

To: Ryan Darby

Date: 29 March 2016

Company: Roberts Day

Project No: RDP15397.01

Fax/email: Ryan.Darby@robertsday.com.au

Inquiries: Roger Banks

Fire Management Plan Addendum Alkimos Beach, South Alkimos

Background

Strategen has prepared this addendum to the approved Fire Management Plan (FMP) for Alkimos Beach, South Alkimos to account for temporary vegetation both within the development site and on adjacent landholdings to the south and east. The original FMP did not account for this temporary vegetation and was approved by City of Wanneroo in January 2015.

Residential development at Alkimos Beach is occurring progressively throughout Lot 9014 Marmion Avenue in the City of Wanneroo. The northeast and central-east precincts have planning and development approval and are either already developed or under construction. The southern and western-most precincts are still progressing through subdivision approval processes and some vegetation is yet to be cleared in these future development areas.

Adjacent land to the south comprises the Satterley Eden Beach residential development, which, like Alkimos Beach, is in an advanced stage of dwelling construction with limited vegetation retained on site in future development areas that are yet to be cleared. The adjacent landholding to the east (Lot 1002), although designated for future urban use as part of the proposed Trinity residential development, does not yet have the appropriate planning approvals in place and remains in a partially vegetated state.

The on-site and adjacent vegetated areas discussed above are temporary in nature as they exist within future development areas that are yet to be cleared and will ultimately impose zero bushfire risk to the surrounding life and property assets. For this reason, these areas were not taken into consideration as part of the approved Strategen (2015) FMP.

Purpose of FMP addendum

Strategen has reviewed the DFES State Map of Bush Fire Prone Areas and the abovementioned temporary vegetation is designated as bushfire prone (DFES 2016). This designation will trigger bushfire assessment and reporting requirements under *State Planning Policy 3.7 Planning in Bushfire-Prone Areas* (SPP 3.7; WAPC 2015) to accompany future planning applications over these areas, particularly with regards to the level of application of increased building construction standards under *Australian Standard AS 3959–2009 Construction of Buildings in Bushfire-prone Areas* (AS 3959–2009, SA 2009).

In addition, the DFES State Map of Bush Fire Prone Areas is yet to be updated to account for ongoing vegetation clearing that is occurring progressively throughout the Alkimos Beach, Eden Beach and Trinity sites.

The purpose of this FMP addendum is therefore to provide the appropriate level of bushfire assessment and reporting information necessary to progress development approvals throughout Alkimos Beach in relation to those areas unaccounted for in the approved Strategen (2015) FMP. In doing so, this will guide ongoing bushfire management across the site to achieve an effective, compliant and suitable level of bushfire mitigation in accordance with relevant policy, guidelines and standards on the basis of detailed, on-ground investigation conducted by Strategen on 14 January 2016.

Vegetation class and effective slope

The majority of temporary vegetation discussed above is consistent with Class C shrubland (Figure 1) subject to slopes from 0–10 degrees, but up-slope from proposed development areas. This includes all remaining on-site vegetation in future development areas of Alkimos Beach (Plate 1 and Plate 2), all remaining vegetation along the southern interface in future development areas of Eden Beach (Plate 3 and Plate 4) and a significant proportion of vegetation in the proposed Trinity development site to the east (Plate 5 and Plate 6). This vegetation is consistent with a low shrubland type consisting of *Acacia rostellifera* (with varying density) over very low coastal shrubs and grasses with some weed invasion along access tracks. Vegetation height is very low (no greater than 0.5 m) and the average fuel load was assessed to be no more than 5 t/ha (tonnes per hectare).

The proposed Trinity site grades from Class C shrubland, as described above, to Class D scrub (Plate 7 and Plate 8) and Class B woodland (Plate 9) with increasing distance to the east towards Marmion Avenue (Figure 1). This vegetation is on predominantly flat land or up-slope from the Alkimos Beach development site. Class D scrub occurs in areas of dense closed scrub and grass tree thickets with an average fuel load of 8 t/ha. Class B woodland occurs in areas of banksia occurrence over low shrubs with an average fuel load of 8 t/ha.



