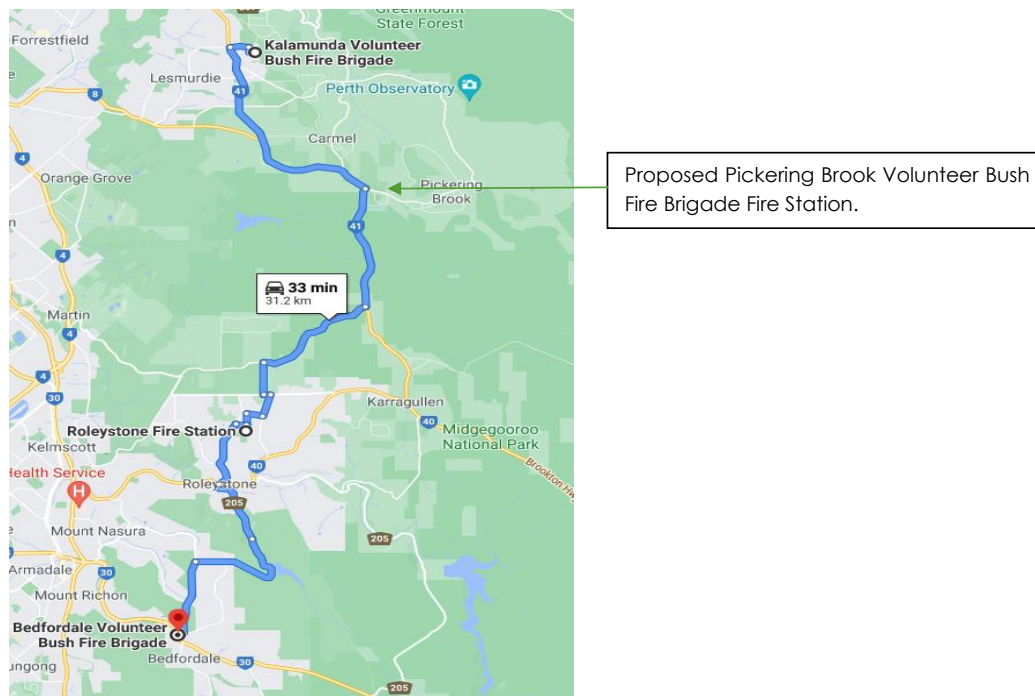


Figure 2 – Surrounding BFB Stations

No	Finding
F1	The type of fire appliance for the proposed Pickering Brook Volunteer Bush Fire Brigade initially should be reviewed with the view of providing a greater response capability for attending potential large-scale fires.

6.1.1. Incidents reported to DFES and attended by Local Government BFB

An analysis of incident data provided by DFES⁸ indicates that during the period 01/07/2001 to 18/05/2021, the KVFBF attend a total of 244 incidents in the Pickering Brook area. Of these 244 incidents, 170 incidents have been separated into:

- Fire – Bush (large);
- Fire – Bush (small); and
- Fire – other (rubbish/vehicle/good intent).

Table 1 (below) depicts the number of incidents reported to DFES between the above periods:

⁸ Incidents reported to DFES and Attended by Local Government and Bushfire Brigades dated 18/5/21.