Plate 1: On-site Class C shrubland, temporary vegetation, low bushfire hazard level (0.3–0.5 m high)



Plate 2: On-site Class C shrubland, temporary vegetation, low bushfire hazard level (0.3 m high)



Plate 3: Class C shrubland to the south, temporary vegetation, low bushfire hazard level (0.3–0.5 m high)



Plate 4: Class C shrubland to the south, temporary vegetation, low bushfire hazard level (0.2 m high)



Plate 5: Class C shrubland to the east, temporary vegetation, low bushfire hazard level (0.5 m high)



Plate 6: Eastern development boundary, Class C shrubland to the east, temporary vegetation, low bushfire hazard level (0.5 m high), cleared land to the west (on site)



Plate 7: Class D scrub to the east, temporary vegetation, moderate bushfire hazard level (>2 m high)



Plate 8: Class D scrub to the east, temporary vegetation, moderate bushfire hazard level (>2 m high)



Plate 9: Class B woodland to the east, temporary vegetation, moderate bushfire hazard level (>2 m high)

Bushfire hazard level assessment

The bushfire hazard levels relating to the above assessment are as follows (refer also to Figure 1):

- all Class C shrubland vegetation contains a 'Low' bushfire hazard level
- all Class D scrub and Class B woodland vegetation contains a 'Moderate' bushfire hazard level.

Vegetation with a 'Low' bushfire hazard level does not constitute bushfire prone vegetation and subsequently will not implicate development areas within 100 m in terms of application of SPP 3.7 or AS 3959–2009. Vegetation with a 'Moderate' bushfire hazard level does constitute bushfire prone vegetation and will implicate development areas within 100 m in terms of application of SPP 3.7 and AS 3959–2009.

In relation to the Alkimos beach development site and the temporary vegetation extent both within the site and adjacent to the site's southern and eastern boundaries, there is no bushfire prone vegetation located within 100 m of proposed development areas (Figure 1). Therefore, development can progress across the Alkimos Beach development site uninhibited by any further bushfire assessment and reporting requirements under SPP 3.7 or AS 3959–2009.

Conclusions and recommendations

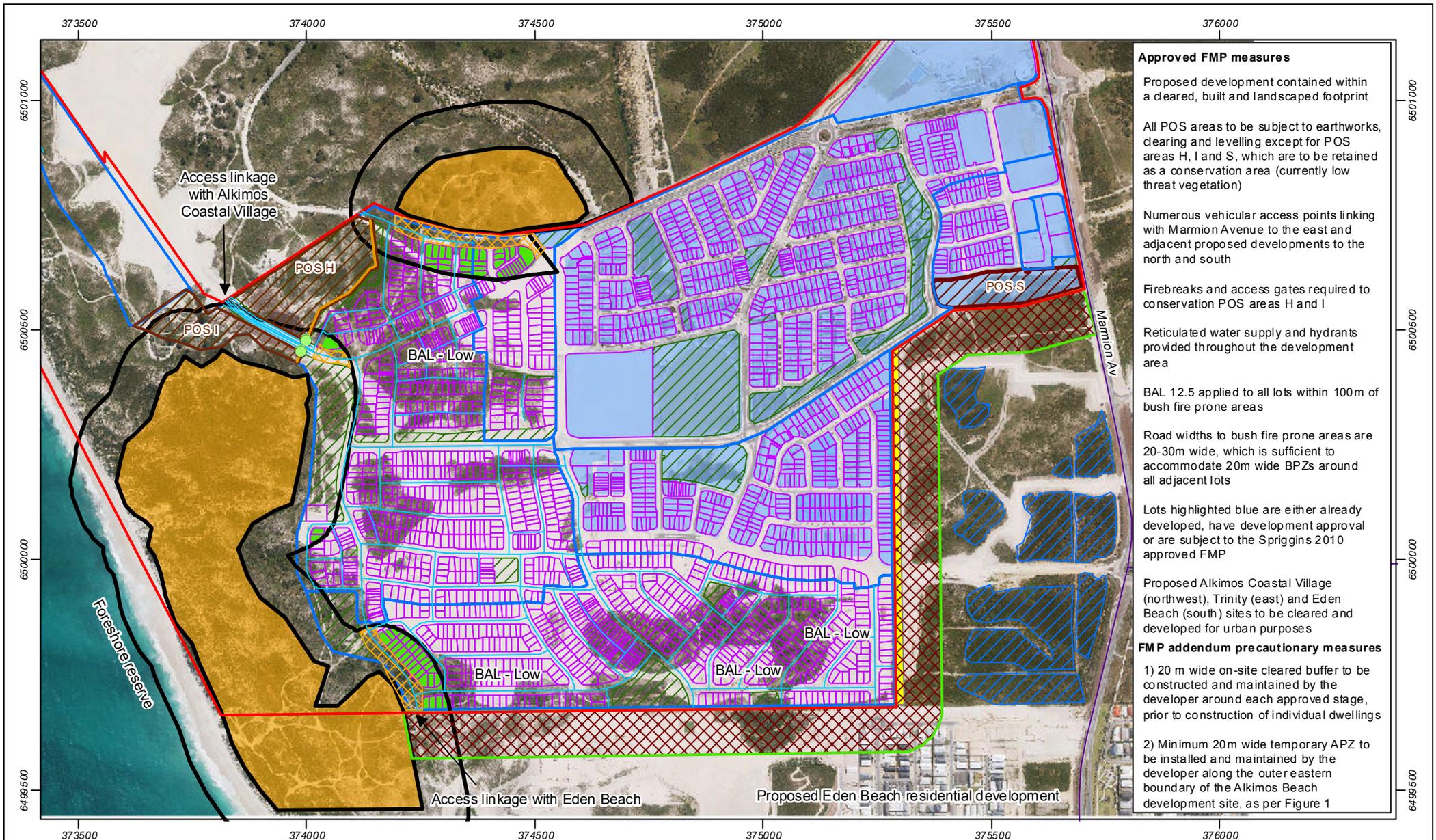
Future development areas of Alkimos Beach that abut temporary vegetation within the site or to the adjacent south and east landholdings are not situated within 100 m of bushfire prone vegetation. Consequently, a BAL-Low rating can be achieved for these development areas and no formal increase in the building construction standard will be required for future dwellings.

However, due to the inherent bushfire risk (albeit low bushfire risk) of fast moving shrubland fire that could impact future development areas of Alkimos Beach until such time that the temporary vegetation is removed, Strategen recommends the following precautionary measures be implemented as part of this FMP addendum:

1. As internal development staging progresses across the Alkimos Beach development site, a 20 m wide on-site cleared buffer is to be constructed and maintained by the developer around each approved stage, prior to construction of individual dwellings, to ensure any bushfire risk from adjacent undeveloped stages is adequately addressed.
2. A minimum 20 m wide temporary Asset Protection Zone (APZ) is to be installed and maintained by the developer along the outer eastern boundary of the Alkimos Beach development site, as depicted in Figure 1. This zone is already substantially constructed as a result of battering along this interface and is to be continued along the full extent of the eastern boundary to the southeast corner of the site prior to construction of the adjacent Alkimos Beach dwellings. The APZ is to remain in place until such time that development on the adjacent Trinity site occurs.
3. Emergency vehicular access is to be maintained throughout the adjacent east Trinity site in accordance with the Trinity fire access plan depicted in Figure 2 until such time that development of the Trinity site occurs. The plan depicts a comprehensive network of existing 6 m minimum width limestone base tracks that will assist emergency access throughout the majority of the Trinity site and Alkimos Beach/Trinity development interface (refer to example depicted in Plate 10). The access network links with Marmion Avenue at four locations to the east and is considered sufficient for the purposes of providing breaks in potential fire run from the east and access for fire appliances to conduct bushfire suppression works in order to protect future life and property assets within the Alkimos Beach development site. In addition to the access network and 20 m APZ discussed above, three turnaround points are in place at the Alkimos Beach/Trinity development interface to enhance emergency access.