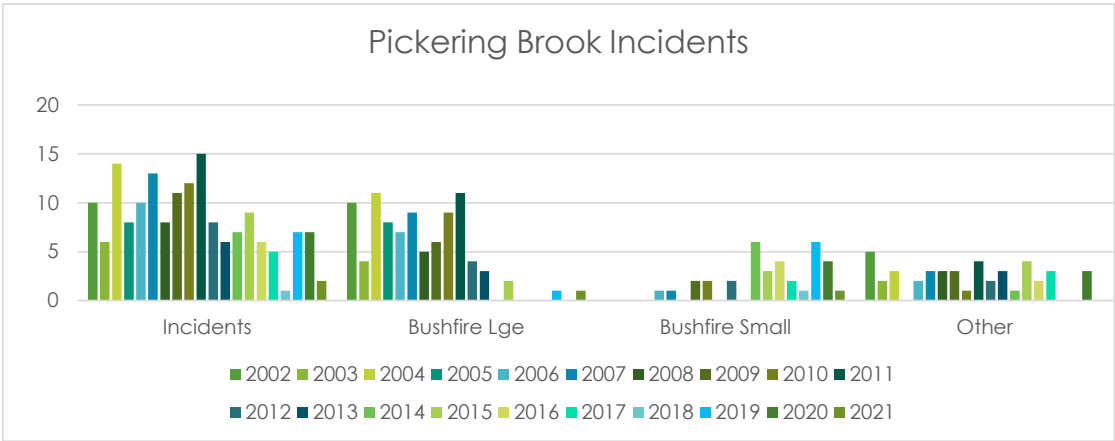


Table 1: Incidents attend by KVBF 2001 to 2021

6.1.2. Community Information Session

A community information session was held at the Pickering Brook Sports Club on Tuesday, 1 June 2021. A total of 26 individuals signed the attendance register at the community session however it should be noted that approximately 8-10 individuals were in attendance who had not signed the register. Numerous communications methods were undertaken prior to the meeting date to offer the community an opportunity to attend and provide relevant feedback to the proposal. Communication methods included:

- Letter drop to 222 local properties;
- Advertisements through the Pickering Brook Sports Club – 223 email contacts;
- Pickering Brook Heritage Association contact list;
- Local school P&C newsletter;
- City of Kalamunda social media mediums; and
- Two electronic variable message boards.

Two key questions were posed to the community as part of the consultative approach (refer Table 2):

- Question 1: Are you supportive of the proposed Pickering Brook Volunteer Bush Fire Brigade Fire Station? and
- Question 2: Are you supportive of the proposed location of the Pickering Brook Volunteer Bush Fire Brigade Fire Station at the George Spriggs Reserve?

Respondents to each of these questions are depicted below:

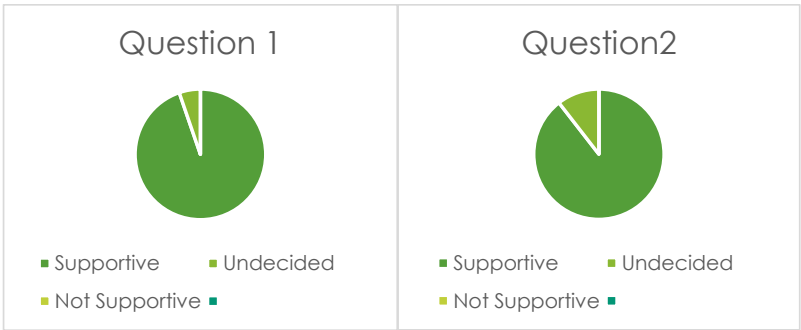


Table 2: Respondents Questionnaire

Based on the approach to the review, the following comments were made:

Proposed Fire Station analysis:

Supportive Comments
Supportive result: 18 results (94.7%)
Increase response time for incidents within the Community
Reduction in potential catastrophic bushfires within district
Supports the proposed developments of the area in the future
Community safety to homes and lives, protection of the water catchment areas and flora and fauna
No 'brainer'
Past fires have impacted the community and a local station will assist in protecting the community
Undecided Comment
Undecided result: 2 results (5.26%)
Unsure as to the location and impact to the quality of life and future lifestyle.

Proposed Fire Station location – George Spriggs Reserve analysis:

Supportive
Supportive results: 17 results (89.4%)
Location has infrastructure such as power, sewer, and part of the community hub
Centralised location with an area that is currently idle and unutilised
Will bring the community together in time of need
Access to Canning Mills, Carmel, Karragullen
Supports response times locally
Undecided Comment
Undecided result: 2 results (10.5%)
Unsure of proposed location and impact to quality of life and lifestyle
Would like to see the Fire Station located on the main road of Pickering Brook by the service station.

No	ToR	Findings
F2	1	There is Community support (94.7% refer Table 2) for the establishment of a Pickering Brook Fire Station.
F3	2	There is Community support (89.4%) for the construction of the Pickering Brook Fire Station on the George Spriggs Reserve.
F4	3	There is Community support for a 2-bay fire station and associated administration building to be constructed on the existing (unutilised) tennis court area of the George Spriggs Reserve.

6.2. Community Meeting – SWOT Evaluation of Proposal

Strengths	Weakness
<ul style="list-style-type: none"> • There is a Community expectation that a VBFB and station should be developed in the near future rather than procrastinated on for more years; • In large, there were no perceived inhibiting factors identified for the establishment of a PBVBFB and station; • Potential for lateral transfer of current KVBF members who reside in the community to form the back-bone of the brigade initially; • Location is convenient for a 'staging' area during large scale incidents i.e., appliances, helitaks, larger helitankers (rotary). 	<ul style="list-style-type: none"> • Has the KAL considered other options to possible site of the fire station such as adjacent to the service station or Primary School? • Were there any other identified locations identified by the KAL? • Appropriate membership to ensure the sustainability of the VBFB.
Opportunities	Threats
<ul style="list-style-type: none"> • A fit-for-purpose station that meets contemporary DFES volunteer station designs (training, ablutions, clean/dirty area, front/rear appliance access) was a necessity that compliments the aesthetics of the area; • Some members of the community will consider joining the brigade in an ancillary role; • Increased membership as the Township develops under the State Government proposal; • Increased number of firefighting appliances required as membership grows. • Mitigate risk for proposed economic development initiatives that may introduce vulnerable user to the local (i.e., tourism uses). • Further uses co-located with the sports club to formalise the community hub. 	<ul style="list-style-type: none"> • There is a separate feasibility study being undertaken as to the future use of the disused Allan Fernie building next to the proposed fire station site as a potential short-term accommodation complex.

6.2.1 Potential alternate site/s

During the course of the feasibility study, the KAL advised that it had explored various appropriate land tenures and only one block of sufficient size had been identified; that being next to the local Primary School which lies some 2.5km east of the proposed site at George Spriggs Reserve.

While the identified site backed onto the current school site, on face-value it would appear to be an acceptable location, however there is a potential greater risk for vehicle/community interactions resulting in injury particularly at peak traffic congestion times during school drop-off/pickup, inattention of drivers, families, and general traffic (refer section 6.3).

Additionally, it was considered that the freehold land adjacent to the school would require purchase at significant cost to the KAL. It would be financially appropriate to utilise KAL owned land first rather than excise land from Government or purchase privately.

6.3 Road Safety

The KAL has advised that there is no formal traffic data available and as such cannot be interrogated and commented on by this report.

It should be acknowledged however that the KAL have recently been successful in receiving Main Roads WA endorsement for reduced posted speed zone for a section of the Pickering Brook Road (refer Figure 2) from 70kph to 60kph.

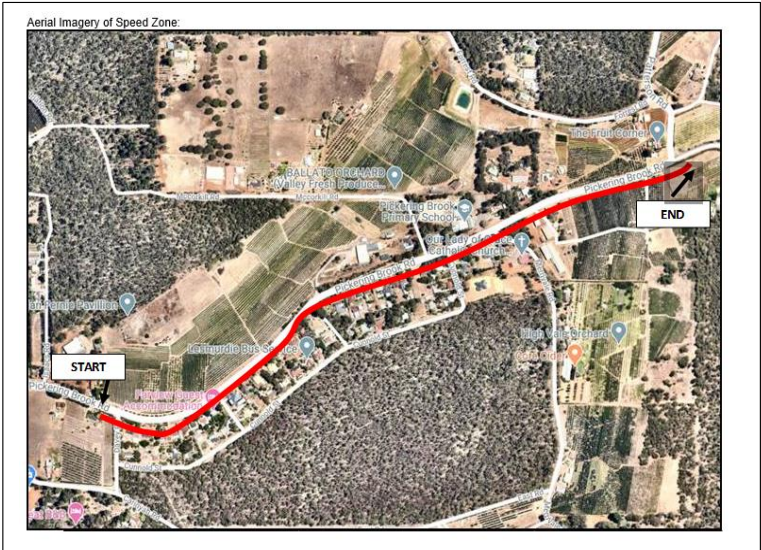


Figure 2 – Speed Zone Reduction

There is a 40kph School Zone speed limit within the vicinity of the primary school on school days. There are no formalised pedestrian crossing/s or cycling facilities along the road with the exception of adjacent to the primary school⁹.