Plate 10: Example of limestone base emergency access track within Trinity site (facing east towards Marmion Avenue)



Approved FMP measures

Proposed development contained within a cleared, built and landscaped footprint

All POS areas to be subject to earthworks, clearing and levelling except for POS areas H, I and S, which are to be retained as a conservation area (currently low threat vegetation)

Numerous vehicular access points linking with Marmion Avenue to the east and adjacent proposed developments to the north and south

Firebreaks and access gates required to conservation POS areas H and I

Reticulated water supply and hydrants provided throughout the development area

BAL 12.5 applied to all lots within 100m of bush fire prone areas

Road widths to bush fire prone areas are 20-30m wide, which is sufficient to accommodate 20m wide BPZs around all adjacent lots

Lots highlighted blue are either already developed, have development approval or are subject to the Spriggins 2010 approved FMP

Proposed Alkimos Coastal Village (northwest), Trinity (east) and Eden Beach (south) sites to be cleared and developed for urban purposes

FMP addendum precautionary measures

- 1) 20 m wide on-site cleared buffer to be constructed and maintained by the developer around each approved stage, prior to construction of individual dwellings
- 2) Minimum 20m wide temporary APZ to be installed and maintained by the developer along the outer eastern boundary of the Alkimos Beach development site, as per Figure 1

Figure 1 FMP Addendum: Alkimos Beach, South Alkimos

Scale 1:11,294 at A4
 0 50 100 150 200 m

Coordinate System: GDA 1994 MGA Zone 50
 Note that positional errors may occur in some areas
 Date: 23/02/2016
 Author: JCrute
 Source: Aerial image: Landgate, flown 09/2015, Subdivision plan: Client 02/2016.
 Path: Q:\Consult\2015\RD\PRDP\15397\ArcMap_documents\M001\RD\15397_01_M001_Rev0_F001.mxd

Legend

- Carriageways
- Conservation POS
- Project area boundary
- Precinct boundaries
- Proposed lots
- Proposed POS
- Development approved / constructed