The existing seal along the section depicted in Fig 2 is in the order of 6-7meters with less than a 1meter shoulder on either side of the road. Existing traffic volumes range from 647 vehicles per day (vpd) in the vicinity of the primary school to 1454vpd near Davey Road (west). Existing heavy vehicle traffic is in the order of 10% which are less than 14m in length.

While the above data may indicate that there is little traffic for responding emergency appliances to contend with, nonetheless, there is still the requirement for all responding VBFB appliance/s in the future to be cognisant of the potential safety implications of their surrounds (road, public/pedestrian and vehicular traffic) they should respond accordingly taking these factors into consideration.

No	Findings
F5	The alternate location of the proposed Pickering Brook Fire Station as identified by the KAL is not supported due to potential increased risk interactions between vehicles, pedestrians, and local traffic in the vicinity of the Primary School.

⁹ Senior Traffic Engineer, KAL, 14/5/2021

F6	The lack of formalised pedestrian crossings, cycling facilities, and shoulder width along the alternate location would increase the risk to those users.
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7. Allan Fernie Building – Separate Feasibility Study

During this review, it was identified that a separate feasibility study, commissioned by the Pickering Brook Sports Club (2019), is currently underway as to the potential use of the current derelict Allan Fernie building and broader reservation located immediately next to the proposed fire station location.

It is understood that Jo Wilkie Consulting is undertaking the review on behalf of the Pickering Brook Sports Club. At a meeting held on Wednesday, 16 June 2021 at the City's office with Jo Wilkie and Christian Della Franca (representing the Pickering Brook Sports Club and Community Reference Group) it was conveyed that options for the building where:

- Development of the proposed fire station site to accommodate caravans as short-stay accommodation;
- Redevelop half of the Allan Fernie building into a potential commercial use such as small cinema, private use etc.; or
- As part of the broader potential tourism outcomes, develop the bush area to the northwest (behind the building) into a camping area "under the trees".

In principle, the current location of the proposed fire station location was agreed as the most appropriate spot, with the development of short-stay accommodation and caravan area being considered more aesthetically pleasing in the area to the northwest of the Allan Fernie building. It was also acknowledged that the uses should be co-located and form part of the broader community hub. The establishment of the fire station would also support the proposed tourism uses from a bushfire planning risk mitigation perspective.

No	Finding
F7	The Allan Fernie building next to the proposed fire station site was identified as being subject to a separate feasibility study. That study has identified that the proposed location of the Pickering Brook Volunteer Bush Fire Brigade Fire Station is also considered as a possible option for the short-stay accommodation (caravan etc).

8. Appendix A – Pickering Brook Meeting Agenda

City of Kalamunda and Stakeholder Meeting Agenda			
Date: 1/06/2021		Time: 1600-1800hrs	Location: Pickering Brook Sports Club
Chair	Phill Thelwell (ERS)		
Note taker	Mike Ward (CBFCO/DFES)		
Apologies			
Discussion Points			
2 Hours	All		
Discussion			
1. Introductions – all participants			
2. Background on proposal by City			
3. Identified location that is suitable			
4. Community expectations of proposed locations – contentious issues			
5. Current/future risk profiles			
6. Additional items to address			
Discussion Item 1 – (Topic)			
Discussion Item 2 – (Topic)			
Discussion Item 3 – (Topic)			
Discussion Item 4 – (Topic)			
Discussion Item 5 – (Topic)			
7 General Business			
8 Action Items			
9 Meeting Close			

9. Appendix B – Attendance Record

City of Kalamunda Meeting – Pickering Brook VBFB Proposal		
Attendance Record		
Date: 1/06/2021	Time: 1600-1800hrs	Location: Pickering Brook Sports Club
Name	Address/Contact	
M Ferne	230 Repatriation Rd	
La Casady	230 Repatriation Rd	
Nancy + Fred Van Donyk	672 Pickering Brook Rd	
Judith Holland	214 P.B. Rd P.B.	
Maria + Maria Giromelli	71 Bracken Rd P/Brook	
Peter + Judy Petrucci	547 Pickering Brook Rd P/BROOK	
LYNN + TO VETI	59 CUNNOD ST PICK BROOK	
204. MARCHESE	112 Pickering Brook Rd	
P. NEWING	1 Woadline Rd Pickering Brook 6070	
D. MARCHETTI	21 MARCHETTI RD P.B	
Wayne Vbs	14 Ind St, Kalamunda	
Chen + Wai	43 Wyde Road Kalamunda	
Melanie C Danz	112 UNION ROAD CALVERT	
30 CUNNOD	"	
CARL DANZI	C.danzi@hotmail.com	
JOH LYONS	jonlyons94@gmail.com	
Domenic Giffaro	25 Repatriation Rd P/BROOK	
BOB WOOTEN	41 FORREST RD P.B.	
PETER ARASI	171 Cammish Rd Kalamunda	

10. Appendix C – About The Reviewers

Craig Hynes AFSM has over 30 years' experience in the fire and emergency services, crisis, and risk management sectors. Craig joined Executive Risk Solutions following a long career in the fire and emergency services industry. His past experience and skills that benefit this review include the following highlights.

Craig was appointed Chief Operations Officer and Chief Officer with the Fire & Emergency Services Authority of WA (FESA) in 2007 after several years acting in the position. Prior to this role he had served as a firefighter and officer in a number of operational positions and roles with the WA Fire Brigade through to 1999. With the formation of FESA in 2000, he undertook several senior appointments including Manager Health Safety & Welfare, Director of Training & Education Services, Assistant Chief Operations Officer Country before taking on the Chief Operations Officer role that he fulfilled until the end of 2011.

As the Director of Training & Education Services he had a key role in developing the national training resources kits and the implementation of the Public Safety Training Package competency framework serving on several Industry committees and reference groups at the State and National level.

He was also responsible for the Registered Training Organisation status for FESA which included the management of the Forrestfield Training Centre with hydrocarbon training props, vehicle, and technical rescue props, USAR and Breathing Apparatus simulation centre. The Training Centre was the initial provider of training for City of Kalamunda emergency response teams prior to a decision to relinquish the Commercial Training Service from its range of services.

In the role of FESA's Chief Operations Officer, Craig was responsible for the direction and management of FESA's operational capability across all hazards. It was a unique role in the emergency services industry which encompassed the Fire & Rescue Service, Bush Fire Service, State Emergency Services, Volunteer Emergency Services, and the Volunteer Marine Rescue Service.

Phillip Thelwell has over 30 year's national and international involvement in public safety and the oil and gas industry. Phillip also joined Executive Risk Solutions following a long career in the fire and emergency services industry. His past experience and skills that benefit this review include the following highlights.

Phillip spent 20 years with the Fire and Emergency Services Authority of Western Australia (FESA). There he was promoted throughout the various ranks being posted to various metropolitan fire stations before attaining the rank of Superintendent accountable for overseeing Major Hazard Facilities and the Specialised Operations portfolio within the State. Phillip in his Special Operations folio represented Western Australia on various national and state committees including Hazardous Materials (HAZMAT), Urban Search and Rescue (USAR) and liaison with Federal agencies to mention a few. He has managed 6 career fire stations, 4 volunteer fire stations, and 4 local Government Bush Fire Brigades.

Phillip's professional achievements include implementing, procuring, and maintaining \$8 million of specialised equipment for the Federal Government. Phillip also developed, implemented, trained, co-ordinated and maintained incident management teams with competency-based training programs for personnel and Contractors, provided emergency, crisis management and security guidance, technical support throughout businesses and developed and implemented specialised interoperability protocols and procedures with State agencies.

After FESA, Phillip went into the private sector and has worked as a senior emergency management adviser for companies including Woodside and Inpex.

11. Appendix D – Pickering Brook Volunteer Bush Fire Brigade Proposed Location and Design