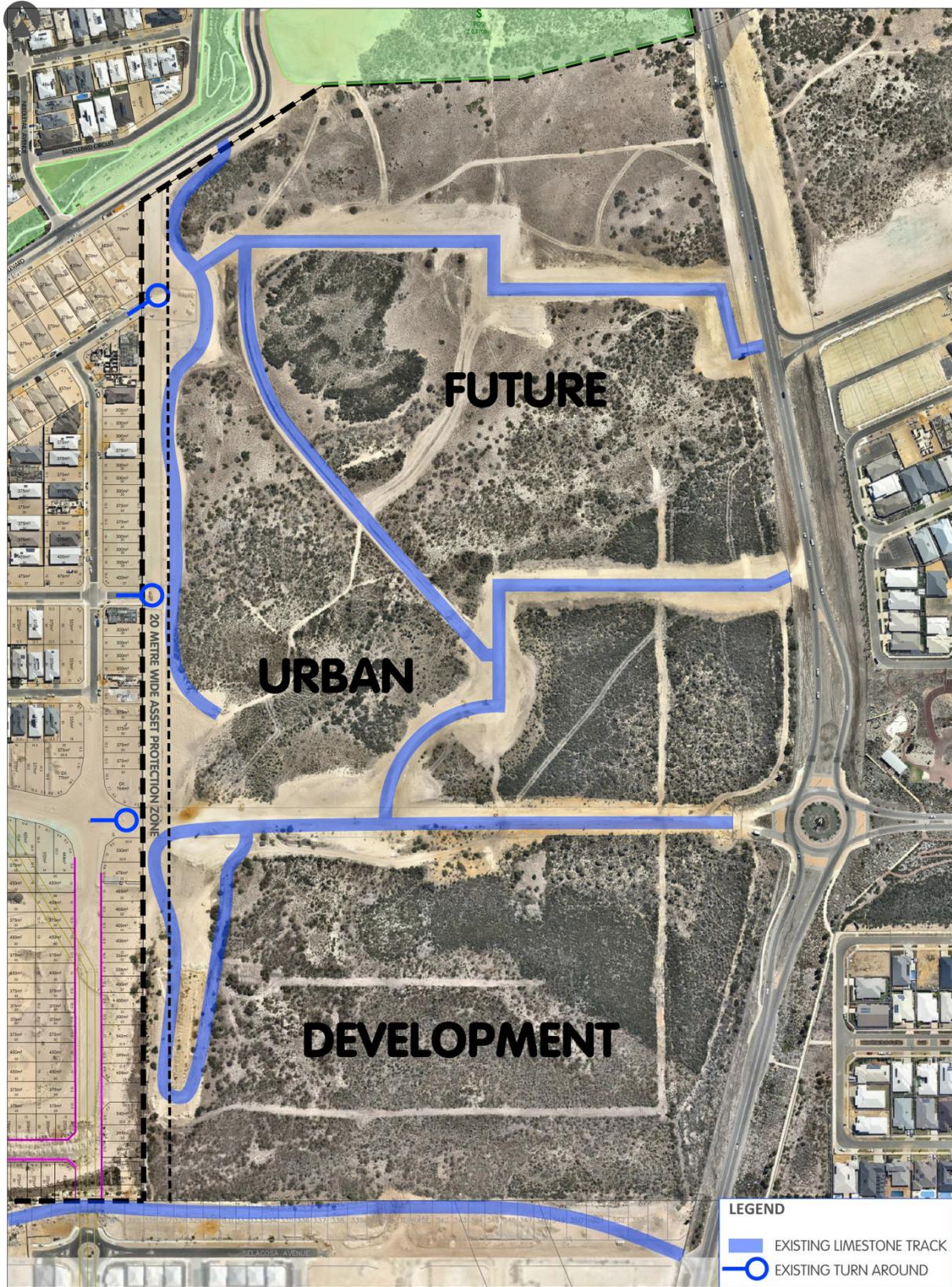
Approved FMP measures

- Access gate
- 3m wide firebreak
- 20-30 m wide BPZ
- 100m wide BAL application area
- Bush fire hazard level: Moderate
- BAL 12.5

FMP addendum measures

- 100m wide assessment area
- Low bushfire hazard level
- 20m wide APZ
- Class D scrub/Class B woodland, moderate bushfire hazard level, bushfire prone vegetation





LANDCORP Lendlease

ALKIMOS BEACH

CADASTRAL INFORMATION
SOURCE: WHELANS
YYMMDD: 140723
DWG REF: fp15205-0343f.dwg
PROJECTION: PC94

AERIAL PHOTOGRAPHY
SOURCE: NEARMAPS
YYMMDD: 160318
DRAFT

RD **grd** group inc.
rd@strategen.com.au
www.strategen.com.au

TRINITY FIRE ACCESS PLAN
Alkimos Beach
City of Wanneroo

SIZE A3

A	BASE PLAN	160318	HH	RD
REV	DESCRIPTION	YYMMDD	DRAWN	APPR'D

REF NO.
DLL ALK

DRAW NO.
RDI 216

REV.
A

Source: Roberts Day 2016

Figure 2: Trinity fire access plan

References

- Department of Fire and Emergency Services (DFES) 2016, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from:
<http://www.dfes.wa.gov.au/regulationandcompliance/bushfireproneareas/Pages/default.aspx>, [21/01/2016].
- Roberts Day 2016, *Trinity fire access plan*, plan prepared for LandCorp and Lend Lease, March 2016.
- Standards Australia (SA) 2009, *Australian Standard AS 3959–2009 Construction of Buildings in Bushfire-prone Areas*, Standards Australia, Sydney.
- Western Australian Planning Commission (WAPC) 2015, *State Planning Policy 3.7 Planning in Bushfire-Prone Areas*, Western Australian Planning Commission, Perth.